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APPROVED

Civil Aeronautical Authority
of Romania

as per letter **22597/23.07.2025**

GROUND OPERATIONS MANUAL

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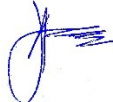
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GROUND OPERATIONS MANUAL

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and its related content within the related chapters, shown in the relevant Tables of Content of this manual.

Action	Function	Name	Signature	Date
Approved by:	Accountable Manager	Vladimir CEBOTARI		01.05.2025
Advised by:	AOC Compliance Manager	Alexandru NICOLAE		01.05.2025
Prepared by:	Ground Operations Manager	Daniel MALECA		01.05.2025

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2. DISTRIBUTION LIST

Manual Holder	Copy number
Ground Operation Manager	Master (hard copy)
CAA	Electronic version via RoCAA Portal
Accountable Manager	Electronic version distributed on https://FOE.asqs.net
Compliance Department	
Safety Manager	
Flight Operations Department	
Operations Control Centre Department	
Ground Operations Department	
Security Manager	
Outstations and Representatives	Electronic version distributed on https://FOE.asqs.net

Ground Operation Manager is responsible for the insertion and distribution of all Editions / Revisions of Ground Operation Manual. All nominated Post Holders shall have a thorough knowledge with the FLYONE's Ground Operation Manual. Once new Edition / Revision of Ground Operation Manual is approved, Ground Operation Manager will publish it on <https://FOE.asqs.net>. Email notification will be sent to all concerned Post Holders and subcontracted handling organizations. Each person is responsible to download and use the current Edition / Revision of the Compliance Monitoring Manual.

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0. ORGANISATION AND RESPONSIBILITIES

0.1. FLYONE GROUND OPERATIONS MANUAL

0.1.1. FOREWORD

Dear Colleagues,

We have put together this Ground Operations Manual to support you in the key role of providing assistance to our passengers.

We have tried to cover all aspects of the operation, but as one of those closest to the customer, you may spot something we have missed, or which needs to be clearer. If so, please do let us know so that we can put it right.

Our success will depend on building on the excellent collaboration we have already made, and on staying close to our customer and his or her needs. In this, as well as in our commitment to compliance with the most important value Safety Operation we also need your help – please do pass back to us any ideas for service improvement which you identify in your daily work.

Ground Operations Manager

Daniel MALECA



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0.1.2. INTRODUCTION

This document has been compiled for FLYONE operations. Whenever used throughout this manual, the simple term **"FLYONE"** implies **"FLY ONE AIRLINES" SRL**. In this manual the term **NATIONAL AUTHORITY** means **CIVIL AVIATION AUTHORITY OF ROMANIA**.

FLYONE outsources ground operations activities (passenger and aircraft handling, fueling, de-icing, bird management, etc.) to ground handling agents and airport operators throughout its network. Management and supervision of ground operations activities is maintained by FLYONE – via the FLYONE Ground Operations team, consisting of Ground Operations Managers and Postholder - Head of Ground Operations.

This Ground Operations Manual is produced by FLYONE Ground Operations Department. It must be available in all areas where ground handling operations are conducted. Any questions with respect to information contained in this manual should be addressed to the FLYONE Ground Operations Department. The content of this manual is accepted and approved by the Postholder – Head of Ground Operations.

Each manual page has an issue date printed in the lower left/ right-hand corner, corresponding to the latest revision issue date.

Draft Revisions have to be internally coordinated with the Nominated Post Holders and finally approved by the Accountable Manager. Following internal approval, Revisions are submitted to the Accountable Manager for approval.

A new Edition / Revision of the Ground Operations Manual will become effective following ten (10) days after Accountable Manager's approval date.

FLYONE's company organizational structure, duties, responsibilities and accountabilities, safety & compliance management systems and emergency response planning are contained in the FLYONE Organization Management Manual (OMM) and Emergency response Plan.

0.1.3. CONTENTS OF THE GROUND OPERATIONS MANUAL

The Ground Operations Manual directs and guides the conduct of all relevant operations duties within FLYONE in order to assure safe, economic, and effective conduct of all operation activities.

The Ground Operations Manual is the basic document governing FLYONE Ground Operations and has been prepared in accordance with the relevant provisions of EASA - OPS. National rules and regulations as well as applicable ICAO/IATA Standards and Procedures are integrated as far as they apply. It also contains company policies, regulations and procedures and possible further constraints as defined in the rules and regulations as imposed by the states in which FLYONE operates. In addition, the Ground Operations Manual complies with IATA Dangerous Goods Regulations.

Although the Male gender is used throughout this manual the contents apply as well to female as to male employees of the Company.

The language used throughout the manual is English. All information contained in the manual shall be clear, legible and accurately represented and must meet the need of ground handling operational personnel.

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0.1.4. REFERENCE DOCUMENTS

The current versions of following regulations, manuals and industry documents were used when writing this manual:

- FLYONE Operations Manual Part A(OM-A) and Organization Management Manual (OMM)
- Air Operation Cover Regulation 965/2012
- IATA Airport Handling Manual
- IATA Dangerous Goods Manual
- IATA Ground Operations Manual Supplement
- Airbus Weight and Balance Manual
- AEA Recommendations for De-icing / Anti-icing Aircrafts on the Ground

0.1.5. ACCESS TO MANUAL

FLYONE will provide the Handling Agent with access to appropriate and most up-to-date manuals. The Handling Agent will ensure that these manuals are readily available for the use of applicable staff. Individual usernames and passwords are provided for each Ground Handling Agent.

Access to these manuals and other FLYONE support material is granted via <https://FOE.asqs.net>

0.1.6. MANUAL UPDATES

The Ground Operations Manual will be updated periodically by the FLYONE Ground Operations Team.

Changes are marked with vertical black line on left margin.

Handling agents will be informed electronically - via e-mail - of every update. The updated manual is uploaded to the <https://FOE.asqs.net> website.

Handling Agents are required to confirm in writing the receipt and implementation of manual changes.

A temporary revision affecting a procedure described in the GOM, or introducing a new procedure, may be issued in order to meet urgent needs. The format to be used is:

- the "Ground Handling Bulletins " if it affects all stations/airports,

Ground Handling Bulletins folders can be found on the <https://FOE.asqs.net> (Manual /uploading).

Stations will keep the respective (valid) Bulletin's on file, making sure that all relevant staff has read & understood the contents, and have easy access for eventual future reference.

0.1.7. FLYONE CONTACT INFORMATION

The following are contactable via the numbers/emails shown in the table below and where stated, on a 24 hour basis:

Title	CONTACT	24H
	FLYONE OCC Dispatcher	
	Email: disp@flyone.eu	
Operation Control Center	Mob: +373 62 002737	
	Tel : +373 22 022737	YES
	Fax: +373 22 022733	
	SITA: KIVOP5F	
	AFTN: LUKKFIAX	
Head of Ground Operations	phone: +40 768 482 340	
	email: foe.groundops@flyone.eu	YES

0.1.8. RESPONSIBILITY

The Head of Ground Operations is responsible for the contents of this Manual. It is the duty of each holder of this Manual to keep him/her and concerned parties informed about its contents and report any discrepancies and/or errors to the Head of Ground Operations. A constant endeavour will be made to approve the established contents and all constructive criticism and suggestions will be given careful consideration.

0.1.9. HOLDERS OF MANUAL COPY

This Manual is issued complete and distributed in PDF format by electronic means to relevant ground handling agents through FLYONE server, <http://FOE.asqs.net>

Each person logs on through a user login and needs to provide personal details for record keeping before entering the download area.

Before downloading FLYONE manuals Agents should complete the web based self certification form in download area or from the link provided in the handling request.

A full list of users that have downloaded the manual is available from administrator panel of the server. This list is considered the distribution list.

Head of Ground Operations is responsible for manual distribution to ensure that revisions and amendments reach the correct recipient.

Note: Of practical reasons no specified name list are presented for company employees. For information about these holders please contact Head of Ground Operations.

0.1.10. REVISIONS

Head of Ground Operations will review the manual contents annually and revise as necessary to maintain the currency of information. From time to time revisions may be issued and a new revision sent to all holders of the Manual. To ensure that the Manual is kept up-to-date, a record of revisions will be numbered consecutively and should be accurately filled in. For each revision the manual is published complete.

0.2. ORGANISATION AND RESPONSIBILITIES

Refer to the OM part A

0.2.1. GROUND OPERATIONS DEPARTMENT

Management: Manager of Ground Operations

Note: On some long-term projects Stations Managers may be appointed and on Ground handling issues will report to Head of Ground Operations.

FLYONE does not conduct ground handling operations, and all ground handling functions are contracted, such as:

- Passenger handling;
- Baggage handling;
- Aircraft handling and loading;
- Load control;
- Aircraft fuelling;
- Aircraft de-/anti-icing.

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Despite that FLYONE outsources the performance of functions within the scope of ground handling operations to external service providers, the FLYONE retains overall responsibility for such functions, and have in place processes for monitoring the applicable external service providers.

For FLYONE flights operated under its own flight designation numbers, will have directly contracted ground handling providers.

0.2.2. HEAD OF GROUND OPERATIONS

Title: Head of Ground Operations

Head of Ground Operations is nominated postholder (NPH) Ground Operations in accordance with JAR-OPS 1. He is delegated authority and assigned responsibility for the management and supervision of ground operations.

Head of Ground Operations is nominated by and accountable to the ACCOUNTABLE MANAGER.

Head of Ground Operations is subordinated by and reports to ACCOUNTABLE MANAGER

Head of Ground Operations has direct access to ACCOUNTABLE MANAGER.

Responsibilities:

Head of Ground Operations is responsible for:

- Ensuring that the FLYONE ground operations are carried out in accordance with conditions and restrictions of FLYONE AOC and FLYONE standards and procedures;
- Maintaining Ground Operations Manual which contains the operational policies, processes, procedures and other guidance or information necessary for ground handling personnel to perform their duties and be in compliance with applicable regulations, laws, rules and FLYONE standards;
- Ensuring documentation used in the conduct or support of ground handling operations contains legible and accurate information and is presented in a format that is appropriate for use by ground handling personnel; is accepted or approved by CAA or other Authorities, if applicable;
- Ensuring the existence of the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy ground handling operational safety and security requirements;
- Authority to make decisions regarding risk tolerability with respect to safety and security of operations in the field of ground handling operations;
- Accountability for safety and security in the field of ground handling operations;
- Responsibility for safety performance in the field of ground handling operations;
- Responsibility for implementing, maintaining and adhering to SMS processes in the field of ground handling, and ensuring that all reasonable steps are taken to improve safety;
- Administering ground handling contracts for FLYONE airplanes, including contracts for fuelling and de-/anti-icing;
- Ensuring fuel suppliers are maintaining standards of fuel safety and quality acceptable to the FLYONE;
- Development of corrective action(s), as appropriate, to address the finding(s) assigned to him;
- Implementation of corrective action(s) assigned for him in a timely manner in appropriate operational areas.

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Qualification requirements:

Head of Ground Operations must be nominated by Civil Aviation Authority and have managerial competency together with appropriate technical/operational qualifications in aviation.

Head of Ground Operations should have:

- Practical experience and expertise in the application of aviation safety standards and safe operating practices;
- Comprehensive knowledge of relevant IATA regulations and any associated requirements and procedures;
- Comprehensive knowledge of FLYONE Operations Specifications
- Comprehensive knowledge of the need for, and content of, the relevant parts of the FLYONE Operations Manual;
- Familiarity with Compliance Systems;
- Appropriate management experience in a comparable organization;
- Five years relevant work experience of which at least two years should be from the aeronautical industry in an appropriate position;
- Thorough knowledge of the FLYONE ground operations concept.

In case of absence Head of Ground Operations will be deputised by person designated by Head of Ground Operation in order to ensure continuity of supervision.

Head of Ground Operations will inform all relevant parties of his absence and delegation of duties to by circulating email.

Head of Ground Operations briefs his deputy of operational situation, before handing over of his duties.

0.2.2.1. STATION MANAGERS

On some projects Stations Managers will be appointed, their duties and responsibilities will include but not limited:

- Responsibility for ensuring operations are conducted in accordance with applicable regulations and FLYONE standards;
- Responsibility for safety performance in the field of ground handling;
- Planning, organizing station operations in accordance with the Ground Operations Manual (GOM) and local regulations (e.g., country laws, regulations and instructions from the local airport authority, etc).
- Establishing and oversight of a system for local station control containing all components of a station operation;
- Establish and maintain relationships with local authorities, handling agents and act as a company representative;
- Oversight of contracted ground handling, catering, fuelling, catering providers.
- Stations Managers report to Head of Ground Operations.

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0.2.3. COMMUNICATION

Head of Ground Operations exchange information relevant to the conduct of ground handling operations throughout the management system, with contracted external providers and operational personnel, by:

- Management meetings
- Regular communications with contracted service providers
- Communications related to ground handling incidents.
- Daily communication in regards operational aspects, by emails, phones, fax.

0.2.3.1. VHF

Where possible, agents should be able to communicate with the aircraft by VHF air – to –ground radio systems. In the event that such systems are not available or unserviceable the agent shall ensure close communication with the airport and air traffic control authorities is maintained in order to respond effectively to the aircrafts movements.

0.2.3.2. MESSAGING

SITA messaging or email notification should be used to notify FLYONE Operations Control Centre of all movements. IATA format messages with applicable delay codes should be used.

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0.2.4. DOCUMENTATION CONTROL

Head of Ground Operations is responsible for ordering, receiving, retention and dissemination of documentation received from external sources, such as: IATA, ICAO Thru the oversight of contracted service providers, FLYONE ensures availability of the current version of applicable ground handling documentation and data in all areas where ground handling activities are conducted.

- Obsolete documents (previous revisions) have to be destroyed.
- Reproduced (printed) documentation can be used when printed and has to be destroyed after utilization.
- Forms used in the FLYONE Ground Operations Department are controlled by Head of Ground Operations. Only controlled forms (contained in the Index of forms) can be used. Index of forms is kept with QA and updated regularly.
- When a need for new form is identified, Head of Ground Operations is provided with code that identify form. Revision of the form and date are to be inserted.
- Regular QA audits assure that only controlled, current forms are in use.
- Regular back-up of electronic documents and data is performed in accordance with IT procedure.

Contracted ground handling providers are supplied with access to FLYONE server, for document revision check. When documents are changed in the FLYONE server notifications are sent via emails, stating all latest revisions of documents contained in FLYONE server.

0.2.4.1. PROVISION OF FLYONE DOCUMENTATION

FLYONE documentation used in the conduct or support of ground handling operations, have to satisfy following:

- Contains legible and accurate information;
- Is presented in a format that is appropriate for use by ground handling personnel;
- If applicable, is accepted or approved by the Authority.

Thru the oversight of contracted service providers, FLYONE ensures that the above is satisfied in all areas where ground handling activities are conducted.

0.2.4.2. RECORDS CONTROL

Head of Ground Operations is responsible for management and control of ground handling records. The following records are retained:

- Post flight documentation envelopes (3 month, to be stored in FLYONE Operations department)
- Trip files (to be stored at ground handling premises for duration of flight)
- Training records (until person is employed, to be stored in FLYONE office)
- Standard Ground Handling Agreements and Service Level Agreements (until the end of validity, to be stored in FLYONE head office).

Regular back-up of electronic documents and data will be performed in accordance with IT procedure. Airway bills should be included into trip file.

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0.3. CONTRACTING OF EXTERNAL SERVICE PROVIDERS

0.3.1. GENERAL

Head of Ground Operations is responsible to ensure that Standard Ground Handling Agreements (SGHA) and Service Level Agreements (SLA) are in place for contracted ground handling activities. FLYONE subcontracts ground handling of aircraft to the most suitable ground handling agent at each aerodrome, either by simple ground handling request (ad hoc flights) or a ground handling agreement based on IATA Standard Ground Handling Agreement where more than ten flights are planned. Acceptance of a handling request constitutes an agreement/contract for the particular operation and that the agent concerned will carry out that operation in accordance with the FLYONE procedures outlined in FLYONE GOM and the IATA AHM standards.

0.3.1.1. WET LEASE OPERATIONS

Head of Ground Operations is responsible to ensure that Standard Ground Handling Agreements (SGHA) and Service Level Agreements (SLA) where applicable are in place for contracted ground handling activities.

0.3.1.2. GROUND HANDLING AGREEMENT

The ground handling agreement shall be based on the IATA Standard Ground Handling Agreement (SGHA), found in the IATA Airport Handling Manual (referred to as AHM 810).

Any deviations from the IATA SGHA must be documented and accepted by Head of Ground Operations.

Signed SGHA shall be kept on file in FLYONE Ground Operations Department and copies available to Station Managers. The ground handling agreement must allow FLYONE at its own cost, to audit the contracted services. The ground handling agent shall cooperate with FLYONE and undertake any corrective action(s) required.

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0.3.1.3. SERVICE LEVEL AGREEMENT

Service Level Agreement (SLA) should be made in conjunction with SGHA only for scheduled flights. Head of Ground Operations may exempt or extend the requirements and the standard SLA, in part or whole, if infrastructural, manpower or other credible reasons make it impractical or impossible to reach targets or goals. The aim of the SLA is to ensure that quality standards are set and can be measured accordingly. Signed SLA shall be kept together with SGHA.

0.4. STANDARDS FOR GROUND HANDLING PROVIDERS

0.4.1. GENERAL

This section describes the standards that the Handling Agent shall meet and working procedures and practices expected by FLYONE to be in place.

0.4.2. ORGANIZATION AND MANAGEMENT

The Handling Agent shall have an organization and management system, including definition of responsibilities and authority, for the management of all ground handling functions associated with ramp operations, passenger services, baggage services, cabin services, weight and balance control, ground support equipment and fuel services.

The Handling Agent shall have a system for the management of personnel assigned to its ground handling operations, to include assurance of competence, training, education, skills and experience.

The Handling Agent shall have a safety management system that includes policy, purpose, applicability, responsibilities, training, operating procedures, risk management, audits, inspections, performance monitoring, emergency response, risk assessment and hazard/mishap evaluations.

Part of the evaluation process of a new handling company consists of: verification of the ground handling license, checking the training and qualification records, evaluation of the weight and balance systems and load controllers trainings and requirements, plus other commercial and operational aspects described individually by each tender. As part of the pre-ops assessment process a joint team from Flight Operations, Ground Operations and Security will assess the airport and providers to verify the suitability and feasibility of operations there.

0.4.3. MANUALS AND DOCUMENTATION

The Handling Agent shall have an operating manual containing corporate standards that meet company and applicable regulatory requirements, and include policies, processes, procedures and practices for all ground handling operations.

The Handling Agent shall have a process to ensure the availability of the operating manual and revisions, in a readily usable format, at each location where ground handling operations are conducted.

The Handling Agent shall have a library or other organized system for documentation retention that contains current manuals, regulatory publications and other essential documents associated with ground handling operations.

The Handling Agent shall have a process to ensure that a current copy of the IATA Dangerous Goods Regulations (DGR) is always available at the appropriate facility.

FLYONE will provide the Handling Agent with access to appropriate manuals. The Handling Agent will ensure that these manuals are readily available for the use of applicable staff.

Access to these manuals and other FLYONE support material is granted via [https:// FOE.asqs.net](https://FOE.asqs.net)

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0.4.4. COMPLIANCE MONITORING

See CMM – Ch. 2.4

0.4.5. TRAINING PROGRAMS

The Handling Agent shall have training programs that include initial and recurrent training to ensure that employees engaged in ground handling operations establish and retain their effectiveness in carrying out associated duties. Such training programs of the Handling Agent shall have:

- FLYONE and regulatory approval, as applicable.
- Initial training - to be completed by all Handling Agent staff prior to being assigned to perform any operational duties on FLYONE flights.
- Recurrent training - at an interval not to exceed 36 months from the date of previous training.
- A process of qualification through written, oral and/or practical evaluation.

Documentation used in training of ground staff, shall as a minimum include:

- FLYONE Ground Operations Manual,
- IATA Airport Handling Manual (AHM) and IGOM,
- IATA Dangerous Goods Regulations manual,
- any other local or national handling rules and regulations, to avoid legal violations, the most restrictive procedure shall be adhered to,
- ICAO Annex 17,
- ICAO Doc 7192
- National Aviation Security Program,
- ICAO Doc 8973,
- EC 300/2008,
- Local emergency response plan,
- Airside severe weather plan

The Handling Agent shall have a process for reviewing and updating training programs to ensure:

- a) Continuous improvement and effectiveness.
- b) Incorporation of the latest regulatory and operational changes in a timely manner.

The Handling Agent shall have a system for maintaining training records that provides for retention, identification, storage, protection, retrieval and disposition of records.

The training programs of the Handling Agent shall be structured to ensure that personnel engaged in all areas of ground handling operations receive training consistent with their functional responsibilities. The content of the training programs shall include the following:

- a) Familiarization training on general provisions associated with ground handling operations.
- b) In-depth training on requirements, including policies, procedures and operating practices associated with specific job functions and responsibilities.
- c) Safety training on the hazards associated with ground handling operations.
- d) Dangerous Goods training in accordance with the applicable requirements of the State in which personnel carry out such duties, or if there are no such requirements, the requirements of the current edition of the IATA DGR. Recurrent DGR training must be completed every 24 months.
- e) Familiarization training with FLYONE procedures prior start of duties, read and sign form issued when procedures are changed.

The Handling Agent shall have a training program to ensure awareness and recognition of undeclared dangerous goods for applicable ground handling personnel.

The Handling Agent shall include in its training programs the safety elements that follow:

- f) Safety management awareness
- g) Human factors
- h) Rules and regulations
- i) Accidents and incidents
- j) Personal protection
- k) Workplace hazards
- l) Equipment operation
- m) Housekeeping
- n) Emergency situations
- o) Airside markings
- p) Ramp safety

The Handling Agent will undertake all training as deemed necessary by FLYONE. The Handling Agent will pay for travel, hotel and meal costs. FLYONE will, however, provide free flights on its own flights when required.

An initial training module shall be provided by each contracted handling agent to every staff member providing activities within the scope of FLYONE operation. The duration of the initial training module shall be sufficient to comply with following requirements, but last at least 4 (four) classroom hours:

- familiarization training on general provisions associated with the specialized ground handling and DGR regulations,
- in-depth training on requirements, including policies, procedures and operating practices associated with specific job functions and responsibilities,
- safety training on the hazards associated with ground handling operations,
- aviation security regulations including latest developments,
- dangerous goods training in accordance with applicable requirements of the State in which personnel carry out such duties or, if there are no such requirements, of the current edition of the IATA DGR manual.

All personnel involved in transportation of dangerous goods have to be instructed according to the table in the IATA DGR (Table 1.5A). The training syllabus is reflected in the operator's training manual and the training program has to be approved by the respective country CAA.

Training records must be retained for a minimum period of 36 months from the most recent training completion date and must be made available upon request to the appropriate national authority

Aspects of Transport of Dangerous Goods by Air with which they should be familiar, as a minimum	Operators and Ground Handling Agents					
	6	7	8	9	10	11
General Philosophy	X	X	X	X	X	X
Limitations	X	X	X	X	X	X
General Requirements for Shippers	X					
Classification	X					
List of Dangerous Goods	X				X	
General Packing Requirements	X					
Packing Instructions	X					
Labelling and Marking	X	X	X	X	X	X
Shipper's Declaration and other relevant Documentation	X	X				
Acceptance Procedures	X					
Recognition of Undeclared Dangerous Goods	X	X	X	X	X	X
Storage and Loading Procedures	X		X			
Pilot's Notification	X		X			
Provisions for Passengers and Crew	X	X	X	X	X	X
Emergency Procedures	X	X	X	X	X	X

- 6. Operator's and ground handling agent's staff accepting dangerous goods
- 7. Operator's and ground handling agent's staff accepting mail or stores (other than dangerous goods)
- 8. Operator's and ground handling agent's staff involved in handling, storage and loading of mail or stores and baggage
- 9. Passenger handling staff
- 10. Flight crew members and load planners
- 11. Crew members (other than flight crew members)

Personnel shall, as appropriate to their job function, receive training on the applicable subjects in the following list.

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The training shall include the job-related chapter of the FLYONE GOM. No person shall be assigned to any duty within FLYONE operation without adequate training and instruction based on the mentioned documents – including the FLYONE GOM.

- a) Passenger Handling
 - safety elements,
 - security regulations,
 - irregularity, incident, accident reporting procedures,
 - dangerous goods regulations acc. IATA DGR manual,
 - principles of the check-in, boarding and the passenger flow,
 - the use of local DCS, or local/carrier's procedures for manual check-in,
 - local procedures for determining baggage weight,
 - reporting to load control (passengers / baggage),
 - awareness of effects excessive and oversized hand baggage may have on safety or the quality of the service,
 - Basics on check-in conditions for infants and PRM, AVIH and PETC.
- b) Lost and Found
 - safety elements,
 - security regulations,
 - irregularity, incident, accident reporting procedures,
 - dangerous goods regulations acc. IATA DGR manual,
 - principles of Lost and Found,
 - the use of the WorldTracer system or manual procedure.
- c) Baggage Handling
 - safety elements,
 - security regulations,
 - irregularity, incident, accident reporting procedures,
 - dangerous goods regulations acc. IATA DGR manual,
 - principles of baggage categories and loading.

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- d) Aircraft Handling – Loading and Ramp Activity
 - airside safety and safety elements including FOD prevention,
 - airside driver training consistent to AHM611, (if applicable),
 - security regulations,
 - irregularity, incident, accident reporting procedures,
 - dangerous goods regulations acc. IATA DGR manual,
 - manual handling of load,
 - safety during aircraft fuelling,
 - principles of aircraft loading,
 - handling of loads requiring special attention,
 - loading incompatibilities,
 - consequences of load damage and spillage,
 - positioning and operation of loading and servicing equipment,
 - passenger boarding bridge operations (if applicable),
 - notification to commander of load being carried,
 - passenger embarkation/disembarkation procedures,
 - standards of aircraft cleaning, lavatory and fresh water servicing,
 - aircraft movement operations.
- e) Mass and Balance and Load Control
 - introduction to mass and balance,
 - moments and balance,
 - aircraft stability,
 - aircraft performance limitations,
 - aircraft structural limitations,
 - load planning,
 - issuing loading instructions,
 - calculation of payload and loadsheet preparation,
 - security regulations,
 - basics of meteorology,
 - irregularity, incident, accident reporting procedures,
 - dangerous goods regulations acc. IATA DGR manual,
 - manual handling of load,
 - principles of aircraft loading,
 - handling of loads requiring special attention,
 - loading incompatibilities,
 - consequences of load damage and spillage,
 - notification to commander of load being carried
 - handling of loads requiring special attention,
- f) Aircraft Movement Control

Refer to IATA Airport Handling Manual AHM 700 – 785 for responsibilities and specialized training requirements.

0.4.6. CONTRACTED SERVICES

The Handling Agent shall have a surveillance or oversight program applicable to any subcontracted handling agent or service provider to ensure that all ground handling operations performed for the Handling Agent are conducted in conformity with the Handling Agent, FLYONE and applicable regulatory requirements.

0.4.7. INCIDENT RESPONSE

The Handling Agent shall have procedures for use by ground handling personnel in response to a spill or leakage in the aircraft or on the ramp.

The Handling Agent shall have procedures for response to ground handling accidents and incidents, including dangerous goods occurrences that must be reported immediately to FLYONE and the appropriate authority via the Dangerous Good Occurrence Report form, found in GOM.

The Handling Agent shall have a system to ensure retention of records of ground accidents and incidents for a minimum of two years.

The Handling Agent shall have procedures for the handling of on-ground emergencies, including aircraft evacuation, bomb threats, facility evacuation and natural disasters.

0.4.8. MASS AND BALANCE

The Handling Agent shall have a process to ensure that current and correct aircraft weight and balance manuals and/or computer software are utilized to produce weight and balance calculations.

The Handling Agent shall have a process for preparing and recording weight and balance calculations prior to flight to ensure that a planned load is properly distributed, safely secured, and within aircraft weight and balance limitations.

The Handling Agent shall have a process for retention of completed weight and balance planning records for a minimum of 3 months.

The Handling Agent shall have a process that ensures production of a load manifest for each flight that contains the weight of the aircraft, fuel, baggage, passengers and crew and is prepared and duly signed by a fully trained and qualified load controller and / or dispatcher.

The Handling Agent shall have a process that ensures actual aircraft loading is accomplished in accordance with the load plan, and that changes or adjustments to the planned load are properly coordinated with appropriate load planners.

For every flight a Loading Instruction Report Form must be completed and duly signed by a fully trained and qualified ramp agent and / or head loader.

The Operator shall have a procedure for ground handling personnel to provide the Captain with written information of special loads as soon as possible before the departure of the flight.

The Handling Agent shall ensure that a prepared and correct load sheet is handed to the Captain no later than 20 minutes prior to STD.

The Handling Agent shall record as LMC (Last Minute Change) on the loadsheets any load alteration, in either weight or location, after issuing the loadsheet. If the changes exceed LMC allowance, a new loadsheet shall be produced. LMC procedure and allowance per aircraft type are set in GOM, Mass and Balance / Last Minute Changes.

Only properly trained personnel may perform any LMC on loadsheets prepared for FLYONE aircraft. If such personnel are not on duty, ramp agent must advise the cockpit crew. LMC will be performed by one of the pilots, and if this causes delay it must be coded as DL31 and considered as Handling Agent's delay, due to lack of properly trained personnel.

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0.4.9. RAMP OPERATIONS

The Handling Agent shall have a procedure that ensures ONE designated individual is responsible for supervision and oversight of ramp operations during a FLYONE turnaround (ramp agent or dispatcher or red-cap or any other locally defined position).

The Handling Agent shall have a procedure that specifies safety procedures for ramp operations around the aircraft.

The Handling Agent shall have procedures for ramp movement operations, including communication using IATA recommended hand signals where appropriate.

The Handling Agent shall have a process for aircraft lavatory service that prevents the possibility of “blue ice” formation and accumulation.

The Handling Agent shall have procedures that ensure all servicing doors and panels are checked and closed prior to aircraft operations.

The Handling Agent shall have a procedure for pushing and towing aircraft, and such procedure must be consistent with IATA recommendations.

The Handling Agent shall have a process that ensures aircraft are checked for damage on arrival and before departure.

The Handling Agent shall have a process for securing the aircraft at the completion of ground handling and servicing functions on overnight/lay-over aircraft.

The Handling Agent shall have written procedures describing tasks carried out in cooperation with relevant local maintenance companies.

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0.4.10. DANGEROUS GOODS HANDLING

FLYONE does not carry dangerous goods as cargo. More information on hidden dangerous goods is in FLYONE GOM Passenger Handling chapter.

0.4.11. AIRPORT FACILITIES

The Handling Agent shall have a process to ensure the existence of facilities and services to the needs of the elderly and disabled, including the availability of wheelchairs and medical assistance.

The Handling Agent shall have a process to ensure the existence of facilities with communication devices for messages, flight information and emergency information to all passengers.

Airport shall have parking stands appropriate for FLYONE A320/A321/GLF4.

0.4.12. CABIN SERVICES

The Handling Agent shall have a process for the cleaning and disinfecting of potable water service equipment, where required.

The Handling Agent shall have a process for securing the aircraft cabin at the completion of cabin cleaning on overnight/lay-over aircraft.

0.4.13. GROUND SUPPORT EQUIPMENT

The Handling Agent shall have a preventative maintenance program for ground support equipment.

The Handling Agent shall establish a system for recording maintenance completed on ground support equipment.

The Handling Agent shall have a system for performing and recording daily checks completed on ground support equipment.

The Handling Agent shall ensure that only fully serviceable equipment is used during the handling of FLYONE flights. Unserviceable equipment shall be removed from the operational area for maintenance and a highly visible OUT OF ORDER - DO NOT USE sign must be attached to avoid usage.

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0.4.14. SERVICE DELIVERY MANAGER

In selected airports, FLYONE will request the appointment of a “Service Delivery Manager”. Working for the Ground Handling Agent, the SDM will be fully knowledgeable in the FLYONE product and will be the key contact for the airport and the airline for all issues relating to the FLYONE Ground Handling operation.

The typical elements of the SDM role are described below, although there may be local variances as agreed with the FLYONE Ground Operations Manager:

Ensure Handling Agent is delivering the FLYONE product, and working in compliance with FLYONE's standards, policies & procedures in all areas.

Develop and maintain effective working relationships with other partners & service providers to resolve obstacles and ensure optimum working relationship for a smooth operation.

Constantly monitor operational performance against all the measures relating to the contract and SLAs and ensuring consistent delivery against these measures.

Management and Supervision of operational documentation: Ensuring access to online manual database is available to all staff and that all bulletins have been filed and communicated to all staff, and enacted locally as required.

Investigate and respond to ASRs, GORs and customer complaints. Ensure follow up actions are implemented to prevent reoccurrence. Identify trends and take preventative and corrective action.

Ensure all personnel engaged in the handling of the FLYONE product have been given comprehensive training in their duties and that training records are documented and maintained, including required refresher training.

Facilitate and support FLYONE Audits. Manage any resulting NCRs.

Maintain statistics and monitor all aspects of operational performance for the FLYONE product. Daily reporting of on-time performance to relevant FLYONE Ground Operations Manager.

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0.5. MONITORING OF EXTERNAL SERVICES PROVIDERS PERFORMANCE

The basis of the monitoring are SGHA and SLA. Monitoring is conducted by the following activities:

- Surveys sent to external service providers and evaluated by Head of Ground Operations and Compliance Monitoring Department.
- Evaluation of the occurrence reported by ground service providers or by FLYONE employees.
- Audits conducted by Compliance Monitoring Department.
- One time inspections performed by Head of Ground Operations or Compliance Monitoring Auditors, when discrepancies are discovered related to conducting to ground operations.
- Operational reports from station managers.
- By day to day communication on operational issues.

In the case when in accordance with wet-lease agreement Lessor is responsible for SGHA and SLA with external service providers, Compliance Monitoring Department will have oversight of Lessor's quality procedures to confirm Lessors oversight of external service providers. FLYONE accepts external providers, without further assessment, provided that service provider has all certification. Surveys, audit checklists will contain all IOSA requirements, related to the external service providers.

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0.5.1. MONITORING OF FUELLING SUPPLIERS

Aircraft ground handling activities take place at the same time as aircraft fuelling operations, which covers refuelling and de-fuelling. These activities must be compatible to ensure the safety and integrity of the operation. Fuel may be delivered to FLYONE aircraft either under contractual arrangements with major fuel companies or under a one-off release for non-contracted locations. All fuel shall be supplied free from contamination in accordance with the standards of the IATA Fuel Quality Pool. Where a formal contract is not in place the supplier giving an 'open release' for the supply of fuel will offer this on the basis of the supply being in accordance with the IATA standard contract for fuel delivery. Only persons who have received initial and recurrent training and testing in the delivery of fuel and associated emergency procedures (including fire fighting) shall operate refuelling processes on FLYONE aircraft.

The following industry documents, as applicable, should be consulted:

- IATA Guidance Material on Standard Into-Plane Fuelling Procedures;
- IATA Fuel Quality Pool: Control of Fuel Quality & Fuelling Safety Standards Services.

To ensure that these requirements are satisfied, FLYONE will send questionnaires to fuel suppliers and the returned questionnaires are assessed by Head of Ground Operations and Compliance Monitoring Manager. Discrepancies identified by crew or maintenance personnel during fuelling operations will be reviewed by Head of Ground Operations.

When discrepancies are serious Head of Ground Operations and/or Compliance Monitoring manager will conduct physical inspection of the fuel supplier.

When the fuelling contracts are arranged by Lessor, Compliance Monitoring Manager will confirm that Lessor has an oversight processes of the suppliers in place.

0.5.2. MONITORING OF DE/ANTI-ICING SERVICE PROVIDERS

If FLYONE has contract for the de/anti-icing services made with de/anti-icing suppliers, contracts have to specify basic details:

- De/anti-ice fluids specifications;
- De/anti-ice fluids suppliers' internal procedure/process for product quality assurance;
- Services in accordance with SGHA.

To ensure that these requirements are satisfied, FLYONE will send questionnaires to de/anti-icing suppliers and the returned questionnaires are assessed by Head of Ground Operations and Compliance Monitoring Manager. Discrepancies identified by crew or maintenance personnel during de/anti-icing operations will be reviewed by Head of Ground Operations.

When discrepancies are serious Head of Ground Operations and/or Compliance Monitoring Manager will conduct physical inspection of the de/anti-icing supplier.

When the de/anti-icing contracts are arranged by Lessor, Compliance Monitoring Manager will confirm that Lessor has an oversight processes of the suppliers in place.

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0.6. EMERGENCY MANAGEMENT PLAN

This section of the manual provides a brief description of the basic procedures that need to be addressed immediately in case of an emergency. Reference shall always be made to the FLYONE Emergency Procedures Manual (FLYONE ERP), to enable the staff and representatives of FLYONE to meet the professional and personal challenge that any emergency situation creates.

FLYONE ERP is available to all contracted suppliers via FLYONE dox server, ERP is always available on FLYONE server for immediate use.

All personnel involved in ground operations MUST be familiar with the contents of the FLYONE ERP (and of similar emergency procedures if it concerns agents/representatives providing services to the company).

0.6.1. EMERGENCY EVACUATION

FLYONE requires contracted ground handling to have procedures in place for responding to emergencies that require the evacuation of an aircraft during the conduct of ground handling operations, in accordance with AHM633.

In the event of an emergency situation occurring during ground handling operations, evacuation of an aircraft may be necessary. The safety of passengers and staff in such circumstances is of utmost importance. The decision and method of evacuation will be dependent on the circumstances and at the discretion of the aircraft commander or designated authority.

Emergency evacuation of aircraft by ground personnel may be required when there is no aircrew on board. The following guidelines are provided:

- Procedures should be established and implemented for aircraft emergency evacuation situations. The procedures should be written in conjunction with and complement existing building evacuation procedures as appropriate.
- These procedures would apply only when aircrew are not on board the aircraft and apply to ground personnel such as engineering, cleaning, catering, ramp etc.
- Refinement and integration of these procedures will require close and continued cooperation between stakeholders (airport authorities, airlines and contractors).
- A designated person "in charge" (supervisor etc.) on board the aircraft would take charge of the emergency, co-ordinate the evacuation and direct personnel to the assembly point.
- Different methods of evacuation from the aircraft should be included in the procedures, e.g. mobile stairs, loading bridge etc.
- Means of communicating the evacuation should also be considered (radios, audible warnings).
- Effective communication is vital to a safe evacuation.
- Staff should be trained in the evacuation procedures including periodic evacuation drills/practices.

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0.7. GENERAL POLICIES

0.7.1. SAFETY

FLYONE, with all employees in collective efforts, shall provide safe and reliable air transport with satisfied customers. This shall be achieved by safe operational practices in conformance with safe standards and procedures.

0.7.2. QUALITY

Quality, is the ability to predict an outcome of a process that efficiently satisfies the needs of the customers in an international and environmental context. Only a fully controlled environment allows us to predict the future. By following established routines and rules we get that control, to the degree it is possible. And if not enough control, we shall have alternate solutions ready.

0.7.3. SECURITY

Security aims to protect people, airplanes, airports and constructions against unlawful acts.

FLYONE objectives are to protect, its passengers, crew, ground staff, luggage and airplane against unlawful actions. A set of continuous activities shall be performed to prevent admission for unauthorized persons, objects and acts into areas and airplane controlled by FLYONE or contracted service providers. These activities include administrative measures and operative measures, which shall be inherent in the daily duties.

0.8. MEDIA

The correctness and reliability of information being distributed is of utmost importance.

Based on this, only ACCOUNTABLE MANAGER and the Media Responsible are entitled to make any statements to media during incidents, emergencies and accidents. And only they are entitled to speak in the name of FLYONE.

If a journalist contacts you, note the name of the journalist and his phone number and forward this to the Deputy, which has the obligation to direct the call to ACCOUNTABLE MANAGER or the Media Responsible.

Pressure applied by Medias may become quite intense sometimes. It is important to remain calm and to handle the media representatives in a professional way and thereby let the staff work with their duties.

0.8.1. DRUGS, ALCOHOL AND NARCOTICS

Even a slight mistake may have disastrous consequences. Alcohol, drugs and narcotics all deteriorate our performance.

Staff is expected not to take any drugs before or during duty.

Staff is further expected not to take any medications unless he is completely familiar with any side effects of the medication and that these do not interfere with the duty. If in doubt the medical advisor shall be contacted for advice prior to duty period.

Alcohol shall not be consumed during duty, use of narcotics is not consistent with duty within the FLYONE at all, employees can be tested randomly.

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0.9. TRAINING AND QUALIFICATION FOR AIRCRAFT HANDLING PERSONNEL

0.9.1. GENERAL

FLYONE has defined requirements for operational personnel and it is contained in their job descriptions. Thru the monitoring of external service providers FLYONE ensure operational positions within the scope of ground handling operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position.

Personnel who perform operational duties in functions within the scope of ground handling operations for the FLYONE must complete:

- Initial training prior to being assigned to perform such operational duties;
- Recurrent training, except recurrent training in dangerous goods on a frequency in accordance with requirements of the regulatory authority, but not less than once during every 36-month period.

The content of training completed by ground handling operations personnel in accordance with above paragraph has to be reviewed and updated by external ground service providers, to remain relevant, and provides the knowledge necessary to perform duties, execute procedures and operate equipment associated with specific ground handling functions and responsibilities, to include:

- Familiarization training on applicable regulations;
- In-depth training on requirements, including policies, procedures and operating practices;
- Training in human factors principles;
- Safety training on associated operational hazards.

Training for personnel who perform operational duties in functions within the scope of ground handling operations for the FLYONE includes testing or evaluation by written, oral or practical means, as applicable, to satisfy the requirement for operational personnel to demonstrate adequate knowledge, competency or proficiency to perform duties, execute procedures or operate equipment.

External service providers has to retain records for completion of required training by personnel who perform operational duties in functions within the scope of ground handling operations for the FLYONE until end of their employment.

Ground handling personnel have to receive dangerous goods training, to include initial training and recurrent training, on a frequency in accordance with requirements of the regulatory authority, but not less than once within 24 months of previous training in dangerous goods. Such training shall be completed by personnel that perform operational duties in the following functions within the scope of ground handling operations:

- Passenger handling;
- Baggage handling;
- Aircraft loading;
- Load control.

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Ground handling personnel assigned to perform ground handling duties in airside operations for the FLYONE, to include the operation of ground support equipment, complete initial and recurrent airside safety training.

Ground handling personnel assigned to perform aircraft fueling operations for the FLYONE complete initial and recurrent training.

Personnel assigned to perform aircraft ground de-/anti-icing operations complete initial and recurrent training.

Thru the monitoring process FLYONE ensures that training requirements are fulfilled.

Qualification requirements for Head of Ground Operations are defined in GOM 0.2.2. and job description file.

The training requirements for handling agents are based on the IATA recommendations regarding standards of competence for staff engaged in load control or ramp handling supervision (IATA AHM591 and AHM 611). The required qualification can be obtained by training courses conducted by the handling agent or training courses conducted by other airlines.

It is responsibility of subcontracted ground handling agent to prepare, approve with local authorities (when applicable) and perform training for staff that is involved in handling of FLYONE aircraft.

0.9.2. TRAINING PROGRAMS AND QUALIFICATION REQUIREMENTS

FLYONE has defined requirements for operational personnel and it is contained in their job descriptions. Thru the monitoring of external service providers FLYONE ensure operational positions within the scope of ground handling operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. Agents should meet basic standards described below in this chapter before accepting handling of FLYONE aircraft. These standards and requirements are also applicable to the limited handling functions carried out by engineering staff. All personnel involved in the ground handling of FLYONE aircraft (ramp handling supervision, load control) has to be trained according to these minimum requirements:

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0.9.2.1. AIRSIDE PERSONNEL

All personnel whose duties require airside access must have received training and authorisation as per latest edition IATA AHM 611. Personnel must comply with the training requirements laid down in the current edition of the IATA Dangerous Goods Regulations.

Airside driver training for ground handling personnel typically addresses the following subject areas:

- General:
- Role and responsibilities of vehicle Operators
- Vehicle equipment standards
- Hazards of airside driving
- Reduced visibility procedures
- Accident and incident reporting procedures

Ramps (aprons), stands and airside roads:

- Familiarization with ramp layout, operational stands, vehicle corridors, airside roads, aircraft taxi lanes
- Airport rules, regulations and/or procedures pertaining to airside vehicle operations
- Procedures for crossing aircraft movement areas
- Pedestrian crosswalk rules

Maneuvering area:

- Identification of obstacle free areas, limited access areas
- Airport regulations and requirements
- Air Traffic Control
- Airport layout
- Maneuvering area driving
- Radio communication requirements and procedures
- Aircraft familiarization

0.9.2.2. LOAD CONTROL PERSONNEL

Any personnel in the Load Control process must have received training and authorization in accordance with IATA AHM 591. As a minimum this process consists of:

- Load planning
- Weight and balance calculation
- Supervision of the loading of the aircraft
- Checking and finalization of the loadsheets and other documents
- Personnel must also have proven knowledge of DCS Systems, if in use. Personnel must comply with the training requirements laid down in the current edition of the IATA Dangerous Goods Regulations.

Training for personnel with duties and/or responsibilities in operational load control functions typically addresses the following operational subject areas, as applicable to assigned function(s):

- General weight and balance proficiency and awareness:
 - a) terminology, definitions of terms, operational codes, abbreviations;
 - b) aircraft balance principles, consequences of improper aircraft loading.
- Aircraft structural load limitations:
 - a) linear (running load) limitation, area limitation (spreader floors);
 - b) limitation per compartment/section/ULD position;
 - c) monocoque (combined) limitation, cumulative limitation;
 - d) missing restraints limitation.
- Unit load devices (ULDs):
 - a) IATA identification codes;
 - b) gross weight limitations, hold restraint requirements;
 - c) container/pallets build-up and tie-down limitations/rules;
 - d) tagging.
- Bulk hold loading:
 - a) load spreading rules;
 - b) load restraint rules: nets, tie-down, volume restraint.
- Load Sheet:
 - a) computation, issuance, checking (electronic and manual modes);
 - b) last minute change procedures.
- Balance tables/charts:
 - a) computation, issuance, checking (all conventional methods).
- Balance tables/charts:
 - a) designation and numbering of aircraft holds;
 - b) issuance and checking (electronic and manual modes).
- Loading messages:
 - a) reading and sending standard loading messages.

0.9.2.3. PASSENGER HANDLING PERSONNEL

Personnel engaged in passenger handling must have received training according to the current edition of the IATA Dangerous Goods Regulations prior to operate in their respective area of operations.

Personnel must also have received general training in passenger handling.

Training for personnel with duties and/or responsibilities in operational passenger handling functions typically addresses the following subject areas, as applicable operational function(s):

- Passenger check-in policies and procedures;
- Baggage check-in policies and procedures;
- Manual check-in procedures;
- Cabin seating considerations, to include exit row, special category passengers;
- Passenger boarding policies and procedures;
- Cabin access door operation, if applicable;
- Boarding bridge operation, if applicable;
- Dangerous goods regulations, considerations and procedures;
- Security regulations, considerations and procedures;
- Load control consequences, coordination and procedures;
- Handling and boarding of weapons and authorized persons carrying weapons;
- Passengers requiring special handling;
- Communication procedures (customer airlines, load control, authorities, others);
- Data protection and security;
- Document protection and security;
- Abnormal and emergency procedures (fire, dangerous goods, security, other);
- Health and safety;
- Emergency response procedures.

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0.9.2.4. AIRCRAFT HANDLING PERSONNEL

Personnel must have received training and authorization according to IATA AHM 611 (current edition) and in accordance with the current edition of the IATA Dangerous Goods Regulations prior to operate in their respective area of operations.

Personnel engaged in the field of pushback, walk out assistance or releasing of aircraft must have received basic training as per IATA AHM 631 (current edition) and local working procedures prior to operate in their respective area of operations.

Personnel operating Ground Support Equipment (GSE) must have received appropriate training and authorization as laid down in IATA AHM 611 (current edition), AHM 630 and other appropriate AHMs prior to operate in their respective area of operations.

Training for personnel with aircraft handling duties and/or responsibilities typically addresses the following subject areas, as appropriate to assigned operational function(s):

- Irregularity/incident/accident reporting procedures;
- Manual handling of load;
- Safety during aircraft fueling;
- Principles of aircraft loading;
- Handling of loads that require special attention;
- Loading incompatibilities;
- Handling of ULDs;
- Operation of aircraft loading systems/securing of ULDs;
- Identification/consequences of malfunctions of in-plane loading systems;
- Consequences of load damage and spillage;
- Positioning and operation of loading and servicing equipment;
- Load notification to pilot-in-command;
- Passenger embarkation/disembarkation procedures;
- Standards of aircraft cleaning, lavatory and potable water servicing;
- Aircraft movement operations.

0.9.2.4.1. PASSENGER LOADING BRIDGE OPERATOR

Personnel must have received appropriate training and authorization as laid down in IATA AHM 634 (current edition) and other appropriate AHMs prior to operate in their respective area of operations.

Training for personnel with duties that include passenger boarding bridge operations typically addresses the following subject areas:

- Standard operating procedures;
- Bridge control system, including emergency switches, cut-offs and buttons;
- Out-of-limits procedures (for returning bridge to normal working limits);
- Back-off procedures and application;
- Manual wind-off procedures;
- Accident and incident response procedures;
- Accident and incident reporting procedures (airport, provider);
- Fire procedures (bridge or aircraft).

0.9.2.5. OTHER GROUND HANDLING STAFF

Other ground handling agent personnel, for example passenger handling personnel, shall receive training appropriate to their job functions, including security training according to applicable regulations and dangerous goods training as described in IATA Dangerous Goods Regulation (DGR).

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0.9.2.6. SMS TRAINING

Personnel performing functions within the scope of ground handling operations must be trained and competent to perform SMS duties. The scope of such training shall be appropriate to each individual's involvement in the SMS according to below safety training specification.

0.9.2.6.1. Functional Groups

In determining the applicability of airside safety training subject areas, ground handling personnel are typically grouped according to operational function as follows.

Function 1: Personnel whose duties require access to airside areas.

Function 2: Personnel whose duties require operation of basic GSE (e.g. tractors, belt loaders).

Function 3: Personnel whose duties require: (1) operation of specialized equipment (e.g. aircraft movement units, container/pallet loaders, de-icing vehicles, catering vehicles), (2) exercise of control during aircraft movement operations, or (3) performance of lead responsibility over other personnel.

Function 4: Personnel in first level management, to include supervisors having responsibility for: (1) directing staff and/or equipment resources, or (2) controlling an operational activity.

Function 5: Personnel in station management having responsibility for resource issues, health and safety, incident management, and budgetary control.

Function 6: Personnel with duties in ticketing, check-in and boarding activities.

- Human Factors
 - (a) Motivation and attitude All Functions
 - (b) Human behavior Functions 4, 5
 - (c) Communication skills All Functions
 - (d) Stress All Functions
 - (e) Ergonomics All Functions
 - (f) Effects of psychoactive substances (drugs and alcohol) All Functions
 - (g) Fatigue All Functions
 - (h) Time pressure All Functions
 - (i) Peer management pressure All Functions
 - (j) Situational awareness All Functions
 - (k) Teamwork All Functions

- Airside Markings and Signage Functions 1 to 5

- Emergency Situations. See Note 3
 - (a) Reporting All Functions
 - (b) Injuries All Functions
 - (c) Security threats All Functions
 - (d) Spillage Functions 1 to 5
 - (e) Alarms and emergency stops All Functions
 - (f) Fuel shut-offs Functions 1 to 5
 - (g) Ground-to-flight deck emergency hand signals Functions 1 to 5
 - (h) Fire All Functions
 - (i) Severe weather All Functions
 - (j) Aircraft stand emergency procedures All Functions

- FOD prevention Functions 1 to 5

- Personal protection. See Note 4
 - (a) Personal protective equipment All Functions
 - (b) Occupational health and safety All Functions
 - (c) Musculoskeletal injury prevention All Functions
 - (d) Weather exposure Functions 1 to 5

Note 3: Subject areas (a) through (j) would be applicable to personnel as appropriate to specific function and types of operations conducted.

Note 4: Subject areas (a) through (d) would be applicable to personnel as appropriate to specific function and types of operations conducted.

- Accidents, Incidents, Near Misses. See Note 5

(a) Personnel injuries	All Functions
(b) Damage to aircraft, GSE, facilities	Functions 1 to 5
(c) Reporting	All Functions
(d) Investigation	Functions 4, 5
(e) Prevention	All Functions
(f) Cost of accidents, incidents	All Functions
(g) Risk assessment	Functions 4, 5

Note 5: Subject areas (a) through (g) would be applicable to personnel as appropriate to specific function and types of operations conducted.

- Airside Safety Supervision

(a) Creating an open reporting culture	Functions 4, 5
(b) Performance monitoring	Functions 4, 5
(c) Coordination of airside activities	Functions 4, 5
(d) Workload management	Functions 4, 5
(e) Decision making	Functions 4, 5
(f) Planning	Functions 4, 5

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1. PASSENGER HANDLING PROCEDURES

1.1. PASSENGER DEPARTURE

1.1.1. PRE-DEPARTURE ACTIVITIES

1.1.1.1. TICKET SALES COUNTER

- Display operating airline required signage, both electronic and manual versions.
- Ensure Dangerous Goods notifications are prominently displayed.

1.1.1.2. PASSENGER PRE FLIGHT PREPARATION

Prepare check-in for flights in accordance with operating airline policy prior to the opening of web or airport check-in, and to verify all necessary data has been transferred into the check-in system correctly.

- Review the booking status.
- For code share flights with an active blocked space agreement, check the allotment to ensure the block of seats, as agreed, is guaranteed to the partner.
- Review the curtain version (if applicable).
- Confirm the Passenger Name List (PNL) and Additions and Deletions List (ADL) were properly transmitted and match the booking status.
- Block seats for security officers, crew, weight and balance, and if seats are unserviceable.
- Confirm the seating plan is set according to the actual aircraft type and version.
- Review the flight remarks, if applicable.
- Record passenger status on PNR, if applicable.
- Review the boarding time, departure time, and gate. Brief staff about the reason for any delays.
- Apply payload restrictions, if any.
- Check the passenger list for special passengers (e.g. WCH, UM, etc.) and pre-assign as per operating airline policy and according to the aircraft type.
- If not pre-reserved, prepare seating for families travelling with infants or children, as per operating airline policy.
- Where free/open seating is applied, inform the crew and passengers and ensure special category passengers have appropriate seats.
- Ensure flight status is open for web check-in if applicable.
- Check-in is opened once the pre-flight preparation is complete.

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1.1.2. CHECK-IN COUNTER REQUIREMENTS

Prior to opening the check-in counters:

- Start and test equipment.
- Ensure scales are functioning.
- Stock boarding card and bag tag printers as per operating airline requirements.
- Ensure adequate stock of any other operating airline required tags.
- Display operating airline required signage, both electronic and manual versions.
- Ensure Dangerous Goods notifications are prominently displayed at the check-in area as well as ticket offices, baggage drop-off areas, self-serve check-in areas, and transfer counters.
- Prepare check-in queues, stanchions, carpets, baggage sizers, podiums etc., as per operating airline specifications.

1.1.3. PASSENGER CHECK-IN

1.1.3.1. GENERAL

Check-in is the complete sequence of steps which involves the registration of the customer and their baggage in a DCS or manual system, the labeling of the baggage and the issuance of one or more boarding passes.

Boarding passes containing the passenger's name must be issued for all passengers, either on paper or electronically.

1.1.3.2. CHECK-IN DEADLINES

Apply check-in deadlines as per operating airline policy, respecting applicable passenger rights and on-time departure requirements.

CHECK IN DEADLINES

Airport check-in to open 3 (three) hours before STD in minimum two counters' positions unless otherwise requested by carrier.

Airport check-in to close 1 (one) hour before STD.

Where available Late check-in policy shall be applied

Late check-in is a special service provided by FLYONE which allow passengers paying a special fee to be boarded for the flight.

Service Delivery Manager, or Local Representative is in charge to decide on this service applicability, taking into account specific of the local airport.

Late Check-in policy will not be applied for UK destinations departing from OTP station, less than 45 min before SDT.

1.1.3.3. OPERATING CARRIER, MARKETING CARRIER AND WET LEASE

Advice the passenger of the operating carrier no later than the time of check-in, if different than the one noted as the "carrier" on the ticket.

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1.1.3.4. CHECK-IN TYPES

1.1.3.4.1. GENERAL

Check-in may be provided at check-in counters, via self-service methods such as web check-in, kiosk or SMS, and may be performed using a departure control system (DCS) or manually.

1.1.3.4.2. MANUAL CHECK-IN

Where no DCS is available, apply established manual check-in procedures.

1.1.3.4.3. THROUGH CHECK-IN

Perform through check-in whenever possible and as per the interline agreement. Travel documents must be checked for all through-checked parts of the journey.

An Interline Through Check-In (ITCI) is when a passenger has been checked-in on a flight by one Airline in their DCS system and also has been "through checked" onto an onward connecting flight in another Airline's DCS system using EDIFACT messaging. A boarding card is issued for both flights. The purpose of EDIFACT is to translate the check-in messages sent between the two Airlines so that they can be translated and read / understood by each Airline's own computer system.

Through check-in is possible if interline carriage is issued as one ticket only, and ITCI agreement is in force between FOE and other airlines.

1.1.3.4.4. RETURN CHECK-IN

For return check-in to be permitted:

- The return journey must be within 24 hours after departure.
- No checked baggage is permitted.
- No change of cities is involved.
- Operating airline approval is required.

Check-in may be provided at check-in counters, via self-service methods such as web check-in, kiosk or SMS, and may be performed using a departure control system (DCS) or manually.

1.1.3.4.5. SELF-SERVICE CHECK-IN

Online/web check-in may be offered if the following conditions are met:

- The passenger is holding an electronic ticket.
- The passenger is departing from an airport where the operating airline's or ground handler's DCS is in use.
- The passenger meets any other qualifying criteria set by the operating airline.

SELF-SERVICE CHECK-IN

It must not be possible for passenger or person acting on behalf of the passenger to check in unless they receive and acknowledge that they understand information describing the types of dangerous goods that are forbidden for transport aboard an aircraft

1.1.3.4.6. OFF-SITE CHECK-IN

Off-site check-in may be permitted if:

- The passenger is holding a valid ticket.
- The location is an approved site.
- The passenger meets any other qualifying criteria set by the operating airline.
- Local off-site security process must be followed.

1.1.3.4.7. EMERGENCY BACK-UP CHECK-IN

In case of DCS failure, local back-up procedures must be established in every station and tested regularly.

1.1.3.4.8. CHECK-IN FEE

For all scheduled FLYONE flights, when is requested by fare rules, passengers are entitled to pay check-in fee, and handling company or company representative is in charge to collect such fee.

FLYONE CHECK-IN FEE

Web check-in -Free of charge

On desk check-in (in airports) when is requested according to special fares.

NO CHECK IN FEE WILL BE COLLECTED FOR BELLOW CATEGORY OF PASSENEGERS:

- INAD
- Transfer Passengers (only for the first segment of journey) Passengers from overbooked flights.

Relevant check-in information should be inserted as follow:

EX: Pax from OVB FOE * check-in free of charge.**

1.1.3.5. CHECK-IN OPENING

Conduct a staff briefing for check-in agents before the check-in counters are opened and receive and review any summarized flight information.

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1.1.4. BAGGAGE DROP-OFF

Passengers who have used a self-service check-in facility may drop their checked baggage at a baggage drop-off.

- Review the boarding pass and pull up the passenger data in the check-in system.
- Verify identity and travel document, assess carry-on baggage, and accept checked baggage.
- Add baggage information and any SSR's to the DCS if required and apply any related fees as per operating airline policy.

Note: DROP-OFF BAGGAGE WILL BE CLOSE 1 HOUR BEFORE STD

1.1.4.1. BOARDING PASS

Passengers who have used a self-service check-in facility (on line check-in from web site www.flyone.eu) and don't have any possibility to print their boarding pass can provide it at airport check-in counters on their electronic devices (smart phone, tablet, PC etc.).

Passengers who have used a self-service check-in facility and failed to present their boarding passes are entitled to pay check - in fee for BORDING PASS REISSUE at the airport check-in desk.

1.1.5. TRAVEL DOCUMENTS AND BOOKING VERIFICATION

Only passengers with a valid passport and valid passenger tickets shall be accepted on FLYONE flights.

Passenger name in passport must be exactly as in passenger list in DCS Go Now (Departure Control System) In the following exceptional case, *passengers can be accepted*:

- passengers hold the tickets with different passport data: date of issue, expiration date and Country of issue (Eg: passenger bought ticket with MD passport, but will travel with RO or BY passport, meanwhile the name and surname will remain the same)

The booking coupon shows a certain status, which enables check-in.

1.1.5.1. GENERAL

- Check the validity of the ticket with regard to the itinerary, flight, date, carrier, reservation status, class, and restrictions.
- Check the ticket for the final destination and confirm this with the passenger.
- Verify the passenger's identity against the travel document presented, including review of date of birth, expiry status of document, a visual comparison of the photo to the passenger, and ensure the name on the travel document matches the booked name.
- Verify the travel document is valid and good for all persons traveling, as not all States allow family members to be registered in a single passport.
- Report any document that shows signs of tampering.
- Locate the passenger in the DCS and review any special remarks.
- Check travel documents for destination and/or transit requirements.
- Review Visa or entry conditions or limitations if required.
- Collect Advanced Passenger Information (API) if required.
- When you identify an issue with a document, notify your supervisor who will contact the appropriate authority for assistance.

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1.1.5.2. ADVANCE PASSENGER INFORMATION

Many governments require airlines to submit advanced passenger electronic data (API) at specified times for disembarking passengers.

Information is generally collected at the time of check-in, or provided from data collected during booking, and verified during presentation of the travel document.

As per operating airline instructions, collect API data at the time of check-in, or review data already provided.

Transmit API data at pre-arranged times to recipients specified by the airline. Always protect passenger's personal information and securely dispose of any related paperwork not kept on file.

1.1.6. PASSENGER ACCEPTANCE

1.1.6.1. REQUIREMENTS FOR PASSENGER ACCEPTANCE

Certain categories of passengers may be refused travel at the operating airline's discretion. Apply the operating airline policies with respect to acceptance.

1.1.6.2. SEATING

Each passenger (except infants not occupying a separate seat) is assigned an individual seat number per flight.

- Allocate seating for special categories of passengers in accordance with operating airline policy.
- The acceptance of passengers on the waitlist is based on booking status and operating airline directives.

SEATING

Persons requiring special conditions, assistance and/or devices when carried on a flight shall be considered as SCPs including at least:

- 1) persons with reduced mobility (PRMs) who, without prejudice to Regulation (EC) No 1107/2006, are understood to be any person whose mobility is reduced due to any physical disability, sensory or locomotory, permanent or temporary, intellectual disability or impairment, any other cause of disability, or age;
- 2) infants and unaccompanied children; and
- 3) deportees, inadmissible passengers or prisoners in custody.

SCPs shall not be allocated, nor occupy, seats that permit direct access to emergency exits or where their presence could:

- Impede the crew in their duties;
- Obstruct access to emergency equipment; or
- Impede the emergency evacuation of the aeroplane.

The commander shall be notified in advance when SCPs are to be carried on board.

In normal circumstances they should not be seated adjacent to an emergency exit.

In circumstances in which the number of PRMs forms a significant proportion of the total number of passengers carried on board:

- The number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation; and

1.1.6.2.1. PAYED SEAT ASSIGNMENT

For All scheduled flights FLYONE operates paid assignment, regardless of the fare of the purchased ticket, passengers may use paid seat assignment, thus having the possibility to choose desired seats.

Paid seat assignment is operable during reservation, web check-in or during airport check-in at the check-in counters, where handling company or airline representative in charge should monitor/collect the correct fare for this service.

Following seating limitations shall be observed:

Category	Transportation Limitation	Seating Limitation
WCHR	Maximum 5 per one cabin crew member but total number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able bodied passenger nor in the row adjacent to emergency exit.
WCHS	Maximum 5 per one cabin crew member but total number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able bodied passenger nor in the row adjacent to emergency exit.
WCHC	Maximum 5 per one cabin crew member but total number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able bodied passenger nor in the row adjacent to emergency exit.

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BLIND	Maximum 5 per one cabin crew member but total number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able bodied passenger nor in the row adjacent to emergency exit.
DEAF	Maximum 5 per one cabin crew member but total number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able bodied passenger nor in the row adjacent to emergency exit
DEAF/BLIND	Maximum 5 per one cabin crew member but total number of PRMs should not exceed the number of able-bodied persons capable of assisting with an emergency evacuation	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able bodied passenger nor in the row adjacent to emergency exit.
Expectant Mothers	Till end of 27th week of pregnancy no medical certificate required. 28th – end of 35th week of pregnancy -medical certificate from physician required within 14 days prior to commencement of air travel. After end of 35 th week of pregnancy- not accepted to air travel.	Shall be seated as close as possible to the floor level exit, without blocking the row that has a direct access to the exit, without blocking evacuation route to able-bodied passenger nor in the row adjacent to emergency exit.
PAX requiring additional oxygen	Not accepted on FLYONE aircrafts	Not accepted on FLYONE aircrafts
STCR Passenger	Passenger who can only be transported on a stretcher.	Not accepted on FLYONE aircrafts
Passengers seating on jump seat	Only with PIC authorization, in case of Overbooking or any special required case (regular passengers, ID staff, instructors, airline's partner employees etc.)	Passengers must be seated on cabin crew vacant seats.

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1.1.6.3. EXIT ROW SEATING

Passengers occupying emergency exit row seating must be able-bodied, and therefore excludes INF, UMNR, MEDA, etc.

Occupancy of emergency exit rows is restricted in accordance with operating airline policy.

EXIT ROW SEATING

Do not allocate seats in emergency exit rows to:

- Persons with reduced mobility, with an intellectual deficiency, illness or any other cause of disability;
- Physically or mentally handicapped passengers unable to move quickly if asked to;
- Persons who are either substantially blind or substantially deaf to the extent that they might not readily become aware of instructions given to begin an emergency evacuation;
- Persons who because of age or sickness are so frail that they have difficulty in moving quickly;
- Pregnant women;
- Unaccompanied Minors (UMNR);
- Infants and children;
- Persons whose physical size would prevent them from being able to move quickly;
- Persons in custody, deportees and inadmissible passengers;
- Passengers who are unable to comprehend safety instructions due to language deficiencies;
- Persons with pets (PETC) or guide dogs.

1.1.7. PASSENGER BOARDING

1.1.7.1. GENERAL

- Check that boarding facilities and gate monitors are displaying flight information.
- Ensure Dangerous Goods and Prohibited Articles notices are displayed at the boarding gate.
- If walking on apron, ensure the route to the aircraft is safe and clearly marked for both passengers and staff.
- For jet bridge boarding, secure and mark off the route to the aircraft.
- If passenger handling staff are trained and authorized to operate cabin access doors, refer to IGOM 4.10. If passenger handling staff operate the jet bridge, refer to IGOM 4.1.3.4.
- Obtain clearance for boarding from the flight crew and according to local procedures and operating airline policy.
- Follow safety requirements for fuelling in progress as per operating airline GOM.
- Make boarding announcements as per operating airline standards.
- Follow policies for passengers requiring assistance or pre-boarding.
- Verify each passenger's identity as per the requirements.
- Check the name on the passenger identity document with the one on the ticket and visually match passenger with photograph.
- Confirm each passenger's boarding acceptance in the DCS before allowing them to board.
- For manual or non-automated boarding, check the flight number and date on the boarding card.
- Apply cabin baggage policies of the operating airline, and account for any gate tagged items.
- Secure the flight by matching the checked-in passengers to the boarded passengers.
- Provide final passenger numbers to cabin crew.
- Provide required flight documents to cabin crew.
- Advise ramp staff and/or load control of the gate baggage to be loaded.
- Send required post flight messages upon flight close out.

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1.1.7.2. PASSENGER BOARDING DISCREPANCIES

If there are passenger discrepancies (minus or plus), they must be resolved prior to closing the aircraft door.

- Make every attempt to locate missing passengers and obtain visual proof of boarding and documents if they are located on the aircraft.
- Apply operating airline procedures and government regulations with respect to the removal of checked baggage of passengers who check-in but fail to board.
- Notify crew and load controller of any last minute changes to passenger and/or baggage load.

1.1.7.3. BOARDING IN CASE OF DCS BREAKDOWN

Where no DCS is available or in case of DCS failure, apply manual boarding procedures.

Ensure the final checked-in count matches the boarded passenger count prior to door closure and prepare and board a final manifest.

1.1.8. FLIGHT DOCUMENTS

1.1.8.1. GENERAL

Provide the flight crew with the required documents according to the operating airline specifications.

1.1.8.2. PASSENGER INFORMATION LIST (PIL)/CAPTAIN LOAD INFORMATION

The Passenger Information List (PIL) or Captain load Information (CLI) provides information to the cabin crew about passengers on board, (name, seat number, and special service requirements).

- Provide a PIL/CLI to the senior cabin crewmember before departure.

1.1.8.3. OTHER FLIGHT DOCUMENTS

Other required documents may include:

- final manifest;
- bag tag list for some specific destination;
- general declarations if required;
- other special information (i.e. INAD documents, etc.).

1.1.9. POST FLIGHT DEPARTURE ACTIVITIES

1.1.9.1. MESSAGES

Ensure all relevant messages are dispatched to the appropriate addresses, as per the operating airline specifications.

FLYONE IATA Standard Messages include:

- Teletype Passenger Manifest (TPM)
- Passenger Transfer Message (PTM)
- Passenger Service Message (PSM)
- Load message (LDM)
- Aircraft Movement Message (MVT)
- Advance Passenger Information (API)

For relevant address for API sending please contact dc@flyone.eu / in copy with foe.groundops@flyone.eu.

1.1.9.2. FLIGHT DOCUMENT RETENTION

Retain (electronically or paper files) flight documents as per operating airline procedures and for a period of no less than three months unless otherwise specified.

Below documents must be retained mandatory three months:

- Passenger Manifest
- Baggage Manifest
- LOADSHEET
- NOTOC
- List of Passengers excluded from travel (due not immigration issues, security threat etc)
- Police reports for INAD's in case of.

FLIGHT DOCUMENT RETENTION

FLYONE requires document to be retained for 3 months.

1.2. PASSENGER SECURITY

1.2.1. SECURITY OF DOCUMENTS

1.2.1.1. BOARDING PASSES, TRANSIT CARDS AND BAGGAGE TAGS

All materials used for passenger and hold baggage processing (e.g. boarding cards, baggage tags, special tags, FIMs, vouchers, stamps) must be protected or be under surveillance at all times in order to prevent unauthorized access and use.

1.2.1.2. DISPOSAL OF PRINTED DOCUMENTS

Printed material such as boarding passes, passenger lists, and handling forms may have to be reprinted and are therefore left behind as waste. Dispose of these documents according to data protection rules, as they contain passenger data.

1.2.1.3. INFORMATION SECURITY

Departure control systems (check-in systems) must be controlled to prevent unauthorized access.

- Follow airport procedures intended to prevent unauthorized use and access to un-issued (blank) boarding passes.
- Before leaving the counter, remove boarding cards and baggage tags from the respective printers or lock them.
- Before leaving the counter, sign-out, log-off and lock the system.
- Observe regulations concerning the usage of sign-ins and passwords.

1.2.1.4. RESTRICTED AREAS

Secure all gate and departure areas by keeping doors closed, use appropriate barricades when directing passengers.

- Ensure all access doors are closed when not in use.
- Position staff as required to direct passengers.
- If passengers have to walk on the apron to aircraft, ensure passengers proceed directly to the aircraft.
- If transportation has to be provided to passengers to move them from the terminal building to the aircraft, make sure only authorized personnel and screened passengers are allowed to board the vehicle.

1.2.2. PASSENGER SUITABILITY FOR TRAVEL

Assess each passenger in terms of security risk by looking for anomalies and observing certain emotional characteristics and/or body language. Be on the lookout for overall fitness to fly, including potentially contagious diseases, medical conditions, intoxication, etc.

Further questioning may be required to assist with passenger assessment.

- When you identify a potential problem passenger, notify your supervisor.
- The supervisor will contact the appropriate local authority for assistance.

PASSENGER SUITABILITY FOR TRAVEL

In case of checked-in passengers is not suitable for travel, and this decision has been made after check-in completion and LOAD SHEET issuance, PIC shall be informed immediately.

1.2.3. SECURITY OF PASSENGERS AND THEIR BAGGAGE

It is the responsibility of supervision staff to ensure all security threats are immediately reported to the customer airline, the flight crew and applicable authorities as per local requirements and customer airline's policy.

Apply customer airline and/or regulatory airport authority security procedures for the handling of passengers and their baggage in the event of:

- A bomb threat condition.
- An increased security threat condition.

1.3. PASSENGER ARRIVAL, TRANSFER AND TRANSIT

1.3.1. PRE-ARRIVAL

Review the pre-arrival information from DCS and/or messages.

- Prepare for short connections if applicable.
- Arrange facilitation for passengers requiring assistance, e.g. UMNR, PRMs.
- Check requirements for any gate delivery mobility aids.
- In case of delay of arrival, check onward connections and make new reservations if required and as per operating airline policy.

1.3.2. ARRIVAL

- If jet bridges is used, prepare jet bridge, ensuring it is free of debris and position as per the standard height for the aircraft type.
- Secure the disembarkation route for passengers.
- Disembark passengers in accordance with operating airline policy.
- Provide assistance to passengers requiring it.
- Communicate any delays in providing assistance services.

1.3.3. TRANSFER (PASSENGER HANDLING AT CONNECTING AIRPORT)

If applicable, and as per operating airline policy:

- Check the inbound/outbound connections and the number of passengers affected.
- Check time-critical connections, and inform gate staff of onward transfer.
- Prepare for handling of passengers requiring assistance.
- Meet the transferring passengers upon arrival of the incoming aircraft.
- Direct passengers:
 - through-checked passengers to the appropriate departure gate(s);
 - Non-through checked passengers to the transfer desk or gate for check-in, whichever is applicable.

1.3.3.1. Transfer Passengers

The passengers, who continue their flights by the same airline or another airline, upon stopping at any intermediate station within a period of 24 hours, from the station of origin to the final destination, provided that they have a confirmed ticket.

- The baggage of the passengers shall be checked-in until the final destination by taking into account the customs regulations, provided that baggage, confirmed tickets and flight routes of the passengers are issued on the same ticket. However;
 - In the event that the flight routes (FOE-FOE) of any passenger have been ticketed individually, and that there is a time interval of minimum 40 min and maximum 24 hours between the relevant flight and the connection flight, then the baggage shall be tagged until the final destination in accordance with the customs regulations.
 - In the event that the flight routes to be traveled by any passenger have been ticketed individually, and that the relevant flights will be operated by two different airlines (FOE - foreign airline), then, the baggage shall be tagged until the final destination only if FOE have interlined agreement with further carrier.

The station of origin shall definitely carry out the passport and visa checking processes in respect of the connection flight of the passenger.

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1.3.3.2. Processes for Transfer Passengers

The list of checked-in passengers shall be sent to the station of transfer as PTM (Passenger Transfer Message). The following processes shall be carried out in order to transfer the passengers and baggage as soon as possible upon receipt of the message:

- "Inbound/outbound" connections shall be checked by taking into account the number of passengers.
- Any measures shall be taken in respect of the critical connections.
- Any preparations for the passengers, to whom special services will be provided, shall be performed.
- PTM/PBI (Passenger Booking Information) details shall be taken into account in respect of the interline transfer (from/to any different airline).
- Any transfer passengers shall be welcomed upon landing.
- Any passengers, for whom "through check-in" processes have been carried out, shall be referred to the relevant departure gates.
- Any passengers, for whom "through check-in" processes have not been carried out, shall be referred to the Transfer Desk in order to have their check-in processes carried out.
- The passengers shall be fully informed about the customs and passport procedures, if possible.

1.3.3.3. PTM Transfer Passenger Message

The message sent by the station of departure in respect of the transfer processes of all passengers and their baggage that will continue to any other stations from the station of arrival.

In respect of the stations where DCS check-in processes are carried out, such messages shall be sent by the system automatically, and in respect of the stations where DCS check-in processes are not carried out, such messages shall be sent manually.

1.3.3.4. Transfer Service.

Transfer Desk

The location where check-in and consultation services are provided to the transit or transfer passengers traveling through the flights of the Company or any contracted company

Transfer Desk officials

- shall check that whether the baggage of transit or transfer passengers have been checked-in until the final destination during their application processes, or not.
- shall carry out check-in processes, and shall refer the passengers to the relevant departure gate.
- shall have check-in processes carried out by the officials of the relevant airline in the event that the passengers will continue their flights by any other airline, and shall deliver the passport, ticket and baggage to the passengers.

1.3.3.5. Transfer Passenger Management

HUB Control Center Management/Transfer Passenger Management shall take any actions in relation to carrying out any transfer processes of the passengers and taking any required measures/precautions.

Procedure for Management of Transfer Passengers. Any reporting shall be sent to foe.groundops@flyone.eu

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1.3.3.6. Special Service

The concerned airline and the ground handling agent shall be responsible for the passengers requiring special attention/services during performance of transfer processes.

- Short Connection
 - The service in which the transfer processes of the transfer passengers and their baggage are carried out as soon as possible. "Quick ramp" shall be necessarily provided.
 - "Short connection" periods for FOE's HUB is less than 40min.
- Hotel and Catering Services at Stations of Transfer

At stations of transfer; catering services shall be provided to the transfer passengers, in case of waiting periods is more than 3 hours, due to irregularity of next FOE 's flight. Hotel services shall be provided to the transfer passengers, in case of waiting periods is more than 8 hours, due to irregularity of next FOE 's flight exceeding.

Actions required to be paid attention during provision of hotel service are as follows:

- Any processes for hotel service shall be carried out at the station of transfer.
- Catering service shall be provided at the hotels based on time zones.
- Period of hotel service provided to the passenger shall be maximum two nights.
- Transit/entry visa fees (excluding operational irregularities) of the transfer passengers, to whom hotel services are provided, shall be paid by the passengers.
- Hotel transfers shall be ensured by the Company.

1.3.3.7. HUB (Main Station) Operations

HUB stations LUKK Airport for FLYONE

- If applicable, and as per operating airline policy:
- Check the inbound/outbound connections and the number of passengers affected.
- Check time-critical connections, and inform gate staff of onward transfer.
- Prepare for handling of passengers requiring assistance.
- Meet the transferring passengers upon arrival of the incoming aircraft.
- Direct passengers:
 - through-checked passengers to the appropriate departure gate(s);
 - non-through checked passengers to the transfer desk or gate for check-in, whichever is applicable.

1.3.4. TRANSIT

1.3.4.1. General

The passengers, who continue their flights by the same flight number, upon stopping at any intermediate stations from the station of origin to the final destination.

- Passengers shall have a single flight coupon and a single boarding pass during such flights.
- The fact that the transit passengers are disembarked from the aircraft, or that they are waited on board the aircraft, shall be determined in accordance with the local requirements (local regulations, structure of the airport, ground time of the aircraft, equipment of the station, etc.).

For Instance: FIE811/LIS/VLC passengers shall be considered as transit passengers.

1.3.4.2. List of Transit Passengers

- In respect of the stations, which do not have "on-line" connection, the passenger manifest, containing the details regarding transit passengers, shall be prepared in the list form, and shall be definitely submitted to the aircraft.
- The on-line stations, which are connected to DCS, may display such lists.

1.3.4.3. Regulations on Disembarkation of Transit Passengers

In the Event that the Aircraft is Changed;

- All transit passengers shall be disembarked.
- Boarding passes of the passengers shall be checked by the ground personnel.
- In case of change in the aircraft type, the new boarding passes shall be issued, and the new seat numbers shall be assigned, or free seating process shall be carried out.
- The number of the boarding passes distributed shall correspond to the number of the transit passengers disembarked.
- Passengers shall be informed about the time of embarkation and the boarding gate
- The concerned departments shall be prepared in respect of the passengers requiring special attention/service.

In the Event that the Aircraft is not Changed;

Boarding passes of the transit passengers available on board the aircraft shall be checked by the cabin crew members. Any measures to be taken in such a case are as follows:

- Passenger doors shall be open.
- Aircraft stairs or boarding bridge shall be in a position to be ready for use.
- Cabin crew members shall be close to the doors.
- Safety belts of the passengers shall not be fastened.

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1.3.4.4. Boarding transit passengers

1.3.4.4.1. Procedure

- Re-secure the flight by checking travel documents and validating boarding status by collection of the transit card or review of the original boarding card.

Validation may also be done using the flight manifest or DCS.

1.3.4.4.2. Missing transit passengers

The flight must be re-secured before door closure. If passengers are missing, apply the procedure for missing passengers.

1.3.4.5. Programmed aircraft change en-route

- Advise cabin crew that all transit passengers must disembark with their carry-on baggage.
- Distribute transit boarding passes (or instruct passengers to retain their original boarding pass) and inform passengers about boarding time and gate and available facilities.
- Provide passenger assistance as required.
- In case of a change of configuration, assign passengers new seat numbers if Applicable.

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1.4. SPECIAL CATEGORIES OF PASSENGERS

1.4.1. UNACCOMPANIED MINORS (UMNR)

UNACCOMPANIED MINORS (UMNR)

Children between the age of 5 and 18 years will be accepted to travel unaccompanied provided that the child is escorted by the parent or guardian both at the airport of departure and the airport of arrival. An UMNR (Unaccompanied Minor) form shall be properly issued and the parent/guardian shall remain with the child as long as possible before boarding

It should be clearly understanding difference between service provided for UMNR foreign citizen, and UMNR service provided for Romanian citizens

UNACCOMPANIED MINORS (UMNR) FOREIGN CITIZENS

Children between the age of 5 and 14 years will be accepted to travel unaccompanied

In order to provide this service following requirements should be applied:

- Prior Confirmation (it shall be requested and provided during reservation)
- Guaranteed payment for the service. (EMD)

UNACCOMPANIED MINORS (UMNR) - ROMANIAN CITIZENS

Children between the age of 5 and 18 years who are Romanian citizens may be accepted to travel unaccompanied, provided that the parent or legal guardian escorts the child both at the airport of departure and the airport of arrival.

Service Requirements:

In order to provide this service, the following conditions must be met:

- Prior confirmation – must be requested and approved at the time of booking;
- Guaranteed payment for the service (EMD issuance required);
- Official statement for border crossing issued by the parents or appointed guardian, as per Romanian legal requirements.

Special Provisions – Romanian Minors Over 16 Travelling Abroad

Romanian minors who have reached the age of 16 may travel unaccompanied abroad only under specific legal conditions, and provided they hold an individual travel document (passport) or a national identity card.

Permitted Travel Situations:

Minors aged 16 and above may travel abroad alone in the following cases:

- Visiting relatives;
- Participating in studies or official competitions/events;
- Undergoing essential medical treatment abroad.

Required Documents at Border Control

Depending on the purpose of travel, the following original notarized documents must be presented upon departure. Photocopies or electronic formats are not accepted.

For Visiting Relatives:

- Notarized declaration from parents/legal representatives explicitly stating:
 - Purpose of travel;
 - Destination country and address;
 - Duration of stay;
 - Full identity of the relative being visited.

For Studies or Competitions:

- Notarized parental declaration (same as above);
- Supporting documents issued by the organizing institution confirming:
 - Type of activity (study or competition);
 - Dates and location of the event.

For Medical Treatment:

- Notarized parental declaration;
- Official medical documents (issued or endorsed by Romanian authorities) proving:
 - Medical necessity;
 - Expected duration of the treatment abroad.

Important Notes:

- All required declarations must be presented in original form at border control.
- The airline is not responsible for legal verification of these documents but reserves the right to deny boarding if documents are missing or unclear.
- It is strongly recommended that passengers verify entry conditions with the embassy or consulate of the destination country in advance.

1.4.1.1. SEATING

Seat UMNRs as per operating airline policy and do not assign seats in emergency exit rows.

FLYONE (1.4.1.1. SEATING)

In order to ensure proper care during the flight, UMNR's should be assigned with window seats A or F, as much as possible in front in economy class section.

AHM560 will specify designated seats for UMNR's based on aircraft configuration.

UMNR's must never be assigned emergency exit seats

1.4.1.2. ACCEPTANCE RESTRICTIONS

Observe operating airline policy for:

- Connecting flights.
- Any restrictions on the maximum number of UMNR.

ACCEPTANCE RESTRICTIONS

Unaccompanied minors are only accepted on direct, point to point flights.

Under no circumstances can UM(s) be accepted for travel on routes which involve a stop-over with change of aircraft.

Children between 14 and 18 years, so called Young Persons (YP), may be accepted as UMNR if requested.

Children under the age of 5 must not be accepted as UMNRs.

They must always travel with their parents, siblings aged 18 or over, capable of guarding and guiding the child throughout the journey, including check-in formalities, customs, immigration etc.

UMNRs must always have a confirmed reservation, stand-by travel is not allowed.

Maximum number of UMNR accepted - 3 per cabin crew member

1.4.1.3. PROCEDURES FOR HANDLING UNACCOMPANIED MINORS

- Complete the handling advice/declaration form ensuring the responsible adult has signed authorization and provided proof of identity.
- Distribute and keep copies as required.
- Ensure the correct remarks and SSR codes are in the check-in record.
- Apply handling fee where applicable.
- Inform the responsible adult to remain at the airport until the aircraft is airborne.
- UMNMR must not be unsupervised until handed over to the cabin Crew.
- Advise/release responsible adult once flight is airborne.

PROCEDURES FOR HANDLING UNACCOMPANIED MINORS

Unaccompanied minors shall generally board prior the other passengers. If there is a high probability of diversion, the commander decides whether the UNMR shall be accepted for transportation.

It is ground staff responsibility to hand UM over to the SCCM along with the UM documents.

1.4.1.4. TRANSFER STATION PROCEDURE

- Meet, assist UMNMR and collect any travel documents from the cabin crew.
- Hand over the UMNMR to the cabin crew of the connecting flight.
- In case of interline transfer, hand over UMNMR to the onward connecting airline agent.

TRANSFER STATION PROCEDURE

Unaccompanied minors are only accepted on direct, point to point flights. Under no circumstances can UM(s) be accepted for travel on routes which involve a stop-over with change of aircraft.

1.4.1.5. ARRIVAL STATION PROCEDURE

- Meet, assist UMNMR and collect any travel documents from the cabin crew.
- Complete the handling advice/declaration form for airline staff responsible.
- Where applicable, ensure baggage of UMNMR is collected.
- Hand over the UMNMR only to the designated adult noted on the handling advice after verifying the identity of this person and having received his signature for receipt of the UMNMR.

1.4.2. INFANTS AND CHILDREN

1.4.2.1. INFANTS

1.4.2.1.1. GENERAL

An infant is a minor that has not yet reached his/her 2nd birthday.

1.4.2.1.2. SEATING

The maximum number of infants allowed per aircraft is limited by the number of supplemental oxygen masks available on the aircraft.

Infants are considered children and must be assigned a seat when, during the journey, they reach the age of 2.

Restrictions may exist regarding the number of infants permitted per adult passenger, or the minimum age required to be responsible for an infant. Apply operating airline policy.

SEATING

An infant shall be carried on the lap of adult passenger; therefore, one infant should be accompanied by one adult on board the aircraft.

AHM560 will specify designated seats for UMNR's based on aircraft configuration.

1.4.2.1.3. AIRCRAFT BABY BASSINETS

If the aircraft is equipped with baby bassinets, apply operating airline policy for assignment, respecting any age and weight limitations.

AIRCRAFT BABY BASSINETS

FLYONE aircrafts not equipped with baby bassinets.

1.4.2.1.4. BABY STROLLERS

Apply operating airline policy regarding checked-in or delivery at aircraft (DAA) service for strollers and provide information to the passenger concerning the procedure, if applicable.

BABY STROLLERS

Accepted free of charge either at check in or delivery at aircraft ONLY FOR infants Baby strollers for children are subject of applicable fee

1.4.2.2. CHILDREN

1.4.2.2.1. GENERAL

A child is a minor between 2 and 12 years of age, having reached his/her 2nd birthday but not his/her 12th birthday. If the minor reaches his/her 2nd birthday during the journey, he/she will be considered a child as of the birthday.

1.4.2.2.2. SEATING

Children must occupy an individual passenger seat and may not be seated in emergency exit rows.

1.4.2.2.3. CHILD RESTRAINT DEVICE

Apply operating airline procedures for the acceptance and use of car seats and other restraint devices. Verify their conformity as per the airline specifications.

- Make sure the child restraint device is placed on a seat which will not hinder the evacuation of any passenger.
- Do not assign a seat for the child restraint device in an emergency exit row, or the row forward or rear of an emergency exit row.
- Respect any operating airline specific limitations, as not all seats may be suitable.

CHILD RESTRAINT DEVICE

Passenger's child restraint system may be used only during flight. For take-off, landing and when the ›Fasten Seatbelt«-Sign is on the seat must be stowed away and infants must be secured by the extension seatbelt, children by the passenger seatbelt.

To ensure the usage of their own equipment, passengers need a confirmed reservation for their child restraint system, and a seat must be booked even if the child is under the age of 2 years.

If no confirmed reservation exists for using their own child restraint system, but a suitable seat is available for the child or infant, passengers may take their seat into the cabin. However, passengers must be advised that if their child seat does not fit properly into the seat of the aircraft, it cannot be used and must be stowed away.

1.4.3. GROUPS

1.4.3.1. GENERAL

A group is defined as a party of at least nine passengers (not including infants), travelling together.

1.4.3.2. CHECK-IN

- Check-in and accept all passengers individually.
- Assign seats together, if requested, respecting any special seating requirements;
- Issue baggage tags individually;
- Each piece of baggage must bear the respective passenger's identification;
- Exception: Bag tags for family members travelling together may be issued on one family name.

1.4.3.3. NON-STANDARD GROUPS

- Unusual groups, excessive weights, or anything outside the standard need to be communicated to load control (i.e. sports teams with higher passenger weights).

1.4.4. PASSENGERS REQUIRING ASSISTANCE

1.4.4.1. GENERAL

For passengers with disabilities and those requiring or requesting assistance;

- Ask the passenger what assistance they require and how you can help them.
- Discuss the most appropriate seating based on their individual needs and the aircraft specifications, even if seats have already been pre-assigned.
- Advise passengers what services and assistance are available based on their needs.
- Advise the passenger of operating airline equipment such as on board wheelchairs, Braille or tactile markings, accessible lavatories.
- Provide information to passengers in alternate formats upon request.
- Ensure accurate SSR codes and any other relevant information are recorded in the DCS.

1.4.4.2. PASSENGERS WITH REDUCED MOBILITY

Appropriately code specific wheelchair requirements based on the passengers' specific needs—WCHC, WCHR, WCHS.

PASSENGERS WITH REDUCED MOBILITY

Definition of PRM.

A person with reduced mobility (PRM) is understood to mean a person whose mobility is reduced due to physical incapacity (sensory or locomotory), an intellectual deficiency, age, illness or any other cause of disability when using transport and when the situation needs special attention which is normally not extended to other passengers.

1.4.4.3. PASSENGERS WITH VISUAL OR HEARING IMPAIRMENTS

Provide passengers who identify themselves as persons having a visual or hearing impairment with access to the same information provided to other passengers.

Ensure accurate SSR codes and any other relevant information are recorded in the DCS.

PASSENGERS WITH VISUAL OR HEARING IMPAIRMENTS

BLND- Passenger is blind

DEAF- Passenger who is deaf or a passenger who is deaf without speech.

DEAF/BLIND- Blind and deaf passenger who can only move about with the help of an accompanying person.

Such a passenger needs individual briefing by a CCM about the location of the emergency exits. Therefore the CCM need to be informed about the seat allocation of such a passenger.

1.4.5. PASSENGER REQUIRING MEDICAL CLEARANCE

WARNING: FOE does not accept PAX requiring additional oxygen!

1.4.5.1. GENERAL

As per the operating airline policy, medical clearance may be required by passengers who appear to have a communicable disease or condition that could pose a direct threat to the health and safety of others on the flight.

- Persons whose medical condition gives reasonable doubt that the individual can complete the flight safely without requiring extraordinary assistance during flight, e.g. persons with acute medical conditions as recent heart attack, stroke, embolism, persons with recent surgery.
- Persons requesting medical treatment during flight, e.g. needing extra oxygen or other medical treatment like infusions.

PASSENGER REQUIRING MEDICAL CLEARANCE

Passengers requiring a written fitness report (fit-to-fly-letter) or a handling form containing medical information (e.g. the MEDA form) which has been completed by a physician/doctor. Following passengers may only be accepted with a medical clearance:

- Persons requesting medical treatment during flight, e.g. needing extra oxygen or other medical treatment like infusions;
- Passengers who require a medical clearance for transportation are referred to as Medical Case passengers (MEDA);
- Passengers with a fresh cardiac infarction, stroke, embolism or similar;
- Passengers who depend on the use of any kind of apparatus or medical treatment, e.g. injections, infusions, oxygen;
- Passengers with internal injuries, quadriplegics, hemiplegics, injured brain or skull, large area external injuries (e.g. wounds, burns)
- Passengers with spasmodic paralysis with cerebral damage
- Intellectual disabled passengers travelling unaccompanied
- Psychotic patients (must be accompanied by a doctor, preferably a psychiatrist)
- Passengers with a contagious disease provided that danger of infection has passed (must be stated in medical certificate)

***Note:** General Medical clearance may be required by passengers who appear to have a communicable disease or condition that could pose a direct threat to the health and safety of others on the flight. If no prior notification was on hand, the confirmation of fitness to fly may be given by the doctor appointed by carrier or by the airport medical services.*

All costs involved in the medical check-up, ambulance services and other outside handling services must be met by the passenger (or his/her insurance company).

1.4.5.2. IATA MEDICAL INFORMATION FORM (MEDIF)

The MEDIF is a standard form used to assess passengers requiring assistance. Examples are:

- Attachment A (Information sheet for passengers requiring special assistance) and;
- Attachment B (Information sheet for passengers requiring medical clearance).

MEDIF-Attachment A

Information Sheet for Passengers Requiring Special Assistance	
1.	Last name / First name / Title
2.	Passenger name record (PNR)
3.	Proposed itinerary
	Airline(s), flight number(s)
	Class(es), date(s), segment(s)
4.	Nature of disability
5.	Stretcher needed onboard? ___ Yes ___ No
6.	Intended escorts ___ Yes ___ No
	Name..... Title..... Age.....
	PNR if different.....
	Medical qualification ___ Yes ___ No Language spoken.....
7.	Wheelchair needed ___ Yes ___ No
	Wheelchair categories ___ WCHR ___ WCHS ___ WCHC Own wheelchair ___ Yes ___ No
	Collapsible WCOB ___ Yes ___ No Wheelchair type ___ WCBD ___ WCBW ___ WCMP
8.	Ambulance needed (to be arranged by the Airline) ___ Yes ___ No
	If yes, specify destination address.....
	If no, specify ambulance company contact.....
9.	Meet and assist ___ Yes ___ No
	If designated person, specify contact.....
10.	Other ground arrangements needed ___ Yes ___ No
	If yes, specify.....
	Departure airport.....
	Transit airport.....
	Arrival airport.....
11.	Special inflight arrangements needed ___ Yes ___ No
	If yes, specify type of arrangements (special meal, extra seat, leg rest, special seating).....
	Specify equipment (respirator, incubator, oxygen, etc).....
	Specify arranging company and at whose expense.....
12.	Frequent traveler medical card (FREMEC) ___ Yes ___ No
	If yes, specify FREMEC number, issued by, expiry date.....

MEDIF-Attachment B, Part 1

Information Sheet for Passengers Requiring Medical Clearance (to be completed or obtained from the attending physician)

1. Patient's name.....
Date of Birth..... Sex..... Height..... Weight.....

2. Attending physician.....
E-mail.....
Telephone (mobile preferred), indicate country and area code..... Fax.....

3. Diagnosis (including date of onset of current illness, episode or accident and treatment, specify if contagious).....
.....
.....

Nature and date of any recent and/or relevant surgery.....

4. Current symptoms and severity.....
.....
.....

5. Will a 25% to 30% reduction in the ambient partial pressure of oxygen (relative hypoxia) affect the passenger's medical condition? (Cabin pressure to be the equivalent of a fast trip to a mountain elevation of 2400 meters (8000 feet) above sea level) ___ Yes ___ No ___ Not sure

6. Additional clinical information

a. Anemia	___ Yes ___ No	If yes, give recent result in grams of hemoglobin
b. Psychiatric and seizure disorder	___ Yes ___ No	If yes, see Part 2
c. Cardiac condition	___ Yes ___ No	If yes, see Part 2
d. Normal bladder control	___ Yes ___ No	If no, give mode of control.....
e. Normal bowel control	___ Yes ___ No	
f. Respiratory condition	___ Yes ___ No	If yes, see Part 2
g. Does the patient use oxygen at home?	___ Yes ___ No	If yes, specify how much.....
h. Oxygen needed in flight?	___ Yes ___ No	If yes, specify ___ 2 LPM ___ 4 LPM ___ Other

7. Escort

a. Is the patient fit to travel unaccompanied?	___ Yes ___ No
b. If no, would a meet-and-assist (provided by the airline to embark and disembark) be sufficient?	___ Yes ___ No
c. If no, will the patient have a private escort to take care of his/her needs onboard?	___ Yes ___ No
d. If yes, who should escort the passenger?	___ Doctor ___ Nurse ___ Other
e. If other, is the escort fully capable to attend to all the above needs?	___ Yes ___ No

8. Mobility

a. Able to walk without assistance	___ Yes ___ No	b. Wheelchair required for boarding	___ to aircraft ___ to seat

9. Medication list.....

10. Other medical information.....

MEDIF-Attachment B, Part 2

Information Sheet for Passengers Requiring Medical Clearance (to be completed or obtained from the attending physician)

1. Cardiac condition

a. Angina ☐ Yes ☐ No When was last episode?

• Is the condition stable? ☐ Yes ☐ No

• Functional class of the patient?

☐ No symptoms ☐ Angina with important efforts ☐ Angina with light efforts ☐ Angina at rest

• Can the patient walk 100 meters at a normal pace or climb 10-12 stairs without symptoms? ☐ Yes ☐ No

b. Myocardial infarction ☐ Yes ☐ No Date.....

• Complications? ☐ Yes ☐ No If yes, give details.....

• Stress EKG done? ☐ Yes ☐ No If yes, what was the result?.....Metz

• If angioplasty or coronary bypass, can the patient walk 100 meters at normal pace or climb 10-12 stairs without symptoms? ☐ Yes ☐ No

c. Cardiac failure ☐ Yes ☐ No When was last episode?.....

• Is the patient controlled with medication? ☐ Yes ☐ No

• Functional class of the patient?

☐ No symptoms ☐ Shortness of breath with important efforts ☐ Shortness of breath with light efforts ☐ Shortness of breath at rest

d. Syncope ☐ Yes ☐ No Last episode.....

Investigations? ☐ Yes ☐ No If yes, state results.....

2. Chronic pulmonary condition ☐ Yes ☐ No

a. Has the patient had recent arterial gases? ☐ Yes ☐ No

b. Blood gases were taken on: ☐ Room air ☐ Oxygen LPM

If yes, what were the results pCO₂ pO₂

Saturation..... Date of exam.....

c. Does the patient retain CO₂? ☐ Yes ☐ No

d. Has his/her condition deteriorated recently? ☐ Yes ☐ No

e. Can the patient walk 100 meters at a normal pace or climb 10-12 stairs without symptoms? ☐ Yes ☐ No

f. Has the patient ever taken a commercial aircraft in these same conditions? ☐ Yes ☐ No

• If yes when?.....

• Did the patient have any problems?.....

3. Psychiatric Conditions ☐ Yes ☐ No

a. Is there a possibility that the patient will become agitated during flight ☐ Yes ☐ No

b. Has he/she taken a commercial aircraft before ☐ Yes ☐ No

• If yes, date of travel? Did the patient travel ☐ alone ☐ escorted?

4. Seizure ☐ Yes ☐ No

a. What type of seizures?.....

b. Frequency of the seizures.....

c. When was the last seizure?.....

d. Are the seizures controlled by medication? ☐ Yes ☐ No

5. Prognosis for the trip ☐ Yes ☐ No

Physician Signature..... Date

Note: Cabin attendants are not authorized to give special assistance (e.g. lifting) to particular passengers, to the detriment of their service to other passengers. Additionally, they are trained only in first aid and are not permitted to administer any injection, or to give medication.

Important: Fees, if any, relevant to the provision of the above information and for carrier-provided special equipment are to be paid by the passenger concerned.

1.4.5.3. FREQUENT TRAVELERS MEDICAL CARD (FREMEC)

If a passenger is a frequent airline traveler and has a stable medical condition established by the initial medical clearance, then a frequent traveler's medical card (FREMEC) may be issued by the airline.

A FREMEC shall be acceptable as medical clearance provided that:

- The travel is completed within its validity;
- The medical condition corresponds with the description provided;
- The passenger is its rightful holder;
- Any limitations stated thereon are observed.

WARNING: Currently FLYONE doesn't issues FREMEC medical card, FREMEC program is under implementation.

Attachment C (FREMEC)



Frequent Traveller's Medical Card (FREMEC)

Honouring Instructions. The data contained in the shaded fields **MUST** always be transmitted with any reservation request. Journeys requested but not authorized by this Card require completion of the Information Sheet for Passengers Requiring Special Assistance.

FREMEC Number: Issued by: Valid until:
Airline's Code Number / Serial Number Airline's Medical Dept's Telex Code DD / MM / YYYY

The holder of this Card

Surname Initial Title Sex Age
 Permanent Address Phone
Indicate country and area code

has the following permanent/chronic incapacitation

Code, if any (example: WCHC, etc.)

The holder is authorised by the Medical Department issuing this Card, to travel by air within the validity of this Card, subject to: (a) the Conditions stated on the reverse, (b) no worsening of the Holder's present health conditions, and (c) full observance of all carrier rules, regulations and instructions, and with the following **LIMITATIONS**:

(Insert limitations, including any permanent dietary requirements)

CONDITIONS OF ISSUE

1. Cardholders are required to **REPORT ALL CHANGES** in their present handicap or incapacitation, and/or the deterioration in their physical or medical condition, to the airline representative or agent with whom they are in contact.
2. Subject to all terms and conditions stated on this Card, the authorisation for air travel is valid only up to the date stated on the front.
3. This Card is not transferable and must be produced, together with proof of the cardholder's identity, on every occasion whenever airline reservations are made for the cardholder, at time of ticket issuance, and when so requested by the airlines or their agents or representatives.
4. Cardholders are reminded that arrangements for travel should be made as much in advance as possible. They should also allow sufficient time for check-in formalities.

Date and Place of Issue

Passenger's Signature

Legal guardian or Passenger's witness may sign
if passenger is physically unable to do so

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1.4.5.4. ADVANCE NOTIFICATION

Passengers are asked to advise the airline of their needs at the time of reservation. Advance notification is required for the following, subject to airline acceptance and approval:

- Passengers traveling with sport ammunition.

1.4.5.5. SEATING

MEDA passengers are entitled to the most appropriate seating according to their needs, including the stowage of on-board medical devices or equipment.

Appropriate seating, as per operating airline policy and passenger needs, should be assigned to:

- a reader/interpreter in case of a vision or hearing impairment. PRM/MEDA and PRM/Non-MEDA may not be seated in emergency exits. passengers traveling on a stretcher;
- completely immobile passengers;
- a passenger travelling with a service animal;
- a passenger with a fused or immobilized leg.

Provide adjacent seating as applicable for:

- a personal care attendant;
- a safety assistant;

1.4.5.6. REQUEST FOR ASSISTANCE WITHOUT ADVANCED NOTICE

If a passenger's special needs were not communicated at the time of booking, or a passenger is identified as a PRM or potential MEDA case upon departure, take all reasonable efforts to accommodate the passenger. Ask appropriate questions and record required codes in the DCS.

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1.4.6. PASSENGERS NOT REQUIRING MEDICAL CLEARANCE

1.4.6.1. GENERAL

As per the operating airline's policy, some passengers may not be required to provide medical clearance. For example:

- expectant mothers up to a date specified before expected delivery;
- persons with simple fractures or injuries;
- persons who are reduced in mobility due to age;
- SSR codes WCHR, WCHS or WCHC provided the condition has remained unchanged for at least the past six months;
- persons who are visually or hearing impaired;
- persons with mental health issues.

PASSENGERS NOT REQUIRING MEDICAL CLEARANCE

FLYONE do not requires medical clearance for:

- persons with simple fractures or injuries;
- persons who are reduced in mobility due to age;
- SSR codes WCHR, WCHS or WCHC provided the condition has remained unchanged for at least the past six months;
- persons who are visually or hearing impaired;
- Persons with mental health issues.

Expectant mothers- till end of 27th week of pregnancy no medical certificate required. 28th - end of 35th week of pregnancy - medical certificate from physician required within 72 hours prior to commencement of air travel

1.4.6.2. HANDLNG

Check that additional needs have been communicated via the respective SSR codes and entered into the DCS, and verify if escort requirements are fulfilled, if applicable.

1.4.6.3. REFUSAL OF PRM'S AND/OR MEDA CASES

Do not refuse the passenger unless there is a legitimate reason for refusal, as per the operating airline's policy.

1.4.6.3.1. RIGHT OF REFUSAL

A PRM and/or MEDA cases may be refused on the basis of the operating airline's General Conditions of Carriage (*Right to Refuse Carriage*).

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1.4.6.3.2. REASONS FOR REFUSAL

Do not refuse a passenger unless one of the following reasons is applicable, and in accordance with the *operating airline policy*:

- The person has such a degree of physical infirmity that the trip would likely result in complications (e.g. diversion) or death.
- The person requires individual nursing or care during the flight, if not accompanied by a suitable escort.
- The person requires oxygen mask during the flight.
- The person who, because of his physical or medical condition, pose a direct threat to the health or safety of other passengers, their property, the aircraft or crew that cannot be eliminated by providing additional aid or services or by other means (e.g. face masks, separate seating).
- The person fails or refuses to submit themselves to the specific conditions of carriage required by the operating airline regulations.
- Information is required about the passenger's medical condition (diagnosis) where the passenger's own physician refuses to disclose such information to the Authorized Medical Service.
- The person has a contagious disease.

1.4.6.3.3. HANDLING

In case of refusal of a PRM and/or MEDA case, inform the passenger and explain the reason for refusal with reference to the General Conditions of Carriage.

Apply the operating airline policy with respect to rebooking to a later date, and/or making all efforts to accommodate the passenger on the next possible flight, if applicable, or refund of the ticket according to the rule of the applied tariff.

- Enter all relevant information about the reason for refusal into the PNR or in the operating airline report e.g. pax refused [flight/date] d/t lack of safety assistant.
- Forward the PNR or report to the appropriate airline department. Document all details of the incident and submit as specified by the operating airline.

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1.4.7. SERVICE ANIMALS

As per the operating airlines acceptance policy, accept passengers with certified service animals into the cabin, and provide appropriate seating with room for both the passenger and the animal, including additional floor space were mandated and as per operating airline policy.

SERVICE ANIMALS

Guide Dogs accompanying a BLIND and/or DEAF customer are permitted in the passenger cabin. They are restricted to a maximum of 2 in the cabin and they will not be considered as PETS when counting the maximum number allowed. Guide dogs and the accompanied passenger will be seated taking into consideration the regulations governing the allocation of seats to PRM. Whenever the flight is not full, an effort should be made to leave the adjacent seats free. In case of two guide dogs on board, they must be seated at opposing ends of the cabin (always taking into account the allocation rules of PRM). Dogs must be located at the feet of the passengers.

During the flight a muzzle must be available and has to be attached to the dog when deemed necessary by the crew. Whenever the aircraft is not full an effort is made to leave the adjacent seats free. The following requirements should be complied if travelling within any country of the European Union:

- Identified by a tattoo or microchip.
- Passport issued by a veterinarian, which certifies rabies vaccine (more than 30 days and less than 12 months).
- Minimum 3 months of age (age required for vaccination).

1.4.8. PASSENGERS REQUIRING OXYGEN FOR MEDICAL USE

FLYONE doesn't accept for transportation passengers requiring oxygen in the medical purposes, and doesn't provide OXYG for medical use.

1.4.9. INADMISSIBLE PASSENGERS AND DEPORTEES

1.4.9.1. INADMISSIBLE PASSENGERS (INAD)

1.4.9.1.1. GENERAL

Inadmissible Passenger (INAD) is a passenger who is refused admission to a country by the local authorities (police, immigration, etc.), due to the lack of visa, expired passport etc.

If a passenger is declared to be inadmissible by the Immigration Authorities, the transporting carrier is responsible for the removal of the passenger in accordance with ICAO Convention, Annex 9.

According with this Convention, "each contracting carrier shall ensure that a person found inadmissible is transferred back into the custody of the operator(s) who shall be responsible for prompt removal to the point where the person commenced his journey or to any other place where the person is admissible".

Inadmissible passenger should be sent back to the country from he has arrived by the next flight or to the country which citizen the passenger is.

The sending direction of INAD passenger and the flight is defined by the representative of the Airline.

Inadmissible passenger is controlled by the airport boundary authorities until he is sent.

The representative of the Airline is in charge to make out an air ticket according to the internal instructions of the Airline to transport an inadmissible passenger to the country where from he has arrived or to the country which citizen he is.

At check-in of an inadmissible passenger, the agent of check-in should put a special service code INAD to the check-in system to form a passenger standard message and passenger information list by check-in results.

It is forbidden to give out boarding passes on the seats near emergency exits to inadmissible passengers.

The baggage of the inadmissible passenger (from flight which he has arrived) should be renewed to the new flight by agents of the serving company as the passenger cannot receive his baggage independently.

After check-in of an inadmissible passenger, all his documents (passport, boundary or immigration authorities report, air ticket, a copy of the guarantee certificate (if used)) should be passed to the captain of the aircraft.

The purser should be informed about the presence of an inadmissible passenger onboard and his seat number by boarding agent.

All INAD passengers will be boarded first being accompanied by local immigration authority's representatives

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The procedure in case the passenger is unable to cover the return fare:

- Company representative should demand of passenger to sign the receipt INAD form doc. Company representative should assist the passenger to fill up the receipt (two copies) and then transmit the receipt and passport copy to FLYONE Ground department through the captain of the aircraft and inform about such passenger/s FLYONE at e-mail avsec@flyone.eu representation@flyone.eu sales@flyone.eu with subject INAD DEBT.
- Every station is responsible to carry out the number of receipts.
- If the same passenger (debtor) further purchases the next FLYONE flight ticket, he/she also is denied of boarding, but the ticket remains unchangeable.
- INAD passengers are responsible for any expenses for food, hotel accommodation etc. incurred at the place where they are refused admission. (According to IATA RESOLUTION 701 — INADMISSIBLE PASSENGERS AND DEPORTEES).

The representative of the Airline or the staff of the designated handling company is in charge to make out an air ticket according to the internal instructions of the Airline to transport an inadmissible passenger to the country where from he has arrived or to the country which citizen he is.

In case the passenger has acquired as well a return ticket, for a later date, the Carrier shall accept to transfer this ticket for the return flight to the country where from the passenger has arrived, for the date in which he has been assigned the INAD status.

For those cases where a receipt form has not been signed by the passenger and the inadmissible passenger has been boarded on a FLYONE flight in order to be returned to the country from which he has arrived, the Handling agent/representative of the Airline is however required to inform FLYONE about such passenger/s at the e-mail addresses indicated above, by indicating the special service code assigned to the INAD passenger and by filling in all the passenger information list by check-in results.

At the moment the INAD passenger arrives in the airport of the country from which he has arrived, the passenger is required to compensate the costs incurred by FLYONE related to the return ticket issued by the Carrier.

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ANNEX 1 INAD RECEIPT



The undersigned, _____,

Owner of passport _____

Resident of _____

Has concluded the passenger transport agreement with the Air Company "FLYONE" regarding the transportation on the route _____ being refused entering into the country by the authorities of this country due to circumstances beyond of "FLYONE " control.

I declare, that I was informed that Air Company FLYONE had issued for me return ticket on the route _____

in amount of (...) euro .

I declare, to reimburse to the company expenses incurred due to my transportation at _____

Representative of AC "FLYONE "

Station _____ Signature _____ Date _____

Passenger _____ Signature _____ Date _____

1.4.9.1.2. UNACCOMPANIED OR ACCOMPANIED TRAVEL

In general, INADs travel without being accompanied. INADs need to be accompanied if:

- the INAD physically resists carriage;
- he has already been denied transportation by another airline;
- there is any sign he might endanger the safety of the flight or passengers.

For the above reasons, unaccompanied INADs may also be refused at any stage.

1.4.9.1.3. REFUSAL

If an INAD resists transportation or gives rise to the assumption that he/she will be the source of annoyance to other passengers or crew members, then only accept him/her according to the procedure for DEPA. Refuse the carriage of deportees or inadmissible passengers if they are likely to:

- involve any risk to the safety of the flight;
- involve any hazard or risk to himself, other passengers or crew members;
- cause discomfort or make himself objectionable to other passengers;
- require special assistance from ground or in-flight staff.

FLYONE SECURITY POLICIES ALLOW MAXIMUM 10 INADs PER FLIGHT

1.4.9.2. DEPORTEES

1.4.9.2.1. GENERAL

- DEPO is used to designate a deportee:
 - That was formally ordered by the authorities to leave that State.
 - Who is under arrest who has to be transported to another State for legal reasons.
 - Who has applied for asylum and is transferred to the state responsible for the application.
 - Described by the term "Dublin Convention" as reasons for transportation.
- DEPA-deportee accompanied:
 - A deportee who is escorted by security escorts during flight.
- DEPU-deportee unaccompanied:
 - A deportee who is not escorted by security escorts during flight.

The responsibility for deportees lies fully with the state(s) concerned. Deportees will be accepted for carriage only on request of an Authority and upon operating airline approval.

Assign inadmissible passengers, deportees and their escorts seats in the rear of the cabin, but not directly adjacent to exits, in accordance with operating airline policy.

1.4.9.2.2. TRAVEL DOCUMENTS

Hand the travel documents to the crew if required by the local authorities, local regulations or operating airline procedure.

1.4.9.2.3. HANDLING

Advise the crew and Pilot-in-Command of INAD, DEPA and DEPU carriage.

FLYONE SECURITY POLICIES ALLOW MAXIMUM 5 DEPA/DEPU FER FLIGHT

1.4.10. UNRULY PASSENGERS

1.4.10.1. GENERAL CONDITIONS OF PASSENGER CARRIAGE

Carriers may refuse carriage or onward carriage of any passenger for reasons of safety in order to prevent violation of any applicable law, regulations or order of any state or country to be flown from, into or over.

UNRULY PASSENGERS

No person under the influence of alcohol or drugs is allowed to enter into airplane if the safety of the airplane or its occupants is likely to be endangered and all reasonable measures have to be taken to ensure that.

Intoxicated and /or unruly passengers should not be accepted but final decision rests with the Commander.

1.4.10.2. HANDLING UNRULY PASSENGERS DURING CHECK-IN OR BOARDING

Report to the supervisor any unruly passenger behavior you observe at check-in, in the lounge, or at the boarding gate, and put baggage of such passengers on standby.

HANDLING UNRULY PASSENGERS DURING CHECK-IN OR BOARDING

Any unruly and or intoxicated passenger behavior should be reported to SCCM or captain before boarding

1.4.10.3. IF PASSENGER IS DENIED CARRIAGE

- Offload the passenger in the DCS and offload his baggage.
- Document the case in the airport or airline report, with details of the passenger's condition (e.g. intoxicated, general abuse, etc.).

1.4.10.4. IF PASSENGER IS ACCEPTED FOR TRAVEL

- Inform Pilot-in-Command and the senior cabin crew member.
- Document the case in the airport or airline report with details of the passenger's condition.
- Report the incident to the applicable departments and the onward airport.

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1.5. PASSENGER IRREGULARITIES

1.5.1. GENERAL PASSENGER IRREGULARITY GUIDELINES

The responsibility to take care about the passenger, about all arrangements in case of any irregularity lies within the duties of FLYONE representative, in case of his/her absence – station manager of handling company is responsible. In case of a code share flight, the care responsibility is of the operating carrier, unless otherwise defined in the code share agreement.

In case of irregularity, FLYONE representative and handling staff involved should provide maximum attention and assistance to the passengers, independently, weather this irregularity is related to the Carrier or not.

1.5.1.1. INFORMATION AND COMMUNICATION TO PASSENGERS

In case of a flight delay, schedule change or cancelation, passengers must be informed about the reason of the irregularity and about the estimated time of flight departure (according to the procedures described below). FLYONE representative and Handling staff should listen to passenger's questions and requests with attention and show them interest in soonest problem salving.

In general, provide immediate and accurate information at regular intervals.

- Ensure staff are briefed for consistent delivery of information.
- Provide passengers written information about their rights according to applicable regulations, upon requested or as required.
- Provide information in alternate formats to passengers with impairments.

The Representative mandatory must ensure passengers assistance according to internal company's documentation in the event of:

- Preliminary Flight Cancellation- even if all passengers has been informed by company's Call Center, The Representative should be present at the departure airport at previously designated time;
- B - Change of the Schedule; The Representative should be present at the departure airport at the scheduled previously time departure, even if all passengers has been informed by company's Call Center.

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1.5.2. DELAYS

Authorization for the flight delay is provided by the Operation Control Center of FLYONE.

The information regarding any irregularity case (flight delay, cancellation, schedule change) must be transmitted by Operation Control Center to Representative/handling office by e mail, SITATEX and by phone obligatory, follow-up information should be sent in the same manner.

If a delay is scheduled to be less than 20 minutes, the delay will not be communicated to the passengers nor be displayed.

1.5.2.1. FLYONE DELAY SUBCODES

Force majeure reasons mean reasons beyond the control of the carrier.

The following reasons are considered to be "force majeure" reasons:

- Metrological conditions (fog, ice, snows, storms etc.)
- Political instability
- Strikes (strikes within the airlines, or within essential service companies, such as airports etc)
- Air Traffic management decisions (ATC delays, slots)
- Unexpected safety shortcomings (airport related problems e.g. runway closure or limitation)

FLYONE will not cover any expenses for hotel accommodation in case of an irregularity caused by force majeure reasons

1.5.2.2. DELAY CODE DESCRIPTION

1.5.2.2.1. AIRLINE SPECIFIC

MAIN CODE	SUB CODE	MEANING OF DELAY CODE	DESCRIPTION	SOURCE (Advise on the delay)
1	AIRLINE SPECIFIC		cannot determine at the time of departure. Further explanation and new MVT needed within 120 minutes of ATD. In case of doubt contact responsible Ground Operations Manager	Handling
2	AIRLINE SPECIFIC / MEL Item related delays /		to be advised/confirmed by Flight Crew)	
	A	USE OF AIRSTARTER	Use of air starter in case of aircraft's APU is INOP. Code to be used up to 10 mins, if more time needed use code 39. Not to be used in case of air starter unit not ready on stand when required	Flight Crew, Handling
	B	Manual start of engine	Defers from regular procedure, will be advised by Flight Crew	Cockpit Crew, Handling
	C	Cargo Door manual operation	In case of aircraft's cargo door automated operation is INOP, flight crew shall open/close the cargo doors which may cause delays in off/onloading	Cockpit Crew, Handling
	D	Application of Operational (O and M) MEL procedures	Certain deferred maintenance item requires additional checks/actions (O and M) by the flight crew which may extend the time needed for departure. If such case exists Flight crew will advise the subcode. Not to be used at the first occasion of aircraft defect; in this case code 41 must be used	Cockpit Crew, Handling
3	MISSING CHECKED-IN PASSENGER			
	A	Late passenger to gate actually travelling	Passengers travelling were late at the boarding	Handling
	B	Passengers were offloaded with their bags	Missing passenger offloaded with their bags	Handling
	C	Passenger offloaded without bags	Missing passenger offloaded without bags, though initially baggage tracing was initiated	Handling

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4	PASSENGER COACHES		regardless of whether the coaches are provided by the handling agent or the airport authority	
	A	Shortage	Not enough buses (not in line with SGHA)	Handling
	B	Late	Buses were late for dis/embarkation	Handling
	C	Late Apron Crew Transport	Crew were late at the aircraft due to late apron transport despite been orderd/advised in advance. Flight crew will advise on this code	Cockpit Crew
5	WHEELCHAIRS		handling etc (for late ambulift or wheelchair use code 34D or 34E with Supplementary Info / SI remark)	Handling
6	NO GATE/STAND AVAILABLE		No gate/stand available at the airport	Handling
7	OFFLOADING OF UNRULY PASSENGER		Delays incurred due to Police attending the inbound flight which delays the outbound sector. Delays accumulated for the handling of unruly passenger including ramp return, refueling, etc. Flight crew will advise on this code	
	A	Inbound	Unruly passenger was on inbound flight which affected outbound leg as well	Cockpit Crew, Handling
	B	Outbound	Unruly passenger was on outbound flight which affected departure	Cockpit Crew, Handling
8	AIRPORT SLOT DISCREPANCIES		(e.g late airport slot allocated) FLYONE OPS will advise on this code	Handling
9	SCHEDULED GROUND TIME LESS THAN DECLARED MINIMUM GROUND TIME		In any case when scheduled Turnaround time cannot be met due to the reasons below. FLYONE OPS will advise on this code	
	A	Crew Passport control	Regular Crew passport control takes more time than needed (explanation needed from Flight Crew)	Cockpit Crew, Handling
	B	Delayed FW departures (extended ground time for night cleaning, catering change, etc..)	In case of operational decision from FLYONE OPS. FLYONE OPS will advise on this code	OPS, Cockpit Crew
	C	Insufficient Ground Time for aircraft rotation (less than 25 mins)	Scheduling discrepancy. FLYONE OPS will advise on this code	OPS, Cockpit Crew, Handling
	D	Contracted Turn Around Time is less than declared minimum	Scheduling discrepancy. FLYONE OPS will advise on this code	OPS, Handling

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10	WEB CHECK-IN	discrepancies / errors faced during check-in or boarding. Handling should advise responsible Ground operations Manager as soon as flight departed		
	A	Web boarding pass error	In case of web boarding pass error occurs	Handling
	B	Web check-in passenger excess bag	In case of several web check-in passenger(s) hand bags are charged at the gate, which cause delay	Handling

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1.5.2.2.2. PASSENGER AND BAGGAGE

MAIN CODE	SUB CODE	MEANING OF DELAY CODE	DESCRIPTION	SOURCE (Advise on the delay)
11	LATE CHECK-IN		Acceptance after deadline	Handling
12	LATE CHECK-IN		congestion in check-in area	Handling
	A	Congestion in spite of all check-in counters open	congestion in check-in area due to insufficient space available	Handling
	B	Congestion due to insufficient check-in counters open / Lack of staff	Congestion in check-in area due to insufficient check-in counters open / Lack of staff	Handling
13	CHECK-IN ERROR		Check-in error of passenger and baggage	Handling
	A	Web related check-in error	Handling should advise responsible Ground operations Manager as soon as flight departed	Handling
	B	Check-in error by handling agent	Error/fault done by handling agent's staff	Handling
14	OVERSALES		Booking error, more seats sold than available	Handling
15	BOARDING		Discrepancies during boarding	
	A	Late boarding by gate staff	Aircraft was ready for passengers but handling staff stated it later. Flight crew will advise on this code	Handling
	B	Slow boarding by gate staff	Embarkation started on time but passengers were not boarded fast enough. Slow acceptance at the gate.	handling
16	MEDICAL EMERGENCY, PASSENGER CONVENIENCE		To be used in case of medical emergency of passenger convenience caused delay. Prompt and detailed report shall be forwarded to FLYONE OPS and responsible Ground Operations Manager	
	A	Passenger medical emergency	Code to be advised by flight crew if in relation to boarded passenger. If passenger was not boarded yet handling shall advise Flight Crew	Cockpit crew, Cabin Crew, Handling
	B	Crew medical emergency	Code to be advised by flight crew	Handling
	C	Handling staff medical emergency	Handling shall advise Flight Crew	Handling

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	D	Passenger convenience	Code to be advised by flight crew if in relation to boarded passenger. If passenger was not boarded yet handling shall advise Flight Crew	Cockpit crew, Cabin Crew, Handling
	E	Press, PR events - airline	If event was organized by FLYONE. Code to be confirmed by FLYONE OPS	Handling on advice
	F	Press, PR events - airport	If event was organized by airport/handling. FLYONE OPS shall be notified of such event in advance	Cockpit crew, Handling
	G	Other	Explanation needed	Handling
18	BAGGAGE PROCESSING		applies to breakdown of airport baggage system only	
	A	Waiting for bags after baggage system breakdown	If system breakdown is temporary and bags cannot be put on baggage carts despite checkin closure was on time	Handling
	B	Late check-in closure due to baggage system breakdown	Passengers are unable to check-in due to baggage system breakdown	Handling
1.5.2.2.3. AIRCRAFT AND RAMP HANDLING				
30	LOADING/UNLOADING		Cabin Baggage	
	A	Excessive hand baggage	cabin baggage becomes hold baggage due to being outsized and baggage category changed at the gate	Handling
	B	"Delivery at Aircraft"	Baby stroller, wheelchair, items handed over at the aircraft	Handling
31	AIRCRAFT DOCUMENTATION		Late / inaccurate	
	A	Ramp supervision	Fault of ramp agent, e.g improper or lack of communication, wrong info, etc..	Handling
	B	Weight and balance by handling - loadsheet	Load sheet problems: late, improper, manual loadsheet in case of EDP system breakdown, etc..	Handling
	C	Weight and balance by handling - loading instruction	Loading instruction discrepancies: late, improper, etc..	Handling
	D	Passenger related information	List of extra services, passenger manifest, etc.. late or inaccurate which caused discrepancies on board	Handling

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	E	Repositioning of deadload for balance reasons	Improper balance position and deadload shall be repositioned	Handling
	F	Weight and balance by flight crew	Weight and balance done by flight crew in case of improper handling activity. Flight crew will advise on this code	Cockpit Crew, Handling
	G	Weather information provided by Ramp agent	Late or inaccurate (too "old", not the requested stations, etc..) Flight crew will advise on this code	Cockpit Crew, Handling
	H	Flight Plan provided by Ramp agent	Late or inaccurate (too "old", not the requested stations, etc..) Flight crew will advise on this code	Cockpit Crew, Handling
32	LOADING/UNLOADING		Hold Baggage	
	A	Lack of loading staff	Delay caused by lack of loading staff (late at the aircraft)	Handling
	B	Wrong bag count	Delay caused by handling agent's wrong bag count	Handling
	C	Not controllable e.g bulky loads	Delay caused by the uncontrollable bulky loads - e.g too many sport equipment, etc..	Handling
33	LOADING EQUIPMENT		Lack of or breakdown of ground servicing equipment, Late at the aircraft	
	A	Lack of	Delay caused by lack of loading equipment	Handling
	B	Breakdown	Delay caused by breakdown of loading equipment	Handling
	C	Late at the aircraft	Delay caused by late arrival of loading equipment to the aircraft	Handling
34	SERVICING EQUIPMENT		Lack of or breakdown of ground servicing equipment, Late at the aircraft	
	A	Steps	Delay caused by late, lack of or breakdown of steps. In case of jetbridge use 87C	Handling
	B	Water service	Delay caused by late, lack of or breakdown of water service	Handling
	C	Toilet service	Delay caused by late, lack of or breakdown of toilet service	Handling
	D	Ambulift	Delay caused by late, lack of or breakdown of ambulift	Handling
	E	Wheelchair	Delay caused by late, lack of or breakdown of manual wheelchair-moving equipment. (e.g pax manually taken to the aircraft and no special carry-on chair is available, etc..)	Handling

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	F	Repositioning of steps	In case of incorrectly positioned steps	Handling
	G	Other	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling
35	AIRCRAFT CLEANING		Code not to be used for cleaning done by the cabin crew (code 68)	
	A	Late compilation of scheduled cleaning	Delay caused by the late compilation of scheduled cleaning	Handling
	B	Extra cleaning requested due to improper initial cleaning	Extra cleaning requested by crew due to improper initial cleaning	Handling
	C	Extra cleaning requested due to other	Extra cleaning requested by crew due to sick passenger or other reason when cleaning cannot be performed with the means available on-board	Handling
36	FUELLING/DEFUELLING		Fault of fuel supplier	
	A	Lack of equipment	Delay caused by lack of fuelling equipment (tanker, steps, etc...)	Handling
	B	Breakdown	Delay caused by breakdown of fuelling equipment	Handling
	C	Late at the aircraft	Delay caused by late availability of fuel (late at the aircraft, late connection to the aircraft, etc...)	Handling
	D	New truck required	New fuel truck needed due to current one's capacity is insufficient	Handling
	E	Defuelling	In case of defueling needed due to fueller's fault	Handling
37	CATERING		late delivery or loading	
	A	Late compilation - schedule	Late compilation of scheduled delivery or loading	Handling
	B	Extra uplift	Extra uplift requested by WIZZ OPS (if crew requests code 68 shall be used)	Handling
	C	Late compilation - ground time	Late compilation of scheduled delivery or loading due to insufficient ground time	Handling

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39	TECHNICAL EQUIPMENT		lack of or breakdown of technical equipment, late at the aircraft	
	A	Pushback, towing, towbar	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling
	B	GPU	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling
	C	Air starter	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling
	D	De-icing	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling
	E	Air conditioning	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling
	F	Other	Explanation needed from Handling agent to responsible Ground Operations Manager	Handling

1.5.2.2.4. TECHNICAL AND AIRCRAFT EQUIPMENT

41	AIRCRAFT DEFECTS		Aircraft defects identified on site, always check with Flight crew and seek for their advice	Handling, Handling on advice
42	SCHEDULED MAINTENANCE, late release		Late release from scheduled maintenance, always check with Flight crew and seek for their advice. FLYONE OPS will confirm the code	
	A	Short ground time - technical	Short ground time - unable to perform the scheduled check due to planned technical ground time	OPS
	B	MX error	MX provider was unable to hand over the aircraft on time due their fault	OPS
43	NON-SCHEDULED MAINTENANCE		Special checks and/or additional works beyond normal maintenance schedule (not to be used for checks required by code 51-52 reasons). Always check with Flight crew and seek for their advice	
	A	Lack of local staff - non mx	For non-maintenance stations where staff has to be sent from other location	OPS
	B	Lack of staff - mx	Maintenance stations with lack of manpower	OPS

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44	SPARES AND MAINTENANCE EQUIPMENT		Lack of spares OR breakdown maintenance equipment. FLYONE OPS will confirm the code	
	A	Lack of spares	No spares available	OPS
	B	Lack of/breakdown of maintenance equipment	Delay caused by lack of/breakdown of maintenance equipment	OPS
	C	Late delivery of spare(s)	Spare parts were ordered but delivery was late	OPS
45	AOG SPARES TO BE CARRIED TO OTHER STATIONS		AOG spare parts to be carried to another station. FLYONE OPS will confirm the code	
	A	Late delivery to the aircraft	Delay caused by late delivery of AOG spares to the aircraft	OPS
	B	Late documentation	Delay caused by late receipt of documentation of AOG spares, which delayed the release of the aircraft back to service	OPS
	C	Incorrect documentation	Delay caused by incorrect documentation of AOG spare parts, which delayed the release of the aircraft back to service	OPS
46	AIRCRAFT CHANGE - technical		AIRCRAFT CHANGE for technical reasons only - others see 51H or 52L). FLYONE OPS will confirm the code	
	A	First recovery flight only	To be used for first recovery flight only. (after code 41-43) Any other flight concerned: see 90F	OPS

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1.5.2.2.5. DAMAGE TO AIRCRAFT

51	DAMAGE DURING FLIGHT OPERATIONS		Any damage while aircraft moves under own engine power). Always check with Flight crew and seek for their advice. FLYONE OPS will confirm the code	OPS, Handling on advice
	A	Bird strike	Damage caused by Bird strike	Cockpit Crew, Handling
	B	Lightning strike	Damage caused by Lightning strike	Cockpit Crew, Handling
	C	Hard of overweight landing	Damage caused by hard of overweight landing	Cockpit Crew, Handling
	D	Severe weather conditions / Turbulence	Damage caused by Severe weather conditions / Turbulence	Cockpit Crew, Handling
	E	Collision during taxi	Damage caused collision during taxi	Cockpit Crew, Handling
	F	FOD damage	Foreign Object Damage during taxi ('Tire') or cargo compartment contamination (Spillage)	Cockpit Crew, Handling
	G	Maintenance and/or aircraft change after damage during flight operations	Maintenance and/or aircraft change after damage during flight operations (e.g. wheel change caused by FOD during taxiing, mandatory Bird strike inspection after Bird strike)	OPS
	H	Other (explanation needed)	None of the cases above, detailed explanation needed	OPS, Cockpit Crew, Handling
52	DAMAGE DURING GROUND OPERATIONS		Any damage during ground operations when aircraft is dispatched from the ground. Detailed prompt report needed from Handling to FLYONE OPS and responsible Ground Operations Manager	Handling
	A	Collision	Collision other than taxi	Handling
	B	Push back, towing	Damage caused by pushback equipment or during push back/towing	Handling
	C	Loading equipment	Damage caused by loading equipment: belt loader, baggage truck/trolley, etc..	Handling
	D	Air bridge	Damage caused by air bridge	Handling
	E	Steps	Damage caused by steps (improper positioning, step failure, etc..)	Handling
	F	Fuel equipment	Damage caused by fuelling equipment (improper positioning, failure, etc..)	Handling
	G	Technical support equipment	Damage caused by GPU, ASU, ACU, water/waste truck, etc... other than listed above	Handling

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52	DAMAGE DURING GROUND OPERATIONS - Continued			
	H	Catering equipment	Damage caused by catering equipment, e.g. during loading/ un-loading, etc..	Handling
	I	Contamination, adverse weather	Damage caused by contamination on the stands or in compartments. Damage caused by adverse weather	Handling
	J	Maintenance and/or aircraft change after damage during ground operations	Maintenance and/or aircraft change after damage during ground operations	OPS
	K	Accidental slide deployment	Accidental escape slide deployment done by ground handling/maintenance staff. Use code 68 if done by cabin crew	Handling
	L	Other (explanation needed)	None of the cases above, detailed explanation needed	Handling
1.5.2.2.6. EDP/AUTOMATED EQUIPMENT FAILURE				
55	DEPARTURE CONTROL		Failure of Departure Control System (DCS)	
	A	Own system	FLYONE's own system failure	Handling
	B	Other system	Failure of DCS system other than provided by FLYONE	Handling
56	CARGO PREPARATION/DOCUMENTATION			
	A	Local equipment failure	In case of flight delayed due to time needed for handling special request of FLYONE - urgent COMail handling, etc.. Always check with responsible Ground Operations Manager	OPS, Handling
57	FLIGHT PLANS		In case of flight delayed due to time needed to flight plan delivered to cockpit. Always check with FLYONE OPS and Flight Crew	Cockpit Crew
	A	Local equipment failure	FLYONE's own local equipment's failure	Cockpit Crew
58	OTHER AUTOMATED EQUIPMENT FAILURE		Other automated system's failure, none of the above cases. Detailed information needed to responsible Ground Operations Manager	OPS, Cockpit Crew, Handling
59	TABLET PC, LACK OF ONBOARD DOCUMENTATION.		In case of Tablet PCs' breakdown/malfunction; OR if any airline operations' related information causes delay. Always check with Flight Crew	Cockpit Crew

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1.5.2.2.7. FLIGHT OPERATIONS AND CREWING

60	LATE DEPARTURE PROCEDURE		Delay caused by late departure procedure. Seek advice from Flight Crew	Cockpit Crew, Cabin Crew, Handling
	A	Additional briefing	Additional briefing needed for performance verification	Cockpit Crew, Cabin Crew
	B	Additional checks	Additional checks needed: e.g headcount, door, slide, etc..	Cockpit Crew, Cabin Crew
	C	Lack of space for accepted hand baggage	Passengers slow to settle/embark/disembark due to lack of space for accepted hand baggage. (e.g too many clothes of passengers at winter season)	Cockpit Crew, Cabin Crew
	D	Incorrect parking position	Pilot's fault (re-positioning of aircraft/GSE, etc... due to improper parking of the aircraft)	Handling
	E	Other (explanation needed)	None of the above cases, detailed explanation needed	Cockpit Crew, Cabin Crew, Handling
61	FLIGHT PLAN		Late compilation or change of flight documentation	OPS, Cockpit Crew
62	OPERATIONAL REQUIREMENTS		Additional operational requirements, to be advised/checked by Flight Crew	Cockpit Crew, Handling
	A	Fuel	In case of huge amounts of fuel to be uplifted. Always specify the amount of block fuel in the daily report to responsible Ground Operations Manager	Handling
	B	Load alteration	Delay caused by load alteration requested by Flight Crew or FLYONE OPS	Cockpit Crew, Handling
	C	Hot brakes	In case of brake failure. (code 2D to be used in case of brake cooling off period)	Cockpit Crew
	D	Other	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	Cockpit Crew, Handling
63	LATE CREW BOARDING		Late crew boarding for other reason than connection	Handling
	A	Flight deck (pilots)	Pilot's late boarding	Handling
	B	Full crew	Late boarding of full flight crew (cabin and cockpit)	Handling
64	FLIGHT CREW SHORTAGE		FLIGHT CREW SHORTAGE sickness, awaiting stand-by, flight time limitations, crew meals, valid visa, and health documents etc .	Cockpit Crew

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65	FLIGHT DECK CREW SPECIAL REQUEST		Flight Deck's - pilots - special request not within operational requirements	
	A	Refueling refusal - training	Must be used if headset is available for refueling and procedure is allowed but "refused" by flight crew due to training, extra briefing, etc.. Flight crews' advice needed. FLYONE OPS and responsible Ground Operations Manager shall be informed	Cockpit Crew
	B	Refueling refusal - no explanation	Must be used if headset is available for refueling and procedure is allowed but "refused" by flight crew without explanation	Handling
	C	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	Cockpit Crew, Handling
66	LATE CABIN CREW BOARDING			
	A	Crew swap, long handover of duties	Delay caused by long handover of duties and/or crew swap	Cabin Crew, Handling
	B	Security checks - training	Late security check completion due to training purposes	Cabin Crew
	C	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	Cabin Crew, Handling
67	CABIN CREW SHORTAGE		Delay caused by insufficient number of cabin crewmembers onboard. Code to be advised by Flight Crew	
	A	Awaiting stand by crew	Delay caused by awaiting stand by crew	Cabin Crew
	B	Sickness	Delay caused by (sudden) sickness of cabin crew	Cabin Crew
	C	Flight time limitations	Delay caused by Flight and Duty time limitations of cabin crew member(s)	Cabin Crew
	D	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	Cabin Crew, Handling
68	CABIN CREW ERROR OR SPECIAL REQUEST (explanation needed)		Delay caused by fault of cabin crew or special request. Explanation needed to FLYONE OPS and responsible Ground Operations Manager	Cabin Crew, Handling
69	CAPTAIN REQUEST FOR SECURITY CHECK (explanation needed)		Captain's request for extraordinary security check. Explanation needed to FLYONE OPS and responsible Ground Operations Manager	Cockpit Crew, Handling

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1.5.2.2.8. WEATHER

71	DEPARTURE STATION		Delayed caused by unfavorable weather of departure station. Code to be used when handling has been finished and the aircraft is ready for departure and waiting for weather improvement	
	A	Low visibility	Delay caused by low visibility (horizontal and/or vertical) at the departure airport.	OPS, Handling
	B	Thunderstorm	Delay caused by severe weather - thunderstorm - at the departure airport. No to be used if handling procedure was delayed due to weather (code 77).	OPS, Handling
	C	Snow, Braking action	Delay caused by snow, contamination, poor or insufficient braking action at the departure airport.	OPS, Handling
	D	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	OPS, Handling
72	DESTINATION STATION		Delayed caused by unfavorable weather of destination station	OPS, Handling
73	EN-ROUTE OR ALTERNATE		Delayed caused by unfavorable weather en- route or at an alternate airport	OPS, Handling
75	DE-ICING OF AIRCRAFT		Delay caused by the deicing of the aircraft. Removal of ice and/or snow, frost prevention. Excluding lack of/late/unserviceable equipment	
	A	Deicing progress	Deicing progress cannot be accomplished at the time of STD. Explanation needed to responsible Ground Operations Manager with proper timings	Handling
	B	Waiting for Deicing in the queue	Deicing cannot be accomplished immediately after doors closed due to number of aircrafts waiting in the queue for deicing	Cockpit Crew, Handling
	C	Late deicing	Deicing performed later than doors closed	Cockpit Crew, Handling
	D	Refilling of trucks	Delay caused by insufficient amount of deicing fluid in the deicing trucks. Refill needed	Cockpit Crew, Handling

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	E	Repeated Deicing due to expired Hold Over Time	Deicing shall be repeated due to expired Hold Over Time before departure. Code to be advised by Flight crew, Explanation needed to FLYONE OPS and responsible Ground Operations Manager.	Cockpit Crew, Handling
76	REMOVAL OF SNOW, ICE, WATER AND SAND FROM AIRPORT		Delay caused by contamination removal from airport areas	Handling
77	GROUND HANDLING IMPAIRED BY ADVERSE WEATHER CONDITIONS		Delay caused by adverse weather conditions at the departure airport	
	A	Airport / Handling limitations	Delay caused by adverse weather conditions which have limitation on airport movements and/or handling services	Handling
	B	Aircraft / Airline limitations	Delay caused by adverse weather conditions which have limitation on aircraft and/or airline performance	Cockpit Crew, Handling
1.5.2.2.9. AIR TRAFFIC FLOW MANAGEMENT RESTRICTIONS (ATFM)				
80	MISSED ATC SLOT		Delay caused by missed ATC slot. Explanation needed to FLYONE OPS and responsible Ground Operations Manager	Flight Crew, Handling
81	ATFM DUE TO ATC EN-ROUTE DEMAND/CAPACITY		Delay caused by "standard" demand/capacity problems of ATC thus Slot time allocation	
	A	Waiting for slot	Slot is after STD	Handling
	B	Too short slot	Time to "catch" CTOT is less then turnaround time. (e.g aircraft late inbound)	Cockpit Crew, Handling
	C	Slot not advised by Handling / ATC	Slot time was not told to Flight Crew	Cockpit Crew
82	ATFM DUE TO ATC STAFF/EQUIPMENT EN-ROUTE		Delay caused by Slot time allocated due to ATC staff/equipment en-route, reduced capacity by industrial action or staff shortage or equipment failure, extraordinary demand due to capacity or reduction in neighboring area	Handling
83	ATFM DUE TO RESTRICTIONS AT DESTINATION AIRPORT		Delay caused by Slot time allocated due to airport and/or runway closed due to obstruction, industrial action, staff shortage, political unrest, noise abatement, night curfew, special flights	Handling
84	ATFM DUE TO WEATHER AT DESTINATION		Delay caused by Slot time allocated due to weather conditions at destination airport	Handling

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1.5.2.2.10. AIRPORT AND GOVERNMENTAL AUTHORITIES

85	MANDATORY SECURITY		Delay caused by Mandatory security checks performed. If not, all security lanes are manned. If all lanes are manned but delays still occur due to queues then code 87D is used. NOT to be used for offloading of missing passengers	Handling
	A	Congestion at security area	Delay caused by congestion at the security area	Handling
	B	Terminal evacuation/limitation due to bomb/fire alarm	Delay caused by mandatory security checks conducted due to bomb/fire alarm	Handling
	C	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	OPS, Handling
86	IMMIGRATION, CUSTOMS, HEALTH		Delay caused by governmental services.	
	A	Immigration	Delay caused by authority needs/demands or lack of staff	Handling
	B	INAD	Delay caused by handling inadmissible passenger(s)	Handling
	C	Insufficient travel documents	Delay caused by insufficient travel documents of passengers	Handling
	D	Congestion at passport-control / boarder-police	Delay caused by crowd formed at passport control-area. Explanation needed to responsible Ground Operations Manager	Handling
	C	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager	OPS, Handling
87	AIRPORT FACILITIES		Delay caused by airport facilities: lack of/breakdown/congestion/etc.	
	A	Ramp congestion	Crowded ramp, blockage of aircraft and/or GSE movements	Handling
	B	Lightings or buildings	Delay caused by restrictions/limitations on lighting or buildings	Handling
	C	Jet bridge	Jet bridge INOP or breakdown	Handling
	D	Congestion at security area	Delay caused by congestion at security area despite all security lanes are open	Handling

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88	RESTRICTIONS AT DESTINATION AIRPORT		Delay caused by restrictions at destination airport	
	A	Airport and/or runway closure	Delay caused by airport and/or runway closure at the destination airport independently of being published or not, but known before departure	Handling
	B	Staff shortage/strike	Delay caused by staff shortage/strike at destination station	Handling
	C	Night curfew	Delay caused by night curfew at the destination station	Handling
	D	Other (explanation needed)	None of the cases above, explanation needed to FLYONE OPS and responsible Ground Operations Manager (e.g special flights, industrial action, political unrest, noise abatement, etc..)	OPS, Handling
89	RESTRICTIONS AT AIRPORT OF DEPARTURE WITH OR WITHOUT ATFM RESTRICTIONS		Delay caused by restrictions at departure airport with or without ATFM restrictions: including Air Traffic Services, start up and push back, airport and/or runway closed due to obstruction or weather (restriction due to weather in case of ATFM regulation only, else refer to code 71), industrial action, staff shortage, political unrest, noise abatement, night curfew, special flights	
	A	With ATFM restrictions	Slot time allocated for departure due to airport facilities	Handling
	B	Without ATFM restrictions	No slot time was allocated for departure, e.g taxiway limitations due to constructions	Handling
	C	Engine run-up restrictions	Engine run-up restrictions on scheduled and on-time flights. (e.g specific stands, noise abatement, etc..)	Handling

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1.5.2.2.11. REACTIONARY

91	LOAD CONNECTION		Delay caused by awaiting load from another flight (deadload, comail, etc..) explanation needed to responsible Ground Operations Manager	Handling
92	THROUGH CHECK-IN ERROR		Through check-in error of passenger and/or baggage	Handling
93	AIRCRAFT ROTATION/REACTIONARY		Late arrival of incoming aircraft from previous sector	
	A	Late departure	Late arrival to destination due to late departure from origin station	Handling
	B	ATC procedure	Late arrival due to ATC procedure during flight. To be advised by Flight Crew	Cockpit Crew, Handling
	C	Holding	Late arrival due to holding during flight. To be advised by Flight Crew	Cockpit Crew, Handling
	D	Weather	Late arrival due to weather during flight (e.g flight path modification, holding, etc..) To be advised by Flight Crew	Cockpit Crew, Handling
	E	Technical	Late arrival due to technical issues during flight, To be advised by Flight Crew	Cockpit Crew, Handling
	F	Technical, Short ground time - income	Short ground time - unable to perform the scheduled check due to late incoming of aircraft	OPS
94	CABIN CREW ROTATION		Delay caused by awaiting Cabin Crew from another flight. Use 66A if long handover procedure	Cockpit Crew, Cabin Crew, Handling
95	CREW ROTATION		Delay caused by awaiting crew from another flight (Flight Deck or entire flight crew)	
	A	Entire Crew	Entire crew late due to rotation	Cockpit Crew, Cabin Crew, Handling
	B	Flight Deck	Only Flight Deck crew late due to rotation	Cockpit Crew, Handling
96	OPERATIONS CONTROL		Delay caused by FLYONE operational decision. Re-routing, diversion, consolidation, aircraft change for reasons other than technical	
	A	Diversion	Diversion with no additional information from FLYONE OPS	OPS
	B	Aircraft change	Aircraft change due to operational reasons	OPS
	C	Diversion - operational	Diversion for operational reasons	OPS

1.5.2.2.12. MISCELLANEOUS

97	INDUSTRIAL ACTION WITHIN OWN AIRLINE		OPS, Handling
98	INDUSTRIAL ACTION OUTSIDE OWN AIRLINE		OPS, Handling
99	NOT ELSEWHERE SPECIFIED (explanation needed)	None of the delay codes/subcodes above, explanation needed to FLYONE OPS and responsible Ground Operations Manager (e.g special flights, industrial action, political unrest, noise abatement, etc..)	OPS, Handling

Note: 1 If no subcode used all reasons are applicable

Note: 2 If subcode cannot be used detailed - though - short explanation needed in MVT/LDM

Note: 3 Fastest and earliest possible reports shall be submitted where explanation shall be sent.

Note: 4 Operation related delays beyond Handling's responsibility shall be advised by Flight crew to Handling

Note: 5 Operations related delays decided by FLYONE OPS will be confirmed and adjusted by FLYONE OPS, if needed

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1.5.2.3. HANDLING PROCEDURES

- Passengers must be advised and notified of delays, and kept informed at regular intervals.
- Where applicable, provide delay notice or passenger rights information and in alternate formats for passengers with impairments.
- Brief staff on the estimated time of departure, estimated time of arrival, and any provisions being offered.

ALL PASSENGER ARE ENTITLED TO HANDLING ASSISTANCE WITH REFERENCE TO INTERNAL REGULATION Nr 836/08.11.2012 Monitorul Oficial 237-241/902 FROM 16.11.2012. AND EU Regulation (EC) No 261/2004

FLYONE will offer meals and refreshments in following irregularity cases:

- Flight cancelation
- Long delays
- Misconnections caused by FLYONE
- Irregularity due to force majeure reasons

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Irrespective of the reason of the delay meals must be offered to all passengers according to the table below, depending on the duration of the delay and time of the day.

Delay	Meals
Up to 2 hours	N/A
Up to 3 hours of delay	<i>Refreshments voucher</i> (mineral water 0,5 L per passenger); <i>Hot drink voucher</i> (cup of coffee or tea); Snack voucher
After 3 hours delay	1 <i>Meal voucher</i> per passenger (mineral water 0,5 L, cup of coffee or tea, salad, hot meal)
After 5 hours delay	1 Meal voucher per passenger (mineral water 0,5 L, cup of coffee or tea, salad, hot meal) during each 5 hours of delay after previously announced delay

Value of refreshments, hot drinks, snacks, meals depend on the local standards, but in general, it should be in the price limit of 3€ - per Refreshment voucher, 5€ -per Hot drink voucher, 10€ -per Snack voucher and 20 € - per Meal voucher.

Company's representative or handling agent should issue mentioned above vouchers drawing report sheet, indicating there kind of voucher, passenger first /family name, issue time, passenger signature. On-board meal ordered for the current flight must be offered to passengers in case of irregularity, if available.

Handling agent must always coordinate the meal voucher value with FLYONE representative or station manager (when handling provides the service), Company's representative supervises the process in such a case. If the meal price exceeds the mentioned above limits, it must be authorized by FLYONE Commercial Director or Ground Operations Manager.

When FLYONE Representative provides the service and meal price exceeds the mentioned limits, and a new price was not coordinated in Representative Contract, it must be authorized by FLYONE Commercial Director or Ground Operations Manager.

Passenger must present his /her valid ticket or boarding pass and ID in order to receive the meal voucher.

Note: At station where meal vouchers are not available, FLYONE representative or station manager must arrange the meals order and delivery, with the local catering provider.

EXCEPTION: Meals and refreshments need not to be offered if the provisions would itself cause a further delay.

Payment of voucher value to passengers in cash is forbidden.

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1.5.2.3.1. COMMUNICATIONS FACILITIES

In case of irregularities, communication facilities can be offered to all passengers, regardless of class of service, if available.

FLYONE Communications Facilities include:

- Phone calls (2 calls per passenger)
- E-mail service (2 e-mail per passenger)
- Every possible social media service.

1.5.2.3.2. HOTEL ACCOMMODATION

FLYONE will offer hotel accommodation and transportation free of charge in all irregularity cases, except force majeure reasons, being authorized by the carrier's representative. A passenger is affected by one of the following irregularity cases:

FLYONE HOTAC GUIDELINES

- Denied boarding due to Overbooking
- Long delays
- Flight cancellations
- Misconnection provided by FLYONE

The hotel accommodation must be offered if delay exceeds 8 hours (day or night) to all passengers.

In case a schedule change is announced less than one week before the new schedule time, FLYONE will not offer HOTAC.

Transportation to/from the hotel and appropriate meals (according to agreement with the hotel) are included in the hotel accommodation.

FLYONE representative, or handling company are responsible to make pre-arrangements and to book the hotels and inform the hotel administrator before sending a large number of passengers.

1.5.2.4. DELAY KNOWN BEFORE CHECK-IN

- Update revised times in the DCS.
- If applicable and as per operating airline policy, rebook any connecting flights according to the airline's priority sequence.
- Check the passenger and baggage through on the rebooked flight.

1.5.2.5. DELAY KNOWN BEFORE BOARDING

- Reconfirm the departure gate and time, and update the revised times in the DCS.
- Advise passengers accordingly and at regular intervals.
- Apply airline specific procedures for certain categories of passengers. (INAD, DEPA)

1.5.3. MISCONNECTIONS/CANCELLATIONS/DIVERSIONS

Handle misconnections in accordance with the operating airline's General Conditions of Carriage.

Term	Definition
Misconnection	Situation when a passenger is unable to use reserved accommodation out of a connection point due to late arrival or cancellation of the delivering flight.
Forwarding member	The member and/or non-IATA carriers responsible for the condition, which creates a need for involuntary change in the passenger's journey.
Original receiving member	The member on whose flight a passenger is originally ticketed to be carried from a connection point.
New receiving carrier	A new carrying member or non-IATA air carrier or surface transportation carrier selected for onward carriage by the forwarding member from the point where an involuntary change becomes necessary.

If known in advance, FLYONE Help Desk, and Call center office in Romania, company's representative should take all necessary steps to inform the passengers about cancellation and the planned solutions (rebooking or rerouting variants) by phone in coordination with, or done by the reservation department.

FLYONE will provide all specified assistance in term of misconnection only acting as Forwarding and receiving carrier

Example:

- Passengers flying on route RMO – OTP –TLV (OE operating all route)
- If RMO – OTP has been delayed, passengers are in entitled to receive HOTAC, and all care package related to delays.

Rebooking/ Rerouting of passengers

- Hotel accommodation and transportation
- Meals and refreshments
- Communication facilities

In case of a **Flight cancellation** the assistance to the passengers must be arranged by company's representative or handling agent in accordance with FLYONE regulations.

The following actions and solutions are to be taken by the representative and handling staff:

In Case of Flight cancellation please take the following steps:

- Rebooking/ Rerouting of passengers
 - Hotel accommodation and transportation
 - Meals and refreshments
- Communication facilities

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1.5.3.1. FLIGHT /DIVERSIONS

In case of flight diversion due to force majeure or meteo condition, Cabin Crew is in charge to coordinate provided assistance to passengers who are staying on board.

In case of all passengers will be debarked designated handling company will take over on passengers' assistance coordinating requested assistance with Ground Operation department and FLYONE OCC.

In case of Flight diversion ALL passengers have to continue their commencement journey no matter how long they were forced to wait on diverted airport.

1.5.4. INVOLUNTARY CHANGE OF ROUTE AND TICKET REFUND

Involuntary changes of route must be handled as per the operating airline policy, **ONLY and STRICTLY on FLYONE operating destinations**

FLYONE will offer rebooking/rerouting free of charge in the following cases:

- Delay/ Misconnection caused by the carrier
- Schedule change
- Denied boarding
- Cancellation
- Diversion.

All FLYONE passengers are entitled to receive full ticket reimbursement due to flight long delay, cancelation or change of the schedule.

Application to receive full ticket refund shall be submitted to the office where passengers bought ticket, or directly to [foe.helpdesk@flyone.eu](mailto:helpdesk@flyone.eu) in case of direct site purchase.

Whenever of the way of ticket purchase (on line or at agency) all involuntary ticket refund shall be processed within 30 days from the receiving such request.

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1.5.5. DENIED BOARDING DUE TO UNAVAILABILITY OF SEATS

1.5.5.1. GENERAL

Passengers holding a confirmed reservation may be denied boarding due to irregularity reasons, for example:

- overbooking of the flight;
- reduced aircraft seating capacity due to unserviceable equipment (cabin doors, slides, etc.);
- reduced weight/seat capacity due to a payload restriction;
- change of aircraft or version.

1.5.5.2. OVERBOOKING OF THE FLIGHT. GENERAL POLICY

In order to optimize the load factor of the flights by minimizing the effect of no-show passengers, airlines may overbook their flights to a certain extent.

This is an accepted and common practice within the airline industry.

Regulation (EC) No 261/2004 of the European Parliament and Moldovan Governmental Decree HG Nr. 836 of 08.11.2012 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights ("the Denied Boarding Regulation")

Denied Boarding Compensation DBC is the financial compensation paid to passengers in case of denied boarding.

Passengers, who cannot be accommodated on an FLYONE flight, qualify for denied boarding compensation (DBC), if they hold a valid ticket with a confirmed reservation for the flight concerned and has presented themselves for check-in within the check-in dead-line, and be in possession of the necessary travel documents, according to the General Conditions of Carriage.

DBC is not applicable:

- If the flight cannot be operated as scheduled for reasons beyond the control of FLYONE (e.g. due to weather conditions, strike etc.).
- If boarding is denied because government has requisitioned all or part of the aircraft capacity.
- If the passenger holds a reduced fare not available to the general public or a nonrevenue ticket (i.e. ID, AD, DM, RDM etc).
- If the passengers are denied boarding because of reasons described in chapter "Denied due to passenger condition"

Categories of passengers who do not qualify for DBC and they never should be off-loaded.

- VIPs, CIPs
- Special categories of passengers such as UMs, passengers with reduced mobility, INADs, deportees.
- Families with children, infants
- Elderly persons
- Passengers with restricted immigration documents (e.g. one-entry visa)
- Transfer passengers

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1.5.5.3. VOLUNTARY DENIED BOARDING POLICY, HANDLING PROCEDURE

In case a flight is overbooked and denied boarding is expected, the search for volunteers is mandatory.

Before refusing boarding to any passenger, FLYONE Representative or its handling agent may call for volunteers not to board such flight, starting from the moment of check-in opening.

A volunteer is a passenger giving up his/her seat in exchange for Care Package under conditions agreed between the passenger concerned and FLYONE.

Voluntary denied boarding handling procedure:

1.5.5.3.1. I -Call For Volunteer not to board the flight.

Volunteers must be individually contacted, not through a public address system.

Dear Passenger,
FLYONE Company, offer you care benefits in exchange for your seat on today flight,
In exchange for your seat, you can receive:

Care Package 1 Passenger don't need HOTAC

- Free Rebooking on FLYONE flights during the 7 days margin or Free Rerouting to any destination operated by FLYONE during the 7 days margin.
- Denied boarding compensation at value of 75 euro or MCO on the value of 1 FOE ONE WAY ticket (STANDARD fare brand) with validity of 1 year from the date of issuance. Has to be exchanged on ticket through FOE Customer Service in OTP
- If passenger holds return ticket, then the return date can be changed during the 7 days margin or return point of departure can be changed on any of destination operated by FLYONE.
- Reconciliation has to be signed between passenger and carrier

Passenger need HOTAC

- Free Rebooking on FLYONE flights during the 24 hours margin or Free Rerouting to any destination operated by FLYONE during the 24 hours margin.
- If rebooking on FLYONE flights due to limited number of frequencies on the route is impossible, then A is ignored and free rebooking on the following FLYONE flight on the initial route is applied.
- If passenger holds return ticket, then the return date can be changed during the 24 hours margin or return point of departure can be changed on any of destination operated by FLYONE.
- Hotel Accommodation (including hotel/airport and v.v. transfer) with one meal per 12 hours menu on the period of stay is offered by FLYONE
- Denied boarding compensation at value of 75 euro or MCO on the value of 1 FOE ONE WAY ticket (STANDARD fare brand) with validity of 1 year from the date of issuance. Has to be exchange on tkt. through FOE Customer Service in OTP
- Reconciliation has to be signed between passenger and carrier

Or

Care Package 2

- New ticket on other airline bought by FLYONE (initial ticket of pax considered no show and non-refundable in spite of Fare rules). For pax holding return ticket on FOE and accepted this Care package.
- Hotel Accommodation (including hotel/airport and v.v. transfer) with 1 meal is offered by FLYONE
- Reconciliation has to be signed between passenger and carrier

If passenger will accept to use service of another airline using free ticket bought by FLYONE then case is considered as VOLUNTRAY DENIED BOARDING PASSENGER and Reconciliation agreement between FLYONE and this Passenger has to be signed.

If a passenger accepts the conditions already at check-in desk, proceed as follows:

- Check them in the system on stand by, and add the remark 'DBV'- denied boarding voluntary or 'DBI'- denied boarding involuntary (if it is the case).
- Check-in the baggage on waiting list/stand by positions according to locally defined procedure.

The baggage will not be loaded. Ramp handling personnel must be informed immediately regarding passenger's name and tag number.

- Send the volunteers to the gate

If the seat is needed, then offload the volunteer in the DCS / check-in system in use. If the seat is not needed, accept the passenger from the stand by and issue a new boarding pass.

1.5.5.3.2. II - Issue Voluntary Denied Boarding Reference

If passengers agreed to receive care Benefits Handling Agent shall issue passenger Voluntary Denied Boarding Reference, based on which passenger will receive assistance at FLYONE customer service counter at base airport LROP.

1.5.5.3.3. III -Ensure Customer Service Delivery.

Is it the Representative's main obligation stated to ensure delivery and make arrangements of all agreed care benefits;

Free Rebooking during the 24 hours margin;

Arrange for Rebooking with FLYONE Helpdesk and Sales providing new itinerary for passenger;

Free Rerouting to any destination operated by FLYONE - Arrange for Rebooking with FLYONE Helpdesk and Sales and providing new itinerary for passenger;

Free Rerouting on other carrier - Arrange for ticket issue with FLYONE Sales OTP providing new itinerary for passenger; In this case Representative on duty shall make a written order for ticket issue to avia@sanair.md /sales.kiv@flyone.eu copy to representation@flyone.eu as per bellow:

Subject: DBI Rerouting enquire

Dear ALL,

Please provide rerouting on flight to XXXX destination for passenger YYYYYY (ETK. number) due to Involuntary Denied Boarding on flight FOE 125 from 07 October. 2017

SI: The total amount for ticket on other carrier shall not prevail 250 EURO.

The cost of the tickets prevailing 250 euro shall be authorized by Commercial Director.

Free Hotel accommodation on stay period, with transfer to/from Hotel -Arrange for HOTAC reservation and transfer to/from hotel providing to the passenger's information regarding hotel.

Financial compensation DBC -Arrange for the DBC voucher issue.

Financial Compensation DBC for volunteers

The following financial compensation can be offered for volunteers:

- 75 EURO
- 1(one) FOE ONE WAY ticket (STANDARD fare brand) with validity of 1 year from the date of issuance.

The Representative or Handling Agent must ensure that the passengers once denied boarding are not affected again from denial of boarding on the next flight or on the rerouted flights

In case of passengers once denied boarding accept to receive all benefits offered by Care Packages, FLYONE representative or handling agent must insert relevant CKIN SSR into DCS, or any other used Departure Control System by Handling Agent as below:

Pax. From OVB .FOE*** check-in/ free of charge

1.5.5.4. INVOLUNTARY DENIED BOARDING POLICY, HANDLING PROCEDURE

However, in exceptional cases of overbooking it may happen that passengers are denied boarding for their booked flight.

Passengers who are denied boarding on a scheduled flight are entitled to compensation. In order to qualify, such passengers must be in possession of a valid ticket with confirmed reservation for the particular flight shown on what ticket.

They must also have presented themselves for check in within the stipulated time limits and be in possession of the necessary travel documents, according to the General Conditions of Carriage.

In case a passenger is denied boarding involuntary, the passenger will be offered the following:

- Written confirmation that passenger has a status involuntary denied boarding. (on passenger request)
- Free Rebooking on FLYONE flights during the 7 days margin or Free Rerouting to any destination operated by FLYONE during the 7 days margin.

OR

- New ticket on other airline bought by FLYONE (initial ticket of pax considered no show and non-refundable in spite of Fare rules).
- Hotel Accommodation (including hotel/airport and v.v. transfer) with 1 meal on the period of stay is offered by FLYONE
- Meals and refreshments according pct 1.5.1.2 on the period of stay at airport.
- Two phone calls free of charge and e-mail message access is offered by FLYONE

Note: If Involuntary Denied Boarding passenger accepts to be rebooked or rerouted on FOE flights, and receive DBC compensation at value of 75 euro or MCO on the value of 1 FOE ONE WAY ticket (STANDARD fare brand) with validity of 1 year from the date of issuance, then case is considered as VOLUNTRAY DENIED BOARDING PASSENGER and Reconciliation agreement between FLYONE and this Passenger shall to be signed.

Or

- Full Refund

In order to receive full refund for the ticket, Passenger shall provide to issuing office FLYONE 's Write Notification.

Note: No DBC is offered in case of full refund of the ticket.

DBC voucher issue procedure:

- DBC Voucher issues is possible only by FOE Designated Representative

Payment can be made as described below:

Bank transfer	The requirements of the Accounting Department for the transfer of compensation - documents required for payment by bank transfer and for payment of cash compensation. 1. Written request for reimbursement, with passenger's original signature. 2. Copy of the ID card and the original ID card when the beneficiary presents himself. 3. Copy the flight ticket. 4. Proof of payment in original (check – for cash payment at an agency / QIWI receipt, bank statement with stamp – for card payment). 5. Banking requisites in case of reimbursement by card or settlement account. 6. Report – issued by FLYONE's Claims Service. 8. Reimbursement order - Signed by General Director. 9. Copy of the receipt of reconciliation signed by the passenger.

ANNEX Denied Boarding Reconciliation

Receipt of Conciliation

The undersigned, _____ date of birth _____, identified by passport Nr. _____, passenger of the flight _____ OE-_____ operated by the Carrier FLYONE on _____, hereby declare that I do not currently have and will not submit in the future any claims and complaints to FLYONE as a result of the Denied Boarding to which I have been subject to regarding the flight OE-_____.

I hereby confirm that the remedies offered to me by FLYONE in form of _____ fully compensate the inconveniences incurred by me and this letter represents the conciliation transaction between me and the Carrier FLYONE.

Passenger (First, Second Name) _____ Date _____ Signature _____

Representative of FLYONE: Station _____ Date _____ Signature _____

ANNEX Denied Boarding Compensation Voucher

Denied Boarding Compensation Voucher

Denied Boarding Voucher	
Flight Number _____	
Passenger Name _____	
Electronic Ticket number _____	
Denied Boarding Compensation	
FOE ONE WAY ticket (STANDARD fare brand) _____	
Issue Station _____	
Passenger Signature _____ FLYONE Representative signature _____	
Date _____	
FOE DBC 00001	

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2. BAGGAGE HANDLING PROCEDURES

2.1. CABIN BAGGAGE

2.1.1. GENERAL

2.1.1.1. DEFINITION

Cabin baggage is baggage that is carried and stowed in the cabin under the passengers control and custody. It is commonly referred to as carry-on baggage or unchecked baggage.

FLYONE sets its standards for size, weight and number of pieces permitted as baggage.

DEFINITION

Cabin baggage is baggage that is carried and stowed in the cabin under the passenger's control and custody. It is commonly referred to as carry-on baggage or unchecked baggage.

It is restricted to only one piece of hand luggage (briefcase, attaché or board case or handbag).

The outside dimensions of any piece of cabin baggage must not exceed 50 x 40 x 25 cm and weight must not exceed 8 kg.

Animals other than Guide Dogs do not come under free baggage allowance.

2.1.1.2. TYPES OF CABIN BAGGAGE

Cabin baggage includes:

- cabin baggage carried within the operator's free carry-on baggage allowance;
- free carry-on items permitted by the operator in addition to the standard (e.g. purse, laptop, duty free item);
- special items permitted by the operator that may require prior arrangement, notification and/or specialized screening requirements or additional charges (e.g. urns containing human remains, pets in cabin);
- Items of dangerous goods permitted in passenger baggage that require prior approval by the operator, according to the IATA Dangerous Goods Regulations (IATA DGR).

Item	Applicable to
• 1 overcoat, wrap or blanket. • 1 umbrella or walking stick. • 1 small ladies handbag or 1 small briefcase (including slimline laptop bags) • A reasonable amount of reading material • 1 small camera or binoculars	All passengers except infants.

2.1.2. ACCEPTANCE

2.1.2.1. ACCEPTANCE POLICIES

Cabin baggage cannot be accepted if it:

- is unsuitable for air carriage due to its weight, size or nature;
- cannot fit under the seat or be stowed in the overhead compartment;
- is unsuitably packed;

Restrictions:

- certain items, because of their weight, size or nature are only accepted with the consent of the operator;
- for security reasons, many countries restrict the carriage of liquids, aerosols and gels in hand baggage;
- Items refused by security screening must be hold-checked as per the operator's policy.

According to IATA Dangerous Goods Regulations (IATA DGR), certain items are prohibited in checked baggage, e.g. cigarette lighters, matches, spare lithium batteries

2.1.2.2. PROVISIONS FOR DG FOR PASSENGERS AND CREW

Dangerous goods must not be carried in or as passengers or crew, checked or carry-on baggage, except as otherwise provided below. Dangerous goods permitted in carry-on baggage are also permitted "on one's person", except where otherwise specified.

The pilot-in-command must be informed of the locator				
Permitted in or as carry-on baggage				
Permitted in or as checked baggage				
The approval of the operator is required				
Alcoholic beverages, when in retail packagings, containing more than 24% but not more than 70% alcohol by volume, in receptacles not exceeding 5 L, with a total net quantity per person of 5 L.	NO	YES	YES	NO
Ammunition, securely packaged (in Div. 1.4S, UN 0012 or UN 0014 only), in quantities not exceeding 5 kg gross weight per person for that person's own use. Allowances for more than one person must not be combined into one or more packages.	YES	YES	NO	NO
Avalanche rescue backpack, one (1) per person, containing a cartridge of compressed gas in Div. 2.2. May also be equipped with a pyrotechnic trigger mechanism containing no more than 200 mg net of Div. 1.4S. The backpack must be packed in such a manner that it cannot be accidentally activated. The airbags within the backpacks must be fitted with pressure relief valves.	YES	YES	YES	NO
Baggage with installed lithium batteries non-removable batteries exceeding-0.3 g lithium metal or 2.7 Wh.	FORBIDDEN			
Baggage with installed lithium batteries	NO	YES	YES	NO
- non-removable batteries. Batteries must contain no more than 0.3 g lithium metal or for lithium ion must not exceed 2.7 Wh;				
- removable batteries. Batteries must be removed if baggage is to be checked in. Removed batteries must be carried in the cabin.				
Batteries, spare/loose, including lithium metal or lithium ion cells or batteries, for portable electronic devices must be carried in carry-on baggage only. For lithium metal batteries the lithium metal content must not exceed 2 g and for lithium ion batteries the Watt-hour rating must not exceed 100 Wh. Articles which have the primary purpose as a power source, e.g. power banks are considered as spare batteries. These batteries must be individually protected to prevent short circuits. Each person is limited to a maximum of 20 spare batteries.	NO*	NO	YES	NO
* The operator may approve the carriage of more than 20 batteries.				
Camping stoves and fuel containers that have contained a flammable liquid fuel, with empty fuel tank and/or fuel container (see 2.3.2.5 for details).	YES	YES	NO	NO
Chemical Agent Monitoring Equipment, when carried by staff members of the Organization for the Prohibition of Chemical Weapons on official travel (see 2.3.4.4).	YES	YES	YES	NO
Disabling devices such as mace, pepper spray, etc. containing an irritant or incapacitating substance are forbidden on the person, in checked and carry-on baggage.		FORBIDDEN		
Dry ice (carbon dioxide, solid), in quantities not exceeding 2.5 kg per person when used to pack perishables not subject to these Regulations in checked or carry-on baggage, provided the baggage (package) permits the release of carbon dioxide gas. Checked baggage must be marked "dry ice" or "carbon dioxide, solid" and with the net weight of dry ice or an indication that there is 2.5 kg or less dry ice.	YES	YES	YES	NO
e-cigarettes (including e-cigars, e-pipes, other personal vaporizers) containing batteries must be individually protected to prevent accidental activation.	NO	NO	YES	NO
Electro shock weapons (e.g. Tasers) containing dangerous goods such as explosives, compressed gases, lithium batteries, etc. are forbidden in carry-on baggage or checked baggage or on the person.		FORBIDDEN		
Fuel cells containing fuel, powering portable electronic devices (e.g. cameras, cellular phones, laptop computers and camcorders), see 2.3.5.10 for details.	NO	NO	YES	NO
Fuel cell cartridges, spare for portable electronic devices, see 2.3.5.10 for details.	NO	YES	YES	NO
Gas cartridges, small, non-flammable containing carbon dioxide or other suitable gas in Division 2.2. Up to two (2) small cartridges fitted into a self-inflating safety device such as a life jacket or vest. Not more than one (1) device per passenger and up to two (2) spare small cartridges per person, not more than four (4) cartridges up to 50 mL water capacity for other devices (see 2.3.4.2).	YES	YES	YES	NO
Gas cylinders, non-flammable, non-toxic worn for the operation of mechanical limbs Also, spare cylinders of a similar size if required to ensure an adequate supply for the duration of the journey.	NO	YES	YES	NO

The pilot-in-command must be informed of the location				
Permitted in or as carry-on baggage				
Permitted in or as checked baggage				
The approval of the operator is required				
Hair curlers containing hydrocarbon gas, up to one (1) per passenger or crew-member, provided that the safety cover is securely fitted over the heating element. These hair curlers must not be used on board the aircraft at any time. Gas refills for such curlers are not permitted in checked or carry-on baggage.	NO	YES	YES	NO
Heat producing articles such as underwater torches (diving lamps) and soldering irons (See 2.3.4.6 for details).	YES	YES	YES	NO
Insulated packagings containing refrigerated liquid nitrogen (dry shipper), fully absorbed in a porous material containing only non-dangerous goods.	NO	YES	YES	NO
Internal combustion or fuel cell engines, must meet A70 (see 2,3,5.15 for details).	NO	YES	NO	NO
Lithium Batteries: Security-type equipment containing lithium batteries (see 2 3 2 6 for details).	YES	YES	NO	NO
Lithium Batteries: Portable electronic devices (PED) containing lithium metal or lithium ion cells or batteries, including medical devices such as portable oxygen concentrators (POC) and consumer electronics such as cameras, mobile phones, laptops and tablets, when carried by passengers or crew for personal use (see 2.3.5.9). For lithium metal batteries the lithium metal content must not exceed 2 g and for lithium ion batteries the Watt-hour rating must not exceed 100 Wh. Devices in checked baggage must be completely switched off and must be protected from damage. Each person is limited to a maximum of 15 PED. Baggage equipped with a lithium battery, other than lithium button cells, the battery must be removable. If offered as checked baggage the battery must be removed and carried in the cabin.	NO *	YES	YES	NO
"The operator may approve the carriage of more than 15 PED.				
Lithium batteries, spare/loose. including power banks see Batteries, spare/loose				
Lithium battery-powered electronic devices. Lithium ion batteries for portable (including medical) electronic devices, a Wh rating exceeding 100 Wh but not exceeding 160 Wh. For portable medical electronic devices only, lithium metal batteries with a lithium metal content exceeding 2 g but not exceeding 8 g. Devices in checked baggage must be completely switched off and must be protected from damage.	YES	YES	YES	NO
Lithium batteries, spare/loose with a Watt-hour rating exceeding 100 Wh but not exceeding 160 Wh for consumer electronic devices and PMED or with a lithium metal content exceeding 2 g but not exceeding 8 g for PMED only. Maximum of two spare batteries in carry-on baggage only. These batteries must be individually protected to prevent short circuits.	YES	NO	YES	NO
Matches, safety (one small packet) or a small cigarette lighter that does not contain unabsorbed liquid	NO	ON PERSON	ONE'S	NO
fuel, other than liquefied gas, intended for use by an individual when carried on the person. Lighter fuel and lighter refills are not permitted on one's person or in checked or carry-on baggage.				
Note "Strike anywhere" matches. "Blue flame" or Cigar" lighters or lighters powered by a lithium battery without a safety cap or means of protection against unintentional activation are forbidden.				
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with non-spillable wet batteries or with batteries which comply with Special Provision A123 or A199, (see 2.3 2.2).	YES	YES	NO	YES
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with spillable batteries or with lithium batteries (see 2.3.2.3 and 2.3.2.4 for details).	YES	YES	NO	YES
Non-radioactive medicinal or toiletry articles (including aerosols) such as hair sprays, perfumes, colognes and medicines containing alcohol; and	NO	YES	YES	NO
Non-flammable, non-toxic aerosols in Division 2.2 with no subsidiary hazard, for sporting or home use.	NO	YES	NO	NO
The total net quantity of non-radioactive medicinal or toiletry articles and non-flammable, non-toxic aerosols in Division 2.2 must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents.				
Oxygen or air, gaseous, cylinders required for medical use The cylinder must not exceed 5 kg gross weight.	YES	YES	YES	YES
Note: Liquid oxygen systems are forbidden for transport. Permeation devices, must meet A41 (see 2.3.5.16 for details).	NO	YES	NO	NO

The pilot-in-command must be informed of the location				
Permitted in or as carry-on baggage				
Permitted in or as checked baggage				
The approval of the operator is required				
Portable electronic devices containing non-spillable batteries, batteries must meet A67 and must be 12 V or less and 100 Wh or less. A maximum of 2 spare batteries may be carried (see 2.3.5.13 for details).	NO	YES	YES	NO
Radioisotopic cardiac pacemakers or other devices, including those powered by lithium batteries, implanted into a person or fitted externally.	NO	ON PERSON	ONE'S	NO
Security-type attache cases, cash boxes, cash bags, etc. incorporating dangerous goods, such as lithium batteries and/or pyrotechnic material, except as provided in 2.3.2 6 are totally forbidden. See entry in 4.2-List of Dangerous Goods.		FORBIDDEN		
Specimens, non-infectious packed with small quantities of flammable liquid, must meet A180 (see 2.3.5.14 for details).	NO	YES	YES	NO
Thermometer, medical or clinical, which contains mercury, one (1) per person for personal use, when in its protective case.	NO	YES	NO	NO
Thermometer or barometer, mercury filled carried by a representative of a government weather bureau or similar official agency (see 2.3.3.1 for details).	YES	NO	YES	YES

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2.1.2.3. PROCEDURE AT CHECK-IN

Assess the size, weight and intended number of pieces of carry-on baggage to meet the operator's standard.

- Weigh carry-on bags if they appear to exceed the specified weight/size limit (weighing of all carry-on baggage may not be systematically required unless mandated by the operator).
- Refer the passenger to the baggage gauge, if available.
- Attached an "approved for carry-on" tag .
- If the carry-on baggage exceeds the free allowance size and/or weight, it must be hold-checked, and charged accordingly
- Be aware of commonly carried dangerous goods items and ask the passenger when there is suspicion of these being carried.

PROCEDURE AT BOARDING

Check for items which are unacceptable, oversized, overweight or exceed the number of pieces as free carry-on baggage, using the cabin baggage gauge .

- Check with the passenger that the baggage contents are in compliance with the IATA DGR. Have the passenger remove any items specifically prohibited in hold baggage.
- Advise the passenger to remove any personal documents or medications.
- Collect any other cabin baggage that cannot be accommodated on board due to limited storage space, that are subject to the gate fee in accordance to the baggage rules.
- Tag bag to the final destination.
- Inform the passenger of pick up at the baggage claim area or aircraft door (DAA) if applicable.
- Advise ramp staff and/or Load Control of the gate baggage to be loaded.

At the boarding gate handling agents mandatory have to check the numbers of carry-on bags.

FLYONE allow free of charge transportations of only one 1PC of carry-on baggage, all others luggage identified during boarding are subject to the additional gate bag fee.

Such baggage must be properly checked- in with appropriate Limited Release Tag.

Transportation of the cabin baggage will be rigorous checked and monitored; thus each bag that will not contain Cabin Baggage label, will be submitted for payment to the handling company in charge with.

The presence of hand luggage which is contrary to the rules of transportation, and has no proper Cabin Baggage tag , will be checked on board by FLYONE's cabin crew, all comments will be noted in the Cabin Baggage Check-list ,one copy of which will be signed and send to the appropriate services by ramp agent.

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2.2. CHECKED BAGGAGE

2.2.1. GENERAL

2.2.1.1. DEFINITION AND GENERAL TERMS.

Checked baggage is baggage for which the carrier takes custody and issues a baggage check.

- Checked baggage is carried in the hold of the aircraft on which the passenger is travelling.
- The operator may refuse to carry checked baggage which is inadequately packed or unsuitable for air carriage due to its weight, size or nature.
- Every piece of baggage must display the passenger's name.
- In case of code share flights, the operator's rules apply.

Note: Certain items, because of their weight, size or nature, are only accepted with consent of the operator.

DEFINITION AND GENERAL TERMS

All below mentioned articles have to be refused for transportation except a previous permission is given by FLYONE:

- Unaccompanied baggage (except lost & found);
- Articles unsuitable for carriage due to their size, weight and characteristics
- Any other type of article which is likely to endanger the aircraft or property which will probably be damaged by air transportation
- Arms and ammunitions,

Transportation of arms is regulated by IATA Resolution 745a, national applicable regulations and FLYONE Aviation Security Programme.

Transportation of arms and ammunition, sports arms by passengers and crew members is forbidden on FLYONE flights, except described below:

Transportation of the arms is allowed only for the following categories of passengers: bodyguards, escorts and law enforcement officers, who perform their duty of service in order to:

- assure the security of the state officials
- accompany the special cargo and diplomatic cargo/mail
- escort a person under arrest

2.2.1.2. CHECKED BAGGAGE ALLOWANCE

Passengers (child, adult and infant) are entitled to a pre-determined checked baggage allowance set by the operator, which can vary based on the fare paid, passenger category, routing, group status or class.

For FLYONE flights the following checked baggage allowance shall apply, take into consideration three fare tickets booking class.

- ADVANTAGE
- LOYAL
- STANDARD.
- LIGHT

Checked baggage allowance for INFANTS is subject to the special rules.

On FLYONE flight Infants are entitled for carriage free of charge 1 piece max. 10kg/115cm + 1 folding pushchair +baby stroller

For ADVANTAGE ticket's Fares, following charges and rules should be applied:

- <https://flyone.eu/en/How-to-book/Fare-Families>

For LOYAL ticket's Fares, following charges and rules should be applied:

- <https://flyone.eu/en/How-to-book/Fare-Families>

For STANDARD ticket's Fares, following charges and rules should be applied:

- <https://flyone.eu/en/How-to-book/Fare-Families>

For LIGHT ticket's Fares, following charges and rules should be applied:

- <https://flyone.eu/en/How-to-book/Fare-Families>

Fares, Rules and Charges posted on web site shall always prevail.

2.2.2. EXCESS BAGGAGE

Excess baggage fees per kilogram or piece or special item are generally applied at the time of ticket booking, at the authorized agencies or at the airport during check-in.

- Apply excess baggage fees as per operator's specifications.
- Rules and fees posted on company web site www.flyone.eu shall prevail when differences occurs between GOM and on site information.

AUTHORIZATION OF FREE EXCESS BAGGAGE

Under special circumstances, FLYONE Head of Ground Operation Department or Airline representative is entitled to allow excess baggage free of charge on FLYONE flights.

The authorization must be entered by the handling agent in the passenger's record in ASTRA DCS check-in system as "PSM " element (or other similar element for a different check-in system) that will reflect this information in the printed Passenger Manifest but it will not be reflected in the PSM message dispatched after the flight departure:

Relevant e-mails confirmation should be write to representation@flyone.eu with subject: Free bag. Transportation.

2.2.3. STANDARD BAGGAGE CHECK-IN

Accept checked baggage that is appropriately packaged and labeled with passenger identification.

- Ensure dangerous goods signage is on display.
- Review weight and pieces information for recording in the DCS and for applying appropriate fees.
- If applicable, ask the passenger any required security related questions.
- Agent should be aware of items due to their nature that might contain dangerous goods. Refer to section 2.5.7.

Baggage rules for interline travel

For interline journeys involving travel on other carriers flights in the ticket, the MSC (Most Significant Carrier) baggage rules (Free Baggage Allowance and Excess Baggage Charges) will apply.

MSC (Most Significant Carrier) rule

If the geographically longest or most significant stretch of your journey is not operated by FLYONE, but by another airline, this airline's rules may also apply to FLYONE flights or FLYONE flight numbers.

If FLYONE operates the geographically longest or most significant stretch of the journey, then the FLYONE's rules and charges will apply.

If the MSC does not publish baggage provisions for the journey concerned apply the published baggage provisions of the carrier accepting the baggage at check-in.

If the carrier accepting the baggage at check-in does not publish baggage provisions for the interline journey concerned apply the published baggage provisions of each operating airline sector-by-sector.

2.2.4. BAGGAGE TAGS

- All old tags must be removed.
- Apply appropriate destination tag and handling tags.
- Place tags in an easily readable location, and where they will not easily be torn off.
- Follow tag instructions, and do not stick glue directly to passenger baggage.
- Use limited release tags as per operator policy.
- Follow operator procedure with respect to supplementary tags on baggage items, such as:
 - Priority tags—to identify Priority baggage to be offloaded first, and segregated as per carrier.
 - Limited Release Tags—used on fragile or unsuitably packaged items.
 - Fragile Sticker—requires extra care in handling.
 - Heavy Tag—placed on items over 23 kg (50 lb).
 - Connection tags—may require segregation on loading and offloading.

2.2.5. BAGGAGE DESTINATION

Through-label baggage to one of the following points, whichever occurs first:

- The first stopover point of the passenger.
- The point to which transportation has been confirmed (OK in ticket), requested (RQ in ticket) or listed (SA in ticket).
- The point where a change of airport is involved.
- The final destination specified in the ticket, including:
 - any tickets issued in conjunction with this ticket,
 - any separately issued tickets with an interline agreement.
- Make sure that the Minimum Connecting Time (MCT) is respected.

2.3. SPECIAL BAGGAGE

2.3.1. BULKY AND OVERSIZED BAGGAGE

2.3.1.1. GENERAL

Baggage is bulky/oversized as defined by the operator policy and/or its weight exceeds 32 kg (70 lbs).

2.3.1.2. MAXIMUM SINGLE ITEM WEIGHT

No single piece of checked baggage can be accepted over 32 kg (70 lbs).

Airlines may also restrict the weight and/or total dimensions.

If presented, the passenger must:

- Repack it into more pieces, each weighing less than 32 kg (70 lbs), or
- Send it as cargo.

Exception: Special equipment like AVIH, WCH, musical instruments and large sports equipment may be excluded from this rule with prior consent of the operator.

2.3.2. CABIN SEAT BAGGAGE (CBBG)

2.3.2.1. DEFINITION

Cabin Seat Baggage is baggage not usually suitable for loading in the aircraft hold.

Such baggage may include:

- musical instruments;
- works of art;
- electronic equipment;
- diplomatic baggage;
- valuable baggage.

Operator policy will dictate the acceptance of CBBG. If not accepted, it can travel as hold checked baggage providing packaging is appropriate.

CABIN SEAT BAGGAGE (CBBG)

Passenger intending to carry CBBG should to buy a separate seat and pay the full fare in the same booking class where the passenger is traveling.

The maximum allowed dimension of baggage in the seat is L135 x D35 x W45 cm and maximum weight 75 kg/seat.

2.3.2.2. LOADING AND LASHING CABIN SEAT BAGGAGE

If applicable, staff approved by the operator are responsible for securing, loading and lashing of bulky, oversize, fragile or valuable baggage in the cabin.

LOADING AND LASHING CABIN SEAT BAGGAGE

Cabin crew will use safety belts to tie down baggage to the seat. CBBG cannot be in seats in emergency exit rows and should not be given seats in the first row of each class. Whenever possible, a window seat should be assigned for CBBG

2.3.3. CREW BAGGAGE

Crew baggage may be presented at check-in, or airside and should be clearly identified with a crew label as well as all flight details.

2.3.4. DELIVERY AT AIRCRAFT (DAA)

2.3.4.1. APPLICABILITY

Delivery at aircraft baggage (DAA) is carry-on baggage, loaded in hold at the time of boarding, and returned to the passenger when disembarking, i.e. at the aircraft stairs or at the loading bridge.

It is not considered as checked baggage, although carried in hold

If used for carry-on baggage, the weight is part of the carry-on baggage allowance

As per the operator policy, apply the "delivery at aircraft" procedure for:

- fully collapsible baby strollers and pushchairs; (larger baby carriages/prams must be checked-in).
- wheel chairs and mobility aids which are not needed during the flight and cannot be stored in the cabin.
- regular carry-on baggage with limited stowage space in the cabin.

Do not use the "delivery at aircraft" procedure for expensive items (e.g. laptop computers, large video cameras, etc.), valuable or important documents, etc., as such items should remain with the passenger.

DAA pieces must be noted on the Load Message under the remark SI.

Ramp handling staff shall inform flight deck crew about the number of DAA bags that have been accepted in compartment.

It must be guaranteed that no unaccompanied DAA baggage is left on board the aircraft. In case a passenger disembarks, check if any DAA has been loaded for the respective passenger. In case of doubts, a full DAA baggage identification has to be performed.

This procedure is not applicable for A-320 due to bridge positioning in some airports.

In exceptional case the carry-on items are oversized the cabin crew has authority to decline acceptance of such items in cabin and may request the DAA procedure even for A-320

For this purpose cabin crew members must have small stock of DAA tags on board of the aircraft and as exception must be given to the loading personnel at the aircraft side to be loaded into the door area of the cargo compartment.

2.3.4.2. PROCEDURE AT BOARDING GATE

Ensure DAA pieces and their loading position are noted on the Load Message under SI-Remark. Ramp handling staff shall inform the flight deck crew of the number of DAA bags.

2.3.4.3. PROCEDURE AT ARRIVAL

Upon arrival: As per the LDM and/or crew request, unload the DAA items/baggage and delivery to the aircraft door.

2.3.4.4. SECURITY PROCEDURE FOR AD-HOC DISEMBARKING PASSENGERS

If a passenger disembarks, check if any DAA baggage has been loaded for the passenger.

When in doubt, perform a full DAA baggage identification.

2.3.5. SPORTING EQUIPMENT

Generally, sporting equipment will be presented as separate pieces of checked baggage.

Accept sporting equipment as per operator procedure.

- Apply procedures for fees and charges, and special handling if required.
- Use limited release tag if applicable.
- Load as per operator instructions.

SPORTING EQUIPMENT BIKES

Only non-motorized bicycles accepted. Up to 190cm (75in) in length, provided they are packed in a recognized bicycle bag and following conditions are met:

- Pedals has been removed or fixed inwards
- Handlebars fixed sideways
- Tyres are deflated

DIVING EQUIPMENT

Only diving equipment listed below is accepted on FLYONE aircrafts provided it is packed in a recognized kit bag and does not exceed the maximum dimensions and weight restrictions for checked baggage. Bags weighing more than 23kg (51lb) may incur a heavy bag charge.

Accepted diving equipment:

- scuba regulator
- tank harness
- tank pressure gauge (pressure-sensitive devices may need special packaging; refer to the manufacturer for advice)
- face mask
- fins
- buoyancy control device
- snorkel
- weight belt
- cylinder tank (must be empty and presented at check-in for inspection)
- spear guns and harpoons (must be unloaded with the spear/harpoon packed separately)

GOLF EQUIPMENT

Golf equipment accepted as checked baggage providing it does not exceed the maximum weight restrictions for checked baggage and is packed in a recognized bag or case to safeguard against damage.

The bag can be up to a maximum size of 190cm x 75cm x 65cm (75in x 29.5in x 25.5in).

Bags weighing more than 23kg (51lb) may incur a heavy bag charge.

A golfing umbrella or parasol carried separately counts as one item of baggage.

SKIING EQUIPMENT

Ski and snowboard equipment accepted as checked baggage up to 190cm (75in) in length provided it is packed correctly. Following conditions should be met:

- Skis and snowboards are packed in a recognized ski or snowboard bag
- Ski poles packed together with skis
- Ski boots packed separately from skis or snowboard - (any bags over general allowance are subject to additional charges)

SURFING EQUIPMENT

- Surfboards can be accepted as checked baggage providing they do not exceed the maximum weight restrictions for checked baggage and are packed in a recognized bag or case to safeguard against damage.
- The bag containing the board can be up to a maximum size of 190cm x 75cm x 65cm (75in x 29.5in x 25.5in).
- Bags weighing more than 23kg (51lb) may incur a heavy bag charge.

SPORTING RACKETS AND STICKS

Rackets and sticks are not permitted in hand baggage but can be packed within checked baggage. Any racket or stick carried separately counts as one item of baggage

2.3.6. WHEELCHAIRS AND MOBILITY AIDS

2.3.6.1. HANDLING WHEEL CHAIRS/MOBILITY AIDS

Apply the "delivery at aircraft" procedure when personal collapsible wheel chairs/mobility aid devices are taken to the gate. Verify with and advise the passenger accordingly. Ensure the wheel chair/mobility aid has a name label, DAA tag and destination tag on it.

- If applicable, issue a NOTOC and advise the pilot in command of the location of the wheel chair or mobility aid device.
- Stow and secure the wheel chair/mobility aid device to prevent unintentional operation and ensure it is protected from

2.3.6.2. WHEELCHAIRS OR OTHER BATTERY OPERATED MOBILITY AIDS

There are two main types of batteries used with wheel chairs or mobility aid devices:

Type of battery Description

Type of battery	Description
Non-spillable battery	Dry battery (including integrated battery) Gel type battery Wet (sealed) battery Lithium-ion battery
Spillable battery	Wet battery (*check operator policy)

All such batteries must be hold-checked.

2.3.6.3. ACCEPTING WHEELCHAIRS/MOBILITY AIDS WITH NON-SPILLABLE BATTERIES

Pre-notification may be required and acceptance is subject to operator approval.

- Battery terminals must be insulated to prevent accidental short circuits, e.g. by being enclosed within a battery container.
- Battery must be securely attached to the wheel chair.

ACCEPTING WHEELCHAIRS/MOBILITY AIDS WITH NONSPILLABLE BATTERIES

FLYONE accepts wheelchairs/mobility aids with non-spillable batteries with accordance to IATA Dangerous Goods Regulations (IATA DGR). Prior approval is not required. Carriage must be stated in PSM / LDM messages to airline and destination.

2.3.6.4. ACCEPTING WHEEL CHAIRS/MOBILITY AIDS WITH SPILLABLE BATTERIES

(only if accepted by the operator)

Pre-notification is required and acceptance is subject to operator approval.

- Packing rules:
 - Wheel chair must be loaded, stowed, secured and unloaded while maintaining an upright position.
 - Battery terminals must be insulated to prevent accidental short circuits, e.g. By being enclosed within a battery container.
 - Battery must be securely attached to the wheel chair.
- If the wheelchair cannot remain upright while being loaded, stowed, secured and unloaded, then apply the following packing rules:
- Battery must be carried in strong, rigid packaging as follows:
 - The outside packaging must be leak-tight, impervious to battery fluid and protected against spilling by securing to pallets or by securing them in cargo compartments using appropriate means of such as restraining straps, brackets or holders.
 - The battery terminals must be protected against short circuits.
 - The battery must be secured upright in the packaging and be surrounded by compatible absorbent material sufficient to absorb its total liquids.
 - The outside packaging must be marked "battery-wet-with wheel chair".
 - The outside packaging must be labeled with the "corrosive" label.
- Battery must not be loaded if not packaged appropriately.

ACCEPTING WHEEL CHAIRS/MOBILITY AIDS WITH SPILLABLE BATTERIES

FLYONE accepts wheelchairs/mobility aids with spillable batteries. Prior approval is not required, however Commander and OCC must be notified by NOTOC prior to departure.

2.3.7. HANDLING OF PETS

2.3.7.1. GENERAL

Handling of pets, in accordance with operator policy. There are two methods of carriage:

- pets carried in the passenger cabin in an approved container (subject to operator acceptance policy);
- pets carried in the cargo compartment.

HANDLING OF PETS

Exceptionally a pet animal may be carried in the cabin of the FLYONE aircraft.

Passengers carrying pet animal must be in possession of a confirmed reservation for transportation animals. Pets must only be accepted for transportation provided that the passenger holds all required documentation (e.g. valid health certificate and vaccination certification) for entry of all countries of transit and destination. Cats and dogs travelling in/to/within the European Union need a passport and be identified by tattoo or chip.

FLYONE permits the transport of animals in the framework of the excess baggage regulations.

The crate must have an impermeable bottom, must be placed under the passenger's seat and the animal must not leave it during the flight.

In other cases the animals shall be carried as checked baggage in the cargo compartment if aircraft equipped with suitable compartment for live animal transportation. The passenger carrying pet shall be in possession of all documents required by the authorities at destination. Commander and handling staff shall ensure that no animal is carried in the cabin who might impede an emergency evacuation.

- Max number of live animals (PETIC) in a passenger cabin of A320 family aircraft: 4;
- Maximum Dimensions for crate: 55x45x25 cm;
- Maximum Mass per PETC with the crate: 8 Kg;
- Maximum one PETIC per one passenger;
- Maximum one PETIC per row;
- Only window seat can be assigned (except first, last row and emergency exits);
- Minimum PETIC separation in cabin 4 rows;
- Captain reserves the right to final approval.
- Only one dog or cat may be transported per kennel.
- No sedation should be used.

Note: The carrier reserves the right to refuse acceptance of an animal for such reasons as illness, poor kenneling of the animal or long transit times.

Following animals will not be carried:

- Pregnant animals without an official veterinary certificate indicating animal fit to fly
- Animal which has given birth in the previous 48 hour
- Animals transported for the purpose of laboratory testing

ANNEX –PETC LIMITED RESPONSIBILITY FOR ANIMAL TRANSPORTATION.

	Declarația de exonerare a responsabilității pentru transportarea animalelor. Limited responsibility Declaration for animal transportation.
Cursa /Flight Nr. _____ Numele / Name _____ Prenumele / Given name _____ Numar pasaport / Passport no. _____ Prin prezenta exonerez Transportatorul de orice răspundere privind transportarea animalului, pentru toate consecințele in caz de refuz de intrare in țară sau trecerea tranzit. Sunt de acord să suport și să rambursez integral Transportatorului toate cheltuielile pe care le poate produce eventuala problemă în transportarea animalului. I exonerate the Carrier from any responsibility regarding the transportation of the animal and the refusal of entry into or transit through the country. I agree to indemnify and reimburse the Carrier for the cost and expenses incurred by eventual problem of transportation of the animal. Data / Date _____ Semnatura / Signature _____	

2.3.7.2. ANIMALS IN HOLD (AVIH)

Animals in Hold are transported as checked baggage in the aircraft hold.

- domestic animals such as dogs, cats, birds, etc.;
- other small warm-blooded animals, such as guinea pigs, hamsters, rabbits, etc.;
- Apply operator acceptance procedures with local customs requirements, animal age and health requirements.

Note: Domestic animals of unusual size or wild animals, reptiles and rodents must be transported as cargo.

Animals shall be transported in accordance with IATA Live Animals Regulations. Live animals shall only be loaded into suitable aircraft compartments, taking into account the animal's needs.

The flight crew shall be notified on the form "Special Load Notification to Captain" (NOTOC) of any live animals loaded as baggage or cargo on the baggage hold. Live animal shipments must be manifested in all documents as AVI.

The following conditions and provisions govern the transportation of animals as checked baggage:

- The animal shall be carried in a kennel/container which meets the specifications of the IATA Live Animals Regulations.
- The animal including the kennel/container shall not be accounted against the passenger's free baggage allowance, i.e. excess baggage charges are always due for the animal plus kennel/container except for Guide Dogs.

The following shall be adhered to:

- It is important that the compartment is not filled by more than 2/3rd of their volume in order to guarantee a sufficient air supply.
- The kennel/container shall be tied down in order to prevent from moving during take-off, flight and landing.
- The kennel/container must not be over-stowed with other baggage or cargo.
- The compartment door shall be closed as late as possible. At the destination or transit station the compartment door shall be opened promptly. This procedure also applies to technical landings.

Live animals must never be stowed together with:

- Dry Ice (ICE)
- Foodstuffs (EAT)
- Radioactive material (RRW/RRY)
- Poison (RPG/RPB)
- Infectious substances (RIS)
- Human Remains (HUM)
- Animals that by nature are natural enemies

2.3.7.3. AVIH HANDLING

- Only rigid containers with a secure door are acceptable.
- A water container must be provided in each container.
- Only one animal per container, unless they are used to cohabiting.
- The container must be large enough to permit the animal to stand in a natural position, turn around and lie down.
- Animals should be loaded last and unloaded first.
- Minimize time on the ramp to protect animals from wind, rain, noise and extreme temperatures.
- Keep other luggage at least 150mm (6 inches) away from the container sides to maximize ventilation.
- Natural predators should not be positioned next to each other.
- Do not load animals in the same compartment with dry ice or radioactive materials.
- Exercise caution with containers that have wheels, ensuring the container cannot roll during loading.
- Containers must be securely attached to the compartment to prevent shifting, using tie down straps.
- Take the deplaning animals immediately to the terminal for claim by their owners.
- Never use the baggage chute to deliver an animal. If the animal cannot be immediately claimed, take the animal to a climate-controlled waiting room.
- The flight crew and station should be informed of AVIH loading to ensure sufficient heat and airflow are maintained.

2.4. BAGGAGE HANDLING

2.4.1. BAGGAGE ROOM PREPARATION

The baggage room must prepare a sufficient and pre-determined number of baggage carts and containers in accordance with the expected passenger load for a flight.

- Check that the containers are in a serviceable condition before using. Use the damage limitation sticker attached as a guide.
- Each container should have a "Container Card" inside the pouch near the door and a "Bingo Sheet" attached to the outside of the next to the pouch (for non automated loading).
- Every item loaded into the container must be recorded on the Bingo Sheet or scanned for automated loading.
- As each bag is loaded into a baggage car, the security sticker must be peeled off of its bag tag and placed on the bingo sheet and retained after departure with the flight documentation.

2.4.2. BAGGAGE TAGS

Apply sorting and loading procedures into containers and cards based on operator policy with respect to checked items tagged as:

- Priority baggage
- Heavy baggage
- Connection baggage
- Late baggage
- Fragile baggage
- Sporting equipment
- Mobility aids or devices
- Animals in hold
- Crew baggage
- Strollers
- Gate Delivery Items
- Items containing dangerous goods (i.e. Dry Ice)
- Standby baggage
- Items with limited release tag

2.4.3. RESTRICTED SHIPMENT

FLYONE does not transport live animals in the cargo compartments or any types of Dangerous Goods (other than those small amounts specified as “exempted quantities” by IATA DGR regulations and onboard medical oxygen). It is the responsibility of the Handling Agent not to accept for transportation and not to load such shipment on FLYONE flights.

Handling Agent must have a training program that ensures that ground handling personnel are:

- able to identify mail, cargo (including DGR) and refuse it from loading onto FLYONE flights.

2.4.4. BAGGAGE CUT-OFF & VERIFICATION PROCESS

Once a flight has been closed for check-in, the Baggage room lead or the Baggage supervisor will:

- review total pieces for each container;
- pass on all baggage figures including baggage counts for each container number so that the total load summary can be prepared;
- Conduct a baggage room sweep to ensure there are no left behind bags.

If baggage is left behind, report to Baggage Services. Appropriate messages must be sent to the down line station and arrangements made to expedite the return of the bag to the passenger.

2.4.5. REMOVAL OF CHECKED BAGGAGE

If instructed to remove hold checked baggage, obtain the name and security number and number of pieces of baggage requiring removal. Refer to electronic records or the bingo sheets to identify the ULD where the baggage is located in order to offload.

The baggage is removed and must be re-screened prior to returning it to passenger services for further handling, subject to local security procedures.

In certain countries, higher baggage screening standards may apply and must therefore be followed.

Always communicate with gate or operator staff with respect to the addition or removal of any checked baggage.

2.4.6. TRANSFER BAGGAGE

Through-label transfer baggage provided the connection is scheduled:

- the same day or
- the next day within 24 hours
- No change of airport
- Subject to local requirements
- Do not through-label baggage—even at the passenger's request—in case of obvious undercutting of the Minimum Connecting Time (MCT).

An interline agreement must be in place with the connecting carrier.

2.4.6.1. SPECIAL CASES

Case	Through-labeling	Remark
Customs clearance required at the transfer point	Yes	Advise passenger to pick up baggage at the transfer point. • Refer to TIM/TIMATIC for country rules.
The passenger specifically wants his baggage at a transfer point	No	Inform the passenger about the risk of missing the connecting flight.

2.4.7. SHORT CONNECTION BAGGAGE

2.4.7.1. DEFINITION

Short connection baggage is baggage of passengers having an onward connection out of a hub with a short-scheduled connecting time.

2.4.7.2. IDENTIFICATION

Short connection baggage is identified by a remark on the baggage tag and/or by a separate short connection tag or sticker.

2.4.7.3. HANDLING SHORT CONNECTION BAGGAGE

Apply the following short connection baggage procedure at outstations.

- Identify all short connections out of the hub airport.
- Handle and prioritize as per operator procedure.

2.5. BAGGAGE SECURITY

2.5.1. GENERAL

Refer to the IATA Security Manual and Operating airline Ground Operations Manual for guidance.

2.5.2. HANDLING OF HOLD BAGGAGE

If passengers and crew members are required to personally identify their hold baggage before loading, do not load any baggage not identified.

Ensure there is no opportunity for the exchange of cabin baggage for hold baggage which may contain items to be used in a planned act of unlawful interference.

When screening of hold baggage gives rise to suspicion regarding the contents, the local screening authority will proceed as per local regulations.

2.5.3. CARRIAGE OF WEAPONS IN HOLD BAGGAGE

Weapons carriage in the hold baggage are subject of the special procedures.

Ammunition, firearms and over weapons shall be carried in the aircraft hold and with the approval of the Airline. Weapon shall be located into the aircraft as per below requirements:

- The weapon transportation is carried out in the isolated baggage hold of the aircraft in the special locked metal boxes:
- The long-barrel weapon, which in the disassembled kind is impossible to place in the standard metal box because of size, is transported in cargo compartments, near a special box, in the packing of the passenger (special container, a box, a case, a cover), corresponding to the requirements of aviation security and weapon safety.

The owner of the Weapon which enquired transportation, shall present below documents and ensure packing requirements.

- The sanction of weapon storage and carrying;
 - The Passenger is obliged to provide packing of the weapon (in a special container, a box, a cover, a case) which should be corresponded to the security requirements and weapon safety. The weapon should be in the unloaded status separately from the ammunition. Patrons should be packed into standard boxes.

Weapon reception to transportation:

Checking such passengers with weapons, the agent of check-in should:

- Ensure that the information about the weapons and ammunition must be directed to the airport of destination in the form of a standard message PSM.
- Ensure that the Information about weapons and ammunition on board must be included in NOTOC (notification to captain) for the purpose of informing crew. The check-in agent must inform responsible person who prepares NOTOC.

2.5.4. SECURITY REMOVED ITEMS

Items not permitted in hand baggage that are removed by security screening personnel may only be accepted in checked baggage, as per operator handling and acceptance procedures.

2.5.5. TRANSFER AND CONNECTING BAGGAGE

When passengers have to collect their hold baggage during the transfer process (because of immigration or security policies of a State), treat hold baggage as originating baggage.

- If baggage is collected landside, submit it to screening before loading on the aircraft.
- If the baggage is collected and transferred in the sterile area, re-screening may not be necessary.

Interline, transfer and connecting baggage must follow the reconciliation procedures as originating baggage, section 2.5.6.

2.5.6. BAGGAGE RECONCILIATION

2.5.6.1. ORIGINATING PASSENGERS

Maintain passenger/baggage reconciliation for all flights, including:

- standby passengers;
- off-airport and group check-in passengers;
- voluntary or involuntary deplaning.

2.5.6.2. ON-LINE, TRANSFER PASSENGERS

- Baggage that is separated from the passenger must be subject to additional security controls.

2.5.6.3. INTERLINE PASSENGERS

- Do not load hold baggage of an interline passenger unless the passenger has a confirmed reservation for the onward flight and the baggage is matched by the onward operating airline.
- In case of high-risk airlines or high-risk flights, interline passengers may be required to identify the baggage before it is transported.

2.5.6.4. DISEMBARKING TRANSIT PASSENGERS

- Offload the cabin and hold baggage of any passenger who disembarks earlier than the station of arrival.

2.5.6.5. MANUAL BAGGAGE RECONCILIATION AT ORIGINATING STATION

- After acceptance, ensure checked baggage is kept in a secure area.
- Crew baggage should be individually identified and marked as crew.
- Secure the flight by matching the checked-in passengers to the boarded passengers. Confirm total boarded passenger count with crew. Confirm by head count if this is operator policy.
- If there are passenger discrepancies (minus or plus), they must be resolved prior to closing the aircraft door.
- Make every attempt to locate missing passengers and obtain visual proof of boarding and documents if they are located on the aircraft.
- As per operator procedures and government regulations, remove the checked baggage of passengers who check-in but fail to board.
- Notify crew of any last minute changes to passenger and/or baggage load.

2.5.6.6. ON-LINE TRANSFER CHECKED BAGGAGE RECONCILIATION

- Load transfer between two flights of the same Operator (on-line) if the inbound passenger transfer message contains the passenger names and baggage details for control.
- If the passenger fails to transfer for any reason, the passenger's checked baggage must be removed.

2.5.7. DANGEROUS GOODS IN BAGGAGE

Passengers and crew may carry commodities in their baggage which can be considered dangerous goods.

Refer to the IATA Dangerous Goods Regulations for handling and acceptance procedures, and for a list of accepted dangerous goods for passenger use.

Agents should be aware of commonly carried items and question passengers when there is suspicion of their carriage. (e.g. camping equipment, hunters).

Should undeclared or mis-declared dangerous goods be discovered, this must be reported to the operator and Supervisor, State of Authority, and all items not be permitted to travel.

Relevant Dangerous Good Occurrence report shall be submitted as below.

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		DANGEROUS GOODS OCCURRENCE REPORT		DGOR No:
1. Operator		2. Date of Occurrence		3. Local time of occurrence
4. Flight date:		5. Flight No:		
6. Departure aerodrome:		7. Destination aerodrome:		
8. Aircraft type:		9. Aircraft registration:		
10. Location of occurrence:		11. Origin of the goods:		
12. Description of the occurrence, including details of injury, damage, etc. (if necessary continue on the reverse of this form):				
13. Proper shipping name (including the technical name):				14. UN/ID No (when known):
15. Class/Division (when known):	16. Subsidiary risk(s):	17. Packing group:	18. Category (Class 7 only):	
19. Type of packaging:	20. Packing specification marking:	21. No of packages:	22. Quantity (or transport index, if applicable):	
23. Reference No of Airway Bill:				
24. Reference No of courier pouch, baggage tag, or passenger ticket:				
25. Name and address of shipper, agent, passenger, etc.:				
26. Other relevant information (including suspected cause, any action taken):				
27. Name and title of person making report:			28. Telephone No:	
29. Company:			30. Reporter's Ref:	
32. Address:			32. Signature:	
			33. Date:	
Description of the occurrence (continuation)				

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Notes for completion of the form:

1. A dangerous goods accident is as defined in Annex I. For this purpose, serious injury is as defined in Regulation (EU) No 996/201031.
2. This form should also be used to report any occasion when undeclared or misdeclared dangerous goods are discovered in cargo, mail or unaccompanied baggage or when accompanied baggage contains dangerous goods which passengers or crew are not permitted to take on aircraft.
3. The initial report should be dispatched unless exceptional circumstances prevent this. This occurrence report form, duly completed, should be sent as soon as possible, even if all the information is not available.
4. Copies of all relevant documents and any photographs taken should be attached to this report.
5. Any further information, or any information not included in the initial report, should be sent as soon as possible to the authorities identified in CAT.GEN.MPA.200(e), NCC.GEN.150(e), NCO.GEN.140(d) and SPO.GEN. 150(e)
6. Providing it is safe to do so, all dangerous goods, packaging, documents, etc., relating to the occurrence should be retained until after the initial report has been sent to the authorities identified in CAT.GEN.MPA.200(e), NCC.GEN.150(e), NCO.GEN.140(d) and SPO.GEN.150(e) and they have indicated whether or not these should continue to be retained.

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2.6. MISHANDLED BAGGAGE/ DELAYED OR MISSING BAGGAGE

Steps for Handling Agents

At the check-in desk in the airport of departure the agent of the handling company must to inform the passenger about the airport of transfer or stop-over airport (where the passenger can receive the baggage).

The handling company must provide the passengers all necessary information in baggage claim area:

- about the place of baggage delivery;
- about the place of the outsized baggage delivery;
- about the place and rules about making customs, veterinary and the other different special controls of the passengers (if necessary);
- about pieces and materials forbidden for aircraft transportation;
- about rules in case of lost, damage or pilfer of the baggage;

The information must be provided by visual, voice or verbal announcement (information desk).

The checked-in baggage is deliver at the airport up to which it has been accepted to be transported.

In case of a lost/damage/pilfer of baggage, before the passenger leaves baggage claim zone, the agent of the serving company should make the property irregularity report (PIR) where the following information must be specified:

- First name, middle name, last name of the passenger whom the baggage is registered on;
- Flight/date of following of the passenger;
- The number of the air ticket;
- The number of the baggage tag (tags);
- Total pieces and weight of the checked-in and received baggage;
- The type of the suitcase (bag), the external description (color, etc.);
- In case of damaged baggage the detailed description of character of the damage, packing conditions and lack of the weight in kilograms.

The agent of the handling company informs the representative of the Airline in all cases of faulty baggage transportation.

Search and transfer of baggage

If the baggage is not arrived in the airport of destination it is necessary to organize the search actions.

- According to the contract of the airline traffic baggage search makes by agents of the handling company at the airport in which the baggage has not received.

Baggage search is held with the use of the automated system of search and tracing of baggage WORLD TRACER. In case of absence of the automated system the search is held with the use of liaison channels AΦTH, SITATEX, e-mail.

The actions of the handling company agent if the baggage has not arrived in the airport of destination

- If the baggage of the passenger has not arrived in the airport of destination, the agent of the handling company must to make an action file (AHL) on each piece if the baggage search is made with the use of the system WORLD TRACER.
- If the baggage search is made with the use of liaison channels AΦTH, SITATEX, e-mail, an inquiry is sent to the airport of departure. The following information is underlined in it:
 - The first and last name of the passenger;
 - Flight/date and route of the passenger;
 - The baggage tag number which has not arrived to the airport;
 - The weight of the baggage, the type of the suitcase (bag), the external description (color) and contents of the baggage.
- The inquiry is also sent to the airports of transfer if the baggage is checked-in as transfer and to the airports where the baggage could be probably sent to (preliminary the agent specifies the information of the flights on which check-in was held at the same time).
- If the airport of departure (transfer) confirms the presence of not arrived baggage, the agent of the handling company have to inform the passenger about the results of searching and define the route of baggage delivery under the arrangement with the passenger.
- The agent of the handling company have to direct the inquiries for the baggage search regularly if the answer has not received.
- All inquiries for the baggage search are necessary to duplicate to the e-mail addresses of lost and found group of the airline: lf@flyone.eu with Subject Damaged /Lost Report
- If the baggage search is made with the use of WORLD TRACER MANAGEMENT SYSTEM, the agent should look through the files created in the system in due time on the presence of not demanded baggage, similar to the description of the searched baggage.
- It is necessary to direct an inquiry for forwarding the baggage carrier and specify the flight number/date.
- The agent of the handling company provides the passenger with information of the baggage arrival, and also about the order of the baggage claim and the necessary documents.
- If the baggage has not been found for 45 days, the search of the passenger's baggage stops.
- The active file AHL in the automated system of baggage search WORLD TRACER is closed.

The search actions of the handling company agent in the airport departure (transfer).

- Having got an inquiry (telegram) for non-arrival baggage, the agent of the handling company should find the information of the number of pieces, the weight of baggage, the baggage tag numbers registered on the flight (the passenger manifest, telegram LDM, COM).
- It is necessary to find the baggage sheet to look for not loaded baggage of the passengers from the given flight.
- It is necessary to check up all baggage in the lost-and-found room, to seek the baggage of the passenger not arrived in the airport of destination.
- In case of baggage search it is necessary to inform the airport of destination and lost-and found group about the search results and to coordinate the flight/date of the baggage forwarding.
- A FWD message is made in the WORLD TRACER MANAGEMENT SYSTEM.

The actions of the handling company agent in case of the missent baggage detection.

- In case of the detection of the missent baggage the agent must to carry out the following actions:
 - to weigh, open the baggage. If there are perishable products in it and if the keeping time of them is up, it is necessary to destroy the perishable baggage.
 - to make a property irregular report and seal up the baggage;
- It is necessary to check up the availability of the inquiries for the baggage to send it according to the inquiry.
- If the information of the given baggage search is absent, to direct an inquiry about the presence of the sent baggage and specify the information regarding the given unit, to the airport of departure and destination according to the data of the baggage tag. If the baggage tag is lost it is necessary to direct an inquiry to the airport of departure, from where the baggage has arrived.

After filling up PIR it is mandatory to inform passenger about its obligation to report his delayed/damaged bag to lf@flyone.eu

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Steps for passengers

Please make sure that every passenger who is denied to claim his bag due to bag delay or damage has the proper information about his actions. (described below)

In the unlikely event that your baggage is missing, damaged or delayed, please file a Property Irregularity Report (PIR) upon arrival at your destination.

Pay a visit to the "Baggage Claim" or "Lost Luggage" desk in the arrival area, where we can help you fill out a Property Irregularity Report (PIR) straight away.

ATTENTION: If the checked baggage does not arrive on the flight carrying its owner, and the passenger does not make a report upon arrival, FLYONE will disclaim liability.

FLYONE will be in charge for all reported baggage irregularities.

In order to help us to provide operative problems solutions, we kindly ask you mandatory to send us via e-mail on the address LF@flyone.eu, the following data:

- Your name and permanent address
- Telephone number
- Flight number and date of your trip
- Ticket number
- A double -sided scanned tag or the original tag of the double-sided baggage tag and the baggage receipt
- Pictures which show the damage clearly visible. *

*Valid in case of damaged bags.

If the checked baggage does not arrive with the passenger to whom it belongs, after fulfilling Property Irregularity Report (PIR), in accordance with the provisions of the Montreal Convention, FLYONE is responsible for searching during 45 days, after FLYONE announce loss statement.

FLYONE will claim liability for compensation in case of damage or loss of luggage, in accordance with national legislation and international agreements.

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2.6.1. STORAGE AND HANDLING MISHANDLED/UNIDENTIFIED/UNCLAIMED BAGGAGE

Hold such baggage in a safe and secure area where access is controlled.

Make sure such baggage is subject to additional security controls before being loaded into an aircraft.

These controls could include a combination of:

- Manual search;
- X-ray;
- Simulation chamber;
- Vapor or trace analysis;
- Delayed onward dispatch for 24 hours or more;
- "RUSH" tag to be used;
- Follow the security requirements of the forwarding carrier;
- It is preferable to load unaccompanied baggage in the Aft Bulk hold of the aircraft;
- The number of unaccompanied bags with a "RUSH" tag must be included in the total load summary.

Report found/unclaimed baggage details to lf@flyone.eu with Subject Unclaimed Report after 3 days from its detection, after 3 days all necessary arrangements should be done in order to arrange their transportation at the base airport KIV as CO-MAIL

2.6.2. MOBILITY AIDS

Damaged, delayed or missing mobility aids should be handled as priority:

- Provide a suitable equivalent loaned item or replacement as needed and as per operator policy.
- Arrange for the repair or replacement of the item immediately.

2.6.3. AVIH

Delay of or damage/injury to AVIH should be handled as priority

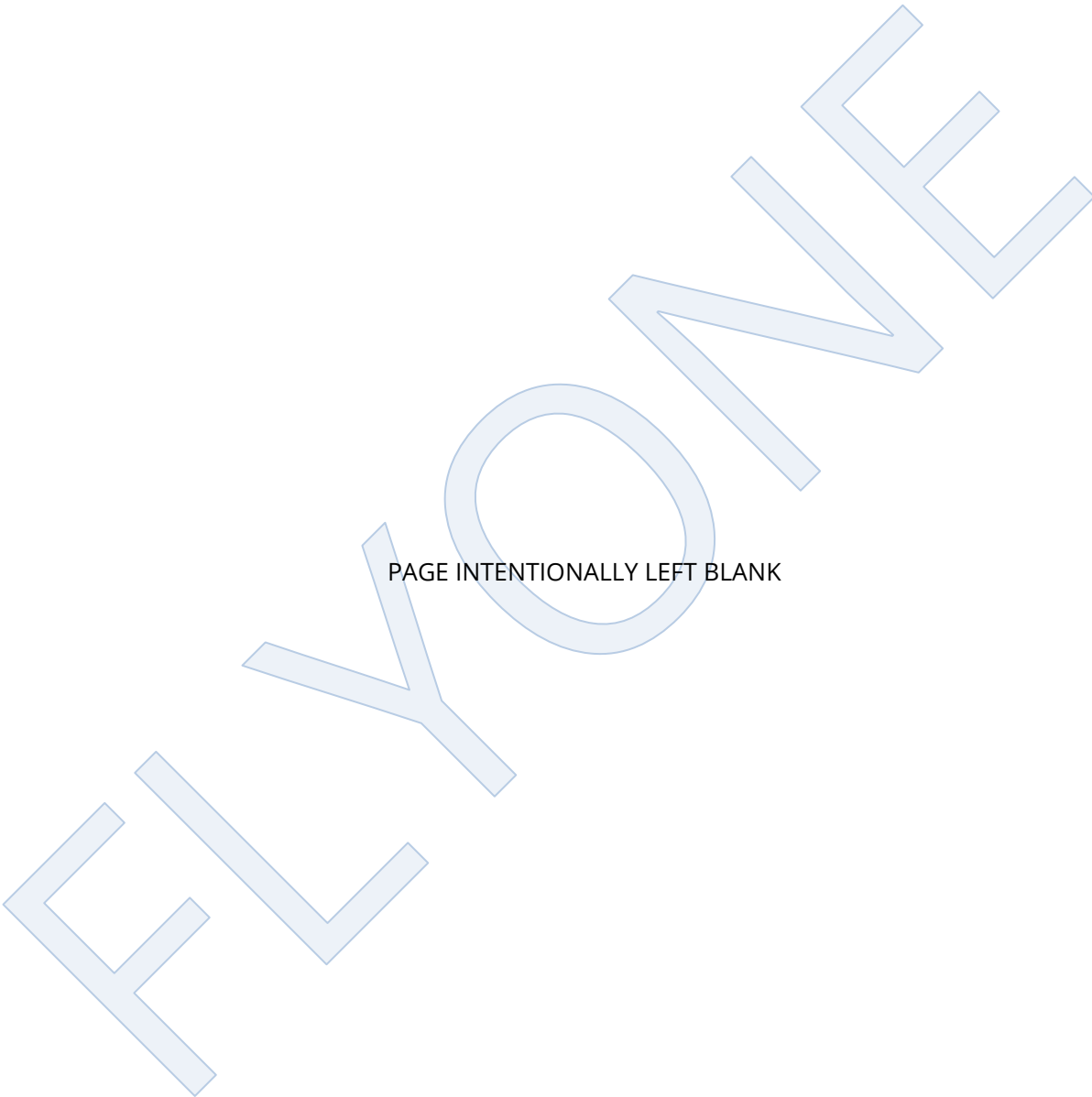
2.6.4. LEGAL TIME LIMITS FOR REPORTING

Loss, delay or damage to baggage must be reported immediately upon arrival, or within 7 days for damage.

- Follow standards from the IATA Baggage Services Manual

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4. AIRCRAFT HANDLING PROCEDURES

This chapter provides procedures for aircraft handling, including safety procedures.

4.1. RAMP SAFETY IN AIRCRAFT HANDLING

4.1.1. INTRODUCTION

Ramp safety rules and procedures promote safe ground handling. Therefore, the minimum safety rules and procedures defined in this section shall always be applied and understood by all personnel working on the ramp.

Aircraft damage can endanger passengers, employees and aircraft. Disruptions may also negatively impact safe airline operations.

Even a slight scratch or dent on an aircraft may result in a serious accident.

If you see or cause any aircraft damage, you **MUST** report it. Refer to the operating airline's policy regarding reporting of aircraft damage.

INTRODUCTION

Refer to GOM chapter 8. HANDLING, NOTIFYING AND REPORTING OCCURENCES

4.1.2. GENERAL RAMP SAFETY

4.1.2.1. DANGER AREAS

There is a particular risk of blast damage or injury from an aircraft engine's exhaust or intake. The risk is further increased if for any reason an aircraft stops and then applies the additional thrust required to "break away" and continue the maneuver.

Vehicles and personnel must remain clear of aircraft danger areas when aircraft engines are running and/or the anti-collision lights are on.

In order to prevent incidents and accidents caused by aircraft engines, you must never position yourself or equipment in the following critical areas before or during aircraft departure and arrival:

- 1) Engine Intake Area
- 2) Engine Blast Area
- 3) Propeller Rotation Area (where applicable)

Note: The length of these areas varies for each aircraft type based on whether the engines are at IDLE or BREAKAWAY thrust. Refer to each aircraft type specific manual for applicable distances.

ATTENTION: Ground personnel and/or loose equipment must stay clear of the intake and blast areas!

4.1.2.2. ENGINE INTAKE AREA

- make sure the engine intake area is clear:
 - at arrival, until the engines have been switched off and are spooling down.
 - at departure or just before pushback.
 - at all times while engines are running.
- It is forbidden to pass through the blast area while the engines are running.

Refer to the operating airline's GOM for distances applicable to the specific aircraft type involved in the operation.

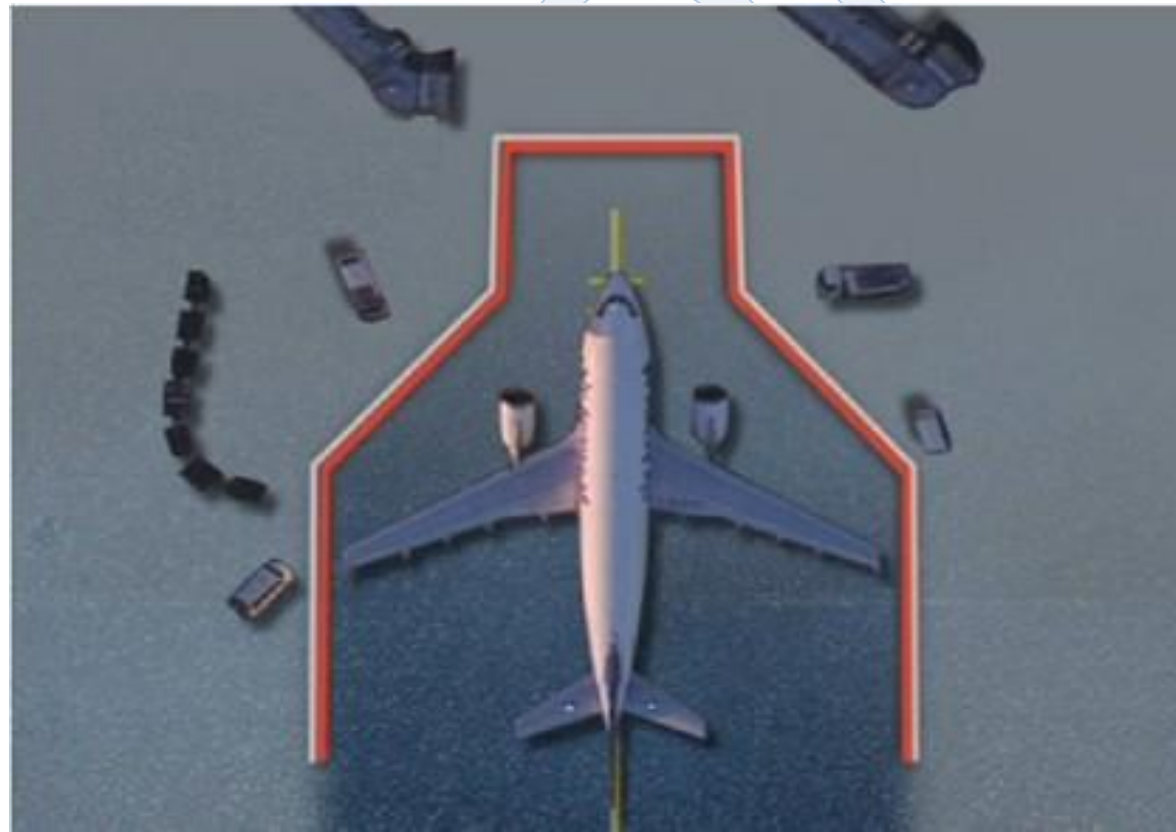
ENGINE INTAKE AREA

Refer to chapter 11 AIRCRAFT CHARACTERISTICS - A320
and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.1.2.3. EQUIPMENT RESTRAINT AREA & EQUIPMENT RESTRAINT LINE

The Equipment Restraint Area (ERA) is defined as the area of the apron in which an aircraft is parked during ground operations. It may be indicated by a waited line. If no markings exist, local procedures must establish safe parking areas, etc. The illustration below provides an example of the markings used at some locations.

The ERA must be free of obstruction and Foreign Object Debris (MD) before and during aircraft arrival and departure.



4.1.2.4. FOD – FOREIGN OBJECT DEBRIS

Foreign Object Debris (FOD) is a general term which applies to all loose objects which are a danger to the safety and integrity of an aircraft and which, therefore, must not be left in any area where they would constitute a hazard.

Every individual has a responsibility to ensure that the risk of damage to aircraft from FOD is minimized. All FOD must be removed and properly disposed of as soon as it is discovered.

Often the presence of FOD is due to the carelessness of personnel working airside and their lack of understanding of its consequences, or the movement of FOD into airside locations during high winds.

Examples of FOD:

Plastic and paper, bags/sheets, rags Metal: nuts and bolts, empty oil and hydraulic fluid cans, tools and equipment

Natural objects: rocks, pebbles and wood

Other debris: burst ballast bags, lug- gage handles and luggage wheels, etc.

CAUTION: Foreign object debris may be ingested into aircraft engines causing damage leading to engine failure. This is especially critical if it occurs in flight, particularly during the take-off phase.

CAUTION: In addition, damage caused by FOD can occur to tires, the undercarriage, control systems and other parts of the airframe. All such damage could lead to inflight failures.

FOD Checks:

The following checks must be conducted prior to any aircraft movement or servicing operation:

Check ground equipment staging and parking areas in proximity to area of operation.

Ensure routine checks are made of ground equipment (including floors of enclosed cabins).

In ramp areas ensure that anything carried in or on a vehicle is secured.

Before aircraft arrival, conduct a FOD walk of the aircraft parking stand removing all FOD found.

Pick-up and dispose of all FOD in designated garbage bins, where provided.

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4.1.3. SAFETY INSTRUCTIONS FOR OPERATING MOTORIZED VEHICLES ON THE RAMP

4.1.3.1. GENERAL SAFETY INSTRUCTIONS FOR GROUND SUPPORT EQUIPMENT (GSE)

Apply these procedures whenever operating GSE on the ramp.

Only drive or operate GSE if you are trained and authorized for that specific equipment type.

GSE must not be moved or driven across the path of:

Taxiing aircraft

Embarking and disembarking passengers on the ramp.

CAUTION: When operating equipment, check the equipment contact zone for possible aircraft damage and immediately report any damage found.

CAUTION: Use all safety devices fitted on GSE (e.g. bumpers, handrails, stabilizers, etc.) during aircraft handling and servicing.

CAUTION: Ensure protective rubber bumpers ARE NOT compressed against aircraft fuselage.

GENERAL SAFETY INSTRUCTIONS FOR GROUND

SUPPORT EQUIPMENT (GSE)

When operating GSE, standard operating procedures, applicable to specific location must be followed by drivers (or operators) of each type of ground support equipment.

Equipment is used only for its intended purpose. Unserviceable equipment must be clearly identified and removed from operations.

Equipment is never moved across the path of taxiing aircraft or passengers walking between an aircraft and terminal.

GROUND SERVICE EQUIPMENT REPAIR AND OVERHAUL

The Handling Company shall have a program for the GSE maintenance whereby it ensures that such equipment is in good mechanical condition for use on FLYONE flights. Equipment may only be used for such a purpose for which it has been built.

FLYONE does require same level of service standards from all subcontractors.

GSE SERVICE

The manufacturer's maintenance specifications shall be obeyed and a preventive maintenance program as well as a system for recording and documenting completed repair and maintenance shall be established. A nominated person must oversee and manage the service programs. Approved service programs and the service history with needed signatures must be stored and readily available for auditors. The service should be performed on regular basis in specified intervals. As minimum these services should be performed:

- An-service a so called lubrication service
- A-service a so called. oil change (minim. once a year)
- C- Service a so called. heavy service
- S- Service battery and electricity driven equipment serviced according to used hours 1 – 4 per year.

Other equipment e.g. baggage and cargo trollies are serviced according to need e.g. tyre change and lubrication.

All service done must be reported and documented as well as stored for 24 months.

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4.1.3.2. BASIC OPERATING REQUIREMENTS FOR GSE

- Check all GSE involved in aircraft handling at the start of a shift (at least once per day), in particular the "parking," brakes, rubber protective bumpers, safety systems and all other proximity sensors.
- Perform a vehicle/equipment walk around check prior to its use.
- Apply parking brakes and place the gear selector in the "PARK" or "NEUTRAL" position on all GSE when it is parked or positioned. Deploy other safety devices if fitted.
- When positioning GSE, make sure: that clearance is kept between all GSE and the aircraft to allow vertical movement of the aircraft during the entire ground handling process—preventing contact between the aircraft and equipment.
- Do not carry extra personnel during GSE movement without an approved seat—apply the "no seat—no ride" principle.
- Do not operate vehicles or equipment while using hand-held portable electronic devices.
- After positioning equipment on the aircraft, raise all safety rails on conveyor belts, loaders and other elevated devices—except where restricted by aircraft type.
- Turn off engine once positioned unless required for equipment operation.
- Do not leave any vehicle unattended with its engine running. In extreme cold weather conditions, local procedures may apply.
- If equipped with stabilizers, ensure they are deployed before operation.
- For electrical or motorized GSE positioned at or near the aircraft, being utilized in the operating mode, the operator must keep within easy reach of the emergency controls. If the equipment is not fitted with external emergency controls, the operator must remain in the operating position and in control of the equipment.
- GPUs and RCA/Cabin heater units may be left running unattended when connected to the aircraft.
- Do not drive GSE with lifting devices in the raised position, except for final positioning of the GSE onto the aircraft.
- Do not allow any GSE such as tractor, pallet transported, baggage/cargo carts and dollies to move or be positioned under the aircraft fuselage.
- GSE must be parked in designated airside equipment parking areas when not in use. Do not obstruct access to firefighting equipment or to the fuel hydrant emergency stop switch.

4.1.3.3. NON-MOTORIZED GSE

- When parked, all non-motorized GSE must have brakes set or chocks in place when not connected to motorized vehicles.
- ULDs must be secured on dollies (or trailers/trucks) using the appropriate restraints.
- Pallet and container dollies may only be towed with the turntables in the locked position ("straight ahead"), and rotated only when at the loader platform.

4.1.3.4. MAINTENANCE PROGRAM FOR GROUND SUPPORT EQUIPMENT

Poorly maintained and improperly used equipment can have costly or even disastrous consequences, a good mechanical maintenance program is a priority for FLYONE company to ensure safety of personnel and prevent damage to the equipment.

The following basic procedures are implemented in order to guarantee good mechanical maintenance program:

- performing constant visual inspections;
- using and maintaining equipment per manufacturer's instructions.
- keeping accurate maintenance records.

When followed, these procedures not only promote safety, but save both time and money.

4.1.3.4.1. MAINTENANCE PROGRAMS

"FLYONE" GSE Maintenance Programs are based on manufacturer manuals, and must be recorded for every unit in its registers (see maintenance programs Types A, B, C) according to manufacturer requirements.

Prior to being used in ground operations, GSE must be checked in order to be serviceable and in a proper functional condition.

4.1.3.4.1.1. MAINTENANCE PROGRAM - TYPE A

It is required that each piece of utilized GSE is inspected each day prior to use. Routine, daily inspections are required to ensure the safety and operational reliability of the equipment.

Type A Maintenance is the everyday planned check. At every shift starting time, each unit/vehicle must be checked for:

- visual integrity of cables and hoses,
- tire,
- brakes,
- hand brakes,
- leakage check

These operations must be performed by the designated handling agent. Records for performing these operations shall be kept on a daily basis and available for FLYONE upon request.

4.1.3.4.1.2. MAINTENANCE PROGRAM - TYPE B

Type B Maintenance is performed every 6 months or as indicated in the manufacturer's maintenance manual. These operations must be performed by the designated handling agent. Records for performing these operations shall be kept and available for FLYONE upon request.

4.1.3.4.1.3. MAINTENANCE PROGRAM - TYPE C

Type C Maintenance is performed in case of serious damage or defects. These operations are performed:

- at specialized service centers.
- at technical section

After repair activities have been finished, all records has to be transposed manager performs in the register for each unit. The recording contains information about repairs provided and components replaced. Records for performing these operations shall be kept and available for FLYONE upon request.

4.1.3.4.2. INSPECTIONS

PRE-INSPECTION

Pre-inspection of GSE are performed every time when the GSE unit/vehicle is dispatched to the ramp, Driver must check and inspect:

- Brakes
- gas pedal
- illumination system
- pressure in hydraulic system
- pressure in pneumatic system,
- back ward mirror are fitted correct
- leakage check
- If the GSE unit/vehicle is carrying a load, all locks, stops, rails or straps are fastened and are the load is secured.

PRE-OPERATIONS VISUAL INSPECTION

Visual check must be done before operating at the aircraft and must include:

- the visual check of hoses, cables, connectors integrity
- Tires and brakes
- Fuel and battery water levels;
- Lights, signals;
- Safety rails;
- Protective padding or buffering;
- Stabilizers.
- Leakage check

OPERATIONS INSPECTION

Visual check must be done after operating at the plane and must include the visual check of hoses, cables, connector's integrity and any possible leakage of oil or any other technical liquids and fuel.

4.1.3.4.3. BREAKDOWN OF GSE

GSE operators have the responsibility to operate equipment in the manner which it is intended to be used. As failure to properly use and maintain GSE could result in serious damage to equipment or personal injury. Damage may be caused due to normal wear and tear as well.

STANDARD OPERATION PROCEDURE WHEN GSE FOUND DEFECTIVE ON THE RAMP

When a GSE unit is found defective on the ramp, as urgent as possible the defective GSE must be evacuated from the ramp in order not to complicate the aircraft movement and other GSE usage. After removing of defective GSE from the apron to technical section, it is placed in a hangar designed for GSE repairing and maintenance. The label "Out of service" is placed on the visible part of the GSE unit.

GSE DISCREPANCY REPORTING

If during visual checks any damage, leakages or other discrepancies are found in the technical section, they must be immediately reported. The equipment is taken out of servicing until the discrepancy is eliminated. After this, the responsible person will perform records in the register of shifts transmits about the damaged unit.

All repair works will be recorded in special record designed for recording of repairs, which shall be available for FLYONE upon request.

OUT OF SERVICE

If a GSE unit is found defective, the persons in charge must be informed. Information about GSE's defect shall be transposed in the register of shifts transmits, which states clearly that this unit is out of service. Also label "out of service" must be placed in a visible place on the equipment (i.e. door handle, driving wheel or control panel) to prevent using of this equipment by mistake in ground operations or to prevent personnel injury.

The "out of service" GSE's information shall be available for FLYONE upon request.

4.1.3.5. PASSENGER BOARDING EQUIPMENT

- The operator of the passenger boarding bridge must be trained and authorized to operate the boarding bridge,
- When positioning equipment at doors and driver/operator vision is restricted, use a guide person.
- Make sure the guide person is in a position to accurately judge clearances and communicate signals to the driver/operator.
- Stop immediately if visual contact with the guide person is lost. A guide person is not required if the equipment is fitted with systems (e.g. sensors) that enable the operator to accurately judge clearances and properly position it to and from the aircraft.
- Make sure the equipment does not contact the wing root leading edge fairing that extends under certain cabin access doors and any other sensors or fairings.
- Make sure any sliding rails and canopies on the equipment are fully retracted during positioning, and fully extended only once the equipment is in position,
- If the equipment's sliding rails cannot be extended until the door has been opened, make sure they are extended immediately upon door opening.
- If the boarding equipment is not equipped with an auto-level feature, position the floor of the boarding device 6 in/15 cm below the door sill. This reduces the possibility that the aircraft door will rest on the boarding device in the event that the aircraft settles during loading and unloading
- Do not leave gaps between the boarding equipment and the aircraft that would allow a person or large piece of equipment to fall through
- Report any malfunction of the bridge to the appropriate person/authority:
 - check that the bridge is serviceable before use.
 - check that the walking surfaces are safe for use.
 - the bridge must be fully retracted or parked in its safe designated parking position during arrival and departure.
 - the safety barrier must be in place whenever the bridge is not at the aircraft,
 - make sure the movement path is clear before moving the bridge.
 - only personnel required for the bridge operation
 - shall be in the bridge while it is moving.
 - move the bridge slowly towards the aircraft until the bridge touches the aircraft—avoiding any aircraft sensors.
 - keep sufficient clearance between the bridge and the underside of the cabin door or as directed by the cabin door markings.
 - engage any safety systems and auto-leveler features if applicable. If the bridge is not equipped with an auto-leveler, the bridge must be attended by an operator whenever it is positioned at an aircraft.
 - close the cabin door before removing the bridge.
 - when positioning is complete, the bridge controls must be isolated as applicable.

PASSENGER BOARDING EQUIPMENT

The passenger loading bridge must be in the fully retracted position prior to

- aircraft arrival and departure. Equipment must not be removed from aircraft cabin
- access door unless the driver (or operator) has advised appropriate persons on the
- aircraft and on the ramp.

4.1.3.6. PASSENGER STAIRS

- Check that the passenger stairs are serviceable before use.
- Check that the walking surfaces are safe for use.
- Passenger stairs must be outside the ERA before aircraft arrival and departure.
- Make sure the movement path is clear before moving the passenger stairs.
- Move the passenger stairs slowly towards the aircraft, avoiding any aircraft sensors, until either the protective bumpers just touch the aircraft or the equipment's proximity sensors stop the movement.
- Keep sufficient clearance between the passenger stairs and the underside of the cabin door, or as directed by the cabin door markings.
- Engage any safety systems and auto-leveler features if applicable. If the passenger stairs are not equipped with an auto leveler, the level of the passenger stairs must be monitored and adjusted as required.
- Deploy stabilizers if fitted.
- Extend side rails after the cabin door has been opened.
- Make sure passenger stairs are positioned so that the cabin door can be used as an unobstructed escape route in the event of an emergency/evacuation.
- If the passenger stairs are towed, disconnect them from the tractor and manually position them on the aircraft.
- Close the cabin door before removing the passenger stairs.
- After the cabin door has been closed, confirm there is no staff on the stairs prior to retracting stabilizers.
- If the stairs are not positioned on the aircraft, they must be pulled back sufficiently to allow the deployment of slides in case of emergency.

DANGER:

Cabin doors shall only be in open position if there is any GSE or boarding device positioned at the door. Cabin doors may never be opened without any equipment positioned at the aircraft.

There is a risk of falling while operating cabin doors. Slide deployments can be fatal. If an armed door begins to open, do not attempt to hold the door, as you risk being seriously injured or killed by doing so.

4.1.3.7. AIRCRAFT LOADING EQUIPMENT

4.1.3.7.1. BELT LOADER

The following precautions must be taken when operating a belt loader:

- The boom of the belt loader must never be positioned inside the cargo hold of any aircraft.
- Position and remove a belt loader in a straight line with the cargo hold door at a 90 degree angle to the aircraft fuselage.
- Ensure the boom is clear of the aircraft or other obstacles before making a turn.
- The rubber bumpers on a conveyor belt loader must NEVER make contact with the aircraft. The minimum distance to be maintained at all times is 1 in/2.5 cm from the fuselage.
- Always raise side handrails as soon as belt loader is positioned. Make sure they do not touch the aircraft fuselage.
- Hand rails may be lowered to accommodate large items during loading and offloading.
- Do not stand or walk on the belt when a hand rail is lowered.
- Specially designed belt loaders (e.g. Ramp Snake or Powerstow) require the equipment to be positioned inside the cargo hold.
- Do not sit or stand on a conveyor belt while it is in operation (up or down).

4.1.3.7.2. GROUND SUPPORT EQUIPMENT SAFETY DRIVING AND PARKING INSIDE ERA

Apply the following precautions when driving or parking Ground Support Equipment (GSE) within the ERA:

- Make a minimum of one complete stop with all motorized vehicles/equipment prior to entering the ERA:
 - Conduct a “Brake Check” or “Safety Stop” by coming to a full and complete stop to confirm the serviceability of the brake system on the vehicle and to test the apron surface.
 - This action MUST be carried out even if there is no Equipment Restraint Line marked on the apron.
 - This stop must be conducted at a distance of no less than 5 m/15 ft from the aircraft.
- Do not drive GSE faster than walking speed.
- Manoeuvre GSE carefully in order to prevent personnel injury and/or aircraft damage.
- Avoid performing any sharp turns near the aircraft, particularly when towing equipment.
- When reversing vehicles or equipment with limited rear-view visibility inside the Equipment Restraint Area, make sure you are:
 - guided by an agent using standard IATA signals, and/or
 - assisted by means of a rear-view video or mirror.
 - If visual contact with the guide person (s) is lost, the GSE operator must stop movement of the GSE immediately
- Any moving vehicle that is not positioning at the aircraft must stay outside the operational safety buffer zone.
- Do not drive or park under the aircraft fuselage and/or wing.

EXCEPTION: GSE and vehicles needed for aircraft servicing (e.g. aircraft refueling truck, water servicing truck, toilet servicing truck). On stations or with aircraft types where the aircraft/stand configuration makes it necessary to tow dollies under the wing during (off)loading of the aft cargo hold of a wide body aircraft.

ATTENTION: In such situations - Tow only empty dollies under the rearmost part of the right wing only.

GROUND SUPPORT EQUIPMENT SAFETY DRIVING AND PARKING INSIDE ERA

Equipment movement does not commence or is halted if the driver (or the operator) does not have or loses visual contact with a guide person

4.2. POT

Water service must not be performed by staff that has already performed toilet servicing during the same shift. Only uplift water if authorized by the operating airline.

Replenish the aircraft tank according to the operating airline instructions—any deviation must be reported to the supervisor or airline representative.

4.2.1. GENERAL HYGIENE PRECAUTIONS

To perform water servicing you must:

- wear clean clothing;
- thoroughly wash your hands using soap before starting water servicing:
 - Do not fill the potable water service unit from the same water source as the toilet service unit.
 - Do not park the potable water service unit and the toilet service unit in the same area.
 - Do not service the toilet and water on the aircraft at the same time.
 - Certain aircraft types are exempted from this rule. (For exceptions, refer to airline GOM)

GENERAL HYGIENE PRECAUTIONS

FLYONE aircraft should not have toilet and water servicing at the same Time

4.2.2. POTABLE WATER UNITS SERVICING PROCEDURE

4.2.2.1. FILLING AIRCRAFT WATER TANKS

- Fill the aircraft water system only after the electrical power supply has been restored.
- Before connecting the aircraft filling hose to the aircraft, flush the hose.
- Each aircraft type has specific requirements for filling and draining. Refer to the operating airline's GOM for specific servicing instructions.

***Note:** When the filling hoses are not in use, the nozzles or connectors must be protected from contamination either by the use of appropriate covers or by immersing them in receptacles containing chlorinated water.*

FILLING AIRCRAFT WATER TANKS

Refer to chapter 11 AIRCRAFT CHARACTERISTICS - A320 and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.2.2.2. WATER SERVICING DURING FREEZING CONDITIONS

The following actions must be followed to prevent freezing of the water in the aircraft water tanks and lines during freezing conditions:

- Drain the aircraft water tanks if instructed by the operating airline as per the operating airline procedures.
- Ensure the fill line is fully drained before closing the cap to prevent freezing of fluid inside.

CAUTION: Keep aircraft cargo doors closed to prevent water lines from freezing when the cargo compartments are not being loaded or offloaded.

CAUTION: Do not attempt to remove the frozen substance in the fill lines or connections or on the service panels. Contact maintenance immediately.

WATER SERVICING DURING FREEZING CONDITIONS

On long ground stops especially during extreme cold conditions potable water must be drained from the aircraft to prevent water freezing in water tanks/lines.

4.3. TOILET SERVICING

4.3.1. INTRODUCTION

The complete procedure for servicing the aircraft toilet waste tank consists of the following 3 steps:

- Draining of the waste tank(s);
- Flushing of the waste tank(s);
- Adding an amount of pre-charge and/or a concentrated deodorant precharge product-as applicable.

CAUTION: Toilet fluids are corrosive. Prior to servicing, inspect the toilet servicing panel on the aircraft for signs of leakage. If any horizontal blue streaks are observed, the blue streak must be cleaned prior to servicing. After cleaning, look again for signs of leakage. Blue ice build-up in higher altitudes may influence airworthiness. In case of a possible leak, immediately inform the airline representative, ground engineer, or advise the flight crew.

4.3.2. HYGIENE PRECAUTIONS

- Wear heavy rubber gloves, eye protection and protective clothing against harmful wastes when performing toilet servicing.
- Do not park the toilet service unit in the same area as the water service unit nor at the water filling point.

CAUTION: Once an agent has performed toilet servicing on an aircraft, the same agent CANNOT perform water servicing during the same shift.

4.3.3. TOILET SERVICING PROCEDURE

TOILET SERVICING PROCEDURE

Refer to chapter 11 AIRCRAFT CHARACTERISTICS - A320 and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.3.3.1. GENERAL

Each aircraft type has specific requirements for toilet servicing and the amount of precharge and/or concentrated deodorant precharge product. Refer to the operating airline's GOM for aircraft type specific instructions for more details.

- Prior to opening a toilet service panel, check for stains around the panel.
- Prior to opening a toilet service panel, check for stains around the panel.
- While opening the service panel, stay clear and watch for signs of leakage.
- Stay clear of the drain fitting cap while opening, and watch for signs of leakage.
- Make sure the drain hose Y-fitting coupling is connected correctly, before a drain valve handle is pulled.
- Empty the waste tank(s).
- Flush the waste tank(s) twice and empty them again.
- Pre-charge the tank(s) with the correct quantity of water and disinfectant-as applicable.
- Fill the waste tank(s) with the correct amount of water and concentrated deodorant pre-charge packets or pre-mixed fluid as applicable. For aircraft equipped with a conventional toilet system, fill the waste tank(s) with the correct amount of water and pre-charge, or concentrated deodorant pre-charge
- After servicing ensure that there are no leaks at the drain fitting cap and the end of the drain hose Y-fitting coupling.
- Close the nozzle tightly in order to prevent the accumulation of ice during flight and wipe off residual water and disinfectant.
- Check for possible leakage.
- After servicing close and latch the fitting caps and service panel door

Note: Inform aircraft maintenance or flight crew, if:

- Fluid leakage is observed.
- The drain valve will not open or the waste tank cannot be drained.

Report any spillage of waste to the supervisor.

4.3.3.2. DRAINING

- Drain the aircraft waste system into the waste tank of a Toilet Service Unit.
- Observe the waste drain hose during draining to confirm that the waste tank is completely emptied. The hose will also vibrate for a few seconds as the contents of the waste tank pass into the waste tank of a Toilet Service Unit.

Note: Drain the waste tanks one at a time for optimal results.

4.3.3.3. SERVICING DURING FREEZING CONDITIONS

Take the following measures to prevent freezing of the fluid in the aircraft toilet tanks and lines during freezing conditions:

- Drain the waste tanks if the aircraft is parked in the open for several hours without electrical power supply and the temperature is, or is expected to be, below the freezing point, as per the operating airline procedure.
- Fill the aircraft toilet system only after electrical power supply has been restored, and as close to flight departure time as possible.
- Ensure the fill line is fully drained before closing the cap to prevent freezing of fluid in the fill line.

CAUTION: Do not attempt to remove the frozen substance in the fill lines or connections or on the service panels. Contact maintenance immediately.

4.3.3.4. INOPERATIVE TOILET SYSTEMS

If defects of the toilet system prevent regular servicing, ask qualified technical staff – if available – for assistance (e.g. removal of panels, etc.).

If no technical staff is available, inform the Flight Crew or an airline representative.

4.4. SAFETY DURING FUELING/DEFUELING

SAFETY DURING FUELING/DEFUELING

Fuelling is conducted in accordance with OEM procedures and specifications defined in the OM-A and maintenance manual. Thru the oversight FLYONE ensures that fuel suppliers are maintaining standards of fuel safety and quality acceptable and fuel delivered and loaded onto aircraft is:

- Free from contamination;
- Of the correct grade and specification for each aircraft type.

Oversight process ensures fuel is stored, handled and serviced in accordance with accepted standards and that:

- Fuel facilities,
- Fire extinguishing equipment suitable for at least initial intervention in the event of a fuel fire is readily available
- Safety and quality procedures, including procedures are in place for quickly summoning the rescue and firefighting service in the event of a fire or major fuel spill.
- Performance levels of personnel are in appropriate level.

Fuelling is considered to start as soon as the filler hose is connected to the airplane. Fuelling/de-fuelling shall only be considered terminated after all the hoses have been disconnected from the airplane.

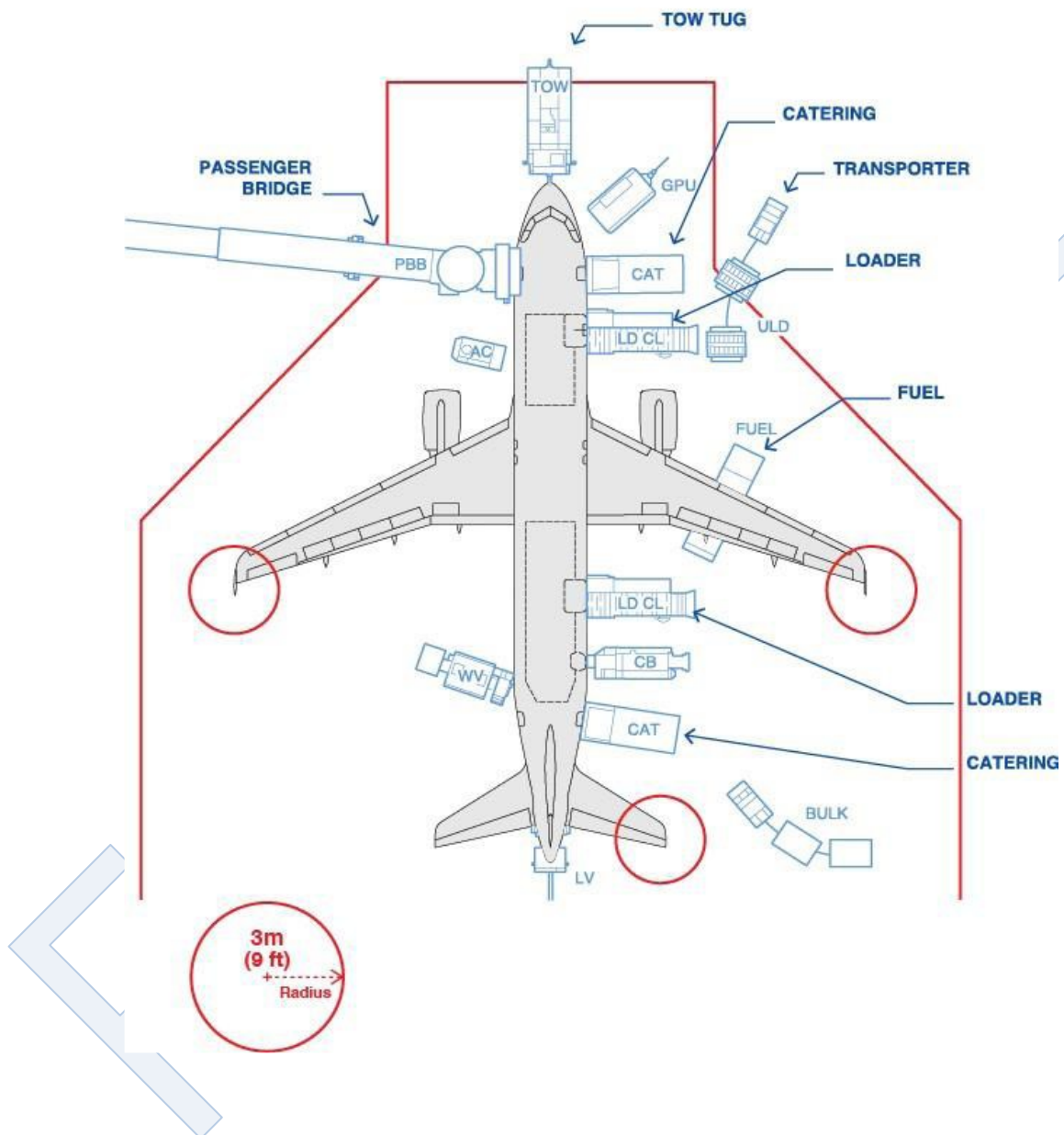
- Spilled fuel shall be removed or dried up immediately in the presence of the airport fire brigade before passengers are boarding the airplane.
- When fuelling an aircraft certain safety regulations must be followed to avoid a potential fire hazard. Local authority regulations, if any, must always be adhered to • Electrical equipment, e.g. GPU, shall not be connected to or disconnected from the aircraft during fuelling. The APU shall neither be started nor stopped during fuelling
- Normally, fuelling may not take place inside a hangar. Fuelling inside a hangar requires special precautions in accordance with local regulations
- Fire extinguishing equipment suitable for at least initial intervention in the event of a fuel fire shall be readily available, and personnel have been trained in the use of such equipment;
- Procedures shall be in place for quickly summoning the rescue and firefighting service in the event of a fire or major fuel spill.
- When fuelling, adequate measures must be taken to prevent spillage. It is important to keep spillage to a minimum. Should excessive spillage occur, appropriate action shall be taken by the person responsible for the fuelling. The airport or local fire department shall be called whenever required.
- The fuelling vehicle shall be positioned in such a way that - if a fire occurs - the vehicle can be driven away without the need to reverse, and so that the persons within the fuelling area can escape easily
- Fuelling shall not be initiated if the wheel brakes of the aircraft are abnormally hot
- Smoking is not permitted within 15 metres of the aircraft while refuelling
- The fuel hose shall be protected and safe guarded from damage.
- If lightning is a threat fuelling shall be stopped.

- The fuel provider shall designate a person with responsibility for fuelling operations. This person is responsible for:
 - The establishment a fuelling safety zone that encompasses the area on the ramp within a 3 m (10 ft) radius around the aircraft fuelling receptacles, tank vents and around the fuelling equipment.
 - No equipment performing aircraft servicing functions shall be positioned within a 3 m (10 foot) radius of aircraft fuel vent openings.
 - The use of: Items that could be sources of ignition or fire (e.g., matches, welding equipment, flashbulbs) are prohibited;
 - The use of portable electronic devices with proper separation distance from aircraft fuel vents and/or fuelling equipment (e.g., mobile telephones, portable radios, pagers) are prohibited
 - A bonding connection shall be establishment between the fuelling vehicle and aircraft to provide for dissipation of electrical energy that may develop;
 - Communicate with the flight crew or other qualified persons onboard the aircraft;
- Provide notification to the flight crew or other qualified personnel onboard the aircraft and/or other appropriate personnel engaged in aircraft ground handling activities when fuelling is about to begin and has been completed unless an equivalent procedural means has been established to ensure the flight and/or cabin crew are aware of fuelling operations and are in a position to effect an expeditious evacuation of the aircraft, if necessary;
- Provide notification to the flight crew or other qualified personnel onboard the aircraft when a hazardous condition or situation has been determined to exist.
- In the event of a fuel spill, ensuring that the following immediate and follow-up actions are taken:
 - Fuelling is stopped;
 - Appropriate ground response personnel or airport fire service is summoned, as applicable;
 - Flight crew or other qualified persons onboard the aircraft are notified.

4.4.1. FUELING SAFETY ZONE

The Fuelling Safety Zone (FSZ) is defined as an area of at least 3 meters in any direction from the centre-point of all fuel vent exits, refuelling plugs, aircraft refueling ports, fuel hydrants, fuel hoses and fuelling vehicles. This distance may be further increased as required by local airport or civil aviation regulations.

Example of safety zone for A320



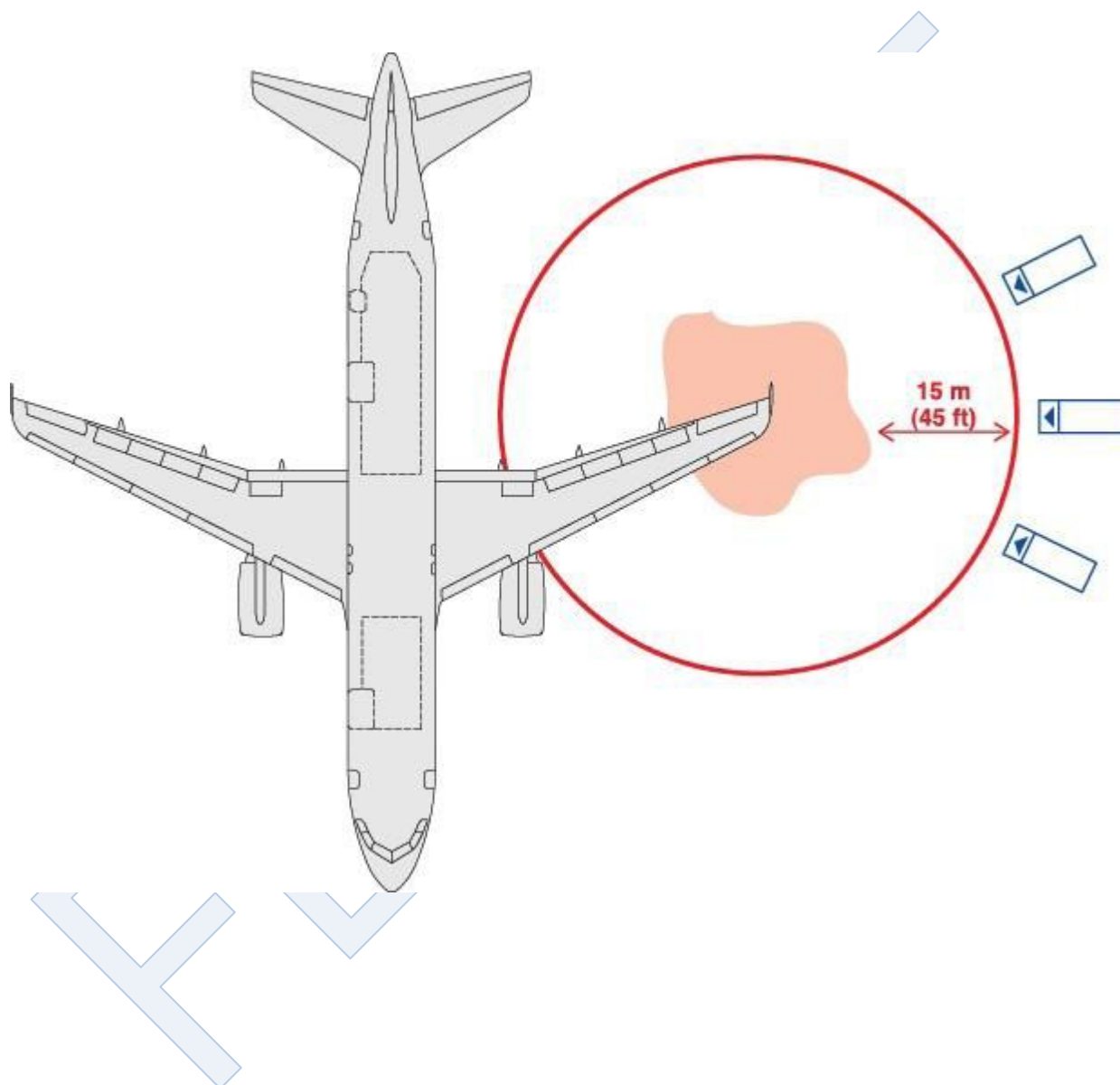
Within the Fuelling Safety Zone (FSZ), all personnel must ensure that they:

- Do NOT smoke.
- Do not use ANY hand held portable electronic devices, including cell phones, portable music players, portable game units or an earpiece or headset.
- Only use company issued and approved radios, radio telephones, pagers, torches, lamps and lighting systems. Battery chargers must not be operated.
- Enter the FSZ only when required by your present job task responsibility.
- Assume that fueling is taking place anytime a fuel vehicle is on the stand during aircraft servicing and fuel hoses connected.
- Do not leave vehicle engines running unnecessarily.
- Position all GSE and vehicles so they do not obstruct the fueling vehicles' escape route, this is not a mandatory requirement for hydrant type fuelling vehicles but every effort should be made to ensure a clear exit pathway.
- Do not allow any passengers to enter the FSZ.
- Avoid the use of motorized GSE within the FSZ.
- Do not park any equipment in the FSZ.
- Ensure fuel hoses are protected and all ground equipment is kept a minimum of 1 metre (3 ft) away from any fuel hose on the stand that is connected between a fuel truck and an aircraft.

4.4.2. FUEL SPILLAGE

Take the following safety measures whenever a fuel spill occurs:

- Activate the emergency shut-off valve where installed.
- Alert the person in charge of fueling and/or the Pilot in Command of the spillage.
- Contact the local fire service if not already done.
- Verify with authorities/supervisor whether to stop all activity around the aircraft.
- As far as possible, restrict all activities inside and outside the spill area to reduce the risk of ignition.
- Secure the area 15 metres from the contaminated area.



4.4.3. REFUELING/DEFUELING WITH PASSENGERS ONBOARD

When fuelling with passengers on board you must:

- Keep designated escape exits clear. An escape exit may either be a bridge into a terminal building, a cabin door or a passenger stair truck positioned on an open cabin door.
- Ensure that all areas on stand below designated escape exits are kept free of any equipment and vehicles which would impede the deployment of an escape slide.
- Not hinder escape routes of passengers on board by ensuring that passenger stairs and bridges are clear of FOD.

Refer to the operating airlines' policy regarding fueling as well as local airports and regulatory requirements. The above is applicable as a minimum standard.

REFUELING/DEFUELING WITH PASSENGERS ON BOARD

Refueling/defueling with passengers embarking, on board or disembarking. During short turnarounds and en-route transits it may be necessary for fueling to occur with passengers onboard, embarking or disembarking, provided it is not prohibited by local airport authorities and/or regulations. Before commencing fueling activities under these conditions local requirements must be considered.

These precautions involve any qualified person, such as an engineer, a ramp agent in charge of re/defueling, the crew onboard including cabin crew and pilot(s). Specific procedures related to safety inside the cabin are described in OMA 8.3.15.3.

Note: (1) The aircraft shall not be refueled/defueled with Avgas (aviation gasoline) or wide-cut type fuel or a mixture of these types of fuel (JET B, JP4 or equivalent), when passengers are embarking, on board or disembarking.

Note: (2) During refueling with all other types of fuel (Kerosene like JET A, JET A-1, JP8, TS1, RT, or equivalent as approved by the AFM), necessary precautions shall be taken when passengers are embarking, on board or disembarking and the aircraft shall be properly manned by qualified personnel ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available.

When an aircraft is being refueled/defueled with passengers embarking, on board or disembarking a qualified person must be designated to supervise the fueling activity.

This designation shall be coordinated with the operating captain.

This qualified person must:

- Remain at a specified location during fueling.
- Be capable of handling emergency procedures concerning fire protection and fire-fighting.
- Be capable of handling communications.
- Be capable of initiating and directing an evacuation.
- Establish, test and keep available two-way communication between ground staff and cockpit. This communication may take place via the aircraft interphone communication system or via other suitable means. The involved personnel should remain within easy reach of the system of communication.
- Inform crew/staff on board and around the aircraft that fueling is about to commence and when fueling is completed.
- Stop re/defueling and inform crew o/b aircraft if any hazard arises, including but not limited to, fuel spillage.
- Ensure that all exit areas, cabin aisles and cross aisles inside the aircraft should be kept clear of obstructions.
- Stop the re/defueling operation immediately, if presence of fuel vapor is detected inside the aircraft or any other hazard arises.

- Coordinate with ground handling supervisor that:
 - Ground activities outside the aircraft and work within the aircraft, such as catering and cleaning, should be conducted in such a manner that they do not create a hazard or obstruct emergency exits;
 - 2) Ensure the fuel truck or hydrant dispenser is not be parked in the embarkation or disembarking path;
 - 3) When stairs are not in position for use in the event of evacuation, ground service personnel ensure the ground area beneath nominated exit doors is kept clear of any obstructions;
 - 4) When passenger loading bridges are in use, access to the terminal is be available;
 - 5) When a passenger loading bridge is not used, aircraft passenger steps or alternate means of emergency evacuation should be in place;
 - 6) Passengers joining or leaving the aircraft via the apron are moved without delay under the supervision of a responsible person over a safe route.

Passengers must be kept at a safe distance from the fueling operation and other hazardous areas such as aircraft engines, APU exhausts and fuel tank vents. "No Smoking" regulations shall be strictly enforced.

The number of cabin crew on board must not be less than the minimum number of cabin crew required to operate the aircraft. If presence of fuel vapor is detected inside the aircraft or any other hazard arises, re/defueling must be stopped immediately

4.4.4. REFUELLING WITH ONE ENGINE RUNNING

REFUELLING WITH ONE ENGINE RUNNING

- Refuelling with one engine running allowed only at airports where no external ground pneumatic power is available and only when aircraft APU is unserviceable.
- Only the RH fuel couplings can be used.
- Overwing gravity filling is not permitted.
- Refuelling with one engine running allowed ONLY without passengers o/b.
- Airport, where refuelling will take a place authorization have to be obtained.
- The Airport Fire Department should standby at the aircraft during the entire refuelling procedure.
- Aircraft should be faced into the wind at a location where the slope is negligible.
- Observe that:
 - Engine number 1 at ground idle.
 - Engine number 2 not started, engine number 1 not shut down and no attempts to start the APU before all fuelling operations have been completed.
- The fuel truck should be positioned under the extremity of the right wing.
- Only manual refuelling procedure should be used.
- The fuel truck shut off valve should be monitored during the entire refueling procedure.
- Flight crew member have to stay in the cockpit during the entire refueling procedure
- Qualified ground crew member have to be at the fuelling station during the entire refuelling procedure.

4.5. ADVERSE WEATHER CONDITIONS

4.5.1. GENERAL

Adverse or poor weather conditions may have a negative impact on aircraft handling activities and ground safety.

4.5.2. WINTER OR SLIPPERY APRON CONDITIONS

Winter weather brings extra hazards which require awareness and more care on the part of personnel working on the aprons to prevent accidents. The following precautions to reduce accident risk must be taken:

- Plan additional time for all ramp activities and take extra care when walking across apron surfaces which can be slippery.
- Take extra care when driving, especially approaching the aircraft. Remember that vehicles require greater distance to stop safely.
- Operators of potable water tankers and toilet servicing vehicles must be vigilant that there is no spillage or leakage that can lead to subsequent freezing. Care must be taken to keep spillage and overflow to a minimum.
- Close all entrance and cargo hold doors as soon as possible and keep them closed to avoid precipitation or snow entry into the aircraft.
- Reduce speeds in slippery apron conditions. Adjust all activities and operations on the ramp to suit the conditions at the time.

4.5.3. STORMS- LIGHTNING

4.5.3.1. NOTIFICATION LEVELS

Levels	Actions
Green–Possibility of Lightning or Thunderstorm activity outside of 8 kilometres (5 miles) radius of the airport	Disseminate lightning warning to airside operating staff
Amber Alert–Lightning activity within an 8 kilometres (5 miles) radius of the airport	Disseminate lightning warning to airside operating staff so they can prepare and plan their activities to be ready in case of a Level 3 in accordance with local regulatory requirements.
Red-Stop/Suspend–Lightning activity within a 5 kilometres (3 miles) radius of the airport	Disseminate the order to stop all airside activities and seek shelter to all airside operating staff

4.5.3.2. LIGHTNING ALERT CALLOUT

In the absence of an integrated airport notification system all airside operating staff shall be aware of the following procedures:

Use Counting Method (see GOM 4.5.3.3) to detect/predict lightning activity. Determine the corresponding level based on the Count Method diagram below.

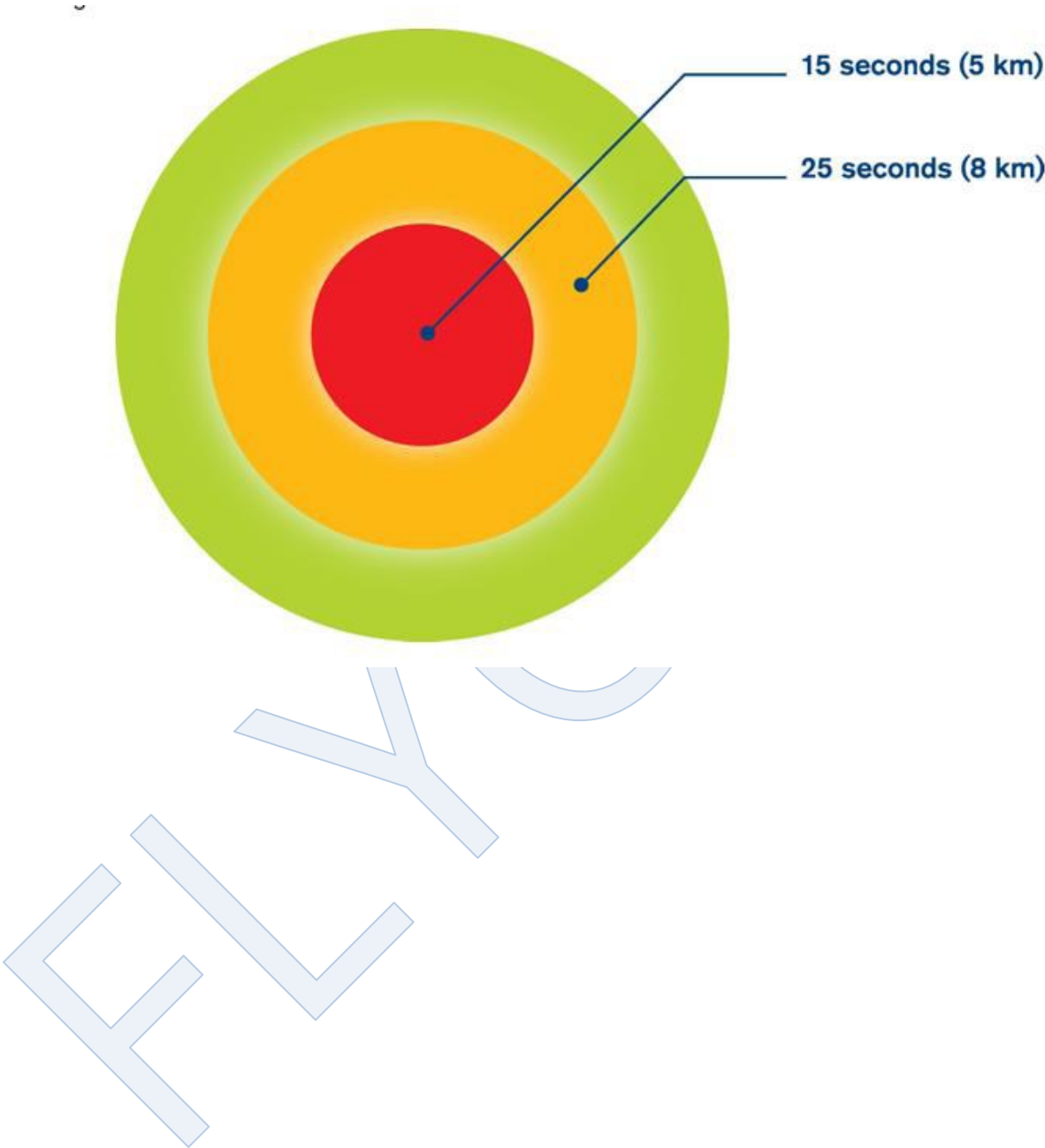
The responsible person notifies all airside operating staff of lightning level. If the person responsible is not available the Counting Method should be used by all airside operating staff for self-protection.

In case of level 3 proceed to designated shelter

4.5.3.3. COUNTING METHOD

The Counting Method is used when an integrated airport notification system is absent. It is used to estimate the level of lightning activity.

Counting Method Chart:



4.5.4. HIGH WIND CONDITIONS

High winds pose a great risk of damage and the following minimum precautions should be taken:

- Ensure the safety of the aircraft by installing additional chocks and removing all equipment from around the aircraft.
- Take extreme care when opening or closing aircraft hold doors.
- Make sure parking brakes are set on all parked GSE.
- Set parking brakes and secure by additional means if necessary, all non-motorized ramp equipment. (i.e. baggage carts and ULD dollies).

HIGH WIND CONDITIONS- SECURING AIRCRAFT IN HIGH/STRONG WINDS. (WINDS IN EXCESS OF 40KTS)

- Ensure all personnel know of the impending weather event Aircraft should be appropriately secured, by using additional chocks, and/or setting aircraft brakes, parking the aircraft into the wind direction where feasible and/ or tie down, and/or ballasting of the aircraft.
- Secure all cargo nets and close all cargo doors on aircraft
- Secure all aircraft cabin doors. (Note: Securing the passenger cabin doors with the APU/Packs operating or an external conditioned air source connected can pressurize the aircraft.
- Where possible add fuel for ballast purposes
- Close cockpit windows
- Close all service panels.
- Secure aircraft nose gear torsion links
- Hook up towbar and attach tug when possible and install by-pass pins.
- If time permit and parking areas are available move aircraft into hangars.
- If hangars are not available consider remote parking aircraft to get them away from structures that they could be blown into.

4.5.5. HIGH WINDS ACTIVITY TABLE

The following actions must be taken when sustained winds and/or gusts of wind exceeding 25 KTS are predicted;

	48 to 72 km/h (30 to 45 mph)	72 to 111 km/h (45 to 70 mph)	Above 111 km/h (70 mph)
Secure bag/freight carts, dollies, ladders/maintenance stands and tow bars and place near or against the building.	x	x	x
Ensure parking brakes are set on all ground equipment	X	x	x
Ensure empty ULDs are secured and doors/curtains are closed	X	x	X
Clear FOD and remove ULDs from the stands	x	x	x
Empty FOD containers and bring inside if not secure.	x	x	x
Suspend use of pre-conditioned air hoses and store securely. Remove marker cones.	x	x	x
Ensure landing gear is chocked for high wind conditions	x	x	x
Do not elevate cabin service/catering highlifts and passenger stairs not equipped with stabilizers.	x	x	X
Do not elevate cabin service/catering highlifts and passenger stairs equipped with stabilizers.		x	x
Close cargo hold/passenger doors		x	X
Close all aircraft access panels		X	x
Do not elevate booms on deicers.		x	X
Remove GSE from aircraft and secure in position outside ERA clear of aircraft		X	x
Secure boarding bridge and position to minimize surface exposed to the direct force of the wind.		x	x
Retract and lower boarding bridge. Position so that boarding bridge length points away from the wind.			x

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4.6. SAFETY CONES

Safety cones are a caution sign for drivers to maintain required safety clearances. Cones protect parts of the aircraft against collision by GSE.

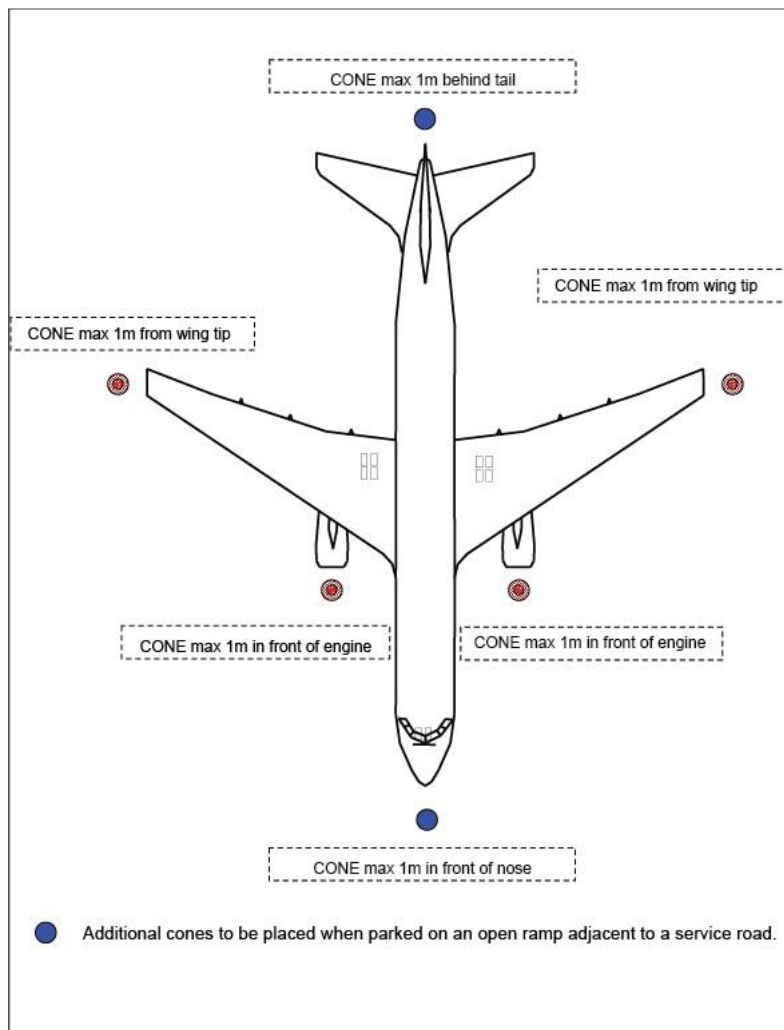
4.6.1. SAFETY CONE PLACEMENT AND REMOVAL

Safety cones are a caution sign for drivers to maintain required safety clearances. Cones protect parts of the aircraft against collision by GSE.

- Prior to arrival of the aircraft, make sure there are sufficient serviceable safety cones to protect the aircraft type to be handled.
- Do not approach the aircraft to position cones unless all of the following criteria are met:
 - aircraft has come to a complete stop.
 - engines have been shut down and are spooling down.
 - anti-collision lights are switched off.
 - aircraft has been chocked.
- Place safety cones on the ground in accordance with the following diagrams—within a maximum of 1 meter outward from the point of the aircraft being protected. Cones must not be placed in high wind conditions.
- Additional safety cones may be needed as per operational requirements or local regulations.
- GSE must not approach the aircraft until all safety cones have been placed (not applicable for the passenger boarding bridge).
- All required safety cones shall remain in place until GSE and vehicle activities around the aircraft have ceased prior to departure of the aircraft.
- Ensure all GSE has been removed from the safety zone.
- Remove the safety cones from around the aircraft.
- When not in use, place the safety cones in the designated storage area.

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4.6.1.1. CONE PLACEMENT FOR WING-MOUNTED TWINENGINE JET AIRCRAFT



4.6.1.2. CONE PLACEMENT FOR FUSELAGE-MOUNTEDTWIN ENGINE COMMUTER AIRCRAFT

CONCISE PLACEMENT FOR FUSELAGE-MOUNTED TWIN

ENGINE COMMUTER AIRCRAFT

N/A for FLYONE

4.6.1.3. CONE PLACEMENT FOR WING-MOUNTED TWINPROPELLER AIRCRAFT

CONCISE PLACEMENT FOR WING-MOUNTED TWIN

PROPELLER AIRCRAFT

N/A for FLYONE

4.6.1.4. CONE PLACEMENT FOR WING-MOUNTED FOURENGINE JET AIRCRAFT

CONCISE PLACEMENT FOR WING-MOUNTED FOUR ENGINE

JET AIRCRAFT

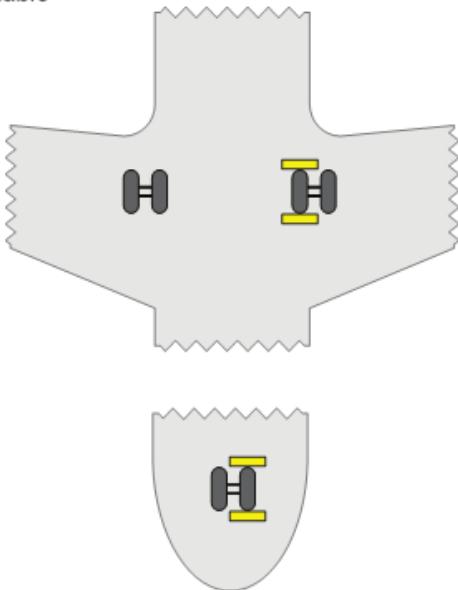
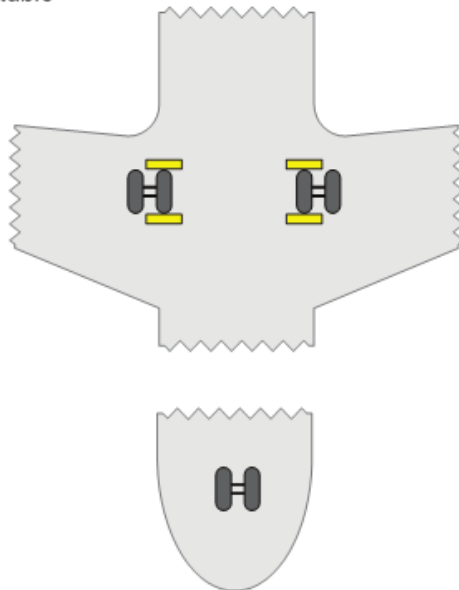
N/A for FLYONE

4.7. AIRCRAFT CHOCKING

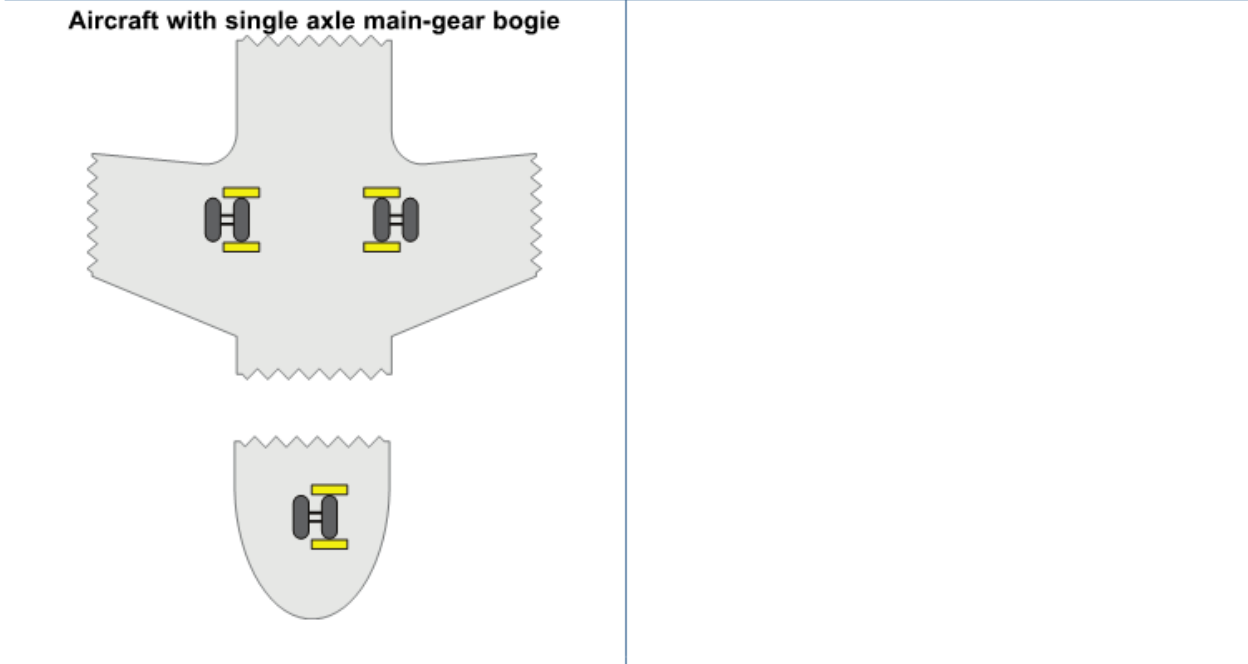
4.7.1. WHEEL CHOCK PLACEMENT

- Make sure the required number of serviceable chocks are available taking account of the aircraft type and/or weather conditions.
- Chocks must be kept clear of the manoeuvring area during aircraft arrival.
- Do not approach the aircraft to position chocks until the aircraft has come to a complete stop.
- Places chocks forward and aft of the aircraft nose gear (according to options listed in diagrams in this section) . One designated member of the ground staff immediately places chocks forward and aft (if aircraft type allows) of the nose gear. This is the first action to take place around the aircraft, and shall be completed before any other activity may take place.
- Before approaching the main gear, wait until:
 - engines have been switched off and are spooling down.
 - anti-collision lights are switched off.
- Walk towards the main gear in a path parallel to the fuselage, avoiding engine intake areas.
- Place chocks forward and aft of the main gear in accordance with the applicable normal chock placement diagram.
- Notify the flight deck crew that the chocks are inserted.

4.7.2. CHOCK PLACEMENT DIAGRAMS

Normal Operation	
Aircraft with single axle main-gear bogie Option 1 Note: No nose gear chocks on aircraft with spray deflectors. Inside or outside main gear chocks are acceptable	Aircraft with single axle main-gear bogie Option 2 Note: No nose gear chocks on aircraft with spray deflectors. Inside or outside main gear chocks are acceptable
	

Parking Aircraft Out of Service/Night-Stop/High Winds



4.7.3. REGIONAL AIRCRAFT CHOCKING

REGIONAL AIRCRAFT CHOCKING
N/A for FLYONE

4.8. HAND SIGNALS

4.8.1. INTRODUCTION

In order to standardize “ground staff-ground staff” communication or “ground staff-flight crew” communication, the following hand signals are defined:

- **Guide Man Hand Signals** – to be used by a specific guide man in direct liaison with the equipment operator to facilitate movements of any type of GSE.
- **Marshalling Hand Signals** – to be used by ground staff, to assist the flight crew during maneuvering of the aircraft and engine starting.
- **Technical/Service Hand Signals** – to be used by ground staff to communicate technical/servicing information to flight crew, and by flight crew to communicate technical/servicing information to ground staff.
- **Pushback Hand Signals** – to be used during the tractor/towbar connection/disconnection process, and at the start and end of the pushback operation.

4.8.2. CONDITIONS FOR USING HAND SIGNALS

The person giving the hand signals must:

- Use only approved hand signals.
- Wear a high visibility vest.
- Maintain the same role throughout the procedure.
- Keep in constant, visual contact with the other ground staff and flight crew throughout the maneuver. If visual contact is lost, the operation must stop and not re-commence until visual contact is re-established.
- Remain clear of the intended pathway of the vehicle/aircraft where possible

4.8.3. GUIDE MAN HAND SIGNALS (FOR GSE)

4.8.3.1. TO ATTRACT OPERATOR'S ATTENTION AND TAKE COMMAND



Arms held above head in vertical position with palms, facing forward.
Meaning: I am in charge of this maneuver. You will take orders only from me.

4.8.3.2. FORWARD MOVEMENT (TOWARD MAN):



Arms a little aside and repeatedly moving upwards, backwards, beckoning onwards.

4.8.3.3. BACKWARD MOVEMENT:



Arms by sides, palms facing forward, swept forward and upward repeatedly.

4.8.3.4. TURN RIGHT

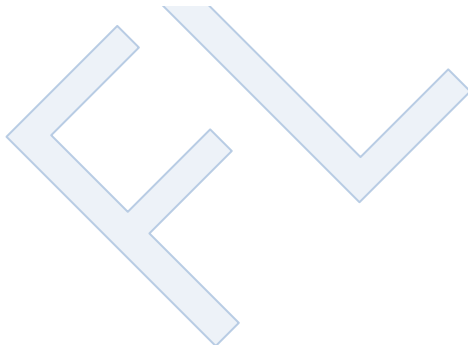


Left arm downward, hand extended, right arm repeatedly moved upward backward. Speed of arm movement indicating rate of turn.

4.8.3.5. TURN LEFT



Right arm downward, hand extended, left arm repeatedly moved upward backward. Speed of arm movement indicating rate of turn.



4.8.3.6. LIFT



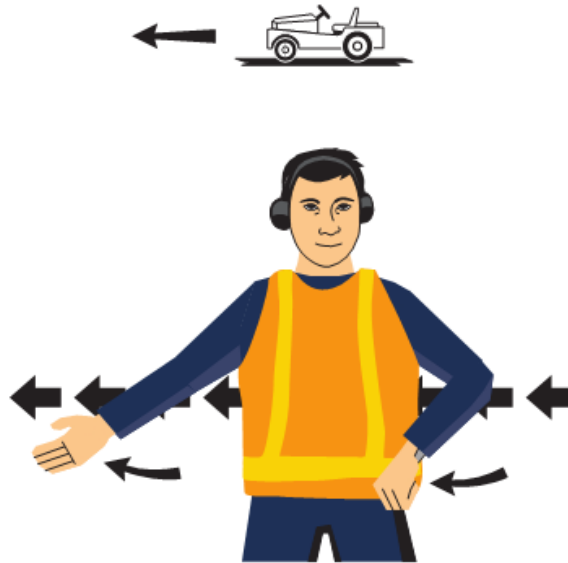
Stretch both arms toward load or equipment, palm up, hand movement in upward direction.

4.8.3.7. LOWER



Stretch both arms toward load or equipment, palm down, hand movement in downward direction.

4.8.3.8. ACCOMPANIED MOVEMENT



Come with Load or equipment. Maintain eye to eye contact with operator or driver. Swing down opposite arm.

4.8.3.9. INDICATED DISTANCE



Distance shown between hands must correspond exactly with existing margin.

4.8.3.10. STOP



Arms raised and crossed over head.

Immediate stop: Hands cross over head with clenched fists.

4.8.3.11. OK. ALL IS CLEAR OR CONTINUE ON YOUR OWN OR DRIVE AWAY



Lift stretched right arm, hand closed, thumb raised.

4.8.3.12. CHOCKS INSERTED; STABILIZERS ON:



Arms down, hand closed facing inward, thumbs extended, move arms inwards.

4.8.3.13. CHOCKS REMOVED; STABILIZERS OFF:



Arms down, hands closed facing outward, thumbs extended, move arms outward.

4.8.3.14. TO INTERRUPT POWER SOURCE (ELECTRICITY,FUEL, AIR):

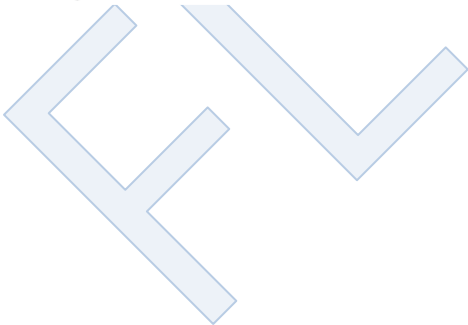


Right arm and hand level with shoulder, palm downward horizontally swinging from extended arm to throat.

4.8.3.15. STOP ENGINE:



Right arm and hand level with shoulder, palm downward, hand on throat making horizontal move to the right, passing hand across throat.



4.8.3.16. TO CONNECT OR DISCONNECT:



Raise left arm and hand, with fingers extended horizontally

Connect: Right hand with clenched fist moving upward to contact left palm

Disconnect: Right hand with clenched fist leaving left palm downward.

4.8.3.17. BRAKES ON/OFF:



Right arm and hand raised horizontally in front of body.

Release brakes: With fist clenched, then extend fingers, palm inward.

Engage brakes: With extended fingers, palm inward, then clench fist.

4.8.4. MARSHALLING HAND SIGNALS (FOR AIRCRAFT)

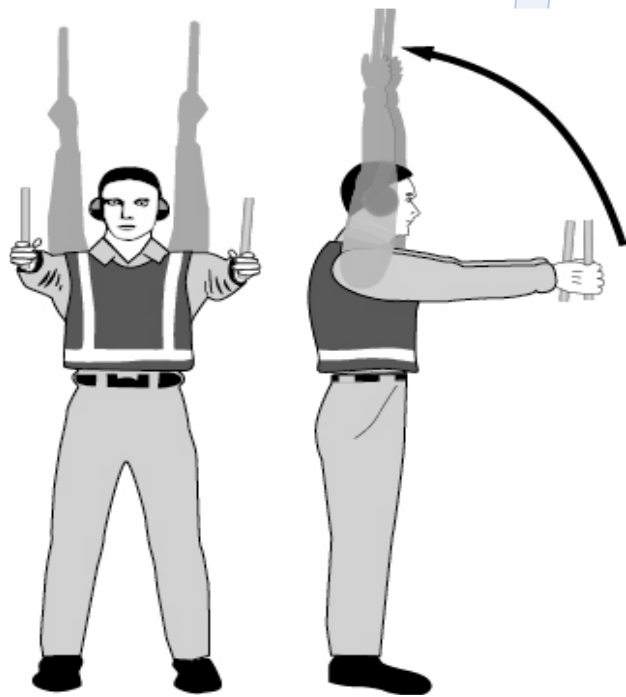
- Do not perform aircraft marshalling unless it is permitted by the local airport authority and you have been trained and authorized.
- Give marshalling hand signals from a position forward of the aircraft while facing and within view of the pilot.
- Wear high visibility vest
- Use illuminated torch lights/wands to improve the visibility of the hand signals in the following situations:
 - Insufficient apron lighting
 - Poor visibility
 - Night conditions
 - When required by local Airport Authorities or regulations.

CAUTION: To avoid any possible confusion by the Flight Crew, do not use guide man hand signals for equipment until all aircraft marshalling has been completed

The hand signals printed on the following pages are illustrated with the use of wands. The meaning of the signals remains the same when bats, gloves or illuminated torch lights are used.

It is not possible to give signals for engaging/releasing parking brakes with the use of bats or illuminated torch lights.

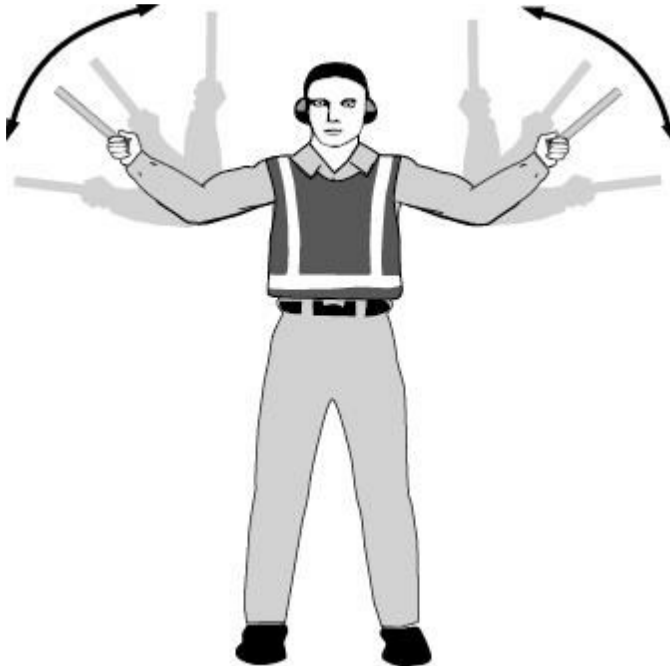
4.8.4.1. IDENTIFY GATE



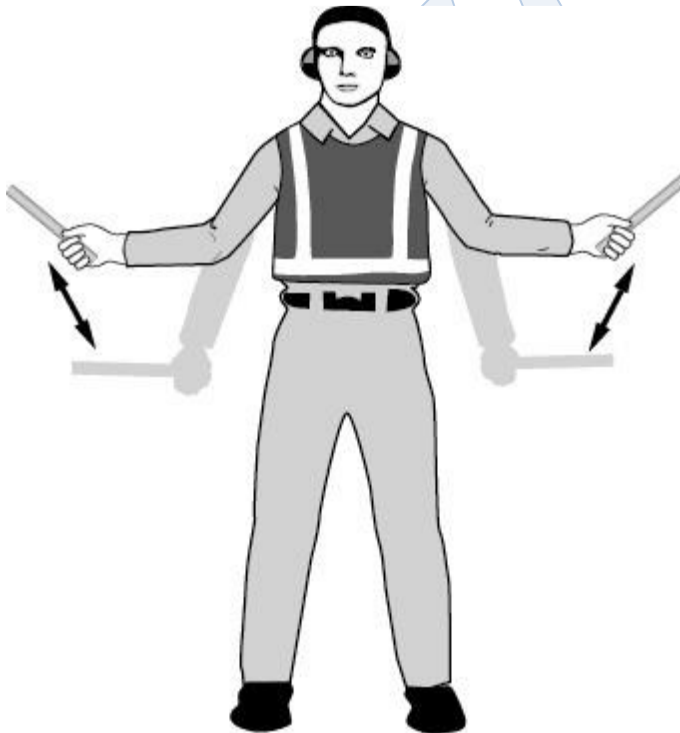
Raise fully extended arms straight above head with wands pointing up, move hands fore and aft to keep from blending into background.

4.8.4.2. CONTINUE TO TAXI STRAIGHT AHEAD

Bend extended arms at elbows and move wands up and down from waist to head.



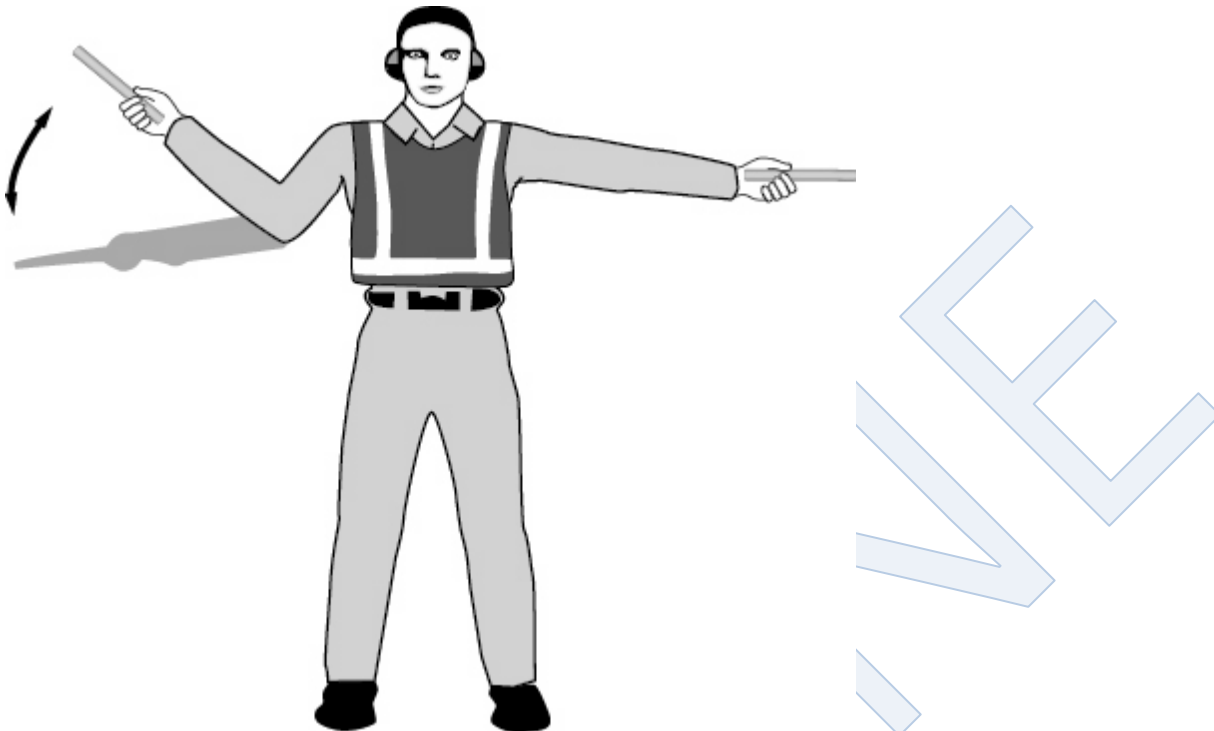
4.8.4.3. SLOW DOWN



Move extended arms downwards in a "patting gesture", moving wands up and down from waist to knees.

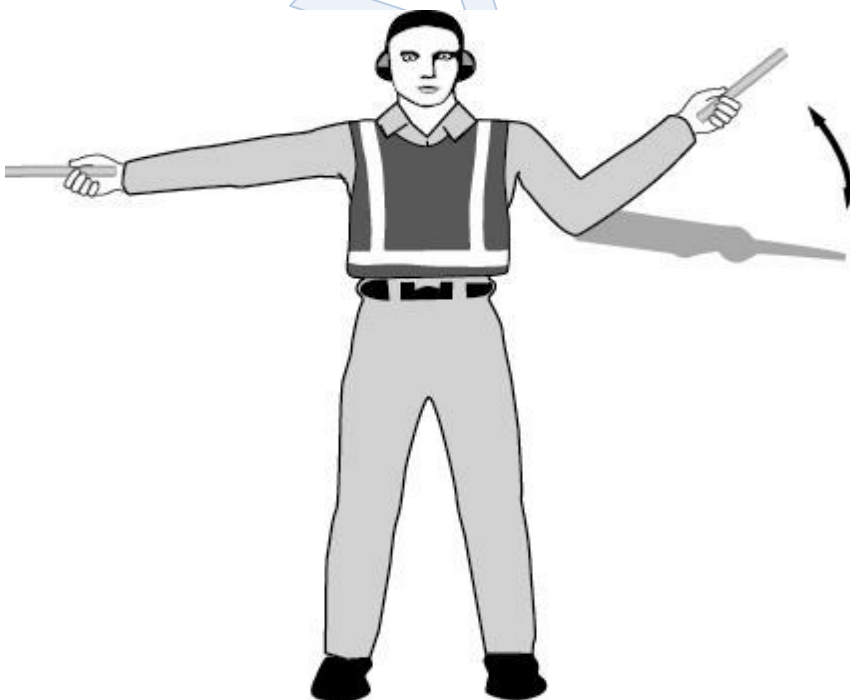
4.8.4.4. TURN RIGHT (FROM PILOTS POINT OF VIEW)

With left arm and wand extended at a 90° angle to the body, right hand makes the come ahead signal. The rate of signal motion indicates to the pilot the rate of aircraft movement desired.



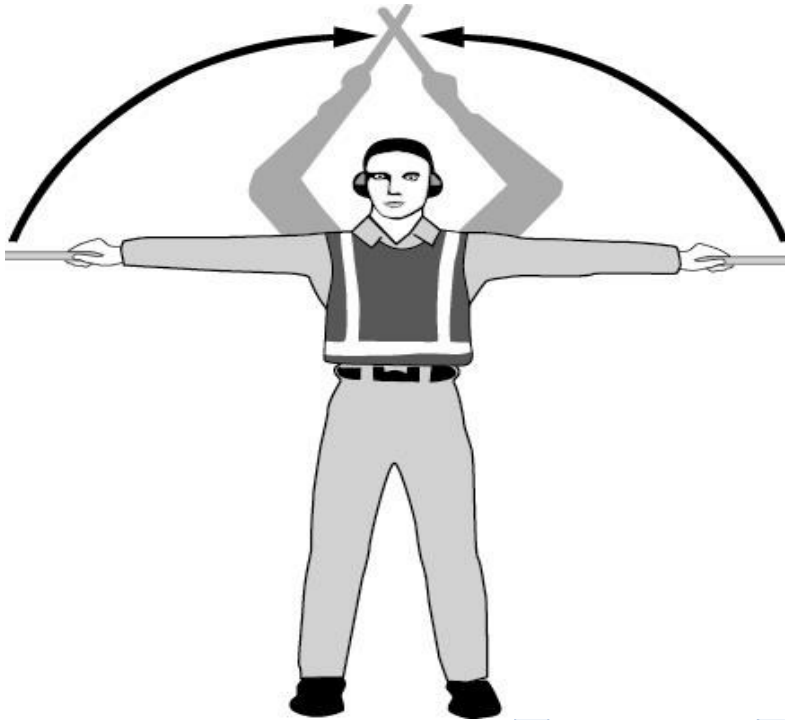
4.8.4.5. TURN LEFT (FROM THE PILOTS POINT OF VIEW)

With right arm and wand extended at a 90° angle to the body, left hand makes the come ahead signal. The rate of signal motion indicates to the pilot the rate of aircraft movement desired.

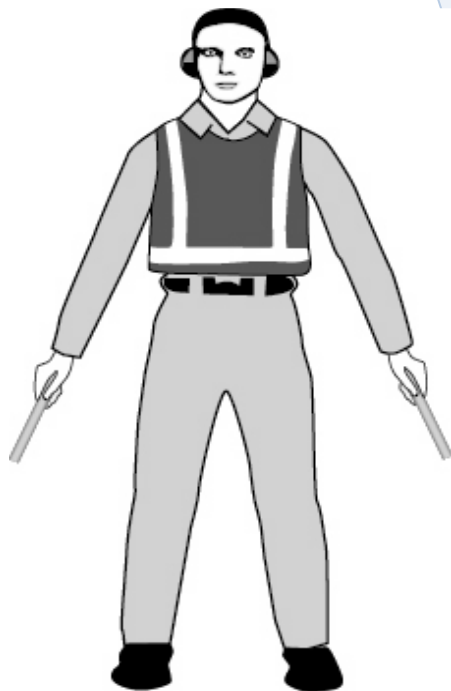


4.8.4.6. STOP/EMERGENCY STOP

Fully extend arms and wands to cross above the head.



4.8.4.7. HOLD POSITION/STAND-BY



Fully extend arms and wands downwards at a 45° angle to the sides. Hold the position until the aircraft is clear for the next maneuver.

4.8.4.8. PROCEED TO NEXT MARSHALLER OR AS DIRECTEDBY TOWER/GROUND CONTROL



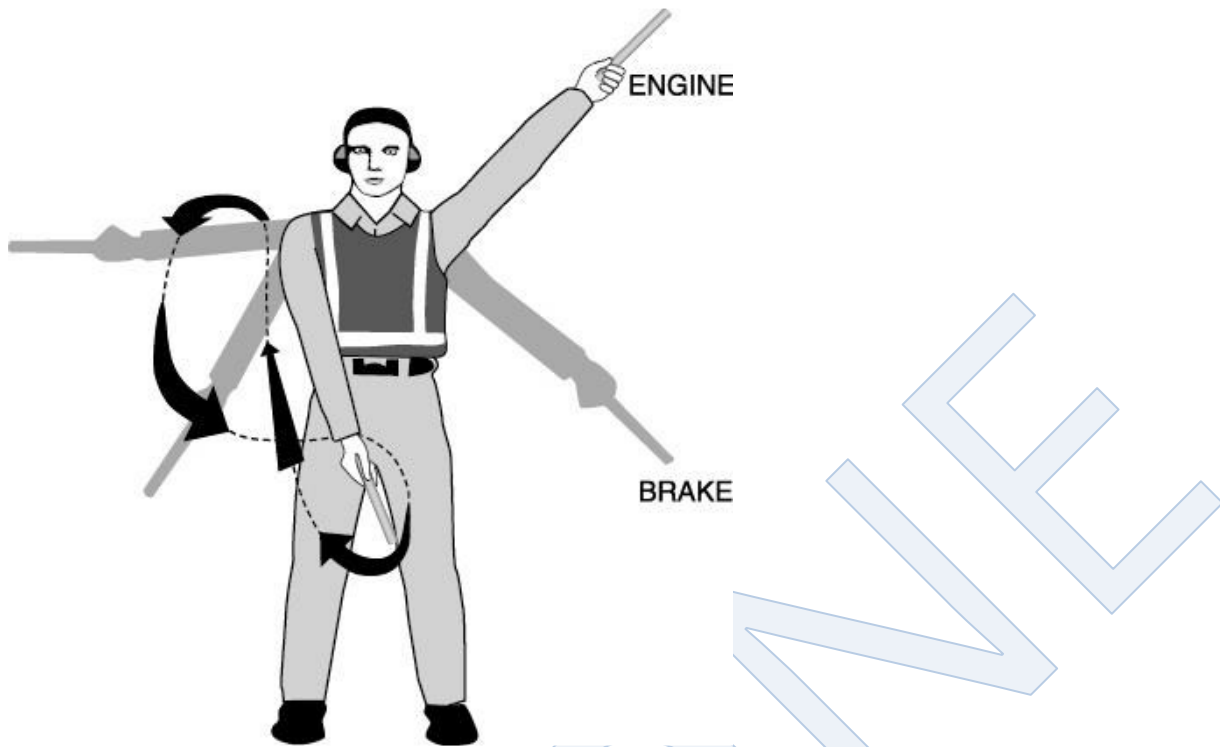
Point both arms upward, move and extend arms outward to side of body and point with wands to direction of next marshaller or taxi area.

4.8.4.9. END MARSHALLING



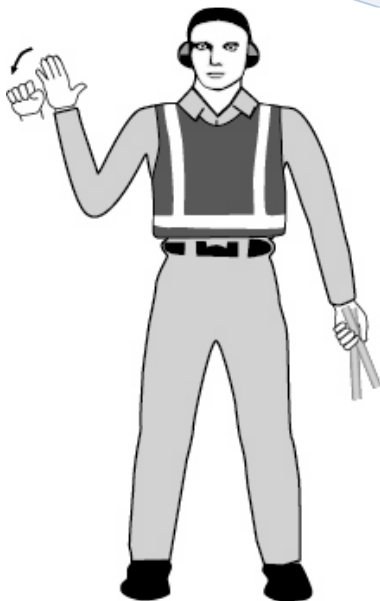
Perform a standard military salute with right hand and/or wand to dispatch the aircraft.
Maintain eye contact with the flight crew until the aircraft has begun to taxi.

4.8.4.10. FIRE



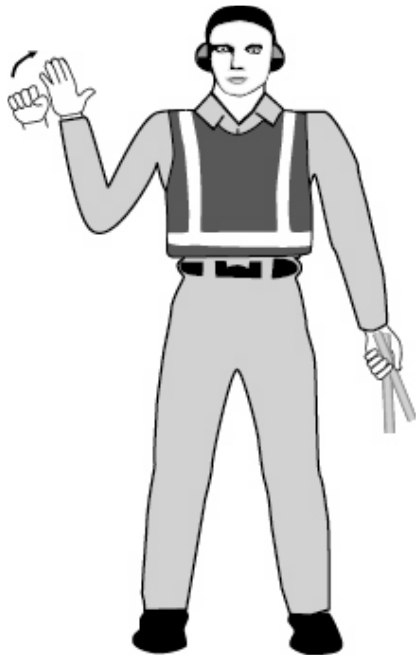
Fire – Move right hand in an exaggerated figure of eight (8), or a fanning type motion, from the shoulder to the knee, while at the same time pointing with the left-hand wand to the area of the fire.

4.8.4.11. SET BRAKES



Raise hand just above shoulder height with open palm. Ensuring eye contact with the flight crew, close hand into a fist. DO NOT move until receipt of thumbs up acknowledgment from the flight crew.

4.8.4.12. RELEASE BRAKES



Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with the flight crew, open palm. DO NOT move until receipt of thumbs up acknowledgment from the flight crew.

4.8.4.13. CHOCKS INSERTED



With arms and wands fully extended above head, move wands inward in a “jabbing” motion until the wands touch.

4.8.4.14. CHOCKS REMOVED



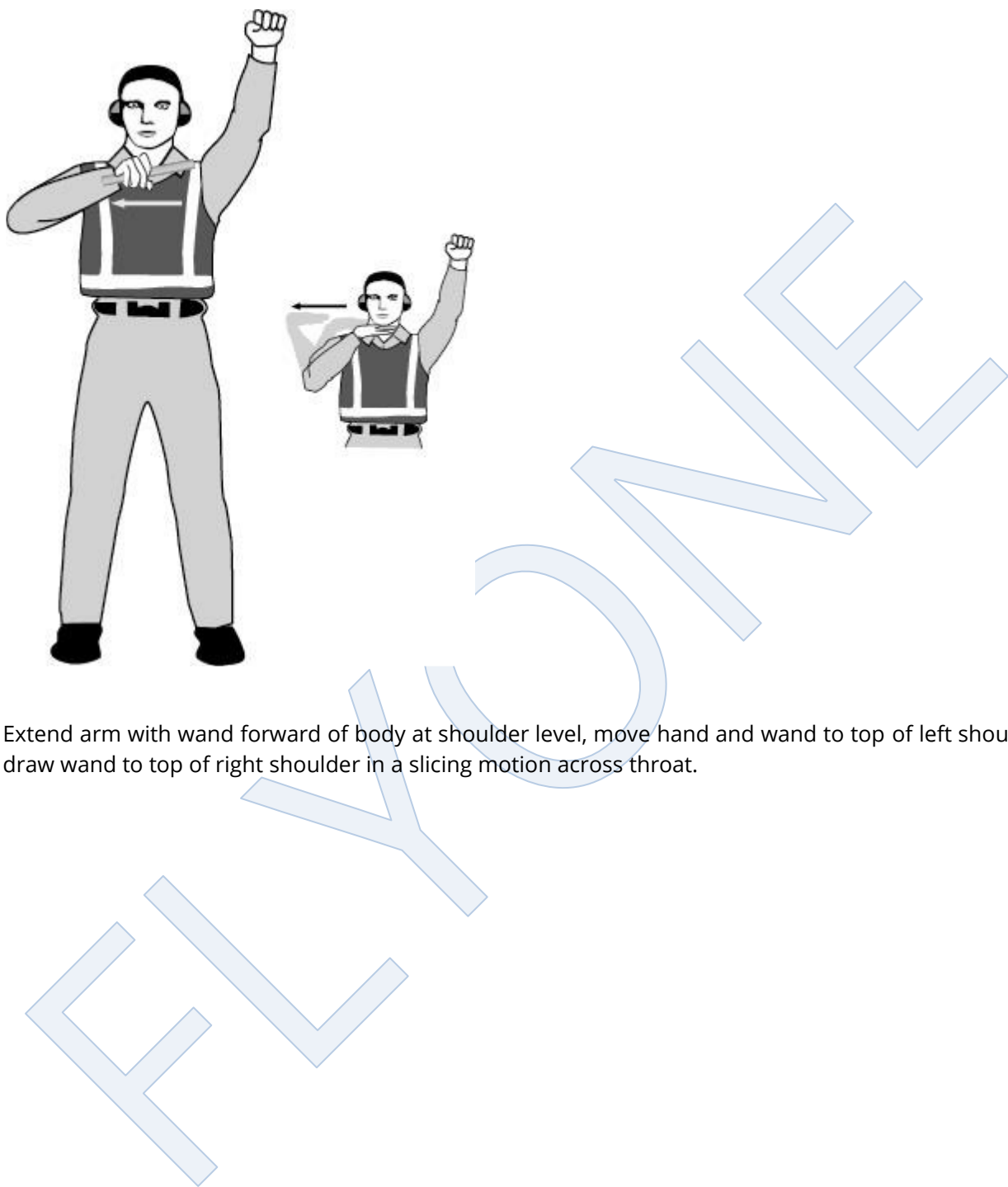
With arms and wands fully extended above head, move wands outward in a “jabbing” motion. DO NOT remove chocks until authorised by the flight crew.

4.8.4.15. START ENGINES



Raise right arm to head level with wand pointing up and start a circular motion with hand, at the same time with the left arm raised above head level point to aircraft.

4.8.4.16. EMERGENCY ENGINE SHUT DOWN

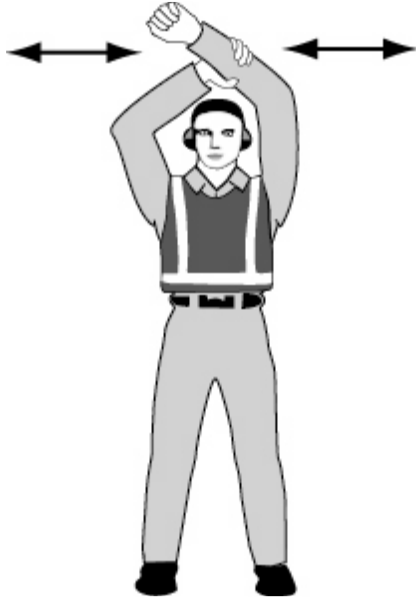


Extend arm with wand forward of body at shoulder level, move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.

4.8.5. TECHNICAL/SERVICING HAND SIGNALS–GROUNDSTAFF TO FLIGHT CREW

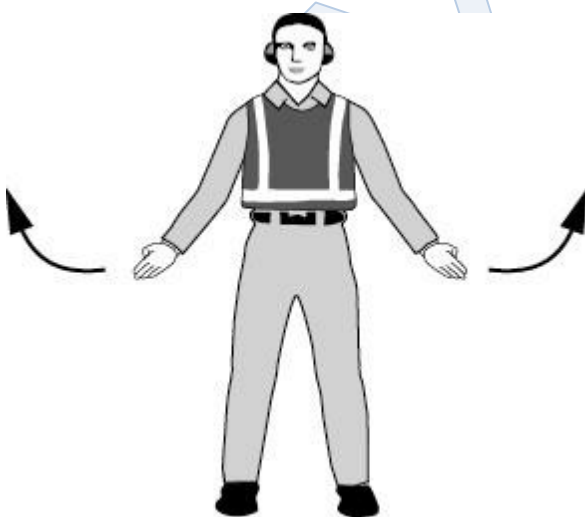
- Only use manual signals when verbal communication is not possible.
- Make sure acknowledgement is received from the flight crew on all occasions.

4.8.5.1. CONNECT TOWBAR:



Bring arms above the head and grasp forearm with opposite hand.

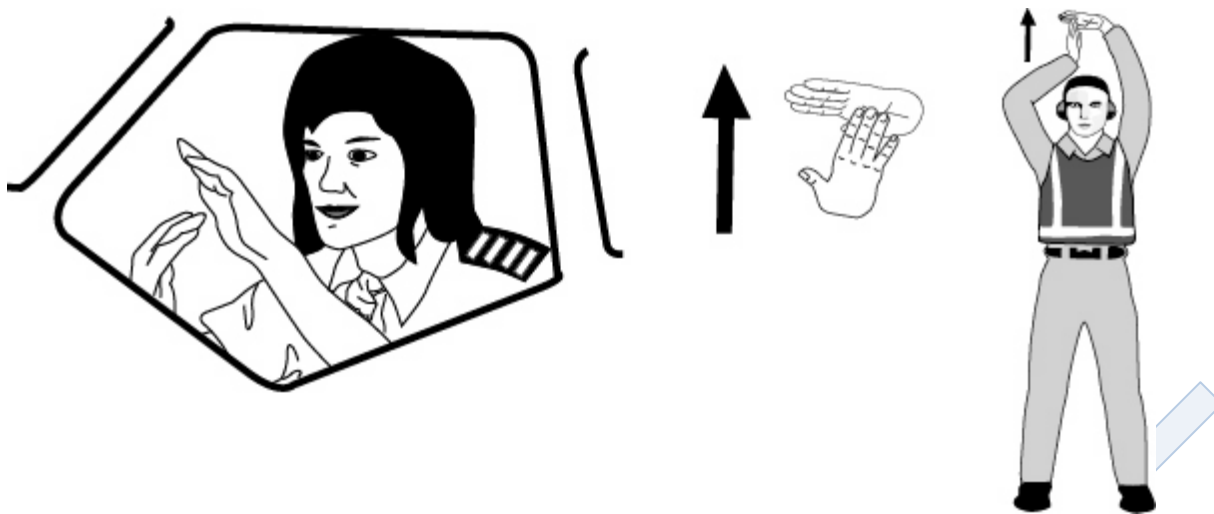
4.8.5.2. AIR UP (SUPPLY PRESSURISED AIR FOR ENGINE START):



Wave arms up & down from thigh to waist with palms up.

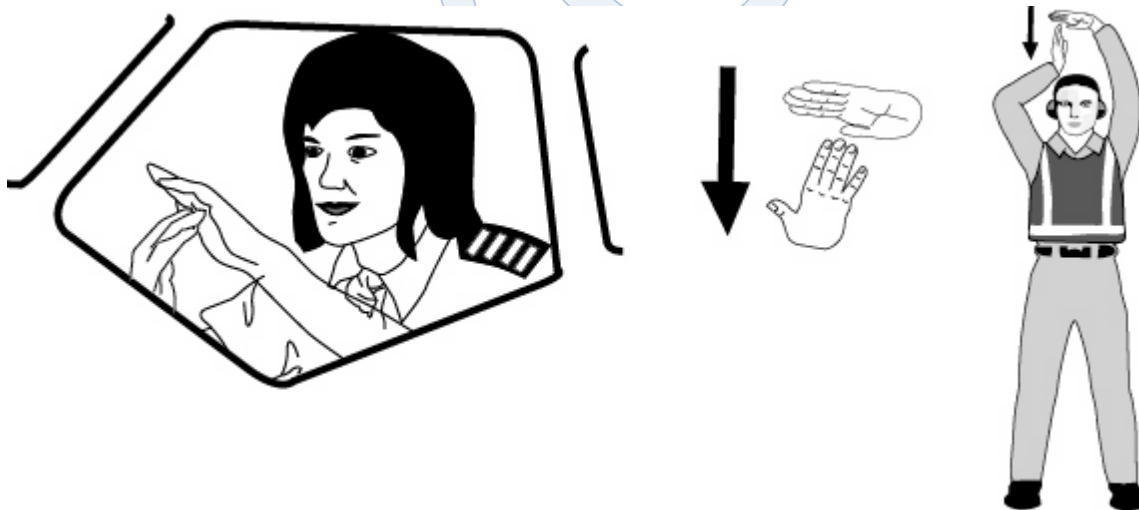
4.8.5.3. CONNECT/DISCONNECT GROUND POWER:

To connect ground power:



Hold arms fully extended above head, open left hand horizontally and move finger tips of right hand into and touch the open palm of left hand (forming a "T"). At night, illuminated wands can also be used to form the "T" above the head.

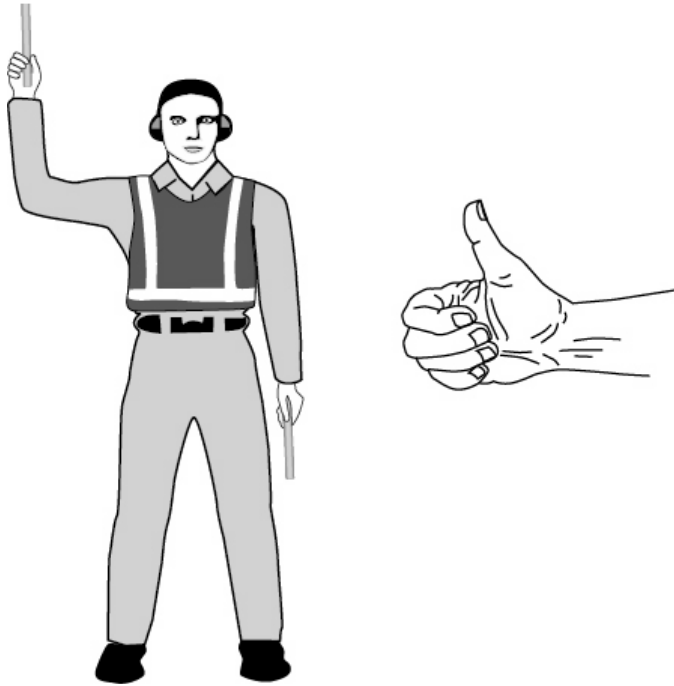
To disconnect power:



Hold arms fully extended above head with finger tips of right hand touching the open horizontal palm of the left hand (forming a "T"), then move right hand away from the left.

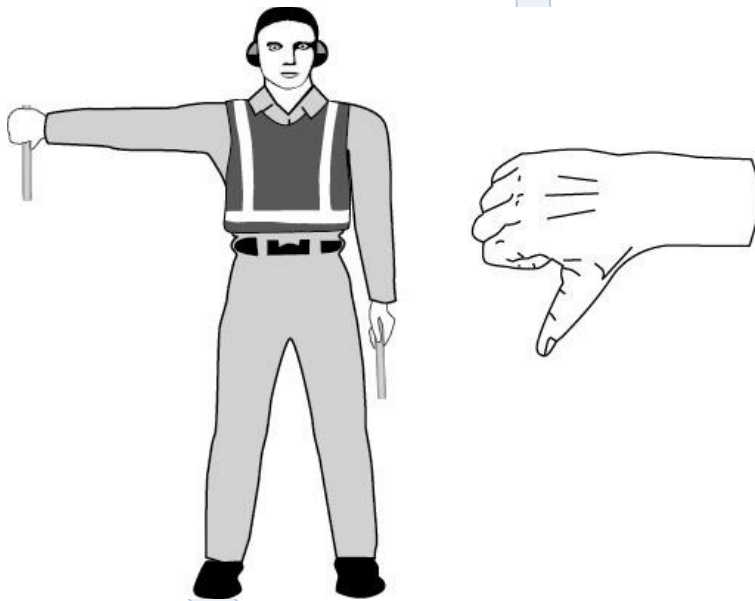
DO NOT disconnect power until authorised by the flight crew. At night, illuminated wands can also be used to open the "T" above the head.

4.8.5.4. AFFIRMATIVE/ALL CLEAR



Raise right arm to head level with wand pointing up or display hand with thumbs up, left arm remains at side by knee.

4.8.5.5. NEGATIVE



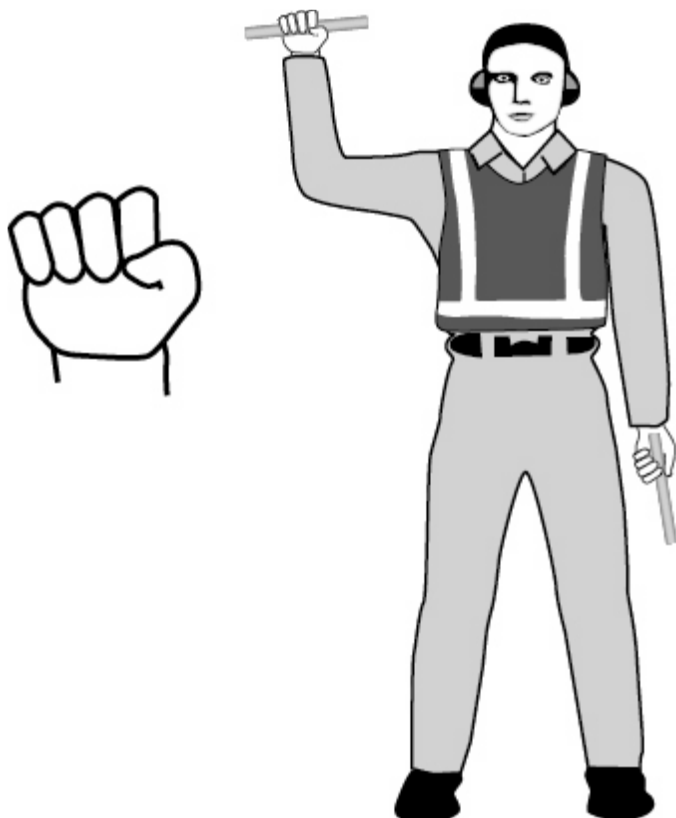
Hold right arm straight out at 90° from shoulder and point wand down to ground or display hand with thumbs down, left hand remains at side by knee.

4.8.5.6. INTERPHONES



Extend both arms at 90° from body and move hands to cup both ears.

4.8.5.7. DO NOT TOUCH CONTROLS



Raise right hand above head level and close fist or hold wand in horizontal position, left arm remains at side by knee.

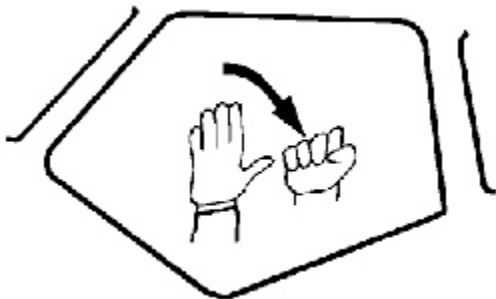
4.8.5.8. OPEN/CLOSE STAIRS FORWARD/AFT



With right arm at side and left arm raised above head at a 45° angle, move right arm in sweeping motion towards top of left shoulder.

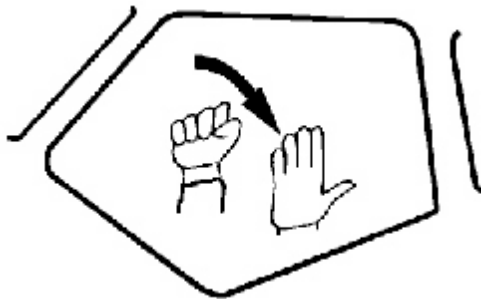
4.8.6. TECHNICAL/SERVICING HAND SIGNALS–FLIGHTCREW TO GROUND STAFF

Brakes Engaged:



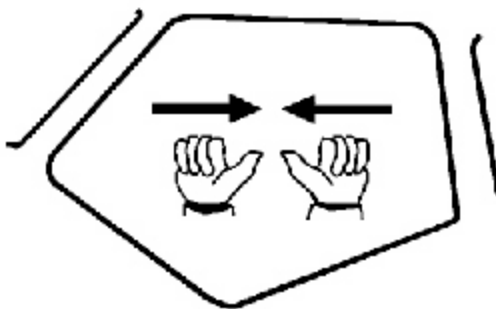
Raised arm and hand, with fingers extended, horizontally in front of face.
Hand is then closed to a fist.

Brakes Released:



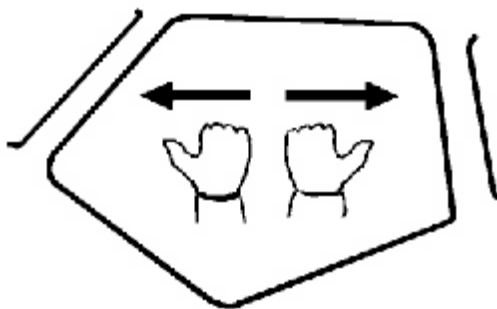
Raised arm, with fist clenched, horizontally in front of face. Hand is then opened to an open palm.

Insert Wheel Chocks:



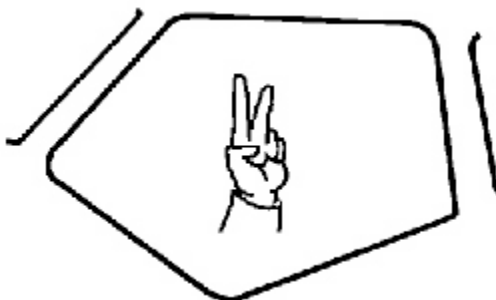
Arms extended, palms outwards, and hands moving inwards.

Remove Wheel Chocks:



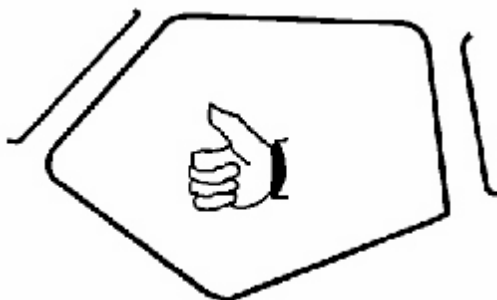
Hands crossed in front of face, palms inwards, and arms moving outwards.

Ready to Start Engine(s):



One hand raised with the appropriate number of fingers stretched indicating the number of the engine to be started.

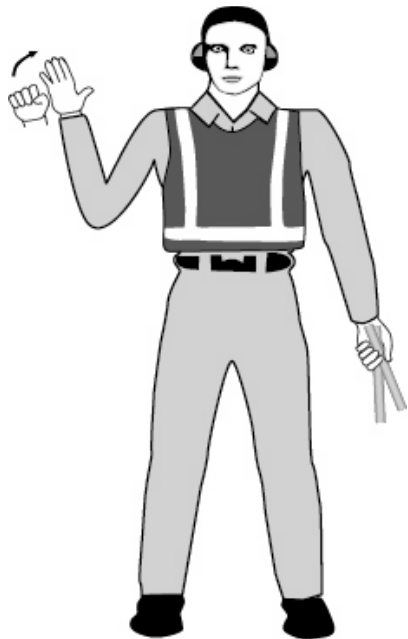
All Clear:



Acknowledgement of all ground actions.

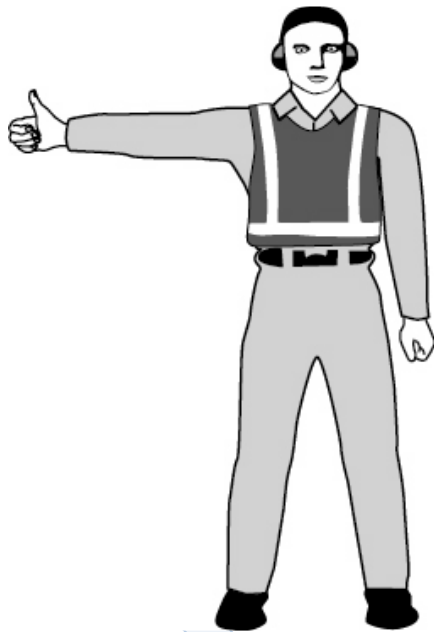
4.8.7. PUSHBACK HAND SIGNALS-HEADSET OPERATOR TO TUG DRIVER

4.8.7.1. VEHICLE BRAKES OFF



Raise hand just above shoulder height with closed fist and ensuring eye contact with tug driver open palm.

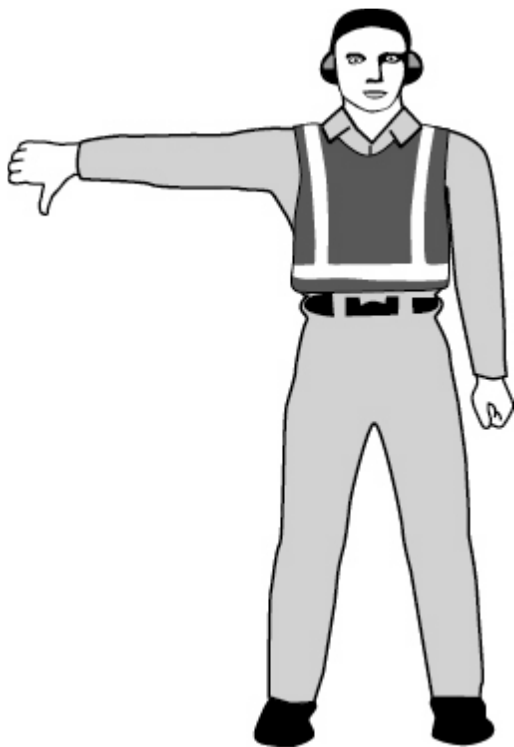
4.8.7.2. CLEAR TO PUSH



Hold arm straight out at a 90° angle from the shoulder and display hand with thumb up.

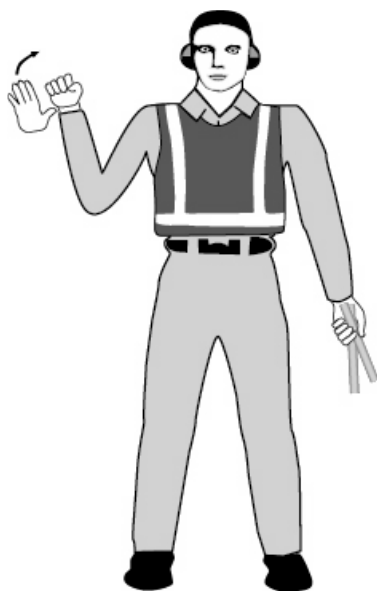
This indicates to the tug driver that all equipment is clear of the aircraft, the chocks have been removed, the aircraft brakes are off and the flight crew has given clearance to commence pushback.

4.8.7.3. **NEGATIVE/HOLD**



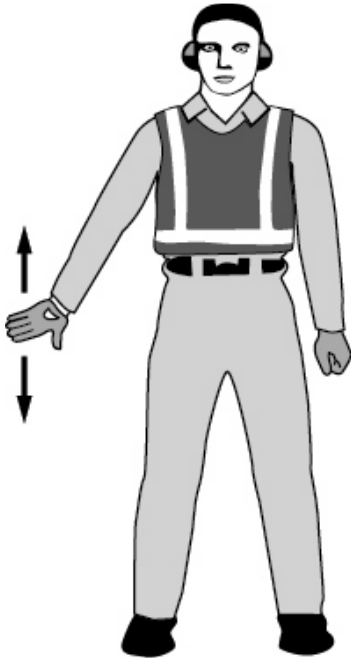
Hold arm straight out at 90° angle from the shoulder and display hand with thumb down. This indicates to the tug driver that the aircraft is not ready for pushback and to hold position.

4.8.7.4. **VEHICLE BRAKE ON/STOP**



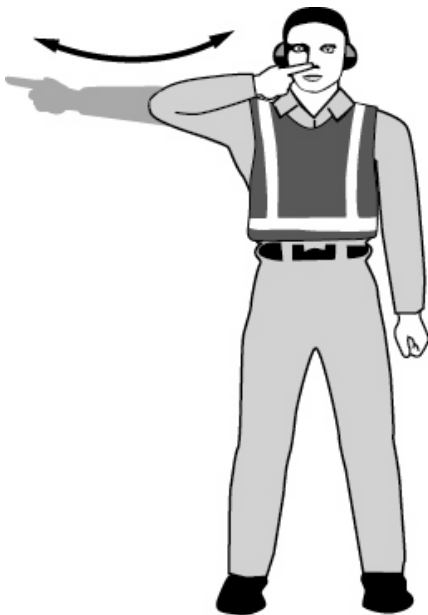
Raise hand just above shoulder height with open palm and ensuring eye contact with tug driver close into a fist. At the end of the pushback also indicates to tug driver that aircraft brakes have been set. Tug driver should return the signal to the Headset operator to confirm vehicle brakes set.

4.8.7.5. SLOW DOWN



With hand at a 45° angle downward to the side make a “patting” motion.

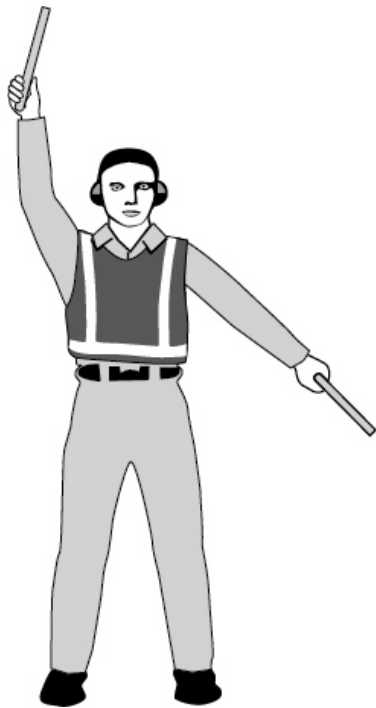
4.8.7.6. CHANGE OF PUSHBACK DIRECTION



Touch nose with finger and with arm at a 90° angle to the shoulder, point in the direction that the aircraft needs to be turned to.

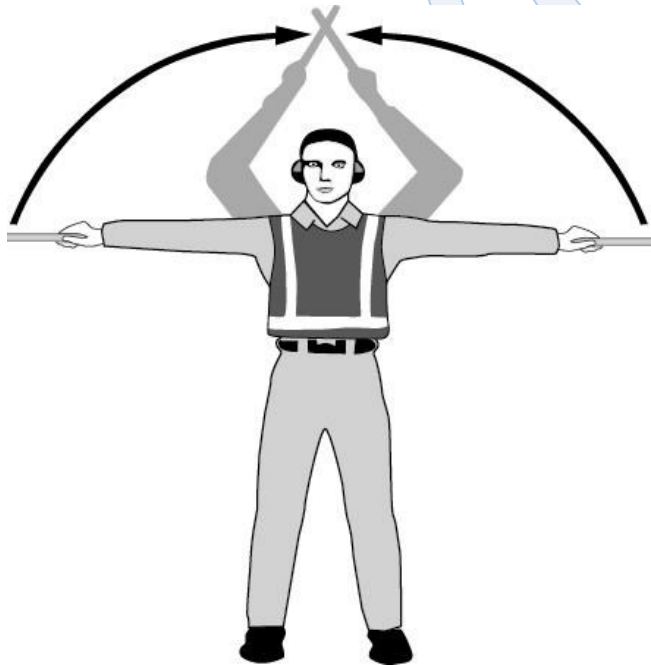
4.8.8. PUSHBACK HAND SIGNALS-WINGWALKER TO HEADSET OPERATOR/TUG DRIVER

4.8.8.1. CLEAR TO MOVE AIRCRAFT



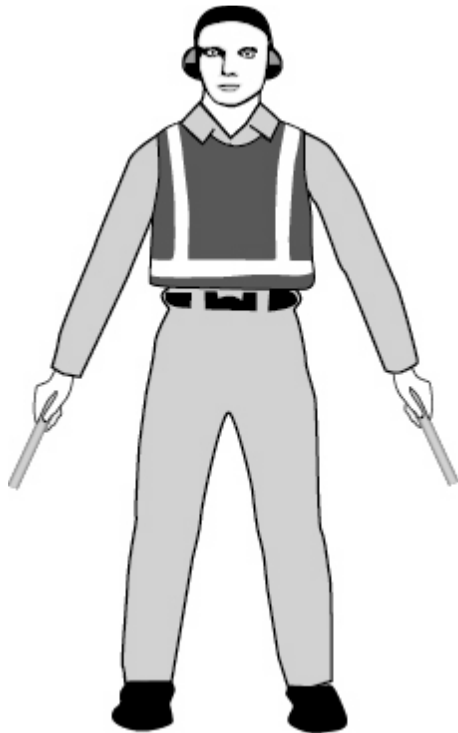
Raise one fully extended arm with wand straight above head and with the other arm and wand at a 45° angle downward to the side.

4.8.8.2. STOP MOVEMENT OF AIRCRAFT



Fully extend arms and wands to cross above the head.

4.8.8.3. HOLD MOVEMENT OF AIRCRAFT



Fully extend arms and wands downwards at a 45° angle to the sides. Hold this position until it is clear for the aircraft to move.

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4.9. AIRCRAFT ARRIVAL

All executed procedures prior to aircraft arrival shall ensure below mandatory requirements :

- The ramp area surface is inspected and is free of:
 - Debris that could cause foreign object damage (FOD);
 - Contamination that could be hazardous to aircraft movement.
- The aircraft movement path is clear of objects and obstacles;
- Personnel not involved in the aircraft departure are positioned outside the equipment restraint area (ERA);
- Required GSE is available and positioned clear of the ERA;
- The aircraft docking guidance system is operational or, if applicable, marshalling personnel are in place;
- If applicable, wing walkers and/or other applicable personnel are present.

4.9.1. ACTIONS PRIOR TO ARRIVAL

- Conduct FOD check on entire stand removing all debris.
- Make sure the stand surface condition is sufficiently free of ice, snow, etc., to ensure safe aircraft movement.
- Make sure the aircraft path and ramp area is free of objects and obstacles which the aircraft may strike or endanger others due to jet blast effects.
- Make sure all Ground Support Equipment (GSE) is positioned well clear of the aircraft path, outside the Equipment Restraint Area (ERA).
- Make sure aircraft docking guidance system is operating, or marshalling staff is present.
- Make sure additional ground personnel (such as wing walkers) are present (if required)
- Ensure that ramp area surface is inspected and is free of:
 - debris that could cause foreign object damage(FOD)
 - contamination that could be hazardous to aircraft movement
- Ensure that aircraft movement path is clear of objects and obstacles ;
- Make sure that personnel not involved in the aircraft departure are positioned outside the equipment restraint area (ERA);
- Make sure that required GSE is available and positioned clear of the ERA;
- Ensure that aircraft docking guidance system is operational or, if applicable ,marshalling personnel are in place;
- Make sure, if applicable, wing walkers and /or other applicable personnel are present.

DANGER:

All persons not involved in the aircraft arrival operation must stay well clear of the arriving aircraft and must not approach the aircraft until:

- The engines have been switched off and are spooling down.
- The anti-collision lights have been switched off, and
- The main gear wheel chocks are positioned.
- Clearance to approach the aircraft has been given by the agent responsible for the arrival operation, if applicable.

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4.9.2. STANDARD ARRIVAL PROCEDURE

4.9.2.1. AIRCRAFT ARRIVAL AT A STAND OR OPEN RAMP

For a standard arrival procedure at a stand without an automated guide-in system or at an open ramp:

- as aircraft approaches the stand area, the marshaller points to the guide-in line on the ramp to be followed by the aircraft by standing at the top of the guide-in line and giving the "IDENTIFY STAND" signal. Wing walkers, if required, will be positioned approximately 1 meter (3 feet) outside the path of the wingtips. Wingwalkers shall maintain visual contact with the Marshaller until the aircraft has come to a complete stop.
- while the aircraft taxis along the guide-in line, the marshaller gives the "Continue to Taxi ahead" signal with marshalling wands.
- the nose wheel should follow the lead-in line all the way to the appropriate stop point. Use the "Turn Left" or "Turn Right" signals to correct the track of the aircraft as required.
- if at any time during aircraft movement the marshaller is unsure or identifies an imminent danger, STOP the aircraft.
- if at any time during aircraft movement, the wingwalkers are unsure or identify an imminent danger, signal the marshaller with the "STOP" signal.
- as the aircraft approaches the stop position, use the "Slow Down" signal if required. As the nose wheel reaches the stop point slowly cross the wands in the "Stop" signal.
- once the aircraft has come to a complete stop and all conditions for chocking are met, the aircraft can be chocked.
- ground power and Pre-Conditioned Air are connected (if required/available).

For a standard arrival procedure at a stand with an automated guide-in system:

- the agent responsible for the arrival, "Marshaller" shall verify that the correct aircraft has been selected for the arrival and the equipment is operational
- the agent responsible for manning the emergency stop button shall be positioned with an unobstructed view of the arriving aircraft and within reach of the system to stop the aircraft in the event it is needed.
- in the event that the emergency stop is activated, and only after a check by the ground staff operating the guidance system that the risk is no longer there, the aircraft docking guidance system can be reactivated. If not standard aircraft arrival procedures shall be used.
- wing walkers, if required, will be positioned approximately 1 meter (3 feet) outside the path of the wingtips. Wingwalkers shall maintain visual contact with the Marshaller until the aircraft has come to a complete stop.

4.9.2.2. ACTIONS AFTER ARRIVAL

- Upon aircraft stopping:
 - position wheel chocks at nose landing gear wheels. (if required).
 - position and connect the Ground Power Unit, if required, before engine shut down.
- After engines have been switched off, are spooling down and anti-collision lights have been switched off:
 - position wheel chocks at the main landing gear wheels and verbal/visual confirm to flight crew.
 - confirm there is no damage on the cabin door area prior to positioning the passenger boarding device(s).
 - position the safety cones.
 - conduct an arrival walkaround to inspect for damage on the following parts of the aircraft:
 - all cargo doors
 - all access panels and servicing access points
 - aircraft fuselage
 - aircraft engine cowlings
 - aircraft passenger doors.
 - give clearance for GSE to approach aircraft.
 - remove nose gear chocks (if required)

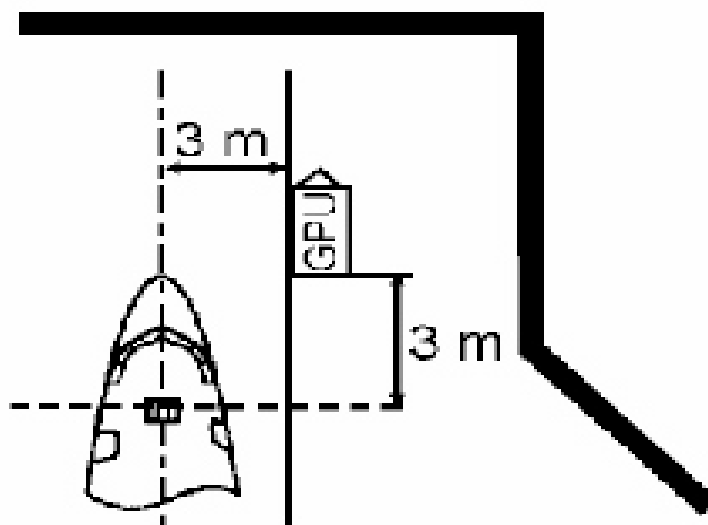
Note: If any damage is found, report it immediately to supervisor and do not approach the aircraft with any GSE in the area where the damage has been found.

CAUTION: If an aircraft arrives with an unserviceable anti-collision light, do not approach the aircraft until headset communication has been established with the flight crew.

4.9.3. GROUND SUPPORT EQUIPMENT ON ARRIVING AIRCRAFT

4.9.3.1. GROUND POWER UNIT (GPU)

- It is permitted to pre-position a GPU inside the ERA provided there is an assigned GPU parking position.
- Position the GPU on the right-hand side of the nose parallel to the aircraft center line with the towbar facing away from the aircraft as shown below.
- Set parking brake/chock the GPU.



4.9.3.2. COOLING/HEATING UNITS/PRE-CONDITIONED AIR(PCA)

DANGER:

Before supplying air by external source make sure that at least one cabin door is open and remains open during air unit operation as per operating airline procedure.

Make sure that a motorized ground air supply unit is not near the aircraft. The engine exhaust pipe of the unit must point away from the aircraft. Heat from the unit's exhaust can cause damage to the aircraft structure.

As part of the fuel conservation programs of most airlines, pre-conditioned air is required at all airports that provide on-stand pre-conditioned air. Refer to the operating airline's manual for the specific aircraft type for the location of the PCA access panel on the aircraft.

Note: Make sure there is no blockage of the hose.

- To connect PCA:
 - open access panel.
 - connect ground pre-conditioned air unit to aircraft.
 - start up ground pre-conditioned air unit.
 - on the ground pre-conditioned air unit, select the desired cooling or heating settings (air temperature and flow rate) or position the selector in the appropriate position.
- To disconnect PCA:
 - shut down ground pre-conditioned air unit.
 - disconnect ground pre-conditioned air unit from aircraft.
 - close the access panel.
 - retract the PCA hose to the fully stowed and secured position.

COOLING/HEATING UNITS/PRE-CONDITIONED AIR (PCA)

PCA access panel on the aircraft refer
to chapter 11 AIRCRAFT CHARACTERISTICS - A320
and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.10. AIRCRAFT DOORS

4.10.1. GENERAL SAFETY REQUIREMENTS

This section Provides generic precaution and does not constitute training on opening/closing of aircraft doors. Do not operate ANY aircraft doors unless you have been trained and authorized to do so.

Follow Airline's GOM as required.

Seek assistance from maintenance personnel if any difficulty is experienced during normal door operation.

CAUTION: Do not operate or leave doors open in winds exceeding those indicated in the manufacturer's limitations.

4.10.2. CABIN ACCESS DOORS

4.10.2.1. GENERAL

There are variances between airlines regarding responsibility for operating cabin access doors. The operating airline determines whether ground staff or cabin crew are authorized to operate cabin access doors—all ground personnel MUST follow procedures as set by the operating airline GOM.

DANGER:

Cabin access doors shall only be in open position if there is an appropriate boarding device positioned at the door. Cabin access doors may not be opened without appropriate equipment positioned at the door.

There is a risk of falling while operating cabin doors.

Slide deployments can be fatal. If an armed door begins to open, do not attempt to hold the door, as you risk being seriously injured or killed.

If a cabin access door is found open without a boarding device positioned at the door you must immediately notify a supervisor or the airline representative.

- Do not attempt to close the cabin access door unless trained and qualified.
- Guard the cabin access door until a qualified person is present to close it.

CABIN ACCESS DOORS – GENERAL

Passenger and service doors may only be opened and closed by crew members from inside. If there is no crew on-board by doors maybe opened by trained technical staff or crew members from outside.

Other personnel may not operate doors unless:

- They are trained to operate applicable aircraft type cabin doors and,
- They are employed by subcontractor authorized by FLYONE to open cabin access doors.

4.10.2.2. OPENING OF CABIN ACCESS DOORS FROM INSIDE BY TRAINED CREW

Ground staff should:

- Knock twice on the door from outside to indicate that a boarding device is properly positioned outside a door to be opened and that the door swing area is free of obstructions.
- Stand clear of the door and wait for the cabin crew to open.
- (As applicable) Assist cabin crew with moving the door to the fully opened position and engaging the gust lock as necessary.

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4.10.2.3. OPENING OF CABIN ACCESS DOORS FROM INSIDE BY AUTHORIZED AND TRAINED GROUND STAFF

- Check that the door is disarmed.
- Check that all indicators show that it is safe to open the door.
- Check visually that a boarding device is positioned at the door.

Note: Should there be a need to partially open a door solely for the purpose of galley trash bin servicing, an external boarding device need not be in position. Do not move the door more than is required for the removal and refit of the bin. Operators GOM to be consulted regarding aircraft type applicability

- Open the door slowly and carefully in accordance with the instructions and markings labelled on the door, and the respective aircraft type specific instructions, and/or your training.

4.10.2.4. OPENING CABIN ACCESS DOORS FROM OUTSIDE WITH CREW/GROUND STAFF ON BOARD

- Look for indications that the door is disarmed.
- Check that all indicators show that it is safe to open the door.
- If there is no indication from the cabin crew that the door is disarmed, knock twice on the door and repeat the previous step.
- If there is still no indication from the cabin crew that the door is disarmed, contact the Pilot-in-Command via an open cockpit window or the aircraft interphone system.
- If there is no cabin crew on board and the red/orange streamer is visible across the interior of the door window, then do not open the door. Instead, seek assistance from airline personnel.
- If you cannot confirm that the door is disarmed, DO NOT OPEN THE DOOR.
- Once you confirm that the door is disarmed, open the door slowly and carefully in accordance with the instructions and markings labeled on the door, and the respective aircraft type specific instructions.
- If integral airstairs (other than those permanently affixed to a boarding door) are to be used, slightly open the door until the airstairs are fully extended.
- Move the door to the fully opened position and engage the gust lock.

4.10.2.5. OPENING CABIN ACCESS DOORS FROM OUTSIDE WITH NO CREW/GROUND STAFF ON BOARD

- Look for indications that the door is disarmed.
- Check that all indicators show that it is safe to open the door.
- If you cannot confirm that the door is disarmed, DO NOT OPEN THE DOOR.
- Once you confirm that the door is disarmed, then open the door slowly and carefully in accordance with the instructions and markings labeled on the door, and the respective aircraft type specific instructions.
- If integral airstairs (other than those permanently affixed to a boarding door) are to be used, then slightly open the door (ajar) until the airstairs are fully extended.
- Move the door to the fully opened position and engage the gust lock.

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4.10.2.6. EMBARKATION OR DISEMBARKATION THROUGH CABIN ACCESS DOORS

Before allowing passengers or crew embarkation or disembarkation via a cabin access door, ensure that the boarding device is properly positioned at the door, and if stairs or integral airstairs are to be used, that both guard rails (if applicable) are extended.

4.10.2.7. CLOSING CABIN ACCESS DOORS

- Make sure service doors are closed immediately after servicing is completed.
- Receive confirmation from the crew that the cabin access door(s) may be closed for departure.
- Before removing the last boarding device from an aircraft, inform any ground staff onboard the aircraft that the last cabin access door is being closed and the last boarding device is being removed from the aircraft.
- Look for any possible obstructions around the door area and remove them.
- Make sure the door gust lock is released and assist the person closing the door by moving it to the ajar position.

CAUTION: If the cabin access door cannot be closed with the boarding device connected, then the operation must be performed from inside the aircraft with extra vigilance and without assistance of ground staff outside the aircraft.

- Do not remove the boarding device from the aircraft until the door is fully closed and locked.
- If stairs were used at a cabin access door, then retract the stair handrails if necessary to close the door. Remain at the top of the stair platform until the door is fully closed, and then descend the stairs before they are moved.
- Close the door slowly and carefully in accordance with the instructions and markings labeled on the door, and the respective aircraft type specific instructions.
- Before leaving the vicinity of the door, confirm that the door is properly seated flush with the surrounding airframe and that the exterior door handle is flush with the surface of the door.
- Seek assistance from aircraft maintenance personnel any time a door malfunction occurs.
- Do not retract equipment stabilizers in advance of the cabin door being fully closed.
- Before retracting equipment from the door, check to ensure the maneuvering area is clear of all obstructions and personnel.
- If a passenger boarding stairs unit is used, then retract the passenger stairs canopy. Move the equipment to its approved parking position and engage any applicable restraints (such as closing the door on the passenger boarding stairs opening).
- Visually inspect the cabin access door and the surrounding fuselage for signs of damage, particularly in any areas where the boarding device was in contact with the aircraft. If damage is discovered then immediately report it to aircraft maintenance personnel, and if available, the Pilot-in-Command.

4.10.2.8. RE-OPENING CABIN ACCESS DOORS

If a cabin access door is not closed properly then it must be re-opened and re-closed. Other situations when cabin access doors may need to be re-opened include the following:

- Subsequent delivery of catering and/or supplies, after the passenger boarding devices have been removed,

OR

- Re-connecting of passenger boarding devices after the initial removal. If there is no crew on board the aircraft, follow the applicable Opening Cabin Access Doors procedures in GOM.
- Once the cabin access door has been closed in preparation for departure, do not attempt to re-open any aircraft door without the authorization of the flight crew.
- If you believe a door must be re-opened, you must notify the flight crew through an open cockpit window or use the flight interphone system.
- If the crew requires a door to be re-opened, they will notify ground staff.
- Regardless of which party requested that the door be re-opened, once the flight crew gives clearance for the door to be re-opened, follow the actions/steps in Opening Cabin Access Doors.
- If authorization to re-open the door is not granted, do not attempt to re-open the door unless clearance given by the flight crew.

4.10.3. CARGO HOLD DOORS

CARGO HOLD DOORS

For doors dimensions and clearances to chapter 11 AIRCRAFT CHARACTERISTICS -A320
and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.10.3.1. OPENING CARGO HOLD DOORS

- Do not operate cargo doors unless trained and authorized.
- Manual operation of an electrically or hydraulically operated cargo door may only be performed by maintenance personnel or flight crew.
- Do not open the cargo doors until the aircraft engines have been shut down and the anti-collision lights have been switched off.
- Before positioning loading equipment or any other ground support equipment at cargo doors and opening cargo doors, perform a visual check for any signs of damage to the doors or surrounding areas. If any irregularities are discovered during this visual check, report them to aircraft maintenance personnel and, if available, the Pilot-in-Command.
- Cargo doors must be opened using technical steps or belt loaders equipped with raised safety rails to reach the cargo doors. ULD loaders must not be used. (Not applicable to main deck cargo doors).
- Open the cargo doors in accordance with the respective aircraft type specific instructions.
- Allow adequate space for door clearance to avoid equipment obstructing the free passage of the door:
 - most aircraft lower compartment cargo doors hinge upwards. Be aware that when opening or closing cargo doors, the lower edge of the door will swing down before going upward.
 - for main deck cargo compartment doors, remove safety barrier once the main deck loader is in position.
- If the cargo door will not open, do not use excessive force, tools or ground support equipment to push or pull on the door to open it. Contact aircraft maintenance personnel for assistance

4.10.3.2. CLOSING CARGO HOLD DOORS

- Do not operate cargo doors unless you have first been trained and authorized.
- Manual operation of an electrically or hydraulically operated cargo door may only be performed by maintenance personnel or flight crew:
 - before closing the cargo doors, ensure: that load restraint and door protection nets are properly fitted.
 - that the cargo compartment lights have been switched off unless required for carriage of AVI.
 - that the door area including the door sill and frame are free of gravel, water, ice and other foreign substances or obstructions.
 - that the door and door frame show no visible signs of damage.
 - that any damage discovered during the inspection of the cargo doors and surrounding areas/frames is immediately reported to aircraft maintenance personnel and the Pilot-in-Command.
- All cargo doors must be closed using technical steps or belt loaders equipped with raised safety rails to reach the cargo doors. ULD loaders must not be used.
- (Not applicable to main deck cargo doors).
- Check that door lock indicators are engaged/properly set as applicable and that the door is properly locked, handles are stowed flush and panels are properly closed.
- If a cargo compartment door is not closed properly, it must be re-opened and reclosed.

CAUTION: If a cargo door must be re-opened prior to aircraft movement, approval from the flight crew via the ground staff responsible for the departure must be obtained.

4.10.3.3. RE-OPENING OF CARGO HOLD DOORS

- If a cargo compartment door is not closed properly, it must be re-opened and re-closed.
- Once the pre-departure walk-around has taken place, do not attempt to reopen any aircraft door without the authorization of the flight crew.
- If you believe a door must be re-opened, you must notify the flight crew through an open cockpit window or use the flight interphone system.
- If the flight or cabin crew requires a door to be re-opened, they will notify ground staff.
- Regardless of which party requested that the door be re-opened, if the flight crew gives clearance for the door to be re-opened, follow the actions/steps in: Opening Cabin Access Doors.
- If authorization to re-open the door is not granted, do not attempt to re-open the door unless clearance is received from the flight crew.

4.11. AIRCRAFT LOADING

4.11.1. SUPERVISION OF AIRCRAFT LOADING

4.11.1.1. GENERAL

Before loading, the hold shall be visually inspected for damage that can affect the load capacity. A qualified individual must supervise the loading of the aircraft and provide a signed confirmation to say:

- The aircraft has been loaded as instructed—including any special load instructions;
- The condition of locks, restraints or ULDs has not affected load capacity;
- The bulk load and ULDs are correctly secured and locks and nets are in use;
- Visible dangerous goods packages were inspected prior to loading;
- Special loads, including dangerous goods have been stowed and secured according to regulations and operating airline procedures;
- The holds are free of any foreign objects;
- Any deviations are approved by Load Agent and recorded
- At the completion of loading, a qualified individual must pass the final loading information to the Load Agent.

4.11.1.2. LOADING OF GENERAL BAGGAGE/CARGO

The person responsible for loading is in charge of, and responsible for, the safe and efficient loading and offloading of the aircraft as well as the protection of the goods carried.

He will ensure the aircraft is loaded as specified by the load agent, in accordance with the operating airline procedures. The person responsible for loading shall be trained in accordance to the standards outlined in AHM 611.

4.11.1.3. LOADING OF DANGEROUS GOODS (WHERE CARRIED)

The person responsible for loading is responsible for the loading of Dangerous Goods shipments as described in the IATA DG Manual and must be qualified as per IATA Dangerous Goods Regulations training requirements.

4.11.2. SAFETY REQUIREMENTS SPECIFIC TO AIRCRAFT LOADING OPERATIONS

4.11.2.1. GENERAL

- Get assistance when moving heavy articles.
- Do not use baggage carts to gain access to cargo compartments.
- The loader bridge height shall be monitored during the loading process and adjusted as necessary to maintain a correct alignment with the cargo hold floor.
- Use ULD Loader platform guide rails as required to ensure alignment when loading.
- Block or secure cargo which will not lie flat on conveyor belts.
- Push DO NOT PULL containers on and off dollies and loaders.
- ULDs on dollies or transporters must be secured to prevent movement by the use of locks, stops, rails or straps at all times, except when the load is being transferred onto or off the equipment.
- Protect live shipments from inclement weather.
- Be alert for special/dangerous goods shipments. Know how they must be handled and secured.
- Operators of equipment shall ensure that other personnel are not entrapped by movement of load/pallets/containers either in the aircraft or on the loading equipment.
- Gates of loaded carts should be lowered carefully, in case loose cargo falls out and causes injury.
- Holds and compartments shall only be entered or exited by using the appropriate elevating device and which has been positioned and secured, e.g. belt conveyor and cargo loader.
- Elevating devices must not be removed from the aircraft when personnel are still within the cargo hold.
- Do not walk between ULDs or carts being towed, or when they are stationary on the ramp as you do not know when they may be moved.
- When loading has been completed, move all loading equipment well clear of the aircraft.

4.11.2.2. SPECIAL PRECAUTIONS WHEN USING CARTS

- Do not wedge light packages between heavier items.
- During transportation in carts and dollies ensure that the load is properly secured by using appropriate locks, stops, rails, curtains and straps.
- Ensure the overall height of load permits safe lifting of each piece of load during loading and offloading of carts by personnel standing on the ground.
- When using tarpaulins, ensure all straps are securely fastened to the baggage cart.
- When not in use the braking system shall be engaged on all strings of baggage carts.

4.11.2.3. SPECIAL REQUIREMENTS WHEN USING TRACTORS

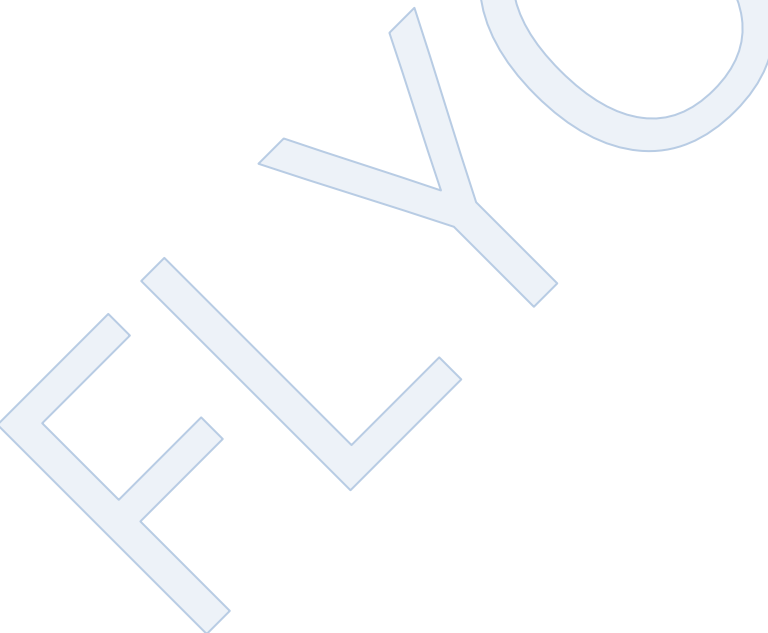
- Drive tractors and carts within speed limits according to local airport regulations, and take care to avoid sharp turns, jerks and sudden stops.
- Approach the aircraft at walking speed.
- Limit the number of carts and dollies in a train to the maximum specified by the local airport regulations.
- Do not attempt sharp turns close to the aircraft. Keep at least 1m (3ft) away from the fuselage.

4.11.2.4. SPECIAL PRECAUTIONS WHEN USING BELTLOADERS

- Ensure proper separation between articles on the conveyor belt to avoid jamming.
- Adjust the back of the conveyor belt correctly to avoid dropping goods from the belt.
- Handrails shall be deployed when a belt loader is used to gain access to aircraft cargo holds; however caution shall be exercised where there is restricted clearance with the aircraft fuselage or engines.

4.11.2.5. LOW-WING AIRCRAFT

- To prevent damage to aircraft with low wings, baggage tractors shall stop approximately 1 meter (3 ft) from the belt loader to unhook the carts. Move the tractor away and position the carts by hand.
- Take care when pulling or pushing carts especially when ramp conditions are slippery. When necessary obtain assistance.
- When removing baggage carts, the tractor shall be positioned pointing away from the aircraft wing and the baggage cart pulled to the tractor.
- Extreme caution must be used when using covered baggage carts.



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4.11.2.6. BULK LOADING OF SMALLER AIRCRAFT

- Use belt loaders if the door sill height does not allow items to be passed into the doorway without undue lifting. Always consider the use of belt loaders for heavy items (over 23 kgs).
- Keep a gap of at least 1m (3 feet) between baggage carts/dollies and the cargo belt when towing, to prevent collisions when approaching the belt loader.
- Carts or dollies must be disconnected from the tractor and manoeuvred by hand if the carts or dollies need to be closer than 1 m (3 feet).

4.11.3. GENERAL LOADING PRECAUTIONS

- Hold baggage must be inspected for signs of leakage before loading.
- Any item of load which is not properly packed and any item that may damage or contaminate the aircraft must not be loaded.
- Container curtains must be closed and locked into place prior to loading.
- Containers must not be contaminated when loaded (snow, wood, plastic etc.).
- Use tarpaulins or covered carts during inclement weather.
- Do not place goods directly on the apron.
- Always observe the specific instruction labels and marks such as FRAGILE, TOP, THIS SIDE UP, etc.
- Report torn (or missing) baggage tags and cargo labels, and do not load unless corrected.
- Report immediately any damage to the load, whether it occurs during handling or is noticed on arrival.
- Report immediately any spills, unusual fumes or smells, etc., to a Supervisor, Flight Crew or local authorities as required.

4.11.4. SPILLS IN CARGO HOLDS

- Spills can occur in cargo holds during loading and in flight due to:
 - Improper packaging.
 - Damage due to mishandling prior to loading.
 - Improper loading in the compartment.
- Spills can be liquid, gels, or material in a powdered or granulated form.
- Spills can be hazardous corrosive, flammable, explosive, toxic or poisonous, etc. Even water can cause serious damage to electrical components and systems.
- Spills can be corrosive to the aircraft structure. Mercury spills are particularly corrosive to the extent that the affected aircraft structure may have to be completely replaced if not cleaned up quickly.

It is essential that any spill is reported immediately to Maintenance, so that corrective action can be taken.

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4.11.5. CARGO HOLD INSPECTION

When an offload is completed, a final check of ALL cargo holds must be conducted to inspect each cargo hold for:

- Damage to the compartment
- Damaged or malfunctioning floor locks
- Spills in the hold that may have occurred
- Baggage or cargo that may have been left on board the aircraft.
- Any other items that should not be present in the hold

A check must be conducted in a hold even if on arrival the hold was reported as not carrying any cargo/baggage (empty). If any damage is found to the compartment or locks, if a spill has occurred, or if any other irregularity is found, it must be immediately reported to a supervisor, the flight crew, and/or a company representative as required by operating airline.

4.11.5.1. CARGO HOLD DAMAGE

Any damage to the structure or linings of containers or bulk holds may lead to specific loading limitations. Therefore, any damage must be reported. The Load Controller shall be informed accordingly.

CARGO HOLD DAMAGE

FLYONE requires immediate notification any aircraft damage to both flight crew and NVD OCC

4.11.5.2. COMPARTMENT SEPARATOR NETS

Compartment separator nets must be secured prior to all flight departures. Between offload and onload, compartment nets must be secured inside aircraft compartments and not left hanging outside, to avoid clips and attachment points from striking fuselage (especially during adverse weather conditions) or inadvertently hooked on GSE and pulled out of the aircraft.

4.11.5.3. CARGO DOOR BARRIER NETS

Between offload and on load, compartment nets must be secured inside aircraft compartments and not left hanging outside.

Cargo door barrier nets must be installed prior to flight departure to prevent cargo from shifting in flight and damaging or blocking the compartment door.

4.11.5.4. CONTAINER/PALLET RESTRAINT SYSTEM

All container stops and pallet locks required to secure containers and pallets must be extended and locked prior to any flight. This includes cargo holds that are empty, unless specified by the operating airline.

A tactile check must be performed by checking the security of each lock with your hands.

4.11.6. ADVANCE LOADING PREPARATION

Before loading commences, the load shall be assembled and checked against loading instructions.

- Ensure ULD placards are properly filled out with the correct information (see 4.11.14.2).
- Ensure ULDs and all cargo is inspected and is fit to be loaded on the aircraft.
- If possible, arrange ULDs on the ramp in order of onload.

4.11.7. AIRCRAFT GROUND STABILITY

Loading or offloading may cause the aircraft to become unstable or could cause the aircraft to tip. Respect aircraft ground stability requirements during loading and offloading. In general:

- when loading, load forward holds before aft holds.
- offload aft holds before forward holds;

For cargo aircraft, a tail support stanchion or nose tether may be required to be fitted during loading and offloading.

4.11.8. OFFLOADING PROCEDURE

4.11.8.1. SCALING PROCESS

If the Flight Crew experiences a handling irregularity on take-off, the Flight Crew may request aircraft scaling (weighing of all baggage and cargo on board) at the arrival station. Aircraft must not be offloaded when a scaling has been requested until the process has been initiated. Contact the airline representative for details.

4.11.8.2. IDENTIFYING SHIPMENTS REQUIRING SPECIFIC HANDLING

Comply with any special handling requirements. All shipments requiring specific handling will be identified on the LDM/CPM.

- Make sure that packages with directional handling labels are kept in the correct orientation (this way up, etc).
- Take care with fragile items.

4.11.8.3. SAFETY PRECAUTIONS FOR OFFLOAD

Take care when handling heavy items. Use proper lifting techniques and ask for assistance if required.

- Take care when placing items on belt loaders. Make sure they are stable and will not fall off.
- Check ULDs during offload for damage, leakage and load stability.
- Check for incorrectly loaded ULDs (locks not raised, locks or side rails overridden, etc).
- Take care if load has shifted during flight.
- Containers can tip during movement because the base is smaller than the top, causing a high center of gravity.

4.11.9. LOADING PROCEDURE

Before loading commences, verify the aircraft registration with the registration on the loading instruction report.

- Ensure loads has been checked against LIR.
- Ensure special equipment (tie down straps, etc.) is available, as required.
- Ensure LIR is received and understood by loading crew.
- Before loading commences, carry out inspection of cargo compartments and restraint system. Report any defects to supervisor, the flight crew, and/or a company representative as required by operating airline.
- For cargo shipments, ensure the nets or tie down straps are tight and the load is secure.
- Items with directional handling labels should be loaded so that the labels will be visible during offload.
- When loading pallets or containers make sure that the edges are either guided by the side rails or fit under the stops/locks/guides and that the height of the pallet allows for sufficient clearance in the door opening.
- Ensure separator nets, fire barriers, door nets, pallet locks and container stops are installed and locked as required as the hold is loaded.
- Keep count of bulk loaded baggage by compartment and destination.
- Document all changes to the load and sign the Load Instruction Report.
- Carry out load verification prior to finalising the weight and balance.

4.11.10. LIVE ANIMALS

Transportation must be in accordance with the IATA Live Animals Regulation (LAR). Also check airline manuals, corresponding sections, for aircraft specific regulations, which may apply.

LIVE ANIMALS

Refer to chapter 11 AIRCRAFT CHARACTERISTICS - A320
and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.11.11. WET CARGO

The Loading Supervisor must check if:

- The wet cargo is properly packed and free of leakage.
- The aircraft floor is properly protected from risk of spillage.

4.11.12. TIE-DOWN

4.11.12.1. GENERAL RULES

Loose load is usually restrained by separation nets between sections or door protection nets. Nevertheless, certain type of loads must always be tied-down. The following is an example of items which must always be tied-down:

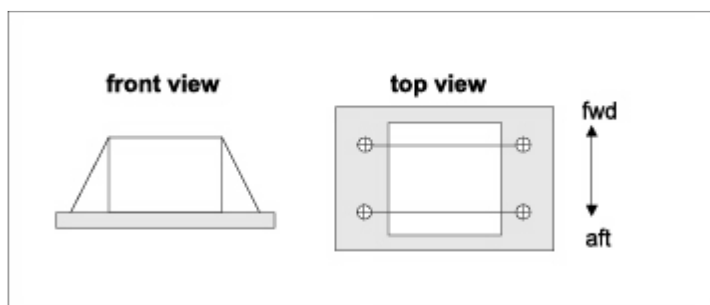
- All high density packages (sharp angles, steel extrusions, metallic trunks, etc.).
- Power driven wheelchairs (bulk compartment).
- AVI.
- Human remains (HUM).

Refer to operating airline policy for further requirements.

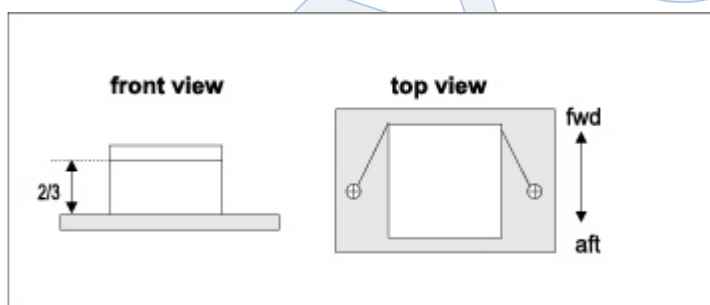
The following must be considered when applying tie-down of cargo. The total tie-down must ensure restraint in at least the following directions:

- Upward,
- Forward and aft
- Sideward

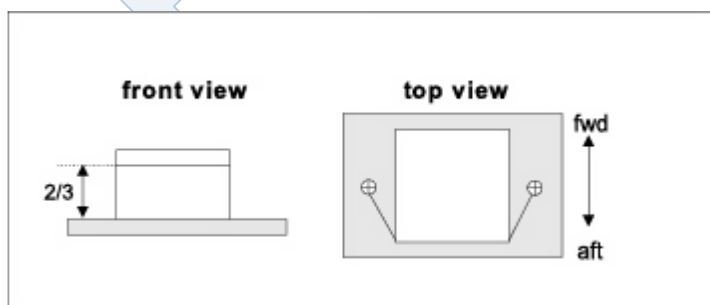
Upward:



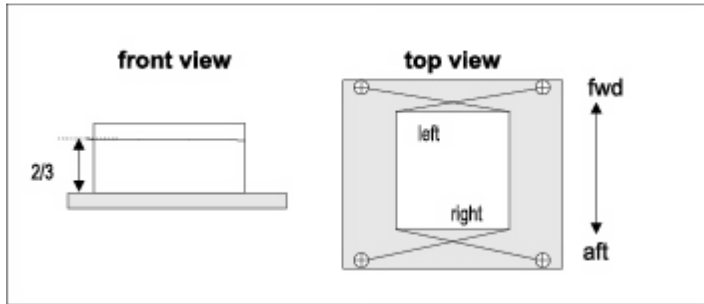
Forward and Aft:



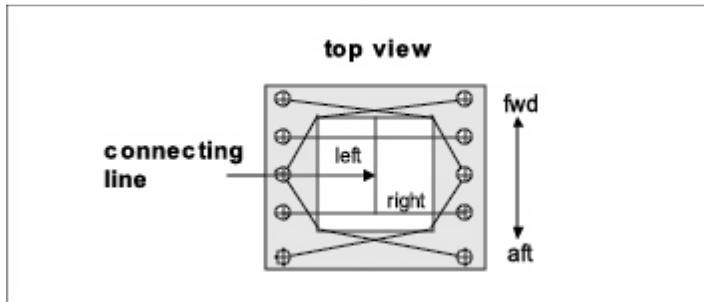
Rearward:



Sideward:



Completed Tie-down:

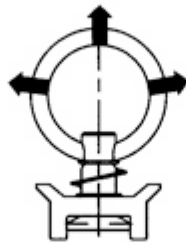


4.11.12.2. TIE DOWN FITTINGS

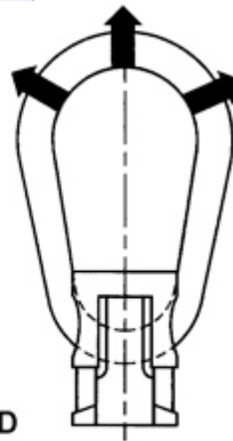
A single tie-down fitting may receive up to 3 straps/ropes in three different restraint directions (one up and two opposite horizontal directions). Forces generated by the load can never act in more than one direction at the same time, and thus the fitting will never be pulled by more than one strap/rope at the same time. Therefore a fitting may never receive more than one strap/rope in the same direction.



FORBIDDEN

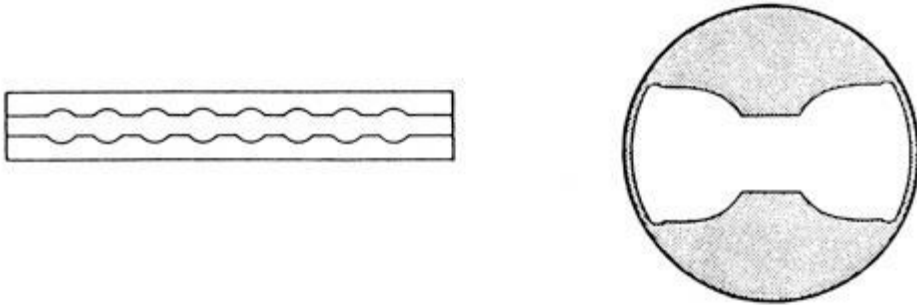


ALLOWED



4.11.12.3. TIE-DOWN EQUIPMENT

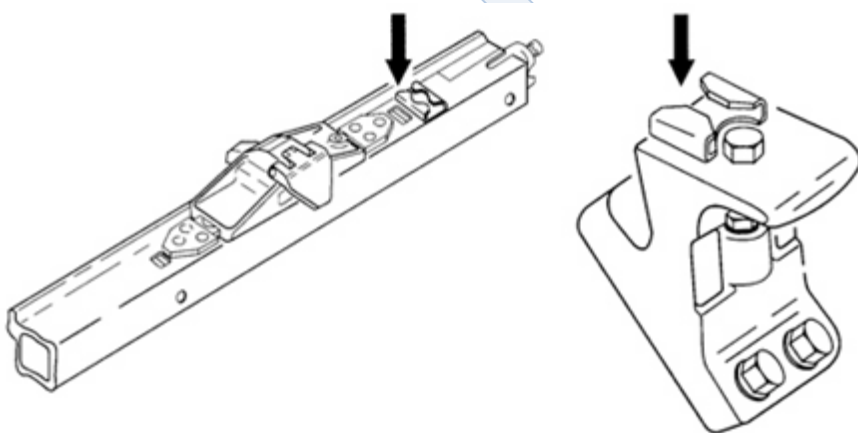
Track and Anchor Plate



1-stud and 2-stud Fittings



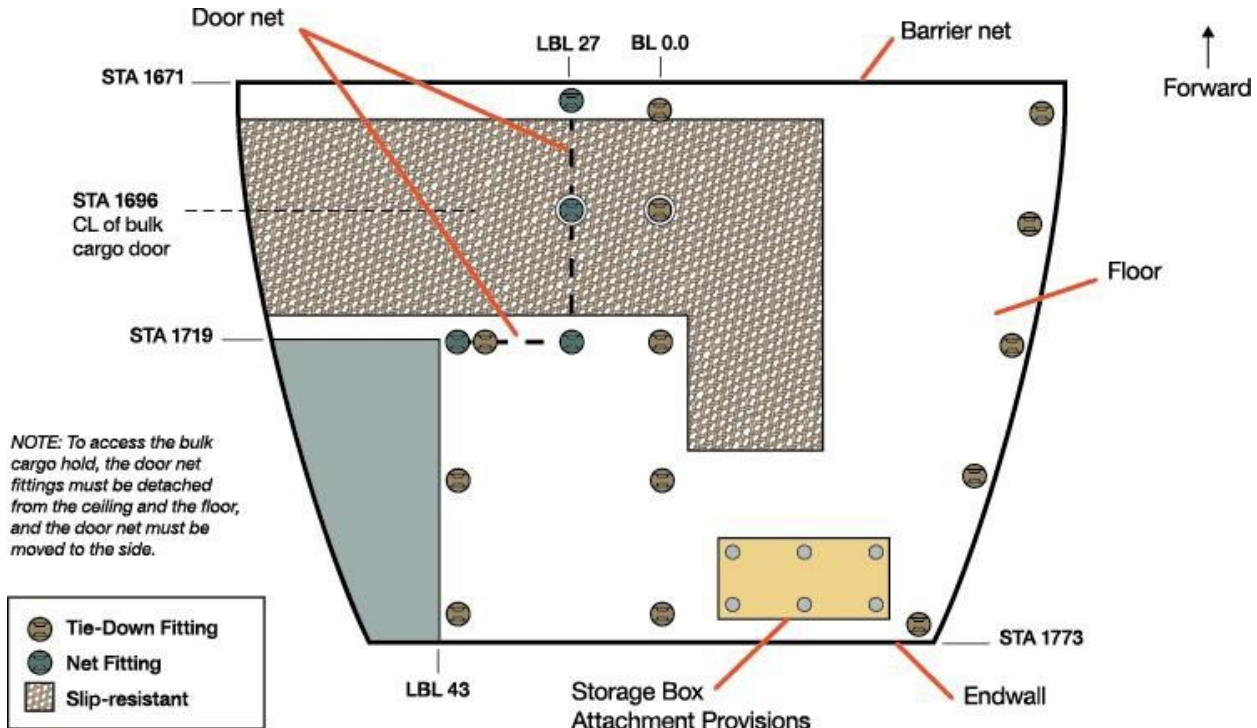
Outboard Side Lock and Side Guide



Tie-down Rope



4.11.12.4. EXAMPLE OF TIE-DOWN PROVISIONS IN BULKCOMPARTMENT



4.11.13. LOAD SPREADING

When the weight of item(s) to be loaded exceeds the maximum floor load per square metre or the maximum floor load per running metre of a compartment, the weight has to be spread to prevent damage to the compartment floor. This applies to HEAs, but may also apply to smaller items weighing less than 150 kg.

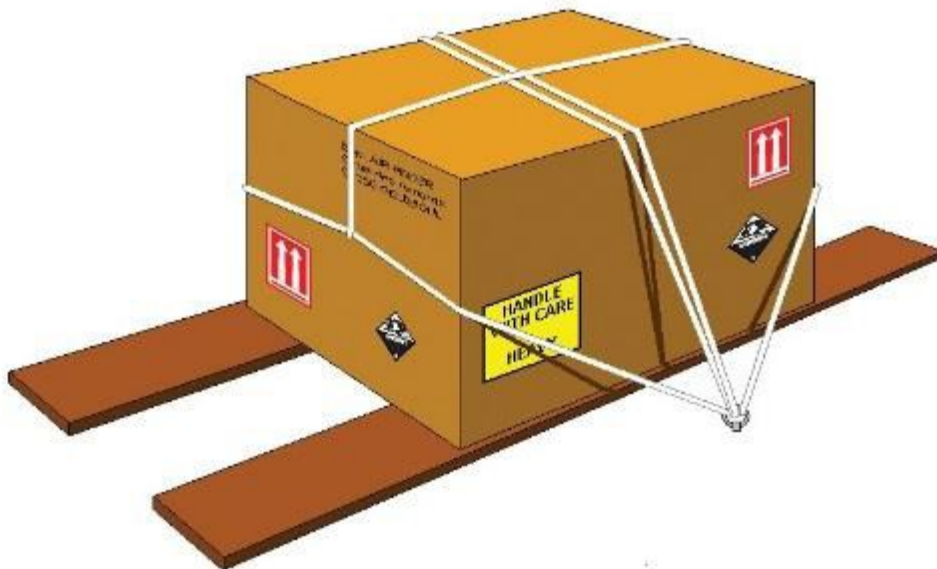
CAUTION: Overloading can cause damage to aircraft frames and ribs and consequently can have serious implications for the safety of the aircraft.

The weight can be spread by making use of spreading wood, in which case:

- The surface to support the weight will be enlarged.
- The length will be enlarged.

The Load Agent or Cargo will advise the spreading requirements for each item.

The information will be notified on the LIR.



4.12. AIRCRAFT DEPARTURE

4.12.1. INTRODUCTION

A departure is normally conducted with a dialogue between flight crew and ground staff in charge of the departure via an interphone. This procedure ensures the highest level of safety during departures based on a precise exchange of information. The ground agent in charge of the departure operation remains in continuous contact with the flight crew and is responsible for the ground maneuver.

Note: The term “headset” also applies where an interphone system is used.

4.12.2. WHEEL CHOCK REMOVAL

- Headset Operator:
 - via the interphone, request chock removal approval from the flight crew, and confirm the aircraft parking brakes are set.
 - check all GSE have been disconnected from the aircraft.
 - check the passenger boarding stairs have been retracted from the aircraft, if applicable.
 - check the tow tractor and tow bar are fully secured to the nose gear and parking brakes are set on the tractor, if applicable.
 - for towbarless tractor operation, check that equipment is fully secured to the applicable landing gear and parking brakes are set on the tractor, if applicable:
- remove chocks at applicable gear only and leave remaining chocks in place until departure
- nose gear wheel chocks may be removed without notification for the purpose of tractor connection provided the main gear wheel chocks are still positioned (except for main gear towbarless tractor).
 - give clearance to ground staff to remove chocks.

Note: If a chock is stuck, the responsible personnel remove it by tapping it with a spare chock or moving the aircraft after the aircraft brakes have been released.

- relay ‘Chocks Removed’ hand signal to the flight crew, and ensure the flight crew repeats the ‘Chocks Removed’ hand signal as confirmation.
- Responsible personnel stow chocks in their designated stowage place.

Note: Nose gear wheel chocks may be removed without notification provided the main gear wheel chocks are still positioned. Once high wind or icy conditions have passed, any additional chocks that were added to the aircraft may be removed so that chock placement reverts to that for normal conditions.

- If hand signals are used (i.e. aircraft interphone system is inoperative) the person performing the hand signal must:
 - be in continuous visual communication with the flight crew throughout the pushback.
 - display the ‘Set Brakes’ hand signal.
 - receive confirmation from the flight crew when they display the ‘Brakes’ hand signal in response.
 - display the ‘Chocks Removed’ hand signal.
 - receive confirmation from the flight crew. Do not remove chocks until confirmation of the flight crew is received.

4.12.3. ACTION PRIOR TO DEPARTURE

Prior to departure of the aircraft, make sure that:

- the ramp area is clear of all FOD and any equipment;
- the apron surface condition is sufficiently free of ice, snow, etc., to ensure safe aircraft movement;
- the ramp area is free of objects/obstacles which may be impacted by the aircraft or may endanger others due to jet blast effects;
- all persons not involved in the aircraft departure operation must remain clear of the departing aircraft, behind the ERA;
- additional ground staff such as Wing Walkers are present (if applicable/required);
- verbal communication with flight crew is established by means of an interphone system, departures using marshalling hand signals without any headset communication are only conducted in exceptional cases.

Note: Prior to connecting the tractor to the aircraft, the tractor may be parked in front of the aircraft or outside of the ERA, but never behind the wing

4.12.4. PRE-DEPARTURE TABLE

General

Prior to aircraft movement, the responsible ground staff must ascertain that the following requirements are met:

Legend: TT–towbar tractor TBL–towbarless tractor PPU–powered push unit

ACTION	APPLICABLE TO					TAXI OUT
	PUSH BACK				TOWING	
	TT	TBL	PPU	TT	TBL	
The required Pre-Departure Servicing Checks are complete.	X	X	X	X	X	X
Fire protection devices are available and correctly positioned (as per local rules).	X	X	X	X	X	X
Communication with flight crew is established via the interphone system.	X	X	X	X	X	X
The path and area that the aircraft is moving towards is clear of objects (FOD) ensuring safe	X	X	X	X	X	X
The stand surface condition is sufficiently free of ice, snow, etc., to ensure safe aircraft movement.	X	X	X	X	X	X
The GSE is outside the ERA, and Loading bridge is fully retracted (if applicable).	X	X	X	X	X	X

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If an Air Start Unit is required, check the equipment is ready and suitable for the operation.	X	X	X			X
Wing Walkers are present (if applicable).	X	X	X	X	X	
The air intake and blast areas of the aircraft engines are clear of persons and obstacles, such as ground support equipment.	X	X	X			X
The bypass pin is installed correctly (if applicable).	X	X		X	X	
Nose gear steering torque links are disconnected. (if applicable)	X	X		X	X	
All persons involved in the aircraft movement stay well clear of the danger areas around the tractor, landing gear and aircraft engines.	X	X	X	X	X	
A qualified brake operator is in the cockpit				X	X	
Wheel chocks are not removed from MLG until Flight Deck has confirmed that Aircraft parking brake is set, the tractor is fully secured to NLG and the parking brake of the tractor is set.	X	X		X	X	
Wheel chocks are not removed from the NLG until the powered push unit (PPU) is fully secured to the MLG and its parking brake is set.			X			
The tractor and shearpin combination (if applicable) are suitable for the operation, considering the aircraft type and weight, the weather and surface conditions.	X			X		
The completion of these requirements is indicated to the Flight Deck by means of the announcement "GROUND READY FOR PUSHBACK" via interphone	X	X	X	X	X	
Prior to connecting the tractor to the aircraft, the tractor may be parked in front of the aircraft or outside of the ERA, but never behind the wings.	X	X	X			

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4.12.5. PRE-DEPARTURE CHECK

4.12.5.1. PRE-DEPARTURE WALK AROUND CHECK

The pre-departure walk around check includes, but is not limited to, ensuring the following:

- The apron is clear of all FOD items that may cause aircraft damage or pose a risk.
- All GSE and passenger boarding devices are detached.
- The stand area is clear of obstructions. GSE and vehicles are positioned clear of the aircraft path.
- Adequate clearance exists between the aircraft and facilities or fixed obstacles along the aircraft movement path.
- All aircraft servicing panels and/or hatches are closed and secured (except external power and headset panels).
- Cabin/cargo doors:
 - handles are flush with the fuselage;
 - there is no visible damage on the aircraft, particularly around cabin and cargo doors.
- Any abnormalities on the aircraft observed (e.g. obvious damage, fluid leakage) are immediately brought to the attention of the pilot in command and maintenance.
- Landing gear safety pins are removed.
- There are no obvious signs of unmarked dents or other skin panel damage

CAUTION: If any of the above conditions or actions are not met or corrected, inform your supervisor, maintenance and the pilot in command.

4.12.6. COMMUNICATION REQUIREMENTS

4.12.6.1. COMMUNICATION DURING ENGINE START

Coordinate the engine starting sequence with the flight crew by conducting a pre-departure briefing and refer to the operating airline's GOM for specific engine start procedures.

- During the engine start communicate with the flight crew only if you observe circumstances that require immediate notification and action by the flight crew.
- In case of starting up with an ASU, supply the pressure at the request of the flight crew, immediately before the start up of the engine.

Note: For ground staff facing the aircraft nose, the aircraft engines are identified, from right to left. (Engine number 1 being the first engine from the right).

4.12.6.2. COMMUNICATION DURING ENGINE FIRE

ENGINE FIRE:

The Flight Crew normally detects an engine or APU fire and will take action using the engine fire extinguishing system. However, alert the flight crew immediately via the interphone headset if flames are noticed from the engine or engine pylon.

In the event that an interphone is not available, the appropriate "Fire" hand signal must be used. (Refer to the Marshalling Hand Signals section in this chapter).

TAILPIPE/EXHAUST FIRE:

If you notice flames from the engine tailpipe during engine starting, alert the flight crew immediately, as such a fire might not be detectable via temperature sensors and/or fire warning systems in the aircraft.

CAUTION: Do not fight engine fires with fire extinguishers on the ground when the flight crew is in the flight deck. The flight crew will take all necessary action.

4.12.7. DEPARTURE COMMUNICATION

Departure communication outlined in this section is a basic standard for both pushback and open ramp (taxi out) departures. Certain airlines may have specific requirements in their departure communications which may vary. If available, refer to the operating airline's GOM otherwise this communication standard shall apply. This specific dialogue does not forbid the exchange of additional important information between flight crew and ground staff using non-standard phraseology (e.g. request for authorization to disconnect ground support units etc.).

Note: If the pushback must be stopped, the following call will be made: STOP PUSH BACK. Where applicable, use "pull out" instead of "pushback".

Note: Only engage the towbarless tractor and lift the aircraft once the passenger boarding device has been removed from the aircraft and the flight crew has requested for pushback.

4.12.7.1. DEPARTURE COMMUNICATION DIALOGUE

Dialogue between Ground Staff and Flight Crew		
Phase	Ground Staff	Flight Crew
Preparation	Call: CONFIRM PARKING BRAKES ARE SET.	Reply: PARKING BRAKES SET.
	Reply: BYPASS PIN INSTALLED & CLEARED TO PRESSURIZE (IF APPLICABLE)	Call: CONFIRM BYPASS PIN INSTALLED. (if applicable)
After completion of the pre-departure servicing checks	Call: PRE-DEPARTURE CHECKS COMPLETED, GROUND READY (TOWBARLESS)	Reply: ROGER BYPASS PIN INSTALLED, PRESSURIZING (if applicable)
	CLEAR TO START ENGINE(S) (FOR OPEN RAMP DEPARTURE ONLY)	Reply: ROGER. STANDBY or YOU MAY LIFT THE AIRCRAFT. (TOWBARLESS) or [STARTING ENGINE(S)...]
Pushback [and engine start]	Call: RELEASE PARKING BRAKES or LIFTING COMPLETED, RELEASE PARKING BRAKES (TOWBARLESS)	Request pushback [and engine start] clearance from ground control. After clearance received: Call: READY FOR PUSHBACK
	Call: COMMENCING PUSHBACK [AND CLEAR TO START ENGINE(S)...] Note: communicate with flight crew on aircraft direction if applicable	When brakes are released: Reply: PARKING BRAKES RELEASED [Reply: STARTING ENGINE(S)...]
Pushback completed	Call: PUSHBACK COMPLETED, SET PARKING BRAKES.	When parking brakes are set: Reply: PARKING BRAKES SET
	Tractor is disconnected and positioned in view of the flight deck (If applicable)	Call: YOU MAY DISCONNECT.
Clearance to Taxi	Reply: DISCONNECTING, HOLD POSITION AND WAIT FOR VISUAL SIGNAL ON YOUR LEFT/RIGHT. Disconnect headset and give the 'All Clear' hand signal. ('All Clear' signal includes showing the steering bypass pin)	Reply: HOLDING POSITION AND STANDING BY FOR VISUAL SIGNAL TO MY LEFT/RIGHT. Acknowledges "All Clear" signal. (Taxi clearance may only be requested after the 'All Clear' signal is received)

The following dialogue is a sample communication to be used for a departure:

4.12.7.2. ITEMS TO BE COMMUNICATED BETWEEN GROUND STAFF AND FLIGHT CREW

Phase	Task	Ground Staff Action
Departure Preparation	GPU removal	When instructed by flight crew, remove GPU.
	Towbar/Towbarless Tractor connection	(a) Get confirmation that the aircraft's parking brake is set. (b) Get confirmation that the nose wheel steering is depressurized or advise flight crew that the bypass pin is inserted (if applicable). (c) Connect the Towbar. (d) Connect the Towbarless tractor.
	Chock removal	(a) Get confirmation from flight crew that aircraft parking brakes are set. (b) Remove chocks.
	Pre-departure check	Advise the flight crew that the pre-departure check has been completed or communicate any discrepancies.
Engine Start	Starting engines	When requested by the flight crew, advise when the engines may be started and the start sequence.
	ASU	When requested by the flight crew, signal to the ASU operator to supply the required pressure.
Pushback [and engine start]	Brakes	Get confirmation that aircraft's parking brakes have been released.
	Movement of the aircraft (pushback/pull out)	Get permission from flight crew, to commence the pushback.
	Direction of push/nose	If applicable, ask in which direction the aircraft has to pushed/in which direction the nose should point after pushback.
	Engine start	When requested by the flight crew, advise when the engines may be started.
Pushback completed & Engine start completed	Towbar/Towbarless Tractor disconnect	(a) Get confirmation that the aircraft's parking brake is set. (b) Disconnect. (c) Remove the steering bypass pin—where applicable.
	Headset removal	(a) Get permission from flight crew to disconnect the headset. (b) Advise flight crew to hold position and wait for visual signal at left/right of the aircraft.
Departure	"All Clear" signal	(a) Ensure verification of pin removal has been completed—if applicable. (b) Give the "All Clear" signal when the path of the aircraft is clear of all obstacles. (c) Get acknowledgement of "All Clear" signal.

4.12.7.3. DEPARTURE COMMUNICATION WITHOUT INTERPHONE

An aircraft departure must always be conducted using interphone communications. In the event that the interphone becomes unserviceable or under extreme circumstances where the interphone is not available, you must use conventional hand signals (see Ch 4.8.4 and 4.8.5) for the departure (not applicable to main gear pushback unit departures).

Prior to departure a briefing must be held between the Captain and the ground agent responsible for the departure, including:

- Review of departure specifics, e.g. direction of movement, final positioning, and taxi out direction;
- The hand signals to be used, including emergency signals.

CAUTION: Read back all given instructions or acknowledge them in a manner clearly indicating that they have been understood and will be complied with.

4.12.8. PREPARATION FOR PUSHBACK

(This section is also applicable to pull-out using applicable equipment)

4.12.8.1. PRE DEPARTURE COMMUNICATION

An aircraft departure must always be conducted using interphone communications. In the event that the interphone becomes unserviceable, you must use conventional hand signals see GOM 4.8.4 and GOM 4.8.5 for the departure (not applicable to main gear pushback unit departures). Prior to departure a briefing must be held between the Captain and the ground agent responsible for the departure, including

- Review of departure specifics, e.g. direction of movement, final positioning, and taxi out direction
- The hand signals to be used, including emergency signals

CAUTION: Repeat all given instructions or acknowledge them in a manner clearly indicating that they have been understood and will be complied with.

4.12.8.2. CONNECTING THE PUSHBACK VEHICLE

The pushback vehicle is connected as follows:

- Aircraft main gear chocks installed, nose gear chocks removed—if applicable;
- Approach nose gear parallel to fuselage;
- Use a marshaller to assist in the final approach to nose gear:
 - Tractor & Towbar:
 - Connect towbar to nose gear first.
 - Raise towbar so that its head is at same height as the tractor connection.
 - Approach slowly until connection aligns and secure connection.
 - Rise towbar wheels
 - Select "Neutral" or "Park" and set parking brake.
 - Towbarless tractor:
 - On final approach to aircraft, the tractor must be properly aligned.
 - Position Towbarless tractor to standby for lifting and wait for clearance from flight deck to lift.
 - Select "Neutral" or "Park" and set parking brake.

CAUTION: Do not remove the main landing gear chocks until all GSE – with the exception of the boarding passenger stairs(s), GPU, PCA, and ASU is removed from the aircraft, the pushback vehicle is connected to the aircraft and the parking brakes of both the pushback vehicle and the aircraft are set.

4.12.9. AIRCRAFT PUSHBACK

(This section is also applicable to pull-out using applicable equipment)

4.12.9.1. PUSHBACK REQUIREMENTS

All staff walking on ramp must remain clear of:

- aircraft nose gear throughout the pushback operation;
- the tractor's path;
- engine danger areas.

4.12.9.2. PUSHBACK & PULL FORWARD

If an aircraft is to be pulled forward after pushback and engines started, special precautions must be taken to reduce the risk of the aircraft's engine thrust causing damage to the nose gear and towbar when stopping the aircraft at completion of manoeuvre.

CAUTION: When using a towbarless tractor - Do not lift the aircraft when loading equipment and/or a passenger boarding device is still connected to the aircraft.

4.12.9.3. GROUND CREW IN CHARGE OF PUSHBACK

Ground Crew Responsibility

The responsible ground crew is defined as the person performing the communications with the flight crew. A responsible ground crew must be in charge of each aircraft pushback. This function can be performed by different agents in different roles and positions. Refer to the operating airline's GOM for the specific assignment of this duty.

Responsible ground crew for the departure will:

- be in charge of the entire pushback, once clearance to begin pushback has been given by the flight crew;
- ensure that the towbar/shearpin/towbarless tractor is suitable for the specific aircraft type;
- conduct briefings with all persons involved in the aircraft movement to review and confirm how the aircraft will be maneuvered;
- be in continuous communication with flight crew by interphone;
- have ultimate responsibility to review pushback procedures based on conditions he/she observes and must inform the flight crew;
- if ramp conditions are below standard for a normal pushback (e.g. hazards, obstacles, slippery or icy) then:
 - He/she will inform the flight crew that engine start clearances will not be given until either:
 - the aircraft is moving over an area of the ramp where the conditions are considered to be safe for an engine start;

OR

- the pushback has been completed, the aircraft has come to a complete stop and the parking brake has been set;
- ensure that the nose gear steering bypass pin is installed prior to towbar connection to aircraft;

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- connect the interphone and conduct a communication check to:
 - verify the communication system is functional;
 - update flight crew on progress of the ramp operation;
 - request permission & disconnect ground power after verbal approval is received from flight crew.
- conduct a Pre-Departure walkaround;
- signal “All Clear” to pushback tractor driver and wingwalkers (if applicable) once advised by flight crew that the aircraft brakes have been released and clearance for pushback given by flight crew;
- be positioned as required by operating airline's GOM, either inside tractor or walking on apron adjacent to nose gear;

DANGER:

If walking adjacent to nose gear: walker and tug driver must be in visual contact throughout the pushback. After approval of flight crew, the tugdriver must always assure taxiway is free of other aircraft/equipment/obstacles.

- monitor the interphone during the pushback and communicate with the flight crew as required;
 - advise the flight crew if for any reason it is not safe to start an engine and stop the engine start (the flight crew may advise as each engine is being started);
 - advise the flight crew to set aircraft brakes at end of pushback. Once confirmation from the flight crew has been received, give the brakes set signal to the tractor driver and wingwalkers (if applicable).
 - Give visual signal to the tractor driver and wingwalkers (if applicable) that it is clear to disconnect towbar after flight crew advises that engines were started normally and the ramp is clear to disconnect the towbar.
 - Disconnect the headset and close the access panel on the aircraft once the clearance has been given by flight crew and the towbar has been disconnected.
 - Remove the nose gear steering bypass pin (if applicable) and ensure the swing lever is returned to the proper position.
 - After headset, towbar and steering bypass pin are removed, close and latch all access panels and then move to designated position to conduct final departure marshalling.
 - Ensure verification of pin removal has been completed—if applicable. Show the “All Clear Taxi” signal.
 - Give the “All Clear to Taxi” signal once eye contact has been made with the flight crew and they are expecting the signal. In low-light conditions the flight crew will turn on the interior lights of the flight deck.
 - Remain in position until an acknowledgement from the flight crew is received and the aircraft begins to taxi.

CAUTION: The flight crew (or brake operator) must be notified immediately:

CAUTION: (1) in the event any connection between the tractor and the aircraft is lost during aircraft movement;

CAUTION: (2) to stop the aircraft movement using gentle brake application if the aircraft is about to overtake the tractor while towing.

DANGER:

If the nose wheels are not in the centered position, they can turn quickly to their centered position when the bypass pin is removed. Personnel injury could result.

Do not disconnect the interphone communication cable until after the towbar (or towbarless tractor) has been disconnected from the nose gear.

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4.12.9.4. WINGWALKER

Wingwalkers or other assist personnel during a pushback are not a universal requirement.

The operating airline's GOM establishes requirements. The presence of such personnel may also be controlled or restricted by civil aviation authorities or local airport authorities. If wingwalkers are not being utilized in the operation for any of the above reasons, all references in this section of GOM shall be ignored.

- Wingwalker or other assist personnel must:
- Be under the direction of the responsible ground crew at all times.
- Use 2 marshalling wands, either day-wands or illuminated wands for low visibility operations.
- Be positioned before and during movement of aircraft as follows where applicable and/or permitted:
 - approximately 1 metre outboard of the wingtip.
 - in line with the rearmost main gear wheel.
 - must maintain visual contact with the person responsible for pushback/towing.
- Ensure the aircraft movement path is clear of any obstructions, other aircraft, vehicles etc.
- Provide "Safe to Proceed" clearance signals at all times to the person responsible for pushback by using a distinct "Pendulum" motion of the arm.
- Continue to monitor the aircraft path until the aircraft is stopped at the departure point.
- Position themselves in clear visibility of the flight crew on the terminal side, at a safe distance away from the aircraft (either at the 11 o'clock or 1 o'clock position).
- give the "AIRCRAFT HOLD" signal to the flight crew when the visual "Brakes Set" signal has been received from the #1 Man. (crossed wands may be over head or in front of chest).



- remain in position until the responsible ground crew walks over to take over the marshalling clearance of the aircraft;
- return to terminal once marshalling duty has been transferred.

4.12.9.5. TRACTOR DRIVER

The pushback tractor driver will:

- align the tractor or tractor and towbar combination with the center line of the aircraft before the aircraft movement;
- completely raise the towbar wheels before the start of the aircraft movement (if used);
- standby for clearance to push communication from flight crew or responsible ground crew;
- select appropriate gear on tractor and slowly begin movement;
- prior to the aircraft movement, make sure that the parking brakes are released and the anti-collision lights are switched on (depending on the local airport regulations);
- start the pushback operation on a straight line;
- keep the maneuvering speed to a minimum, and apply the vehicle brakes gently;
- scan the apron during pushback, monitor clearances and wingwalkers (if applicable) to ensure that aircraft is moving clear of all obstructions. Be prepared to stop;
- ensure during pushback the steering turn limits are not exceeded and advise flight crew if any are exceeded. Damage to nose gear will occur. Refer to the operating airline's GOM for the specific limits and how they are marked on the aircraft;
- If responsible ground crew on interphone is walking on ramp, maintain visual contact and ensure a safe distance is maintained from the nose gear during entire pushback;
- If the responsible ground crew is too close to the nose gear, the pushback must be stopped and a review of the required safety clearance conducted.
- set brakes on the tractor once pushback is completed;
- Maintain the brakes on the pushback until the release signal is received from the flight crew or responsible ground crew on interphone;
- wait for flight crew or responsible ground crew on interphone to give the "Aircraft Brakes Set" signal;
- release the tractor brakes and put the gear selector in "Neutral" after aircraft brakes have been set, to release any pressure on the towbar;
- position the tractor in the aircraft's path and be visible to the flight crew (if possible) after the towbar has been disconnected from the tractor;
- remain in position visible to the flight crew until the headset operator has disconnected and is in view of the flight crew;
- drive tractor back to terminal or appropriate parking position.

CAUTION: If the nose wheels are not in the centered position, they can turn quickly to their centered position when the bypass pin is removed. Personnel injury could result.

4.12.10. OPEN RAMP DEPARTURE

- Complete all pre-departure checks.
- Refer to departure communication section and follow required phases of dialogue.
- Ensure all staff and equipment is clear of the aircraft behind the ERA.
- Position for marshalling in an area behind the ERA while being in clear view of the flight crew on either side of the aircraft (depending on facility).

4.12.11. MANEUVERING DURING ADVERSE WEATHER CONDITIONS

During adverse weather conditions (fog, rain, etc.) visibility and traction will be affected. The Tractor Driver must reduce and adapt vehicle speed as required by the present conditions.

4.12.11.1. ICY CONDITIONS

When maneuvering the aircraft on slippery apron surfaces, extreme caution is required to avoid losing control of the tractor due to skidding. Many elements can contribute to the hazards involved such as strong winds, slippery road surfaces, pavement slopes etc.

Observe the following minimum precautions:

- Avoid sudden turns, deceleration or acceleration.
- Except when using an Air Start Unit, do not start aircraft engines unless:
 - the condition of the pavement is such that reasonable traction is ensured;
 - the aircraft parking brakes are set and the aircraft is disconnected from tow tractor/towbarless tow tractor.

4.12.12. NOSE GEAR STEERING

4.12.12.1. GENERAL

Each aircraft type has specific requirements for the bypass of the nose gear steering mechanism. Refer to the operating airline's GOM for nose gear steering bypass pin details.

DANGER:

The bypass pin must be:

- checked regularly for proper technical condition, or as per manufacturer instructions.
- labeled with the specific aircraft type(s) for which it can be used; identified with a "Remove before Flight" streamer;

4.12.12.2. NOSE GEAR PROTECTION AND STEERING ANGLES

In order to protect the nose gear from damage, visual turning limit markings indicate the

- aircraft's maximum nose gear steering angles. Refer to the operating airline's GOM for
- details.

DANGER:

In the event of exceeding the maximum nose gear steering angle, inform the maintenance department and flight crew, if applicable, and request a technical inspection. The aircraft must return to the parking stand in order to check whether the gear is damaged.

When using a towbarless tow tractor equipped with either an over steer warning or over steer protection device, verify the visual turning limit markings at all times to prevent exceeding the maximum nose gear steering angle. When using a towbarless tractor on an aircraft, the "over steering" or "over torque" system of the tractor must be operative.

NOSE GEAR PROTECTION AND STEERING ANGLES

Refer to chapter 11 AIRCRAFT CHARACTERISTICS - A320 and chapter 12 AIRCRAFT CHARACTERISTICS - A321

4.12.13. ANTI-COLLISION LIGHTS

On a standard departure, once all aircraft doors are closed, the flight crew requests pushback clearance from ATC. Once clearance is obtained the flight crew will switch on the aircraft's anti-collision lights.

CAUTION: Anti-collision lights that are switched on are a visual indication to ground staff of imminent engine start-up or aircraft movement. Vehicle traffic must stop until the aircraft has departed from the area.

4.12.14. ENGINE CROSS BLEED START

Engine start using cross bleed can only be performed once the pushback has been completed, the aircraft brakes have been engaged, and the area around the aircraft is clear.

CAUTION: With engine(s) above idle thrust, blast and suction effects are greater.

4.12.15. RE-ESTABLISHING COMMUNICATION AFTER DEPARTURE

This procedure is to be used in case the ground staff or flight crew wishes to re-establish interphone communication after it has been disconnected.

4.12.15.1. INITIATED FROM THE COCKPIT

The flight crew sets the parking brake and re-establishes communication with ground staff via company channel or ATC. If visual communication with responsible ground agent is still established then visual signals may be used.

4.12.15.2. INITIATED FROM THE GROUND

If ground staff needs to re-establish communication with the aircraft after dispatch, do NOT approach the aircraft. If communication cannot be established using hand signals, make contact via company channel or through ATC.

When preparing to re-establish communication with aircraft, take the following precautions:

- Make sure you have been seen by the flight crew and the intention to approach the aircraft to re-establish interphone communication is understood.
- Approach the aircraft from the direction where visual contact with the flight crew is maintained as long as possible.
- Only the person establishing the interphone communication shall approach the aircraft.
- Stay outside the aircraft's engine danger area when approaching the aircraft.
- If possible, position pushback tractor in front of aircraft in clear view of flight crew to act as a safety barrier and prevent premature movement of the aircraft.

CAUTION: For safety reasons, the interphone communication system cannot be used when there is thunderstorm activity over the airport as there is a risk of electrical discharges between the aircraft and the interphone system. Under these conditions communication headsets cannot be worn.

4.12.16. INTERPHONE COMMUNICATION FAILURE

Aircraft pushback requires a communication interphone. In the event the interphone becomes unserviceable or communications is lost, the following procedure must be followed:

- In case of a single person operation and if no other means of communication are available, stop the movement (depending on local situations and regulations) and immediately request assistance to continue the movement.
- In case of multiple person operation then communication with the flight crew will be established using hand signals as described in this chapter. The tractor driver must be able to receive the visual signals as relayed from the flight crew.
- Once hand signal communication has been established the pushback can resume.
- Notify ATC (if radio available) and continue the movement in co-operation with ATC, depending on local regulations.

4.12.16.1. INTERPHONE FAILURE DURING TOWING

If during the tow the interphone fails, the tow must immediately be stopped and an alternate means of communication established before continuing. If this is not possible, assistance must be requested.

4.13. AIRCRAFT TOWING

4.13.1. AIRCRAFT TOWING REQUIREMENTS

The following requirements must be met to perform an aircraft tow:

- Ensure hydraulic system pressure for aircraft braking and/or the brake accumulator is within required pressure range. Refer to the operating airline's GOM for each aircraft type for more detail.
- Ensure any required electrical systems for towing are energized.
- Ensure all gear safety pins/sleeves are installed, and after tow, ensure all pins are removed and stowed. Refer to each airline's GOM for procedures regarding gear lock pin responsibilities and requirements.
- Make sure a qualified brake operator is in the cockpit.
- Establish communication with the brake operator by means of the interphone system.
- Make sure wheel chocks are positioned at the end of the maneuver, prior to disconnecting the towbarless tow tractor or towbar.

CAUTION: Inform the brake operator/flight crew and/or contact the maintenance department for technical inspection if you:

CAUTION: (1) observe any type of excessive fluid leakage;

CAUTION: (2) notice any signs of unmarked aircraft damage;

CAUTION: (3) observe any fault, failure, malfunction or defect which you believe may affect the safe operation of the aircraft for the intended flight.

4.13.2. TOWING MANEUVERING

The towing maneuvering procedure is similar for all aircraft types. The following minimum safety precautions and procedures must be followed prior to and during aircraft towing operations:

- Align the tractor or tractor and towbar combination with the center line of the aircraft before the aircraft movement.
- Completely raise the towbar wheels before the start of the aircraft movement (if used).
- Prior to the aircraft movement, make sure that the parking brakes are released and the anti-collision lights are switched on (depending on local airport regulations).
- Wait for the authorization of the flight crew or brake operator before moving the aircraft.
- Start the pushback operation on a straight line.
- Keep the maneuvering speed to a minimum, and apply the vehicle brakes gently.
- Do not exceed the towing speed limit as regulated by the towing equipment, aircraft and/or airport.
- Use relevant apron lines as guidance during maneuvering to ensure safe obstacle clearance.
- Keep a minimum safety distance between vehicles sufficient in which to stop.
- Stop 50 m/55 yd before a taxiway intersection, if a stop is required.
- Avoid sharp turns, which results in excessive tire scrubbing.
- Make all stops smoothly.
- When arriving at the allocated position, move the aircraft in a straight line for a few meters to ensure that the nose wheels are in the straight ahead position. This relieves any torsional stress applied to landing gear components and tires.
- Apply the tractor parking brake after a complete stop.

Note: Some of these precautions may not be applicable to towbarless vehicles.

4.13.2.1. TOWING PREPARATION

The following checklist is to be used in preparation for an aircraft tow.

Action	Performed by	
	Brake Operator	Tractor Driver
Apply the cockpit checklist for towing. Refer to the operating airline's GOM for details.	✓	
Connect and test the interphone link.	✓	
Insert the bypass pin.	✓	✓
Give permission to connect the towbar and tractor or towbarless tractor after applying the aircraft parking brake.	✓	
Connect the towbar, first to the aircraft, then to the tractor.		✓
Before connecting the towbarless tractor, ensure the aircraft main landing gears are symmetrically chocked.		✓
Connect the tractor or towbarless tractor and set the parking brake.		✓
Once all GSE has been cleared away from the aircraft, remove or check removal of aircraft chocks.		✓
Switch on the external and anti-collision lights of the aircraft.	✓	
Contact the Control Tower for clearance to start moving the aircraft (depending on local regulations).	✓	✓
After receiving the clearance, release the aircraft parking brake.	✓	
Give clearance to the Tractor Driver to start moving the aircraft.	✓	
Request confirmation from the Brake Operator that the aircraft parking brake has been released.		✓
Conduct tow.		✓



4.13.2.2. TOWING COMPLETION

The following checklist is to be used at the end of an aircraft tow.

Action	Performed by	
	Brake Operator	Tractor Driver
Set tractor parking brake.		✓
Request Brake Operator to set the aircraft parking brake.		✓
Inform the Control Tower that towing is completed and the frequency will be left (depending on local regulations).	✓	✓
Set the aircraft parking brake and check the pressure. Inform the Tractor Driver: PARKING BRAKE SET, PRESSURE CHECKED.	✓	
Chock the aircraft main landing gear.		✓
Switch off the external and anti-collision lights of the aircraft.	✓	
Inform Brake Operator: AIRCRAFT CHOCKED.		✓
Request permission from Brake Operator to disconnect the towbar or towbarless tractor.		✓
Give permission to disconnect the towbar or towbarless tractor.	✓	
Disconnect the towbar or towbarless tractor and remove the bypass pin.		✓
Chock the aircraft.		✓
Inform: TOWBAR/TRACTOR DISCONNECTED.		✓
Release the aircraft parking brake and inform: PARKING BRAKE OFF.	✓	
Check and inform: AIRCRAFT STABILIZED.		✓
After permission from the Brake Operator, shut down and disconnect the tractor GPU.		✓
Install and connect a GPU.		✓
Remove and stow gear safety pins in the dedicated location.	✓	

4.13.3. INCIDENTS DURING TOWING

Brake Operator	Tractor Driver
VHF Communication Failure	
	- Stop aircraft/tractor set immediately. - Apply tractor parking brake. - Advise Towing Regulation and wait for assistance (Follow me before completing the towing).
Tractor Failure	
- Inform ATC. - Apply parking brake. - Listen to VHF and wait for assistance.	- Stop aircraft/tractor set. - Inform ATC (towbarless towing with one man operation). - Apply tractor parking brake. - Chock the aircraft. - Listen to VHF (towbarless towing with one man operation).
Coupling Break Off	
- Brake the assembly by stepping on both brake pedals progressively. - As soon as the aircraft is at a standstill, apply the parking brake before releasing the pedal.	- Do not apply tractor brakes. - Follow the aircraft path attentively and stop the tractor according to the aircraft position. - Chock the aircraft.
Tractor Fire	
- Inform ATC. - Apply parking brake.	- Inform the Brake Operator. - Stop aircraft/tractor set immediately. - Move tractor away as rapidly as possible. - Fight the fire, using the fire extinguisher. - Chock the aircraft.
Aircraft Fire	
- Inform ATC. - Apply the parking brake. - Fight fire with the on board fire extinguisher. - Evacuate the aircraft using on-board means, if required.	- Stop aircraft/tractor set immediately. - Move tractor away as rapidly as possible. - Chock the aircraft.
Accident with Other Aircraft or Vehicle	
- Contact the Control Tower stating position and nature of trouble. - Listen to VHF and wait for assistance.	- Stop aircraft/tractor set immediately. - Apply tractor parking brake. - Advise towing regulation. - Do not unload or disconnect the aircraft. - Chock the main landing gear.

The Tractor Driver and Brake Operator must continuously keep each other informed.

4.13.4. TOWING LIMITS

- Fuel and other loads can affect an aircraft's balance. To avoid “tail tipping” during towing, ensure that the actual centre of gravity of the aircraft is forward of the critical centre of gravity. If you are unable to determine this, then you must request assistance from a qualified weight and balance agent of the operating airline.
- Refer to the operating carriers GOM for respective aircraft type specific instructions for further details.

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5. LOAD CONTROL

5.1. INTRODUCTION

Load control is a function, which ensures the production of all applicable documentation to comply with operator and regulatory authorities for an individual flight. This includes planning, reporting and recording the loading of the aircraft.

5.2. LOAD CONTROL PRINCIPLES

Load Control is an essential function, which guarantees the safety of a flight. It includes accurate planning, recording and: reporting of all load distributed on an aircraft.

Documented communication is required to ensure correct weight & balance calculations are conducted and provided to pilot in command prior to an aircraft's departure.

5.3. REGULATORY REQUIREMENTS

5.3.1. GENERAL REQUIREMENTS

Load control function can be carried out by the operator or a third party. It can be performed at any dedicated location locally at the departure airport or at a remote centralized load control facility. Load control may be performed with a system (manual or computerized) approved by the operator.

GENERAL REQUIREMENTS

The data for Load control normally is carried out by FLYONE flight crew.

Flight crew are in charge for the correctness of weight and balance calculation documentation preparation. However depending of the nature of operations load control function might be outsourced from third parties. If FLYONE intends to outsource Load control function from third parties (to handling company), weight and balance systems should be tested and approved by FLYONE Departure Control System manager and Head of Flight Operations.

5.3.2. QUALIFICATION REQUIREMENTS

The load controller shall be qualified and licensed for the job function. Training for the load control function shall be performed by a qualified instructor authorized by the operator. Load control licensing, training and documentation shall be in compliance with regulations and operators policies.

5.3.3. DOCUMENTATION REQUIREMENTS

The operator is responsible for providing all relevant documentation for load planning and weight and balance calculations. The operator shall define data content and terminology for documents, reports and messages.

The load controller is responsible for accurately reflecting the data received on all documents, reports and messages with regard to each flight handled as per AHM590. Relevant documents shall be manually or electronically signed as per operator and regulatory requirements. Specified documents shall be retained for a period in accordance with applicable regulations and the requirements of the operator, but no less than a period of three months.

Disposal of documents may also be subject to regulation.

DOCUMENTATION REQUIREMENTS

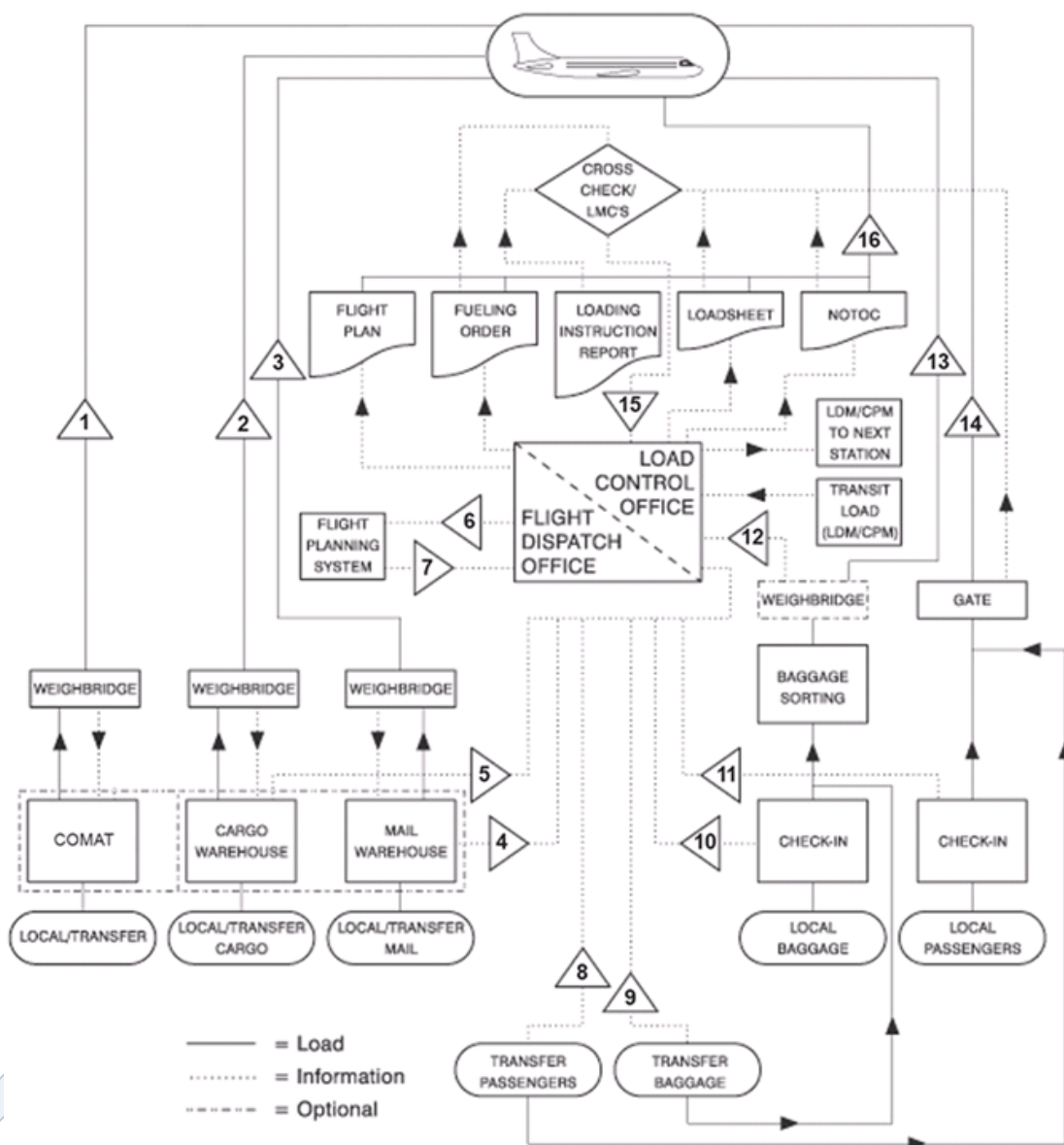
Refer to AHM 560 A320 & AHM 560 A321.

Manuals are available on FLYONE docs server <http://FOE.asqs.net>

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5.4. LOAD CONTROL PROCESS FLOW

5.4.1. LOAD CONTROL PROCESS FLOW SCHEMA



5.4.2. LOAD CONTROL PROCESS FLOW LEGEND: (ACTIONS IN TRIANGLES ABOVE ARE DEFINED BELOW)

TRIANGLE #	ACTION
1.	Cornat.
2.	Cargo to aircraft.
3.	Mail to aircraft.
4.	Mail weight/destination/category/DG/Special Load information to Load Control Office
5.	Cargo weight/destination/category/DG/Special Load information to Load Control Office
6.	ZFW/Aircraft registration/Route to Flight Planning System,
7.	Flight plan including Take-off, Trip-Fuel, Maximum Gross Weights to Dispatch/Load Control Office.
8.	Transfer passenger number/category/destination/class/status to Load Control Office.
9.	Transfer baggage weight/number/category/destination/class and special information to Load Control Office.
10.	Local baggage weight/number/category/destination/class and any information to Load Control Office.
11.	Local Passengers number/category/destination/class/status to LoadControl Office.
12.	Baggage weight/number/category/destination/class and any special information to Load Control Office.
13.	Baggage to aircraft.
14.	Passengers to aircraft.
15.	Cross-check documents and LIR information to Load Control Office for final loadsheet.
16	Final Loadsheets/LMC/INOTOC/Fuelling Order/Flight Plan to Flight Deck(Cockpit).

Note: Actions and items not in chronological order.

5.5. INFORMATION EXCHANGE

All data pertaining to aircraft weight and balance calculations shall be communicated to the person responsible for the Loadsheets and manually or electronically documented and/or filed.

5.6. LOAD PLANNING

5.6.1. GENERAL

The load planning procedure typically takes into consideration, as applicable for each flight, the following:

- Aircraft empty weight and center of Gravity.
- Operating equipment, e.g.: crew, catering, EIC.
- Aircraft limitations.

Total traffic load and the EZFW can be calculated as described in AHM 590. The flight plan will state the estimated fuel load which the Load Controller will use to ensure load is optimized without limits being exceeded. The load distribution shall be planned by the Load Controller adhering to the operator's specific requirements and procedures. The LIR will be released to the airport loading team. After confirmation of final loading, Load sheet shall be released and provided to PIC.

5.6.2. LOADING INSTRUCTIONS/REPORT (LIR)

An LIR shall be issued for each flight, Manual LIR shall conform AHM515, and electronic LIR shall conform AHM514. Both could be subject to operator customization. The aircraft shall be loaded in accordance with the LIR. All deviation requests shall be approved as per operator requirements. LIR shall be signed by responsible person as described in AHM514 or 515 to confirm that the containers pallets and bulk load have been loaded and secured in accordance with operator instructions.

LOADING INSTRUCTIONS/REPORT (LIR)

The loading instruction/report shall be completed for every arriving and departing flight. It contains written instructions for the loading staff for unloading/loading of the aircraft.

Ground handling agent may use own loading instructions report form, provided it conforms with IATA AHM514 or AHM515 standard. Alternatively, FLYONE standard loading instructions form should be used.

The number of copies should be in accordance with local requirements. One copy shall be handed over to the head loader being responsible for the loading process.

All deviations from the loading instruction shall be recorded in detail and must be taken into account when completing weight and balance documents. After completion of loading the head loader certifies by his signature that the aircraft was loaded according to given instructions including all deviations recorded and that the load was secured properly. In case of originating flights, the signature also confirms that the hold was empty prior to loading.

One copy of the loading instruction/report signed by the head loader shall be filed in the station's trip file.

All load planning is based on the expected total on load consisting of:

- number of booked passengers
- estimated baggage for booked pax
- estimated co-mail shipment, excess baggage, animals and EIC shipments

When planning the load distribution, it shall be ensured that the load limitations for each cargo compartment will not be exceeded.

5.6.3. OFF-LOADING INSTRUCTION REPORT

An OIR may be issued prior to aircraft arrival. Refer to AHM 514 and 515 for data elements and format. Consideration shall be given to ensure aircraft stability during the offloading process and passenger disembarkation.

5.6.4. NOTIFICATION TO THE CAPTAIN (NOTOC)

The flight crew must be provided with a notification concerning dangerous goods and any other special load as required by the operating airline (i.e. PER, AVI, HEG, HUM) onboard the aircraft in the form of a NOTOC (Notification to Captain). The person responsible for the Loadsheets is liable to decide on the loading positions. This will be reflected in the right hand side of the NOTOC. Any change must be agreed and communicate in advance with load controller. If agreed, NOTOC shall be updated by personnel responsible for loading or loading supervision. Finalized NOTOC shall be signed and delivered to PIC. Note: for NOTOC forms refer to AHM 381.

NOTIFICATION TO THE CAPTAIN (NOTOC)

For each flight in which Dangerous Goods or special load are transported, as early as possible prior to departure, the Commander is to be given accurate and legible written information pertaining to dangerous goods onboard the aircraft to be transported as cargo. Such information is typically presented to the PIC in a notification called the NOTOC. The NOTOC shall be signed by the Commander and be readily accessible to the airports of last departure and next scheduled arrival until the flight has arrived at the destination airport.

Note: One copy of the NOTOC should be stored in the loading station's file, additionally one copy of the NOTOC shall be sent to FLYONE Operations Control Center, preferably by email, as early as practicable prior to departure of the aircraft, but in no case later than when the aircraft moves under its own power. The NOTOC shall be completed in the English language and shall include dangerous goods that have been loaded on the aircraft at a previous departure point and that are to be carried on a subsequent flight.

For each flight in which Dangerous Goods are transported as revenue or non-revenue cargo, information on dangerous goods to be loaded on a flight have to be communicated to the appropriate person(s) in the load control system. Information to be communicated shall include the following:

- If applicable, Air Waybill number;
- Proper shipping name and/or UN/ID number;
- Class or division, and subsidiary risk(s) corresponding to label(s) applied, and for Class 1, compatibility group;
- If applicable, packing group;
- For non-radioactive material, number of packages, exact loading location and, as applicable, net quantity or gross weight of each package, except:
 - For UN 1845, carbon dioxide, solid (dry ice): At the option of the Operator, only the UN number, proper shipping name, classification, total quantity in each aircraft hold and offload airport are required;
 - For UN 3480, (Lithium ion batteries) and UN 3090 (lithium metal batteries): At the option of the Operator, only the UN number, proper shipping name, class, total quantity at each loading location, and whether the package must be carried on a cargo-only aircraft are required. UN 3480 (Lithium ion batteries) and UN 3090 (lithium metal batteries) carried under a State exemption shall meet all requirements specified in iv) and v).
- For radioactive material, number and category of packages, overpacks or freight containers, exact loading locations and, as applicable, transport index and dimensions for each package;
- Any restriction for transport on cargo aircraft only;
- Offload airport;
- If applicable, dangerous goods transported under a state exemption;
- If applicable, ULD identification number(s).

5.7. LOADSHEET

5.7.1. PRODUCTION OF LOADSHEET

In order to produce the Loadsheet the following criteria shall be met:

- Passenger acceptance finalised
- All hold load confirmed
- Fuel figures finalised
- Crew configuration confirmed
- All operator specific requirements are confirmed

Load control may release a Preliminary Loadsheet with one or more of the above criteria not yet finalized as per operator requirements. The Load controller shall confirm that all aircraft limitations are adhered to before any Loadsheet is released. Applicable use of ballast shall be considered as per AHM 537 and operator procedures. Loadsheet format and contents shall meet criteria set in AHM516, 517, 518, or as required by the operator.

PRODUCTION OF LOADSHEET

1. Manual loadsheet or EFB loadsheet

Only flight crew is qualified to do manual and EFB loadsheet for Company aircraft.

2. DCS loadcontrol system:

Automated loadsheet from DCS loadcontrol system is acceptable, provided DCS loadcontrol system is approved by FLYONE.

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5.7.2. DELIVERY OF THE LOADSHEET

Loadsheet shall be delivered and handed over to PIC. Both manual, and electronic delivery processes are acceptable as per operator requirements.

DELIVERY OF THE LOADSHEET EFB LOADSHEET

If weight and balance calculated by crew using EFB device then the loadsheet report will be produced. Loadsheet Report form is to be filled out in triplicate. (One copy for flight crew, one copy for ground crew at departure and one copy for ground crew at destination) It is divided into four sections:

1. Section 1 contains:

- Flight details identification;

It shall normally be filled by flight crew and then handed over to ground handling (dispatcher).

2. Section 2 contains load information data (input) required for the mass and balance computation:

- Passenger information;
- Passenger seating distribution;
- Cargo loading information.

It shall normally be filled by the handling agent (dispatcher) signed and presented to crew. The signature of handling agent confirms that aircraft has been loaded in accordance with the Loadsheet form presented to the flight crew.

3. Section Number three contains mass and balance computation results:

- Load/Trim Information;
- Last Minute Change (LMC) information;
- Revised Load/Trim Information.

4. Section Number four contains:

- Captains Name/Code and Signature.

The signature of the commander will confirm:

- Acceptance of the aircraft load and its distribution;
- Mass and balance figures are true copy of the output results of the ELB Loadsheet application;
- LMC figures are verified correct.

EDP LOADSHEET

Loadsheet produced by approved DCS system is acceptable, provided documents is according to relevant IATA AHM standards such as IATA AHM 517. The loadsheet shall normally be completed by the Loadsheet Agent. The Loadsheet Agent shall check and correct the Loadsheet for necessary last minute changes so it corresponds with the actual loading of the aircraft, before it is presented to the Commander. The form shall be completed and distributed as follows:

- White original to the captain, to be inserted into the Flight Envelope
- yellow copy for station trip file - to be retained for a period in accordance with requirements of the regulatory authority, but no less than 3 months

Note: Final EDP loadsheet should be delivered to crews not later than EDD-10 min.

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FLYONE LOADSHEET REPORT EXAMPLE:

 DVC-2701 26JAN17 1442 A320 -211 LOADING INSTRUCTION/REPORT PREPARED BY EDNO ALL WEIGHTS IN KG OBOROC S. 01 FROM/TO FLIGHT A/C REG VERSION DATE TIME KIV DME FIE123 EK32008 Y150 25JAN17 1156 ACTUAL LOADING INSTRUCTION WEIGHT ***** CPT 0 FORWARD MAX 50 :0 : :ONLOAD: N : :REPORT: CPT 0 TOTAL: CPT 1 FORWARD MAX 3402 :1 : :ONLOAD: N : :REPORT: CPT 1 TOTAL: CPT 3 AFT MAX 2426 :3 : :ONLOAD: DME B/733 : :REPORT: CPT 3 TOTAL: CPT 4 AFT MAX 2110 :4 : :ONLOAD: N : :REPORT: CPT 4 TOTAL: CPT 5 BULK MAX 1497 :5 : :ONLOAD: N : :REPORT: CPT 5 TOTAL: ***** SI NOTOC NIL EET/0150 3/B/43 THIS AIRCRAFT HAS BEEN LOADED IN THE CONTAIERS/PALLETS AND BULKLOAD ACCORDANCE WITH THESE INSTRUCTIONS AND HAVE BEEN SECURED IN ACCORDANCE THE DEVIATIONS SHOWN ON THIS REPORT. WITH COMPANY INSTRUCTIONS. PRINT NAME: PRINT NAME: SIGNATURE: SIGNATURE:

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FLYONE LOADSHEET EXAMPLE:



DVC-2701 26JAN17 1442
A320 -211
L O A D S H E E T CHECKED BY APPROVED EDNO
ALL WEIGHTS IN KG OBOROC S. 01F
FROM/TO FLIGHT A/C REG VERSION CREW DATE TIME
KIV DME FIE123 EK32008 Y150 4/3/0 25JAN17 1156
WEIGHT DISTRIBUTION
LOAD IN COMPARTMENTS 733 3/733
PASSENGER/CABIN BAG 10798 71/64/2/2 TTL 139 CAB 0
PAX 137
TOTAL TRAFFIC LOAD 11531
DRY OPERATING WEIGHT 43280
ZERO FUEL WEIGHT ACTUAL 54811 MAX 60500 ADJ

TAKE OFF FUEL 8800
TAKE OFF WEIGHT ACTUAL 63611 MAX 73500 ADJ

TRIP FUEL 4600
LANDING WEIGHT ACTUAL 59011 MAX 64500 L ADJ

BALANCE AND SEATING CONDITIONS LAST MINUTE CHANGES
DOI 48.65 DEST SPEC CL/CPT + - WEIGHT
LIZFW 69.19 MACZFW 33.34
LITOW 66.12 MACTOW 31.03
LILAW 69.60 MACLAW 32.91
STAB TO -0.5
SEATING
0A/35 0B/54 0C/48
UNDERLOAD BEFORE LMC 5489 LMC TOTAL + -
LOADMESSAGE AND CAPTAINS INFORMATION BEFORE LMC
THIS AIRCRAFT HAS BEEN LOADED IN ACCORDANCE WITH THE
LOADING INSTRUCTIONS INCLUDING THE DEVIATIONS RECORDED.
THE LOAD HAS BEEN SECURED IN ACCORDANCE WITH COMPANY
REGULATIONS
SIGNED
LDM
FIE123/25.EK32008.Y150.4/3/0
-DME.135/2/2.T733.3/733
.PAX/137.PAD/NIL
SI
PAX WEIGHT USED M/88 F/70 C/35
NOTOC NIL
PANTRY A 512/+1.7
FUEL DENSITY 0.785
-DME.B733.CNIL.MNIL.ENIL
EET/0150
3/B/43

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Flight Details

Identifying Pre-amble	Description
DATE	Date of departure
A/C REG	Aircraft registration
FLT No	Flight number
FROM	Departure airport
TO	Arrival airport
CREW	Crew composition

Load Information

Identifying Pre-amble	Description
MALE/ADULTS	Number of males or adults
FEMALE	Number of females
CHILDREN	Number of children
INFANTS	Number of infants
TOB	Total passengers on board
C / Y	Total passengers on club and economy class
OA	Total passengers on section A
OB	Total passengers on section B
OC	Total passengers on section C
CP1	Total weight of baggage, cargo & mail in compartment 1
CP3	Total weight of baggage, cargo & mail in compartment 3 (A320 only)
CP4	Total weight of baggage, cargo & mail in compartment 4
CP5	Total weight of baggage, cargo & mail in compartment 5
TOTAL CARGO	Total cargo weight in kilogram

Load and Trim info

Identifying Pre-amble	Description
ZFW / ZFWCG	Zero Fuel Weight and Zero Fuel Weight Center of Gravity as computed by the EFB Loadsheet application.
TOW / TOWCG	Takeoff Weight and Takeoff Weight Center of Gravity as computed by the EFB Loadsheet application.

Revised Load and Trim info

Identifying Pre-amble	Description
ZFW / ZFWCG	Revised Zero Fuel Weight and Zero Fuel Weight Center of Gravity taking into account the LMC as computed by the EFB Loadsheet application.
TOW / TOWCG	Revised Takeoff Weight and Takeoff Weight Center of Gravity taking into account the LMC as computed by the EFB Loadsheet application.

5.7.3. LAST MINUTE CHANGE

In case of last minute changes the refer to the process described in AHM 551

LAST MINUTE CHANGE

Traffic Load LMC" means the difference between:

- 1) The actual loading according to the Loading Instruction/Report and the relevant figures on the loadsheet;
- 2) The actual number of passengers according to the gate check and the relevant figures on the loadsheet.

Last Minute Change (LMC), are changes in the Mass and Balance of the aircraft subsequent to the completion of the loadsheet. Such changes have to be entered in writing in the loadsheet LMC box.

Only changes in the weight of the traffic load (passengers, baggage, cargo and mail) or in its distribution are to be recorded in the LMC box of the loadsheet. However, in addition to the load categories mentioned above, changes to items absorbed in the DOM such as crew, crew baggage, pantry, portable water and ballast etc. may also be entered in the LMC box. The total weight change represented in by the LMC entries shall be shown in the LMC total box.

Fuel LMC (take-off fuel or trip fuel) must not be entered in the LMC box and new loadsheet must be prepared. In order to ensure that the changes did not exceeded limits, the previously calculated take-off, zero fuel and/or landing weights and CG must be cross-checked with new weights and CG including LMC.

The flight crew may be informed verbally of last minute changes either directly or by using radio communication. Before recording the LMC, the ramp agent or the load controller must ensure that:

- The total weight of the LMC does not exceed the Underload;
- The load limitations of the compartments and positions are not exceeded;
- The center of gravity remains within the permissible limits.

Flight crew should recalculate the trim to ensure that center of gravity remains within permissible limits. If necessary a complete new loadsheet shall be made and if necessary redistribute the load

Acceptable LMC tolerance described below:

Last Minute Change (LMC) in the weight of the traffic load (passengers, baggage, cargo and mail) or in its distribution shall be recorded in the LMC section of the computerised load and trim sheet (LTS).

The total Last Minute Change (LMC) weight shall:

- Not exceed the underload and the load limitations of the compartments
- Maintain the aircraft with the center of gravity envelope
- Not exceed the maximum LMC allowed as per table below:

A320/A321	Max. allowed LMC (combination of passengers and cargo)	
	<= 500 kg	> 500 kg
Passenger	Up to + / - 5	More than + / - 5
Compartment Load	Up to + / - 500 kgs	More than + / - 500 kgs
Re-Calculation	NO	YES
Procedure	LMC data shall be noted in the LMC section of computerised load and trim sheet (LTS).	Flight crew shall request a new computerised load and trim sheet (LTS) or compute load and trim sheet with Airbus Flysmart+ Loadsheets application.
CAUTION	LMC related to fuel figures are not allowed. <i>Flight crew shall request a new computerised load and trim sheet (LTS) or compute load and trim sheet with Airbus Flysmart+ Loadsheets application.</i>	

- LMC related to fuel figures are not allowed.
- Flight crew shall request a new computerised load and trim sheet (LTS) or compute load and trim sheet with TAILLOG application.

Note: It is not required to draw additional lines on CG envelope of manual Load & Trim Sheet, when LMC are within prescribed limits.

A complete new Load & Trim Sheet is required when LMC limits are exceeded.

The ZFW, TOW and LW shall be corrected with the total LMC weight and checked against the maximum values.

The LMC corrected ZFW, TOW and LW should never exceed the Maximum Allowable ZFW, TOW and LW.

Corrected ZFW, ZFW CG, THS setting, V1, VR, V2 and Tflex shall be inserted in the MCDU by PF and checked by PM.

5.7.4. LOADSHEET DISCREPANCIES

Any discrepancies found after the Loadsheel release, shall be communicated to person responsible for the Loadsheel, Pilot in command and/or operator shall be informed without delay, as per operator communication policy,

5.7.5. POST DEPARTURE MESSAGING

All relevant messages pertaining to flight handling such as: LMD, CPM, SCM, U M, MVT, DIV shall be produced and delivered in accordance to AHM 422, 424, 423, 587, 780, 781.

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6. AIRSIDE SUPERVISION AND SAFETY

6.1. INTRODUCTION

To ensure ground operational safety, all station activities, including, if applicable, those outsourced to an external third-party ground service provider or its subcontractors, shall be conducted under the direct oversight of supervision personnel.

6.1.1. OPERATIONAL REQUIREMENTS

- Supervision personnel must be trained and qualified to perform the assigned functions.
- Assigned individuals will provide oversight of personnel conducting, airside operations.
- An assigned individual will oversee the aircraft turnaround during ramp/apron activities ensuring the aircraft is handled and serviced according to GOM or the Operator's specific requirements, these duties may be combined with another function/role.
- If applicable checklists are provided, they shall be completed as required by the individual assigned to provide oversight.
- Individuals assigned to oversee ground handling operations, must have oversight on airside operations, ground safety and flight schedule

6.2. SUPERVISION SCOPE

Oversight for an aircraft arrival/departure includes, but is not limited to the following activities:

- Aircraft, vehicles and GSE operations and parking.
- Arrival.
- Baggage handling.
- Cabin Equipment.
- Catering ramp handling.
- De-icing/anti-icing services and snow/ice removal.
- Departure.
- Exterior cleaning.
- Interior cleaning.
- Load control document accuracy:
 - LIR;
 - Loadsheets.
 - NOTOC.
- Other documents as applicable.
- Load control and flight operations.
- Marshalling.
- Moving of aircraft.
- Passenger services.
- PRM.
- Ramp fueling/de-fueling operations.
- Ramp regulations.
- Ramp services.
- Ramp to flight-deck communications.
- Staff conduct, behavior and operational practice, PPE.
- Toilet services;
- Towing cargo and baggage;
- ULD and bulk loading and unloading of baggage and cargo.
- Water service.

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6.3. TURNAROUND COORDINATION SUPERVISION REQUIREMENTS

The table below defines elements that require supervision by individuals assigned to oversee ground handling operations. Primary task is to stop all unsafe acts.

	ACTIONS		REMARKS
1	Pre-flight brief conducted regarding flight requirement(s) and services as needed		
2	Pre-arrival check parking position free of Foreign Object Damage (FOD). Obstacles and/or spillage		
3	Personnel wearing PPE available and ready		
4	All GSE and personnel positioned outside the Equipment Restraint Area (ERA)		
5	Ensure guidance system is activated and marshaller (s) wing walkers correctly positioned as applicable		
6	Personnel must stay clear of the aircraft. until anti-collision lights have been switched off (exception applies if APU is not operational)		
7	Ensure aircraft chocked and coned		
8	Ensure an arrival external check prior to approach of any ground support equipment is done		
9	Ensure equipment is properly positioned and operated (e.g, guide rails)		
10	Ensure cargo holds are offloaded and commodities correctly handled as required		
11	Ensure all cargo holds offloaded according to LIR and inspected for damage		
12	Passenger bridge and/or steps set to correct height before opening cabin access doors and all safety devices are installed		
13	Aircraft cabin access door operation by authorized and qualified person		

14	During passenger (dis)-embarkation, passenger movement protected and guided in walkways between the aircraft and bus of terminal		
15	Passenger walkways clean of obstacles and free of undesired contaminated substances		
16	Fuel bowser/tank is properly positioned and escape route not obstructed		
17	Ensure FUEL SAFETY ZONES are respected		
18	Ensure safety precautions for fueling with passengers on board or boarding are adhered to as applicable		
19	Ensure on-load started and the person responsible for loading oversight, such as a Load Master in possession of the LIR		
20	Ensure condition of load Inspected prior to loading		
21	Ensure baggage and cargo loaded and handled in accordance with the LIR		
22	Ensure DG correctly handled. segregated, secured and stowed		
23	Ensure holds are checked to verify load and locks/nets configuration		
24	Ensure Load information is exchanged with all deviations noted		
25	Ensure final load information provided to Flight crew as required		
26	Ensure GSE removal procedures followed		
27	Ensure final ramp Inspection and aircraft walk-around check performed Chocks and cones removal procedures followed		
29	Ensure departure sequence conducted as required		
30	Ensure post departure activities conducted as required with appropriate document retention		

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6.4. REPORTING - INCIDENTS, ACCIDENTS AND NEARMISSES

In the event of an, incident or accident, the work must stop and the event shall immediately be reported to the line management and airline representative. Local regulations may require the report to be provided to the local authorities. In general:

Complete the Ground Incident Damage Report form to collect all relevant information regarding the event.

Submit the Ground Incident Damage Report form to the line management, the airline and local authorities as required - see AHM 650 - Ground Incident Damage Report Sheet 01-02, doc.

REPORTING - INCIDENTS, ACCIDENTS AND NEAR-MISSES

Refer to GOM chapter 8

6.5. AIRSIDE SAFETY INVESTIGATION PROCEDURE

6.5.1. GENERAL

The investigation process will be conducted in a logical way by collecting and analyzing factual information in order to identify root causes, contributing and human factors.

6.5.2. FACTUAL INFORMATION

In general:

Gather factual information including photographs, testimonials, reports, sketches, video, footage, maps and any other relevant information.

Determine the level of investigation:

- Basic investigation-an inquiry to identify the key elements that led to the event.
- Formal investigation-a formal inquiry with all involved and legally required internal and external parties.

6.5.3. INVESTIGATION PROCEDURE

In general:

- Gather all information available about the event:
 - Identify the circumstances leading up to the event.
 - Review all reports pertaining to the event.
 - Collect all available data (CCTV and other video footage, photographs, objects, testimonials, sketches, maps).
 - Identify the people involved and any witnesses.
 - Gather all relevant factual information concerning the people involved (roster, training records, medical information related to the event if possible, employee records, assigned task, and all reports, any other).
 - Gather all relevant factual information concerning the technical, environmental and infra structural conditions. Conduct interviews with all individuals involved and any witnesses.
- Conduct a confirmation site visit if possible.
- Confirm If a SOP is published and available for the task being performed.

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- Identify human factors:
 - Communication.
 - Stress and timing.
 - Fatigue.
 - Loss of situational awareness.
 - Health condition.
 - Use of available resources.
 - Staff feedback related to the SOP,
 - Teamwork.
 - Knowledge retention and competence.
- Technical factors:
 - Use of a GSE.
 - Preventive and Corrective maintenance records.
 - Current technical condition.
 - Suitability for the task.

6.5.4. ANALYSIS

Analyse the event by:

- Describing the sequence of events as they occurred for each person /element involved.
- Identifying any failures in the tasks performed in relation to written instructions.
- Identifying any causal links between events.
- Documenting a chronological sequence of events that led to the incident/accident supported by factual information.
- Determining which failures contributed to the accident based on factual evidence in relation to the sequence of events.
- Identifying pre-existing and/or new hazards that contributed to the event.

6.5.5. CONCLUSION AND CAUSES

Specify:

- Root causes.
- Contributing factors,
- Human factors.

6.5.6. INVESTIGATION FOLLOW-UP

Follow-up the investigation by:

- Establishing the following for each root cause:
 - Corrective action requests.
 - Preventive actions requests.
- Making safety recommendations that:
 - Address the root causes, contributing and human factors identified as a part of the investigation.
 - Ensure corrective and preventive action requests will be issued to the line management.
 - Provides line management with corrective action plans to address the root causes, contributing and human factors for approval.
 - Ensure that an Action plan implementation is confirmed through a monitoring/audit process.
 - Ensure that the Human factors in Airside Safety Investigations form is completed. (See AHM652 Human Factors in Airside Safety Investigations.)

6.6. MONITORING PROCEDURES

Safety performance monitoring is important in order to enable management to identify trends that could have a negative effect on safety. The following checklists:

- AHM 612 A, B, C, D, E, F, G, H, I, and
- Airside Management Safety Review Checklist

Should be used to monitor safety performance in the operations.

6.7. EMERGENCY RESPONSE PROCEDURES

The following actions are to be carried out in the event of an emergency in accordance with airline and, or the Ground Service Provider's procedures and local regulations.

- Communication:
 - With the Carrier:
 - Notify the Carrier.
 - Establish a Crisis Control Center.
 - Provide regular situation reports.
 - Maintain the flow of communications/actions.
 - Identify and assemble translators.
 - With the airport and other authorities:
 - Liaise with airport emergency services and local authorities.
 - Prepare the location and facilities to be used.
 - With the Ground Service Provider (GSP):
 - Inform GP staff.
 - Conduct an initial briefing.
 - With the Passengers, Crew and Victims: provide regular updates.
 - With the Relatives: provide regular updates.
 - With the media: Provide regular updates.
- General Requirements:
 - Deploy the of the emergency response team.
 - Provide liaison staff at the emergency location.
 - Provide initial financial assistance to passengers as agreed with the Carrier.
- Passengers and Crew:
 - Assist with the collection of information from passengers, crew and victims.
 - Provide assistance and secured private facility for passengers.
 - Provide assistance and secured private facility for crew members.
 - Assist in repatriation and/or onward travel.
- Cargo, Baggage and Mail:
 - Assist with the inventory of cargo, baggage and mail carried on the aircraft.
 - Safeguard from loss or damage the baggage, cargo and mail and arrange for secure storage.
- Documentation:
 - Establish station emergency data sheet; contacts, grid maps, facility information sheets.
 - Maintain current emergency contact information of the Carrier, Handling Company and local authorities.
 - Collect, preserve, secure and restrict all documentation pertaining to the emergency and make available to the Carrier.
 - Support the verification of the passenger list_ e) Maintain a log of events and action taken.
 - Maintain detailed expense documentation relating to services provided during an emergency.

- Relatives:
 - Assist with the collection of information from family members.
 - Provide assistance and secured private facility to family members.
 - Assist with reuniting passengers and family members.
- Facilities:
 - Provide emergency response facilities for airline permanent and deployed staff.
 - Assist the arrival, set-up and operations of the operating carrier's Go team.
 - Determine appropriate support services that may be required for continuing emergency operations.
 - Arrange for security at all Carriers' premises at airport.

EMERGENCY RESPONSE PROCEDURES

Refer to FLYONE EMERGENCY RESPONSE PLAN (ERP) for detailed procedures.

ERP is available on FLYONE dox server <http://FOE.asqs.net>

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7. De-/Anti –icing Program

7.1. Control, Responsibilities, Training

7.1.1. Scope

Present De-/Anti –icing Program is elaborated to ensure below requirements:

- Ensure adherence to the Clean Aircraft Concept
- Defines responsibilities within the Program
- Addresses applicable locations within the route network
- Specifies technical and operational requirements
- Specifies training and qualification requirements
- Is applicable to external service providers that perform de-/anti-icing functions for FLYONE.

Binding Instruction

FLYONE 's De-icing /Ant-icing Program (DAP) is the binding instruction for control and performance of De-Icing / Anti-Icing for all aircraft operated.

Basic Source

The procedures in this manual are based on the latest revision of the Global De-icing Standards and FAA Holdover Time Guidelines, which are in detail:

- AS6285C "Aircraft Ground De-icing/Anti-Icing Processes"
- AS6286A "Aircraft Ground De-icing/ Anti-icing Training and Qualification Program"
- AS6332 "Quality Assurance Programme for De-icing/Anti-icing of Aircraft on the Ground"
- ARP6257 "Aircraft Ground De/Anti-Icing Communication Phraseology for Flight and Ground Crews"
- FAA Holdover Time Guidelines Winter 2024-2025 and N 8900 Revised FAA- Approved De-icing Program Updates, Winter 2024-2025

Wherever in this document a reference is given to any other document:

- ✓ Use the latest revision which is available.
In case the specifications shown in this document are more restrictive than in other documents,
- ✓ the requirements of the DAM are always observed.

All De-Icing / Anti-Icing vehicles must meet the requirements of ISO 11077 'Aerospace - self-propelled De-Icing / Anti-Icing vehicles - functional requirements' or equivalent specifications.

Subcontracted service

FLYONE currently subcontracts all de/anti-icing services at all served destinations

Clean Aircraft Concept

The so-called 'clean aircraft concept' is the principal target of all De-Icing / Anti-Icing activities:

- ✖ A pilot must not take-off in an aircraft that has:
 - ice, snow or slush on the fuselage, wings or stabilizers or control surfaces, in gaps between the airframe and control surfaces or in gaps between control surfaces and control tabs,
 - any frost on the upper surfaces of wings, stabilizers, control surfaces,
 - any frost or other contamination on the lower side of the horizontal stabilizer.
- ▶ For a detailed and complete list of surfaces that have to be clean and for any exceptions see Required Aircraft Condition.
- ▶ Perform a Contamination Check of these aircraft surfaces.
- ✓ Observe local rules concerning aircraft cold weather operations.

7.1.2. Central Responsibility

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Special approvals

Any deviation of the procedures or fluids as described in this manual must be approved by FIA Ground Operations Department prior to application or use.

Responsibility

The final responsibility of the contents in this manual lies within the FLYONE Ground Operation Department.

Approval

Prior to publication of the DAP, nominated post holders gives the approval to the publication:

Distribution

A new edition of the DAP will be sent to the respective ground handling provider. Further distribution or internal publishing is under the responsibility of the respective handling agent.

Monitoring of de /anti-icing service providers

When FLYONE has contract for the de/anti-icing services made with de/anti-icing suppliers, contracts have to specify basic details:

- De/anti-ice fluids specifications;
- De/anti-ice fluids suppliers’ internal procedure/process for product quality assurance;
- Services in accordance with SGHA.

To ensure that these requirements are satisfied, FLYONE will send questionnaires to de/anti-icing suppliers and the returned questionnaires are assessed by Head of Ground Operations and Compliance Monitoring Manager. Discrepancies identified by crew or maintenance personnel during de/anti-icing operations will be reviewed by Head of Ground Operations.

When discrepancies are serious Head of Ground Operations and/or Compliance Monitoring Manager will conduct physical inspection of the de/anti-icing supplier.

When the de/anti-icing contracts are arranged by Lessor, Compliance Monitoring Manager will confirm that Lessor has an oversight processes of the suppliers in place.

7.1.3. Local Responsibilities

7.1.3.1. Responsibility of De-icing / Anti-icing Company

Performance Tasks As Provider of De-Icing / Anti-Icing Services (Performance):

- ▶ Maintain vehicles / equipment, fluids, training and procedures in accordance with this manual and the relevant ISO specifications or equivalent documentation.
- ▶ Ensure that the fluid quality is within the limits determined by the fluid manufacturer.
- ▶ Assume responsibility for the correct and complete accomplishment of the De-Icing / Anti-Icing of the aircraft.
- ✓ Make sure that the personnel performing the De-Icing / Anti-Icing operation works according to the requirements detailed in this manual.
- ✓ Observe the relevant freezing point, the lowest operational use temperature, and aircraft limitations of the fluid.
- ✓ Ensure that the treatment is performed symmetrically and that on completion all frozen deposits have been removed.

Post De-Icing / Antilcing Check

As provider of the Post De-Icing / Anti-Icing Check:

- ✓ Make sure that the aircraft has been de-iced / anti-iced according to the requirements detailed in this manual.
- ✓ Make sure that the Post De-Icing / Anti-Icing Check (PDAC) has been performed properly before you report the Anti-Icing Code to the Commander.
- ▶ Report the Anti-Icing Code to the Commander.
This confirms the correct and complete accomplishment of the De-Icing / Anti-Icing of the aircraft and transfers the responsibility for the condition of the aircraft before take-off to the Commander.

Auditability

As provider of any De-Icing / Anti-Icing services and/or checks:

- ✓ Make sure that all ground handling providers have full access to training programs and records.
- ✓ Make sure that a copy of all training material (hand-outs, presentations etc.) is locally available for auditing purposes.
This is also applicable in case of training performed by third parties and/or at another location. Legal advice: this is required for auditing only, protection of copyrights shall be secured.

Quality Assurance

A Quality Assurance Program is established and maintain in accordance with Quality Program Assurance Program and Compliance Monitoring Manual

Subcontracting

Due to aviation legislation, it remains the Air Operator’s responsibility to assess the quality of any company providing safety relevant services.

Task sharing between different companies

If two different companies are involved in the De-Icing / Anti-Icing treatment (performance) and the Post De-Icing / Anti-Icing Check:

- ✓ Make sure that local procedures are established and documented in order to ensure safe communication between these companies.
This is especially important at stations where De-Icing / Anti-Icing is performed by one company and the Post De-Icing / Anti-Icing check is done by airline station personnel or another Handling Company.
- ▶ Make sure that the Anti-Icing Code is given to the Commander only after the Post De-Icing / Anti-Icing Check is completed.
Reporting Policy
- ▶ The Handling agent shall report non-conformities to standard aircraft De-Icing / Anti Icing procedures as laid down in this manual, industry standards and legal requirements to the relevant airline by using the corresponding reporting tool.

7.1.3.2. Responsibility of the Commander

The Commander must

- ✓ determine whether an aircraft De-Icing / Anti-Icing is required,
- ✓ assume responsibility for accepting the performed procedure,
- ✓ make sure that the relevant surfaces remain free of frost, ice, slush and snow until take-off,
- ✓ assume responsibility for the Anti-Icing condition of the aircraft before take-off,

Final decision

The Commander has the final decision. His evaluation will override the judgment of ground staff and may include additional instructions.

The Commander has the final decision. His evaluation will override the judgment of ground staff and may include additional instructions.

However, if ground personnel report contamination (for example clear ice etc.) on aircraft surfaces:

- ✓ This contamination must be removed before take-off!

7.1.4. Training and Qualification for De-Icing / Anti-Icing

DANGER: Risk of personal injury or even death!

If the procedures and regulations are not observed, De-Icing / Anti-Icing may lead to accidents:

- ✓ Make sure that De-Icing /Anti-Icing is performed by specially and intensively trained personnel only.
- ✓ Make sure that these personnel can communicate with Cockpit Crews in English or German language.

Basic principles

Flight safety may be endangered if De-Icing / Anti-Icing is not performed in the correct way.

- ✓ Make sure that De-Icing / Anti-Icing is performed, supervised, checked and instructed by trained and qualified personnel only.
- ✓ Make sure that personnel involved in De-Icing / Anti-Icing receive
 - initial and
 - recurrent training.
- ✓ Make sure that the training is performed and supervised according to the regulations of this subsection. This training should be performed as close as possible prior to the beginning of the De-Icing season.

Training elements

Basic elements of a De-Icing / Anti-Icing are:

- 1.4.1 Theoretical De-Icing / Anti-Icing Training Topics for all personnel categories. Theoretical training must be completed before start of practical training.
- 1.4.2 Practical De-Icing / Anti-Icing Training Topics for some personnel categories.
- 1.4.3 Examination and Records

Training and qualification program

- ✓ To ensure an acceptable level of competence every De-Icing / Anti-Icing company must have an acceptable training and qualification program embedded into a quality assurance program.
- ✓ The De-Icing / Anti-Icing company must have an SMS training program for staff working in De-Icing / Anti-Icing Operations appropriate to each staff's involvement in the Operator's SMS.
Authorization to perform or to supervise De-Icing / Anti-Icing or to perform the Post Delcing / Anti-Icing check at FLYONE aircraft may only be granted to personnel who have:
 - ✓ attended an acceptable De-Icing / Anti-Icing training and/or refresher training, and / received instruction about specific De-Icing / Anti-Icing procedures, and
 - ✓ successfully passed a test according to Examination and Records.

Language skills

All De-Icing / Anti-Icing personnel communicating with the Cockpit Crew shall have an adequate knowledge of the English language in order to communicate properly.

Staff Training and Qualification

De-Icing / Anti-Icing procedures shall be carried out exclusively by staff, trained and qualified. Companies providing De-Icing / Anti-Icing services shall have a qualification program and a quality assurance program to monitor and maintain an acceptable level of competence.

Organization of training

If initial or additional instruction or training of personnel is required:

- ▶ Contact Ground Operation Manager FLYONE

7.1.4.1. Theoretical De-Icing / Anti-Icing Training Topics

- ✓ Training elements can be found in AS6286A "Aircraft Ground Deicing/ Anti-Icing Training and Qualification Program"

7.1.4.2. Practical De-icing / Anti-icing Training Topics

- ✓ Training elements can be found in AS6286A "Aircraft Ground Deicing/ Anti-Icing Training and Qualification Program"

7.1.4.3. Examination and Records

To ensure effectiveness of the training program:

- ▶ Establish an examination and assessment program covering the training elements which are listed in Training subjects of AS6286A "Aircraft Ground Deicing/ Anti-Icing Training and Qualification Program".
- ▶ Record the names of training participants, their training results and name of trainer for proof of qualification.

Theoretical examination

- ✓ Make sure that the theoretical examination is in accordance with EU Part-66 or any equivalent requirements.
- ▶ The minimum passing mark for the theoretical examination is 75%.
Only personnel having passed the examination successfully are qualified.

Practical assessment

Before granting final qualification to personnel who perform De-Icing / Anti-Icing operations (driving and/or spraying):

- ▶ The practical assessment shall be performed in actual operational conditions involving an actual aircraft (as applicable) before initial qualification to a qualified trainer or supervisor. Further evaluations may be performed as applicable for the local demands and/or company requirements.

Filing period

- ✓ It is required to keep the 'two latest' training records as a minimum. As **practical** training is regarded separately and not subject to recurrent training as long as a person continues to be active in the field of De-Icing / Anti-Icing, it could happen that after 2 years there is no more evidence that a practical training ever took place.
- ▶ Install a recording system that fulfils the legal requirements by either
 - keeping the original record of practical training until 12 months after the person terminates work in the field of De-Icing / Anti-Icing, or
 - installing a system of recurrent practical training which clearly addresses that the renewal of qualification is based on the initial practical qualification, or
 - installing a system of practical experience recording (personalized 'de-icing event log'), which clearly states that the log is based on the initial practical qualification,
 - or equivalent.
- ✓ Copies of certificates shall also be handed over to the participants.

7.1.4.4. Recurrent training

Frequency

- ✓ A recurrent training for De-Icing / Anti-Icing shall be performed every year before start of the De-Icing season.

As an exception and to allow flexibility in training especially for larger groups, the qualification shall be renewed latest before the next years' end. As an example: if qualified on November 1st 2019, a renewal is forthcoming in November 2020, but at latest by December 31st 2020.

However, it is highly recommended that the training be performed as early in the season (or before the beginning of the season) as practicable.

SAE standard functions

- ✓ Deicing Vehicle Driver, Deicing Operator, Supervision of Deicing/Anti-Icing and Pre-/ Post Deicing Inspector among other qualifications need to complete recurrent training covering the fields as applicable to the SAE standard function according to Theoretical De-icing / Anti-icing Training Topics.
- ✓ Examination must be done according to Examination and Records.

Recurrent Training for Surveillance Personnel

A Web Based Training (WBT) for recurrent training of surveillance personnel is acceptable.

The recurrent training has to be performed every year before start of de-icing season.

- ✓ This Web Based Training (WBT) covers the training requirements for surveillance personnel who are assigned to do De-icing/ Anti-icing Checks
- ✓ Shall be available in English language.
- ✗ FLYONE cannot assume any responsibility beyond its own operation.
- ✗ The recurrent training for de-icing does not replace the initial basic classroom de-icing training and can only be executed after the initial training has been attended successfully.
- ✓ A test is integrated in the Web Based Training (WBT) and is intended for examination of surveillance personnel.

If for any reason a person has not completed a recurrent training for more than two full local De-Icing seasons:

- ✗ The qualification expires.
- ▶ Perform a complete basic training to re-qualify this person.

7.2. Fluid Handling

Aircraft De-Icing / Anti-Icing Fluid (ADF) is a chemical product with environmental impact.

During fluid handling:

- ✖ Avoid any unnecessary spillage.
- ✓ Comply with local environmental and health regulations.
- ✓ Comply with fluid manufacturer’s safety data sheet.

Due to different chemical characteristics and possible changes in aerodynamic behavior:

- ✖ Do not mix different products without additional qualification testing.

7.2.1. Fluid Storage

To avoid contamination of fluid and environment:

- ✓ Only use tanks dedicated to the storage of De-Icing / Anti-Icing Fluid (ADF).

Condition

- ✓ Make sure that storage tanks are made of a material compatible with the ADF.
- ✖ Avoid using dissimilar metals in contact with each other, as galvanic couples may form and degrade thickened fluids.

In case of doubt: Check the fluid manufacturer’s documents and ask for an approval in writing.

WARNING: Risk of severe degradation of Type II and IV fluids due to tank corrosion.

- ✓ Whenever possible use stainless steel tanks. Mild steel tanks are only acceptable when coated with a suitable lining to prevent corrosion.

Labeling

- Label tanks readable and visible (at a prominent place) to avoid contamination.

Annual checks

- Inspect tanks annually for corrosion and contamination before the deicing season starts.

Note: If the fluids are tested and qualified in accordance with 6.1 Fluid Quality Control Checks, the inspection interval may be longer than one year.

- If corrosion or contamination is evident, tanks must be maintained to standard or replaced.
A high level of liquid in the tanks serves as precaution against corrosion at the liquid / vapor interface and the vapor space.
- ✓ Make sure that the storage temperature limits comply with the fluid manufacturer guidelines.
- To ensure that no degradation or contamination has occurred, check the stored fluid periodically (refer to Fluid Quality Control Checks for requirements).

7.2.2. Pumping

ADF may be degraded by excessive mechanical shearing.

- ✓ Make sure to use only compatible pumps and spraying nozzles.
- ✓ Pay special attention that the design of the pumping system complies with the fluid manufacturer's recommendations.

7.2.3. Filling Ports and Transfer Lines

To avoid contamination and/ or unintended mixture of different fluid types make sure that the filling ports and transfer lines are

- ✓ compatible with the ADF to be filled in and transferred.
- ✓ clearly labeled to prevent that a wrong type or brand of fluid is filled into the storage system.

7.2.4. Heating

When De-Icing / Anti-Icing fluid is heated:

- ✓ Make sure that heating is done in accordance with the fluid manufacturer guidelines.

WARNING: Risk of fluid degradation or undesirable aerodynamic effects.

- ✗ Avoid unnecessary heating of fluids in vehicle tanks
- Prolonged or repeated heating of fluids (directly or indirectly) may result in loss of water which can lead to performance degradation of the fluid.
- For Type I fluid water loss may cause undesirable aerodynamic effects
- For Type II and Type IV fluids thermal exposure and / or water loss may cause fluid degradation.

7.2.5. Application

- ✓ In order to prevent contamination, equipment used must be cleaned thoroughly before initially filled with ADF.
- ✗ ADF in trucks must not be heated in confined or poorly ventilated areas.
- Check the integrity of the fluid at the spray nozzle periodically (at least before and in the mid of the winter season).

Note: If more than one nozzle is installed, they have to be marked in order to prevent confusion.

7.2.6. Degradation

Inadequate storage, pumping or heating can cause degradation of Type II or Type IV fluids.

A Type II or Type IV fluid is considered to be degraded if the viscosity is below the minimum limit as provided by the fluid manufacturer and/ or by the Flight Standards Information Bulletin for Air Transportation (FSAT) issued by the Federal Aviation Administration (FAA).

WARNING: A Type II or Type IV fluid with a viscosity above the maximum limit shall never be used.

Any of the following items can additionally accelerate the fluid performance degradation:

- Low fluid consumption
- Trucks being on standby mode with heating system on for extended periods of time
- High temperatures in fluid tanks
- High temperatures in water tanks which are in direct contact with the fluid tanks (no insulation between the tanks)

WARNING: Expected Holdover Time may not be achieved.

- If a Type II or IV fluid is degraded, special procedures for holdover time determination have to be used.
- See Application of Fluids with Degraded Viscosity for special regulations.

7.2.7. Application of Fluids with Degraded Viscosity

General Procedure

If a fluid has been examined by a certified laboratory or any handling company, and FLYONE Ground Operations has been informed that the fluid was found to be degraded:

- ✓ FIA GROUND OPS will inform the affected stations about this via e-mail.
This e-mail includes a copy of the laboratory report.

7.2.7.1. Degraded Type II Fluid used as Type I

If the viscosity of a Type II fluid is degraded in a way that it no longer matches the holdover times for a Type II fluid, you may use the fluid as a Type I fluid if all other parameters are within the limits.

- ✓ application of fluid in accordance with application table for Type II fluids
- ✓ holdover time according to holdover time table for Type I fluids.

7.2.7.2. Degraded Type IV Fluid used as Type I

If the viscosity of a Type IV fluid is degraded in a way that it no longer matches the holdover times for a Type IV fluid, you may use the fluid as a Type I fluid if all other parameters are within the limits.

- ✓ application of fluid according to application table for Type IV fluids
- ✓ holdover time according to holdover time table for Type I fluids.

7.2.7.3. Transport of De-Icing / Anti-Icing Fluid Samples

- ✓ All Aircraft De-Icing / Anti-Icing fluids listed in this manual are not considered to be ' Dangerous Goods', as they do not meet the respective criteria.
- ✗ Samples may be transported in plastic bottles (min. 750 ml) in the cargo compartment.

7.3. De-Icing / Anti-Icing Procedures

7.3.1. Contamination Check

General

The decision that deicing/anti-icing is required may be determined when one or more of the following circumstances is applicable:

- An aircraft is parked overnight and subjected to ice or snow conditions
- When ice has accumulated in flight (inflight ice)
- During taxi to the gate occurring in icing and/or snow conditions
- Following an inspection or check by the flight crew at a gate
- As indicated by a check by a qualified de icing/anti-icing person
- Active frozen or freezing falling precipitation is occurring
- When cold soaked fuel has created ice or frost on critical surfaces or components
- When aircraft has been de-iced/anti-iced some time prior to flight crew arrival

Check procedure

The Contamination Check is a check to determine the need to de-ice:

- ✓ The check shall be performed by a qualified person.
- ▶ Perform the check during all weather conditions which may lead to aircraft icing on the ground.
- ▶ Perform the check from points offering sufficient visibility of the areas and parts of the aircraft mentioned below.
- ▶ Where an aeroplane has been de-iced and/or anti-iced some time prior to the arrival of the Flight Crew, an additional ‘Contamination Check’ shall be carried out prior to departure, in order to establish whether further treatment is required.
- ✓ All areas and parts of the aircraft listed in General aircraft requirements after deicing/anti-icing must be clean of ice, frost, snow and slush.

Some exceptions are also listed there.

Request for treatment

In case of any contamination:

- ▶ Initiate De-Icing / Anti-Icing according to local procedures.
- ✓ Requests for De-Icing / Anti-Icing must specify the parts of the aircraft requiring treatment.
- ▶ Remove contamination by a De-Icing treatment followed by an Anti-Icing treatment if required.

Special checks

For specific aircraft types or weather conditions additional requirements may exist, for example special clear ice checks such as tactile checks on wings.

- ✕ These special checks are not covered by the contamination check.

7.3.2. Methods

Standard method

The standard method for De-Icing / Anti-Icing of an aircraft on ground is to treat the aircraft surfaces with de-icing / anti-icing fluids to provide an aerodynamically clean aircraft.

✓ If additional aircraft specific methods or limitations apply refer to following chapters within the DAP:

Precautions, Limits

- ✓ Make sure to observe the safety-relevant regulations of
 - General Precautions and
 - Precautions in Special Conditions and
 - Limits.

De-Icing

When aircraft surfaces are contaminated with snow, frost, slush or ice:

- ▶ Remove all contamination by a De-Icing treatment before departure.

See De-Icing for details.

Anti-Icing

When snow, light freezing rain, or other freezing precipitation exists and / or there is a risk of contamination of the surfaces at the time of take-off:

- ▶ Protect the aircraft surfaces by an Anti-Icing treatment before departure to avoid icing during taxi until take-off.

See Anti-Icing for details.

Anti-Icing only

When aircraft surfaces are free of contamination during ground time but freezing or frozen precipitation is expected during taxi:

- ▶ Perform an Anti-Icing treatment as a precautionary measure.

In case of active frost or freezing / frozen precipitation warning from the local meteorological service:

- ▶ Perform an Anti-Icing treatment to clean aircraft surfaces before the start of precipitation to minimize the possibility that contamination accumulates and adheres on aircraft surfaces.

Preventive Anti-Icing 'overnight protection'

- ▶ See Methods for specific information.

Pre-De-/ Anti-Icing ('early treatment')

- ▶ See Methods for specific information,

De-Icing / Anti-Icing

This is a combination of the procedures ' De-Icing' and ' Anti-Icing'.

It may be performed in **one or two steps**.

- ▶ Choose between a one- or a two-step procedure depending upon weather conditions, conditions of the aircraft and the holdover time.
- ✓ Where holdover time is critical consider a two-step procedure using undiluted type II or IV fluid for the second step.

One-step procedure

One-step De-Icing / Anti-Icing is performed with heated Anti-Icing fluid which remains on aircraft surfaces to provide Anti-Icing capability:

- ▶ Choose the correct fluid concentration with regard to the necessary holdover time, outside air temperature or wing skin temperature (whichever is lower), and weather conditions.

WARNING: Risk of fluid freezing on the aircraft surfaces and aerodynamic problems!

- ✓ Wing skin temperatures may be lower than OAT
- ▶ Use a mix with a higher concentration of glycol than suggested by the OAT to ensure a sufficient freezing point buffer.

WARNING: Risk of blocking or impeding flight control systems!

The application of Type II or IV fluid, especially when used in a one-step procedure may cause residues to collect in aerodynamically quiet areas, cavities and gaps.

Dried residues may rehydrate and freeze following a period of high humidity and/ or rain conditions. This may impede flight control systems. These residues may require removal.

In order to minimize the collection of dried fluid residues:

- ▶ Whenever possible de-ice and anti-ice with Type I fluid only

Two-step procedure

Two Step De-Icing / Anti-Icing is performed with heated De-Icing fluid in the first step and unheated (or heated) Anti-Icing fluid applied in the second step to provide Anti-Icing capability.

- ▶ Choose the correct fluid concentration/s for De-Icing and Anti-Icing with regard to weather conditions, OAT or wing skin temperature (whichever is lower) and the necessary holdover time.
- ▶ Service providers shall ensure the first step fluid and the second step fluid used on aircraft are compatible. This can be accomplished by contacting the respective fluid manufacturer(s).

WARNING: Risk of fluid freezing on the aircraft surfaces and aerodynamic problems!

- ✓ Wing skin temperatures may be lower than OAT.
- ▶ Use a mix with a higher concentration of glycol than suggested by the OAT to ensure a sufficient freezing point buffer.
- ▶ Perform a De-Icing according to De-Icing.
- ▶ Perform an Anti-Icing according to Anti-Icing.
- ✓ Make sure that the second step starts before the first step fluid freezes. When treating composite surfaces, freezing may happen even more quickly.
- ✓ If necessary de-ice and anti-ice area by area.
- ✓ When applying the second step use a spraying technique which completely covers the first step fluid and provides a sufficient quantity of second step fluid.
- ✓ For determination of the necessary holdover time make sure that the holdover time is equal or greater than the estimated time from start of Anti-Icing to start of take-off based on existing weather conditions.
- ✓ When refreezing occurs after the first step (De-Icing), both the first and second step shall be repeated (De-Icing and Anti-Icing).

WARNING: Risk of blocking or impeding flight control systems!

The application of Type II or IV fluid, especially when used in the first step of two-step procedure may cause residues to collect in aerodynamically quiet areas, cavities and gaps. Dried residues may rehydrate and freeze following a period of high humidity and/ or rain conditions. This may impede flight control systems. These residues may require removal. In order to minimize the collection of dried fluid residues:

- ▶ Whenever possible use hot water or a heated mix of Type I fluid/ water mixture for the first step of the two-step procedure.
- ▶ Whenever possible anti-ice with Type I fluid only.

7.3.2.1. Infrared De-Icing

Scope

This section establishes the procedures for removal of frozen precipitation using infrared De-Icing technology.

Application and Restrictions

- ▶ See Methods for specific information

De-Icing

De-Icing using infrared energy is accomplished through heat that breaks the bond of adhering frozen contamination. The application of infrared energy may be continued to melt and evaporate frozen contaminants.

Wet surfaces require an application of heated De-Icing fluids to preclude re-freezing after removal of infrared energy source.

When required, for operations other than frost or leading edge ice removal and when OAT is at or below 0°C (32°F), an additional treatment with heated De-Icing fluid must be performed within the facility to prevent re-freezing of water which may remain in hidden areas.

WARNING: Aerodynamic problems may occur!

If De-Icing and / or Anti-Icing fluids have been applied to the aircraft and the holdover time is expired, and therefore a new De-Icing / Anti-Icing is required:

- ▶ Perform a conventional De-Icing / Anti-Icing with fluids.
- ✕ Do not use Infrared De-Icing.

It is forbidden to use Infrared De-Icing on al FLYONE aircraft

Inspection

The aircraft must be inspected in accordance with the requirements of Required Aircraft Condition.

Anti-Icing

If Anti-Icing is required it must be accomplished in accordance with Anti-Icing.

If Anti-Icing is performed inside the facility, infrared power levels must be adjusted as required during the Anti-Icing process to prevent accumulation of frozen contamination due to the effect of blowing snow through the facility and to maintain fluid integrity for the time the aircraft is in the facility.

Dehydration of the fluid can negatively impact the fluid performance.

7.3.2.2. Hot Air De-Icing

Hot air De-Icing must be performed with low flow hot air sources such as Air Conditioning Units, Cabin Heaters, or any other Hot Air Units.

- ✓ Make sure that the temperature at the engine inlet / radome area does not exceed 55°C.

Application and Restriction

WARNING: Risk of personal injuries or aircraft damage!

- ✗ Do not use air starter or mounted jet engines.

Pressure on loose held hoses, blast and temperature cannot be controlled and exceed both job safety and technical limits.

7.3.3. Safety Precautions

7.3.3.1. General Precautions

WARNING: If any significant damage on the airplane is identified during the walk-around/ contamination check and/or damage identified or caused during the de-/anti-icing process, it must immediately be reported to the flight crew for further investigation and decision for aircraft airworthiness.

Deviation from standard procedures

If deviating from any standard procedure (for example application of a degraded fluid):

- Inform the Commander about this before the start of the De-Icing / Anti-Icing treatment.

Before application

- Before starting the De-Icing / Anti-Icing process always coordinate with the Cockpit Crew to ensure that the aircraft is properly configured for De-Icing / Anti-icing treatment.
For communication procedures see Guideline for Ground-to-Cockpit Communication De-Icing/Anti-Icing.
- ✓ They will switch OFF the air-conditioning system and APU air (if not otherwise recommended by the aircraft manufacturer). This is to avoid that De-Icing / Anti-Icing fluid enters the system.

CAUTION: Risk of undesired cabin evacuation!

De-Icing / Anti-Icing fluid entering the air-conditioning system can cause 'smoke' in the cabin followed by a smoke warning.

- ✗ Make sure that there is also no external air supply (i.e. air conditioning unit, air starter) connected to the aircraft during De-Icing / Anti-Icing.

Even if air-conditioning is switched off from inside, contaminated air could enter the system and be distributed when switched on again.

- Before closing the doors remove all ice or snow from surrounding area.
- Before application of De-Icing / Anti-Icing fluid close all doors and windows to prevent galley floor or upholstery contaminations.
For special procedure to De-Icing / Anti-Icing with open passenger door see De-Icing with Open Passenger Door.
- ✓ Make sure that engines are shut down or running at idle.
- ✗ Propeller driven aircraft engines must not be running during De-Icing / Anti-Icing since proper fluid application is not possible in the air stream of propellers.
- ✓ Make sure that the movable surfaces are in position as specified by the aircraft manufacturer.

During application

During De-Icing / Anti-Icing, take care of the following:

WARNING: Risk of aerodynamic problems!

- ▶ Aircraft shall be treated symmetrically, that is, left-hand and right-hand side shall receive the same and complete treatment, even when only one side of the aircraft needs treatment: Same areas, same quantity, type and mixture strength of fluid.

Procedures in Ant-Icing fluid application strategy shall be followed if an anti-icing treatment is to be performed on the aircraft.

- ✓ Anti-Icing treatments must always cover the entire wing, the entire vertical stabilizer / rudder and the entire horizontal stabilizer / elevators on both sides of the aircraft.

If Anti-Icing was not performed accordingly:

- ✗ Do not give an Anti-Icing code to the Cockpit Crew.

- ▶ Spray from the leading edge to the trailing edge.
- ▶ Start at the highest point of the surfaces and work to the lowest point, i. e. on most aircraft start at the wing tip and work towards the wing root.
- ▶ On vertical surfaces start at the top and work down.
- ✗ Do not spray De-Icing / Anti-Icing fluid directly on wiring harnesses, electrical components, landing gear, brakes, wheels, exhausts or thrust reversers.
- ✗ Do not spray De-Icing / Anti-Icing fluid directly into openings of pitot tubes, static ports or angle of attack airflow sensors.
- ✗ Do not spray De-Icing / Anti-Icing fluid directly into engine or APU inlets, engine probes / sensors.
Due to location of the APU inlet on top or aside of tail section, following aircraft are especially sensitive to De-Icing fluid ingestion by APU:
- ✓ Minimize unintentional fluid spray entry into engines, APU, other intakes / outlets and control surface cavities.
- ✗ Do not spray fluid directly onto flight deck or cabin windows as this can cause crazing of acrylics or penetration of the window sealing.
- ✗ Do not spray fluid directly onto the hinges or bushings of folding wing devices, as this can cause lubricants to be washed away. Overspray is allowed.
- ✓ Keep landing gear and wheel bays free from build-up of slush, ice or accumulations of blown snow.
- ✓ As ADF can be blown backwards onto cockpit windows during taxi or take-off if applied on any forward area, as e.g. radome, minimize the use of ADF at these areas.
- ▶ If necessary, de-ice this area with mechanical means like brooms or brushes, diluted type I ADF or hot air, see Hot Air De-icing for basic details.

As ice can build up on the aircraft surfaces when descending through dense clouds or precipitation during approach and landing at low temperatures:

- ▶ Check gaps between fixed and moveable surfaces, e.g. retracted flaps.
- ✓ A tactile check ('hands-on check') may be necessary.

If any frozen deposits are found:

- ▶ Remove them before departure.

After application

- ✓ If Type 11 or IV fluids are used remove all traces of the fluid on the cockpit windows before departure, especially on windows fitted with wipers.
De-Icing / Anti-Icing fluid may be removed with an approved cleaner and a soft cloth.

WARNING: Risk to slip and fall, which may result in injuries!

Equipment and ramp surfaces may be slippery after De-Icing / Anti-Icing.

- ✓ Be careful, especially under low humidity or non-precipitation weather conditions when increased danger of slipping is not normally expected.

7.3.3.2. Precautions in Special Conditions

Strong wind

- ✓ During strong wind conditions it may become difficult to effectively reach the aimed surfaces with the spray of the De-Icing / Anti-Icing fluid.
- ✓ This is especially true when the wind blows from aircraft tail to nose.

WARNING: Risk of aerodynamic problems during take-off!

When fluid spray is blown away from the intended direction due to wind:

- ✗ It is possible that aircraft surfaces are not sufficiently clean and protected due to insufficient fluid flow and film.
- ▶ Approach aircraft surfaces as near as safely possible with the spraying nozzle.
- ▶ Choose alternative truck position, even behind wing/stabilizer, and/or use a high spraying angle.
Example: Keep nozzle directly over the wing and spray down vertically instead of spraying from low angle.
- ✗ Do not spray directly from the rear into gaps and bays.
- ✓ Make sure to check the leading edges properly.

Heavy snow or ice cover

If an aircraft is heavily covered with snow or ice, ice may be present below the moveable leading edge devices (flaps or slats) on the fixed leading edge of the wing. In this case the following sequence is mandatory:

- ✗ Do not move flaps / slats before de-icing.

If the aircraft was parked with flaps / slats retracted:

- ▶ Perform De-Icing with flaps / slats retracted
- ▶ Extend the flaps / slats into take-off position
- ▶ Perform Deicing of fixed wing leading edges
- ▶ Retract the flaps / slats and proceed with a complete De-Icing / Anti-Icing

If the aircraft was parked with flaps / slats extended:

- ▶ Perform De-Icing of flaps / slats and fixed wing leading edges
- ▶ Retract the flaps / slats completely
- ▶ Proceed with a complete De-Icing / Anti-Icing

Freezing fog

In freezing fog conditions:

- ▶ Check rear side of fan blades for ice build-up before start up.

If any frozen deposits are found:

- ▶ Remove them using hot air (see Fan Blade De-Icing using Hot Air).

Clear ice: Precautions

Clear ice can form on aircraft surfaces, even under a layer of snow and slush:

- ▶ Examine surfaces very closely after De-Icing / Anti-Icing treatment to ensure that all deposits have been removed.
- ✓ Clear ice can especially form near the fuel tanks, on upper wing or lower wing surfaces.

This type of ice normally occurs at low wing temperatures and when large quantities of cold fuel remain in wing tanks during turnaround / transit and any subsequent refueling does not cause a sufficient increase of the wing temperature.

Clear ice: Conditions

Clear ice must be mostly expected when

- ✓ wing temperatures remain well below 0°C (32°F) during turnaround / transit / outside air temperatures are between -2°C and +15°C* (28°F and 59°F)*
- ✓ ambient humidity is high and / or precipitation occurs during turnaround / transit*
- ✓ frost or ice is present on lower wing surfaces.

Note:* Clear ice can even form at outside air temperatures outside this range if the conditions mentioned above are met.

Clear ice: Tactile check ('hands-on check')

This form of ice is extremely difficult to detect visually. If the conditions mentioned above prevail or if there is any doubt whether clear ice has formed:

- ▶ Perform a close examination before departure to make sure that all frozen deposits have been removed.
- ✓ If necessary perform the close examination as a 'hands-on-check' (i.e. by touching the affected surfaces).
- ✓ The 'hands-on-check' shall be performed by a qualified person. Observe local regulations.

De-Icing / Anti-Icing sub-sequent take-off

When aircraft surfaces have been treated with Type II or IV fluids, - and the aircraft has without not performed a take-off (e.g. because of a technical problem after De-Icing / Anti-Icing and prior to take-off, etc.), - and the applicable holdover time of the fluid has been exceeded:

- ▶ Remove the 'failed' De-Icing / Anti-Icing fluid from the aircraft surfaces prior to the next flight.
- ✓ Make sure to observe procedures and restrictions for removal according to Application Limits.

7.3.4. Limits

7.3.4.1. Fluid Related Limits

- ✓ For fluid limits such as 'lowest operational use temperature', 'concentration', 'freezing point information', 'highest concentration to be used', 'storage temperature', 'storage time or shelf life limitations' refer to the fluid manufacturer's documentation.

WARNING: Fluid freezing on the aircraft surfaces may occur which can cause aerodynamic problems!

- ✗ Never apply a fluid if the OAT is below the 'lowest operational use temperature' (LOUT) of that fluid.

Type I fluids

- ✓ The freezing point of the Type I fluid / water mixture used for the first step (De-Icing) in a two-step procedure shall be at OAT or below.
- ✓ The freezing point of the Type I fluid / water mixture used either as second step (Antilcing) in a two-step procedure or in a one-step procedure (De-Icing / Anti-Icing) must be at least 10°C (18°F) below the OAT or wing skin temperature (whichever is lower).
- ✓ For the application and temperature limits of a Type I fluid / water mixture refer to Table 1: 1Guidelines for the application of Type I fluid/water mixtures (minimum concentrations).

WARNING: Aerodynamic problems may occur!

Type I fluids supplied as concentrates must not be used undiluted:

- ▶ Fluid concentrates have to be diluted with water prior to usage. For exceptions refer to fluid manufacturer's documentation.

Type II and type IV fluids

- ▶ Type II and type IV fluids used as De-Icing / Anti-Icing agents may have a lower temperature application limit of -22.5 °C (-8.5 °F). The application limit may be lower, provided a 7 °C (13 °F) buffer is maintained between the freezing point of the neat fluid and OAT or wing skin temperature (whichever is lower).
- ✗ In no case shall this temperature be lower than the LOUT.

Note: These fluids may not be used below -25°C (-13°F) in active frost conditions (see TABLE 3: GUIDELINE FOR HOLDOVER TIMES FOR TYPE I, II AND IV FLUID MIXTURES IN ACTIVE FROST CONDITIONS).

- ✓ For the application and temperature limits of a Type II or IV fluid/water mixture either as a second step (Anti-Icing) in a two-step procedure or in a one-step procedure (De-Icing / Anti-Icing) refer to 5.1.2 Table 2: Guidelines for the application of Type II and IV fluid / water mixtures (minimum concentrations).

7.3.4.2. Application Limits

WARNING: Risk of blocking or impeding flight control systems!

The application of **thickened** fluids may cause residues to collect in aero-dynamically quiet areas, cavities and gaps. These residues may rehydrate and freeze at low temperatures, high humidity and/or rain conditions.

- ✓ / These residues may require removal.
- ✓ / The application of hot water or heated Type I fluid in the first step of the De-Icing / Anti-Icing procedure minimizes the formation of residues.
- ▶ Whenever possible use hot water for the first step.

If this is not possible use Type I fluid whenever available.

Observe the procedure related restrictions under 'Preventive anti-icing ('overnight protection')' in DAP Methods and 'Pre-de-/anti-icing ('early treatment')' in DAP Methods.

Holdover time exceeded, repeated treatment

Under no circumstances may an aircraft that has already been anti-iced receive a further coating of Anti-Icing fluid directly on top of the first fluid film (e.g. if holdover time has been exceeded).

WARNING: Risk of aerodynamic problems!

- ✗ Repeated Anti-Icing only is not permitted.
- ▶ Inform the Commander that a new De-Icing, and if necessary, an Antilcing treatment has to be performed prior to the next flight.

If OAT during removal is above 0°C, and there is no precipitation that requires Anti-Icing (if so, follow procedure 'at or below 0°C'):

- ▶ Remove the 'failed' De-Icing / Anti-Icing fluid with hot water.
- ✓ Make sure that any remainders from the previous De-Icing / Anti-Icing treatment are flushed off.

If OAT during removal is at or below 0°C:

- ▶ Use following procedure before next departure to remove all fluid remainders from the previous De-Icing / Anti-Icing treatment.
- ▶ Wash off the old fluid in the first step with following preferences, derived from 5-1-1 Table 1: Guidelines for the application of Type I fluid / water mixtures (minimum concentrations):
- ✓ 0°C and above: with hot water or heated Type I fluid/water mixture
- ✓ Below 0°C with a heated Type I fluid/water mixture

If Type I fluid is not available:

- ✓ With a mix of hot water and Type II or IV fluid, diluted as much as possible according to Table 2: Guidelines for the application of Type II and IV fluid / water mixtures (minimum concentrations).
- ✓ Make sure that any remainders from the previous De-Icing / Anti-Icing treatment are flushed off during the first step.

When required by weather conditions:

- ▶ Apply Anti-Icing according to standard procedures in the second step.

7.3.5. De-Icing

7.3.5.1. Removal of Contaminants

- ▶ Remove ice, snow, slush or frost from aircraft surfaces before dispatch and before Anti-Icing.
- ✓ This may be done with heated fluids, hot air (see Hot Air De-Icing), by mechanical methods, by any alternate technologies like infrared application or in any combination thereof.

Pre-step process

If agreed by the operator, a pre-step process prior to the De-Icing process, in order to remove large amounts of frozen contamination (e.g. snow, slush or ice), may be considered to reduce the quantity of glycol-based De-Icing fluid that is needed.

- ✓ This pre-step process may be performed with various means, for example brooms, forced air, heat, heated water, heated fluids with negative freezing point buffer).

If a pre-step process is done:

- ✓ Make sure that the subsequent De-Icing process removes all frozen contamination **including** the contamination that may have formed on surfaces or in cavities due to the pre-step process.

Standard method

- ✓ The standard method is removal by heated fluids.
- ▶ For maximum effect apply fluids close to the aircraft surface to minimize loss of heat.
The heat of the fluid effectively melts any frost and light deposits of snow, slush and ice. Heavier accumulations require the heat to break the bond between the frozen deposits and the aircraft structure; the hydraulic force of the fluid spray is then used to flush off.
- ✓ The De-Icing fluid prevents re-freezing for a period of time depending on aircraft skin temperature, outside air temperature (OAT), the fluid used, the fluid / water mixture and the weather conditions.

Frost or light ice

- ▶ To remove frost or light ice, use a nozzle setting giving a solid spray cone.
This ensures the largest droplet pattern available, thus keeping the maximum heat in the fluid.

Partial treatment (e.g. frost or ice patches)

See 8-4 Removal of Local Area Contamination for special procedures.

Snow or slush

- ▶ To remove snow or slush, use a nozzle setting sufficient to flush off deposits and minimize foam generation as foam can easily be mistaken for snow.
- ✓ The method used depends on the equipment available and the quantity and type of snow (i.e. light and dry or wet and heavy):
 - or light deposits of both wet or dry snow, similar procedures as for frost removal may be used.
 - generally, for heavier deposits use a stronger fluid flow.
 - Wet snow is more difficult to remove than dry snow and unless deposits are relatively light, selection of high fluid flow is more effective.
- ✓ Under certain conditions it is possible to use the heat combined with the hydraulic force of the fluid spray to melt and subsequently flush off frozen deposits

Heavy accumulation of snow is always difficult to remove from aircraft surfaces and very high quantities of fluid will be required. In such conditions:

- ▶ Consider manual removal of the snow with mechanical means before De-Icing with fluid.

WARNING: Structural damage or engine damage / flame out may occur!

Under a layer of snow may be a layer of ice or clear ice. This is difficult to be detected visually. Snow removal does not ensure removal of this ice. After removal of snow:

- ▶ Check the affected surfaces according to precautions under 'Clear ice: precautions' in Precautions in Special Conditions.

Ice

- ▶ To break the ice bond, use heated fluid.
The following method makes use of the high thermal conductivity of the metal skin.
- ▶ Direct a stream of hot fluid at close range onto one spot at an angle of less than 90 degrees, until the aircraft skin is exposed.
The aircraft skin then transmits the heat laterally in all directions raising the temperature above the freezing point. This breaks the ice off the aircraft skin.
- ▶ Repeat this procedure several times to break a large area of frozen snow or ice.
- ▶ Flush off the deposits with either a low or high flow depending on the amount of contamination.
- ▶ If Type II or IV is available consider the application of undiluted fluid for Anti-Icing under these conditions.

7.3.5.2. De-Icing Fluid Application Strategy

For effective removal of contamination, the following techniques should be used. Certain aircraft, aircraft configurations and local conditions may require special procedures.

General

Non-metallic surfaces (e.g. composites) warm up more slowly than metallic surfaces, due to being bad conductors of heat. De-Icing may take longer and more fluid may be needed.

- ▶ Generally treat the surfaces from the highest point to the lowest.
- ✗ Do not spray from the rear.
- ✓ In exceptional cases (e.g. narrow parking position) the truck may stand behind the wings but must use a telescope arm with nozzle turned to ensure spray direction from front.

Then, a second and qualified person must observe this from the front to ensure proper treatment of the leading edges. If the spraying operation can be monitored visually via a camera at the nozzle, the second person is obsolete.

- ▶ Ice, snow or frost may dilute the fluid: apply enough hot De-Icing fluid to ensure that re-freezing does not occur and all contaminated fluid is flushed off.

Wings, horizontal stabilizer and elevators

- ✓ Ensure that the freezing point of the De-Icing fluid is low enough to prevent refreezing.
- ▶ Spray from the leading edge to the trailing edge.
- ▶ Start at the highest point of the surfaces and work to the lowest point. (i. e. on most aircraft start at wing tip and work towards wing root).
- ✗ No frost or other contamination is permitted on the lower side of the horizontal stabilizer.

Underwing and lower side of horizontal stabilizer de-icing

- ✗ This is a De-Icing process only, Anti-Icing is not required.
- ✓ Underwing frost is usually caused by very cold fuel in the wing tanks ('cold soak effect').
- ✓ An occasional type of contamination on lower side surfaces may be slush whirled up during taxiing.

If removal of contamination is required from the lower side of wings including flaps lower surfaces or horizontal stabilizer and elevator:

- ▶ Apply De-Icing fluid sparingly to minimize fluid flow into drain holes.
- ▶ Use Type I fluid for underwing De-Icing, whenever possible.
- ✓ Treatments must be symmetrical.
- ▶ Spray the affected area with a heated fluid/water mix suitable for a one-step procedure or a two-step procedure, as required (see warning below), and then spray the same area under the other wing or horizontal stabilizer, even if the contamination is only present under one wing or horizontal stabilizer.
- ▶ Check that all frozen deposits have been removed, and then report details of the treatment to the Commander:

'Underwing De-Icing only. Holdover times do not apply.'

WARNING: Risk of fluid freezing on the aircraft and aerodynamic problems!

- ✓ Wing skin temperatures may be lower than OAT.
- ▶ Use a mix with a higher concentration of glycol than suggested by the OAT to ensure a sufficient freezing point buffer.

Vertical surfaces

- ▶ Start at the top and work down.

Fuselage

- ▶ Spray along the top center line and then outboard.
- ✖ Make sure that fuselage is clear of ice and snow. Hoarfrost is allowed.

Nose / radome area, cockpit windows

- ▶ Preferably use a Type I / water fluid mixture or manual methods of removal (such as squeegees or brushes) or hot air (see Hot Air De-Icing) to remove contamination from the forward part of the aircraft.
- ✓ Heated cockpit windows will not normally require to be de-iced, but manual removal of contamination reduces the heating time.
- ✖ Deicing/anti-icing fluid spray shall not be directed towards/into the orifices of pitot tubes (heads), static ports/vents, or directly onto air stream direction detectors probes/angle of attack airflow sensors. This includes all openings.

In exceptional cases, when only thickened fluids of types II and IV are available:

- ✓ Dilute the thickened fluid with hot water as much as possible according to TABLE 2: GUIDELINES FOR THE APPLICATION OF TYPE II AND IV FLUID / WATER MIXTURES (MINIMUM CONCENTRATIONS). Dilution must be appropriate for the current OAT to avoid refreezing.
- ✖ Avoid spraying near cockpit windows.
- ✓ Keep the application of De-Icing fluid in areas from which fluid can be blown backwards onto the cockpit windows to a minimum.
- ▶ Use squeegees or equivalent to remove any thickened fluid remaining on nose areas where it could be blown back onto the cockpit windows.
- ▶ Fluid residues must be removed from sensing elements / sensors and the area forward of them.

In case an inspection, cleaning or replacement is required, an aircraft maintenance organization has to be informed and qualified personnel needs to perform the tasks.

If the cockpit windows have been contaminated by thickened fluid:

- ▶ Before cleaning: ask the Cockpit Crew if they can switch OFF the window heating system to make cleaning easier.

As window heating is often combined with sensors and probes heating, they may decide to keep it switched on.

- ▶ Use water or an approved windshield cleaner to clean the windows. When outside air temperature is at or below 0°C preferably use a low freezing point windscreen washing fluid.

WARNING: During falling precipitation, heated windows may cause liquid runoff to freeze near sensors, requiring deicing.

Landing gears and wheel bays

- ✓ Keep the application of De-Icing fluid in this area to a minimum.
- ✓ You may remove accumulations such as blown snow by other means than fluid (i.e. mechanical means, air blast, hot air, etc.).
- ▶ Where deposits have bonded to surfaces: Remove them by application of hot air (see Hot Air De-Icing) (preferred method), or with small quantities of hot De-Icing fluids.

WARNING: Risk of damage to or malfunction of brakes!

- ✖ Do not spray De-Icing fluid directly onto wheels and brakes, wiring harnesses or electrical components.

Sensors and probes

- ✓ Keep the application of De-Icing fluid in this area to a minimum.
- ✓ You may remove accumulations such as blown snow by other means than fluid (i.e. mechanical means, air blast, hot air, etc.).
- ▶ Where deposits have bonded to surfaces: Remove them by application of hot air (see Hot Air De-Icing) (preferred method), or with small quantities of hot De-Icing fluids.

DANGER: Risk of wrong air data indications on the flight deck due to blocked sensors!

- ✖ Do not spray De-Icing fluid directly into openings of pitot tubes, static ports or angle of attack airflow sensors.

Engines

- ▶ Remove any deposits of snow mechanically from engine intakes before departure.
- ▶ Remove any frozen deposits that have bonded either to the lower surface of the engine intake, the fan blades including the rear side, or to propellers by hot air (see Fan Blade De-Icing using Hot Air) or any other means according to the aircraft maintenance manual.

7.3.6. Anti-Icing

The application of Anti-Icing fluid prevents snow, ice, frost, or slush from accumulating on treated aircraft surfaces for a certain period of time ('holdover time').

Preparation

For effective Anti-Icing:

- ✓ Aircraft surfaces must be free from contamination (e.g. de-iced).
- ▶ Reduce pump speed.
The high fluid pressures and flow rates normally associated with De-Icing are not required for Anti-Icing.
- ▶ Adjust the nozzle of the spray gun to provide a medium spray flow.
- ▶ If maximum holdover times are needed use Type II or IV fluids. Type I fluids provide shorter holdover times than Type II or IV fluids.

Anti-Icing fluid application strategy

The following surfaces shall be treated as specified by the aircraft manufacturer’s documentation:

- Wing upper surfaces including leading edges and upper control surfaces
- Wing tip devices
- Both sides of vertical stabilizer and rudder to receive anti-ice protection when freezing precipitation conditions exist
- Horizontal stabilizer upper surfaces including leading edges and elevator upper surfaces
- When necessary, fuselage upper surfaces, dependent upon the amount and type of freezing precipitation (this is especially important on center-line engine aircraft).
- Anti-Icing of the lower side of the wings and/ or horizontal stabilizer is normally not required.
- ▶ On wings and horizontal stabilizer / elevators spray from the leading edge to the trailing edge.
- ▶ Do not spray from the rear.
- ▶ Treat horizontal surfaces in a way that you start at the highest point of the surfaces and work to the lowest point. (i. e. on most aircraft start at the tip of the surface and work towards the root).
- ▶ On vertical surfaces start at the top and work down.
- ▶ The process should be continuous and as short as possible.
- ▶ Anti-icing should be carried out as near to the departure time as possible in order to utilize available holdover time.
- ▶ The anti-icing fluid shall be distributed uniformly and with sufficient thickness over all surfaces to which it is applied.
- ▶ Anti-Icing treatment shall be symmetrical and shall cover the entire wing, the entire vertical stabilizer/rudder and horizontal stabilizer/elevator on both sides of the aeroplane.
- ✓ In order to control the uniformity, all aircraft surfaces shall be visually checked during application of the fluid.

WARNING: Aerodynamic problems may occur!

Anti-icing fluids may not flow evenly over wing leading edges, horizontal, and vertical stabilizers.

- ✓ These surfaces should be checked to ensure that they are properly coated with fluid.

- ▶ To use Type I Holdover Times Guidelines in all conditions, including active frost, an additional minimum of 1 L/m2 (~2 gal/100 ft2) of heated Type I fluid mixture with a nozzle temperature of at least 60 °C (140 °F) must be applied to the surfaces after all frozen contamination is removed. This application is necessary to heat the surfaces, as heat contributes significantly to the Type I fluid holdover times. The required protection can be provided using a one-step method by applying more fluid than is strictly needed to just remove all of the frozen contamination (the same additional amount stated above is required).
- ▶ For Type II or IV fluids which flow readily over surfaces, the correct amount is indicated by fluid just beginning to run off the leading and trailing edges. For fluids which form a more static layer, the minimum quantity required will typically be 1 L/m2 applied in an even layer across the surface. For further guidance on the amount of fluid, refer to AS6286A Aircraft Ground Deicing/Anti-Icing Training and Qualification Program or the fluid manufacturer’s documentation.

It is the responsibility of the Deicing Service Provider to ensure that the surfaces mentioned above are free of frost, snow, slush, or ice prior to the start of the anti-icing treatment, and that on completion of the treatment, these surfaces are fully covered with an adequate layer of anti-icing fluid.

7.3.7. Interruption of De-Icing / Anti-Icing Treatment

A De-Icing / Anti-Icing treatment should be continuous and as short as possible. If a treatment is interrupted (for example a truck running out of fluid), the Commander shall be immediately informed stating;

- ✓ Reason for interruption;
- ✓ Actions to be taken (in consultation with the Commander) and / Expected time of delay.

Before continuing the treatment:

- ▶ Inform the Commander;
- ▶ Establish in consultation with the Commander, further treatment to be carried out, including any surfaces requiring re-treatment (in relation to Holdover time) and
- ▶ Carry out treatment as agreed.

7.4. Final Checks & Notification

7.4.1. General aircraft requirements after de-icing/anti-icing

Following the De-Icing / Anti-Icing procedures and prior to take-off, the critical aircraft surfaces shall be free of all frost, snow, slush, or ice accumulations in accordance with the following requirements:

- ✓ Wings, tail and control surfaces.
A thin coating of frost (3mm or less) on lower wing surfaces, in areas between forward and aft spars, cold-soaked by fuel is permitted.

Note: Frost or any other contamination is not acceptable on the lower side of the horizontal stabilizer and elevators, unless specified in the Airplane Flight Manual (OM-A/OM-B) or other aircraft manufacturer's documentation.

- ✓ Aerodynamic probes (pitot tubes, static ports, angle-of-attack sensors) and the area forward of them.
Pitot tubes, static ports, and other air data sensing devices shall be free of frost, snow, slush, ice, and fluid.
Fluid residues must be removed as well.
Ice ridges can form on the nose of the fuselage while on the ground. These ridges will disrupt air flow into the pitot tubes and which can result in false measurements. All contamination shall be removed from this area.
- ✓ Outflow valves, air condition inlets and outlets.
Air inlets, outlets, pressure-release valves, and outflow valves shall be free of frost, snow, slush, or ice, and shall be unobstructed.
- ✓ Landing gear and landing gear doors.
Landing gear and landing gear doors shall be unobstructed and free of frost, snow, slush, or ice. Do not spray deicing/anti-icing fluids directly onto wiring harnesses and electrical components (receptacles, junction boxes, etc.,) brakes, wheels, exhausts, or thrust reversers.
- ✓ Fuel tank vents.
Fuel tank vents shall be free of frost, snow, slush, or ice.
- ✓ Fuselage.
A thin layer of hoarfrost may be present if all vents and ports are clear. Hoarfrost is considered to be 'thin', if letters, markings, painted lines etc. on the aircraft surface are visible through the frost layer.
- ✓ Nose / random area and cockpit windows
Any significant deposits of frost, snow, slush, or ice on the windscreens or on areas forward of the windscreens shall be removed prior to departure. Heated flight deck windows will not normally require deicing. Any forward area from which fluid may flow back onto windscreens during taxi or subsequent take-off shall be free of fluid prior to departure.
If SAE Type II or IV fluid has been used, all traces of the fluid on flight deck windows shall be removed prior to departure, with particular attention paid to windows fitted with wipers. Thickened-fluid (SAE Type II or IV) can be removed by using a diluted Type I mixture, water (where it has been determined that refreezing will not occur), a manual method (ensuring that windscreen heat is turned off), or another cleaner as approved by the aircraft manufacturer.
During falling precipitation, heated windows may cause liquid runoff to freeze near sensors, requiring deicing.
- Engines
Cowlings, engine inlets (including the leading edge), exhaust, cooling intakes, control system probes, and ports shall be free of frost, snow, slush, or ice. Engine fan blades, propellers (as appropriate), and spinner cones shall be free of frost, snow, slush, or ice, and shall be free to rotate.

Flight Control Check

A 'flight control check' using an external observer may be required after De-Icing / Antilcing depending on aircraft type. This is particular important if the aircraft has been covered by a thick cover of ice or snow.

Dried Thickened Fluid Residues When the Aircraft Has Not Been Flown After Anti-Icing

Dried thickened-fluid (SAE Type II or IV) residues can occur when surfaces have been deiced/anti-iced but the aircraft has not imminently been flown and has not been subject to precipitation. The fluid may then have dried on the surfaces. In such situations, the aircraft must be checked for dried residues from thickened fluids and cleaned as necessary.

Special Maintenance Considerations

Proper account should be taken of the possible side-effects of fluid use. Such effects may include, but are not necessarily limited to, dried and/or rehydrated residues and the removal of lubricants.

7.4.2. Post De-Icing / Anti-Icing Check (PDAC)

- ✓ An aircraft shall not be dispatched after a deicing/anti-icing treatment until the aircraft has received the following visual check by a qualified person according to 1.4 Training and qualification for De-Icing / Anti-Icing.
- ✓ The Post De-Icing / Anti-Icing may be performed by the same personnel doing the De-Icing / Anti-Icing treatment according to De-Icing / Anti-Icing Procedures.

When the deicing/anti-icing service provider performs the deicing/anti-icing treatment as well as the Post De-Icing / Anti-Icing Check, it may either be performed as a separate check or incorporated into the deicing/anti-icing operation as specified below. The deicing/anti-icing service provider shall specify the method used in his winter procedures, by customer where necessary:

1. As the deicing/anti-icing treatment progresses, the deicing/anti-icing sprayer will closely monitor the surfaces receiving treatment in order to ensure that all forms of frost, snow, slush, or ice (with the exception of cold-soaked fuel frost on the lower surface of wings and light frost on the fuselage, which may be allowed per the aircraft manufacturer and state regulatory authority) are removed and that upon completion of anti-icing treatment, these surfaces are fully covered with an adequate layer of anti-icing fluid.
2. When the request for deicing/anti-icing did not specify the fuselage, a visual check of the fuselage shall be performed at this time, in order to confirm that it has remained free of contamination (with the possible exception of light frost, which may be allowed as per the aircraft manufacturer and state regulatory authority).
3. Any evidence of contamination that is outside the defined limits shall be reported to the flight crew immediately and be removed by further deicing/ anti icing treatment. Then the Post De-Icing / Anti-Icing Check shall be repeated.
4. Once the treatment has been completed, the Deicing Operator will conduct a close visual check of the surface where the treatment commenced, in order to ensure that it has remained free of contamination (this check is not required for 'frost only' conditions).

Minimum scope

- ▶ Always check
 - wings
 - horizontal stabilizer (both lower and upper surfaces)
 - vertical stabilizer
 - fuselage including nose / radome area, pitot heads, static ports, temperature and angle of attack sensors.

Additional scope

- ▶ Additionally check
 - all other parts of the aircraft on which a De-Icing / Anti-Icing treatment was performed according to the requirements identified during the Contamination Check

Check

- ▶ Check that all parts mentioned above are clean of ice, frost, snow and slush.
- ✓ The 'Minimum scope' must always be checked during a Post De-Icing / Anti-Icing Check, even if the de-icing request and treatment did not include all parts as listed above.
- ✓ The Post De-Icing/Anti-Icing Check shall be performed from points offering sufficient visibility of all treated surfaces (e.g., from a deicing/anti-icing vehicle, ladder, or other suitable means of access).
- ✓ The Post De-Icing / Anti-Icing Check shall be conducted properly in adequate visibility conditions and suitable time.

Special checks

For specific aircraft types or weather conditions additional requirements may exist, for example special clear ice checks such as tactile checks on wings.

- ✖ These special checks are not covered by the Post De-Icing / Anti-Icing Check.

Corrective measures

If any contamination is found:

- ▶ Notify the Commander.
- ▶ Initiate removal by a further De-Icing, and if necessary, Anti-Icing treatment.
- ▶ Repeat the Post De-Icing / Anti-Icing Check.

Notification to Cockpit

If the Post De-Icing / Anti-Icing Check is completed successfully:

- ▶ Report the Anti-Icing Code to the Commander (for details see Anti-Icing Code).

WARNING: Risk of aerodynamic problems during take-off!

- ✓ For a safe take-off within the aircraft performance limits, the Cockpit Crew has to rely on a correct De-Icing / Anti-Icing treatment.
- ✗ The Anti-Icing Code must not be transmitted to the Commander before the Post De-Icing / Anti-Icing Check has been completed properly and successfully.

7.4.3. Pre-take-off Check

After the Post De-Icing / Anti-Icing Check was performed, the Commander must monitor the weather conditions.

Before take-off he must assess whether the applied holdover time is met and still appropriate and/ or if untreated surfaces may have become contaminated. This check is usually performed from inside the cockpit.

7.4.4. Pre-take-off Contamination Check

In general this is a check of the critical surfaces for contamination. This check shall be performed when the condition of the critical surfaces of the aircraft cannot be effectively assessed by a pre-takeoff check or when the holdover time has been exceeded. This check is normally performed outside of the aircraft. The alternate means of compliance for a pre-takeoff contamination check is to perform a complete deicing/anti-icing re-treatment of the aircraft.

This check is also applicable for take-offs after landing at off-route stations where Fly One De-Icing / Anti-Icing procedures are available (take-off from an alternate airport).

- ▶ Check that all parts of the aircraft mentioned in Required Aircraft Condition are clean of ice, frost, snow and slush.
- ▶ Perform the check from outside the aircraft.

7.4.5. Notification and Recording

7.4.5.1. De-Icing / Anti-Icing Notification

- ✖ An aircraft must not take-off after a De-Icing / Anti-Icing treatment until the Commander has been notified about the type of De-Icing / Anti-Icing treatment performed.
- ✓ Make sure that the Commander is notified about completion of the De-Icing / Anti-Icing operations.
- ✓ The notification after completion must include the results of the Post De-Icing / Anti-Icing Check indicating that the treated aircraft surfaces are free of ice, frost, slush or snow.

For specific aircraft types or weather conditions additional requirements may exist, for example special clear ice checks such as tactile checks on wings, or checks after De-Icing certain aircraft parts by hot air.

- ✓ Additional confirmation for these checks is required.

If Anti-Icing has been performed:

- ✓ Make sure that the notification includes the Anti-Icing code as specified in Anti-Icing Code to enable the crew to determine the expected holdover time under the prevailing weather conditions.

7.4.5.2. Anti-Icing Code

- See Notification and Recording specific information.

The Anti-Icing Code must be recorded and transmitted to the Commander by referring to the last step of the De-Icing / Anti-Icing procedure and in the sequence as listed below:

1. Type of fluid i.e. Type I, Type II or Type IV
2. The fluid name (manufacturer and brand/trade name) of the Type II, or IV antiicing fluid.

Note: Communication of this element is not required for Type I fluid.

3. The concentration of fluid (dilution) within the neat fluid/water mixture, expressed as a percentage by volume for Type II or IV (i.e., 100% ("neat") = 100% fluid, 75% = 75% fluid and 25% water, 50% = 50% fluid and 50% water)
4. The local time (hours and minutes), either:
 - For a one-step deicing/anti-icing operation: at the start of the final treatment, or
 - For a two-step deicing/anti-icing operation: at the start of the second step (antiicing)
5. The date in the following format: day, month, year (DDMMMYY (e.g., 28JAN15 = January 28, 2015))

Note: This element is required for record keeping and is optional for flight crew notification.

6. The statement, "Post-deicing/anti-icing check completed."

Note: For specific aircraft types, additional requirements exist, e.g., tactile checks for clear ice on wing surfaces. Additional confirmation for these checks may be required.

Example

The last step of a deicing/anti-icing procedure is the application of a mixture of 75% Type II fluid and 25% water, made by the Manufacturer as Brand X, commencing at 13:35 local time on 20 February 2016, is reported and recorded as follows:

"TYPE II / MANUFACTURER, BRAND X/75% /1335 /20FEB16 /POST DEICING/ ANTI-ICING CHECK COMPLETED"

Note: An alternative means of visual communication of the Anti-Icing Code to the flight crew can be used (e.g., written on paper, EMBs, ACARS, EFBs, etc.).

For communication procedure see Guideline for Ground-to-Cockpit Communication De-icing/ Anti-icing.

Task sharing

If two different companies are involved in the De-Icing / Anti-Icing process, i.e. one company does the De-Icing and/ or Anti-Icing and a different company performs the Post De-Icing / Anti-Icing Check (see Responsibility of De-icing / Anti-icing Company)

- ▶ Establish and document a communication procedure between both companies to ensure a safe communication.

WARNING: Risk of aerodynamic problems during take-off!

- ✓ For a safe take-off within the aircraft performance limits, the Cockpit Crew has to rely on a correct De-Icing / Anti-Icing treatment.
- ✗ The Anti-Icing Code must not be transmitted to the Commander before the Post De-Icing / Anti-Icing Check has been completed properly and successfully.

7.4.5.3. All-clear Signal

- ✓ Make sure that the Commander receives the information that all De-Icing / Anti-Icing operations are now complete and that all personnel and equipment are clear before reconfiguration or movement of the aircraft.

7.4.5.4. Recording

- ▶ Record the Anti-Icing code given to the Commander and the flight data on a locally provided form or print-out.
- ✓ Other forms of recording which may better suit the local station organization and the De-Icing and Anti-Icing Company are acceptable, if the required minimum information is retained.

Filing

- ▶ File the Anti-Icing Code record in the local Trip File, if not filed by the De-Icing and Anti-Icing Company according to local requirements.

7.5. Fluid Application, Holdover Time Guidelines and Approved Fluids

7.5.1. Fluid Application Tables and Holdover Times

Beginning of holdover time

Holdover protection is achieved by a layer of Anti-Icing fluid remaining on aircraft surfaces and therefore protecting them for a certain period of time.

- When performing a one-step De-Icing / Anti-Icing procedure the holdover time begins at the start of the treatment.
- When performing a two-step De-Icing / Anti-Icing procedure the holdover time begins at the start of the second step (Anti-Icing).

End of holdover time

The holdover time expires when frozen deposits start to form or accumulate on the treated aircraft surfaces.

- ✓ Make sure that the holdover time of the applied fluid is equal or greater than the estimated time from the beginning of the Anti-Icing to the start of take-off run, based on existing and forecasted weather conditions.

Type I fluids

Due to their properties Type I fluids form a thin liquid wetting film which provides **limited holdover time**, especially in conditions of freezing or frozen precipitation.

With a Type I fluid, increasing the concentration of the fluid in the fluid / water mixture will **not** increase the holdover time!

Type II and Type IV fluids

These fluids contain a thickening agent which enables the fluid to form a thicker liquid wetting film on aircraft surfaces. Therefore, thickened fluids provide a longer holdover time especially in conditions of freezing or frozen precipitation

- ✓ To achieve a longer holdover time with a thickened fluid, increase the fluid concentration in the fluid / water mix.
- ✓ Usually maximum holdover time can be achieved by applying the fluid undiluted.

Precipitation Intensity

In all cells of the HOT tables where two values of time are provided (except for light and very light snow, freezing drizzle, and freezing rain), the precipitation intensity is light to moderate. For the "Very Light" and "Light" snow columns, HOTs should be considered in terms of their respective rates. Very light snow has a liquid equivalent snowfall rate of 0.3 to 0.4 millimetres per hour (mm/h), and light snow has a rate of 0.4 to 1.0 mm/h. (For reference, moderate snow has a liquid equivalent rate of 1.0 to 2.5 mm/h, and heavy snow is greater than 2.5 mm/h.) The longer times for very light snow would correspond to the lesser rate, whereas the shorter times would correspond to higher rates. For freezing rain, the range is confined to light freezing rain, which can be up to 2.5 mm/h. Except for freezing drizzle, heavy precipitation conditions are not considered in any HOT guidelines.

Snow Conditions

The Types I and IV, and most Type II fluid-specific HOT guidelines include three separate snow columns representing very light snow, light snow, and moderate snow conditions. Recent surveys and analysis of worldwide snow conditions have revealed that more than 75 percent of snow occurrences fall into the light and very light snow category. Values in the "Very Light," "Light," and "Moderate" snow columns are based on tests conducted by APS Aviation Inc. These tests were conducted on behalf of the FAA and TC.

HOT values for liquid equivalent snowfall rates between 0.4 and 1 mm/h (0.02 and 0.04 inches per hour (in/h), and 4 and 10 grams per decimeter squared per hour (g/dm2/h)) are selected for the "Light" snow column and HOT values for liquid equivalent snowfall rates between 0.3 and 0.4 mm/h (0.01 and 0.02 in/h, and 3 and 4 g/dm2/h) are selected for the "Very Light" snow column. Overall, these selections were based upon a number of factors, including:

- Snow intensity reporting and measurement inaccuracies for light conditions of less than 0.5 mm/h.
- Potential wind effects.
- Light snow variability.
- Possible safety concerns associated with pretakeoff checks.

Use of holdover time

The holdover time tables give an indication of the time frame of protection which can be tables expected under certain weather conditions.

The holdover time can be influenced and / or reduced by:

- high moisture content
- high wind velocity
- jet blast
- fast dropping OAT
- aircraft surface temperature, especially wing skin temperature
- runway De-Icing fluid spray or thin layer under the ADF (for example possibly splashed on the aircraft surface during previous landing)

Under extreme conditions (heavy precipitation etc.), no holdover time may be available at all.

Due to this variety of factors that can influence holdover times:

- ✖ Do not consider these times as a minimum or maximum as the actual time of protection may be extended or reduced due to the particular conditions.
 - ✓ In general, the lower limit of the published time span is used to indicate the estimated holdover time during moderate precipitation and the upper limit indicates the holdover time during light precipitation.
 - ✖ **There are no holdover times for 'heavy' precipitation, with the exception of freezing drizzle** (holdover times are applicable for intensities of light, moderate and heavy freezing drizzle).
 - ▶ Always use the indicated times in combination with a pre-take-off check.
- The responsibility for the application of these data remains with the user, i.e. the Commander.

All fluids approved by FLYONE can be used with the holdover time guidelines specified in this document (see De-Icing / Anti-Icing fluids approved by FLYONE).

These holdover time guidelines are only applicable if the requirements for the 'lowest on wing viscosity' are met. For details refer to fluid manufacturer's documentation.

Generic and Brand Name Holdover

Time Tables Holdover time tables in this document are the so-called Generic Holdover Time Tables (in short 'Generic Tables'). That means they are not brand specific and therefore valid for all fluids of a certain type like Type I, II and IV fluid.

Holdover time tables exist also for individual fluid products. They are called Brand Name Holdover Time Tables (in short 'Brand Name Tables'). They are only valid for an individual fluid (like e.g. 'Kilfrost ABC-S Plus'). Holdover times in these tables may be longer than in the 'Generic Table'.

Brand Name Tables may only be used at approved stations under conditions according to Usage of Brand Name Holdover Time Tables.

Metallic or composite surfaces

Holdover time tables in this document are valid for both metallic and composite surfaces of an aircraft.

Holdover times for degraded fluids

- ✓ For degraded Type II or Type IV fluids use the holdover time table for Type I fluids.
- For exceptions and further details refer to Application of Fluids with Degraded Viscosity.

7.5.1.1. Table 1: Guidelines for the application of Type I fluid / water mixtures (minimum concentrations)

Outside air temperature (OAT) or wing skin temperature (1)	One-Step Procedure De-icing / Anti-icing	Two-Step Procedure	
		First Step: De-icing	Second step: Anti-icing (2)
0°C (32°F) and above	Heated mix of fluid and water with a freezing point of at least 10°C (18°F) below OAT	Heated water or a heated fluid / water mixture	Heated mix of fluid and water with a freezing point of at least 10°C (18°F) below OAT
below 0°C (32°F) down to LOUT		Heated fluid / water mixture with a freezing point at OAT or below	

Note 1: Fluids must not be used at temperatures below their lowest operational use temperature (LOUT).

Note 2: To be applied before first-step fluid freezes, typically within 3 minutes. (This time may be higher than 3 minutes in some conditions, but potentially lower in heavy precipitation, colder temperatures, or for critical surfaces constructed of composite materials. If necessary, the second step shall be applied area by area.)

CAUTION:

- This table is applicable for the use of Type I holdover time guidelines in all conditions, including active frost. If holdover times are not required, a temperature of 60 °C (140 °F) at the nozzle is desirable.
- If holdover times are required, the temperature of water or fluid/water mixtures shall be at least 60 °C (140 °F) at the nozzle. Upper temperature limit shall not exceed fluid and aircraft manufacturers' recommendations.
- To use Type I Holdover Times Guidelines in all conditions including active frost, an additional minimum of 1 litre/m² (~2 gal./100 sq. ft.) of heated Type I fluid mixture must be applied to the surfaces after all frozen contamination is removed. This application is necessary to heat the surfaces, as heat contributes significantly to the Type I fluid holdover times. The required protection can be provided using a 1- step method by applying more fluid than is strictly needed to just remove all of the frozen contamination (the same additional amount stated above is required).
- The lowest operational use temperature (LOUT) for a given Type I fluid is the higher (warmer) of:
 - 1) The lowest temperature at which the fluid meets the aerodynamic acceptance test for a given aircraft type, or
 - 2) The actual freezing point of the fluid plus a freezing point buffer of 10 °C (18 °F).
- Wing skin temperatures may differ and, in some cases, be lower than the OAT. A stronger mix (more glycol) may be needed under these conditions.

7.5.1.2. Table 2: Guidelines for the application of Type II and IV fluid / water mixtures (minimum concentrations)

Outside air temperature (OAT) or wing skin temperature (1)	Concentration of neat fluid/water mixture in vol% / vol%		
	One-Step Procedure De-Icing / Anti-Icing	Two-Step Procedure	
		First step: De-Icing	Second step: Anti-Icing (2)
0°C (32°F) and above	100/0, 75/25 or 50/50 heated (3) Type II or IV fluid/water mixture	Heated water or a heated Type I, II or IV fluid/water mixture	100/0, 75/25 or 50/50 Heated or unheated Type II or IV fluid/water mixture
below 0°C (32°F) to -3°C (27°F)	100/0, 75/25 or 50/50 heated (3) Type II or IV fluid/water mixture	Heated Type I, II or IV fluid/water mixture with a freezing point at OAT or below	100/0, 75/25 or 50/50 Heated or unheated Type II or IV fluid/water mixture
below -3°C (27°F) to -14°C (7°F)	100/0 or 75/25 heated (3) Type II or IV fluid/water mixture	Heated Type I, II or IV fluid/water mixture with a freezing point at OAT or below	100/0 or 75/25 Heated or unheated Type II or IV fluid/water mixture
below -14°C (7°F) to LOUT	100/0 heated (3) Type II or IV fluid/water mixture	Heated Type I, II or IV fluid/water mixture with a freezing point at OAT or below	100/0 Heated or unheated Type II or IV fluid/water mixture

Note 1: One step or second step fluids must not be used at temperatures below their lowest operational use temperature (LOUT). First step fluids must not be used below their freezing points. Consideration should be given to the use of Type I fluid when Type II/IV fluid cannot be used due to LOUT limitations (see Table 1 Guidelines for the application of Type I fluid / water mixtures (minimum concentrations)). The LOUT for a given Type II/IV fluid is the higher (warmer) of:

- The lowest temperature at which the fluid meets the aerodynamic acceptance test for a given aircraft type; or
- The actual freezing point of the fluid plus its freezing point buffer of 7 °C (13 °F).

Although some LOUTs are lower than the temperatures stated in the HOT table, holdover times do not apply when anti-icing below the lowest temperature stated in the band.

Note 2: To be applied before first step fluid freezes, typically within 3 minutes. (Time may be longer than 3 minutes in some conditions, but potentially shorter in heavy precipitation, in colder temperatures, or for critical surfaces constructed of composite materials. If necessary, the second step shall be applied area by area.)

Note 3: Clean aircraft may be anti-iced with unheated fluid.

CAUTION:

- For heated fluids, a fluid temperature not less than 60 °C (140 °F) at the nozzle is desirable. When the first step is performed using a fluid/ water mixture with a freezing point at OAT, the temperature at the nozzle shall be at least 60 °C (140 °F) and at least 1 litre/m² (~2 Gals/ 100 ft²) must be applied to the surfaces to be de-iced.
- Upper temperature limit shall not exceed fluid and aircraft manufacturers' recommendations.
- Wing skin temperatures may differ and in some cases may be lower than the OAT. A stronger mix (more glycol) may be needed under these conditions.
- Whenever frost or ice occurs on the lower surface of the wing in the area of the fuel tank, indicating a cold soaked wing, the 50/50 dilutions of Type II or IV shall not be used for the anti-icing step because fluid freezing may occur.
- An insufficient amount of anti-icing fluid may cause a substantial loss of holdover time. This is particularly true when using a Type I fluid mixture for the first step in a two-step procedure.
- Some fluids shall only be used undiluted. For some fluids the LOUT may differ. For details refer to fluid manufacturer's documentation.

7.5.1.3. Table 3: Guideline for Holdover Times for Type I, II and IV fluid mixtures in Active Frost conditions

Outside Air Temperature ^{2,3,4}	Type I Aluminum	Outside Air Temperature ^{3,4}	Outside Air Temperature ^{3,4}	Concentration Fluid/Water By % Volume	Type II	Type IV
-1 °C and above (30 °F and above)	0:45	-1 °C and above (30 °F and above)	-1 °C and above (30 °F and above)	100/0	8:00	12:00
				75/25	5:00	5:00
				50/50	2:00	3:00
below -1 to -3 °C (below 30 to 27 °F)		below -1 to -3 °C (below 30 to 27 °F)	below -1 to -3 °C (below 30 to 27 °F)	100/0	8:00	12:00
				75/25	5:00	5:00
				50/50	1:30	3:00
below -3 to -10 °C (below 27 to 14 °F)		below -3 to -10 °C (below 27 to 14 °F)	below -3 to -10 °C (below 27 to 14 °F)	100/0	8:00	10:00
				75/25	4:00	5:00
below -10 to -14 °C (below 14 to 7 °F)		below -10 to -14 °C (below 14 to 7 °F)	below -10 to -14 °C (below 14 to 7 °F)	100/0	6:00	6:00
				75/25	1:00	1:00
below -14 to -21 °C (below 7 to -6 °F)		below -14 to -21 °C (below 7 to -6 °F)	below -14 to -21 °C (below 7 to -6 °F)	100/0	3:00	6:00
below -21 to -25 °C (below -6 to -13 °F)		below -21 to -25 °C (below -6 to -13 °F)	below -21 to -25 °C (below -6 to -13 °F)	100/0	2:00	4:00
below -25 °C to LOU (below -13 °F to LOU)		below -25 °C (below -13 °F)	below -25 °C (below -13 °F)	100/0	No Holdover Time Guidelines Exist	

NOTES

1. To use the HOTs in this table, ensure that the fluid and dilution being used is listed in the List of Qualified Fluids Tested for Anti-Icing Performance and Aerodynamic Acceptance table (Table 49 - Table 52). Any restrictions on the use of the fluid must be identified and applied.
2. Type I Fluid / Water Mixture must be selected so that the freezing point of the mixture is at least 10 °C (18 °F) below outside air temperature.
3. Ensure that the lowest operational use temperature (LOU) is respected.
4. Changes in outside air temperature (OAT) over longer frost events can be significant; the appropriate holdover time to use is the one provided for the coldest OAT that has occurred between the de/anti-icing fluid application and takeoff.
5. To use the Type III fluid frost holdover times, the fluid brand being used must be known. AllClear AeroClear MAX must be applied unheated.

CAUTION:

- Fluids used during ground de/anti-icing do not provide in-flight icing protection.
- Holdover times in the table above can only be used when De-Icing / Anti-Icing has been done with flaps/slats retracted.
- This table is for departure planning only and should be used in conjunction with pretakeoff check procedures.

7.5.1.4. Table 4: Guideline for Holdover Times for Type I fluid mixtures

Guideline for holdover times for Type I fluid mixtures

Outside Air Temperature ^{1,2}	Freezing Fog, Freezing Mist ³ , or Ice Crystals ⁴	Snow mixed with Freezing Fog ⁵	Very Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Moderate Snow, Snow Grains or Snow Pellets ^{6,8}	Freezing Drizzle ⁹	Light Freezing Rain	Rain on Cold-Soaked Wing ¹⁰	Other ¹¹
-3 °C and above (27 °F and above)	0:11 - 0:17	0:05 - 0:08	0:18 - 0:22	0:11 - 0:18	0:06 - 0:11	0:09 - 0:13	0:02 - 0:05	0:02 - 0:05	CAUTION: No holdover time guidelines exist
below -3 to -6 °C (below 27 to 21 °F)	0:08 - 0:13	0:04 - 0:06	0:14 - 0:17	0:08 - 0:14	0:05 - 0:08	0:05 - 0:09	0:02 - 0:05		
below -6 to -10 °C (below 21 to 14 °F)	0:06 - 0:10	0:03 - 0:05	0:11 - 0:13	0:06 - 0:11	0:04 - 0:06	0:04 - 0:07	0:02 - 0:05		
below -10 °C (below 14 °F)	0:05 - 0:09	0:02 - 0:03	0:07 - 0:08	0:04 - 0:07	0:02 - 0:04				

NOTES

1. Type I fluid/water mixture must be selected so that the freezing point is at least 10 °C (18 °F) below the outside air temperature.
2. Ensure that the lowest operational use temperature (LOUT) is respected.
3. Freezing mist is best confirmed by observation. It is never reported by METAR but can occur when mist is present at 0 °C (32 °F) and below.
4. Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
5. These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate." No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
6. To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
7. Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light." No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
8. Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
9. Includes light, moderate, and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
10. No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
11. Includes heavy snow, ice pellets, moderate and heavy freezing rain, small hail, and hail.

CAUTION:

- Holdover times in the table above can only be used when de-icing/anti-icing has been done with flaps/slats retracted.
- The time of protection will be shortened in heavy weather conditions. Heavy precipitation rates or high moisture content, high wind velocity, or jet blast may reduce holdover time below the lowest time stated in the range. Holdover time may be reduced when aircraft skin temperature is lower than outside air temperature.
- Fluids used during ground de/anti-icing do not provide in-flight icing protection.
- This table is for departure planning only and should be used in conjunction with pretakeoff check procedures.

7.5.1.5. Table 5: Guideline for Generic Holdover Times for Type II Fluids ¹

Outside Air Temperature ²	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ³ , or Ice Crystals ⁴	Snow mixed with Freezing Fog ⁵	Snow, Snow Grains or Snow Pellets ^{6,7,8}	Freezing Drizzle ⁹	Light Freezing Rain	Rain on Cold- Soaked Wing ¹⁰	Other ¹¹
-3 °C and above (27 °F and above)	100/0	0:55 - 1:50	0:20 - 0:40	0:30 - 0:55	0:35 - 1:05	0:25 - 0:35	0:07 - 0:45	CAUTION: No holdover time guidelines exist
	75/25	0:40 - 1:10	0:15 - 0:25	0:15 - 0:30	0:25 - 0:40	0:15 - 0:25	0:04 - 0:25	
	50/50	0:15 - 0:30	0:05 - 0:10	0:07 - 0:15	0:09 - 0:15	0:06 - 0:09		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:30 - 0:45	0:15 - 0:30	0:20 - 0:40	0:20 - 0:45	0:15 - 0:20		
	75/25	0:25 - 0:55	0:09 - 0:15	0:10 - 0:25	0:15 - 0:30	0:08 - 0:15		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:30 - 0:45	0:10 - 0:25	0:15 - 0:30	0:20 - 0:45 ¹²	0:15 - 0:20 ¹²		
	75/25	0:25 - 0:55	0:07 - 0:15	0:09 - 0:20	0:15 - 0:30 ¹²	0:08 - 0:15 ¹²		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:15 - 0:20	0:01 - 0:05	0:02 - 0:07				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:15 - 0:20	0:00 - 0:02	0:01 - 0:03				
below -25 °C to LOU ¹³ (below -13 °F to LOU)	100/0	0:15 - 0:20	0:00 - 0:00	0:00 - 0:01				

NOTES

1.

To use the HOTs in this table, ensure that the fluid and dilution being used is listed in the *Type II Fluids Tested for Anti-Icing Performance and Aerodynamic Acceptance* table (Table 50). Any restrictions on the use of the fluid have to be identified and applied.
2.

Ensure that the lowest operational use temperature (LOU) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
3.

Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
4.

Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
5.

These holdover times are for use in -SNFZFG and SNFZFG. The *Snowfall Intensities as a Function of Prevailing Visibility* table (Table 48) is required to confirm the precipitation intensity is no greater than “moderate”. No holdover times exist if the reported visibility correlates to a “heavy” precipitation intensity.
6.

To determine snowfall intensity, the *Snowfall Intensities as a Function of Prevailing Visibility* table (Table 48) is required.
7.

Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The *Snowfall Intensities as a Function of Prevailing Visibility* table (Table 48) is required to confirm the precipitation intensity is no greater than “light”. No holdover times exist if the reported visibility correlates to a “moderate” or “heavy” precipitation intensity.
8.

Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
9.

Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
10.

No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
11.

Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
12.

No holdover time guidelines exist for this condition below -10 °C (14 °F).
13.

If the LOU is unknown, no holdover time guidelines exist below -25 °C (-13 °F).

CAUTION:

- Holdover times in the table above can only be used when de-icing/anti- icing has been done with flaps/slats retracted.
- The time of protection will be shortened in heavy weather conditions. Heavy precipitation rates or high moisture content, high wind velocity, or jet blast may reduce holdover time below the lowest time stated in the range. Holdover time may be reduced when aircraft skin temperature is lower than outside air temperature.
- Fluids used during ground de-/anti-icing do not provide in-flight icing protection.
- This table is for departure planning only and should be used in conjunction with pretakeoff check procedures.

7.5.1.6. Table 6: Guideline for Generic Holdover Times for Type IV Fluids

Outside Air Temperature ²	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ³ , or Ice Crystals ⁴	Snow mixed with Freezing Fog ⁵	Very Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Moderate Snow, Snow Grains or Snow Pellets ^{6,8}	Freezing Drizzle ⁹	Light Freezing Rain	Rain on Cold-Soaked Wing ¹⁰	Other ¹¹
-3 °C and above (27 °F and above)	100/0	1:15 - 2:15	0:25 - 0:45	1:55 - 2:20	1:00 - 1:55	0:30 - 1:00	0:40 - 1:10	0:20 - 0:35	0:08 - 1:05	CAUTION: No holdover time guidelines exist
	75/25	1:25 - 2:40	0:30 - 0:55	2:05 - 2:25	1:15 - 2:05	0:40 - 1:15	1:00 - 1:20	0:30 - 0:50	0:09 - 1:20	
	50/50	0:30 - 0:55	0:07 - 0:20	1:00 - 1:10	0:25 - 1:00	0:10 - 0:25	0:15 - 0:40	0:09 - 0:20		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:15 - 0:35	0:20 - 0:40	1:45 - 2:05	0:55 - 1:45	0:25 - 0:55	0:25 - 1:10	0:20 - 0:25		
	75/25	0:40 - 1:20	0:25 - 0:50	1:50 - 2:10	1:05 - 1:50	0:30 - 1:05	0:20 - 1:05	0:15 - 0:25		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:15 - 0:35	0:15 - 0:35	1:30 - 1:50	0:45 - 1:30	0:20 - 0:45	0:25 - 1:10 ¹²	0:20 - 0:25 ¹²		
	75/25	0:40 - 1:20	0:20 - 0:45	1:45 - 2:00	0:55 - 1:45	0:25 - 0:55	0:20 - 1:05 ¹²	0:15 - 0:25 ¹²		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:15 - 0:30	0:01 - 0:06	0:30 - 0:45	0:09 - 0:30	0:02 - 0:09				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:15 - 0:30	0:00 - 0:02	0:10 - 0:20	0:03 - 0:10	0:01 - 0:03				
below -25 °C to LOU ¹³ (below -13 °F to LOU)	100/0	0:15 - 0:30	0:00 - 0:01	0:07 - 0:10	0:02 - 0:07	0:00 - 0:02				

NOTES

1. To use the HOTs in this table, ensure that the fluid and dilution being used is listed in the *Type IV Fluids Tested for Anti-Icing Performance and Aerodynamic Acceptance* table (Table 52). Any restrictions on the use of the fluid have to be identified and applied.
2. Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
3. Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
4. Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
5. These holdover times are for use in -SNFZFG and SNFZFG. The *Snowfall Intensities as a Function of Prevailing Visibility* table (Table 48) is required to confirm the precipitation intensity is no greater than “moderate”. No holdover times exist if the reported visibility correlates to a “heavy” precipitation intensity.
6. To determine snowfall intensity, the *Snowfall Intensities as a Function of Prevailing Visibility* table (Table 48) is required.
7. Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The *Snowfall Intensities as a Function of Prevailing Visibility* table (Table 48) is required to confirm the precipitation intensity is no greater than “light”. No holdover times exist if the reported visibility correlates to a “moderate” or “heavy” precipitation intensity.
8. Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
9. Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
10. No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
11. Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 46 provides allowance times for Type IV EG fluids and Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail. If the glycol type is unknown, the allowance times for SAE Type IV PG fluids should be used).
12. No holdover time guidelines exist for this condition below -10 °C (14 °F).
13. If the LOU¹³ is unknown, no holdover time guidelines exist below -25.5 °C (-14 °F).

CAUTION:

- Holdover times in the table above can only be used when de-icing/anti-icing has been done with flaps/slats retracted.
- The time of protection will be shortened in heavy weather conditions. Heavy precipitation rates or high moisture content, high wind velocity, or jet blast may reduce holdover time below the lowest time stated in the range. Holdover time may be reduced when aircraft skin temperature is lower than outside air temperature.
- Fluids used during ground de/anti-icing do not provide in-flight icing protection.
- This table is for departure planning only and should be used in conjunction with pretakeoff check procedures.

7.5.1.7. Table 7: Snowfall Intensities as a Function of Prevailing Visibility

Visibility		Day		Night	
Statute Miles	Meters	-1°C and below 30 °F and below	Above -1°C Above 30 °F	-1°C and Below 30 °F and below	Above -1°C Above 30 °F
≤1/4 (≤3/8)	≤400 (≤600)	Heavy	Heavy	Heavy	Heavy
1/2 (>3/8 to ≤5/8)	800 (>600 to ≤1000)	Moderate	Heavy	Heavy	Heavy
3/4 (>5/8 to ≤7/8)	1200 (>1000 to ≤1400)	Moderate	Moderate	Moderate	Heavy
1 (>7/8 to ≤1 1/8)	1600 (>1400 to ≤1800)	Light	Light	Moderate	Moderate
1 ¼ (>1 1/8 to ≤1 3/8)	2000 (>1800 to ≤2200)	Light	Light	Moderate	Moderate
1 ½ (>1 3/8 to ≤1 5/8)	2400 (>2200 to ≤2600)	Light	Light	Moderate	Moderate
1 ¾ (>1 5/8 to ≤1 7/8)	2800 (>2600 to ≤3000)	Very Light	Light	Light	Light
2 (>1 7/8 to ≤2 ¼)	3200 (>3000 to ≤3600)	Very Light	Very Light	Light	Light
2 ½ (>2 ¼ to ≤2 ¾)	4000 (>3600 to ≤4400)	Very Light	Very Light	Very Light	Very Light
3 (>2 ¾ to ≤3 ¼)	4800 (>4400 to ≤5200)	Very Light	Very Light	Very Light	Very Light
≥3 ½ (>3 ¼)	≥5600 (>5200)	Very Light	Very Light	Very Light	Very Light

NOTES

- The METAR/SPECI reported visibility or flight crew observed visibility will be used with this visibility table to establish snowfall intensity for Type I, II, III, and IV holdover time guidelines, during snow, snow grain, or snow pellet precipitation conditions. This visibility table will also be used when snow, snow grains, or snow pellets are accompanied by blowing or drifting snow, or when snow is mixed with ice crystals or freezing fog in the METAR/SPECI.
- The use of Runway Visual Range (RVR) is not permitted for determining visibility used with the holdover tables.
- Some METARs contain tower visibility as well as surface visibility. Whenever surface visibility is available from an official source, such as a METAR, in either the main body of the METAR or in the Remarks (“RMK”) section, the preferred action is to use the surface visibility value.
- If the visibility is being reduced by snow along with form(s) of obscuration such as fog, haze, smoke, etc., use of the table above may overestimate the actual snowfall intensity. However, use of the snowfall intensity being reported by the weather observer or automated surface observing system (ASOS), from the FMH-1 Table, may underestimate the actual snowfall intensity as it does not directly correlate to the snowfall intensities used when determining holdover times. Use of the visibility table in all snow conditions with or without obscurations is recommended.

CAUTION:

- During snow conditions alone, the use of Table "Snowfall Intensities as a Function of Prevailing Visibility" in determining snowfall intensities does not require pilot company coordination or company reporting procedures since this table is more conservative than the visibility table used by official weather observers in determining snowfall intensities.
- Because the FAA Snowfall Intensities Table, like the FMH-1 Table, uses visibility to determine snowfall intensities, if the visibility is being reduced by snow along with other forms of obscuration such as fog, haze, smoke, etc., the FAA Snowfall Intensities Table does not need to be used to estimate the snowfall intensity for HOT determination during the presence of these obscurations. Use of the FAA Snowfall Intensities as a Function of Prevailing Visibility Table under these conditions may needlessly overestimate the actual snowfall intensity. Therefore, the snowfall intensity being reported by the weather observer or automated surface observing system (ASOS), from the FMH-1 Table, may be used.

7.5.1.8. Usage of Brand Name Holdover Time Tables

- ▶ See Fluid Application Tables and Holdover Times for FOE specific information

7.5.1.9. Brand Name Table for Clariant Safewing MP II Flight

- ▶ See Fluid Application Tables and Holdover Times for FOE specific information

7.5.1.10. Brand Name Table for Kilfrost ABC-S Plus

- ▶ See Fluid Application, Holdover Time Guidelines and Approved Fluids specific information

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7.5.1.11. Brand Name Table for Clariant Safewing MP IV Launch

- ▶ See Fluid application tables and holdover times for FOE specific information

7.5.1.12. Brand Name Table for Kilfrost ABC-K Plus

- ▶ See Fluid Application Tables and Holdover Times for FOE specific information



7.5.2. De-Icing / Anti-Icing Fluids Approved by FLYONE

- ✓ Only fluids listed below are approved for application to all FLYONE aircraft.
- ✓ These fluids meet the legal requirements in general (e.g. SAE AMS1424, SAE AM- S1428, ISO 11075, ISO 11078 and must be on the list of qualified fluids published by the FAA (FAA Holdover Time Guidelines Winter 2024-2025) and have passed material compatibility and storage stability testing according to SMI.
- ✗ Do not apply any non-approved De-Icing / Anti-Icing fluid without approval from GOD FOE (Ground Operation Department FOE)
- ✗ Do not apply any acetate- or format-based fluids for aircraft de-icing because it may significantly shorten the Holdover Times of Type II, III, and IV fluids (thickened fluids) when used thereafter, and may also cause corrosion of aircraft materials.

7.5.2.1. Type I Fluids

The following Type I fluids meet the requirements of SAE AMS 1424 / ISO 11075 and are approved for application to all FLYONE aircraft:

Company Name	Fluid Name
ABAX Industries	DE-950
ADDCON EUROPE GmbH	IceFree I.80
AllClear Systems LLC	Lift-Off P-88
AllClear Systems LLC	Lift-Off E-188
AVIAFLUID International Ltd.	AVIAFLO EG
Aviation Shaanxi High-Tech Physical Co. Ltd.	Cleanwing I
Aviation Xi'an High-Tech	KHF-1
Boryszew S.A.	Borygo Plane I
Clariant GmbH	Octaflo EF Concentrate
Clariant GmbH	Octaflo EG Concentrate
Clariant GmbH	Octaflo Lyod
Clariant GmbH	Safewing MP I 1938 ECO (80)
Clariant GmbH	Safewing MP I 1938 ECO (80) Premix 55% i.g. ready-to-use
Clariant GmbH	Safewing MP I 1938 ECO
Clariant GmbH	Safewing EG I 1996 (88)
Clariant GmbH	Safewing MP I ECO PLUS (80)
Clariant GmbH	Safewing MP I LFD 80
Clariant GmbH	Safewing MP I LFD 88

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Cryotech Deicing Technology	Polar Plus®	
Cryotech Deicing Technology	Polar Plus® LT	
Company Name	Fluid Name	
Cryotech Deicing Technology	Polar Plus® LT (80)	
Cryotech Deicing Technology	Polar Plus® (80)	
Dow Chemical Company	UCAR™ ADF Concentrate	
Dow Chemical Company	UCAR™ ADF XL-54	
Dow Chemical Company	UCAR™ PG ADF Concentrate	
Dow Chemical Company	UCAR™ PG ADF Dilute 55/45	
HOC Industries	SafeTemp® ES Plus	
Inland Technologies	Duragly-E Type I ADF Concentrate	
Inland Technologies	SafeTemp® ES Plus	
Kilfrost	Kilfrost DF Plus	
Kilfrost	Kilfrost DF Plus (80)	
Kilfrost	Kilfrost DF Plus (88)	
Kilfrost	Kilfrost DFsustain™	
LNT Solutions	E188	
LNT Solutions	P180	
LNT Solutions	P188	
Newave Aerochemical Co. Ltd.	FCY-1A	
Newave Aerochemical Co. Ltd.	FCY-1 BIO+	
Oksayd Co. Ltd.	DEFROST EG 88.1	
Shaanxi Cleanway Aviation Chemical Co. Ltd	Cleansurface I	
Velvana a. s.	AIRVEL OK 1	

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HOLDOVER TIMES FOR SAE TYPE I FLUID ON CRITICAL AIRCRAFT SURFACES
COMPOSED PREDOMINANTLY OF ALUMINUM

Outside Air Temperature ^{1,2}	Freezing Fog, Freezing Mist ³ , or Ice Crystals ⁴	Snow mixed with Freezing Fog ⁵	Very Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Moderate Snow, Snow Grains or Snow Pellets ^{6,8}	Freezing Drizzle ⁹	Light Freezing Rain	Rain on Cold-Soaked Wing ¹⁰	Other ¹¹
-3 °C and above (27 °F and above)	0:11 - 0:17	0:05 - 0:08	0:18 - 0:22	0:11 - 0:18	0:06 - 0:11	0:09 - 0:13	0:02 - 0:05	0:02 - 0:05	CAUTION: No holdover time guidelines exist
below -3 to -6 °C (below 27 to 21 °F)	0:08 - 0:13	0:04 - 0:06	0:14 - 0:17	0:08 - 0:14	0:05 - 0:08	0:05 - 0:09	0:02 - 0:05		
below -6 to -10 °C (below 21 to 14 °F)	0:06 - 0:10	0:03 - 0:05	0:11 - 0:13	0:06 - 0:11	0:04 - 0:06	0:04 - 0:07	0:02 - 0:05		
below -10 °C (below 14 °F)	0:05 - 0:09	0:02 - 0:03	0:07 - 0:08	0:04 - 0:07	0:02 - 0:04				

- NOTES
- 1 Type I fluid / water mixture must be selected so that the freezing point of the mixture is at least 10 °C (18 °F) below outside air temperature.
 - 2 Ensure that the lowest operational use temperature (LOUT) is respected.
 - 3 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 4 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 5 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 6 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 7 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 8 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 9 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 10 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 11 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.



HOLDOVER TIMES FOR SAE TYPE I FLUID ON CRITICAL AIRCRAFT SURFACES
COMPOSED PREDOMINANTLY OF COMPOSITES

Outside Air Temperature ^{1,2}	Freezing Fog, Freezing Mist ³ , or Ice Crystals ⁴	Snow mixed with Freezing Fog ⁵	Very Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Light Snow, Snow Grains or Snow Pellets ^{6,7,8}	Moderate Snow, Snow Grains or Snow Pellets ^{6,8}	Freezing Drizzle ⁹	Light Freezing Rain	Rain on Cold-Soaked Wing ¹⁰	Other ¹¹
-3 °C and above (27 °F and above)	0:09 - 0:16	0:02 - 0:04	0:12 - 0:15	0:06 - 0:12	0:03 - 0:06	0:08 - 0:13	0:02 - 0:05	0:01 - 0:05	CAUTION: No holdover time guidelines exist
below -3 to -6 °C (below 27 to 21 °F)	0:06 - 0:08	0:02 - 0:04	0:11 - 0:13	0:05 - 0:11	0:02 - 0:05	0:05 - 0:09	0:02 - 0:05		
below -6 to -10 °C (below 21 to 14 °F)	0:04 - 0:08	0:02 - 0:04	0:09 - 0:12	0:05 - 0:09	0:02 - 0:05	0:04 - 0:07	0:02 - 0:05		
below -10 °C (below 14 °F)	0:04 - 0:07	0:02 - 0:03	0:07 - 0:08	0:04 - 0:07	0:02 - 0:04				

- NOTES
- 1 Type I fluid / water mixture must be selected so that the freezing point of the mixture is at least 10 °C (18 °F) below outside air temperature.
 - 2 Ensure that the lowest operational use temperature (LOUT) is respected.
 - 3 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 4 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 5 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 6 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 7 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 8 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 9 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 10 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 11 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.

7.5.2.2. Type II Fluids

The following Type II fluids meet the requirements of SAE AMS 1428 / ISO 11078 and are approved for application to all FLYONE aircraft:

Company Name	Fluid Name
ABAX Industries	ECOWING AD-2
Aviation Xi'an High-Tech	Cleanwing II
Clariant GmbH	Safewing MP II FLIGHT
Cryotech Deicing Technology	Polar Guard II
Kilfrosth	ABC-K PLUS
Newave Aerochemical Co. Ltd.	FCY-2

TYPE II HOLDOVER TIMES FOR ABAX ECOWING AD-2

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	1:20 - 3:00	0:30 - 0:55	2:25 - 2:55	1:15 - 2:25	0:40 - 1:15	0:40 - 1:40	0:30 - 0:45	0:09 - 1:25	CAUTION: No holdover time guidelines exist
	75/25	1:15 - 1:25	0:20 - 0:40	1:45 - 2:10	0:55 - 1:45	0:25 - 0:55	0:35 - 1:05	0:20 - 0:30	0:04 - 0:50	
	50/50	0:15 - 0:30	0:05 - 0:10	0:35 - 0:40	0:15 - 0:35	0:07 - 0:15	0:09 - 0:15	0:06 - 0:09		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:45 - 2:30	0:25 - 0:45	2:00 - 2:25	1:00 - 2:00	0:30 - 1:00	0:25 - 1:10	0:20 - 0:30		
	75/25	0:35 - 1:55	0:20 - 0:35	1:40 - 2:05	0:50 - 1:40	0:25 - 0:50	0:15 - 0:55	0:20 - 0:35		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:45 - 2:30	0:20 - 0:40	1:45 - 2:05	0:55 - 1:45	0:30 - 0:55	0:25 - 1:10 ¹¹	0:20 - 0:30 ¹¹		
	75/25	0:35 - 1:55	0:20 - 0:35	1:35 - 2:00	0:50 - 1:35	0:25 - 0:50	0:15 - 0:55 ¹¹	0:20 - 0:35 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:15 - 0:40	0:01 - 0:05	0:20 - 0:30	0:07 - 0:20	0:02 - 0:07				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:15 - 0:40	0:00 - 0:02	0:09 - 0:15	0:03 - 0:09	0:01 - 0:03				
below -25 to -27 °C (below -13 to -17 °F)	100/0	0:15 - 0:40	0:00 - 0:00	0:05 - 0:07	0:01 - 0:05	0:00 - 0:01				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE II HOLDOVER TIMES FOR AVIATION XI'AN HIGH-TECH CLEANWING II

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	0:55 - 1:50	0:20 - 0:40	1:35 - 1:55	0:55 - 1:35	0:30 - 0:55	0:35 - 1:05	0:25 - 0:35	0:10 - 0:55	CAUTION: No holdover time guidelines exist
	75/25	0:50 - 1:20	0:20 - 0:35	1:20 - 1:40	0:45 - 1:20	0:25 - 0:45	0:35 - 1:00	0:20 - 0:30	0:07 - 0:50	
	50/50	0:35 - 1:00	0:10 - 0:20	0:50 - 1:05	0:25 - 0:50	0:15 - 0:25	0:20 - 0:40	0:10 - 0:20		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:45 - 1:50	0:15 - 0:30	1:20 - 1:35	0:40 - 1:20	0:25 - 0:40	0:30 - 0:55	0:20 - 0:25		
	75/25	0:40 - 1:45	0:20 - 0:35	1:20 - 1:35	0:45 - 1:20	0:25 - 0:45	0:35 - 0:40	0:20 - 0:25		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:45 - 1:50	0:15 - 0:25	1:05 - 1:20	0:35 - 1:05	0:20 - 0:35	0:30 - 0:55 ¹¹	0:20 - 0:25 ¹¹		
	75/25	0:40 - 1:45	0:20 - 0:35	1:20 - 1:35	0:45 - 1:20	0:25 - 0:45	0:35 - 0:40 ¹¹	0:20 - 0:25 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:20 - 0:50	0:09 - 0:20	0:45 - 1:00	0:25 - 0:45	0:15 - 0:25				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:20 - 0:50	0:05 - 0:10	0:30 - 0:35	0:15 - 0:30	0:07 - 0:15				

- NOTES**
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE II HOLDOVER TIMES FOR CLARIANT SAFEWING MP II FLIGHT

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	3:30 - 4:00	0:45 - 1:10	2:35 - 3:00	1:35 - 2:35	1:00 - 1:35	1:20 - 2:00	0:45 - 1:25	0:10 - 1:30	CAUTION: No holdover time guidelines exist
	75/25	1:50 - 2:45	0:30 - 1:00	2:35 - 3:00	1:20 - 2:35	0:40 - 1:20	1:10 - 1:30	0:30 - 0:55	0:06 - 0:50	
	50/50	0:55 - 1:45	0:09 - 0:20	0:45 - 0:55	0:25 - 0:45	0:10 - 0:25	0:20 - 0:30	0:10 - 0:15		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:55 - 1:45	0:35 - 1:00	2:05 - 2:30	1:15 - 2:05	0:45 - 1:15	0:35 - 1:30	0:25 - 0:45		
	75/25	0:25 - 1:05	0:20 - 0:40	1:45 - 2:10	0:55 - 1:45	0:30 - 0:55	0:25 - 1:10	0:20 - 0:35		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:55 - 1:45	0:30 - 0:50	1:50 - 2:10	1:05 - 1:50	0:40 - 1:05	0:35 - 1:30 ¹¹	0:25 - 0:45 ¹¹		
	75/25	0:25 - 1:05	0:15 - 0:30	1:20 - 1:40	0:40 - 1:20	0:20 - 0:40	0:25 - 1:10 ¹¹	0:20 - 0:35 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:30 - 0:50	0:06 - 0:20	1:10 - 1:40	0:25 - 1:10	0:08 - 0:25				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:30 - 0:50	0:02 - 0:07	0:30 - 0:40	0:10 - 0:30	0:03 - 0:10				
below -25 to -29 °C (below -13 to -20 °F)	100/0	0:30 - 0:50	0:01 - 0:05	0:20 - 0:30	0:07 - 0:20	0:02 - 0:07				

- NOTES**
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE II HOLDOVER TIMES FOR CRYOTECH POLAR GUARD® II

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	2:50 - 4:00	0:50 - 1:25	3:00 - 3:00	1:55 - 3:00	1:05 - 1:55	1:35 - 2:00	1:15 - 1:30	0:15 - 2:00	CAUTION: No holdover time guidelines exist
	75/25	2:30 - 4:00	0:30 - 1:05	3:00 - 3:00	1:25 - 3:00	0:40 - 1:25	1:40 - 2:00	0:40 - 1:10	0:09 - 1:40	
	50/50	0:50 - 1:25	0:07 - 0:20	1:10 - 1:35	0:25 - 1:10	0:10 - 0:25	0:20 - 0:45	0:09 - 0:20		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:55 - 2:30	0:35 - 1:05	2:25 - 2:50	1:25 - 2:25	0:50 - 1:25	0:35 - 1:35	0:35 - 0:45		
	75/25	0:40 - 1:30	0:25 - 0:50	2:20 - 3:00	1:05 - 2:20	0:30 - 1:05	0:25 - 1:05	0:35 - 0:45		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:55 - 2:30	0:30 - 0:50	2:00 - 2:20	1:10 - 2:00	0:40 - 1:10	0:35 - 1:35 ¹¹	0:35 - 0:45 ¹¹		
	75/25	0:40 - 1:30	0:20 - 0:45	2:00 - 2:30	0:55 - 2:00	0:25 - 0:55	0:25 - 1:05 ¹¹	0:35 - 0:45 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:25 - 0:50	0:08 - 0:25	1:35 - 2:15	0:35 - 1:35	0:10 - 0:35				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:25 - 0:50	0:03 - 0:10	0:40 - 0:55	0:15 - 0:40	0:04 - 0:15				
below -25 to -30.5 °C (below -13 to -23 °F)	100/0	0:25 - 0:50	0:02 - 0:05	0:25 - 0:30	0:07 - 0:25	0:02 - 0:07				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE II HOLDOVER TIMES FOR KILFROST ABC-K PLUS

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Snow, Snow Grains or Snow Pellets ^{5,6,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	2:15 - 3:45	0:45 - 1:15	1:00 - 1:40	1:50 - 2:00	1:00 - 1:25	0:20 - 2:00	CAUTION: No holdover time guidelines exist
	75/25	1:40 - 2:30	0:25 - 0:50	0:35 - 1:10	1:25 - 2:00	0:50 - 1:10	0:15 - 2:00	
	50/50	0:35 - 1:05	0:05 - 0:10	0:07 - 0:15	0:20 - 0:30	0:10 - 0:15		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:30 - 1:05	0:40 - 1:10	0:55 - 1:30	0:25 - 1:00	0:15 - 0:35		
	75/25	0:25 - 1:25	0:25 - 0:50	0:35 - 1:05	0:20 - 0:55	0:09 - 0:30		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:30 - 1:05	0:40 - 1:05	0:50 - 1:25	0:25 - 1:00 ¹¹	0:15 - 0:35 ¹¹		
	75/25	0:25 - 1:25	0:25 - 0:50	0:35 - 1:05	0:20 - 0:55 ¹¹	0:09 - 0:30 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:30 - 0:55	0:01 - 0:05	0:02 - 0:07				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:30 - 0:55	0:00 - 0:02	0:01 - 0:03				
below -25 to -29 °C (below -13 to -20 °F)	100/0	0:30 - 0:55	0:00 - 0:00	0:00 - 0:01				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE II HOLDOVER TIMES FOR NEWAVE AEROCHEMICAL FCY-2

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Snow, Snow Grains or Snow Pellets ^{5,6,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold- Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	1:15 - 2:25	0:25 - 0:40	0:30 - 0:55	0:35 - 1:05	0:25 - 0:35	0:08 - 0:45	CAUTION: No holdover time guidelines exist
	75/25	0:50 - 1:30	0:15 - 0:30	0:20 - 0:40	0:25 - 0:45	0:15 - 0:25	0:05 - 0:25	
	50/50	0:25 - 0:35	0:09 - 0:20	0:15 - 0:25	0:10 - 0:20	0:07 - 0:10		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:45 - 1:30	0:15 - 0:30	0:20 - 0:40	0:20 - 0:45	0:15 - 0:20		
	75/25	0:30 - 1:05	0:10 - 0:20	0:15 - 0:25	0:15 - 0:30	0:08 - 0:15		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:45 - 1:30	0:10 - 0:25	0:15 - 0:30	0:20 - 0:45 ¹¹	0:15 - 0:20 ¹¹		
	75/25	0:30 - 1:05	0:08 - 0:15	0:10 - 0:20	0:15 - 0:30 ¹¹	0:08 - 0:15 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:25 - 0:35	0:01 - 0:05	0:02 - 0:07				
below -18 to -25 °C ¹² (below 0 to -13 °F)	100/0	0:25 - 0:35	0:00 - 0:02	0:01 - 0:03				
below -25 to -28 °C (below -13 to -18 °F)	100/0	0:25 - 0:35	0:00 - 0:00	0:00 - 0:01				

- NOTES**
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type II fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

7.5.2.3. Type IV Fluids

The following Type IV fluids meet the requirements of SAE AMS 1428 / ISO 11078 and are approved for application to all FLYONE aircraft:

Company Name	Fluid Name
ABAX Industries	Ecowing AD-49 *
Clariant GmbH	Safewing MP IV LAUNCH
Clariant GmbH	Safewing MP IV LAUNCH PLUS
Cryotech Deicing Technology	Polar Guard Advance
Dow Chemical Company	UCAR™ Endurance EG106 De/Anti-ic- ing Fluid *
Dow Chemical Company	UCAR™ FlightGuard AD-49 *
Inland Technologies	ECO-SHIELD® *
Kilfrosth	ABC-S Plus
Newave Aerochemical Co. Ltd.	FCY-9311

CAUTION: Type IV fluids marked with an "*" must not be used diluted for Anti-Icing.

- Fluid water mixtures 75/25 and 50/50 may be used for De-Icing. But not for Anti-Icing.

TYPE IV HOLDOVER TIMES FOR ABAX ECOWING AD-49

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,6,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	3:20 - 4:00	0:45 - 1:25	3:00 - 3:00	1:55 - 3:00	1:00 - 1:55	1:25 - 2:00	1:00 - 1:25	0:10 - 1:55	CAUTION: No holdover time guidelines exist
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	50/50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:20 - 1:35	0:35 - 1:05	2:55 - 3:00	1:30 - 2:55	0:45 - 1:30	0:25 - 1:25	0:20 - 0:25		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:20 - 1:35	0:30 - 0:55	2:25 - 3:00	1:15 - 2:25	0:40 - 1:15	0:25 - 1:25 ¹¹	0:20 - 0:25 ¹¹		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:25 - 0:40	0:01 - 0:06	0:30 - 0:45	0:09 - 0:30	0:02 - 0:09				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:25 - 0:40	0:00 - 0:02	0:10 - 0:20	0:03 - 0:10	0:01 - 0:03				
below -25 to -26 °C (below -13 to -15 °F)	100/0	0:25 - 0:40	0:00 - 0:01	0:07 - 0:10	0:02 - 0:07	0:00 - 0:02				

NOTES

1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.

2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.

3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.

4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.

5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.

6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.

7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.

8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.

9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.

10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).

11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR CLARIANT SAFEWING MP IV LAUNCH

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	4:00 - 4:00	0:50 - 1:20	2:50 - 3:00	1:45 - 2:50	1:05 - 1:45	1:30 - 2:00	1:00 - 1:40	0:15 - 1:40	CAUTION: No holdover time guidelines exist
	75/25	3:40 - 4:00	0:45 - 1:20	3:00 - 3:00	1:45 - 3:00	1:00 - 1:45	1:40 - 2:00	0:45 - 1:15	0:10 - 1:45	
	50/50	1:25 - 2:45	0:20 - 0:35	1:25 - 1:40	0:45 - 1:25	0:25 - 0:45	0:30 - 0:50	0:20 - 0:25		
below -3 to -8 °C (below 27 to 18 °F)	100/0	1:00 - 1:55	0:40 - 1:05	2:25 - 2:50	1:30 - 2:25	0:55 - 1:30	0:35 - 1:40	0:25 - 0:45		
	75/25	0:40 - 1:20	0:40 - 1:10	2:40 - 3:00	1:30 - 2:40	0:50 - 1:30	0:25 - 1:10	0:25 - 0:45		
below -8 to -14 °C (below 18 to 7 °F)	100/0	1:00 - 1:55	0:35 - 1:00	2:10 - 2:30	1:20 - 2:10	0:50 - 1:20	0:35 - 1:40 ¹¹	0:25 - 0:45 ¹¹		
	75/25	0:40 - 1:20	0:35 - 1:00	2:25 - 2:55	1:25 - 2:25	0:45 - 1:25	0:25 - 1:10 ¹¹	0:25 - 0:45 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:30 - 0:50	0:05 - 0:15	1:15 - 1:45	0:20 - 1:15	0:06 - 0:20				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:30 - 0:50	0:02 - 0:06	0:30 - 0:45	0:09 - 0:30	0:02 - 0:09				
below -25 to -28.5 °C (below -13 to -19 °F)	100/0	0:30 - 0:50	0:01 - 0:04	0:20 - 0:30	0:06 - 0:20	0:01 - 0:06				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
- 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
- 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
- 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
- 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
- 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
- 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
- 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
- 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
- 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
- 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR CLARIANT SAFEWING MP IV LAUNCH PLUS

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	3:55 - 4:00	0:40 - 1:35	3:00 - 3:00	2:05 - 3:00	0:55 - 2:05	2:00 - 2:00	1:00 - 2:00	0:20 - 2:00	CAUTION: No holdover time guidelines exist
	75/25	3:55 - 4:00	0:35 - 1:25	3:00 - 3:00	1:55 - 3:00	0:50 - 1:55	2:00 - 2:00	1:20 - 1:25	0:20 - 1:50	
	50/50	1:15 - 1:50	0:15 - 0:35	1:35 - 2:00	0:45 - 1:35	0:20 - 0:45	0:25 - 1:00	0:15 - 0:20		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:55 - 2:15	0:35 - 1:15	3:00 - 3:00	1:40 - 3:00	0:45 - 1:40	0:25 - 1:35	0:25 - 0:40		
	75/25	0:40 - 2:00	0:30 - 1:05	3:00 - 3:00	1:30 - 3:00	0:35 - 1:30	0:20 - 1:05	0:20 - 0:30		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:55 - 2:15	0:30 - 1:05	3:00 - 3:00	1:25 - 3:00	0:40 - 1:25	0:25 - 1:35 ¹¹	0:25 - 0:40 ¹¹		
	75/25	0:40 - 2:00	0:25 - 0:55	2:55 - 3:00	1:15 - 2:55	0:30 - 1:15	0:20 - 1:05 ¹¹	0:20 - 0:30 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:25 - 0:50	0:05 - 0:20	1:15 - 1:50	0:25 - 1:15	0:07 - 0:25				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:25 - 0:50	0:02 - 0:07	0:30 - 0:45	0:09 - 0:30	0:03 - 0:09				
below -25 to -29 °C (below -13 to -20 °F)	100/0	0:25 - 0:50	0:01 - 0:04	0:20 - 0:30	0:06 - 0:20	0:02 - 0:06				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
- 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
- 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
- 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
- 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
- 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
- 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
- 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
- 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
- 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
- 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR CRYOTECH POLAR GUARD® ADVANCE

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	2:50 - 4:00	0:50 - 1:25	3:00 - 3:00	1:55 - 3:00	1:05 - 1:55	1:35 - 2:00	1:15 - 1:30	0:15 - 2:00	CAUTION: No holdover time guidelines exist
	75/25	2:30 - 4:00	0:30 - 1:05	3:00 - 3:00	1:25 - 3:00	0:40 - 1:25	1:40 - 2:00	0:40 - 1:10	0:09 - 1:40	
	50/50	0:50 - 1:25	0:07 - 0:20	1:10 - 1:35	0:25 - 1:10	0:10 - 0:25	0:20 - 0:45	0:09 - 0:20		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:55 - 2:30	0:35 - 1:05	2:25 - 2:50	1:25 - 2:25	0:50 - 1:25	0:35 - 1:35	0:35 - 0:45		
	75/25	0:40 - 1:30	0:25 - 0:50	2:20 - 3:00	1:05 - 2:20	0:30 - 1:05	0:25 - 1:05	0:35 - 0:45		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:55 - 2:30	0:30 - 0:50	2:00 - 2:20	1:10 - 2:00	0:40 - 1:10	0:35 - 1:35 ¹¹	0:35 - 0:45 ¹¹		
	75/25	0:40 - 1:30	0:20 - 0:45	2:00 - 2:30	0:55 - 2:00	0:25 - 0:55	0:25 - 1:05 ¹¹	0:35 - 0:45 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:25 - 0:50	0:08 - 0:25	1:35 - 2:15	0:35 - 1:35	0:10 - 0:35				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:25 - 0:50	0:03 - 0:10	0:40 - 0:55	0:15 - 0:40	0:04 - 0:15				
below -25 to -30.5 °C (below -13 to -23 °F)	100/0	0:25 - 0:50	0:02 - 0:05	0:25 - 0:30	0:07 - 0:25	0:02 - 0:07				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR DOW INC. UCAR ENDURANCE™ EG106

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	2:05 - 3:10	0:30 - 1:00	2:45 - 3:00	1:20 - 2:45	0:40 - 1:20	1:10 - 2:00	0:50 - 1:15	0:20 - 2:00	CAUTION: No holdover time guidelines exist
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	50/50	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -3 to -8 °C (below 27 to 18 °F)	100/0	1:50 - 3:20	0:25 - 0:50	2:25 - 3:00	1:10 - 2:25	0:35 - 1:10	0:55 - 1:50	0:45 - 1:10		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -8 to -14 °C (below 18 to 7 °F)	100/0	1:50 - 3:20	0:25 - 0:45	2:10 - 2:45	1:05 - 2:10	0:30 - 1:05	0:55 - 1:50 ¹¹	0:45 - 1:10 ¹¹		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:30 - 1:05	0:15 - 0:35	1:45 - 2:15	0:50 - 1:45	0:25 - 0:50				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:30 - 1:05	0:15 - 0:30	1:30 - 1:55	0:40 - 1:30	0:20 - 0:40				
below -25 to -29 °C (below -13 to -20 °F)	100/0	0:30 - 1:05	0:15 - 0:30	1:20 - 1:45	0:40 - 1:20	0:20 - 0:40				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 46 provides allowance times for Type IV EG fluids in ice pellets and small hail).
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR DOW INC. UCAR FLIGHTGUARD™ AD-49

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	3:20 - 4:00	0:45 - 1:25	3:00 - 3:00	1:55 - 3:00	1:00 - 1:55	1:25 - 2:00	1:00 - 1:25	0:10 - 1:55	CAUTION: No holdover time guidelines exist
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	50/50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:20 - 1:35	0:35 - 1:05	2:55 - 3:00	1:30 - 2:55	0:45 - 1:30	0:25 - 1:25	0:20 - 0:25		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:20 - 1:35	0:30 - 0:55	2:25 - 3:00	1:15 - 2:25	0:40 - 1:15	0:25 - 1:25 ¹¹	0:20 - 0:25 ¹¹		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:25 - 0:40	0:01 - 0:06	0:30 - 0:45	0:09 - 0:30	0:02 - 0:09				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:25 - 0:40	0:00 - 0:02	0:10 - 0:20	0:03 - 0:10	0:01 - 0:03				
below -25 to -26 °C (below -13 to -15 °F)	100/0	0:25 - 0:40	0:00 - 0:01	0:07 - 0:10	0:02 - 0:07	0:00 - 0:02				

- NOTES**
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR INLAND TECHNOLOGIES ECO-SHIELD®

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	1:15 - 2:40	0:35 - 1:00	2:25 - 2:50	1:20 - 2:25	0:45 - 1:20	0:40 - 1:30	0:35 - 0:40	0:15 - 1:35	CAUTION: No holdover time guidelines exist
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	50/50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
below -3 to -8 °C (below 27 to 18 °F)	100/0	1:10 - 2:35	0:30 - 0:55	2:05 - 2:30	1:10 - 2:05	0:40 - 1:10	0:50 - 1:25	0:30 - 0:40		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -8 to -14 °C (below 18 to 7 °F)	100/0	1:10 - 2:35	0:25 - 0:50	1:55 - 2:15	1:05 - 1:55	0:35 - 1:05	0:50 - 1:25 ¹¹	0:30 - 0:40 ¹¹		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:30 - 1:00	0:01 - 0:06	0:30 - 0:45	0:09 - 0:30	0:02 - 0:09				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:30 - 1:00	0:00 - 0:02	0:10 - 0:20	0:03 - 0:10	0:01 - 0:03				
below -25 to -25.5 °C (below -13 to -14 °F)	100/0	0:30 - 1:00	0:00 - 0:01	0:07 - 0:10	0:02 - 0:07	0:00 - 0:02				

- NOTES**
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR KILFROST ABC-S PLUS

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	2:10 - 4:00	0:55 - 1:35	3:00 - 3:00	2:05 - 3:00	1:15 - 2:05	1:50 - 2:00	1:05 - 2:00	0:25 - 2:00	CAUTION: No holdover time guidelines exist
	75/25	1:25 - 2:40	0:30 - 0:55	2:05 - 2:25	1:15 - 2:05	0:45 - 1:15	1:00 - 1:20	0:30 - 0:50	0:10 - 1:20	
	50/50	0:30 - 0:55	0:15 - 0:25	1:00 - 1:10	0:30 - 1:00	0:15 - 0:30	0:15 - 0:40	0:15 - 0:20		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:55 - 3:30	0:50 - 1:25	3:00 - 3:00	1:50 - 3:00	1:05 - 1:50	0:25 - 1:35	0:20 - 0:30		
	75/25	0:45 - 1:50	0:30 - 0:50	1:50 - 2:10	1:05 - 1:50	0:40 - 1:05	0:20 - 1:10	0:15 - 0:25		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:55 - 3:30	0:45 - 1:15	2:55 - 3:00	1:45 - 2:55	1:00 - 1:45	0:25 - 1:35 ¹¹	0:20 - 0:30 ¹¹		
	75/25	0:45 - 1:50	0:25 - 0:45	1:45 - 2:00	1:00 - 1:45	0:35 - 1:00	0:20 - 1:10 ¹¹	0:15 - 0:25 ¹¹		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:40 - 1:00	0:01 - 0:06	0:30 - 0:45	0:09 - 0:30	0:02 - 0:09				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:40 - 1:00	0:00 - 0:02	0:10 - 0:20	0:03 - 0:10	0:01 - 0:03				
below -25 to -28 °C (below -13 to -18 °F)	100/0	0:40 - 1:00	0:00 - 0:01	0:07 - 0:10	0:02 - 0:07	0:00 - 0:02				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

TYPE IV HOLDOVER TIMES FOR NEWAVE AEROCHEMICAL FCY 9311

Outside Air Temperature ¹	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist ² , or Ice Crystals ³	Snow mixed with Freezing Fog ⁴	Very Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Light Snow, Snow Grains or Snow Pellets ^{5,6,7}	Moderate Snow, Snow Grains or Snow Pellets ^{5,7}	Freezing Drizzle ⁸	Light Freezing Rain	Rain on Cold-Soaked Wing ⁹	Other ¹⁰
-3 °C and above (27 °F and above)	100/0	1:55 - 4:00	0:25 - 0:55	2:20 - 2:55	1:10 - 2:20	0:35 - 1:10	1:10 - 2:00	0:40 - 1:05	0:15 - 1:25	CAUTION: No holdover time guidelines exist
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	50/50	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -3 to -8 °C (below 27 to 18 °F)	100/0	0:35 - 2:05	0:20 - 0:40	1:50 - 2:20	0:55 - 1:50	0:30 - 0:55	0:35 - 1:20	0:20 - 0:35		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -8 to -14 °C (below 18 to 7 °F)	100/0	0:35 - 2:05	0:20 - 0:35	1:35 - 2:00	0:50 - 1:35	0:25 - 0:50	0:35 - 1:20 ¹¹	0:20 - 0:35 ¹¹		
	75/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
below -14 to -18 °C (below 7 to 0 °F)	100/0	0:30 - 0:55	0:10 - 0:20	1:00 - 1:15	0:30 - 1:00	0:15 - 0:30				
below -18 to -25 °C (below 0 to -13 °F)	100/0	0:30 - 0:55	0:05 - 0:10	0:35 - 0:40	0:15 - 0:35	0:07 - 0:15				
below -25 to -29.5 °C (below -13 to -21 °F)	100/0	0:30 - 0:55	0:05 - 0:10	0:30 - 0:40	0:15 - 0:30	0:06 - 0:15				

- NOTES
- 1 Ensure that the lowest operational use temperature (LOUT) is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
 - 2 Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below.
 - 3 Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
 - 4 These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.
 - 5 To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required.
 - 6 Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 48) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.
 - 7 Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
 - 8 Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
 - 9 No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
 - 10 Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail (Table 47 provides allowance times for Type IV PG fluids in ice pellets and small hail).
 - 11 No holdover time guidelines exist for this condition below -10 °C (14 °F).

7.6. Quality Control

7.6.1. Fluid Quality Control Checks

The check procedures described below are in compliance with SAE AS6285C "Aircraft Ground De-icing/Anti-Icing Processes" and applicable EU regulations.

Calibration and accuracy/functional testing of refractometers, pH meters and viscometers shall be performed periodically and recorded according to the requirements by equipment manufacturer.

7.6.1.1. Fluid Delivery / Acceptance Check

This check shall be performed for each delivery of aircraft de-icing and anti-icing fluids before the first use of the delivered fluid for filling a storage tank or de-icing vehicle tank.

Delivery Documentation

- ✓ The delivery shall be accompanied by a Certificate of Analysis or Certificate of Conformance.
- ✓ For all fluid types, the certificate shall include delivery specifications and test results of the following:
 1. Fluid appearance
 2. Refraction (Refractive Index)
 3. pH
- ✓ For deliveries of Type 11 and IV fluids, the certificate shall also include delivery specifications and test results for laboratory viscosity testing.
- ✓ The documentation and paperwork accompanying the delivery shall be checked to verify the following:
 1. The delivered fluid corresponds to the fluid ordered
 2. The delivered fluid brand name corresponds to product identification labels or tags for each delivery vessel
 3. The delivered fluid concentration corresponds to product identification labels or tags for each delivery vessel
 4. The lot or batch number on delivery documents correlate with other shipping documents provided
 5. The test results noted on the Certificate of Analysis or Certificate of Conformance meet the applicable fluid manufacturer's specifications

Shipment Seals

- ✓ Shipment seals shall be checked to ensure:
 1. The product has not been tampered with
 2. Identification numbers align with those noted on delivery documentation (where applicable).
- ✓ If seals contain identification numbers, the numbers should be noted on acceptance documentation.

Bulk Shipping (e.g. road tankers and rail tankers)

The fluid supplier shall provide an assurance that one of the following has been met prior to loading the bulk shipping container for delivery to the customer:

1. The shipping container and included delivery hoses were cleaned.
2. The previous load consisted of fluid identical to the delivered fluid.

Fluid Samples

- ✓ A fluid sample shall be taken from the delivery vessel.
 1. For bulk shipping containers a sample from each separate compartment is required if applicable.
 2. For deliveries of multiple containers (e.g. totes or drums), only one sample from a common production lot or batch is required.

Fluid Sample Checks

- ✓ The following checks shall be performed on each sample:
 1. Visual examination for:
 - Color
 - Foreign body contamination (e.g. rust particles, debris, etc.)
 2. Refraction Check (refractive index or freezing point) to verify fluid concentration
- ✓ The following checks are optional for each sample. These checks can be helpful if fluid degradation is suspected:
 1. pH check
 2. Field viscosity check or laboratory viscosity test for Type II or IV fluids / All check results shall be within the fluid manufacturer’s specifications.

Nonconformities or Discrepancies

- ✓ Service providers shall have a documented procedure in place on the appropriate action to be taken when irregularities or discrepancies are identified during the fluid delivery documentation checks and fluid sample checks.
- ✓ Fluid manufacturers should have information contained within their documentation outlining specific procedures and/or contact information to assist and provide support to service providers in such occurrences.

7.6.1.2. Fluid Pre-Season and Within-Season Checks

- ✓ Fluids that are applied to the aircraft shall meet the fluid manufacturer’s specification. A program shall be in place that assures the safe use and performance parameters of fluids are always followed and met.
- ✓ One way of complying with this requirement is to carry out a mid-season check.

Type I Fluid

- ✓ Checks shall be performed:
 - At the start of the de icing season
 - On any vehicle or storage tank when fluid contamination or degradation is suspected
- ✓ Fluid samples shall be taken from all de-icing/anti-icing fluid spray nozzles of all de-icing/anti-icing spraying equipment in the most common concentrations used for de-icing/anti-icing, and from all storage tanks in use. For vehicles without a mixing system, the sample may be taken directly from the vehicle pre-mix tank after ensuring that the fluid is at a uniform mixture.
- ▶ Perform the following checks on the fluid samples:
 - Visual examination
 - Refractive Index
 - pH (*)
- * Perform this check if it is suitable to detect degradation of the fluid used.

Type II and Type IV Fluids

- ✓ Checks shall be performed:
 - At the start of the de-icing season
 - On any vehicle or storage tank when fluid contamination or degradation is suspected
 - After equipment maintenance on the fluid pump and spray system that has the potential to affect the quality of the fluid (e.g., pumps, nozzles, etc.)
- ✓ Fluid samples shall be taken from all de-icing/anti-icing fluid spray nozzles of all de-icing/anti-icing spraying equipment for all of the concentrations used for anti-icing and from all storage tanks in use.
- ▶ Perform the following checks:
 - Visual examination
 - Refractive Index
 - pH (*)
- * Perform this check if it is suitable to detect degradation of the fluid used.
- Laboratory viscosity

Fluid Sample Check Requirements

- ✓ Results of the visual, refractive index, and pH checks shall be within the limits set by the applicable fluid manufacturer.
- ✓ Results of the viscosity checks on samples from spray nozzles shall be no lower than the Lowest On-Wing Viscosity (LOWV) and no higher than the Highest On-Wing Viscosity (HOWV). Fluids with a viscosity less than the LOWV shall not be used with holdover time guidelines.
- ✓ Results of the viscosity checks on samples from storage tanks shall be within the limits needed to ensure the viscosity of fluid when applied to aircraft will remain within the LOWV and the HOWV. Any expected degradation during fluid storage and handling and during the use of fluid application equipment must be taken into account.

Note:The LOWV for specific fluids are listed in Transport Canada and FAA holdover time guideline publications. The HOWV for specific fluids are provided by the applicable fluid manufacturer. The LOWV and HOWV are unique for each specific fluid and fluid concentration (i.e., 50%, 75%, and 100%).

- ▶ Take sample as described in Sampling Procedure for De-Icing / Anti-Icing Fluids.
- ▶ Perform the checks according to Fluid Check Methods.

7.6.1.3. Daily Concentration Checks

Fluids or fluid/water mixture samples shall be taken from the deicing/anti-icing equipment nozzles on a daily basis when the equipment is in use

Perform a refractive index check on the samples taken.

The sample shall be protected against precipitation.

Combustion heaters and trucks shall not be operated in confined or poorly ventilated areas to prevent asphyxiation. Requirements for suitable equipment are described in ARP1971.

Equipment without a mixing system:

- ✓ Samples may be taken from the mix tank instead of the nozzle. Ensure the fluid is at a uniform mix.

Equipment with proportional mixing system:

- ✓ Operational setting for the flow and pressure shall be used. Allow the selected fluid concentration to stabilize before taking a sample.

Equipment with automated fluid mixture monitoring system:

- ✓ The interval for refractive index checks has to be determined by the handling company in accordance with the system design.

Type I Fluid from Nozzles

- ✗ Maximum permitted concentration shall not be exceeded.
- ✓ For use in a one-step method and in the second step of a two-step method, the concentration shall be such that the freezing point of the fluid is at least 10 °C (18 °F) below the OAT.
- ✓ For use in the first step of a two-step method, the concentration shall be such that the freezing point of the fluid is at the OAT or below.

Type I Fluid in Tanks

- ✓ The concentration shall be within the “in-service” limits published by the manufacturer for fluid at the applicable concentration.

Type II and IV Fluids

- ✓ For fluids from nozzles and in tanks, the concentration shall be within the “in-service” limits published by the manufacturer for fluid at the applicable concentration.
- ✓ For Type II and IV fluid/water mixtures (50/50 or 75/25), a tolerance range of 0 to +7% from the setting may apply, depending on the product.

7.6.1.4. Check on Directly or Indirectly Heated Type II or IV Fluids

- ✓ SAE Type II and IV deicing/anti-icing fluids, if heated (directly or indirectly), shall be heated in a manner to preclude fluid degradation in storage or application.

The integrity of the fluid following heating shall be checked periodically.

Factors like heating rate and heating time cycles should be considered in determining the frequency of fluid inspections. Refer to the fluid manufacturer's recommendations.

7.6.1.5. Fluid Check Methods

The following checks may be performed by any equivalent method.

Visual Contamination Check

- ▶ Put fluid from the sample into a clean glass bottle.
- ✓ Check for any kind of contamination (e.g., rust particles, debris, rubber, or discoloration, etc.).

Refractive Index Check

- ▶ Perform a functionality test on the Refractometer.
- ▶ Put a fluid drop taken from the sample or from the nozzle onto the test screen of the refractometer and close the cover plate.
- ▶ Read the value on internal scale and use the correction factor given by the manufacturer of the fluid in case the temperature of the refractometer is not 20 °C (68 °F).
- ▶ Compare the value with the refractive index limits to determine concentration.
- ▶ Clean the Refractometer and return it into the protective cover.

pH-Value Check

- ✓ This check may be performed either with pH indicator paper (litmus paper) or with a calibrated or functionally tested pH meter.
- ▶ Read the value and compare with the limits for the fluid.

Note: In the laboratory, this pH check shall be performed with a calibrated or functionally tested pH meter.

Field Viscosity Check

- ✓ This check may be performed using the fluid manufacturer's recommended method, like a falling ball or the Stony Brook device.
- ▶ Read the value and compare with the limits for the fluid.

Laboratory Viscosity Check

- ▶ Perform the viscosity test using the fluid manufacturer's method or AS9968 Compare the viscosity values with the applicable limits.

7.6.2. Sampling Procedure for De-Icing / Anti-Icing Fluids

7.6.2.1. Introduction

To ensure the required fluid quality for the De-Icing / Anti-Icing performance until takeoff the De-Icing / Anti-Icing fluids must be in an 'ex-works' condition and at the correct concentration.

When taking samples:

- ▶ Simulate typical aircraft application to consider possible effects of vehicle/ equipment heating and/ or delivery system components on fluid condition.
- ✓ As Type I fluids are not sensitive to shearing in the De-Icing equipment and at the nozzle, samples may be taken directly from the nozzle without fully opening the nozzle.

7.6.2.2. Method

- ✓ Preferably spray the fluid onto a purpose-built stand with a suitable plate for fluid application and with an associated fluid collection system.
- ✓ In the absence of such a stand you may spray onto a clean polyethylene sheet (approx. 2 m x 2 m) laid directly on the ground.
- ✓ Make sure that the distance between the spray nozzle and the surface is approximately 3 m .
- ▶ Spray the fluid vertically to the surface.
- ✓ If different spray patterns and flow rates are used during routine De-Icing / Anti-Icing operations: Take samples at typical nozzle settings and flow rates.

7.6.2.3. Procedure

To ensure a correct sampling process proceed as follows:

- ✓ Select the required flow rates and spray patterns for the fluid to be sampled.
- ▶ Spray the fluid to purge the lines and check the concentration of a sample taken from nozzle/ gun after purging.

In case that the refractive index shows that the lines are not purged properly:

- ▶ Repeat step above until the required concentration is correct.
- ▶ On certain vehicles it may be necessary to spray more than 50 liters before the lines are purged completely.
- ▶ Direct the fluid onto the sampling surface and spray an adequate amount of fluid to ensure that 1 liter of fluid sample can be taken.
- ▶ During spraying open the nozzle to the typical setting.

If the nozzle is not opened wide enough the fluid can be severely sheared.

- ▶ Where a polyethylene sheet is used for sampling purposes carefully lift the corners of the sheet and collect 1 liter of fluid into a clean and dry bottle.
- ▶ Fill the bottle completely to avoid bubbles in the fluid caused by shaking.

Reference Fluid

For reference purposes:

- ▶ Take a 1 liter sample of the fluid from the storage facility.
- ▶ Take a 1 liter sample from the fluid tank of the De-Icing / Anti-Icing equipment/ vehicle being sampled.
- ▶ Fill the bottles completely to avoid bubbles in the fluid caused by shaking.

7.6.2.4. Identification of Samples

- ▶ Attach a label to each sample providing the following data:
 - Brand name and Type of fluid (e.g. Kilfrost ABC-S / Type IV)
 - Identification of the De-Icing / Anti-Icing equipment (e.g. Elephant Beta DT04)
 - Detail where the sample was taken from (e.g. nozzle, storage tank or equipment / vehicle tank)
 - Fluid / Water Mixture Ratio (e.g. 100/0, 75/25, 50/50)
 - Date sample was taken
 - Station
 - Name of Handling Company

7.6.2.5. Checks of De-Icing / Anti-Icing fluids

Responsibility

It is the duty of any company offering the De-Icing / Anti-Icing to provide proper Deicing / Anti-Icing fluid, i. e. to care for all fluid checks according to the regulations of Fluid Quality Control Checks.

Where a De-Icing / Anti-Icing Company performs the De-Icing / Anti-Icing:

- ✓ / Make sure that the De-Icing / Anti-Icing Company has the fluids checked on its behalf.

Frequency of laboratory checks

Fluids that are applied to the aircraft shall meet the fluid manufacturer’s specification. A program shall be in place that assures the safe use and performance parameters of fluids are always followed and met.

- ✓ In addition to the various fluid checks at the airport and in line with SAE AS6285C "Aircraft Ground Deicing/Anti-Icing Processes", fluids must be checked according to

7.6.2.6. Fluid Pre-Season and Within-Season Checks.

Qualified laboratories

Following laboratories may be used:

- fluid manufacturers' laboratories (contact via customer service of fluid supplier),
- De-Icing company's own laboratory,
- independent local or national laboratory
- Make sure that the checks, especially the laboratory viscosity check, are performed according to the standards of Fluid Check Methods, and that these standards are stated on the check reports.

Otherwise, an evaluation of the reports may be difficult.

Shipping

Before shipping any De-Icing / Anti-Icing fluid samples for check:

- ✓ Make sure that the fluids are listed in De-Icing / Anti-Icing Fluids Approved .
- Send the samples, each taken and each labeled according to Sampling Procedure for De-Icing / Anti-Icing Fluids, to one of the laboratories.

Attach an order letter with invoice address to the shipment.

- ✕ De-Icing / Anti-Icing fluid samples of all fluids approved for FLYONE, subsidiaries and partners are not considered to be 'dangerous goods', as they do not meet the classification criteria for class 3 (flammable liquids) or any other class.

7.6.2.7. [open]

7.6.2.8. IATA De-Icing / Anti-Icing Quality Control Pool (IATA DAQCP)

FLYONE are not part of the IATA De-Icing / Anti-Icing Quality Control Pool (DAQCP).

7.7. References and Definitions

7.7.1. References

Fluid standards Wherever in this document fluid Types I, II or IV are indicated, this always refer to the latest version of the applicable SAE fluid types. (For example: Type I fluid refers SAE Type I per AMS 1424. Type II fluid refers to SAE Type II per AMS 1428, etc.).

ISO

See also <http://www.iso.ch>

- ISO 11075, Aircraft -- De-icing/anti-icing fluids -- ISO type I
- ISO 11076, Aircraft -- De-icing/anti-icing methods on the ground
- ISO 11077, Aircraft ground equipment -- De-icers -- Functional requirements
- ISO 11078, Aircraft -- De-icing/anti-icing fluids -- ISO types II, III and IV

SAE

See also <http://www.sae.org>

- AMS1424P " De-Icing / Anti-Icing fluid, Aircraft, SAE Type I"
- AMS1424/1 " De-Icing / Anti-Icing fluid, Aircraft SAE Type I Glycol (Conventional and Non-Conventional) Based"
- AMS1424/2 " De-Icing / Anti-Icing fluid, Aircraft SAE Type I Non-Glycol Based"
- AMS1428K "Fluid, Aircraft De-Icing / Anti-Icing, Non Newtonian, (pseudoplastic), SAE Types II and IV"
- AMS1428/1 "Fluid, Aircraft De-Icing / Anti-Icing, Non-Newtonian (Pseudoplastic), SAE Types II, III, and IV Glycol (Conventional and Non-Conventional) Based"
- AMS1428/2 "Fluid, Aircraft De-Icing / Anti-Icing, Non-Newtonian (Pseudoplastic), SAE Types II, III, and IV Non-Glycol Based"
- AS5537 "Weather Support to Deicing Decision Making (WSDDM) Winter Weather Nowcasting System"
- AS5635 "Message Boards (Deicing Facilities)"
- AS5681B "Minimum Operational Performance Specification for Remote On-Ground Ice Detection Systems"
- AS5900C "Standard Test Method for Aerodynamic Acceptance of AMS1424 and AMS1428 Aircraft Deicing/Anti-Icing Fluids"
- AS5901C "Water Spray and High Humidity Endurance Test Methods for SAE AM- S1424 and SAE AMS1428 Aircraft Deicing/Anti-icing Fluids"
- AS6285C "Aircraft Ground Deicing/Anti-Icing Processes"
- AS6286A "Aircraft Ground Deicing/ Anti-Icing Training and Qualification Program"
- AS6332 "Quality Assurance Programm for Deicing/Anti-icing of Aircraft on the Ground"
- AS9968 "Laboratory Viscosity Measurement of Thickened Aircraft Deicing/Anti-icing Fluids with the Brookfield LV Viscometer"
- ARP1971C "Aircraft De-Icing vehicle - self-propelled"
- ARP4902P "Design of Aircraft Deicing Facilities"
- ARP5058A "Enclosed Operator's Cabin for Aircraft Ground Deicing Equipment"
- ARP5149C "Training Program Guidelines for Deicing/Anti-Icing of Aircraft on Ground"
- ARP5646A "Quality Program Guidelines for De-Icing / Anti-Icing of Aircraft on the Ground"
- ARP5660A " De-Icing Facility Operational Procedures"
- ARP6257 "Aircraft Ground De/Anti-Icing Communication Phraseology for Flight and Ground Crews"
- ARP6852C "Methods and Processes for Evaluation of Aerodynamic Effects of SAE- Qualified Aircraft Ground Deicing/Anti-icing Fluids"
- AIR1335B "Ramp De-Icing"
- AIR5704 "Field Viscosity Test for Thickened Aircraft Anti-Icing Fluids"
- AIR6232 "Aircraft Surface Coating Interaction with Aircraft Deicing/Anti-Icing Fluids"
- AIR6284 "Forced Air or Forced Air/Fluid Equipment for Removal of Frozen Contaminants"
- ASTM D2196 "Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational (Brookfield Type) Viscometer"

7.7.2. Definitions & Abbreviations

Active frost

Active frost is a condition when frost is forming. Active frost occurs when the aircraft surface is

- at or below 0°C (32°F), and
- at or below dew point

ADF

Aircraft De-Icing / Anti-Icing Fluid.

Anti-Icing

Precautionary procedure which provides protection against formation of frost or ice and accumulation of snow or slush on treated surfaces of the aircraft for a limited period of time (holdover time).

Anti-Icing fluid

- Mixture of water and Type I fluid, or
- Premix Type I fluid
- Type II or Type IV fluid, or
- Mixture of water and Type II or Type IV fluid

Mixtures of Type I fluid and water must be heated to ensure a temperature of 60°C (140°F) minimum at the nozzle.

APU

Auxiliary Power Unit

ARINC

Aeronautical Radio, Incorporated (www.arinc.com)

Buffer (freezing point buffer)

The difference between the Outside Air Temperature (OAT) and the freezing point of the fluid used.

Celsius

°C, degrees Celsius. To obtain °F (degrees Fahrenheit); °F = (°C x 9/5) + 32

Change of State

The transformation of water from one form (e.g., solid (ice), liquid, or gaseous (water vapor), to any other form).

- Condensation: the change of water vapor to liquid
- Evaporation: the change of liquid water to water vapor
- Freezing: the change of liquid water to ice
- Melting: the change of ice to liquid water
- Sublimation: the change of (1) ice to water vapor or (2) water vapor to ice (also called deposition)

Check

An examination of an item against a relevant standard by a trained and qualified person.

Clear Ice

The formation of a layer or mass of ice which is relatively transparent because of its homogeneous structure and small number and size of air spaces. Factors, which favor clear icing, are large drop size, rapid accretion of super cooled water and slow dissipation of latent heat of fusion. Aircraft are most vulnerable to this type of build-up, when:

- 1. wing temperatures remain well below 0 °C (32 °F) during the turnaround/transit
- 2. ambient temperatures between -2 °C and +15 °C are experienced
- 3. precipitation occurs while aircraft is on the ground and/or
- 4. frost or ice is present on lower surface of either wing.

Note: Clear ice can form at other temperatures if conditions (a), (c), and (d) exist.

Cold Front

Any non-occluded front, which moves in such a way that colder air replaces warmer air.

Cold soak effect

The wings of an aircraft are said to be 'cold soaked' when they contain very cold fuel as a result of having just landed after a flight at high altitude or from having been refuelled with very cold fuel.

Whenever precipitation falls on cold soaked aircraft when on the ground, clear ice may occur. Even in outside air temperatures between -2°C and +15°C, ice or frost can form in the presence of visible moisture or high humidity if the aircraft structure / surface remains at 0°C or below.

Clear ice is very difficult to detect visually and may break loose during or after take-off.

The following factors contribute to cold soaking:

- Temperature and quantity of fuel in fuel cells
- Type and location of fuel cells
- Duration at high altitude flights
- Temperature of refueled fuel
- Time since refueling

Cold Soaking

Ice can form even when the outside air temperature (OAT) is well above 0 °C (32 °F). An aircraft equipped with wing fuel tanks may have fuel that is at a sufficiently low temperature such that it lowers the wing skin temperature to below the freezing point of water. If an aircraft has been at a high altitude, where cold temperature prevails, for a period of time the aircraft's major structural components such as the wing, tail, and fuselage will assume the lower temperature, which will often be below the freezing point. This phenomenon is known as cold soaking. While on the ground, the cold soaked aircraft will cause ice to form when liquid water, either as condensation from the atmosphere or as rain, comes in contact with cold soaked surfaces.

Cold Soaked Clear Ice

This is the formation of ice, normally in the area of the wing fuel tanks, caused by the cold soak effect. Clear ice is very difficult to be detected visually and may break loose during or after take-off, and poses a hazard particularly to aircraft with rear fuselage mounted engines.

Cold Soaked Fuel

This is the formation of frost, normally in the area of the wing fuel tanks, caused by the Frost cold soak effect.

Cold Soaked Wing Ice / Frost

Water, visible moisture, or humidity forming ice or frost on the wing surface, when the temperature of the aircraft wing surface is at or below 0 °C (32 °F).

Contamination

Contamination in this document is understood as all forms of frozen or semi-frozen moisture such as frost, snow, ice, or slush.

Contamination check

Check of aircraft surfaces for contamination to establish the need for De-Icing. De-Icing / Anti-Icing

DAQCP

Quality Control Pool

DASGO

Data Access for Ground Operations

De-Icing

Procedure by which frost, ice, slush, or snow is removed from an aircraft in order to provide clean surfaces.

De-Icing / Anti-Icing

Combination of the procedures described in De-Icing and Anti-Icing. It may be performed in one or two steps.

De-Icing fluid

- Heated water, or
- Mixture of water and Type I fluid, or
- Premix Type I fluid
- Type II or Type IV fluid, or
- Mixture of water and Type II or Type IV fluid

De-Icing fluid is normally applied heated in order to ensure maximum efficiency.

Dew Point

The temperature to which a sample of air must be cooled, while the amount of moisture and barometric pressure remain constant, in order to attain saturation with respect to water.

Fahrenheit

°F, degrees Fahrenheit. To obtain °C (degrees Celcius); °C = 5/9 x (°F - 32)

FP

Freezing Point.

Freezing drizzle

Fairly uniform precipitation composed exclusively of fine drops (diameter less than 0.5 mm (0.02 inch)) very close together which freezes upon impact with the ground or other exposed objects.

Freezing fog

A suspension of numerous tiny water droplets which freezes upon impact with the ground or other exposed objects, reducing the horizontal ground visibility to less than 1 km (5/8 mile).

Freezing rain

See below for 'Light freezing rain' and 'Moderate and heavy freezing rain'.

Hail

Precipitation of small balls or pieces of ice with a diameter ranging from 5 to > 50 mm (0.2 to > 2.0 inch) falling either separately or agglomerated.

Frost / Hoarfrost

Ice crystals that form from ice saturated air at temperatures below 0°C (32°F) by direct deposition on the ground or other exposed objects.

Holdover time (HOT)

Estimated time for which an anti-icing fluid will prevent formation of frost or ice, and the accumulation of snow on the treated surfaces of an aircraft.

Ice pellets / Small hail

Precipitation of transparent (grains of ice), or translucent (small hail) pellets of ice, which are spherical or irregular, and which have a diameter of 5 mm (0.2 inch) or less. The pellets of ice usually bounce when hitting hard ground.

Light freezing rain

Precipitation of liquid water particles which freezes upon impact with the ground or other exposed objects, either in form of drops of more than 0.5 mm (0.02 inch) or smaller drops which, in contrast to drizzle, are widely separated. Measured intensity of liquid water particles is up to 2.5 mm/hour (0.1 inch/hour) or 25 grams/dm2/hour with a maximum of 0.25 mm (0.01 inch) in 6 minutes.

Lowest operational use temperature (LOUT)

The Lowest Operational Use Temperature is the higher (warmer) of:

- the lowest temperature at which the fluid meets the aerodynamic acceptance test (determined by the wind tunnel test), or
- the freezing point of the fluid plus the freezing point buffer of 10°C for Type I fluid and 7°C for Type II or type IV fluids (determined by the climatic chamber test)

METAR

Meteorological Report (local), also METREP, SPECI, AUTO-METAR. Reported normally every 30 minutes. Includes a possible TREND-forecast. Informs of the current weather situation.

An example report:

SA EFHK 090720 26006KT -SN 5000 SCT006 BKN008 M02/M03 Q0998 NOSIG 1529//75 2229//75=

SA = METAR report

EFHK = ICAO Airport code, Map area E Finland Helsinki-Vantaa

090720 = Observation day (09) and time (0720), UTC

26006KT = Wind (260 ° and 06 Knots)

-SN = Light snow

5000 = Visibility (m)

SCT006 = Clouds (coverage and height) BKN008= Clouds (coverage and height)

M02/M03 = Temperature (-2 °C) and dew point (-3 °C) Q0998= Air pressure (QNH 998 hPa)

NOSIG = TREND forecast (no significant changes) 1529//75= SADIS-group

2229//75 = SADIS -group

= = End of report

Moderate and heavy freezing rain

Precipitation of liquid water particles which freezes upon impact with the ground or exposed objects, either in form of drops of more than 0.5mm (0.02 inch) or smaller drops which, in contrast to drizzle, are widely separated. Measured intensity of liquid water particles is more than 2.5 mm/hour (0.1 inch/hour) or 25 grams/dm2/hour.

Negative buffer

A negative buffer exists when the freezing point of a De-Icing fluid is above the OAT

OAT

Outside Air Temperature.

Rain and snow

Precipitation in the form of a mixture of rain and snow.

Rain (or high humidity) on cold-soaked wing

Water, visible moisture, or humidity forming ice or frost on the wing surface, when the temperature of the aircraft wing surface is at or below 0°C (32°F).

Relative Humidity

The ratio of the existing amount of water vapor in the air at a given temperature to the maximum amount that could exist at that temperature (usually expressed in percent).

Rime ice

Small frozen water droplets, spherical opaque / milky granular appearance looking similar to frost in a freezer. Typically rime ice has low adhesion to the surface and its surrounding rime ice particles.

Saturation

The condition of the atmosphere when actual water vapor present is the maximum possible at existing temperatures.

Slush

Snow or ice that has been reduced to a soft watery mixture by rain, warm temperatures and / or chemical treatment.

Snow

Precipitation of ice crystals, most of which are branched, star-shaped or mixed with unbranched crystals. At temperatures higher than -5°C (23°F) the crystals are generally agglomerated into snowflakes.

Snow grains

Precipitation of very small white and opaque particles of ice that are fairly flat or elongated with a diameter of less than 1 mm (0.04 inch). When snow grains hit hard ground, they do not bounce or shatter.

For holdover time purposes treat snow grains as snow.

Snow pellets

Precipitation of white, opaque particles of ice. The particles are round or sometimes conical. Their diameter ranges from about 2-5 mm (0.08-0.2 inch). Snow pellets are brittle, easily crushed; they bounce and may break on hard ground.

For holdover time purposes treat snow pellets as snow.

TAF

Terminal Area Forecast for the airport (including changes). Valid for 9H/18H or as long as the airport is open. Renewed every 3/6 hours.

An example forecast report:

FC EFHK 090500 090615 22013KT 6000 -RASN BKN006 TEMPO 0610 2000
-DZ BKN004 BECMG 1012 33010KT 9999 SCT010 BKN030 TEMPO 1014 5000 - SNRA BKN007 =
FC = TAF
090500 = Time when forecast prepared
090615 = Time valid, Day 09 between 06 to15 UTC
22013KT = Wind
-RASN = Light rain and snow (slush)
6000 = Visibility (m)
BKN/SCT = Cloud coverage and height TEMPO = Temporary change (time when)
2000 = Visibility (m)
-DZ = Light drizzle
BECMG = Becoming (time when)
33010KT = Wind
9999 = Visibility (not stated, better than 10 Km)
-SNRA = Light snow and rain (slush/sleet, snow dominating)
= = End of report

TREND Forecast (time based on METAR report)

SIGMET Significant Meteorological Report

SWC Significant weather chart

AIREP SPECIAL Pilot Report

TLB

Technical Log Book.

Warm Front

Any non-occluded front, which moves in such a way that warmer air replaces colder air.

Water Vapor

Water in the invisible gaseous form.

Note: Intensity in MET reports is defined according to horizontal visibility.

7.8. Special Procedures

7.8.1. Aircraft Ground De/Anti-Icing Communication Phraseology for Flight and Ground Crews

7.8.1.1. Ground-to-Cockpit Communication in English General

Note: During De-Icing / Anti-Icing operations with engines running, both verbal and visual communications shall be utilized and positive control maintained during the De-Icing / Anti-Icing operation.

- ▶ Coordinate the whole process between Commander and ground personnel performing the De-Icing / Anti-Icing treatment.
- ✓ This coordination must include the fluid type, mixture rate, the surfaces and parts of the aircraft which have to be treated, and other special or non-standard procedures.
Refer to Interruption of De-Icing / Anti-Icing treatment and communication phraseology (further below) in case of interrupted operations.
- ✓ The ANTI-ICING CODE must be given after all de-icing equipment is cleared from aircraft and all checks including the Post De-Icing / Anti-icing Checks are made.

Normal Operation - Standard Phraseology

Words in parentheses indicate that specific information, such as a level, a place, or a - time, etc., must be inserted to complete the phrase, or alternatively that optional phrases may be used. Words in square parentheses indicate optional additional words or information that may be necessary in specific instances.

Circumstances	Cockpit	Ground
Prior to deicing/anti-icing: aircraft configuration confirmation		(aircraft call sign) STANDING BY TO DEICE CONFIRM PARKING BRAKES SET AND ADVISE TREATMENT REQUIRED
	[affirm] PARKING BRAKES SET AND REQUEST (type of de/anti-icing and areas to be treated)	
		HOLD POSITION AND CONFIRM AIRCRAFT CONFIGURED
	[affirm] AIRCRAFT CONFIGURED,-	
	-	DEICING STARTS NOW.
Upon concluding deicing/ anti-icing procedure		(aircraft call sign) DEICING COMPLETE; ADVISE WHEN READY FOR INFORMATION ANTI-ICING CODE (appropriate anti-icing code) 1) TYPE OF FLUID (Type I, II or IV) AT PERCENT OF MIX FOR TYPE II or IV 2) COMPLETE NAME OF ANTI-ICING FLUID 3) HOLDOVER TIME STARTED AT (local time) 4) POST DEICING CHECK COMPLETED. Note: Anti-icing code example: A deicing/anti-icing procedure whose last step is the use of a mixture of 75% of a Type II fluid and 25% water, commencing at 13:35 local time, is reported and recorded as follows: Aircraft de-iced anti-iced , Antilcing type II (manufacture’s name and brand of anti-icing fluid) at 75% started at 13:35 local time, Post De-icing / Antilcing Check completed
	[affirm] ANTI-ICING CODE- (appropriate anti-icing code)	

Circumstances	Cockpit	Ground
All-clear after deicing / antiicing	-	(aircraft call sign) PERSONNEL AND EQUIPMENT ARE CLEAR OF AIRCRAFT (followed by handoff instructions.)

Local area contamination (partial treatment)

Circumstances	Cockpit	Ground
Local area contamination (partial treatment)		LOCAL AREA DEICING ONLY. HOLDOVERTIME DOES NOT APPLY

Interrupted Operations

A deicing/anti-icing treatment should be continuous and as short as possible. If a treatment is interrupted (for example, a truck runs out of fluid), the aircraft commander shall be immediately informed stating:

- 1. The reason for interruption
- 2. The actions to be taken (in consultation with the commander);
- 3. The expected time of delay.

Circumstances	Cockpit	Ground
Interrupted operations		(aircraft call sign) TREATMENT INTERRUPTED: • REASON FOR INTERRUPTION; (truck inoperative, low in fluid, etc.) • ACTIONS TO BE TAKEN (in consultation with the commander) • EXPECTED TIME OF DELAY. • INFORM THE COMMANDER OF FURTHER TREATMENT TO BE CARRIED OUT, INCLUDING ANY SURFACES REQUIRING RE-TREATMENT (IN RELATION TO HOLDOVER TIME). Carry out treatment as agreed

Abnormal Occurrences

Circumstances	Cockpit	Ground
For proximity sensor on the deicing equipment activation		(aircraft call sign) BE ADVISED EQUIPMENT PROXIMITY ACTIVATION ON (significant point on aircraft). Either: • NO VISUAL DAMAGE OBSERVED or • DAMAGE (description of damage) OBSERVED [SAY INTENTIONS]
For other aircraft having an emergency on the deicing bay or slot		EMERGENCY IN DEICING BAY/SLOT (deicing bay/slot number). Either: • SHUT DOWN ENGINES or • STAND BY FOR FURTHER INSTRUCTIONS

7.8.2. Fan Blade De-Icing using Hot Air

7.8.2.1. Equipment

According to aircraft manufacturer’s manuals, de-icing with hot air must be performed with low flow hot air sources such as Air Conditioning Units, Cabin Heaters, or any other Hot Air Units.

- ✓ Make sure that the temperature at the engine inlet does not exceed 55° C.

WARNING: Risk of personal injuries or aircraft damage!

- ✗ Do not use air starter or mounted jet engines.

Pressure on loose held hoses, blast and temperature cannot be controlled and exceed both job safety and technical limits.

7.8.2.2. Procedure

Request

The Commander must determine whether fan blade De-Icing is required. If the Commander is not available, fan blade De-Icing may also be requested by qualified ground staff.

Safety Precautions

Observe following safety precautions during fan blade De-Icing:

- ✓ Make sure that there are no foreign objects in the engine inlet which may damage the engine.
- ▶ Inform the Cockpit Crew before starting the process.
- ▶ Make sure that only trained and qualified staff perform this task.

Procedure

- ▶ Position the hot air unit preferably in front of the engine.
- ▶ If loose snow is evident it may be removed by using a broom with soft bristles before De-Icing with hot air.
- ▶ Focus the hot air on the fan blades.
- ▶ Remove any of the frozen deposits that may have been bonded to the fan blades, including the rear side of the fan blades.
- ▶ Remove any of the frozen deposits that may have bonded to the lower surfaces of the engine intake.
- ▶ Remove any melt water which may have collected at the lowest point of the engine intake with a soft cloth to avoid refreezing of the fan blades.

Note: The De-Icing of fan blades will take about 10 to 15 minutes per engine, sometimes longer, depending on the amount of contamination.

Contamination Check

After the fan blade De-Icing:

- ▶ Perform a contamination check to ensure that the fan blades including the rear side are clean and dry, and that they are free to rotate.
- ▶ Perform a visual check to ensure that there are no foreign objects in the engine inlet.
- ✓ Ensure that there is no remaining water in the engine inlet.

Communication

After completion of the fan blade De-Icing:

- ✓ Inform the Cockpit Crew that the fan blade De-Icing was performed successfully.

Extreme weather

- ✓ In extreme weather conditions, when the preferable protection method of engines by covers was not possible, observe following additional regulations.

WARNING: Risk of engine damage due to refreezing of fan blades!

- ✗ No Holdover Times are available for this procedure.
- Fan blades may refreeze due to remaining water after removing the hot air unit.
- ✓ Conditions which increase this risk are:
 - engine cooled down after extended ground or parking time,
 - wind (cold air) may have blown precipitation into the engine during ground or parking time
 - high humidity at outside air temperatures at or below 0°C (32°F).
- ▶ Coordinate with Cockpit Crew and ATC a start-up time as close as operationally possible to the fan blade De-Icing time.

If you are not sure:

- ▶ Repeat the contamination check shortly before starting the engine(s).
- ▶ Repeat the hot air application if necessary.

When such extreme weather conditions are or have been present:

- ✓ Consider the time needed for fan blade De-Icing of all engines.
- ✓ Parallel use of more than one hot air unit is recommended whenever possible.

Examples how to start-up as close as operationally possible to the fan blade De-Icing time:

- ✓ At 4-engine aircraft, de-ice two engines of the same side first.

As soon as the safety areas of this side are free, while repositioning the hot-air unit(s) to the other side: start both de-iced engines without delay.

- ✓ At 2-engine aircraft, when only one hot-air unit is available:
- ✓ Start the de-iced engine without delay.

7.8.3. Removal of Local Area Contamination

- ▶ See Removal of local area contamination for specific information

Local area frost and ice

Such type of contamination will typically be found on the wing and/or stabilizer leading or edges or in patches on the wing and/or stabilizer upper surfaces. It may be caused for example by cold fuel or cold structure, or by freezing moisture during prior approach.

Partial treatment

In these cases, a complete De-Icing is not necessary, but only the contaminated areas require treatment.

Conditions

- ✓ Presence of frost and/or ice is limited to localised areas on the surfaces of the aircraft.
- ✕ No holdover time likely to be required, in other words no precipitation falling or expected.

Procedure

- ▶ Treat the affected area(s) with a heated fluid/ water mix suitable for a One-Step Procedure.
- ✓ Ensure that the same area(s) on the other side of the aircraft are treated as well.
- ▶ Treat both sides of the aircraft identically, even if the contamination is present on one side only:

Same areas, same quantity and type of fluid, same mixture strength.

- ✓ Ensure that both wings are treated symmetrically as described above.

WARNING: Risk of fluid freezing on the aircraft surfaces and aerodynamic problems!

- ✓ Wing skin temperatures may be lower than OAT.
- ▶ Use a mix with a higher concentration of glycol than suggested by the OAT to ensure a sufficient freezing point buffer.

Check

As trained and qualified person releasing the aircraft make sure that:

- ▶ the treatment was done symmetrically, and
- ▶ all contamination has been removed.

Communication

After completion of the local area contamination removal:

- ✓ Notify the Commander about the treatment:

'Local area De-Icing only. Holdover times do not apply.'

7.8.4. De-Icing with Open Passenger Door

De-Icing with Open Passenger Door (SWR and EDW)

Early De-Icing on stand

‘Early De-Icing on stand’ means, that the De-Icing may start when passengers are still boarding and all ramp services are completed. This procedure will apply, provided the following conditions are fulfilled:

- Valid TOI or CCI entry which allows the „early De-Icing on stand" procedure.
- Aircraft is parked at dockstand and jetty is connected.
- In advance coordination required between ground staff (turnaround coordinator) and the CMD. Procedure shall be judged on a flight-by-flight basis, depending on weather and wind conditions.
- CMD shall agree on the application of the "early De-Icing" procedure.
- All ramp services (fuel, water, ext. air conditioning etc.) shall be completed.
- All doors (incl. cargo) shall be closed, except door 1L with the jetty connected.
- Communication between CMD and De-Icing crew is required before initiation and after termination of De-Icing.
- Only De-Icing of wings and/or stabilizer or local wing frost removal allowed.
- De-Icing of fuselage is not allowed.
- Cockpit Crew shall perform the De-Icing checklist "Ref. to Airframe De- / Anti-Icing procedure on ground" except that door 1L is/are still open with the jetty connected.
- After completion of the boarding, the crew may close door 1L even if the "early De-Icing on stand" is still in progress.
- Cockpit Crew shall inform Cabin Crew about De-Icing during boarding.

General

In general, prior to the application of De-Icing / Anti-Icing fluids, all doors and windows should be closed, and all service vehicles and personnel should be clear to prevent:

- galley floor areas being contaminated with slippery De-Icing fluids,
- upholstery becoming soiled,
- vehicles and/ or personnel becoming contaminated with fluid (see General Precautions)

Procedure

However, when ramp activities have been completed and all doors, **except a forward passenger door**, are closed, it is permissible to start De-Icing surfaces well away from the open door, provided that

- ✓ the commander is informed and has agreed to this procedure before spraying,
- ✓ passengers and staff will not be subject to fluid overspray,
- ✓ fuselage in the vicinity of the open door is not treated,
- ✓ wind conditions are such that fluid or fluid overspray cannot reach the passenger door area.
- ✗ This procedure is not recommended if passengers are boarding the aircraft via open stairs.
- ✗ Doors shall not be closed until all ice or snow has been removed from the surrounding area.

7.8.5. Forced Air De-Icing

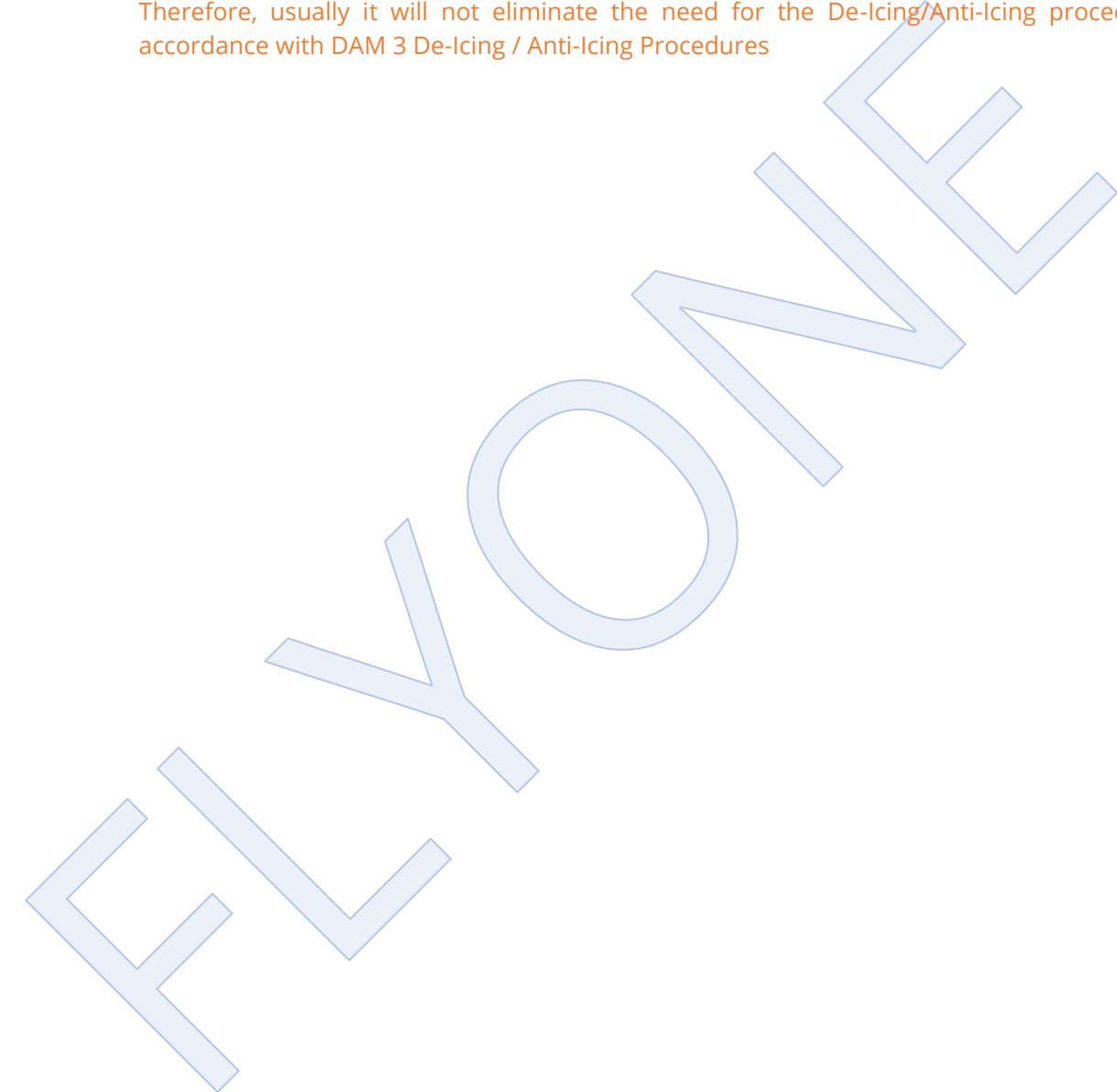
General description

Forced Air utilizes an air stream to remove accumulations of frozen contamination from the aircraft, either with or without fluid. Forced Air may be used as a 'Pre- De-Icing step' prior to the conventional De-Icing / Anti-Icing procedure or, in case of dry and nonadhering snow, for ' De-Icing only'.

After the application of Forced Air:

- ✓ Perform a Post- De-Icing / Anti-Icing Check in accordance with 4.2 Post De-Icing / Anti-Icing Check (PDAC) in order to ensure that the aircraft is free of any contamination.

CAUTION: Forced Air may not remove adhering contaminants and does not provide any holdover time. Therefore, usually it will not eliminate the need for the De-Icing/Anti-Icing procedures in accordance with DAM 3 De-Icing / Anti-Icing Procedures



Safety concerns and precautions

The treatment and removal of contamination must be performed and checked by qualified personnel.
In order to avoid damage caused by high pressure:

- ✓ Maintain a distance of at least 90 cm (3 feet) between the air nozzle and aircraft surfaces
- ✓ Always keep the nozzle at a low angle to aircraft surfaces
- ✓ Direct the air from the nozzle in the same direction that air flows over the aircraft in flight (i.e. front to the rear)
- ✓ Take care to prevent loose debris to impact other aircraft surfaces and personnel, or from being ingested into engines or other inlets or openings (for example pitot tubes, static vents etc.)
- ✓ Take care to prevent removed ice, snow or slush to enter and accumulate in aerodynamically quiet areas (such as control surface hinge areas) or engine inlets as special inspections may then be required
- ✓ Take care to prevent damage by debris when removing ice, snow or slush from the landing gear and wheel well areas
- ✗ Do not direct Forced Air into engines or other inlets or openings or directly onto any angle of attack airflow sensors
- ✗ Never place the nozzle at a right angle to aircraft surfaces
- ✗ Do not direct the air nozzle at the windshield or side windows
- ✗ Do not use holdover time guidelines when using Forced Air with glycol mode, unless a conventional Anti-Icing procedure in accordance with 3 De-Icing / Anti-Icing Procedures has been applied after the Forced Air De-Icing

Notification to the Cockpit Crew

In case only a De-Icing procedure has been performed (no Anti-Icing):

- ▶ Give the following statement to the Commander after the Post- De-Icing / Anti-Icing Check has confirmed that the treated areas are clean: ' De-Icing only. Holdover times do not apply.'

In case a conventional De-Icing / Anti-Icing procedure has been performed after the application of a Forced Air procedure:

- ▶ Report the Anti-Icing Code according to Anti-Icing Code to the Commander.

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7.9. Specifics Procedures

7.9.1. General

7.9.1.1. Central Responsibility

Designation of ‘Deicing Stations’

The designation of deicing stations is mandatory and it is regulated in Station Operations for De- and Anti-Icing.

Only PIC (Pilot in Command) is deciding about the designation of the station to perform De/anti-Icing, whatever this station will be regular, charter, or even a flight form diverted airport.

As part of the briefing package Flight Crews will receive further information concerning whether a station is approved for deicing or not.

An overview of all deicing and non-deicing stations is maintained in the station database.

Subcontracting Responsibility of De-Ic ing / Anti Icing Company

FLYONE will assess the respective provider for operational safety and will not unreasonably withhold the consent.

Responsibility of the Commander

Additionally, the Commander must;

- report the Anti-Icing Code via mandatory reporting system
- enter the Anti-Icing Code into the Technical Log Book or equivalent.

7.9.1.2. Training and Qualification for De-Icing / Anti-Icing

General

Only trained and qualified personnel shall carry out aircraft ground deicing/anti-icing procedures. Theoretical and practical skills training shall be conducted by qualified personnel who have demonstrated the skills to deliver the training and who have competence (knowledge, skill, and experience) in the subjects to be instructed. Assessments shall be conducted by persons who have appropriate knowledge, skills, and experience in the functions being assessed. Training shall be a combination of theoretical (suitable and sufficient information and instruction relating to the topic being trained) and practical skills training to verify the trainees’ understanding of, and ability to complete, the task being trained. Changes to methods and processes shall be communicated to relevant personnel, and additional information and training shall be delivered as appropriate.

Language proficiency

In line with AS6286A “Aircraft Ground Deicing/Anti-icing Training and Qualification Program”, FLYONE expects these personnel to have knowledge of level 4 ‘operational’ according to the ICAO Language Proficiency Rating Scale as laid down in the ICAO Manual on the Implementation of ICAO Language Proficiency Requirements (ICAO Doc 9385).

Qualified De-Icing / Anti-Icing trainers

De-Icing / Anti-Icing training must only be conducted by qualified trainers.

- ✓ Trainers of a De-Icing/Anti-Icing company or another qualified Training organization must have a minimum qualification see below.
- ✓ De-Icing / Anti-Icing training of personnel employed by FLYONE must only be conducted by trainers authorized . To be eligible as trainer, the following requirements must be met:
- ✓ qualified De-Icer, De-Icing supervisor or Post De-Icing / Anti-Icing Checker, or
- ✓ Ramp Agent or qualified handling personnel of a Handling Company, holding all relevant check-outs or equivalent, or
- ✓ certified aircraft engineer / mechanic.

Then to be authorized as trainer:

- ✓ Training and experience according to 1-4-1 Theoretical De-Icing/Anti-Icing Training Topics and 1-4-2 Practical De-icing / Anti-icing Training Topics
- ✓ Train-the-Trainer course including assessment.
- ✓ The trainer qualification is renewed annually with a 2-day de-icing trainer course including a written exam.

Organization of training

If initial or additional instruction or training of personnel is required:

- ▶ Contact your designated Area De-Icing Trainer.

If such a trainer is not available in your area:

- ▶ Contact OGD FLYONE for coordination.
- ▶ In line with AS6286A "Aircraft Ground Deicing/Anti-icing Training and Qualification Program", FLYONE expects this personnel to have knowledge of level 4 'operational' according to the ICAO Language Proficiency Rating Scale as laid down in the ICAO Manual on the Implementation of ICAO Language Proficiency Requirements (ICAO Doc 9385).

Airport regulations (Airport User Manual, traffic rules etc.) must be obtained locally.

- ▶ Training/s may take place at a station/s other than the trainees' home station/s.

Theoretical Deicing / Anti-Icing Training Topics

Theoretical training for the various categories of personnel includes the following topics as a minimum:

Training topics: THEORY														
Deicing (DI-) Qualification Level Reference (SAE standard)											Function			
Recommended elements for training	De-icing vehicle driver	Deicing operator	Supervision of deicing/anti-icing	Pre-/Post deicing/anti-icing inspector	Deicing instructor	Deicing coordinator	Fluid Quality Inspector (Laboratory staff)	Head of deicing training	Flight Crew - winter operations (basics of de-icing/anti-icing)	Cabin Crew (icing awareness)	Surveillance Personnel	Head of Surveillance* or Responsible Manager *	De-icing Coordinator / HCQA Inspector	QUASI Inspector
	DI-L10	DI-L20	DI-L30	DI-L30 B	DI-L40	DI-L50	DI-L60	DI-L70	DI-L80	DI-L80 B				
A. The requirement for aircraft ground deicing/anti-icing														
Basic knowledge of aircraft performance		X	X	X	X	X		X			X	X	X	X
Effects of frozen contamination on aircraft performance		X	X	X	X	X		X	X		X	X	X	X
The Clean Aircraft concept, regulations, and recommendations	X	X	X	X	X	X	X	X	X		X	X	X	X
Meteorological considerations on ice formation		X	X	X	X	X		X	X	X	X	X	X	X
B. The practical methods for aircraft treatment with deicing/anti-icing fluids														
General techniques for removing frozen deposits from aircraft surfaces		X	X		X	X		X	X		X	X	X	X
Deicing/anti-icing by fluids - procedures in general	X	X	X	X	X	X		X	X		X	X	X	X
Basic characteristics of aircraft deicing/anti-icing fluids		X	X	X L	X	X	X	X	X		X	X	X	X
Types of fluid checks required and the equipment for this		X	X	X	X	X	X	X	X		X	X	X	X
Deicing/anti-icing equipment operating procedures	X	X			X	X		X			X	X	X	
Fluid application and the use plus the limitations of Holdover Time (HOT) tables		X	X		X	X		X	X		X	X	X	X

Training topics: THEORY														
Deicing (DI-) Qualification Level Reference (SAE standard)											Function			
Communication procedures and deicing/anti- icing code	X	X	X	X	X	X		X	X		X	X	X	X
Aircraft in general and common critical areas of surfaces and instruments	X	X	X	X	X	X		X	X	X	X	X	X	X
C. Special aspects of aircraft deicing/anti-icing operations														
Safety precautions and human factors	X	X	X	X	X	X	X	X	X		X	X	X	X
Environmental impact and mitigation	X	X	X	X	X	X	X	X	X		X	X	X	X
Deicing facility operation	X	X	X	X	X	X	X	X	X		X	X	X	X
Learning from season operations, audit findings and updated standards for next season		X	X	X	X	X		X	X		X	X	X	X
Local rules and restrictions and airport procedures	X	X	X	X	X	X		X	X	X	X	X	X	
Provisions and procedures for contracted deicing / anti-icing, incl.					X	L						X	X	
Surveillance training											X	X	X	X

De-icing Qualification Levels basically correspond to the SAE standards for training and qualifying staff, but the topics to be included deviate in detail between FLYONE a and SAE: L = required by 5F, but not part of SAE Training Subjects.

* if actively involved in surveillance tasks for de-icing / anti-icing or due to local task assignment by the Responsible Manager.

Local Needs

Not all topics listed above can reasonably be part of a central standard training, for example the topic 'Local rules and restrictions and airport procedures". If a station and airport are too small for an efficient local de-icing / anti-icing training setup, and standard training is received from an organization located elsewhere:

- ✓ Make sure to have a suitable concept how local regulations are trained.
A local workshop with all stakeholders like relevant personnel from FIA station, other air operators, De- and Anti-icing Company, airport operator, Apron Control / ATC may be a good option.
- ✓ Similar may apply to other topics.

Practical De-Icing / Anti-Icing Training Topics

✓ Practical training for the various categories of personnel includes the following topics as a minimum:

Training topics: PRACTICAL ELEMENTS														
Function (SAE standard)											Function			
Recommended elements for training	De-icing vehicle driver	Deicing operator	Supervision of deicing/anti-icing	Pre-/Post deicing/anti-icing inspector	Deicing instructor	Deicing coordinator	Fluid Quality Inspector (Laboratory staff)	Head of deicing training	Flight Crew - winter operations (basics of de-icing/anti-icing)	Cabin Crew (icing awareness)	Surveillance Personnel	Head of Surveillance* or Responsible Manager ST/GU*	De-icing Coordinator / HCQA Inspector	QUASI Inspector
	DI-L10	DI-L20	DI-L30	DI-L30B	DI-L40	DI-L50	DI-L60	DI-L70	DI-L80	DI-L80B				
Overview of deicing/anti-icing equipment and its operation plus facilities (e.g., storage tanks)	X	X			X			X			no requirements			
Cab layout and operation	X	X			X			X						
Deicing unit control panel	X	X			X			X						
Basket operation	X	X			X			X						
Auxiliary engine operation (if fitted)	X	X			X			X						
Fluid Heater Operation (if fitted)	X	X			X			X						
Ground Hose Operation	X	X			X			X						
Pre-Spray Checks	X	X			X			X						
Communication	X	X	X	X	X	X		X						
Vehicle Positioning	X	X			X			X						
Vehicle safety around aircraft	X	X			X			X						
Fluid spraying	X	X			X			X						
Other de/anti-icing procedures	X	X		X	X			X						
Driving the deicing truck	X	X			X			X						
Deicing scenarios (where applicable)	X	X			X			X						
Emergency situations (clarify theoretical elements in practice)	X	X	X		X			X						

Training topics: PRACTICAL ELEMENTS											
Function (SAE standard)										Function	
Quality checks (if applicable)	X	X			X		X	X			
Contamination check	X	X	X	X	X			X			
Spraying and using hot air (Practice as needed)	X	X	X		X			X			
Practical validation	X	X			X			X			

* if actively involved in surveillance tasks for de-icing / anti-icing or due to local task assignment by the Responsible Manager of the respective station.

7.10. De-Icing / Anti-Icing Procedures

7.10.1. Contamination Check

- See Tasks of the Responsible Manager.

7.10.2. Methods

Preventive Anti-Icing 'overnight protection'

This procedure is not used very often due to operational implications. Instead, the 'Pre- De-/ Anti-Icing ('early treatment')' procedure is to be preferred, see further below.

- ✓ Clean aircraft surfaces may be anti-iced already an evening before.

This minimizes overnight ice accumulation and often makes subsequent De-Icing easier.

WARNING: Risk of blocking or impeding flight control systems caused by dried out fluid residues!

- ✗ Basic condition: There is no precipitation present or forecast.
- ✓ This procedure is limited to aircraft types and subject to the same conditions as shown below for the 'Pre-De-/Anti-Icing ('early treatment')' procedure.

Pre-De-/Anti-Icing ('early treatment')

- ✓ Aircraft may be de-/anti-iced several hours prior to departure, when weather conditions allow for a long holdover time, usually at frost.
- Contact FIA OCC and FIA OGD for approval to apply this procedure locally.

WARNING: Risk of blocking or impeding flight control systems caused by dried out fluid residues!

- ✗ Pre-De-/Anti-Icing ('early treatment') is not permitted for all aircraft with non-powered flight controls.

Pre-De-/Anti-Icing ('early treatment') is permitted under following conditions:

- ✓ For treatments carried out without the Cockpit Crew present, a suitably qualified person must confirm the treatment required and the correct configuration of the aircraft.
- ✓ Anti-Icing may only begin max. 3 h before STD.
- ✓ Treatment for Anti-Icing shall be performed with undiluted (100 %) Type II or IV fluid.
- ✓ The application of a diluted Type II or IV fluid with a mixture of 75% / 25% is only allowed for narrow body aircraft and if all influencing factors have been considered (e.g. wing skin temperature, high moisture content, high wind velocity, or jet blast etc.).
- ✓ Make sure by local procedures that the Cockpit Crew receives all information about treatment and checks performed.
- ✓ The person performing the Post De-/Anti-Icing Check must deliver the Anti-Icing code in writing.

If during Pre-De-/Anti-Icing the Cockpit Crew is not on board, and aircraft is sealed:

- ✖ Do not open the aircraft doors.
- ▶ Suitable methods to deliver the signed Anti-Icing code may be:
 - take the Anti-Icing code to the office and deliver it to the Cockpit Crew together with the briefing documents, or
 - in waterproof plastic bag attached to nose gear or adjacent to door 1L, or to the forward passenger stair;

in this case make sure to enter a remark on the cover sheet of the briefing package, showing the location of the Anti-Icing code.

CAUTION: Risk of damage to protective paint coating!
If attaching a plastic bag adjacent or on door 1L:

Make sure to use adhesive tape which does not detach the aircraft paint upon removal

Instructions for Loading and Taxiing

The necessity of snow removal depends on the amount of snow which has accumulated on the horizontal stabilizer and the nacelles:

If the layer of snow is between 0 and 5 cm: No special de-icing procedure for loading and taxiing is necessary.

- ▶ However, any contamination on the aircraft surfaces must be removed according to the Clean aircraft concept' in DAP 1.1 Scope.

If the layer of snow is between 5 and 20 cm: No special de-icing procedure for loading and taxiing is necessary.

- ▶ However, any contamination on the aircraft surfaces must be removed according to the 'Clean aircraft concept' in DAP 1.1 Scope.
- ▶ For loading details refer to GOM Load Control (only applicable for loading staff).

If the layer of snow exceeds 20 cm:

- ✓ Make sure that snow is removed before loading and/or taxiing of the aircraft
- ▶ Any contamination on the aircraft surfaces must be removed according to the 'Clean aircraft concept' in DAP 1.1 Scope.

Request for Snow Removal

If snow removal is required it must be requested by either

- the Cockpit Crew, or
- the Ramp Agent, or
- a qualified and trained person from the ground staff

Sequence for Snow Removal

Whenever snow must be removed due to towing, loading, or taxi limitations:

- ▶ Remove snow in the following sequence:
 - Stabilizer
 - Nacelles
 - Fuselage
 - Wings
- ✓ Due to holdover time limitations remove snow preferably by mechanical means whenever possible (e.g. use brushes or brooms with soft bristles).

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8. OCCURENCES REPORTING

8.1. GENERAL

FLYONE has established non-punitive reporting system to enable possibility to report about all occurrences, unairworthy conditions, potential hazards and other problems.

All events, related to the mandatory occurrences, have to be reported as soon as practicable, but not later than within 48 hours from the event. FLYONE Compliance Monitoring Manager's responsibility is to provide the report to CAA about mandatory occurrence within 72 hours.

The report when applicable must be provided to the organization responsible for the design of the aircraft any incident, malfunction, technical defect, exceeding technical limitations, occurrence that would highlight inaccurate, incomplete or ambiguous information contained in data established.

Beside mandatory occurrences each employee or contractor is encouraged to report any kind of potential hazard or problem, which in his/her opinion is causing or may cause a safety related problem or otherwise impact the company procedures and processes. Occurrence report (Form OMM 7.1), or in case of contractor, its internal report form has to be used for that. The person, who reports about the problem, may sign the form, but also can send a report anonymously. In all cases it is not any intention to blame the person who was involved in occurrence, problem or has reported about it.

Investigation and further treatment of the received report will be processed according to the FLYONE procedures. Completed Ground Incident reports are kept by Compliance Monitoring Manager.

Ground incident reports are kept for 5 years.

The completed occurrence report shall be sent to SMS manager and Compliance Monitoring Manager via FLYONE reporting system which is integrated within IQSMS and is available on

<https://FOE.asqs.net>.

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8.2. MANDATORY OCCURRENCES REPORTING

All events, related to the mandatory occurrences, have to be reported. It may include, but are not limited to:

8.2.1. AIRCRAFT- AND OBSTACLE-RELATED OCCURRENCES

- A collision or near collision, on the ground or in the air, between an aircraft and another aircraft, terrain or obstacle (Obstacle includes vehicle).
- Wildlife strike including bird strike.
- Taxiway or runway excursion.
- Actual or potential taxiway or runway incursion.
- Final Approach and Take-off Area (FATO) incursion or excursion.
- Aircraft or vehicle failure to follow clearance, instruction or restriction while operating on the movement area of an aerodrome (for example: wrong runway, taxiway or restricted part of an aerodrome).
- Foreign object on the aerodrome movement area which has or could have endangered the aircraft, its occupants or any other person.
- Presence of obstacles on the aerodrome
- or in the vicinity of the aerodrome which are not published in the AIP (Aeronautical Information Publication) or by NOTAM (Notice to Airmen) and/or that are not marked or lighted properly.
- Push-back, power-back or taxi interference by vehicle, equipment or person.
- Passengers or unauthorized person left unsupervised on apron.
- Jet blast, rotor down wash or propeller blast effect.
- Declaration of an emergency ('Mayday' or 'PAN' call).

8.2.2. DEGRADATION OR TOTAL LOSS OF SERVICES OR FUNCTIONS

- Loss or failure of communication between:
 - aerodrome, vehicle or other ground personnel and air traffic services unit or apron management service unit;
 - apron management service unit and aircraft, vehicle or air traffic services unit.
- Significant failure, malfunction or defect of aerodrome equipment or system which has or could have endangered the aircraft or its occupants.
- Significant deficiencies in aerodrome lighting, marking or signs.
- Failure of the aerodrome emergency alerting system.
- Rescue and firefighting services not available according to applicable requirements

8.2.3. OTHER OCCURRENCES

- Fire, smoke, explosions in aerodrome facilities, vicinities and equipment which has or could have endangered the aircraft, its occupants or any other person.
- Aerodrome security related occurrences (for example: unlawful entry, sabotage, bomb threat).
- Absence of reporting of a significant change in aerodrome operating conditions which has or could have endangered the aircraft, its occupants or any other person.
- Missing, incorrect or inadequate de-icing/anti-icing treatment.
- Significant spillage during fuelling operations.
- Loading of contaminated or incorrect type of fuel or other essential fluids (including oxygen, nitrogen, oil and potable water).
- Failure to handle poor runway surface conditions.
- Any occurrence, where the human performance has been directly contributed to or could have

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8.2.4. AIRCRAFT- AND AERODROME-RELATED OCCURRENCES

- A collision or near collision, on the ground or in the air, between an aircraft and another aircraft, terrain or obstacle (Obstacle includes vehicle).
- Runway or taxiway incursion.
- Runway or taxiway excursion.
- Significant contamination of aircraft structure, systems and equipment arising from the carriage of baggage, mail or cargo.
- Push-back, power-back or taxi interference by vehicle, equipment or person.
- Foreign object on the aerodrome movement area which has or could have endangered the aircraft, its occupants or any other person. (7) Passengers or unauthorised person left unsupervised on apron.
- Fire, smoke, explosions in aerodrome facilities, vicinities and equipment which has or could have endangered the aircraft, its occupants or any other person.
- Aerodrome security-related occurrences (for example: unlawful entry, sabotage, bomb threat).

8.2.5. DEGRADATION OR TOTAL LOSS OF SERVICES OR FUNCTIONS

- Loss or failure of communication with aircraft, vehicle, air traffic services unit or apron management service unit.
- Significant failure, malfunction or defect of aerodrome equipment or system which has or could have endangered the aircraft or its occupants.
- Significant deficiencies in aerodrome lighting, marking or signs.

8.2.6. GROUND HANDLING SPECIFIC OCCURRENCES

- Incorrect handling or loading of passengers, baggage, mail or cargo, likely to have a significant effect on aircraft mass and/or balance (including significant errors in loadsheets calculations).
- Boarding equipment removed leading to endangerment of aircraft occupants.
- Incorrect stowage or securing of baggage, mail or cargo likely in any way to endanger the aircraft, its equipment or occupants or to impede emergency evacuation.
- Transport, attempted transport or handling of dangerous goods which resulted or could have resulted in the safety of the operation being endangered or led to an unsafe condition (for example: dangerous goods incident or accident as defined in the IATA Dangerous Goods Regulations (IATA DGR)).
- Non-compliance on baggage or passenger reconciliation.
- Non-compliance with required aircraft ground handling and servicing procedures, especially in de-icing, refuelling or loading procedures, including incorrect positioning or removal of equipment.
- Significant spillage during fuelling operations.
- Loading of incorrect fuel quantities likely to have a significant effect on aircraft endurance, performance, balance or structural strength.
- Loading of contaminated
- incorrect type of fuel or other essential fluids (including oxygen, nitrogen, oil and potable water).
- Failure, malfunction or defect of ground equipment used for ground handling, resulting into damage or potential damage to the aircraft (for example: tow bar or GPU (Ground Power Unit)).
- Missing, incorrect or inadequate de-icing/anti-icing treatment.
- Damage to aircraft by ground handling equipment or vehicles including previously unreported damage.
- Any occurrence where the human performance has directly contributed to or could have contributed to an accident or a serious incident.

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8.3. IATA GROUND DAMAGE DATA BASE

The IATA GDDB has been established as a quality source of defensible data that will support a performance-based approach to the management of ground handling operations. Data submitted to IATA for the GDDB is assembled and integrated in a manner that permits, through statistical analysis, the identification of trends and contributing factors associated with aircraft ground damages.

FLY ONE will submit data for the GDDB benefit from having access to the analytical results. As a key component of IATA's Integrated Solution for Ground Operations, such results are used by various IATA working groups and task forces associated with the Ground Operations and ISAGO programs, and form the basis for the development of damage prevention strategies and success measurement metrics.

The assurance of data quality and overall database integrity requires that data is submitted by participants in a uniform and consistent manner. Therefore, the GDDB includes strict reporting protocols, including associated definitions and assumptions.

Reporting guidelines and other information can be found online at the IATA Ground Damage Database page (<http://www.iata.org/gddb>).

8.4. UNDISCIPLINED PASSENGERS OCCURENCES

Behavior of undisciplined passengers shall be filled using both following forms:

- Disruptive passenger ground incident report
- Passenger disturbance report form for authorities.
- Notice of undisciplined and disruptive passenger completed if:
- The passenger was banned from boarding the flight at the airport in the flight to which he has a ticket;
- In aircraft if the passenger does not follow members of the crew requirements, after the written notice was served.

If the passenger was denied from the boarding for the aviation security violation, the passenger must be accompanied by the airline passenger carrying rules, passenger baggage must be unloaded from the aircraft, its name is removed from the passenger manifest and warned senior cabin crew on the change in the number of passengers.

Passenger must be escorted by company employees, airport service company or security personnel to the passenger terminal of the restricted area and released or delivered to the police, if security rules violations were serious, the police continue to deal with the passenger's responsibility for the actions taken in accordance with the laws of the country of departure.

In preparing the report must be taken by the crew of the Callout event witnesses (passengers).

The witness's name, contact information must be included in the notification form, as well as other additional information, that may help the investigation of the airlines and the police. In case of more serious event, respectively, to be followed by a more detailed report.

Disruptive passenger ground incident report and Passenger disturbance report form for authorities is available on FLYONE server, <http://FOE.asqs.net>.

8.5. BOMB THREAT OCCURENCES

The bomb threat report form consists from the questions and answers, which helps in the conversation and to obtain the necessary information about the explosive and the calling person. The essential elements of the conversation must be written on paper or recorded electronically.

Bomb threat Form is available on FLYONE server, <https://FOE.asqs.net>.

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8.6. INVESTIGATION OF INCIDENTS

Handling Agents are required to launch an investigation into the causes of the incident/accident and fill in a Ground Incident/Accident/Damage report form provided by FLYONE or using a similar report form of the Handling Agent.

Any evidence (e.g. witness reports, paint marks) must also be recorded and photographs taken wherever possible.

A copy of the Handling Agent's investigation report must be submitted to FLYONE.

8.7. ACCIDENT PREVENTION PROGRAM

Handling Agents should provide internal notification of incidents, accidents and damages to all staff concerned. They should also incorporate the lessons learned from incidents/accidents/damages into staff trainings as case studies.

Operating procedures should be amended in order to eliminate unsafe working practices.

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9. SECURITY

9.1. GENERAL

This section describes the Company's general policy, measures and procedures for ensuring security to all Company's airplanes during all phases of flight operations i.e. on the ground, and inflight.

FLYONE requires all personnel involved in flight operations to be familiar, with the Company's security instructions and regulations, and comply with, the relevant security requirements and State security programs.

The Security Manager has overall responsibility for matter affecting security. He will report directly to the CEO. In addition, he is responsible for the establishment and maintenance of security procedures within the company. He should also closely co-operate with the relevant Airport Authorities and police in order to ensure co-ordination and compliance with the above. He is responsible to make arrangements for the availability of the necessary instructional expertise and also that suitable lecture programs are part of the training syllabus.

Primarily responsibility of the operator is to protect the passenger's life, aircraft, cargo and mail and own property from damage and destruction. The responsibility of Airport Authorities to take precautions to prevent unauthorized persons gaining access to aircraft operating areas and to the aircraft themselves. Nevertheless, all persons in charge of ground operations units, or agents at airports, are to make immediate representations to the airport authority, if at any time they should be dissatisfied with the security arrangements, e.g. if there are opportunities for unauthorized access to operational areas.

FLYONE security procedures are confidential and are written in a separate manual.

However, the guidelines how to act in non-standard situations additionally are provided in this chapter.

9.1.1. AUTHORITY OF THE COMMANDER

To take all reasonable measures to ensure that all persons carried in the airplane obey all lawful commands given by him for the purpose of securing the safety of the airplane and of persons or property carried therein.

9.1.2. IDENTIFICATION CARDS

All employees must wear the airline identification card (ID card) issued for the duration of their contract. ID can be issued for the time not longer than 2 years

ID card must not be lent or disposed of in any manner. If the card is lost it must be immediately reported to Security Manager, as appropriate, and a replacement card obtained.

The identification card is to be worn in a visible position at all times when on duty or when entering areas requiring the wearing of ID card. The ID card is a property of company and operating airport and should be given back to the company, when the employment contract is terminated or expires.

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9.1.3. CREW BAGGAGE SECURITY

All crew baggage should normally carry an identification label with company logo, sign "CREW BAGGAGE" and, if found, with request to return by company address.

Crew members must not leave their baggage unattended at all time. Crew members must not accept for carriage any parcels from third parties. Any package belonging to a crew member shall at all times be carried by the crew member concerned onto the aircraft personally and shall not be trusted to any other crew members.

The individual crew member is responsible for the handling and security of his personal baggage.

Adherence to the following procedures is required:

- Keep your bags locked when you are not using them;
- Maintain security of all your carry-on baggage;
- Before leaving hotel, make sure all items in your bags belongs to you and have not been tampered;
- Keep your bags in view at all times in public areas such as lobbies, boarding lounges, restaurant, restrooms, hotel or terminal buildings;
- Never accept anything for carriage, including letters or envelopes, given by strangers, fellow employees or acquaintances.

9.1.4. FLIGHT CREW COMPARTMENT SECURITY

- All passenger-carrying airplanes of a maximum certificated Take-off mass in excess of 45500 kg or with a maximum approved passenger seating configuration greater than 60 shall be equipped with an approved flight crew compartment door that is capable of being locked and unlocked from each pilot's station and designed to meet the applicable retroactive airworthiness operational requirements. The design of this door shall not hinder emergency operations, as required in applicable retroactive airworthiness operational requirements.
- In all airplanes which are equipped with a flight crew compartment door in accordance with subparagraph (a):
 - This door shall be closed prior to engine start for Take-off and will be locked when required by security procedure or the commander, until engine shut down after landing, except when deemed necessary for authorized persons to access or exit is following the National Aviation Security Program.
 - Means shall be provided for monitoring from either pilot's station the area outside the flight crew compartment to the extent necessary to identify persons requesting entry to the flight crew compartment and to detect suspicious behavior or potential threat.

9.2. SECURITY OF THE AIRCRAFT.

9.2.1. OBJECTIVES OF THE APPLICABLE SECURITY MEASURES.

The security measures shall apply with a goal to prevent hiding of weapons, explosive materials, other dangerous items in the aircraft or damaging of the aircraft structure. In view of the security area in which the aircraft is to be parked, the appropriate security measures shall apply.

9.2.2. AIRCRAFT SECURITY SEARCH

- If required by the relevant national authority, before the flight departure, an aircraft security search will be performed to prove that no suspicious items are found on board. An aircraft security search has to be performed in an empty cabin prior each first flight of the day and in situations where the aircraft has been found unattended. A random examination of the lifejackets pouches has to take place. The aircraft security check may be conducted by the on duty crew on an aircraft in service during turn-around, transit stop or when taking over the aircraft from the previous crew when service providers have left the aircraft. Handling companies' staff performs the aircraft cargo compartments security searches and checks before loading of hold baggage, cargo and post.
- The requirement for the conduct of, and the need for, a security check or a security search is based upon a security risk assessment accomplished by the Operator and/or the relevant national authorities. Trained and competent aircraft crew members conduct searches and checks of aircraft.
- Guidance material is available by the operator for aircraft security checks and searches under normal circumstances, higher threat situations and emergency situations.
- As a general rule, the security checks would include:
 - A comprehensive inspection of the interior of the aircraft, including the passenger cabin area, seats, overhead luggage lockers, toilets, galleys and other technical areas such as the flight deck. The focus is on areas that are readily accessible without the use of common tools. To facilitate the search, panels that can be sealed are sealed, to show their integrity has not been compromised.
- A security search is a more thorough than a security check and includes an in-depth inspection of the interior and exterior of the aircraft.
- To promote competent security searches, it is recommended that aircraft security search checklists be made available for each type and configuration of aircraft. When the checklist is completed, it is signed by the person responsible for the inspection.
- To be effective, aircraft checks and searches are typically carried out in good lighting conditions, or personnel performing such activities are provided with lighting sufficient for the purpose.
- For personnel performing aircraft security searches training and their knowledge recurrence in Appendix there is "Expanded aircraft security search checklist", which details the aircraft A320 and A321 places to be searched thoroughly.
- The aircraft security searches are carried out by the crew and handling company staff for passengers, crew and aircraft security purposes, making sure there are no left on the aircraft hidden things.

Security searches of the aircraft carries- out by flight attendant(s), pilots and handling companies staff in accordance of "A320 - A321 AIRCRAFT security search" checklist. The search shall cover all areas of an aircraft in the stamped checklist. A Security search can be performed by one member of the crew or, by aircraft commander order, the search can be spreaded over several crew members (for example, cabin crew should check the interior of their workplace, and co-pilot checks the aircraft from the outside and cockpit, if it was left unattended). When search of the aircraft is completed, handling companies' staff should report to aircraft commander. Cabin crew shall inform the completion of the search to senior cabin crew. Senior cabin filing the "A320 - A321 AIRCRAFT SECURITY SEARCH" checklist and form "INFORMATION ON THE AIRCRAFT SECURITY SEARCH", marking the searched by cabin crew places in search checklist and presenting checklist and information form to captain for signing. Senior cabin crew, first officer and handling companies staff reports to commander the completion of aircraft security search.

On the basis of those reports, the aircraft commander should mark the places searched by handling companies staff and pilots on the "A320 - A321 AIRCRAFT SECURITY SEARCH" checklist, to file his name and to sign the "A320 - A321 AIRCRAFT SECURITY SEARCH" checklist and the form "INFORMATION ON THE AIRCRAFT SECURITY SEARCH" as a person responsible for aircraft security search performance.

Aircraft commander responsible for distribution of those forms:

- Filled ' A320 - A321 aircraft security search " checklist (Sec Form. 004) is stored along the flight with flight documents, and
- information of the aircraft security search performance or omission left the airport of departure together with the aircraft loading documents (load sheet) to the handling company or together with the aircraft flight log to maintenance organization's engineer.

Those documents should be stored full flight time or 24 hours, whichever takes longer.

9.3. AIRCRAFT SECURITY SEARCH WITHIN EU 2018/1139

9.3.1. SEARCH STANDARDS

On request of the pilot-in-command, the airport operator shall advise him whether the aircraft is in the critical parts of security restricted areas of the airport or not. In cases when it is not clear, it shall be deemed that the aircraft is in another than the critical parts of security restricted areas.

An aircraft need not be subjected to an aircraft security check. It shall be subjected to an aircraft security search in accordance with (EC) Regulation 2015/1998 point 3.1.

When an area is no longer considered to be a critical part because of a change of security status then the airport shall inform those carriers that are affected.

Third countries where the security standards applied are recognized as equivalent to the common basic standards as regards aircraft security are listed in (EC) Regulation 2015/1998 Attachment 3B

References to third countries in this Chapter and where applicable in Commission Implementing Decision C(2015) 8005 include other countries and territories to which, in accordance with Article 355 of the Treaty on the Functioning of the European Union, Title VI of Part Three of that Treaty does not apply.

When aircraft search must be performed The aircraft search must be performed in all cases when there is every reason to believe that an unauthorized person could enter the aircraft.

In performance of the aircraft search the places of the aircraft defined in Annex 6 must be searched.

An aircraft arriving into a critical part from a third country not listed in Attachment 3-B shall be subjected to an aircraft security search any time after passenger disembarkation from the area to be searched and/or the unloading of the hold.

The aircraft which arrives from a Member State to which it came in a transit flight from a third country which is not included in the list of Annex 3-B to the COMMISSION REGULATION (EU) No. 2015/1998 shall be deemed as the aircraft arriving from the third country subject to the aircraft security search.

An aircraft may be exempted from an aircraft security search if it arrives into a critical part from a Member State or from a third country listed in Attachment 3-B of Implementing Regulation (EU) 2015/1998.

An aircraft arriving into, or departing from, a part other than a critical part shall be subjected to an aircraft security search at any time before departure.

An aircraft in transit may be exempted from an aircraft security search. If it arrives from a third country not listed in Attachment 3-B of Implementing Regulation (EU) 2015/1998 and one or more passengers disembark the aircraft then the following shall be undertaken:

- reconciliation of the remaining passengers and baggage, and
- verification that no articles were left in overhead bins and seat pockets by the disembarking passengers.

An aircraft that was accessible in a part other than a critical part and is then moved into a critical part shall be subjected to an aircraft security search at any time before departure.

If the search is carried out before moving the aircraft into a critical part, the areas of the aircraft searched shall be either sealed, locked or under constant monitoring by persons responsible and trained for protecting aircraft until the aircraft arrives in the critical part.

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An aircraft security search shall consist of an examination of all of the following areas, when they are accessible without the use of tools, keys, stairs or other aids, and without breaking seals:

- overhead bins;
- cupboards and storage compartments, including crew storage areas;
- toilet compartments;
- galley areas;
- seat pockets;
- areas under seats, between seats and between the seat and the wall;
- flight deck, if left unattended;
- aircraft hold ;
- items contained within the hold;
- aircraft service panels and service hatches;
- wheel wells;
- between 5% and 10% of lifejacket pouches.

Where an aircraft is in a critical part, the aircraft security search may be performed whilst service providers are on board the aircraft.

Where an aircraft is in a part other than a critical part, the aircraft security search may be performed whilst service providers are on board the aircraft provided that the service providers and their items carried are under supervision.

The aircraft security searches are carried out by the crew members and ground handling companies staff for passengers, crew and aircraft security purposes, making sure there are no left on the aircraft hidden things.

The aircraft search shall be performed by the cabin attendant(-s), pilots and ground handling companies staff in compliance with "A-320/321 AIRCRAFT SECURITY SEARCH CHECKLIST".

On performing the aircraft search all aircraft places in such checklist shall be searched. The cabin attendants shall search the aircraft interior - parts of passenger compartment in accordance of assigned to perform their duties in flight, pilots shall search the aircraft exterior and pilot's compartment, if left unattended and handling companies' staff are searching the aircraft cargo compartments. After performing a Security search of the aircraft, cabin crew shall inform the performance to the senior cabin crew, pilots and handling company staff reports to captain. Senior cabin crew should file the "A-320/321 AIRCRAFT SECURITY SEARCH CHECKLIST" and " INFORMATION ON THE AIRCRAFT SECURITY SEARCH", to mark the places in checklist searched by cabin crew and to present those forms to captain. On the basis of those reports, the aircraft commander should file the places searched by pilots and handling companies staff, to put his name and to sign the " A320 - A321 AIRCRAFT SECURITY SEARCH" checklist and the form

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"INFORMATION ON THE AIRCRAFT SECURITY SEARCH" as a person responsible for aircraft security search performance.

Aircraft commander responsible for distribution of those forms:

- filled ' A320 -A321 aircraft security search ' checklist (Form No.6) should be stored along with the flight documents; and
- information (Sec Form . 004) of the aircraft security search performance or omission should be left at the airport of departure together with the aircraft loading documents (load sheet) to the handling company or together with the aircraft flight log to maintenance organization's engineer. These documents are stored during flight time or 24 hours, whichever takes longer.

An aircraft in transit may be exempted from an aircraft security search.

If it arrives from a third country not listed in Attachment 3-B of Implementing Regulation (EU) 2015/1998 and one or more passengers disembark the aircraft then the following shall be undertaken:

- Reconciliation of the remaining passengers and baggage, and
- Verification that no articles were left in overhead bins and seat pockets by the disembarking passengers

On finding a suspicious item the crew member shall inform the pilot-in-command who will verify the information received and, if necessary, relay such information to the person in the company responsible for security and the police service in the airport.

On request by the inspector of the civil aviation administration in the state in which the aircraft is operated and the inspectors of the senior civil aviation authorities performing the inspection of the aircraft documents, the pilot-in-command shall submit "A320 - A321 AIRCRAFT SECURITY SEARCH CHECKLIST" or to inform at what company (maintenance or handling) of the last departure airport, there was left the Information on the aircraft security search.

How the aircraft search shall be made?

The examination of the areas shall be done by a hand search.

A visual check may be used as an alternative method for the examination of those areas that are empty.

Explosive detection dogs may be used as a supplementary method of examination.

Explosive trace detection (ETD) equipment may be used as a supplementary method of examination.

During the examination of the areas in the cabin of the aircraft, no passengers shall be present in the area to be examined, unless the aircraft is in transit.

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Where an aircraft is in transit, the aircraft security search may be performed whilst passengers remain on board provided that:

- the passengers are in possession of their cabin baggage when the examination is performed; and
- the passengers are under supervision in order to prevent movement through the aircraft when the search is being performed.

To be effective, aircraft checks and searches are typically carried out in good lightning conditions, or personnel performing such activities are provided with lightning sufficient for the purpose.

Information on the aircraft search shall be recorded in the form (Sec Form. 004) and for 24 hours or until the end of the flight (whichever is longer) shall be kept in the premises outside the aircraft:

- flight number;
- destination from which the previous flight arrived; and
- a reference whether the aircraft search was or was not performed.

In the cases the aircraft search was performed, such additional information shall also be submitted:

- date and time for the aircraft search;
- name, surname and signature of the person responsible for the aircraft search.

Filed and signed by captain INFORMATION ON THE AIRCRAFT SECURITY SEARCH (Sec Form. 004) shall be kept at the airport of departure for the duration of the flight or for 24 hours, whichever is longer. This information on the aircraft search form should be left on ground at each airport before departure together with loadsheet or with Flight Log and should be kept for 24 hours or until the end of the flight (whichever is longer).

9.3.2. DATA ON SERVICES RENDERING SUBJECTS.

The flight crew performing the aircraft search and the staff of the company shall not employ services provided by other subjects.

The crew members shall complete training on the procedures of the aircraft security search and must:

- be aware of the procedures of the aircraft search;
- performing his/her duties on board, prohibit access of unauthorized persons to the aircraft;
- on finding a suspicious item inform the pilot-in-command and the police service in the airport;
- the duly filled-in "AIRCRAFT SECURITY SEARCH CHECKLIST" keep together with other flight documents for 24 hours or until the end of the flight (whichever is longer) and information on the aircraft search should be left on ground in each airport of landing before departure together with load-sheet or to engineer together with ATL and shall be kept for 24 hours or until the end of the flight (whichever is longer);
- report all incidents to the pilot-in-command and, by filling-in the form of the occurrence report, the pilot-in-command must report the occurrence and its synopsis to the security manager.

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9.3.3. BOMB SEARCH ON AIRCRAFT EU 2018/1139 ANNEXIV 8.D

- Regular search of aircraft for suspect explosive device and weapons may be conducted prior to commencing each flight, based on a risk assessment conducted by the appropriate authority. A similar search is required when an aircraft is suspected of being the target of an act of unlawful interference. The difference between the two types is only in the degree and thoroughness of the search undertaken, and these will be dictated by the total circumstances applicable to each situation.
- The aircraft search procedure checklists are placed on each FLYONE aircraft. Use of such checklist by ground crews is particularly helpful at locations where the only persons familiar with the particular type or configuration of aircraft are pilots and cabin crew members.
- Aircraft searches should be carried out in isolated aircraft parking position with good lightning conditions.
- Control of access to the aircraft should be imposed before starting a search, which should be carried out with minimum number of persons on board.
- Searches should be briefed not to touch suspicious objects, but to notify the search coordinator, mark the location with a promoted object not touching the device and withdraw from the immediate area to await further instructions. If a suspect device is discovered, the possibility of secondary devices should not be discounted.
- Radios should not be used to transmit within 25 meters of a suspect device.
- Searches should be briefed to look for:
 - That should not be there;
 - That cannot be accounted for;
 - That is out of place.
- The Aircraft Search Checklist is adapted to suit airline fleet.
- The "AIRCRAFT A320 - A321 BOMB SEARCH CHECKLIST" is divided in to the areas of aircraft to flight crew members and to ground staff searches, which are most familiar with the construction of those aircraft parts.

9.3.3.1. AIRCRAFT A320-A321 BOMB SEARCH CHECKLIST ON GROUND

- Search by Cabin Crew
 - Forward Galley Area
 - Forward Toilet
 - Forward Crew Station
 - Forward Service Door
 - Forward Entrance Door
 - Cabin
 - Aft Toilets
 - All Crew Stations
 - AFT Service Door
 - AFT Galley
- Search by Flight Deck Crew (Flight deck)
 - Walls, ceiling and floor
 - Coatroom
 - Overhead Baggage Storage — entire area with baggage removed
 - Compartments above baggage rack and coatroom
 - Drinking fountain, cup dispenser, cup disposal compartment and drain valve access
 - Area above and along sidewall of stowage compartment, forward side of forward toilet
- Search by A/C loader / Ramp agent (Cargo compartments)
 - Forward cargo compartment, especially area underneath hinge snap-panel of cargo door floor covering
 - Waste water tank compartment
 - Flight-kit boxes
 - Aft cargo compartment (especially area of cargo door hinge joints)
 - Zone immediately behind aft cargo compartment

- Search by Ground Engineer (Aircraft exterior)
 - Fuselage (the areas behind/in the following doors and openings should be checked)
 - Random
 - Ground pneumatic connector panel
 - Cabin compressor air-inlets
 - Cabin compressor access panels
 - Doppler navigation antenna door
 - Cabin compressor air-outlets
 - Heat exchanger control access panels
 - Heat exchanger outlet guide vanes
 - Radio rack air-outlet
 - Beacon-holder (beacon removed)
 - Security locker and contents
 - Flashlights (check batteries)
 - Seals of first-aid kits for proper condition
 - Seals of life raft panels for proper condition
 - Accessory compartment door
 - Auxiliary tank fuel sump doors
 - Cabin pressure safety valves
 - Aft waste water service panel
 - Cabin pressure regulator valve
 - Aft waste system service panels
 - Access door to stabilizer-mechanism
 - Tail cone access door
 - Aft potable water service panel
 - Aft cargo doors
 - Forward cargo doors
 - Forward potable water service panel
 - Ground air conditioning connector door
 - External power fuser door
 - External power receptacle
- (Cabin Compressor Compartment)
 - Entire compartment, especially area of hollow spaces and cavities
- (Accessory Compartment)
 - Entire compartment as well as all installations
- (Landing Gear Wheel Wells and Gears)
 - Nose wheel well — area behind access and zip-fastener panels
 - Entire main wheel wells and zone of wing roots LH + RH
 - Gears, wheels — tires, rims, brakes and parts such as struts, drag-braces, beams, arms, actuators, frames and trucks
- (Wings)
 - Trailing edge flap sections
 - Snap-covers to fuel X-feed tube
 - Snap-covers to fire-extinguisher bottles
 - Pressure refueling adapters
 - Inspection snap-covers
 - Fuel vent openings

- (Engines and Pylons)
 - Engine air-intake, exhaust and fan-duct
 - Engine oil and pneumatic heat exchanger air-inlet scoop
 - Engine oil refill cover
 - Engine heat exchanger air-outlet door
 - Constant speed drive oil refill cover
 - Open engine cowl doors and fan cascade vanes. Entire engine installation and all openings on the cowl doors and pylons to be checked.

9.3.4. BOMB SEARCH AND CREW ACTION DURING THE FLIGHT OR AIRCRAFT TAXIING

- On taxiing, the primary intention must be to taxi the aircraft to some part of the airport away from the terminal building and evacuate the aircraft in controlled circumstances if at all possible. In flight, the primary consideration must be given to the potential effects of an explosion on board and on the people on the ground, particularly within densely populated areas.
- An emergency should be declared stating the nature of the emergency and the aircraft should be diverted to the nearest airfield, civil or military, at which it can land safely.
- When the aircraft is making an approach to land over a densely populated area, it should be permitted to land at the airport in accordance with current emergency procedures. Its time in the air should not be prolonged in order to divert to another airfield. If an immediate landing cannot be made a search should be conducted and, if a suspicious item is found, the procedures to move the item to the Least Risk Bomb Location (LRBL) should be followed. On aircrafts A320 and A321 the Least Risk Bomb Location (LRBL) place is at the right hand back doors.
- When an aircraft lands following a RED bomb warning, passengers and crew should disembark as quickly as possible and move at least 400 meters upwind from the aircraft with minimum delay.

9.3.5. IN FLIGHT SEARCH FOR EXPLOSIVE DEVICE

It is better that the flight crew search the areas of the aircraft with which they are most familiar:

- Operating crew search the flight deck.
- Cabin crew search the cabin.
- if there is a maintenance engineer on board, he will have an extensive knowledge of the aircraft and may be able to suggest search areas not immediately apparent.

9.3.6. SEARCH PROGRESS

- One member of the operating crew will conduct the search while the other controls the aircraft.

Particular attention should be given to small spaces, not easily accessible, including the avionics bay.

- In a crowded cabin, it is essential that the search team is well organized to ensure that the whole cabin area is searched in a logical and methodical manner, with nothing being moved past the search 'barrier' without first being inspected. Before the search begins, the passengers shall be required to identify, and remove, all their hand baggage from the overhead bins and floor, and to place it on their knees, open for scrutiny.
- Search cabin as in the checklist. Begin at the flight deck door, work back through the aircraft cabin, the galleys and the toilets. Particular attention should be given to small spaces between equipment and the inner lining of the aircraft, especially in the galley and toilet areas.

As each section of the cabin is searched, passengers must be moved from their seats and all hand baggage, loose fittings, such as seat cushions, lifejackets and contents of seat pockets etc. removed and examined. After searching the area, all the items removed must be replaced under proper supervision.

Searching can be assisted by the use of a powerful electronic torch and, if available, a mirror to observe under seat areas.

- If an unusual or unclaimed article is found, it should not be disturbed. Its position should be noted and other articles kept clear of it. The remainder of the aircraft should be searched to ensure that not more than one unidentified item is on board. Only then, should consideration be given to what to do with it/them.

Instructions and procedures to be followed during a threat warning during the commencement of a flight and when the aircraft is still on the ground.

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9.4. AIRCRAFT SECURITY

9.4.1. AIRCRAFT SECURITY STANDARDS

Regardless of where an aircraft is parked at an airport, each of its external doors shall be protected against unauthorized access by:

- ensuring that persons seeking to gain unauthorized access are challenged promptly; or
- having the external door closed. Where the aircraft is in a critical part, external doors that are not accessible by a person from the ground shall be considered closed if access aids have been removed and placed sufficiently far from the aircraft as to reasonably prevent access by a person; or
- having electronic means which will immediately detect unauthorized access; or
- having an electronic airport identification card access system at all doors leading directly to the passenger boarding bridge, adjacent to an open aircraft door, which only allows access for persons that are trained.

Such persons must ensure that unauthorized access is prevented, during their use of the door.

Paragraph 1 of part 9.4.1 shall not apply to the aircraft, which is parked in the locked or otherwise protected from the unauthorized access hangar.

An effective method to deter or detect illegal access to aircraft is the implementation of frequent but irregularly timed patrols by security personnel. This is particularly important when operations are at their lowest levels and aprons and hangar areas are least frequented. Such patrols are normally conducted by airport personnel.

Additional measures to prevent unauthorized access to passenger aircraft may include:

- Parking aircraft in a well-lit area; adding security lighting, if necessary;
- When possible, parking aircraft in an observable area;
- Parking aircraft away from fences or buildings that might provide easier access;
- For aircraft parked overnight, depending on the perceived risk at the location, applying a tamper-evident seal to all exterior doors or verifying the identity of all persons who access the aircraft to ensure a legitimate reason for accessing the aircraft;

For aircraft parked remotely from a loading bridge:

- Closing all exterior doors and exterior hatches of the aircraft;
- Removing all stairs;
- Ensuring no portable stairs, lift devices or passenger transfer vehicles are in the immediate vicinity of the aircraft.

For aircraft parked with access to a loading bridge:

- Closing all exterior hatches of the aircraft;
- Closing all exterior doors of the aircraft not served by a bridge;
- Locking the door between the terminal and the bridge;
- Ensuring no portable stairs, lift devices or passenger transfer vehicles are in the immediate vicinity of the aircraft;
- Locking or keeping under constant surveillance doors that provide access to the bridge from the apron or retracting the bridgehead from the aircraft and deactivating the bridge head positioning controls.
- Additional security measures shall be performed to the aircraft which are parked in other place than the critical parts of security restricted areas with outer door closed.
- In the cases when the outer door is closed and the aircraft is parked in other place than the critical parts of security restricted areas, all outer doors shall be sealed.

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Additional protection of aircraft with closed external doors in a part other than a critical part

Where external doors are closed and the aircraft is in a part other than a critical part, each external door shall also:

- have access aids removed; or
- be sealed; or
- be locked; or
- be monitored.

Point (a) shall not apply for a door that is accessible from the ground by a person.

Where access aids are removed for doors that are not accessible by a person from the ground, they shall be placed sufficiently far from the aircraft as to reasonably prevent access.

Where external doors are locked, only persons with an operational need shall be able to unlock these doors.

Where external doors are monitored, the monitoring shall ensure that unauthorized access to the aircraft is immediately detected.

Aircraft security on the ground:

- Whenever possible, aircraft should be parked away from perimeter fences or any easily penetrable barriers;
- aircraft parked overnight should be parked in controlled area and well illuminated areas;
- aircraft parked overnight should be observed by irregularly timed patrols carried out by airport security staff or law enforcement officers;
- the engineering staff shall perform protection of the aircraft during maintenance and servicing and prevent access of unauthorized persons onboard the aircraft;
- the crew members shall perform protection of the aircraft from the moment of arrival of the aircraft until it is left to protection of the engineers or a crew member who is the last to leave the aircraft in the airside on the apron removes the ladders and closes the doors of the aircraft and the hatch in the cargo compartment;
- the flight crew shall observe the loading of hold baggage, cargo, mail and foodstuff onboard the aircraft;
- before the flight the pilot-in-command shall inform the cabin attendant on the procedures and internal telecommunication in the cases of dangerous situations or in the unlawful attempts to enter the flight deck;
- between the flights when the aircraft is deserted from the engineering staff or crew members protection of the aircraft is performed by the airport security service.

Security measures applicable in flight:

- In compliance with aviation security regulations:
- access of unauthorized persons to the flight deck shall be prohibited;
- appropriate security measures shall apply to the potentially disruptive persons in flight.
- In order to avoid unlawful interference in flight the flight crew and cabin attendants shall complete the course on actions to be taken with disruptive passengers.
- possession of weapons shall be prohibited in the aircraft, except the cases they are transported in the cargo compartment or they are necessary pursuant to the security requirements in the national legislation and the permission from the state of operation is obtained.

Sterile flight crew compartment:

- Sterile flight crew compartment procedures should ensure that:
 - flight crew activities are restricted to essential operational activities; and
 - cabin crew and technical crew communications to flight crew or entry into the flight crew compartment are restricted to safety or security matters.
- The sterile flight crew compartment procedures applies to:
 - during critical phases of flight;
 - during taxiing (aeroplanes);
 - below 10 000 feet above the aerodrome of departure after take-off and the aerodrome of destination before landing, except for cruise flight; and
 - during any other phases of flight as determined by the pilot-in-command or commander.
- All crew members are trained on sterile flight crew compartment procedures established by the company, as appropriate to their duties, on operator initial or recurrent courses.

During periods of time when the sterile flight deck compartment procedures are applied, cabin crew and technical crew members should call the flight crew or enter the flight crew compartment only in cases related to safety or security matters. In such cases, information should be timely and accurate.

Cabin crew and technical crew use their own discretion to determine whether the situation is related to safety or security matters and whether to call the flight crew.

Situations requiring information to the flight crew may include:

- any outbreak of fire inside the cabin or in an engine;
- a burning smell in the cabin or presence of smoke inside or outside;
- fuel or fluid leakage;

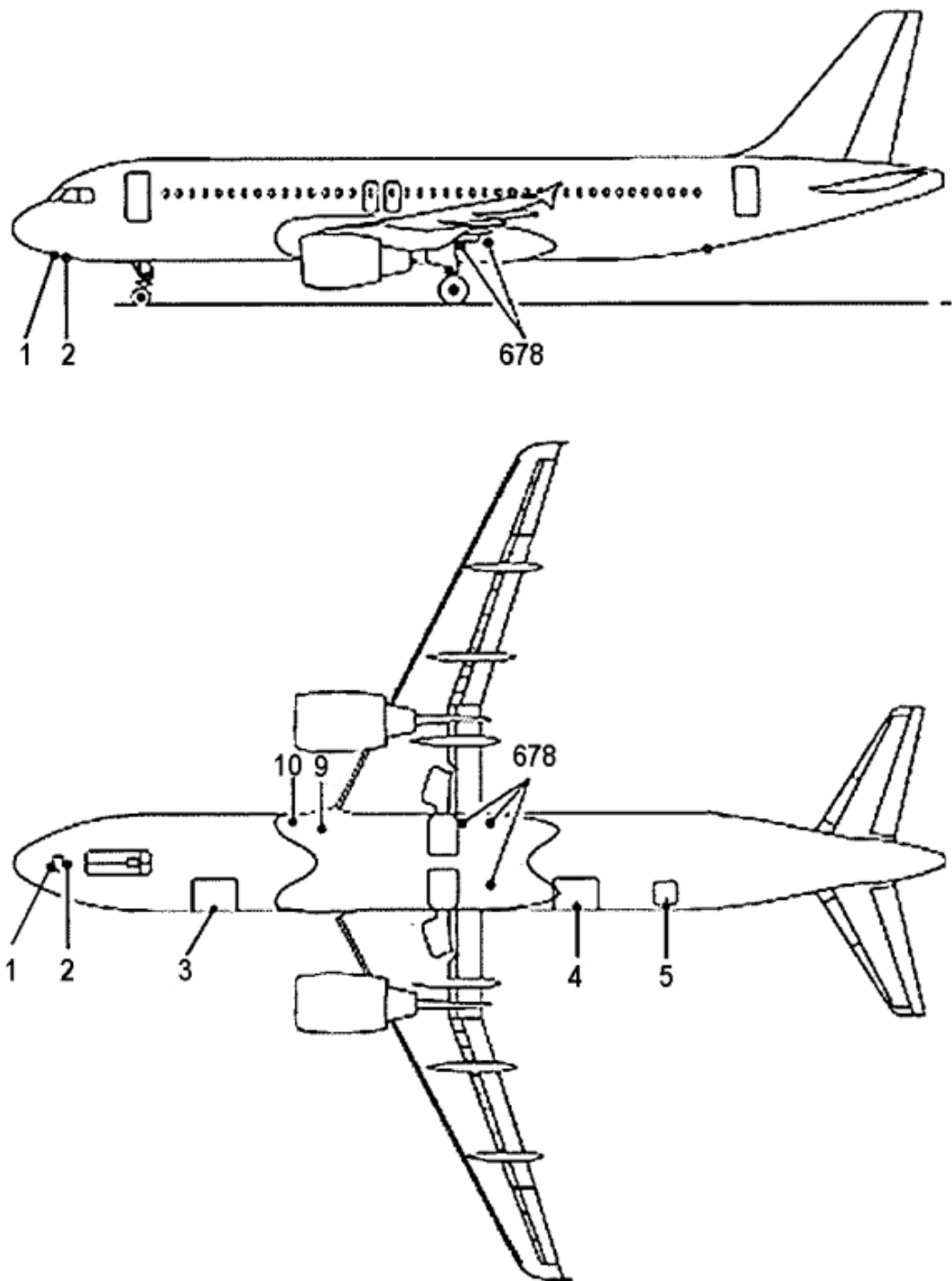
Person on jump seat in pilots cabin should be familiarised with sterile cockpit procedures.

Aircraft sealing procedure requirements:

- The seal must be:
 - numbered;
 - resistant to the atmospheric impact (wind, rain, low and high temperatures);
 - leave an indelible trace after opening of the sealed door indicating break of the seal.
- The numbers of the seals issued for use, shall be registered in the airline. The seals used and damaged in the aircraft shall be recorded on the seal stocktaking sheet kept in the aircraft.
- If the aircraft, used for operations, is left in the critical parts of security restricted areas of the airport unattended by the crew members, the ladders shall be removed and the door locked. In such case, the aircraft can be left seal free.
- If the aircraft removed from operations is left unattended in other than the critical parts of security restricted areas, the officer of the airline who leaves the aircraft last shall:
 - fill-in the seal stocktaking sheet;
 - Starting from inside the aircraft, seal doors from inside. The door used to leave the aircraft shall be sealed from outside. Total number of seals-14
 - for aircrafts A320 - A321 the following doors/panels shall be closed and sealed by applying security seals:
 - Passengers' entry door 1L (from outside);
 - Passengers' entry door 1R, (from inside);
 - Passengers' entry door 2L, (from inside);
 - Passengers' entry door 2R, (from inside);
 - 1-Avionics bay door;
 - 2-external power receptacle access door;
 - 3- Forward cargo door;
 - 4- Aft cargo door;
 - 5- Bulk cargo door;
 - 6, 7, 8 - Three hydraulic system ground services doors;
 - 9- Ground air start connector;
 - 10- Ground service conditioned air connector.

Sealing Places

The seal stocktaking sheet shall be filled-in before sealing and left in the aircraft



***Note:** The used for aircraft sealing seal numbers should be left on ground at the person, which have sealed the aircraft. He should to tear out the seal numbers from the "Seal numbers book" and keep them for 24 hours or the end of the flight.*

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Provided that in sealing the seal is broken, the number of the seal shall be recorded in the seal stocktaking sheet as void.

Only the flight crew members of the airline, engineering staff and engineers of the FLYONE subcontracting maintenance organizations shall be authorized to seal and unseal the aircraft.

To serve the goal, the list of persons authorized to enter the aircraft of the airline shall be approved by company CEO according to the special permits.

Prior to entering the aircraft, a representative of the airline shall make sure if the seals are not damaged. He/she shall also sign in the seal stocktaking sheet confirming the check and removal of the seals.

If a trespass is detected or suspected, the aircraft security search shall be accomplished following "A320 - A321 Aircraft security search" checklist in the pertinent parts of the aircraft where an unauthorized person can access. The person who detected the broken seal shall inform the officer responsible for security.

In cases when the outer door is sealed and the aircraft is moved to the critical parts of security restricted areas of the airport, the above procedure shall also apply in the critical parts of security restricted areas.

9.4.2. ACCESS CONTROL

Officers of the airport security service shall verify the certificates of the persons entering the airport controlled area.

Officers of the airport security service shall overview movement in the airport controlled area.

On working hours the staff of the airline shall wear the identity card issued by the airline and the certificate issued by the airport attached to the clothes above the waist in a well visible place.

On arrival to the airport to perform their duties, the officers of the airline, depending on their position and the control system in the airport, shall have access to the aircraft by passing through the control points for the staff of the ground handling services or the flying personnel by passing the control points for the passengers or special airport control points for the flying staff.

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9.5. CONTINGENCY MEASURES

9.5.1. PLANNING OF CONTINGENCY MEASURES

The Flight Crew members must be well aware of their duties in the case of unlawful interference.

For this purpose, the airline shall perform training of the staff about the actions to be taken in the case of unlawful interference. The personnel of the airlines administration shall act in compliance with the plan of contingency measures.

9.5.1.1. MEASURES TO BE TAKEN IN THE THREAT OF EXPLOSION

Actions to be taken after a call with the threat to explode the aircraft:

- The main questions to be given in all cases to the person reporting about a danger of explosion by the person receiving the message in order to assess such a threat and to give assistance in preparing the responsive actions:
 - Where is the bomb?
 - When will the bomb explode?
 - What is the type of the bomb?
 - How does it look like?
 - What are the reasons to lay a bomb?
- After receiving of such information, the employee shall precisely write down the expressions used by the caller in the beginning of the conversation and replying. It is extremely important for the employee to listen for the entire message in order to characterize the voice of the caller by its pitch, sex, age, to identify if the voice is familiar, the background.
- If possible, after receiving such information, the employee shall immediately give a secret signal to another employee to follow the conversation. Such employee shall also record the text of the conversation and precisely stick to the expressions without interpretations. In all cases, attempts must be made to proceed the conversation about the bomb threat as long as possible.
- The employees shall adopt the following scheme: one employee gives questions and in the meantime, the other reports the case and tries to identify the number and the location of the person calling. Questions to be asked:
 - Can you tell the place where the bomb is?
 - Can you briefly describe the place where the bomb is? That will give us a chance to warn people on board the aircraft (premises).
 - Please define the detonator type?
 - Is the detonator activated by a special clock mechanism?
 - How much time left until explosion?
 - What is your purpose to destroy the aircraft (premise)?
 - What are explosive materials?
 - Who are you and where are you? To what group of people do you belong?
 - Are you sure the bomb explodes as you anticipate?
 - Do you have a family? What will they think of you when they know about your deed?
 - What are the reasons to express your convictions in such a way?
 - Do you think the destruction of the aircraft (premise) will solve your problems?
 - Do you understand you are destroying the property of other people?

The questions shall be asked to prevent from answering unambiguously.

Measures by the company responsible persons to be taken in the threat for explosion:

At the end of the conversation, such information shall be reported to the company OCC (filed Bomb threat report and AVSEC manager).

Measures to be taken when the threat is to destroy the aircraft on the ground arise:

- passengers and crew members have to leave the aircraft, their baggage has to be offloaded;
- the aircraft shall be removed to a remote parking place;
- passengers, crew members and their baggage shall be isolated and repeatedly searched;
- security search of the aircraft.

Measures to be taken after the threat to destroy the aircraft in the air:

On receipt of a threat to destroy the aircraft in the air, after consultations with the flight control center, pilot-in-command shall return to the aerodrome of departure or land in the nearest suitable airport. After choosing the airport, information about the decision taken, shall be sent to the flight control center, the search and rescue service, police, fire-fighting service, first aid and airport aviation security service.

9.5.1.2. DETECTION OF THE SUSPICIOUS OR PROHIBITED ITEM

9.5.1.2.1. ACTIONS TO BE TAKEN ON FINDING A SUSPECT EXPLOSIVE DEVICE DURING A SEARCH

There are four steps that should be taken by anyone that finds a suspicious item during the search, in order to ensure the safety of personnel and minimum disruption to operation.

The four steps and the order in which they should be executed are as follows:

- Confirm;
- Clear;
- Cordon; and
- Control.

Confirm

Confirm that the object found should actually be reported as a suspect explosive device. Check for labels or tags giving possible information of the owner. Do not attempt to move the object in order to gain better access to it since it may be equipped with an anti-handling device that may cause it to detonate.

Eliminate the possibility that the suspect object is private property, such as crew baggage, left unattended by anyone in the immediate area. Do not take too long in carrying this action since the device may be on a timer or able to be detonated by remote control.

Note its exact location. Make brief notes of its appearance and mark its position, if necessary, with a distinct item to assist police or EOD staff in identifying the object on their arrival.

Assess the validity and likelihood of the suspect object being in that particular location. Ask whether the:

- a) object is placed in a position to kill personnel or destroy resources; and
- b) target is valuable, vital, attractive or under threat from possible attack.

Once satisfied that the suspect object could be an explosive device, carry out the next three steps and take the necessary actions as defined in location contingency plans.

If any doubt, treat as a suspect explosive device.

Clear

Clear all persons, including any search teams, from the immediate area of the suspect device. A minimum initial distance of 100 m should be achieved, but the actual circumstances, i.e. the presence of large areas of glass or flammable or explosive substances in the vicinity of the device,

the possibility of building collapse, or local contingency plans, may dictate a larger distance.

At the same time, ensure that relevant duty personnel such as the airport security officer or duty airport officer are notified about the suspect device according to local contingency plan.

Cordon

Establish a cordon to prevent anyone from gaining access to the area. The size of the cordon will depend on the site of the incident, the size of the suspect device and the protection of cordon personnel. A good baseline is to ensure that cordon personnel are out of line of sight of the device.

Establish one cordon entry point and ensure that nobody approaches the device unless authorized by the incident commander. It is not unusual for senior management and other persons to insist that they should view the device in order to give a second opinion, but they should be politely denied access until EOD experts have arrived and confirm that it is safe to do so.

Police may deploy outer cordon on access routes in order to ensure safe evacuation and the rapid arrival of emergency services.

Control

Establish an incident control point as the central control area for the incident, until police or specialized staff arrive on the scene and take command. Relevant personnel should be informed according to local contingency plans about the suspect device, if they have not been informed.

The persons who discovered the device should remain in order to assist police and EOD experts.

The police should assume control on their arrival and dictate further actions as necessary.

Nominate a rendezvous point outside the cordon for all other agencies that will be arriving at the incident.

Follow further local procedures or instructions for suspect explosive device incidents.

Emergency services such as fire and ambulance crews should stand by at the rendezvous point outside the cordon to deal with the results of any explosion or fire.

In the event of explosion, first aid should be rendered immediately to injured personnel, followed by the implementation of established damage control procedures.

After the effects of explosion are under the control, the search should be continued in case there are secondary explosive devices.

Definitions

In dealing with suspect explosive device incidents, it is important to use common terminology so as to minimize misunderstandings. The following definitions are used by many EOD experts and agencies, and it is recommended they be adopted by Member States when dealing with incidents and in reporting incidents to ICAO:

- Improvised explosive device (IED). An explosive device placed or fabricated by perpetrators of an act devised from non-military components;
- Bomb threat. The manner in which an IED incident starts. This is usually received by telephone, but also covers an alarm raised by the discovery of a device;
- Bomb alert. Issue once a bomb threat has been investigated or assessed, and discredited, as no device was found, and any precautionary measures have been relaxed and normal activity resumed;
- False alarm. Occurs when a suspect IED was discovered and EOD resources tasked.
- Investigation of the item by EOD experts revealed the item to be innocent, i.e. left without evil intent and containing no explosive device or substance; and
- Hoax. Occurs when a suspect IED was discovered and EOD resources tasked.

Investigation of the item by EOD experts revealed it to be constructed to resemble a viable IED but containing no explosive or dangerous substance.

9.5.1.3. FAILURE OF THE SECURITY EQUIPMENT

In the cases of malfunction of the screening equipment, search and check shall be continued by alternative means, i.e. hand search applying the devices still in operation (hand metal detectors, explosive detecting dogs, etc.).

9.5.1.4. STRINGENT MEASURES IN THE CASE OF THE INCREASED THREAT

Under conditions of the increased danger more stringent security measures shall apply for which implementation the efforts of all ground-handling services and their staff is needed.

In the airport:

- maximum decrease of the entrance gates to the airport;
- cancelation of the sightseeing tours in the airport;
- check of the passengers documents at the entrance gates to the airport;
- strict control for access to the service premises;
- permanent check of the waste-boxes;
- broadcast of aviation security information through the local public address system;
- update of the evacuation plans in the case of accident;
- permanent inspection of the public and service premises;
- check of documents for the whole staff.

Access to the security restricted areas:

- check of documents and search of the whole staff;
- permanent search of the vehicles before entrance to the security restricted areas;
- check of the passes of the persons busy at the aircraft;
- additional control points at the entrance to the security restricted areas.

Aircraft:

- full interior and exterior inspection of the aircraft;
- additional protection (in particular, after inspection)
- strict check of the passes of the persons busy at the aircraft;
- permanent control over the aircraft necessary supply;
- instructions for the maintenance staff in the case of a danger to aviation security.

Passengers:

- baggage identification before each boarding;
- removal of batteries and other power supply sources from the hand luggage.

Checked-in baggage:

- screening and hand search of all checked-in baggage;
- screening and hand search of all checked-in baggage of the transit passengers.

Cargo, mail:

- collection of cargo and mail from the unknown consignors shall be prohibited;
- permanent inspection and search of the whole cargo and mail;
- protection of cargo and mail on transportation from the terminal to the aircraft;
- protection of cargo and mail during loading;
- check of documents and mail seals of cargo before loading;
- in special cases, transportation of cargo and mail shall be suspended.

9.5.1.5. FLIGHTS INTO REGIONS WITH INCREASED RISK

In case of flights into the regions of increased risk a probability for the acts of unlawful interference may arise. In accordance to the threat levels issued by applicable state aviation security authorities, to establish the stringent measures, mentioned above. Therefore, a special attention of the airport services, crews, maintenance and security services shall be paid to such flights.

Measures to be taken:

In the airport:

- Aircraft, ready for the flight after security search, shall be transferred to the security service;
- maintenance staff shall undergo check of documents and search. Maintenance shall be performed only by the approved personnel;
- close inspection of the documents of the passengers and identification of the passengers;
- screening and hand search of all hand luggage;
- check and search of all transit and transfer passengers of the particular flight;
- only the passengers to the flight shall enter the sterile area;
- escorting of the passengers from the sterile area to the aircraft;
- screening and hand search of all checked-in baggage. Interviews during check-in and baggage screening;
- repeated check of the documents and identification of the registered baggage before boarding;
- the aviation security staff shall stop escorting the aircraft only after the aircraft leaves for the runway.

Flight crew:

- all crew members shall complete inspection of documents and screening and hand search;
- the crew shall be briefed about the peculiarities of the region to which the aircraft leaves, warning for vigilance.

At the destination airport:

- under no circumstances leave the aircraft without attendance. Confide the aircraft to the aviation security service in a necessity to leave the aircraft;
- watch the boarding of the passengers and the loading of baggage, cargo and mail. In a case of a concern, abort boarding, loading of cargo and mail and inform the aviation security service. Resume boarding and loading after elimination of concern or removal of the identified deficiencies. In the case of a conflict with passengers, the pilot-in-command shall warn the passengers about the responsibility according to the legal acts. If the flight has to be discontinued due to the incident, the aircraft shall return to the departure or alternate airport. The pilot-in-command shall report the incident in-flight to the flight controller and after landing to report to the Security Manager.

9.6. SECURITY OF PASSENGERS AND HAND LUGGAGE

9.6.1. OBJECTIVE OF SEARCH

The passengers and the baggage shall be screened and searched with the purpose to identify whether there are no available items causing a threat to security of the passengers, aircraft and items onboard the aircraft.

9.6.2. SEARCH OF THE DEPARTING PASSENGERS

9.6.2.1. GENERAL PROVISIONS

Unless otherwise stated, the authority, airport operator, air carrier or entity responsible in accordance with the national civil aviation security programme ensure the implementation of the measures set out in this chapter.

For the purpose of this:

- 'liquids, aerosols and gels' (LAGs) shall include pastes, lotions, liquid/solid mixtures and the contents of pressurized containers, such as toothpaste, hair gel, drinks, soups, syrups, perfume, shaving foam and other items with similar consistencies;
- 'security tamper-evident bag' (STEB) is a bag that conforms to the recommended security control guidelines of the International Civil Aviation Organisation;
- 'liquid explosive detection systems (LEDS) equipment' is a piece of equipment capable of detecting threat materials .

9.6.2.1.1. SEARCH STANDARDS

Before screening, coats and jackets shall be taken off and shall be screened as cabin baggage.

The screener may request the passenger to undertake further divesting as appropriate:

- According to the implementing rules approved the following one or a few search methods of the persons can be employed as primary or secondary means under given circumstances:
 - hand search;
 - walk-through metal detection equipment (WTMD);
 - explosive detection dogs;
 - explosive trace detection (ETD) equipment;
 - security scanners which do not use ionising radiation;
 - ETD equipment combined with hand held metal detection (HHMD) equipment.
- Where the screener cannot determine whether or not the passenger is carrying prohibited articles, the passenger shall be denied access to security restricted areas or rescreened to the screener's satisfaction.
- When a hand search is performed it shall be carried out so as to reasonably ensure that the person is not carrying prohibited articles.
- When WTMD equipment alarms, the cause of the alarm shall be resolved
- Hand-held metal detection (HHMD) equipment may only be used as a supplementary means of screening. It shall not replace the requirements of a hand search.
- Where a live animal is permitted to be carried in the cabin of an aircraft, it shall be screened either as a passenger or as cabin baggage.
- The appropriate authority may create categories of passengers that, for objective reasons, shall be subject to special screening procedures or may be exempted from screening.
- Explosive detection dogs and ETD equipment may only be used as a supplementary means of screening.
- When WTMD equipment alarms, the cause of the alarm shall be resolved. This shall be achieved by:
 - subjecting the passenger to a hand search or
 - screening the passenger again by WTMD equipment; or
 - screening the passenger by a security scanner.
- Where passengers have passed through WTMD equipment and did not cause it to alarm, between 10% and 20% of those passengers shall be subjected to screening by either:
 - a security scanner; or
 - ETD; or
 - a hand search; or
 - EDD.

Passengers shall be entitled to opt out from a security scanner. In this case the passenger shall be screened by an alternative screening method including at least a hand search. When the security scanner alarms, the cause of the alarm shall be resolved.

Before being screened by a security scanner, the passenger shall be informed of the technology used, the conditions associated to its use and the possibility to opt out from a security scanner.

- When a security scanner alarms, the cause of the alarm shall be resolved. This shall be achieved by:
 - subjecting the passenger to a targeted hand search in the areas of the body for which an alarm is raised ; or
 - re-screening the person with the security scanner after further divesting; or
 - subjecting the passenger to a hand search targeted hand search shall consist of a manual check of those parts of the body where the security scanner alarms. A hand search consists of a manual check of the person's body.
- The screening by explosive trace detection (ETD) equipment of passengers shall use samples taken from at least:
 - the palms and backs of the passengers hands or a personal item recently handled by the person (wallet, purse, passport etc.); and
 - at least one of the following regions on the person's body: the outer waistband of the person or the top of shoes worn.
- Where ETD equipment is employed in combination with hand held metal detection (HHMD), for areas where hand search is not possible or desirable, if applicable, it shall be:
 - applied directly to the area; and
 - applied to the extremities/openings of plaster casts; and
 - applied to any area which appears to have been tampered with or raise concern.
- Where an alarm is generated during the screening with ETD equipment it shall be solved so as to reasonably ensure that the passenger does not constitute a potential threat to civil aviation. The procedure to be followed shall be included in the airport security programme or the relevant document of the entity responsible for screening. The appropriate authority may require prior approval. Explosive trace detection (ETD) equipment in combination with hand held metal detection (HHMD) equipment may only be used in cases where the screener considers a hand search of a given part of the person to be inefficient and/or undesirable.
- For passengers with reduced mobility the nature of the passenger's disability shall be taken into account when choosing the method of screening. If a wheelchair, crutch, stick or stretcher is being used by the passenger, it shall, if possible, be screened as cabin baggage.
- Screening of Persons Other Than Passengers and Items Carried Persons other than passengers shall be screened by one of the following means:
 - hand search;
 - walk-through metal detection equipment (WTMD);
 - explosive detection dogs;
 - explosive trace detection (ETD) equipment;
 - security scanners which do not use ionising radiation;
 - explosive trace detection (ETD) equipment combined with hand held metal detection (HHMD) equipment.
- Exemptions and special screening procedures
- Persons other than passengers responding to a serious emergency threat to life or property may be exempted from screening.
- The appropriate authority may, on the basis of a local risk assessment, establish a specific accreditation procedure for compliance authority officers, fire brigade staff and licensed security staff required to carry fire arms in security restricted areas to be exempted from screening, or to be subjected to special screening procedures, provided that they are on duty at that airport. Unless they are on covert surveillance duties or responding to an emergency.

9.6.2.1.2. TRANSIT PASSENGERS

- The transit/transfer passengers shall be checked applying the above methods if:
 - transit passengers entered the places where there are persons who did not undergo checks by the aviation security staff;
 - transit passengers were returned their baggage from the cargo department or they have a possibility for access to it.
- Transit passengers and their cabin baggage may not be checked if:
 - they remain onboard the aircraft; or
 - they are separated from already checked departing passengers, except those who will be boarded on the same aircraft; or
 - they arrive from a Member – State, except the cases when the European Commission or the State in question submitted information that the passengers and their cabin baggage cannot be considered checked according to the common principal standards; or
 - they arrive from a non – Member – State which security standards are considered equal to the common principal standards applied in the European Union.
- The passengers can remain onboard the aircraft in the transit airport. The transit passengers who require leaving the aircraft for the time being are asked to take their cabin baggage. All transit passengers shall leave the aircraft if deemed necessary for maintenance.

9.6.2.2. SEARCH VENUE

Locations for the search and check points are defined by ICAO, ECAC, EU and Commission regulations and must comply with the requirements of these documents.

9.6.2.3. DATA ON SERVICES RENDERING SUBJECTS (NAMES AND CONTACTS OF THE SUBJECTS)

The airline "FLYONE" shall perform flights under standard IATA agreements with the airports. The aviation security checks shall be performed by the aviation security staff of the airport.

In the meantime, the airline performs charter passenger flights and the passengers are served by the ground handling companies on the contractual agreement.

9.6.3. SEARCH PROCEDURES FOR THE TRANSFER PASSENGERS

All transfer passengers and their hand luggage travelling on international and internal flights shall be checked by the aviation security staff and provided that:

- passengers and their hand luggage arrive from the EU Member State to which the aircraft
- made a transit flight from a third country NONEU, from which came the transit passengers.
- The ground handling service shall provide the airport administration with an early information on such passengers and their hand luggage and whether such passengers and their hand luggage is checked in the airport;
- transfer passengers entered the places where there are persons who did not undergo checks by the aviation security staff;
- transfer passengers were returned their baggage from the cargo department or they have a possibility for access to it.

Transfer passengers and their cabin baggage may not be checked, if:

- they arrive from a Member – State, except the cases when EU Commission or the Member – State submit information that the passengers and their hand luggage cannot be considered checked according to the common principal standards;
- they arrive from a non – Member – State which security standards are considered equal to the common principal standards.

9.6.3.1. SEARCH STANDARDS.

Search standards are defined in paragraph 9.6.2.2.

9.6.3.1.1. PERSONS NOT ACCEPTING SEARCH

Although FLYONE does own the process of passenger and cabin baggage screening at any destination, this is a security function conducted by external organizations.

However, FLYONE, and respectively its authorized representative, will deny passengers (incl. their luggage) that do not consent to an authorized search of his person when required to do so. Additionally, such persons, or others who might be denied passage for other security reasons, are referred to policing authority officials, if required by local requirements.

9.6.3.2. SEARCH VENUE.

Requirements for locations for the screening and hand check points are defined in paragraph 9.6.2.3.

9.6.3.3. DATA ON SERVICES RENDERING SUBJECTS(NAMES AND CONTACTS OF THE SUBJECTS)

The airline "FLYONE" shall perform flights under standard IATA agreements with the airports. The aviation security checks shall be performed by the aviation security staff of the airport.

9.6.4. LIST OF THE PERSONS RELIEVED FROM THE AVIATIONSECURITY INSPECTIONS

The following officials are relieved from the aviation security inspections:

- Minister for Foreign Affairs of the Republic of Lithuania;
- Chairman of the Constitutional Court of the Republic of Lithuania;
- Presidents of the Republic of Lithuania after expiry of their term in office;
- Accompanying spouses of the officials listed in paragraphs 1-6.
- The officials of foreign states and international organizations and other persons relieved from the aviation security inspections in the Republic of Lithuania:
- Monarchs and members of the royal families of foreign states;
- Leaders of foreign states and their deputies;
- Chairpersons of the Parliaments of foreign states;
- Prime Ministers of foreign states and their deputies;
- Ministers for Foreign Affairs of foreign states;
- European Council President;
- Chairperson of the European Commission and members of the Commission;
- Chairperson of the European Parliament;
- Secretary General of the European Council;
- Accompanying spouses of the officials listed in paragraphs 1-9.

The responsible authorities of a state from which the flight is operated may produce list of the passengers to whom special inspection procedures apply or who are relieved from inspections.

Upon receipt of the application for a VIP flight in the country in which FLYONE operate, the Security Manager of the company or the Ground Operations Manager service of the company together with the persons responsible for aviation security in the Civil Aviation Administration of the states, if asked, shall specify lists of the persons to whom special inspection procedures apply or who are relieved from inspections and shall harmonize the servicing procedures for VIP persons with the persons responsible for security in the airports of departure and arrival.

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9.6.5. HAND LUGGAGE SCREENING AND CHECKS

9.6.5.1. STANDARDS OF SCREENING AND CHECKS

- Before screening, portable computers and other large electrical items shall be removed from cabin baggage and shall be screened separately, unless the cabin baggage is to be screened with Explosive Detection Systems (EDS) equipment meeting standard C2 or higher.
- The appropriate entity at all airports shall screen, upon entry to the security restricted area (SRA), at least LAGs obtained at an airport or on board an aircraft that are sealed in a STEB inside which is displayed satisfactory proof of purchase at airside at an airport or on board an aircraft, as well as LAGs to be used during the trip for medical purposes or a special dietary requirement, including baby food.
- Before screening, LAGs shall be removed from cabin baggage and shall be screened separately from other items of cabin baggage, unless the equipment used for the screening of cabin baggage is also capable of screening multiple closed LAGs containers inside baggage.
- Where LAGs have been removed from cabin baggage, the passenger shall present:
 - all LAGs in individual containers with a capacity not greater than 100 millilitres or equivalent in one transparent resealable plastic bag of a capacity not exceeding 1 litre, whereby the contents of the plastic bag fit comfortably and the bag is completely closed; and
 - all other LAGs, including STEBs containing LAGs.

Appropriate authorities, airlines and airports shall provide appropriate information to passengers in respect of the screening of LAGs at their airports.

Cabin baggage shall be screened by at least one of the following methods:

- a hand search;
- x-ray equipment;
- explosive detection systems (EDS) equipment;
- explosive detection dogs in combination with point (a);
- ETD equipment.

Where the screener cannot determine whether or not the cabin baggage contains any prohibited articles, it shall be rejected or rescreened to the screener's satisfaction.

A hand search of cabin baggage shall consist of a manual check of the baggage, including its contents, as to reasonably ensure that it does not contain prohibited articles.

Where x-ray or EDS equipment is used, each image shall be viewed by the screener or analysed by auto clear software (ACS).

Where x-ray or EDS equipment is used, all alarms shall be resolved to the satisfaction of the screener so as to reasonably ensure that no prohibited articles are carried into the SRA or on board an aircraft.

Where x-ray or EDS equipment is used, any item whose density impairs the ability of the screener to analyse the contents of the cabin baggage shall be taken out of the baggage. The bag shall be screened again and the item shall be screened separately as cabin baggage.

Any bag that is found to contain a large electrical item shall be screened again with the item no longer in the bag and the electrical item screened separately, unless the cabin baggage was screened with EDS equipment meeting standard C2 or higher.

Explosive detection dogs and explosive trace detection (ETD) equipment may only be used as a supplementary means of screening.

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The appropriate authority may create categories of cabin baggage that, for objective reasons, shall be subject to special screening procedures or may be exempted from screening. The Commission shall be informed of the categories created.

Persons screening cabin baggage by x-ray or EDS equipment shall normally not spend more than 20 minutes continuously reviewing images. After each of these periods, the screener shall not review images for at least 10 minutes. This requirement shall only apply when there is an uninterrupted flow of images to be reviewed.

There shall be a supervisor responsible for screeners of cabin baggage in order to assure optimum team composition, quality of work, training, support and appraisal.

The screening, by ETD equipment which requires particulate sampling, of cabin bags shall use samples taken from at least the following:

- parts of the outside of the baggage that are frequently handled, such as zips, handles and clasps of the baggage; and
- the inside of the baggage including, where applicable, the inner lining of the baggage or the outside of any large items contained within the baggage.

The screening, by ETD equipment which requires vapour sampling, of cabin bags shall use samples taken from at least the inside of the baggage.

Where an alarm is generated during the screening with ETD equipment it shall be solved so as to reasonably ensure that the cabin baggage does not constitute a potential threat to civil aviation.

The procedure to be followed shall be included in the airport security programme or the relevant document of the entity responsible for screening. The appropriate authority may require prior approval.

The appropriate authority may allow a diplomatic bag to be exempted from screening or to be subjected to special security procedures provided that the requirements of the Vienna Convention on Diplomatic Relations are met.

Screened cabin baggage placed in the hold of an aircraft during the boarding process due to space constraints on board the aircraft shall continue to be considered as cabin baggage.

Screening and checks of liquids, aerosols and gels

Liquids, aerosols and gels shall be screened and checked with:

- X-ray equipment;
- explosives detection systems;
- small quantity explosives trace detector;
- chemical reaction testing stripes; or
- scanners of liquids in the bottles.

Skin reaction or test can be used as a supplementary search means only.

LAGs carried by passengers may be exempted from screening with LEDS equipment upon entry to the SRA:

- if the LAG is in individual containers with a capacity not greater than 100 millilitres or equivalent in one transparent resealable plastic bag of a capacity not exceeding 1 litre, whereby the contents of the plastic bag fit comfortably and the bag is completely closed; or
- if the LAG is sealed in a dedicated STEB upon purchase locally at the airport airside;
- if the LAG in a STEB originates from another EU airport or an aircraft of an EU carrier and is resealed in a dedicated STEB before leaving the security restricted area of the airport;
- if the LAG is screened locally with LEDS equipment airside and is then sealed in a dedicated

STEB.

The dedicated STEBs referred to under points (b) to (d) of point 4.5.1.19 shall:

- be clearly identifiable as a STEB of that airport;
- display inside proof of purchase or resealing at that airport within the preceding period of three hours;

LAGs shall be screened as cabin baggage. In addition, unless LAGs are exempted from screening with LEDS equipment or unless LAGs are of a quantity no greater than 100 millilitres or equivalent and either are sealed in a STEB or are required for medical purposes or a special dietary requirement, including baby food, to be used during the trip, screening by LEDS equipment .

Dedicated STEBs shall:

- originate from a supplier that submits a declaration to the airport operator confirming that the STEB is made available exclusively for use airside at that airport; and
- upon entry to the SRA, be subjected to a visual check by the screener to ascertain that it is sealed, unopened and does not show any signs of tampering.

With regard to point 4.1.3.2 (b) the appropriate authority may authorise, when flights are delayed by extraordinary circumstances, additional time in reasonable relation to the period of delay for the purpose of exempting dedicated STEBs from screening with LEDS equipment.

The passengers shall be readily informed about the EU airports which restricted access areas and the aircraft they can take liquids, aerosols and gels and the provisions related therein.

The authorities of the departing airports shall place information for the passengers with a list of items prohibited for transportation by air in well visible locations in the departure halls and at the check-in stands in order the passenger could be aware with the list before the check-in of the baggage to be transported in the cargo department commences.

The airline shall contain this list in the regulation on the passengers' transportation and submits it for passengers' information to the travelling agencies with which it has agreements on the ticket distribution.

The baggage of the passengers shall not be checked provided that:

- the designated authority of the departing state had been informed in good time and issued a permission for transportation of the particular item;
- the pilot-in-command had been informed on the passenger and a prohibited item transported by him.

The cabin crew shall contain the prohibited item into the cargo department.

The security personnel of the airport can refuse the passenger, who holds a suspicious item, to enter the restricted access area and the passenger compartment of the aircraft.

The passengers are entitled to:

- contain liquids into the checked-in baggage;
- carry pharmaceutical and diet products to be used amid the trip in the cabin baggage, as well as food for the babies;

Requirements for a hand search :

A hand search shall consist of an examination of the body and clothing by running the hands over the body and clothing in a systematic manner, back and front.

A hand search shall, where applicable, include a physical examination of:

- Headgear upper, body and clothing (back, collar, lapels, shoulders, pockets, arms, tie or scarf, blouse, shirt, sweater or cardigan, including pockets), lower body and clothing (trousers or skirts, inner and outer waistband, belt, pockets, turn-ups, hemlines)

It shall, where appropriate, include a physical or visual examination of:

- Haifootwear In addition, unusual or suspicious bulges should be further examined.

When performing a hand search, special attention shall be paid to the possibility of concealed objects hidden behind collars, waistbands and belts, as well as within footwear.

A search by explosive trace detection (ETD) equipment in combination with hand held metal detection (HHMD) equipment may replace the hand search of those parts of the person listed above where the screener considers the hand search to be inefficient and/or undesirable.

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9.6.6. ACTIONS TO BE TAKEN WITH THE SUSPICIOUS PASSENGERS AND BAGGAGE

The items prohibited to take into the restricted access area or to the passenger compartment of the aircraft detected in the search of the passenger can be transported in the baggage transportable in the cargo compartment only if they do not cause danger and do not violate provisions of legal acts.

The final decision on transportation of such items shall be taken by the pilot-in-command.

The aviation security officer performing the inspection of the passenger and his baggage or the pilot-in-command shall deny entrance for the passenger into the restricted access area, if the passenger refuses to undergo inspection, submit his baggage for search, deposit a dangerous item prohibited for transportation in the cabin or redeploy such item into the baggage in the cargo compartment.

If a prohibited item is detected in the search or the passenger refuses to undergo inspection or refuses to return such item or deploy it in the baggage transportable in the cargo compartment, the police officers shall be summoned.

Until the arrival of the police officers, the passenger shall be detained and the identified items and materials kept by the officers of the State Border Police at the Ministry of the Interior.

The airport aviation security officer shall register the items removed from the passengers at the search points and issue a document to the passenger confirming the removal of such items.

9.6.7. CONTROL OF PASSENGERS' MOVEMENT

After the screening and search by the aviation security officers the departing passengers shall be directed to the critical part of the restricted access area for boarding on the aircraft.

Whenever unscreened persons or passengers and crew members arriving from third countries may have had access to critical parts, a security search of those parts that could have been contaminated shall be carried out as soon as possible in order to reasonably ensure that it does not contain prohibited articles.

Departing passengers with hand baggage ground handling services company derived from the restricted area and re-check by aviation security personnel.

After withdrawal of the passengers as soon as possible scrutinize those parts which could be contaminated, security check-in order to reasonably ensure that they are not prohibited items.

"The arriving passengers shall not be allowed to enter the premises with the departing passengers already searched and screened by the aviation security staff.

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If the design of the airport permits, to ensure separation from departing passengers who have been subjected to screening, arriving passengers disembark from an aircraft in accordance with any of the following:

- On a level different from the departure boarding area, or
- Through an area isolated from the departure boarding area; or
- Into an area of the airport dedicated to arriving passengers only.

If physical means to avoid contact between departing and arriving passengers is not possible, passenger mix may be prevented by restricting access to the departure lounge until all arriving passengers have cleared the area. This solution may not be possible in large airport terminals with many gates close to each other.

The major concern regarding the sterility of arriving passengers will most likely be associated with flights that have originated in states where screening requirements are considered to be inadequate by the State of Flight Arrival. In order to limit the disruption of passenger flow within a terminal, consideration might be given to assigning the disembarkation of all such flights to a common sector or area of the airport or terminal that can be cordoned off and/or monitored by security personnel.

Special precautions are also taken to control transfer and transit passengers and their baggage include surveillance of transit areas (arrival/departure halls) and baggage storage and sorting areas.

Where transit or transfer passengers have access to hold baggage or baggage collection areas, rescreening is necessary before re-boarding or having any contact with other screened passengers.

The objective is to ensure transit and transfer passengers do not mix with unscreened passengers.

9.6.8. SERVICES TO THE PASSENGERS OF SPECIAL CATEGORIES

9.6.8.1. DIPLOMATS AND OTHER PRIVILEGED PASSENGERS

In compliance with the Vienna Convention on the Diplomatic Relations the diplomats and other privileged persons and their cabin baggage, except „the diplomatic bags“, shall undergo security check together with the departing passengers or security check in the VIP halls.

The procedures for transportation of the diplomatic mail, foreign consular mail by air and the procedures for servicing of the leaders of the diplomatic agencies accredited are defined in the relevant decisions and resolutions.

9.6.8.2. STATE COURIERS AND DIPLOMATIC BAGS

The diplomatic, consular and governmental couriers, the authorized officers of the forwarder or consignee of the foreign diplomatic and foreign consular mail and their personal belongings shall undergo usual aviation security check procedures in the airports defined in the legal acts.

In compliance with the defined procedures the personnel of the ground handling company responsible for the acceptance of the diplomatic baggage shall be satisfied that such baggage is forwarded by the appropriately authorized officers of those missions.

The appropriate authority can excuse the diplomatic baggage from search and screening or direct to apply special search and screening procedures if the Vienna Convention on Consular Relations is applicable.

9.6.8.3. PERSONS WITH A REDUCED MOBILITY AND PASSENGERS WITH HEALTH PROBLEMS

On selling a ticket to an incapacitated person, the personnel of the travelling agency must inform such person on the search procedures for such persons before the flight.

Physically or mentally incapacitated persons (i.e. persons with cardio-stimulators, crutches, ammunition, with para-trolleys or on stretchers, etc.) infants in carts and children (consent of the adult person is needed for their search) and other persons can be searched separately from other passengers, if so requested. For such purpose, at the passengers' check points a separate check room or a screen must be provided behind which search cannot be observed. Search of the person can be performed only by a security officer of the same gender. Appliances used by the incapacitated persons (i.e. crutches, ammunition, para-trolleys or cabin baggage) shall also be searched.

A mentally incapacitated person can be transported by "FLYONE" aircraft if only accompanied by a caregiver.

If the pilot-in-command of the aircraft assumes that a mentally incapacitated person can cause a threat to flight safety, he/she may refuse to transport a mentally incapacitated person.

9.6.8.4. POTENTIALLY UNRULY PASSENGERS

Deportees:

- persons who have been issued a permission of the appropriate authority of the any country to arrive to such country legally or have arrived to such country illegally who later are officially ordered by the appropriate authority to leave such a country

Persons refused a permission to enter (inadmissible persons):

- persons who have been refused by the competent authorities of the country to enter the country and are deported to the state of arrival or any other state which accepts such persons.

Legally detained persons:

- persons arrested or convicted by court who must be deported. The persons of this group shall be always escorted by the officers of the appropriate authorities.

The appropriate authority in a reasonably good time (at least before 24 hours) shall inform the airline in written about its intentions to board the potential dangerous passengers on the aircraft.

The following information must be given in the letter to the airline and the pilot-in-command:

- identity of the person;
- reasons for deportation;
- name (-s) and duties of the escorting officer (-s), if any;
- risk assessment made by the appropriate authority (including for nomination or no-nomination of the escort);
- if necessary, a plan for preliminary seating; and
- nature of the document available;
- Willingness or unwillingness to travel by air;
- Whether the person has attempted to escape custody;
- Whether the person has any history of violence;
- Whether the person has a history of self-harm;
- Whether members of the person's family are booked on the same flight;
- Whether the person is likely to be the target of harm during the transportation;
- The mental and/or physical state of the person;
- Wanted status of the person (by any other authority);
- Other information that would allow an operator to assess the risk of endangering the security of the flight;
- Special conditions and precautions for transport of the person, if any.

Notification of the PIC:

On receipt of such information, the AVSEC manager shall notify the appropriate authority and the pilot-in-command, prior to the commencement of a flight, when passengers are to be transported who are obliged to travel because they have been the subject of judicial or administrative proceedings.

Special security measures applicable to the above groups of potentially unruly passengers to be transported by air:

- the officers of the airport security service must perform search of the persons in question, their cabin baggage and hold baggage;
- the appropriate authorities must agree upon transportation of such passengers with airline and the pilot-in-command. The officers of the ground handling company shall board such passengers on the aircraft before the boarding of the passengers departing by the flight;
- the cabin attendant shall not give such passengers the seats at the passage and the emergency exits;
- in flight the cabin attendant shall not serve such persons with alcoholic drinks;
- subject to the degree of a potential risk, the competent authority shall define the number of escorting persons;
- the cabin attendant shall maintain a regular communication with the escorting officers and the pilot-in-command;
- the appropriate authorities shall see that information on transportation of the passengers belonging to such group by the particular flight is not published;
- the escorting officers shall use the movement constraint appliances, if consider them necessary.

Transportation of legally detained persons:

On receipt of a notification from the appropriate authority on the planned transportation of the potentially dangerous passengers by the aircraft of the airline, the Director General of the airline shall assess if the escort accompanying the person under convoy is sufficient and acceptable to the airline, a severity of the crime made by the person, his/her addiction to drugs, the political situation in the state of arrival and shall inform in writing the authority arranging the convoy for the person on the decision of the airline accepting, refusing or demanding for additional security measures for transportation of the person under convoy and notify the crew of the aircraft on transportation of the person under convoy by the flight perform by this particular crew.

The escorted person transported by air must be convoyed at least by one officer. Provided that in the opinion of the authority arranging the convoy or the Director General of FLYONE the escorted person is dangerous, he must be accompanied at least by two officers.

Only one escorted person can be transported in one FLYONE flight.

FLYONE can refuse to transport an escorted person if, in its view, the person can endanger flight safety. In such case, FLYONE shall give its opinion in writing to the escorting authority about the reasons for the refusal of transportation.

The accompanying officers must ensure that the escorted person does not carry dangerous items.

The hold baggage of the escorted person shall be the last baggage in the cargo compartment.

The pilot-in-command of the "FLYONE" aircraft shall inform the accompanying officers who convoy the escorted person not to take any measures without his consent which may endanger flight safety.

The escorted person together with the accompanying officers shall be escorted by the officers of the ground handling company to the aircraft, boarded before boarding of the passengers and disembarked after all passengers had left the aircraft and escorted by the officers of the ground handling company to the arrival hall in the airport.

From the moment of search and screening in the airport until boarding and from the moment of disembarking until leaving the controlled area in the terminal of arrival the escorted person and the accompanying officers shall be accompanied and watched by the airport security service officer.

9.6.9. UNRULY PASSENGER POLICY

9.6.9.1. SECURITY MEASURES APPLICABLE TO UNRULY PASSENGERS

Special security measures shall be applicable to the unruly passengers.

Unruly Passenger means a person who were checked-in for the flights operated under FLYONE designation code who:

- threatens, intimidates, causes danger or by premeditated actions endangers safety of the aircraft equipment or persons;
- threatens, intimidates, causes danger to the crew members or by premeditated actions interferes with the performance of their duties or otherwise impedes their duties;
- by premeditated actions makes damage to the aircraft, its equipment, thus, causing a danger to safety to the aircraft or the passengers on board;
- disseminates untrue information concerning safety during the flight;
- does not obey instructions or commands concerning flight safety.

Pursuant to the international security regulations the pilot-in-command of the "FLYONE" aircraft can refuse to transport passengers provided that:

- the passenger is intoxicated by alcohol, drugs or pharmaceutical;
- the physical condition of the passenger is mean;
- the passenger disrupts order, harass or abuse other passengers;
- the passengers suffer from epidemic diseases;
- the passenger does not come for screening and search in time;
- the passengers violating "FLYONE" regulation on transportation of passengers, the requirements of its agents or officers or refusing to be screened and searched before the flight.

The personnel of the ground handling company shall inform the pilot-in-command of such passenger and the pilot-in-command shall take a decision and shall be responsible for the decision taken to carry or refuse to carry such a passenger.

Upon taking the decision refusing to carry the passenger, the pilot-in-command immediately shall inform the OCC

Each time the pilot-in-command refuses to carry or agrees with great unwillingness to carry a passenger, station manager or Airline Representative shall send a report to the AVSEC manager with copy to the Head of Ground Operation at avsec@flyone.eu with the following information:

- name and address of the passenger;
- flight route, flight number and date;
- reasons for refusing to carry or difficulties in agreeing to carry;
- data on the passenger's ticket, number and data on the issuing agent;

The name and surname, contact details and their explained material in written of the witness with their signs on report form.

In case of refusal from flight on ground, to unruly passenger should be presented the company regulations on transportation of the passengers, where to should be the company right to refuse from flight the unruly or dangerous passenger.

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For solution of the problems with the unruly passengers, “FLYONE” shall apply preventive measures and procedures:

- additionally inform passengers on the reaction of the airline towards offenders in the airline regulation on transportation of the passengers;
- the flight crew and the cabin crew adopt the policy of non-conformation with the offenders;
- in the case of the passenger's actions violating the order, handling agents, the cabin attendant shall explain the consequences of the degree of their probability;
- Passengers are not allowed to drink alcohol has been lodged not by the cabin crew;
- Handling agents, Cabin crew members shall monitor and determine the passengers who potentially consume their alcohol.
- These procedures and operations crew members trained in the company's courses and recurrent courses.

Some of the obvious warning signs are:

- drunkenness;
- unusually loud and boisterous behavior;
- threatening, violent and disruptive behavior; and
- smoking in nonsmoking areas.

Training:

In the airline course and refresher training the ground crew members passing the training of company procedures and actions in dealing with unruly passengers.

In practical exercises, skills of communication between the cabin attendants and the pilots shall be improved by applying the aeronautical terms and explaining the cabin attendants how to precisely inform the pilots on the situation in the cabin.

Practical exercises for using of restraining devices having in “Restraining devices” kit.

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9.6.9.2. GROUND PROCEDURES

In taking actions against the unruly or aggressive passengers the following classification of danger levels shall apply enabling members of the flight crew and ground services readily and without additional explanations to understand the present situation and the danger level on the ground or in the aircraft.

Danger levels:

Level 1 – actions violating the order;

Level 2 – physical intimidating actions;

Level 3 – life endangering actions;

Level 4 – attempts of intrusions or actual intrusion onto the flight deck.

On check –in, or boarding the passengers shall be observed by the ground crew with a goal to identify the disruptive passengers.

On completion of the boarding, physically strong passengers, pilots and personnel from other airlines travelling by this flight and capable of helping the crew in the case of danger shall be preselected.

The handling agents and cabin attendants shall be trained to identify and communicate with the persons with the mental problems in order to prevent the dangers of level 1 or 2 transform into the dangers of level 3 or even level 4.

Incident categories:

Category 1:

include verbal warning, and not tied to the safety of flight or attempt to penetrate the pilots should be warned. Passenger orally informed of the responsibilities and requested to follow safety rules. When satisfied that the passenger in accordance with established rules, no other crew members to take action is not necessary, but the pilot in command must be informed about the event.

Category 2:

this behavior is attributed to the passenger refuses to comply with safety rules. Notice of unruly passengers must be completed and sent to the company's main office to security manager and copy left at the departure airport security department.

Category 3:

assigned to the most serious disciplinary violations involving 2,3 and 4 levels. The incidents in the intervening time, the passenger duties performed by the ground handling agents, airline representative, crew, wounded or attempted to cause serious injury crew member or passenger.

It also includes an attempt to muscle into the cockpit or on the passenger's undisciplined actions have been carried out a forced landing at nearest airport.

Recommended cockpit security procedures to start the first stage of turbulence on the aircraft.

This procedure can be terminated only by permission of the commander of the aircraft if the aircraft turbulence, whether the undisciplined behavior of the passenger, finished.

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9.6.9.3. AIRBORNE PROCEDURES

From the moment of boarding until they disembark from the aircraft the cabin attendant shall watch the passengers and provided the passenger's behavior becomes undisciplined or a similar problem arises which may directly endanger flight safety he/she must take measures appropriate to the situation.

Before taking any responsive actions the cabin attendant must analyze and assess the present situation in order to inform the pilots precisely on the situation in the cabin and to quell alone a conflicting situation. Should one cabin attendant fails to resolve a conflicting situation on a flight with two cabin attendants, he/she must immediately pass the further resolution of the situation to the other cabin attendant. Such collaboration must help the cabin attendants to assess situation onboard the aircraft in a more precise manner.

The responsive actions taken by the crew must correspond to the danger level:

Level 1 – actions violating the order

The cabin attendant must:

- warn the pilots and the other cabin attendants;
- watch other passengers with a goal to identify if those are not the actions to distract attention from hijacking of the aircraft;
- isolate the flight deck from the passengers;
- prevent the passengers from walking in the compartment;
- try to resolve the conflicting situation;
- on receipt a warning from the cabin attendant on the situation on board, the pilot-in-command decide on an appropriate address to the passengers by the aircraft public address system;
- the cabin attendant also give the disruptive passenger a card with admonitions about legal responsibility for the violation of the defined order in the aircraft and explain that the crew can immediately take responsive measures in the case of further continuation of disruptive actions;
- after the flight the cabin attendant record all events and actions in the report and give it to security manager.

Level 2 – physical intimidating actions

The cabin attendant must:

- alone or with the assistance of other cabin attendants or passengers separate persons engaged in the fight;
- warn the pilots and the other cabin attendants;
- isolate the flight deck from the passengers;
- watch other passengers with a goal to identify if those are not the actions to distract attention from hijacking of the aircraft;
- on receipt a warning from the cabin attendant on the situation on board, the pilot-in-command inform the flight controller on the situation on board and the requested assistance on the ground.

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Level 3 – life endangering actions

The cabin attendant must:

- warn the pilots and the other cabin attendants;
- isolate the flight deck from the passengers and block the passage with a service trolley;
- use power to quell the offenders asking the assistance of the passengers;
- apply the movement constraint appliances from the Restraining devices kit, asking the assistance of the passengers.

The pilot-in-command must:

- take a decision on the emergency landing in the nearest airport and inform the flight controller on the situation on board and the requested assistance on the ground.
- set the transponder to code 7500;
- set the receiver to 121,5 MHz frequency;
- make preparations and begin the emergency descent;
- after landing park the aircraft in the site at the order by the dispatcher, switch-off the engines and disconnect power supply;
- if possible, evacuate the passengers.

Level 4 – attempts of intrusions or actual intrusion onto the flight deck

- the crew must attempt to leave control and management of the aircraft to the pilots;
- the cabin attendant must warn the pilots and the other cabin attendants;
- the pilots must use the aircraft public address system ask for the assistance of the cabin attendance and the passengers to protect the flight deck;
- the cabin attendants must protect the flight deck by using any means and measures to liquidate the danger;
- the cabin attendants can give commands and use any means to quell the offenders;
- apply the movement constraint appliances from the Restraining devices kit, asking the assistance of the passengers.

The pilot-in-command must:

- take a decision on the emergency landing in the nearest airport and inform the flight controller on the situation on board and the requested assistance on the ground;
- set the transponder to code 7500;
- set the receiver to 121,5 MHz frequency;
- make preparations and begin the emergency descent;
- after landing park the aircraft in the site ordered by the dispatcher, switch-off the engines and disconnect power supply;
- if possible, evacuate the passengers.
- In the event of any situation related to the unlawful interference, the ultimate objective must be protection of lives of the persons on board (expect the offenders).

The flight deck must be isolated to:

- ensure reliability of further flight;
- execute further control in the aircraft;
- protect persons on board and on the ground.

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9.6.9.4. LEGITIMACY OF REPRESSIVE MEANS

Tokyo Convention of 1963 (Convention on offences and certain other acts committed on board the aircraft) concretely defines the issues of unlawful interference in the field of international civil aviation which relieve from responsibility for the actions taken against the intruders.

Article 10 of the Convention states that “for actions taken in accordance with this Convention, neither the aircraft commander, any other member of the crew, any passenger, the owner or operator of the aircraft, nor the person on whose behalf the flight was performed shall be held responsible in any proceeding on account of the treatment undergone by the person against whom the actions were taken”.

9.6.9.5. RESTRAINING DEVICES

Crew need to be aware that a situation can escalate at any moment and sometimes without warning.

In turn, Crew members must attempt to defuse a critical situation until it becomes clear that there is no way to resolve it verbally. FLYONE carries devices to restrain a physically confronting passenger. The kit consists from the public accessible devices in any shop:

- 1 power tape;
- 10 straps;
- 2 belts;
- 1 cutter.

Applying restraining devices should be used when all conciliatory approaches have been exhausted.

Once restraints have been used, they should remain on the passenger for the duration of the flight even if he/she promises good behavior.

Securing the restraining device to a combative, agitated and violent passenger can be extremely difficult for the crew. Able Bodied Passengers (ABPs) can assist Cabin Crew in restraining the unruly passenger(s). It should be made clear by the cabin crew that they are to remain in charge and that ABPs should only act according to the directives provided by cabin crew members no matter their profession or rank. Cabin crew should never relinquish control of the cabin to either perpetrators or ABPs, even if they are air carrier employees or law enforcement officers. Cabin crew should control the amount of force used by ABPs in order to restrain or subdue a perpetrator and make sure it is not excessive.

When asking an ABP for help, cabin crew should be firm and exert authority. Cabin crew members need to be aware that some passengers have shown that they are willing to assist crew members (in most cases). However, some are not. There is no guarantee of support and the crewmember must be prepared to act accordingly.

Flight crew need to quickly assess if the Cabin Crew can control the disturbance. If the answer is negative, the flight crew should relay this information to the applicable persons on the ground and land as quickly as possible.

Preflight check

The Restraining devices kit in place shown in “Emergency equipment distribution list and seal is not broken.

In case of broken seal found, the kit should be replaced.

9.6.9.6. INCIDENT REPORTING PROCEDURES

All the acts of unlawful interference that took place on board must be reported by the cabin attendance to the pilot-in-command and the pilot-in-command must report them to the Security Manager by filling-in the form of the Occurrence Report.

Having collected all available material and taken the reports of the crew members, the Security manager shall submit a primary occurrence report to the Civil Aviation Administration.

CEO of the airline shall issue an order to set up the commission for investigation of the case. After investigation of the case, the Commission shall state the reasons and issues the recommendation for the prevention of the similar occurrences. The final report shall be forwarded to the Civil Aviation Administration and the investigator-in-charge of the aircraft accidents and incidents.

On the basis of the recommendations issued by the investigation commission, the directors of the departments directly engaged in the occurrence shall implement the recommended measures for the prevention of the similar occurrences in their departments.

The quality assurance manager shall audit the implementation and efficiency and inform on the outcome CEO and shall submit a report on the implementation of the recommended measures to the Civil Aviation Administration and the investigator-in-charge of the aircraft accidents and incidents in this way closing the investigation of the occurrence.

9.6.9.7. INCREASED SECURITY THREATS

FLYONE ensures that in case of increased threat levels which require immediate action (like bomb threats, hijacking), required measures are implemented without delay and always in accordance with requirements of the applicable authorities.

In the case of a general (i.e. non-specific) intermediate threat level, in addition to the baseline passenger and carry-on screening procedures, the following additional measures may be implemented:

- Continuous random searching of passengers by hand (or by approved technological methods) either at the departure gate (where airport facilities permit) or other suitable location(s).
- Continuous random searching of cabin baggage by hand (or by approved technological means) either at the departure gate (where airport facilities permit) or other suitable location(s).

In the case of a general (i.e. non-specific) high threat level, additional measures such as the following may be introduced:

- All departing passengers are searched again by hand or screened with metal detection equipment at the departure gate before being permitted to board the aircraft;
- All cabin baggage is subjected to an additional search by hand or by X-ray equipment, either at the departure gate (where airport facilities permit) or other suitable location(s), before being permitted to be carried on board the aircraft.

If a threat is specific to a certain object (e.g. liquid explosives), then more specific counter measures than above would need to be implemented.

To facilitate additional screening, earlier close-out of passenger check-in operations is a consideration.

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9.7. HOLD BAGGAGE SECURITY IN THE CARGO COMPARTMENT

9.7.1. OBJECTIVES OF THE SAFETY MEASURES

The hold baggage after security check made by the aviation security staff as well as the transfer baggage of the cargo compartment shall be protected with a goal to prevent access of unauthorized persons from the moment of the cargo acceptance for transportation to the departure of the transporting aircraft.

9.7.2. IDENTIFICATION OF THE PERSON

9.7.2.1. STANDARDS FOR IDENTIFICATION OF THE PERSON

The document confirming the identity of the person shall be the citizen's passport, EU Member –State citizen's passport or the identity card of such persons or the citizen's passport of another state, travel documents of the person without citizenship.

A check at the passengers' check-in stand shall establish whether the name and the surname in the identity document of the passenger is coincident with the name and the surname in the electronic departure control system as well as whether the photography in the document is that of the submitting passenger.

The personnel of the ground handling company at the boarding place shall re-check whether the name and the surname on the boarding pass is coincident with the name and the surname on the identification document as well as whether the photography in the document is that of the submitting passenger and the flight number on the boarding pass is of the departing aircraft.

9.7.2.2. POINTS FOR IDENTIFICATION OF THE PERSONS

The personnel of the ground handling company performing the service shall check the identity documents of the passengers at the places of the passengers check-in and boarding.

9.7.3. INTERVIEWS OF THE PASSENGERS

The objective of the interview is to identify if:

- the passenger alone arranged his baggage and, at the same time, is responsible for the content of the baggage;
- the passenger did not leave the baggage for safekeeping to strangers;
- the baggage is locked;
- large items (camera, video camera, radio receiver, etc.) belong to the passenger or given by strangers before the flight.

9.7.3.1. QUESTIONS TO BE ASKED

- Did you pack the baggage alone?
- Did you leave the baggage for safekeeping to strangers?
- Did you leave the baggage unattended?
- Is that your baggage?
- Who asked you to take this baggage?

If the baggage does not belong to the person who submitted it for check-in, the true owner of the baggage must be found who must be asked the same questions. Provided that the baggage was left unattended or packed not by the owner, the baggage must be checked with particular carefulness.

9.7.3.2. VENUE FOR INTERVIEWING

The personnel of the ground handling company performing the service shall perform interviews of the passengers at the places of the check-in of the passengers and their baggage.

9.7.3.3. DATA ON SERVICES RENDERING SUBJECTS

The airline "FLYONE" has entered the agreement with the ground handling enterprises in every airport used for its operations which provides for the interviews with the passengers defined in this chapter of the programme.

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9.7.4. PROCEDURES FOR SCREENING AND HAND SEARCHES OF THE HOLD BAGGAGE OF THE DEPARTING PASSENGERS

9.7.4.1. STANDARDS FOR SCREENING AND CHECKS

- The following methods, either individually or in combination, shall be used to screen hold baggage:
- a hand search; or
- x-ray equipment; or
- explosive detection systems (EDS) equipment; or
- explosive trace detection (ETD) equipment;
- explosive detection dogs.

Where the screener cannot determine whether or not the hold baggage contains any prohibited articles, it shall be rejected or rescreened to the screener's satisfaction.

- A hand search shall consist of a thorough manual check of the baggage, including all its contents, so as to reasonably ensure that it does not contain prohibited articles.
 - Where x-ray or EDS equipment is used, any item whose density impairs the ability of the screener to analyze the contents of the baggage shall result in it being subject to another means of screening.
 - Screening by explosive trace detection (ETD) equipment shall consist of the analysis of samples taken from both the inside and the outside of the baggage and from its contents. The contents may also be subjected to a hand search.
 - The appropriate authority may create categories of hold baggage that, for objective reasons, shall be subject to special screening procedures or may be exempted from screening. The Commission shall be informed of the categories created.
 - Persons screening hold baggage by x-ray or EDS equipment shall normally not spend more than 20 minutes continuously reviewing images. After each of these periods, the screener shall not review images for at least 10 minutes. This requirement shall only apply when there is an uninterrupted flow of images to be reviewed. There shall be a supervisor responsible for screeners of hold baggage in order to assure optimum team composition, quality of work, training, support and appraisal.
 - In the cases when X-ray devices are employed:
 - the software for the picture projecting of dangerous goods must be installed and operated;
- or
- between 10% and 20% of hold baggage, selected on a continuous random basis,
 - shall also be screened by:
 - a hand search; or
 - EDS equipment; or
 - explosive detection dogs (EDD); or
 - explosive trace detection (ETD) equipment; or
 - the same X-ray equipment for the second time by the same verifier checks baggage from a different angle (the angle of the turn - not less than 60 ° and not more than 90 °), except where there is a detailed X-ray scanning equipment.

- Where EDS equipment is used and when a piece of hold baggage generates an alarm, either the alarm shall be resolved by the screener if he is satisfied that the baggage does not contain prohibited articles or the baggage shall be screened again by one or more of:
 - EDS equipment of a higher standard;
 - EDS equipment that is of the same standard but used in a manner that allows a more detailed examination of the baggage;
 - a hand search;
 - x-ray equipment, whereby the same screener examines the baggage from a different angle with at least 60° and no more than 90° rotation, unless multi-view x-ray is used.

Whenever the tunnel size of x-ray equipment installed before 1 October 2013 does not allow for the above range of rotation, the appropriate authority may permit a smaller rotation until 31 December 2015;

- x-ray equipment, whereby a screener examines the baggage from two different angles with at least 60° and no more than 90° rotation, unless multi-view x-ray is used.
- EDD;
- ETD equipment.
- Where EDD as referred to in point (f) or ETD equipment as referred to in point (g) are employed for alarm resolution either the whole bag shall be screened or, if it can be clearly identified, only the item(s) causing the alarm may be screened.
- The screening, by ETD equipment which requires particulate sampling, of hold baggage shall use samples taken from at least the following:
 - parts of the outside of the baggage that are frequently handled, such as zips, handles and clasps of the baggage; and
 - the inside of the baggage including, where applicable, the inner lining of the baggage or the outside of any large items contained within the baggage.
- The screening, by ETD equipment which requires vapour sampling, of hold baggage shall use samples taken from at least the inside of the baggage.
- Hold baggage may be screened off-airport or at landside provided that immediately after screening it becomes secured baggage.
- Measures shall be taken to ensure that secured baggage has not been tampered with before being loaded onto an aircraft.
- The appropriate authority may allow a diplomatic bag to be exempted from screening or to be subjected to special security procedures provided that the requirements of the Vienna Convention on Diplomatic Relations are met.
- Pursuant to the requirements of designated authorities to define the list of items prohibited for transportation by air. The airport authorities shall place information for the passengers with a list of items prohibited for transportation by air in well visible locations in the airports and at the check-in stands in order the passenger could be aware with the list before the check-in of the hold baggage commences

9.7.4.2. LOCATIONS OF THE POINTS FOR SCREENING AND CHECKS

Locations for the screening and check points are defined by ICAO, ECAC, National Security Program, national regulations and must comply with the requirements of these documents.

9.7.4.3. DATA ON SERVICES RENDERING SUBJECTS

The airline "FLYONE" LTD has entered the agreement with the ground handling enterprises in every airport used for its operations which provides screening and hand search for the hold baggage of the departing passengers.

9.7.5. PROCEDURES FOR SCREENING AND MANUAL CHECKS OF THE TRANSFER HOLD BAGGAGE

FLYONE ensures that transfer hold baggage for an international passenger flight either:

- Is subjected to screening prior being loaded into an aircraft by applying one of the methods defined in paragraph 5.4.1.2 above, or
- Has been screened at the point of origin and subsequently protected from unauthorized interference from the point of screening at the originating airport to the departing aircraft at the transfer airport.

9.7.5.1. STANDARDS FOR SCREENING AND CHECKS

Standards for screening and checks are defined in paragraph 9.6.4.1 above.

9.7.5.2. LOCATIONS OF THE POINTS FOR SCREENING AND CHECKS

Locations for the screening and check points are defined by ICAO, ECAC, National Security Programme, national regulations and must comply with the requirements of these documents.

9.7.5.3. DATA ON SERVICES RENDERING SUBJECTS

The airline "FLYONE" has entered the agreement with the ground handling enterprises in every airport used for its operations which provides screening and hand search for the transfer hold baggage.

9.7.6. PROTECTION OF THE CHECKED HOLD BAGGAGE

9.7.6.1. PROTECTION STANDARDS

- Passengers may not be allowed access to screened hold baggage, unless it is their own baggage and they are supervised to ensure that: (a) no prohibited articles as listed are introduced into the hold baggage; or (b) no prohibited articles as listed in are removed from the hold baggage and introduced into the security restricted areas or on board an aircraft.
- Hold baggage that has not been protected from unauthorised interference shall be rescreened.
- The hold baggage should be protected by ground handling and airport security staff from unauthorised interference from the point it is screened or accepted for transportation, whichever is earlier, until departure of the aircraft.
- The hold baggage kept in the critical part of the airport shall be considered protected from an unlawful impact.
- Hold baggage that is in a part other than a critical part shall be considered as protected from unauthorised interference if:
 - it is secured baggage; or
 - it is not left unattended at airports where alternative provisions apply in accordance with point
- The airline "FLYONE" performs flights under agreements with the airports which security services define protection procedures for the hold baggage.

The hold baggage kept in the principal part of the airport shall be considered protected from an unlawful impact.

The hold baggage kept outside the principal part of the airport shall be considered protected from an unlawful impact if:

- baggage is protected; or
- baggage is not left unattended;
- in the cases the protected baggage is maintained by unauthorized persons, measures are taken to avoid a damage before loading it onboard the aircraft.
- Requirements for the protection of the hold baggage searched by the aviation security staff:
- the company performing ground handling of the hold baggage must keep tags in the office;
- only the authorized persons shall be entitled by the airport security staff for access to the premises with hold baggage, transportation belts and vehicles;
- vehicles for transportation of the checked baggage to the aircraft must be watched by the airport security staff and the personnel of the ground handling company;
- the personnel of the ground handling company shall be prohibited to leave the searched baggage unattended on the apron or at the aircraft;
- provided the baggage is checked-in and taken from the passenger outside the airport, access to the premises with the checked-in hold baggage and vehicles shall be granted only to the authorized officers; transportation of such baggage shall be done in the closed, locked and sealed vehicles which are prohibited to leave unattended;
- only the authorized persons shall be entitled by the airport security staff for entrance to the premises with the lost or temporally stored baggage.

Should a need be to a passenger, the aviation security staff may allow him/her to access to the searched hold baggage belonging to him/her, however, the passenger must be accompanied and watched by the airport security staff in order the prohibited items shall not:

- be placed into the hold baggage; or
- be removed from the hold baggage and taken into the cabin or the restricted access area.

The return point for hold baggage shall be separated from other premises for servicing of the baggage. If such premises are unserviceable, their doors and hatches for transportation belts must be locked and the premises watched by technical means (CCTV, warning systems, etc.) or the staff of the airport security services.

Mishandled, Unidentified and Unclaimed baggage is held in a locked and secure storage cage or room. Access and key control is properly supervised and the baggage subjected to additional screening before being loaded into an aircraft.

Unclaimed baggage is kept for a period of time, as prescribed by the local authority, and disposed of through that authority as unclaimed property.

9.7.7. CHECK-IN PROCEDURES OUTSIDE THE AIRPORT

"FLYONE" shall not apply the procedure of check-in outside the airport.

9.7.8. PROCEDURES FOR TRANSPORTATION OF FIREARMS AND OTHER WEAPONS

Carriage of firearms and weapons shall be performed according to the norms provided in:

- EASA applicable regulations;
- IATA Dangerous Goods Regulations (IATA DGR);
- Law of Romania on the carriage and use of weapons in Romania.

9.7.8.1. ACCEPTANCE PROCEDURES

Military and sports weapons and ammunition and their replicas can be transported by air as cargo or checked-in hold baggage and must be out of reach for passengers in flight. Information on the kind of weapons and ammunition intended for transportation by "FLYONE" shall be submitted in good time to the head of the airline ground handling service in order inspections of the documents and permissions can be made, if any.

The passengers with authorizations for importation of weapons must declare them to the check-in services and inform the staff of the aviation security service.

The weapons shall be transported with the escort of the aviation security staff to the aircraft as a checked-in baggage from the area of collection and assortment until loading on the aircraft. The officer of the aviation security service shall produce an accompanying letter and a certificate (3 copies) for the weapons prepared for transportation by air. One accompanying letter shall be given to the pilot-in-command, the second to the persons responsible for transportation of weapons (owners), the third shall be kept by the airport aviation security service.

The weapons intended for transportation by air must be carried unloaded and stored in places out of reach of passengers (flight deck or cargo compartment).

At the point of destination indicated in the authorization for transportation of weapons the passenger (owner of the weapon) shall submit to the pilot-in-command a copy of his accompanying letter and the permission for transportation of the weapon. The pilot-in-command shall scrutinize the documents and return the weapons to the owner.

Before taking back the weapons the owner of the weapons shall sign on the accompanying letter, thus, confirming the return of the weapons.

If during search of the passenger and baggage illegally transported firearms or other weapons, explosive materials or dangerous items and the passenger refuses to leave the dangerous item or to transport the dangerous item in the cargo compartment, the aviation security staff must call the police officers and until their arrival must pass the dangerous items for protection to the officers of the State Border Police.

Military/Police Troop Transport

If FLYONE performs an exclusive charter flight, weapons may be allowed in the cabin provided that:

- an exclusive charter flight would not have any regular passengers;
- firearms unloaded;
- ammunition securely boxed and placed in cargo compartment.

Senior officer is present during flight,

Commander is informed about who is in charge and the purpose of the transport.

The Airport Security responsible should be given a prior notice.

Policeman acting as Bodyguard

Policeman acting as bodyguard accompanying his/her subject on charter flights when there are no passengers except members of delegation, may carry unloaded weapon in the passengers compartment and to store the ammunition in the cargo compartment. Authorization regarding policeman's handling of weapons and ammunition on board, must be received from FLYONE Security with special notify for OCC mandatory.

The Commander and the Airport Security responsible shall be informed. Policeman shall be able to present identification.

On flights together with passengers policeman, acting as bodyguard, shall present the permit, firearm and ammunition to airport security.

9.7.8.2. SECURITY STAFF FOR THE GOVERNMENT VIPPERSONS

Security officers flying by regular flights who are issued authorizations for transportation of weapons must give them to the staff of the aviation security service.

Transportation of weapons and firearms shall be prohibited in the cabin, except the cases when an official delegation of the State or the Government flies accompanied by the armed security officers and there are no other passengers in addition to the members of the delegation.

Pilot-in-commands shall be notified prior to the departure of a flight about the number of authorized armed persons on board the aircraft and the seats allocated.

Pilot-in-command must remind that the firearms are not loaded, cartridges are kept separately from the firearms or the unloaded firearms shall be collected and kept on the flight deck until the end of flight.

9.7.8.3. SECURITY OF WEAPONS AND AMMUNITION ON THE GROUND

The airport aviation security staff shall keep the weapons separately from other checked-in hold baggage in the appropriate safe-boxes in the cargo compartment. The weapons shall be transported to the aircraft as checked-in hold baggage from the area of collection and assortment to loading onboard with the escort of the aviation security staff. The security officer shall give the pilot-in-command the firearm and one of three copies of the accompanying letter. The pilot-in-command shall contain the weapon in the cargo compartment.

9.7.8.4. SECURITY MEASURES TO BE TAKEN WITH THE SUSPICIOUS HOLD BAGGAGE

On detecting a suspicious item in the checked-in hold baggage or the assumption that dangerous items prohibited for transportation in the cargo compartment can be found in the hold baggage, such baggage shall be repeatedly undergo hand search.

For this purpose, the owner of such baggage must be summoned to the premises for the checked-in hold baggage by the aviation security staff and in presence of the owner the baggage shall be repeatedly searched by the aviation security staff. Throughout such search the passenger shall not be allowed to touch the searched baggage.

On detection of the dangerous item prohibited for transportation in the cargo compartment, such item shall be removed from the baggage, registered and the passenger shall be issued a document confirming the removal of such item.

9.8. CARGO AND MAIL SECURITY

9.8.1. OBJECTIVES OF SECURITY MEANS

The cargo and mail bags to be transported by international and domestic passenger flights shall be subjected to the appropriate security control, including screening where practicable, as established by the applicable state before loading on board the aircraft with a goal to prevent bringing in of prohibited items into the aircraft.

Assembled explosive and incendiary devices that are not carried in accordance with the applicable safety rules shall be considered as prohibited articles in consignments of cargo and mail.

9.8.2. CARGO AND MAIL SECURITY

"FLYONE" shall accept cargo and mail for transportation from a registered agent or registered mail (approved by appropriate institutions) services.

All cargo and mail shall be screened by a regulated agent before being loaded on to an aircraft, unless:

- the required security controls have been applied to the consignment by a regulated agent and the consignment has been protected from unauthorized interference from the time that those security controls were applied and until loading; or
- the required security controls have been applied to the consignment by a known consignor and the consignment has been protected from unauthorised interference from the time that those security controls were applied and until loading; or
- the required security controls have been applied to the consignment by an account consignor, the consignment has been protected from unauthorised interference from the time that those security controls were applied and until loading, and it is not carried on a passenger aircraft; or
- the consignment is exempt from screening and has been protected from unauthorized interference from the time that it became identifiable air cargo or identifiable air mail and until loading.

Where there is any reason to believe that a consignment to which security controls have been applied has been tampered with or has not been protected from unauthorised interference from the time that those controls were applied, it shall be screened by a regulated agent before being loaded on to an aircraft. Consignments which appear to have been significantly tampered with or which are otherwise suspect shall be treated as high risk cargo or mail (HRCM) .

A person with unescorted access to identifiable air cargo or identifiable air mail to which the required security controls have been applied shall have successfully completed either a background check or a pre-employment check .

9.8.2.1. PROCEDURES FOR THE CARGO ACCEPTANCE

When accepting any consignments, a regulated agent shall establish whether the entity from which it receives the consignments is a regulated agent, a known consignor, an account consignor or none of these.

The person delivering the consignments to the regulated agent or air carrier shall present an identity card, passport, driving license or other document, which includes his or her photography and which has been issued or is recognised by the national authority. The card or document shall be used to establish the identity of the person delivering the consignments.

- 1 FLYONE shall demand that the regulated agent:
2. When accepting consignments from a regulated agent, the receiving regulated agent shall establish the security status of the consignment by verifying whether or not "SPX", "SHR" or "SCO" is indicated on the accompanying documentation. If there is no such indication, it shall be deemed that no security controls have previously been applied.
3. When accepting consignments to which security controls have previously been applied, the regulated agent shall establish the identity and address of the agent or consignor.
4. This shall be done at least by verifying whether the agent or consignor is listed as a regulated agent or known consignor in the 'Union database on supply chain security'.
5. The verification can be considered as done if the regulated agent verified earlier on the same day that the entity from which it receives consignments is listed in the 'Union database on supply chain security'.
6. The regulated agent shall ensure that consignments to which not all required security controls have previously been applied are:
7. (a) screened or
8. (b) accepted for storage under the regulated agent's exclusive responsibility, not identifiable as shipment for carriage on an aircraft before selection, and selected autonomously without any intervention of the consignor or any person or entity other than those appointed and trained by the regulated agent for that purpose.
9. Point (b) may only be applied if it is unpredictable for the consignor that the consignment is to be transported by air.

10. After the security control, the regulated agent ensures:
 11. (a) Unescorted access to these consignments is limited to authorised persons; and
 12. (b) These consignments are protected from unauthorised interference until they are handed over to another regulated agent or air carrier. Consignments of cargo and mail that are in a critical part of a security restricted area shall be considered as protected from unauthorised interference. Consignments of cargo and mail that are in parts other than a critical part of a security restricted area shall be located in the access-controlled parts of the regulated agent's premises or, whenever located outside of such parts, shall:
 13. be physically protected so as to prevent the introduction of a prohibited article, or
 14. not be left unattended and access is limited to persons involved in the protection and handling of cargo.
 15. Prior to accepting the consignment for transportation by aircraft, the flight crew shall check the consignment against the provisions
- If SPX, SCO or SHR marking is missing on the bill, it shall be deemed that the security control has not been completed and the flight crew shall deny the acceptance of the consignment on board the aircraft until the personnel of the regulated agent does not complete the security control.
16. The regulated agent alongside with cargo or mail shall submit the air bill or separate declaration and the accompanying documents, i.e. air bill or a separate declaration (in electronic format or a hard copy).

17. The documents shall be submitted to the flight crew member who is responsible for loading of consignment for the inspection at any time before loading of the consignment onboard the aircraft and shall provide all of the following information:

- (a) the unique alphanumeric identifier of the regulated agent as received from the appropriate authority;
- (b) a unique identifier of the consignment, such as the number of the (house or master) air waybill;
- (c) the content of the consignment, and
- (d) the security status of the consignment, stating:
 - 'SPX', meaning secure for passenger, all-cargo and all-mail aircraft, or
 - 'SCO', meaning secure for all-cargo and all-mail aircraft only, or
 - 'SHR', meaning secure for passenger, all-cargo and all-mail aircraft in accordance with high risk requirements;
 - the reason that the security status was issued, stating:
 - 'KC', meaning received from known consignor, or
 - 'AC', meaning received from account consignor, or
 - 'RA', meaning selected by a regulated agent, or
 - the means or method of screening used, or
 - the grounds for exempting the consignment from screening; (
- (f) the name of the person who issued the security status, or an equivalent identification, and the date and time of issue;
- (g) the unique identifier received from the appropriate authority, of any regulated agent who has accepted the security status given to a consignment by another regulated agent.

18. A regulated agent tendering consignments to another regulated agent or air carrier may also decide to only transmit the information required under points (a) to (e) and (g) and to retain the information required under point (f) for the duration of the flight(s) or for 24 hours, whichever is the longer.

19. In case of tendering consignments the requirement of points SM 11.2.1.3 and 11.2.1.4 considered to be satisfied, if:

- the regulated agent performing the consolidation retains the information required under points 6.3.2.6(a) to (g) for each individual consignment for the duration of the flight(s) or for 24 hours, whichever is the longer; and
- the documentation accompanying the consolidation includes the alphanumeric identifier of the regulated agent who performed the consolidation, a unique identifier of the consolidation and its security status.

20. Cargo and mail shall be screened by at least one of the following methods in accordance with Attachment 6-J:

- hand search;
- x-ray equipment;
- EDS equipment;
- explosive detection dogs (EDD);
- ETD equipment;
- visual check;
- metal detection equipment (MDE).

Where the screener cannot determine whether or not the cargo or mail contains any prohibited articles, it shall be rejected or rescreened to the screener's satisfaction.

21. Methods of screening cargo and mail

a) Hand search

A hand search shall consist of a thorough manual check of the consignment, including all its contents.

b) X-ray screening:

(A consignment screened by single view x-ray equipment shall be examined from at least two different angles with at least 60° and no more than 90° rotation by the same screener, if the depth of the consignment to be penetrated by the x-ray beam exceeds 130cm.

(Consignments for which the screener cannot reasonably ensure that they do not contain prohibited articles after screening from two different angles shall be either rejected or subjected to another appropriate means or method of screening.

c) **Screening with small amount explosive detectors (ETD)** shall consist of the analysis of trace particles or vapour samples taken from both the inside and the outside of the consignment and from its contents.

(Trace particles or vapour samples shall be collected from at least the following areas:

- (a) internal and external box seams, if applicable, under any protective wrapping;
- (b) a minimum of 2 external surfaces, under any protective wrapping;
- (c) any areas used for manual handling or lifting;
- (d) any areas which appear to have been subject to tampering.

(ETD equipment may not be used, other than in combination with other appropriate means or methods, for screening consignments if any of the following conditions apply:

- (a) if it is not possible to access any area listed at point 2 (a)-(d) above; or
- (b) the consignment surfaces are wet or damp; or
- (c) the consignment surfaces are obscured or otherwise protected by packing material which may reduce or impede the effectiveness of the sample collection.

d) Visual check shall consist of a thorough visual check of the consignment and shall only be allowed:

- in combination with other methods; or
- where all parts of the consignment can actually be seen, with or without aids; or
- for live animals.

e) Metal detection equipment

(Metal detection equipment (MDE) shall only be used to screen consignments of cargo and mail which would not normally be expected to contain any metallic parts.

9.8.2.2. SEARCH AND SCREENING STANDARDS

The security control methods applicable by the regulated agent shall be defined in para. 9.8.2.1.6 and 10.8.2.1.7.

9.8.2.3. SEARCH AND SCREENING VENUE

The Search and screening venue shall be located between the points for the acceptance of cargo and mail and the storage of cargo and mail.

The premises in the cargo terminal shall be split into two parts:

▣ public access area where access shall be granted to the staff of the terminal and the persons sending or reclaiming cargo and mail, as well as vehicles for mail and cargo transportation;

▣ cargo and mail storage premises where arriving cargo and mail or accepted for sending are kept after screening by the aviation security staff; such premise must be separated from the public access area and entrance for unauthorized persons prohibited.

Entrance to the premises for acceptance of cargo and mail, security inspections, assortment and storage shall be made through the defined access gates. The access gates shall be constantly controlled. The staff and the persons authorized to enter the premises shall be issued the passes.

When the access gates are not used, they must be locked. Technical means can be used for protection of the premises (CCTV, alarm warning, etc.).

9.8.2.4. DATA ON SERVICES RENDERING SUBJECTS

The airline "FLYONE" shall perform flights under agreements with regulated agents which personnel ensures search and protection of the air carrier's mail and materials from the moment of acceptance until loading on board the aircraft.

9.8.2.5. LIST OF CARGO AND MAIL EXEMPTIONS FOR SCREENING AND HAND CHECK

- The following consignments may be exempted from screening:
 - time-critical consignments of life-saving materials, provided that they come from a reliable source and are accompanied by appropriate documentation; and
 - bio-medical samples which may be damaged if subject to screening, provided that they come from a reliable source and are accompanied by appropriate documentation; and
 - nuclear materials, provided that they are protected in accordance with the Convention on the Physical Protection of Nuclear Materials, New York and Vienna, 3 March 1980; and
 - consignments which are individually less both than 6 millimetres in thickness and than 250 grams in total weight; and
 - consolidations composed uniquely of consignments exempted under (d); and
 - transfer cargo and mail, unless: it has not previously been screened or subject to security controls by a regulated agent or known consignor and is to be transferred from an all-cargo or all-mail aircraft to a passenger aircraft
- For the purposes of points 11.2.6.1. (a) and (b), reliable sources shall include established medical and charitable organizations, for which the regulated agent or appropriate authority has confirmed:
 - the address; and
 - the nature of the business or operation; and
 - contact details of a person accepting responsibility for the consignment; and
 - VAT reference number or company registration number.

The documentation shall indicate the source of the consignment, details of the intended recipient and a description of the contents.

The appropriate authority may, on the basis of a risk assessment, allow the following consignments to be exempted from screening or to be subjected to special security procedures:

- consignments of mail comprised only of items that are individually 2000 grams or less in total weight and which are carried on all-mail flights, for delivery to an address
- cargo and mail transported on individual ad-hoc flights operated on account of a single consignor.
- The appropriate authority may allow a diplomatic bag to be exempted from screening or to be subjected to special security procedures provided that the requirements of the Vienna Convention on Diplomatic Relations are met.
- The transit cargo shall not be screened and searched if it remains onboard the aircraft.
- On conducting the operations in a cargo facility, the company ensure the procedures are in place for persons and vehicles having access to security restricted areas in or around any cargo facility are subjected to security control by airport security staff.

9.8.3. SECURITY OF UNACCOMPANIED HOLD BAGGAGE AND THE PRIVATE PROPERTY TRANSPORTED AS A CARGO

- For the purposes of the transport of unaccompanied hold baggage, the following may be considered as factors beyond the passenger's control:
 - (a) the passenger was denied boarding and he/she did not volunteer to give up his seat; or
 - (b) the passenger and/or his/her baggage was re-routed onto another flight and it was not at his/her request; or
 - (c) the baggage failed to transfer between two flights due to unforeseen reasons, causing it to miss the departing flight; or
 - (d) there was a malfunction of the baggage system, causing the baggage to miss the departing flight; or
 - (e) the baggage was loaded onto an aircraft other than that for which it was checked in; or
 - (f) the airline decides not to load or unload a bag for operational reasons and the passenger has not influenced the decision by changing his travel itinerary.

In the case of points (c) – (f), the air carrier shall establish that the passenger did travel on the flight on which he/she was checked in. If the passenger did not travel on the flight on which he/she was checked in, then the baggage shall be subjected to the additional security controls

- Where unaccompanied hold baggage is screened by a hand search, it shall be supplemented by the use of explosive trace detection (ETD) equipment.
- Where unaccompanied hold baggage is screened by x-ray equipment it shall be examined by the same screener from two different angles with at least 60° and no more than 90° rotation, unless multi-view x-ray is used.
- Where unaccompanied hold baggage is screened by EDS equipment, the equipment shall meet at least Standard 2.
- Screened cabin baggage placed in the hold of an aircraft during the boarding process due to space constraints on board the aircraft shall continue to be considered as cabin baggage.

After search and screening the unaccompanied baggage shall be kept in the premises protected from unauthorized access.

9.8.3.1. SEARCH AND SCREENING STANDARDS

Search and screening standards shall be defined in p.7.3.1.

9.8.3.2. SEARCH AND SCREENING VENUE

Locations for the search and check points are defined by ICAO, ECAC regulations, National Security program, national regulations and must comply with the requirements of these documents.

9.8.3.3. DATA ON SERVICES RENDERING SUBJECTS

The airline "FLYONE" shall perform flights under agreements with the airports which security services perform security services in the airport and perform search and screening of mail parcels with mailing services on the contractual agreement.

9.8.4. CARGO AND MAIL SECURITY

9.8.4.1. SECURITY MEASURES

- In order to ensure that consignments to which the required security controls have been applied are protected from unauthorised interference during transportation:
 - (a) the consignments shall be packed or sealed by the regulated agent, known consignor or account consignor so as to ensure that any tampering would be evident; where this is not possible alternative protection measures that ensure the integrity of the consignment shall be taken; and
 - (c) the cargo load compartment of the vehicle in which the consignments are to be transported shall be locked or sealed or curtain sided vehicles shall be secured with TIR cords so as to ensure that any tampering would be evident, or the load area of flatbed vehicles shall be kept under observation; and
 - (d) the haulier declaration shall be agreed by the haulier who has entered into the transport agreement with the regulated agent, known consignor or account consignor, unless the haulier is itself approved as a regulated agent.

The signed declaration shall be retained by the regulated agent, known consignor or account consignor on whose behalf the transport is carried out. On request, a copy of the signed declaration shall also be made available to the regulated agent or air carrier receiving the consignment or to the appropriate authority concerned.

As an alternative to point (c), the haulier may provide evidence to the regulated agent, known consignor or account consignor for whom it provides transport that it has been certified or approved by an appropriate authority.

9.8.4.2. PROTECTION OF CARGO AND MAIL AT AIRPORTS FOR LOADING ONTO AN AIRCRAFT

Consignments of cargo and mail that are in a critical part shall be considered as protected from unauthorised interference.

Consignments of cargo and mail in a part other than a critical part of a security restricted area shall be located in the access-controlled parts of a regulated agent's premises or, whenever located outside of such parts, shall be considered as protected from unauthorised interference if:

- they are physically protected so as to prevent the introduction of a prohibited article; or
- they are not left unattended and access is limited to persons involved in the protection and loading of cargo and mail onto an aircraft.

Express consignments to be delivered within 48 hours shall be transported by air only if the following security measures apply:

- mail is accepted, processed and administered by duly the chosen and trained personnel;
- mail received:
 - hand search or physical search;
 - screening by X-ray machine;
 - search in the simulator; or
 - search by other technical or bio-sensory means (i.e. traces and explosive detecting dogs) endeavoring to ensure that it does not contain prohibited items; and
- information on the flight and the route of the mail transporting aircraft is kept confidential.

Other mail than express mail shall be transported by air only if the following security measures apply:

- mail is accepted, processed and administered by duly the chosen and trained personnel;
- mail received:
 - hand search or physical search;
 - screening by X-ray machine;
 - search in the simulator; or
 - search by other technical or bio-sensory means (i.e. traces and explosive detecting dogs) endeavoring to ensure that it does not contain prohibited items.

The security measures defined in sub-para b shall randomly apply to a part of mail.

The security measures defined in sub-para b shall not apply to:

- mail from a known consignor;
- letters which weight or thickness is under the defined norm;
- consignments with rescue means;
- items of a high value which protection standard is not less than defined in sub-para b;
- transit mail.

Cargo terminals and warehouses represent an area that may be favourable to the introduction of weapons, explosives or other prohibited items that could affect aviation security.

Generally, cargo terminals should be divided into two sectors:

- The landside sector, which may be entered by cargo personnel and members of the general public to send or pick up goods, as well as by service vehicles and cargo delivery/collection vehicles. This portion should include the parts of the terminal where cargo is delivered and picked up.
- The airside sector, which includes that portion of the terminal facilities where cargo is processed for air transportation or transshipment cargo is stored. The airside sector shall be isolated from the landside sector portion of the terminal, the border should be clearly defined and access to the airside portion shall be restricted. The airside portion could as well be included in the security restricted area of the airport; access to that area shall be strictly controlled. All persons and, where applicable, vehicles entering the airside sector shall be subjected to security controls.

Areas of the cargo building where cargo is stored after acceptance shall be secured and protected against unauthorised interference with the shipments. Cargo shipments (including transshipment cargo) must be protected from unauthorized interference from the point security screening or other security controls are applied until departure of the aircraft.

Where there is any reason to believe that a consignment to which security controls have been applied has been tampered with or has not been protected from unauthorised interference from the time that those controls were applied, it shall be screened before being loaded on to an aircraft.

9.8.5. PROCEDURES FOR DIPLOMATIC MAILTRANSPORTATION

Foreign diplomatic mail shall be carried by a diplomatic courier or a temporary diplomatic courier (hereinafter, the diplomatic courier) and foreign consular mail by a consular courier or temporary consular courier (hereinafter, the consular courier). Diplomatic mail carried by the diplomatic courier and consular mail carried by the consular courier shall be accepted on board the aircraft together with the cabin baggage of the diplomatic or consular courier.

If the diplomatic or consular courier does not accompany any foreign diplomatic or foreign consular mail, it can be handed to the pilot-in-command of the aircraft flying to the defined airport.

The consignor or consignee of foreign diplomatic or consular mail can authorize its officer for giving diplomatic or consular mail directly to the pilot-in-command or taking delivered foreign diplomatic or consular mail directly from him. When consignors or consignees of foreign diplomatic or consular mail inform the Ministry of Foreign Affairs to give foreign diplomatic or consular mail to the pilot-in-command or take delivered foreign diplomatic or consular mail directly from him, the Ministry of Foreign Affairs shall submit the list of officers to the AVSEC manager and ground operation department of the FLYONE.

Foreign diplomatic mail is immune, it cannot be opened or arrested.

The aviation security inspection procedures shall not apply to foreign diplomatic or consular mail, however, when there is a reason to believe that the consignment with foreign diplomatic or consular mail contains items which can endanger aviation security foreign diplomatic or consular mail can be screened.

Foreign diplomatic or consular mail shall be screened only under consent of the consignor of foreign diplomatic or consular mail and in presence the authorized officer or the diplomatic or consular courier. If the consignor of foreign diplomatic or consular mail does not agree with screening of foreign diplomatic or consular mail or such screening reveals that the consignment with foreign diplomatic or consular mail contains items which endanger aviation security, the consignment with foreign diplomatic or consular mail shall be refused from entrance to the security restricted area and shall be returned to the authorized officer or the diplomatic or consular courier of foreign diplomatic or consular mail. If screening gives a reason to believe that the consignment contains not the official correspondence, documents or items for the official use, the following provisions shall apply:

- foreign consular mail cannot be open or arrested, however, when there is a reason to believe that the consignment with foreign consular mail contains not the official correspondence, documents or items for the official use, the officers of the airport aviation security service or the customs can insist that the authorized officer of the consignor or consignee of foreign consular mail or the consular courier, with the consent of the consignor or consignee of foreign consular mail, would open in their presence the consignment with foreign consular mail. If the consignor or consignee of foreign consular mail refuses to comply with such requirement or the opening reveals that the contained items or a their part is not the official correspondence, documents or items for the official use, the consignment with foreign consular mail shall be returned to the authorized officer or the consular courier of consular mail and the arriving consignment with foreign consular mail shall not be handed over to the authorized officer of the consignee of consular mail but shall be returned to the delivering consular courier or pilot-in-command. When the consignment with foreign consular mail is returned to the authorized officer of consignor of foreign consular mail or the consular courier, after removing the reasons due to which the consignment with foreign consular mail was returned, once again he can submit the consignment for sending. The pilot-in-command shall keep the returned consignment with foreign consular mail and return it to the consignor of foreign consular mail.

The above consents shall be obtained in cooperation with the Ministry of Foreign Affairs which addresses the consignor or consignee of foreign diplomatic or consular mail for such consents on request of the officers of the airport aviation security service or the customs.

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All procedures and formalities related to delivering of foreign diplomatic or foreign consular mail to the aircraft or taking from the aircraft shall be executed, shall be given the priority.

In the case of disagreement between the authorized officer of the consignor or consignee of foreign diplomatic or consular mail and the authorities performing screening or the airport services on application of such regulations, the Ministry of Foreign Affairs shall be informed.

The procedures for transfer of foreign diplomatic or consular mail to the aircraft and taking from the aircraft apply to the staff of the ground handling companies, the officers of the aviation security service and the pilots-in-command.

The principal provisions of this decision defining the duties and responsibilities of the pilot-in-command are as follows:

- on completion of the aviation security search and screening in the airport the officer of the ground handling company, by car or (if not necessary) on foot, accompanies the authorized officer of the consignor of foreign diplomatic or foreign consular mail with diplomatic or consular mail to the appropriate aircraft;
- the authorized officer of the consignor of foreign diplomatic or foreign consular mail who delivered diplomatic or consular mail shall be given access to the aircraft and handover such mail and documents confirming the status of diplomatic or consular directly to the pilot-in-command;
- if the consignment with foreign diplomatic or consular mail (all bags and containers) shall exceed 15kg or 70x30x42 cm, foreign diplomatic or consular mail shall be delivered to the aircraft through the airport cargo terminal in compliance with the defined procedures accompanied by the authorized officer of the consignor of foreign diplomatic or consular mail;
- foreign diplomatic or consular mail delivered to the aircraft by the authorized officer of the consignor of foreign diplomatic or consular mail shall be directly and unimpededly handed over to the pilot-in-command;
- the authorized officer of the consignee of foreign diplomatic or consular mail shall
- arrive to the aircraft accompanied by the officer of the ground handling company by car or (if not necessary) on foot;
- the authorized officer of the consignee of foreign diplomatic or consular mail shall enter on board the aircraft and take foreign diplomatic or consular mail and the accompanying documents directly from the pilot-in-command;
- the consignment with foreign diplomatic or consular mail (all bags and containers) exceeding 15 kg or 70x30x42 cm, shall be handed to the consignee through the airport cargo terminal. Such consignment with foreign diplomatic or consular mail, under surveillance of the authorized officer of the consignee of foreign diplomatic or consular mail, shall be loaded onto the vehicle of the ground handling company and taken to the airport cargo terminal where after scrutiny of the documents confirming the status of the consignment it shall be handed to the authorized officer of the consignee of foreign diplomatic or consular mail and can be loaded onto the vehicle of the consignee. All operations with the consignment with foreign diplomatic or consular mail (loading, transportation in the airport area) shall be performed under surveillance of the authorized officer of the consignee of foreign diplomatic or consular mail and only on consent or agreement issued by the consignee of foreign diplomatic or consular mail;
- if the authorized officer of the consignee of foreign diplomatic or consular mail does not appear to take foreign diplomatic or consular mail in time, foreign diplomatic or consular mail shall be further protected by the crew members in the aircraft.

It is the responsibility of the pilot-in-command to take a decision on a possibility to handover it in another form or transport it back according to the agreement on transportation of foreign diplomatic or consular mail concluded with the consignor or consignee of foreign diplomatic or consular mail and pursuant to the international legislation.

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9.8.6. MEASURES TO BE TAKEN WITH THE SUSPICIOUS BAGGAGE OR MAIL

On finding suspicious cargo or mail consignment the ground crew members shall inform the officers of the police in the airport. Such cargo and consignment shall not be moved until the police arrive. The security measures must be taken as not to stand and use radio transmitters or mobile phones in the vicinity of the item, prevent access of the unauthorized persons to the suspicious cargo or mail consignment.

9.9. APPENDIX 1: Security search list A-320

SECURITY SEARCH CHECK LIST AIRBUS A-320

Flight No:	Aircraft Reg.	Aircraft Type:	Origin of the previous flight:
Departure point:	Intermediate point:		Destination point:
Date:		Time of completion of search:	
PILOT IN-COMMAND (signature)		NAME PRINT:	
An aircraft security search consist of an examination of the following areas, when they are acceptable without the use of tools, keys, stairs or other aids and without breaking seals. If irregularities occur, please inform appropriate authorities / FLY ONE AVSEC Manager. This information shall be kept on ground for the duration of the flight or for 24 hours, whichever is longer. During aircraft cabin search passengers should not be onboard, except when the aircraft in transit. Where an aircraft is in transit, the aircraft security check may be performed whilst passengers remain on board provided that: a) the passengers are in possession of their cabin baggage when the examination is performed; and b) the passengers are under supervision in order to prevent the movements throughout the aircraft when the search is been performed. Inspections of the following areas SHALL be performed after completing all servicing procedures.			
Areas to be Checked:			Checked √
Overhead bins.....			☐
Cupboards and storage compartments including crew storage areas.....			☐
Toilet compartments and trash receptacles.....			☐
Galey areas and trolleys.....			☐
All seat pockets.....			☐
Areas under seats, between seats and between the seat and the wall.....			☐
Minimum 10% of lifejackets pouches.....			☐
All the above been checked and there is no visible sign of tampering or any forbidden articles found			
RESPONSIBLE PERSON NAME PRINT:	POSITION:	SIGNATURE:	
Flight Deck if left unattended.....			☐
All the above been checked and there is no visible sign of tampering or any forbidden articles found			
RESPONSIBLE PERSON NAME PRINT:	POSITION:	SIGNATURE:	
Aircraft holds:.....			Pre-Flight ☐
.....			After Flight ☐
Items contained within the hold			☐
Aircraft service panels and hatches.....			☐
Aircraft Maintenance panels and hatches.....			☐
Wheel wells			☐
All the above been checked and there is no visible sign of tampering or any forbidden articles found			
RESPONSIBLE PERSON NAME PRINT:	POSITION:	SIGNATURE:	

9.10. APPENDIX 2: Security search list A321

SECURITY SEARCH CHECK LIST AIRBUS A-321

Flight No:	Aircraft Reg.	Aircraft Type:	Origin of the previous flight:
Departure point:	Intermediate point:	Destination point:	
Date:		Time of completion of search:	
PILOT IN-COMMAND (signature)		NAME PRINT:	
An aircraft security search consist of an examination of the following areas, when they are acceptable without the use of tools, keys, stairs or other aids and without breaking seals. If irregularities occur, please inform appropriate authorities / FLY ONE AVSEC Manager. This information shall be kept on ground for the duration of the flight or for 24 hours, whichever is longer. During aircraft cabin search passengers should not be onboard, except when the aircraft in transit. Where an aircraft is in transit, the aircraft security check may be performed whilst passengers remain on board provided that: a) the passengers are in possession of their cabin baggage when the examination is performed; and b) the passengers are under supervision in order to prevent the movements throughout the aircraft when the search is been performed. Inspections of the following areas SHALL be performed after completing all servicing procedures.			
Areas to be Checked:			Checked ✓
Overhead bins.....			☐
Cupboards and storage compartments including crew storage areas.....			☐
Toilet compartments and trash receptacles.....			☐
Galey areas and trolleys.....			☐
All seat pockets.....			☐
Areas under seats, between seats and between the seat and the wall.....			☐
Minimum 10% of lifejackets pouches.....			☐
All the above been checked and there is no visible sign of tampering or any forbidden articles found			
RESPONSIBLE PERSON NAME PRINT:	POSITION:	SIGNATURE:	
Flight Deck if left unattended.....			☐
All the above been checked and there is no visible sign of tampering or any forbidden articles found			
RESPONSIBLE PERSON NAME PRINT:	POSITION:	SIGNATURE:	
Aircraft holds:.....			Pre-Flight ☐
.....			After Flight ☐
Items contained within the hold			☐
Aircraft service panels and hatches.....			☐
Aircraft Maintenance panels and hatches.....			☐
Wheel wells			☐
All the above been checked and there is no visible sign of tampering or any forbidden articles found			
RESPONSIBLE PERSON NAME PRINT:	POSITION:	SIGNATURE:	

9.11. APPENDIX 3: Ground bomb threat procedures

GROUND BOMB THREAT PROCEDURES ("Specific" threat – RED) CHECKLIST
Upon reception of the information "There is a bomb threat pending assessment" in relation to the aircraft, pilot-in-command and ground operator should develop the following activities: • Inform ATS upon the delay of take-off due to security requirements; • Establish contact with the FLY ONE OCC or accountable manager of FLY ONE;
Upon receiving the information that the aircraft is subjected to a "specific" (RED) threat, handling agent should develop the following activities: • Declare the emergency to ATS stating the nature of the emergency; • Move the aircraft in the "isolated" parking position; • Organize the disembarking of all passengers and crew with all cabin baggage by steps or jetties (except where emergency slides are used). Escape slides where applicable should only be used in extreme emergencies. Disembarking should be developed as soon as possible and in an orderly manner; • Should monitor and ask airport authorities to provide: ◦ protection cordon around the aircraft and aircraft guard; ◦ strict control of access to the aircraft's servicing area; ◦ transportation of passengers and crew members in a safe area of the airport, located in such a way as to provide separation from other airport's passengers and not allow access to other areas. Passengers should remain in this area until the crew members, hold baggage, cargo, catering and supplies have been screened or searched and declared safe; ◦ unloading of hold baggage, cargo, baggage of crew members, catering, supplies, etc.; ◦ searching of the whole aircraft (the interior and the exterior) in accordance with "Security Checklist". This should be done in the shortest possible time dependent on the aircraft size. Once the aircraft has been considered sterile, it could be towed back to a normal parking position; ◦ depending on the findings of the aircraft search, it may be necessary to interview the passengers and check their identity; ◦ hold baggage should first be screened and then reloaded subject to identification during the re-boarding of the passengers. Unattended baggage should be subjected to rigorous screening or searching; ◦ supplies and catering should be screened before they are re-loaded on the aircraft; ◦ baggage of crew members should be screened before they are re-loaded on the aircraft; ◦ all cargo should be screened before it is re-loaded on the aircraft; ◦ the passengers and crew members should be thoroughly screened before re-boarding. • Inform the FLY ONE OCC about the consequences of the bomb threat upon passengers, crew members and aircraft's flight capacity; • Ask for instructions related to rendering the aircraft into operation (Decisions affecting the resumption of the aircraft's operation, after the clearance by the Appropriate Authority from the state where the act of unlawful interference took place, are the responsibility of FLY ONE); • Fill in the "Report an act of unlawful interference".

9.12. APPENDIX 4: Aircraft security search guidance

AIRCRAFT SECURITY SEARCH GUIDANCE		
The purpose of the search is to detect any object or package on board an aircraft that is not consistent with the normal provisioning. when performing this task, you should look for anything that does not belong. If a suspect item is found:		
- do not touch it. - do not disturb it. - do not use radios in the vicinity of this object. - notify a supervisor immediately for notification to local authorities. - notify without delay: - FLYONE Flight Dispatcher GSM: +373 62 002737 Tel: +373 22 100003; FLYONE Aviation Security Manager GSM: +40 766 681 638		
CABIN SEARCH PROCEDURES		
- Look for any items that are out of place or appear suspicious. - Inspect all toilets. Remove all newspapers, trash, etc. Open all cabinets and look for non-supply items. Do not unscrew panels that are normal in bulkheads, flooring, etc. - All over-head bins must be inspected. Lift blankets and pillows in order to look for suspicious items and perform visual inspections for empty areas. - Inspect all seat pockets. Pull open seat-pockets and feel for suspicious items, check all magazines, newspapers or any advertising material. Perform visual inspection for empty areas. - Remove minimum 10 % of life vest packages from the holder and inspect for signs of tampering. Inspect the holder area. If required, replace damaged or tampered life vest package(s). In case of signs of tampering (ex. if opened), life jacket holds must be inspected. During high risk situations remove all vests packages from the holder and inspect for signs of tampering. - Visually inspect the area beneath the seats. - Open all cabinets. Look for suspicious items. - Inspect cockpit and floor area, under all seats, coat and baggage area. - Inspect all galley areas and crew rest areas. Check waste containers, storage bins, ovens, trolleys, and other accessible compartments.	Steps to be followed while performing aircraft security search during transit stops: - Lost & found; - Passengers counting; - Senior cabin attendant gives the command: "Cabin crew security check"; - Toilets (after the search should be closed); - The galleys (integrally); - Storage compartments, including crew storage equipment bins and compartments, all crew rest areas; - All seats search (seat pockets, the space between seats, the space between seats and walls, lifejacket presence, including minimum 10% of lifejacket pouches). During seats search, passengers at the request of cabin crew will stand-up; - Cabin crew will perform the simultaneous seats search from both aircraft sides, one will begin in the front of the aircraft moving to the back on one side, the other from the back moving to front on the other side; - After the complete seats search and "OK" signal, senior cabin attendant announces passengers on the necessity to identify their hand baggage by placing it on their knees; - Cabin crew makes another search of overhead bins; - At the end of the security search "Security check done" must be reported to the senior cabin attendant; - Passengers must be informed on the necessity to place their belongings on the overhead bins.	
AIRCRAFT HOLDS SEARCH PROCEDURES		
Pre-flight aircraft holds search is performed prior to loading hold baggage and cargo; After flight aircraft holds search is performed after unloading hold baggage and cargo. WARNING: Before reaching for object inside any compartment, be careful for sharp items, objects or syringes. If found, advise captain. Procedures to dispose of syringes and sharp items: 1. Never recap. 2. Dispose of needle in tube then add Red Z and water, close tube and shake.		
DETAILED AIRCRAFT SECURITY SEARCH INSTRUCTIONS		
Flight crew compartment		Cabin
- Seats - Entire floor including area forward of the rudder pedals and beneath all seats - Ceiling, side and rear wall - Pedestal and consoles - Windshield - All instrument and switch panels - All circuit breaker fuse panels	- Flight engineers' desk - Coat locker - Ash trays - Flight library stowage - Life jacket stowage - Spare lamp stowage - Crew oxygen masks stowage - Emergency door and mechanism	- Seats and stowage under seats - Sidewall stowage bins - Floor – DO NOT remove carpet unless there is evidence of an inappropriate item under it - Side walls including windows - Bulkheads, stowages, curtain - Light recesses - Magazine rack, inspect all contents (magazines, newspapers, etc.) - All crew rest areas - Life jacket stowages minimum 10% - Coat closet - Emergency door mechanism - All overhead bins - All seat pockets
Toilets		Aircraft exterior
- Remove soiled and waste materials if not previously removed - Remove and inspect containers under the sink - Inspect sink and area around sink - Towel container - Tissue dispenser - Toilet seat and lid - Mirror and compartment - Ceiling walls and floor - Door		Fuselage - Inspect belly from ground – all cargo and entrance doors should be closed - Check all inlet scoops, exhaust outlets and in general all openings and doors with quick opening fasteners - Air conditioning bays - Hydraulic bays - Portable water and toilet service panels - Other locations Landing gear - Wheels and brakes - Short struts and retract mechanism - Hydraulic installations - Flight control mechanism and wheel wells - Wheel well doors and mechanism
Wings - Leading edge flaps and leading edge cavities - Wing rear spar areas - Trailing edge flaps - Ailerons and hinges - Fuelling stations Engines - Inlet - Exhaust - Check fan and turbine reverse area - Open fire access doors, inspect visible area inside Empennage - Horizontal stabiliser and elevator mechanism - Vertical stabiliser and rudder mechanism - Rear fuselage compartment - APU compartment, if applicable		
Aircraft holds		
- With containers removed, check all areas, floor, walls, ceiling - Unzip flexible panels and inspect areas inside - Check opening under catwalk platforms - Check removable divider nets		
Galley complex		
- Remove and inspect all drawer surfaces (inner and outer) - Open and inspect all panels/compartments - All accessible buffet surfaces - Waste container - Ceiling, walls and floor - Remove trolleys and inspect area behind - Attendant seats		
Electrical/ equipment compartments		
Do not remove equipment (unless obvious signs of interference) Applicable for main equipment, forward electronic, air conditioning: - Check shelves and all surfaces for foreign objects - Check all areas. Floor, walls, ceiling		

9.13. APPENDIX 5: Disruptive Passenger ground incident report

Disruptive Passenger ground incident Report		
Flight №: _____ Rout: _____		
Date (yy/mm/dd): _____		
Time (UTC) of incident : _____ Location of the incident: _____		
Information about the passenger:		
Surname: _____ Date of the PNR: _____		
Travel class: first/business ☐ economy ☐		
Departing or transiting: Departing ☐ Transiting ☐		
Men ☐ women ☐ Age: (about) _____ Citizenship: _____		
Travels: alone ☐ family ☐ group ☐ (If several passengers are involved, please to give details): _____		
Member of the business club ☐ Membership number, if known: _____		
Member of the relevant program for frequent flyer: ☐ Please give details intelligence _____		
Details of the incident:		
☐ Bickering with: _____	☐ Intentional damage to property	
☐ Verbal abuse against: _____	☐ Denied boarding which crew	
☐ Physical violence against: _____	☐ Smoking in area "smoking prohibited"	
☐ Sexual harassment in relation to the: _____	☐ Violation of the order	
☐ Attack on: _____		
☐ Other (please specify and, if necessary, use additional sheets): _____ _____		
Possible contributing factors:		
Primary (e) factor (s)	Secondary (e) factor (s)	
Alcohol	☐	☐
Medical conditions	☐	☐
Prisoner / deportee in transit	☐	☐
Dissatisfaction with service	☐	☐
Seating	☐	☐
overbooking	☐	☐
Conflict with other passengers	☐	☐
Wrong mishandled baggage	☐	☐
☐ Other (please specify and, if necessary, use additional sheets): _____ _____		

Assessment of the situation:

That ground staff responsible for ensuring that an undisciplined or potentially problematic passenger was not consciously allowed on the flight. If the passenger was allowed to board the aircraft the ship would have created it, in your opinion, the situation in which:

	Yes	No
• She could be jeopardizing the safety of the flight of the aircraft?	☐	☐
• a serious threat to the security could be created crew or other passengers?	☐	☐
• The presence of a passenger might jeopardize the proper order and discipline on board?	☐	☐
• The presence of a passenger might cause inconvenience to other passengers in the passenger cabin of the aircraft?	☐	☐
• Flying could adversely affect the normal state of the passenger?	☐	☐
• Other (specify) _____	☐	☐

Immediate measures taken

Airlines said the representative	☐	☐
Reported security service	☐	☐
Police said	☐	☐

The adoption of additional measures (please specify): _____

Casualties

Handling Agent ☐, Passenger ☐, Check-in Agent ☐

Other persons (please specify and, if necessary, use additional sheets): _____

Following actions

Police: Arrest ☐ Other activities (please give details and, if necessary, use the additional sheets): _____

Notes / additional information _____

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10. CLEANING REQUIREMENTS

10.1. GENERAL

As a general rule, interior cleaning shall start as soon as passengers have disembarked. For overnight stops, cleaning shall be accomplished as soon as practical, to prevent odours and have aircraft ready for possible adhoc flights. Cleaning shall be performed to a high standard, so aircraft is presentable to passengers and crew. Cleaning providers should employ their own quality systems which should include feedback from cabin crew. Cleaning providers at bases shall be in regular contact with base manager who will provide additional feedback and cleaning instructions as needed. Further descriptions of tasks and frequency of cleaning are listed below.

For ACMI operations cleaning schedule and specification might differ from outlined in this chapter in order to satisfy client's standards for particular type of operations.

10.2. TURNAROUND CLEANING

Turnaround cleaning shall be accomplished on every turnaround by the cabin crew, unless deep cleaning is requested to be performed, Cabin crew are authorized to request cleaning at the operated stations, evidences for the made request shall be provided

10.3. INTERMEDIATE CLEANING

Intermediate cleaning should be performed only at base station after completion of every turnaround flight (ex: RMO – OTP - RMO , intermediate cleaning shall be done after AC arrival at HOME-BASE) .

10.4. DEEP CLEANING

During intensive aircraft utilization deep cleaning shall be accomplished monthly according to schedule, every second full week of the month. This is to ensure that all aircraft will receive deep clean at regular intervals, despite them being swapped between bases.

Deep cleaning regularly shall be ordered by Head of Ground Operation or ground operation manager via e-mail prior e-mail notification.

Additional deep cleaning may be ordered by base managers or OCC due to special circumstances.

10.5. CLEANING REQUIREMENTS FOR A320 FAMILY AIRCRAFTS

10.5.1. PASSENGER CABIN

	PASSENGER CABIN	Turnaround	Intermediate	Deep
a	Remove In-flight waste from Cabin Area	x	x	x
b	Remove In-flight waste from Seat literature pockets & Overhead lockers	x	x	X
c	Vacuum clean inside Seat pockets		x	x
d	Clean both sides of seat tables, including in arm tables		x	X
e	Spot Clean and arrange window blinds		x	X
f	Clean seat arms		x	x
g	Clean seat frames under seat cushion		x	x
h	Brush Seats, cross seat belts	x	x	X
l	Refold blankets, return all blankets & pillows to overhead lockers (at destinations where blankets are provided)		x	x
m	Clean Cabin windows			x
n	Spot Clean overhead lockers, wall panels, bulkheads, and floor level vents		x	
o	Clean overhead lockers, wall panels, bulkheads, PSUs and floor level vents		x	X
p	Clean & dry wall panels, floor level vents, inside & outside of lockers			X
o	Clean & dry Bulkhead, PSUs & Console		x	x
r	Cleaning ceiling air conditioning centre vents			x
s	Clean and dry ceiling panels			x
p	Clean all main and emergency exit doors			x
q	Spot clean ceiling panels			x
s	Vacuum & spot clean carpet		x	x

10.5.2. GALLEY

	GALLEY	Turnaround	Intermediate	Deep
a	Remove waste sacks from carts and static bins	x	x	x
b	Clean and disinfect carts & bins		x	x
c	Replace with new waste sacks in carts and static bins, including two spares	x	x	x
d	Clean ceiling panels, bulkheads, main doors and wall panels			x
e	Clean & dry ceiling panels, bulkheads, main doors and wall panels			x
f	Check ovens for spillages, clean were required			x
g	Spot clean entrance doors, bulkheads & stowage doors			x
h	Clean entrance doors, bulkheads & stowage doors			X
i	Clean ovens & urns. Empty & Clean ice drawers			X
j	Chlorinat ice drawer			X
k	Clean all galley units inside & out			X
l	Clean sinks, work tops and drainage channels			X
m	Sweep Galley Floor			x
n	Vacuum clean and shampoo galley floor covering		x	x
o	Spray all work surfaces with galley sanitizer		x	x
p	Clean crew seat surrounds & PA stowage 's	x	x	x
q	1st flight of day - pass drain clear through sink drains		x	

10.5.3. TOILETS

	TOILETS	Turnaround	Intermediate	Deep
a	Remove waste from bins	X	X	X
b	Clean & Disinfect waste bins		X	X
c	Clean wash basins and mirrors, buff to shine	X	X	X
d	Clean & disinfect inside cupboards		X	X
e	Clean & replenish (if required) liquid soap dispensers		X	X
f	Clean & disinfect ceiling, walls doors & toilet surround		X	X
g	Clean toilet bowl and spray ring with CB60		X	X
h	Clean & disinfect toilet seat, cover & shroud	X	X	X
i	Clean & disinfect nappy changing table		X	X
j	Clean & dry floor		X	X
k	Replace Air freshener discs (if required)		X	X

10.5.4. FLIGHT DECK

	FLIGHT DECK	Turnaround	Intermediate	Deep
a	Remove in-flight waste from Flight Deck Area	X	X	X

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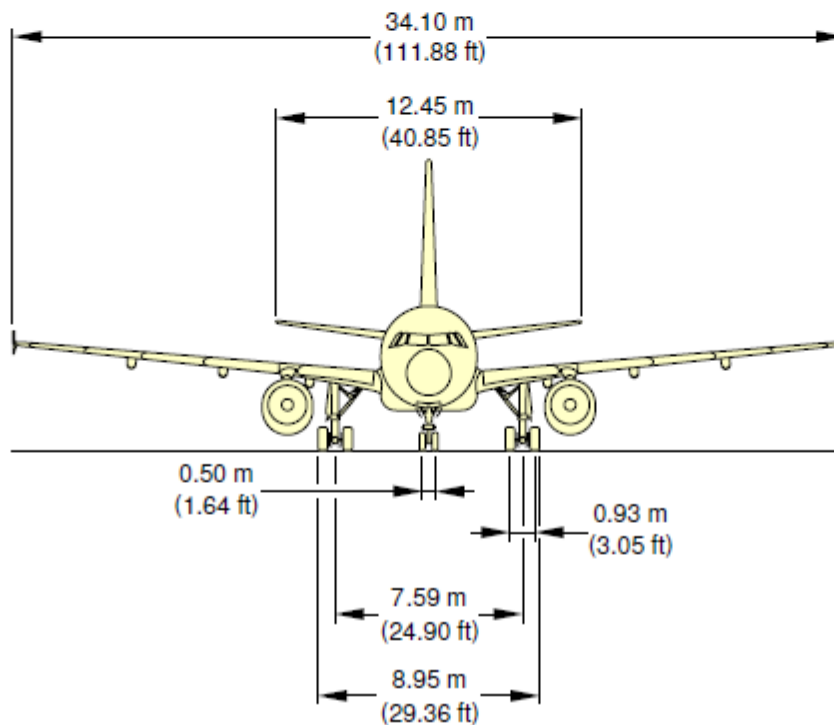
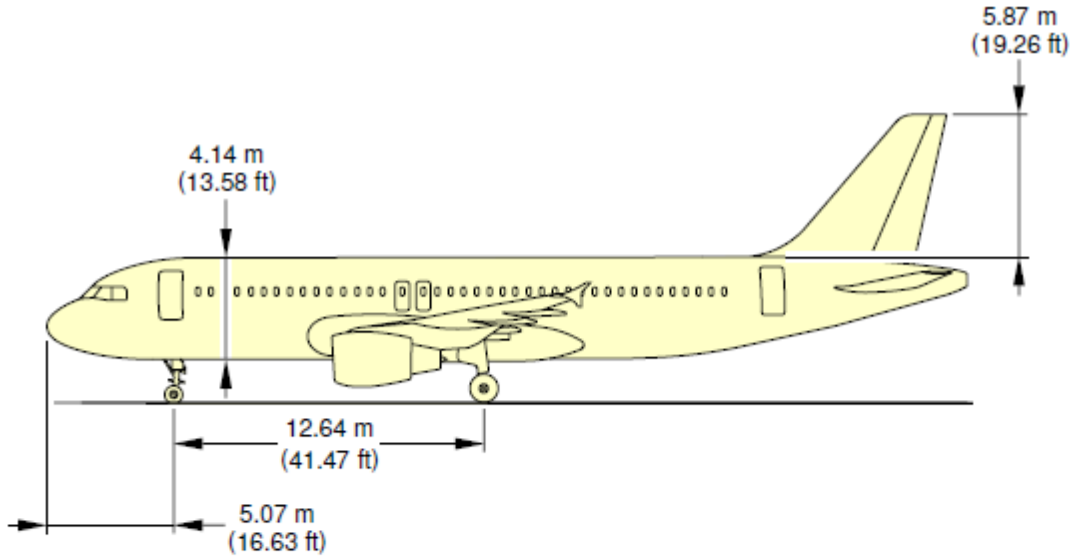
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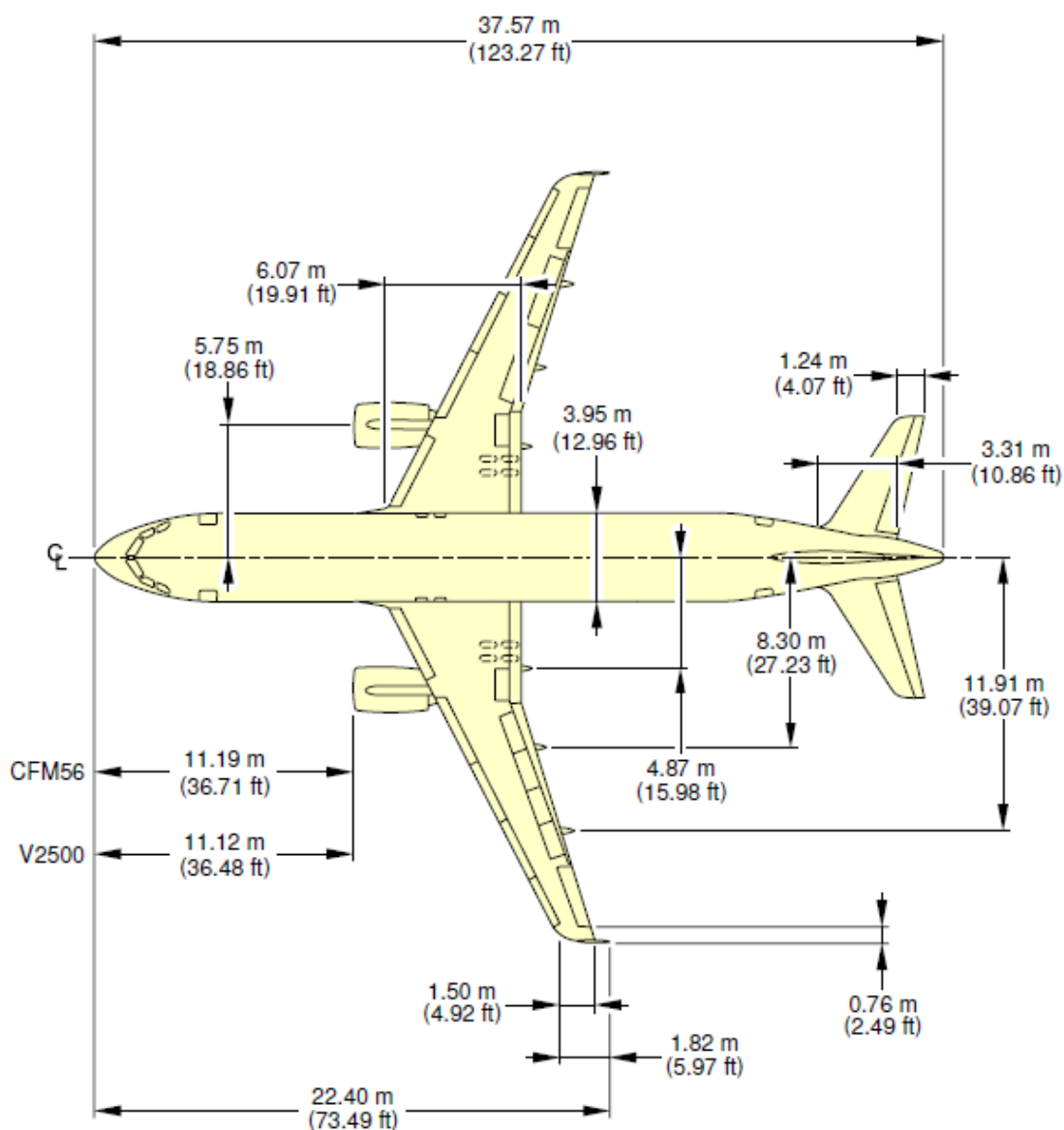
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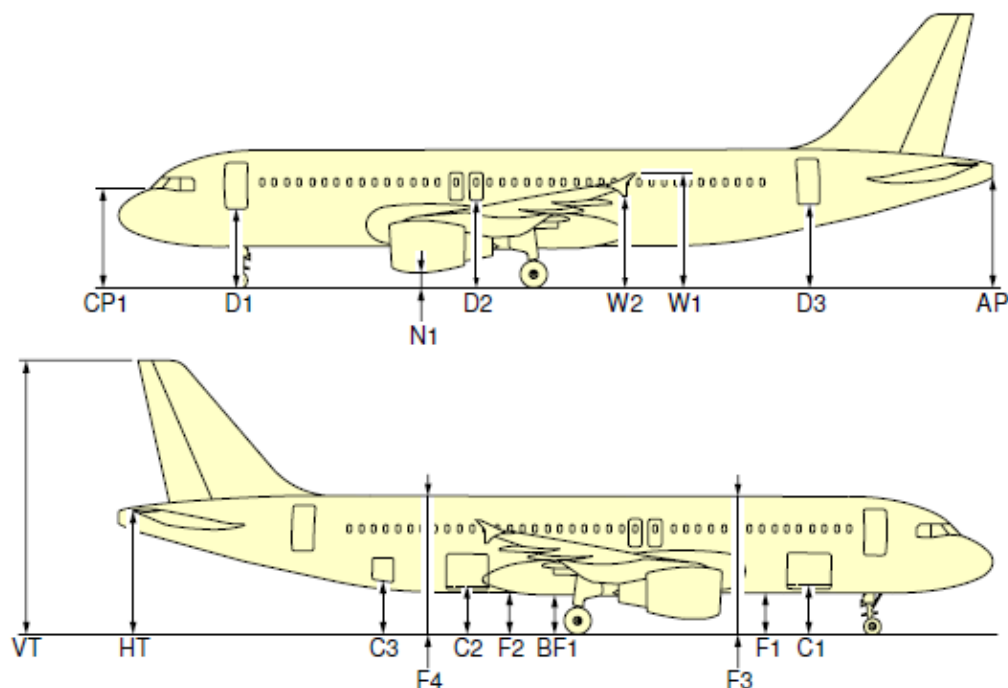
11. AIRCRAFT CHARACTERISTICS A320

11.1. AIRCRAFT DIMENSIONS

11.1.1. EXTERIOR DIMENSIONS AND GROUND CLEARANCES



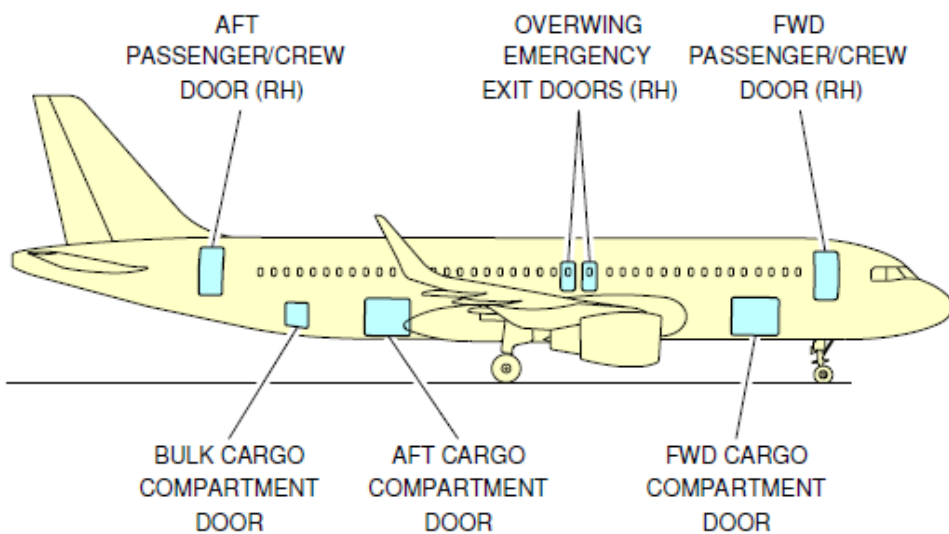
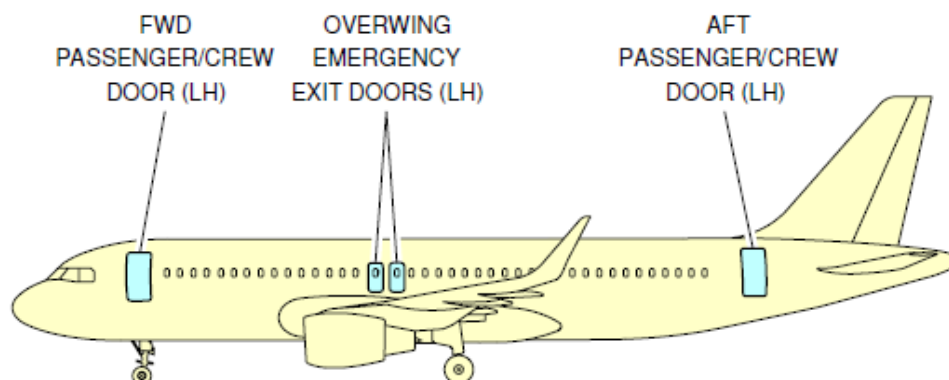




A/C CONFIGURATION		MRW				41 000 kg (90 389 lb)		A/C JACKED FDL = 4.60 m (15.09 ft)	
		FWD CG (17%)		AFT CG (36.8%)		CG (26.5%)			
		m	ft	m	ft	m	ft	m	ft
DOORS	D1	3.38	11.09	3.45	11.32	3.48	11.42	4.13	13.55
	D2	3.87	12.70	3.88	12.73	3.98	13.06	4.54	14.89
	D3	3.60	11.81	3.50	11.48	3.70	12.14	4.13	13.55
	C1	1.98	6.50	2.04	6.69	2.09	6.86	2.71	8.89
	C2	2.12	6.96	2.07	6.79	2.22	7.28	2.71	8.89
	C3	2.19	7.19	2.11	6.92	2.29	7.51	2.75	9.02
FUSELAGE	F1	1.72	5.64	1.76	5.77	1.82	5.97	2.43	7.97
	F2	1.84	6.04	1.79	5.87	1.95	6.40	2.43	7.97
	F3	5.86	19.23	5.90	19.36	5.97	19.59	6.58	21.59
	F4	5.99	19.65	5.93	19.46	6.09	19.98	6.58	21.59
	BF1	1.62	5.31	1.60	5.25	1.72	5.64	2.26	7.41
	CP1	4.17	13.68	4.27	14.01	4.28	14.04	4.96	16.27
WINGS	W1	4.76	15.62	4.71	15.45	4.86	15.94	5.35	17.55
	W2	3.78	12.40	3.74	12.27	3.89	12.76	4.38	14.37
TAILPLANE	HT	5.46	17.91	5.32	17.45	5.56	18.24	5.93	19.46
	AP	4.74	15.55	4.59	15.06	4.84	15.88	5.20	17.06
	VT	11.98	39.30	11.83	38.81	12.08	39.63	12.45	40.85
ENGINE/ NACELLE	N1 (CFM)	0.57	1.87	0.58	1.90	0.67	2.20	1.24	4.07
	N1 (IAE)	0.75	2.46	0.76	2.49	0.85	2.79	1.42	4.66

11.2. AIRCRAFT DOORS

11.2.1. CABIN DOORS AND HOLD DOORS



Door	Height (m)	Width (m)
L1, R1	1.85	0.81
L2, R2, L3, R3 (twin emergency exits)	0.90	0.50
L4, R4	1.85	0.81

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11.2.1.1. HOLD DOORS OPERATIONS

CAUTION: A MINIMUM CLEARANCE OF 197 CM (78 INCHES) TO THE FUSELAGE SIDE HAS TO BE RESPECTED BEFORE DOORS ARE OPERATED.

Cargo door clearances

The ground clearance for the lower edge for both the cargo doors is approximately 200 cm (79 inches). It is dependent on aircraft weight, aircraft CG position, landing gear wheels and tyre sizes.

During opening and closing, the forward and aft hold doors swing about 56 cm below the door sill level. The doors can be damaged or may damage load. Keep the door swing area clear and open the doors carefully.

In case of power failure the hold doors can be operated manually. Only the station engineer is authorized to do this.

Opening

- Pull the locking handle in the door fully out and turn it by 90° to UNLOCKED
- Open the cover of the door operation panel under the aircraft.
- Turn the selector switch to OPEN and hold it until the door is open and the green light comes on.

Closing

- Turn the selector switch to CLOSE and hold it until the door is closed and the green light goes off.
- Close the cover.
- Turn the locking handle in the door to LOCKED and push it on a level with the aircraft surface.

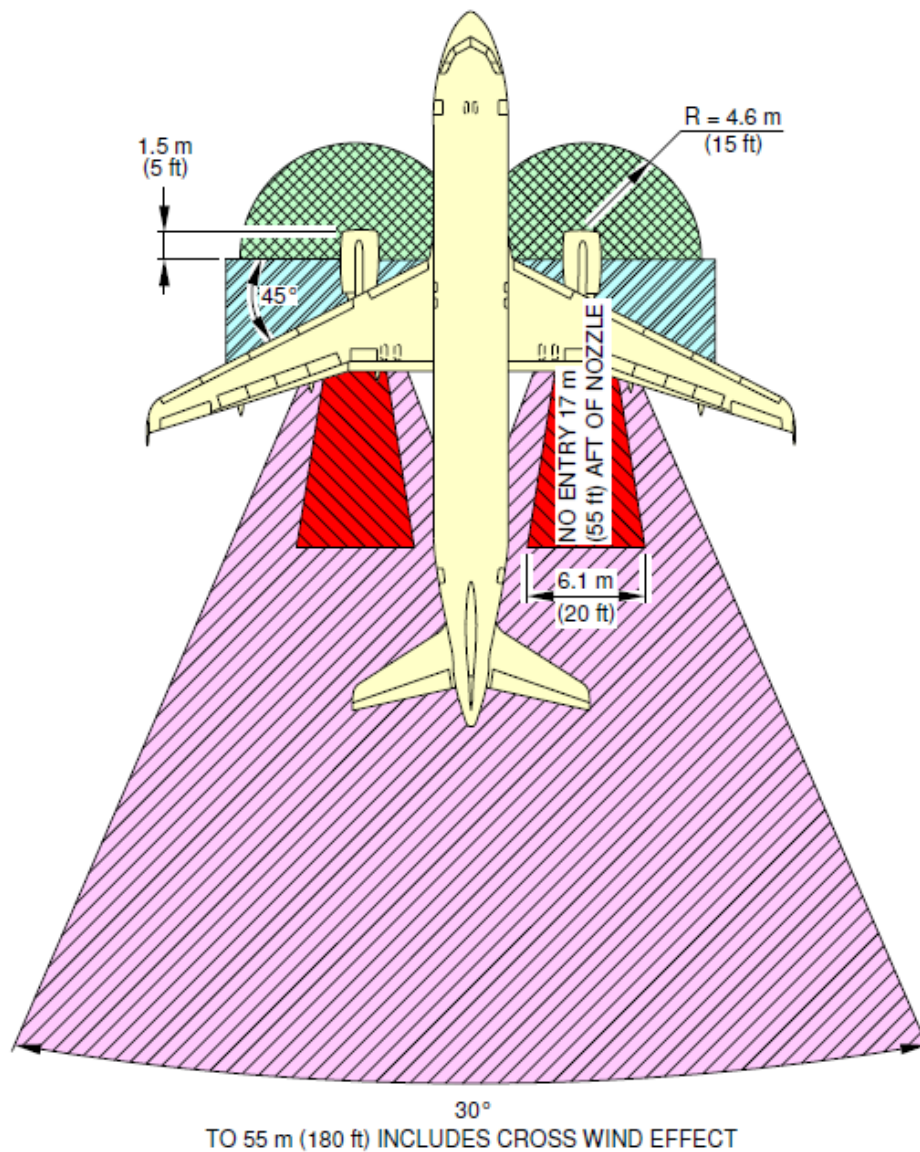
11.2.1.2. BULK COMPARTMENT DOOR

- Press the button in the door handle until the handle springs out.
- Turn the door handle to OPEN.
- Push the door inward and turn the door handle to LOCKED without closing the door again.
- Open the door until it locks at the compartment ceiling.
- Turn the door handle to OPEN.
- Pull the door down until it is closed.
- Turn the door handle to LOCKED and push the door handle on a level with the cabin surface.

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		Revision	00

11.3. DANGER AREAS

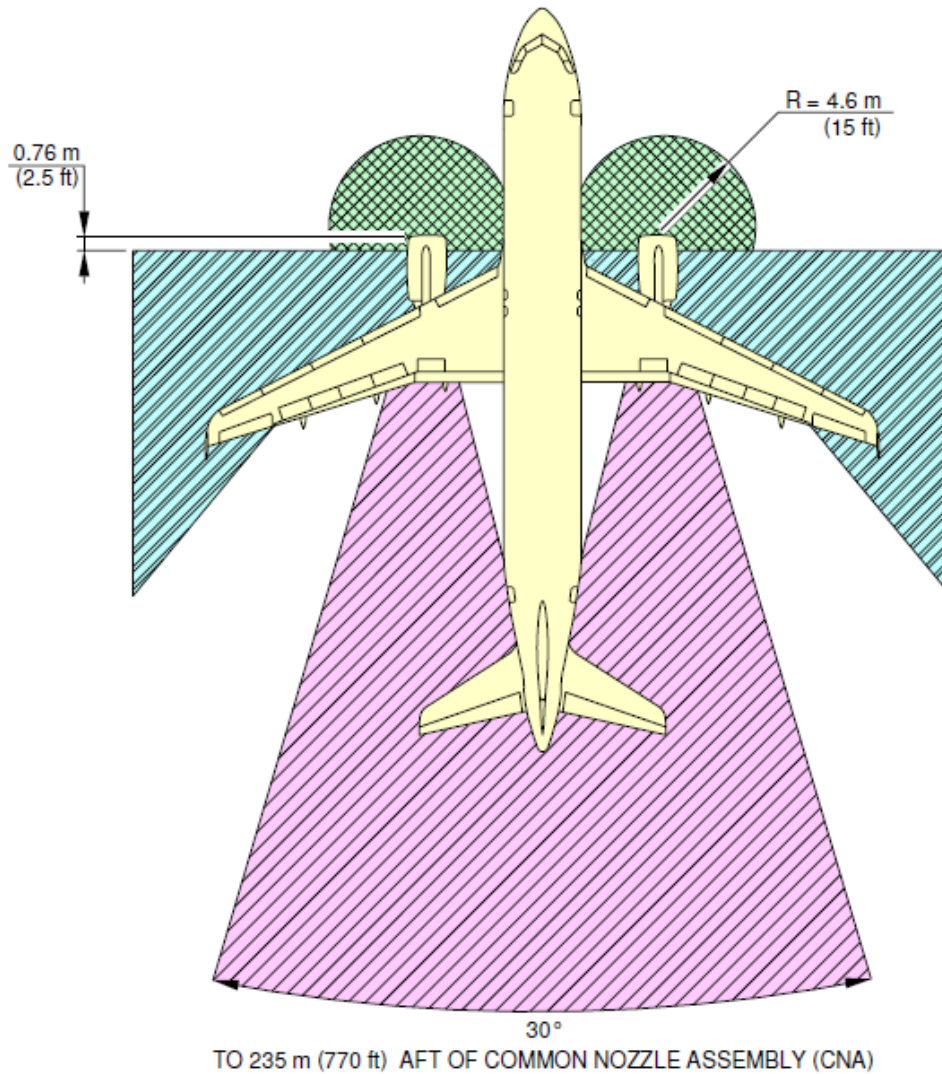
11.3.1. CFM56 SERIES ENGINE GROUND IDLE SPEED



NOTE:

	INLET SUCTION DANGER AREA		EXHAUST WAKE DANGER AREA 65 mph (105 km/h) OR GREATER
	ENTRY CORRIDOR		EXHAUST WAKE DANGER AREA 65 mph (105 km/h) OR LESS

11.3.2. IAE V2500 SERIES ENGINE. GROUND IDLE POWER

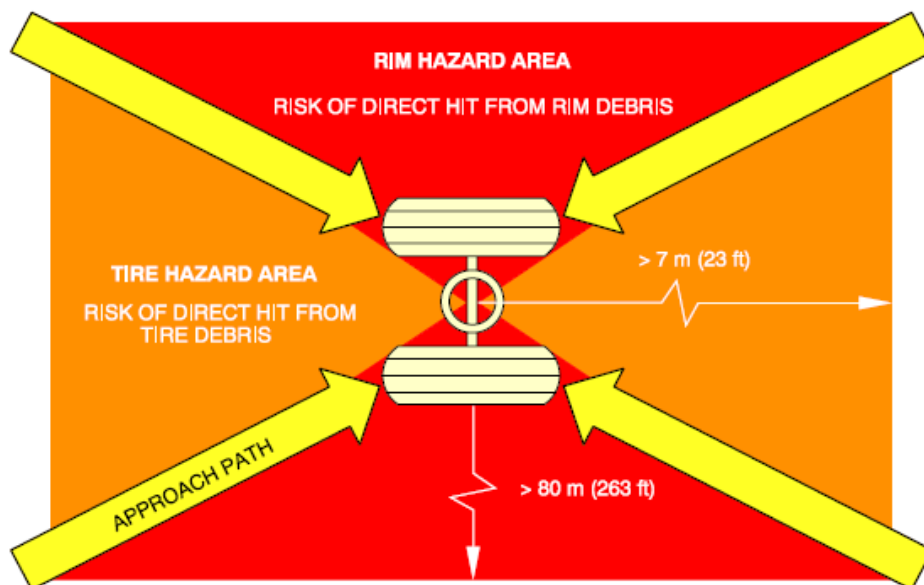


NOTE:

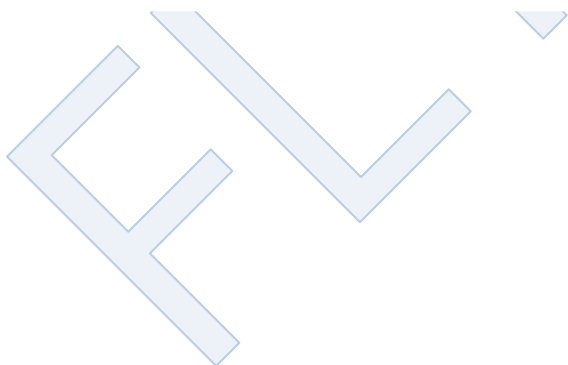
-  INTAKE SUCTION DANGER AREA MINIMUM IDLE POWER
-  ENTRY CORRIDOR
-  EXHAUST DANGER AREA

11.3.3. WHEEL BRAKE OVERHEAT HAZARD AREAS

WHEEL/BRAKE OVERHEAT HAZARD AREAS

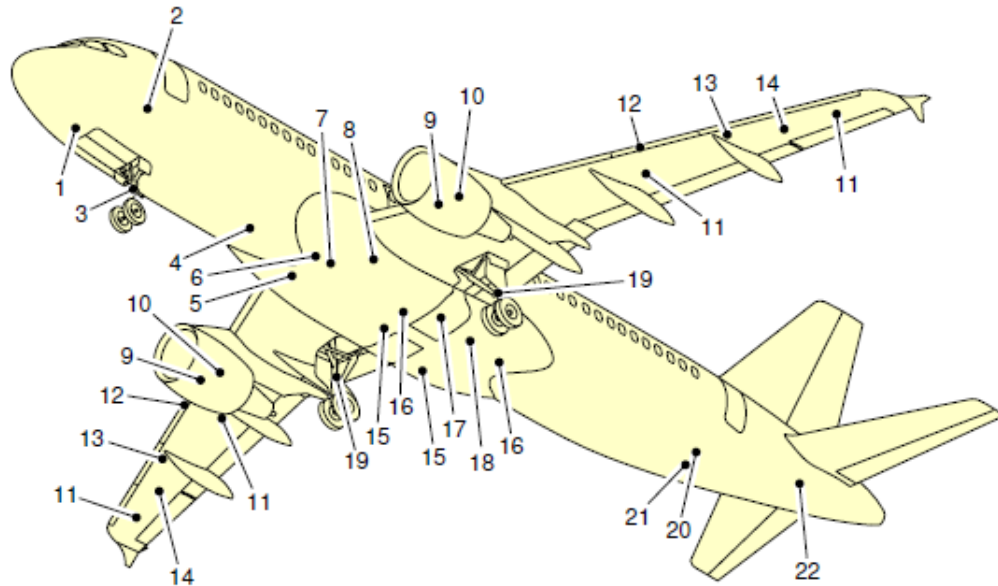


- ONLY APPROACH A LANDING GEAR THAT IS HOT OR ON FIRE FROM AN OBLIQUE ANGLE IN THE DIRECTION OF THE TIRE SHOULDER,
- DO NOT GO IN THE RIM HAZARD AREAS; METAL DEBRIS FROM A RIM BURST CAN KILL YOU.
- ONLY GO IN THE TIRE HAZARD AREAS WITH CAUTION; RISK OF DEBRIS FROM TIRE EXPLOSION.



11.4. AIRCRAFT SERVICING ARRANGEMENT

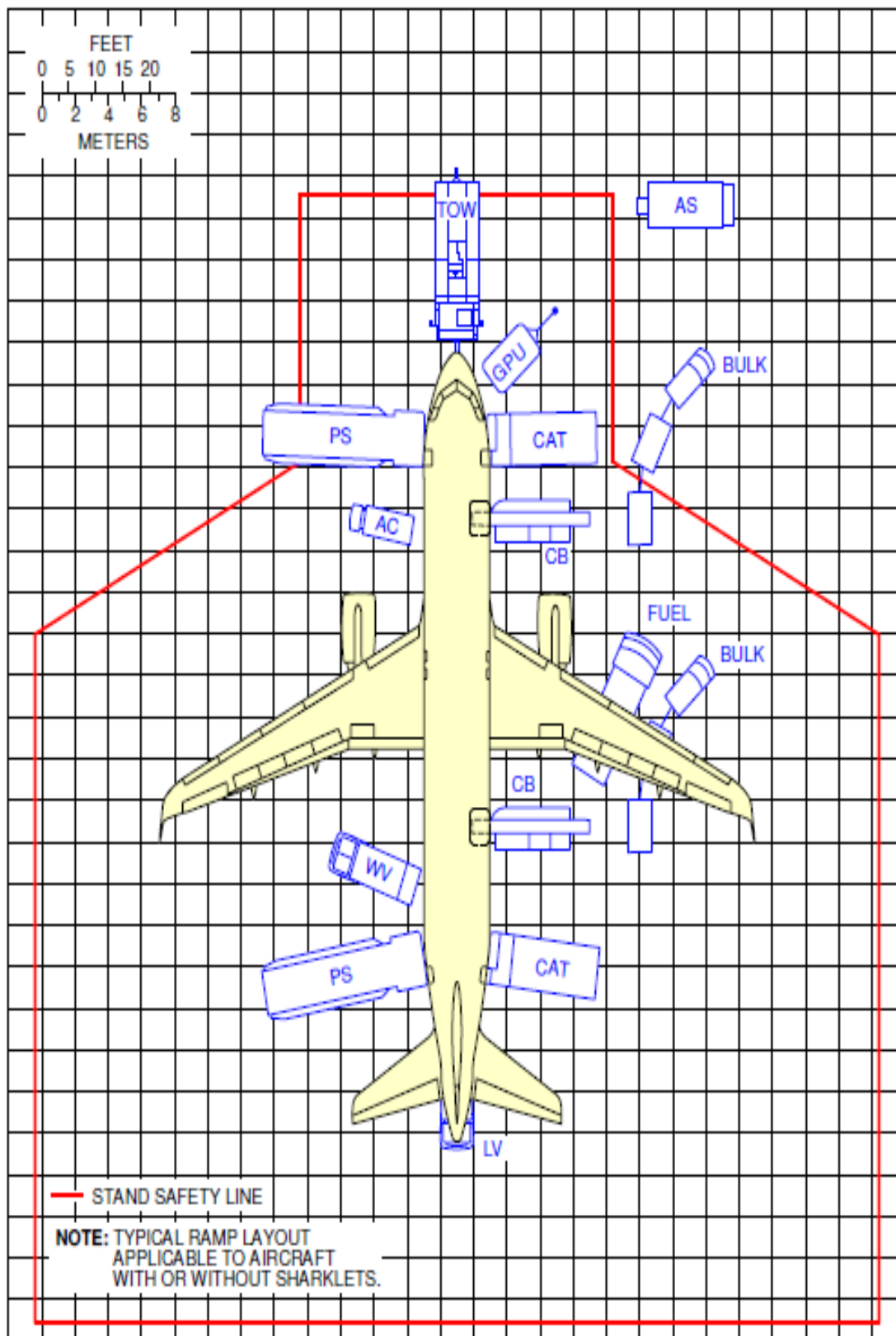
11.4.1. ROUND SERVICE CONNECTIONS



1 – GROUND ELECTRICAL POWER CONNECTOR	13 – OVERWING REFUEL (IF INSTALLED)
2 – OXYGEN SYSTEM	14 – NACA VENT INTAKE
3 – NLG GROUNDING (EARTHING) POINT	15 – YELLOW HYDRAULIC-SYSTEM SERVICE PANEL
4 – POTABLE WATER DRAIN PANEL (OPTIONAL)	16 – BLUE HYDRAULIC-SYSTEM SERVICE PANEL
5 – POTABLE WATER DRAIN PANEL	17 – ACCUMULATOR CHARGING (GREEN SYSTEM) AND RESERVOIR DRAIN (GREEN SYSTEM)
6 – LOW PRESSURE AIR PRE-CONDITIONING	18 – GREEN HYDRAULIC-SYSTEM SERVICE PANEL
7 – HIGH PRESSURE AIR PRE-CONDITIONING	19 – MLG GROUNDING (EARTHING) POINT
8 – REFUEL/DEFUEL INTEGRATED PANEL	20 – WASTE WATER SERVICE PANEL
9 – IDG/STARTER OIL SERVICING	21 – POTABLE WATER SERVICE PANEL
10 – ENGINE OIL SERVICING	22 – APU OIL SERVICING
11 – OVERPRESSURE PROTECTOR	
12 – REFUEL/DEFUEL COUPLINGS (OPTIONAL-LH WING)	



11.4.2. POSITIONING OF GROUND SERVICING EQUIPMENT



11.5. LOADING

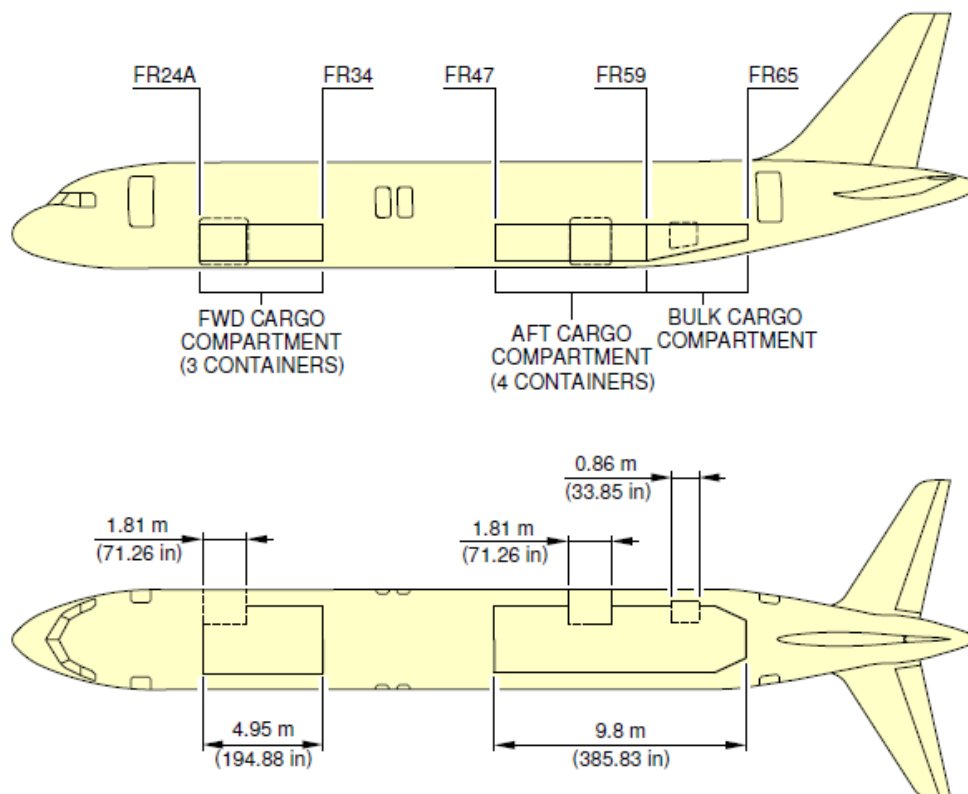
11.5.1. COMPARTMENT LAYOUT

AFT HOLD					Forward Hold		
Compartment 5	Compartment 4		Compartment 3		Compartment 1		
	2	1	2	1	3	2	1
Bulk door		AFT Door					FWD door

11.5.2. WEIGHT LIMITATIONS

Compt	Net Section	Max. Load per Net Section (kg)	Max. Load per Compt. (kg)	Max. Running Load (kg/m)	Max. Floor Load (kg/m2)	Usable Volume (m3)
1	11	1045	3042	588	732	4.0
	12	1225		765		4.7
	13	1132		765		4.4
3	31	1301	2426	741		5.4
	32	1125		703		4.3
4	41	928	2110	580		3.6
	42	1182		738		4.8
5			1497	460		5.8

11.5.3. CARGO HOLD DIMENSIONS



11.5.4. MAXIMUM DIMENSIONS OF BULK LOAD

The load ability of bulky items into the compartments can be determined by using the max. dimension tables below. The indicated package sizes are approximate reference figures.

Compartment 1:

Light packages (max. 50 kg) where tilted loading is allowed / possible:

Maximum length	Maximum width	Maximum height
up to 4.89 m	0.75 m	0.75 m
up to 4.93 m	0.50 m	0.50 m
up to 5.00 m	0.25 m	0.25 m

All packages which must be loaded in an upright position:

Maximum length	Maximum width	Maximum height
1.64m	1.49m	1.18m

Heavy packages (HEA up to max. 500 kg):

Minimum length	Minimum width	Minimum height
0.80 m	0.40 m	0.40 m
Maximum length	Maximum width	Maximum height
1.64m	1.49m	1.18m

Compartment 3 and 4:

Light packages (max. 50 kg) where tilted loading is allowed / possible:

Maximum length	Maximum width	Maximum height
up to 4.91 m	0.75 m	0.75 m
up to 5.14 m	0.50 m	0.50 m
up to 5.30 m	0.25 m	0.25 m

All packages which must be loaded in an upright position:

Maximum length	Maximum width	Maximum height
1.71m	1.49m	1.18m

Heavy packages (HEA up to max. 500 kg):

Minimum length	Minimum width	Minimum height
0.80 m	0.40 m	0.40 m
Maximum length	Maximum width	Maximum height
1.71m	1.49m	1.18m

Compartment 5

Light packages (max. 50 kg) which must be loaded in an upright position:

(m) Height	Width								
	0.10	0.20	0.33	0.40	0.50	0.60	0.70	0.80	0.85
0.10	3.23	3.23	32.1	3.18	3.16	3.10	3.03	2.77	2.68
0.20	3.23	3.21	3.17	3.14	3.04	2.95	2.78	2.60	2.65
0.30	3.23	3.21	3.17	3.14	3.04	2.95	2.78	2.60	2.54
0.40	3.19	3.15	3.11	3.01	2.90	2.82	2.62	2.48	2.43
0.50	3.11	3.09	2.91	2.81	2.71	2.57	2.42	2.31	2.28
0.60	2.90	2.73	2.59	2.47	2.34	2.24	2.17	2.11	2.08
0.65	2.70	2.54	2.41	2.29	2.17	2.08	2.02	1.98	1.93
	Length (m)								

Heavy packages (HEA up to max. 500 kg):

(m) Height	Width					
	0.40	0.50	0.60	0.70	0.80	0.85
0.30	2.25	2.05	1.86	1.65	1.48	1.41
0.40	2.25	2.05	1.86	1.65	1.48	1.41
0.50	2.25	2.05	1.86	1.65	1.48	1.41
0.60	2.25	2.05	1.86	1.65	1.48	1.41
0.65	2.25	2.05	1.86	1.65	1.48	1.41
	Length (m)					

11.5.5. LOAD SECURING A320

The divider and door net in each compartment must be closed at any time. Additional tie down is normally not required except for individual items of load which by their nature, shape or density may constitute a hazard. They must be restrained, which can be achieved by filling the cargo hold or net section volumetrically, or by tie-down.

When filled up to 80% of height, the cargo hold or net section is considered to be volumetrically full. Packages weighing more than 150 kg shall be restraint or individually tied down.

Single packages should be tied-down. Tie-down of loads to aircraft structure is achieved by straps or nets connected to the tie-down points located on the cargo hold floor.

Each tie-down point is designed to an ultimate load of 906 kg, in any direction.

Cargo compartments are marked with max loading height markers, in case marking is not visible, a minimum clearance of 5 cm must be kept between any load and compartment hold ceiling.

Beginning behind the AFT, each section has to be filled up to at least 80% of its volume, before the next section can be loaded. If a net section in CMPT 3 or CMPT 4 is not filled up to at least 80% of its volume, the BULK (CMPT 5) is restricted to a maximum of 250kg in total.

11.5.6. LOADING OF LIVE ANIMALS

FLYONE carry domestic pet only (dogs, cats etc.) in the cargo hold. AVIH can be transported as cargo or as passenger baggage.

- AVIH is must be securely lashed.
- Pilot-in-command should be notified via NOTOC.

The optimum pet location is in the hold that is empty or least loaded (i.e. hold 5 if empty or hold 1 if loaded less than half).

Under IATA regulations, live animals cannot be transported when the ground temperature is 35°C or more. This means FLYONE will not accept live animals on any flight when the ground temperature is 35°C or higher including the humidity level at the station of origin, transit station or destination. If temperatures are equal to or exceed 35°C at any of the stations in the routing, animals should not be accepted and will therefore be rebooked for the next available flight(s). At any time when temperature is below 5°C, FLYONE may not be able to accommodate animals. It is not recommended to ship toy-sized dogs, puppies and kittens. Below is guidance table for accepting pets in cargo holds:

Number of pets per hold	Ground temperature at departure (°C)	Ground temperature at arrival (°C)	Max Flying Time (Hours)	Minimum hold temp during flight if empty compartment (°C)	Minimum hold FREE space available (m³)
One (1) Up to 40Kgs	10°C-29°C	10°C-29°C	05:00	00 0°C - 5°C	6.0
Two (2) Up to 40Kgs	10°C-29°C	10°C - 29°C	05:00	0°C - 5°C	6.0
Three (3) Up to 40Kgs	10°C-29°C	10°C - 29°C	03:30	0°C - 5°C	6.0

11.5.7. PRECAUTIONS AGAINST TIPPING

In order to avoid the possibility of the aircraft tipping, during loading or unloading, the following procedure must be followed:

- Loading, load forward compartment first, partially loading compartment 11 to allow access to 12 and 13, ensure passenger boarding has commenced before loading compartment 5.
- Offloading, off-load rear compartments first, starting with compartment 5 whenever possible.

11.6. AIRCRAFT WEIGHTS AND CG DATA

Refer to FLYONE AHM560. Manual is available on FLYONE dox server <https://FOE.asqs.net>

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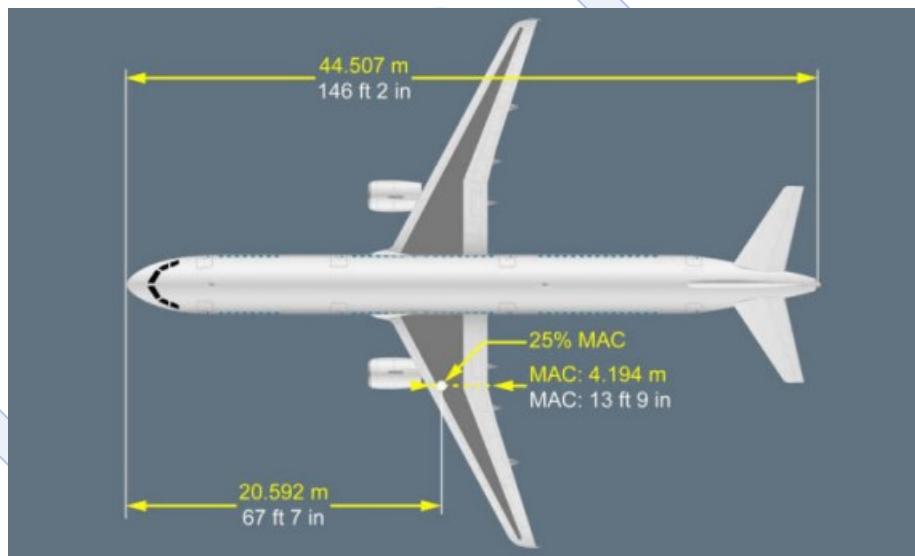
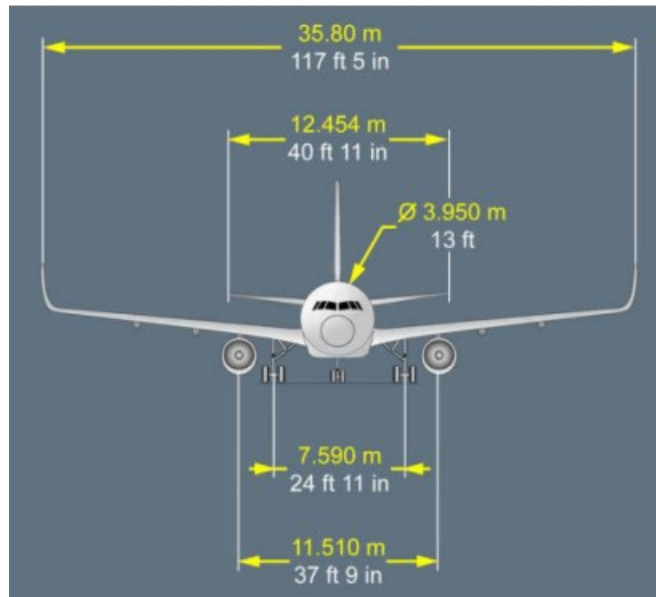
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12. AIRCRAFT CHARACTERISTICS A321

12.1. AIRCRAFT DIMENSIONS

12.1.1. EXTERIOR DIMENSIONS AND GROUND CLEARANCES





	WING	
Reference area	126 m ²	1 356 ft ² 36 in ²
Root chord	6.259 m	20 ft 6 in
MAC (LA)	4.194 m	13 ft 9 in
Aspect ratio	9.1	

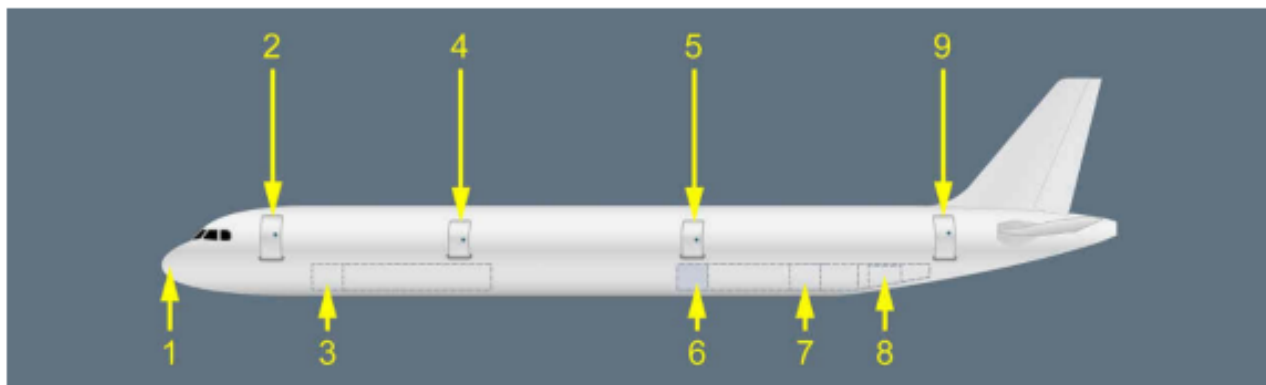
	HORIZONTAL TAIL PLANE	
Reference area	31 m ²	333 ft ² 98 in ²
MAC (LH)	2.701 m	8 ft 10 in
Aspect ratio	5	
Distance from 25 % LA to 25 % LH	20.255 m	66 ft 6 in

	VERTICAL TAIL PLANE	
Reference area	21.51 m ²	231 ft ² 77 in ²
MAC (LV)	3.948 m	12 ft 11 in
Aspect ratio	1.6	
Distance from 25 % LA to 25 % LV	19.390 m	63 ft 8 in

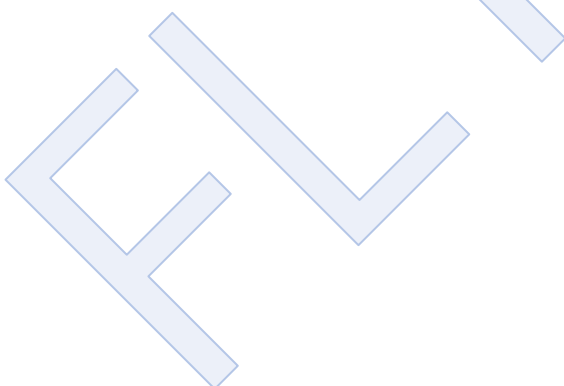
FLYONE

12.2. AIRCRAFT DOORS

12.2.1. CABIN DOORS AND HOLD DOORS



Legend	Equipped Component		Weight		H-ARM	
			(kg)	(lb)	(m)	(in)
1	Radome	CTR	30	66	3.300	129.92
2	FWD cabin door	LH	100	220	7.579	298.38
		RH	100	220	7.579	298.38
3	FWD cargo hold door	RH	115	254	10.681	420.51
4	First emergency exit	LH	80	176	16.384	645.04
		RH	70	154	16.384	645.04
5	Second emergency exit	LH	70	154	27.331	1 076.02
		RH	70	154	27.331	1 076.02
6	ACT1	CTR	375 (1)	827 (1)	27.445	1 080.51
7	Aft cargo hold door	RH	115	254	32.139	1 265.32
8	Rear bulk cargo hold door	RH	40	88	35.793	1 409.17
9	Aft cabin door	LH	100	220	39.016	1 536.06
		RH	100	220	39.016	1 536.06



12.2.1.1. HOLD DOORS OPERATIONS

CAUTION: CAUTION: A MINIMUM CLEARANCE OF 197 CM (78 INCHES) TO THE FUSELAGE SIDE HAS TO BE RESPECTED BEFORE DOORS ARE OPERATED.

Cargo door clearances

The ground clearance for the lower edge for both the cargo doors is approximately 200 cm (79 inches). It is dependent on aircraft weight, aircraft CG position, landing gear wheels and tyre sizes.

During opening and closing, the forward and aft hold doors swing about 56 cm below the door sill level. The doors can be damaged or may damage load. Keep the door swing area clear and open the doors carefully.

In case of power failure the hold doors can be operated manually. Only the station engineer is authorized to do this.

Opening

- Pull the locking handle in the door fully out and turn it by 90° to UNLOCKED
- Open the cover of the door operation panel under the aircraft.
- Turn the selector switch to OPEN and hold it until the door is open and the green light comes on.

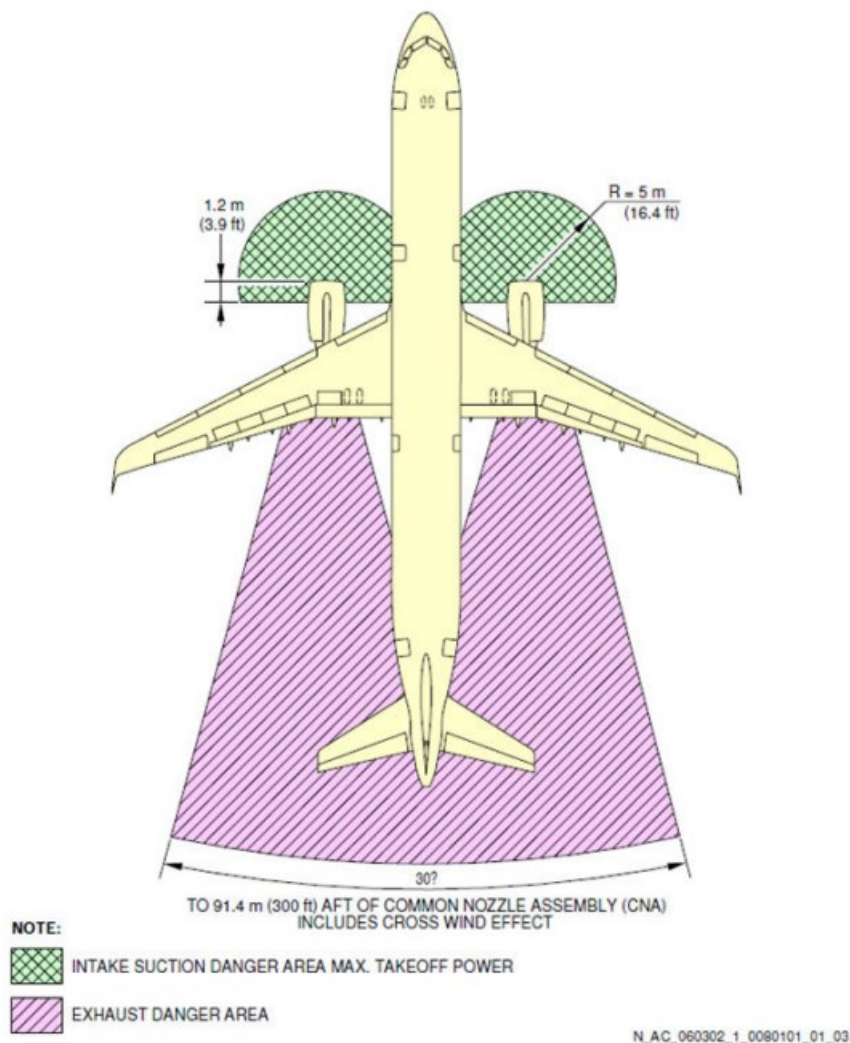
Closing

- Turn the selector switch to CLOSE and hold it until the door is closed and the green light goes off.
- Close the cover.
- Turn the locking handle in the door to LOCKED and push it on a level with the aircraft surface.

12.2.1.2. BULK COMPARTMENT DOOR

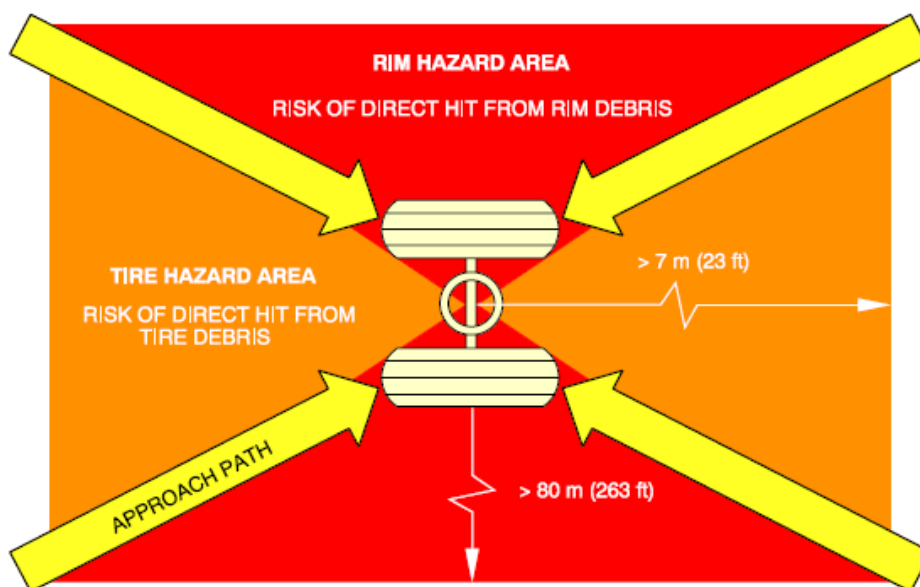
- Press the button in the door handle until the handle springs out.
- Turn the door handle to OPEN.
- Push the door inward and turn the door handle to LOCKED without closing the door again.
- Open the door until it locks at the compartment ceiling.
- Turn the door handle to OPEN.
- Pull the door down until it is closed.
- Turn the door handle to LOCKED and push the door handle on a level with the cabin surface.

12.3. DANGER AREAS

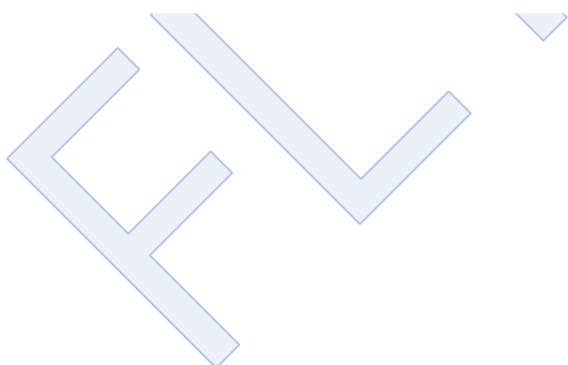


12.3.1. WHEEL BRAKE OVERHEAT HAZARD AREAS

WHEEL/BRAKE OVERHEAT HAZARD AREAS

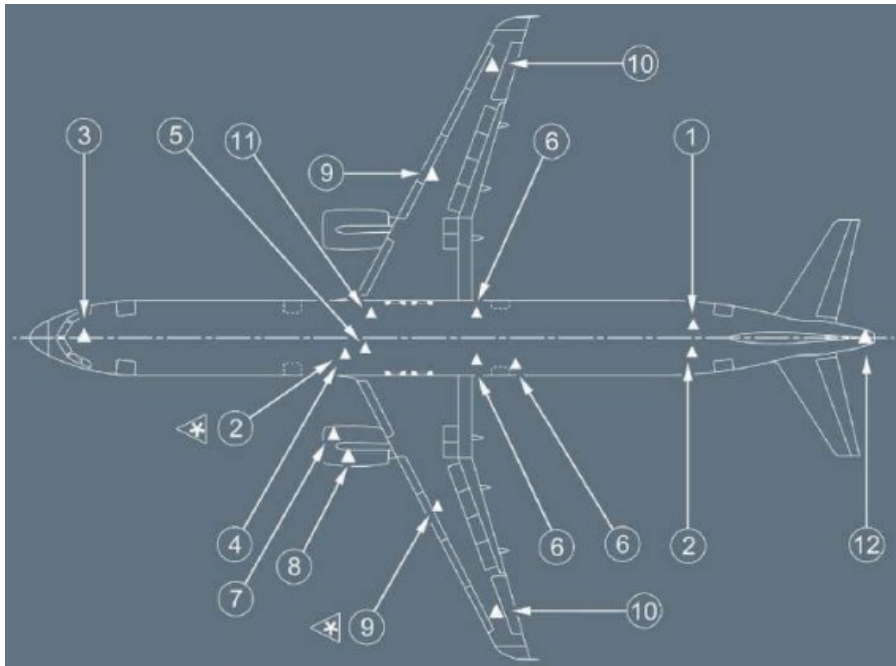


- ONLY APPROACH A LANDING GEAR THAT IS HOT OR ON FIRE FROM AN OBLIQUE ANGLE IN THE DIRECTION OF THE TIRE SHOULDER,
- DO NOT GO IN THE RIM HAZARD AREAS; METAL DEBRIS FROM A RIM BURST CAN KILL YOU.
- ONLY GO IN THE TIRE HAZARD AREAS WITH CAUTION; RISK OF DEBRIS FROM TIRE EXPLOSION.

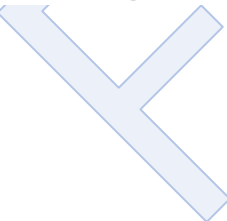


12.4. AIRCRAFT SERVICING ARRANGEMENTS

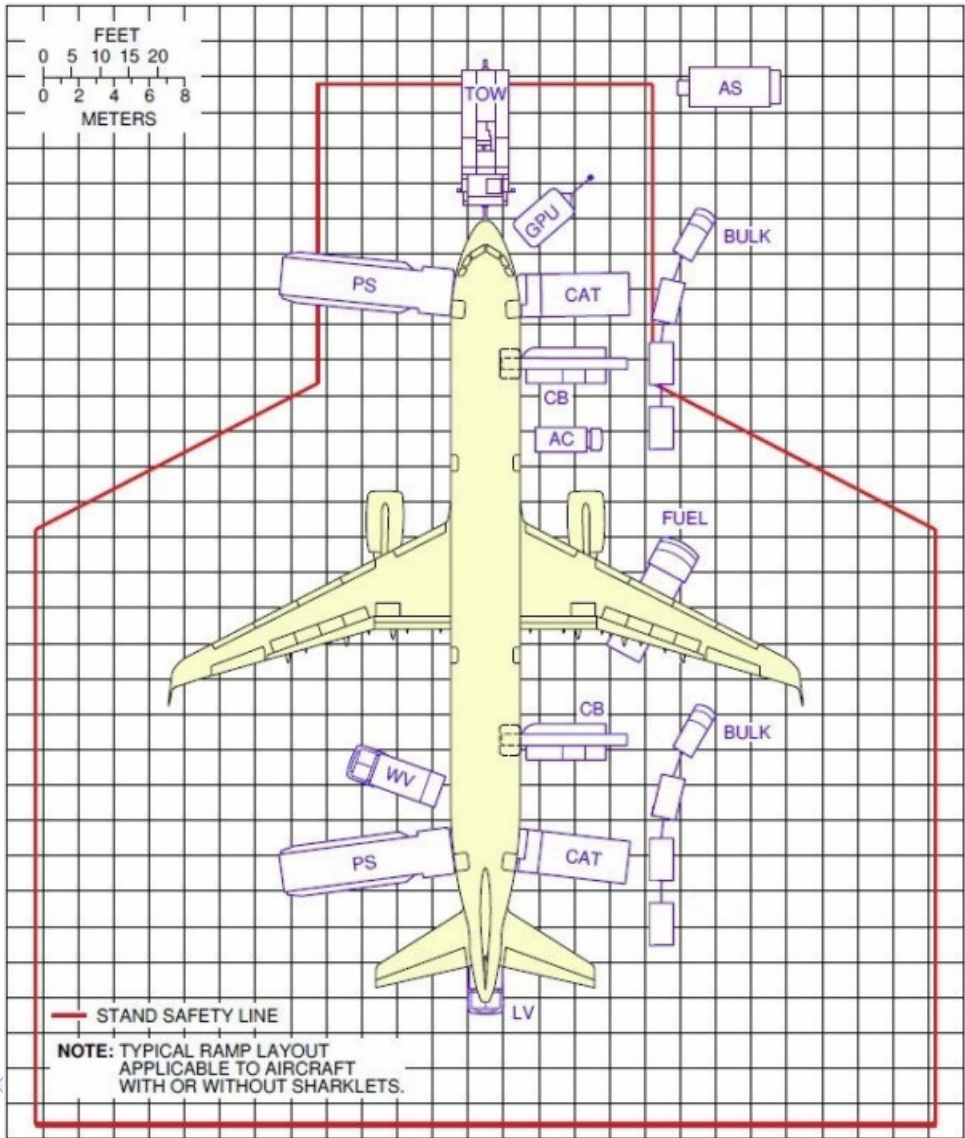
12.4.1. GROUND SERVICE CONNECTIONS



- (1) Toilet servicing
- (2) Water filling and/or draining
- (3) Electrical ground power receptacle
- (4) LP ground air supply connector
- (5) HP ground air supply connector
- (6) Hydraulic
- (7) IDG oil filling
- (8) Engine oil filling
- (9) Refueling/defueling
- (10) Gravity filling panels
- (11) Refueling/defueling panel
- (12) APU oil filling



12.4.2. POSITIONING OF GROUND SERVICING EQUIPMENT



12.5. LOADING

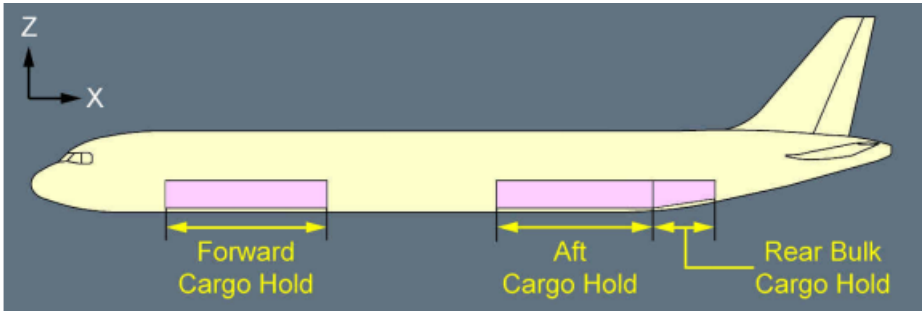
12.5.1. COMPARTMENT LAYOUT

AFT Hold						Forward Hold				
Compartment 5	Compartment 4		Compartment 3			Compartment 2			Compartment 1	
	2	1	3	2	1	3	2	1	2	1
Bulk door		AFT door								FWD door

12.5.2. WEIGHT LIMITATIONS

Compt	Net Section	Max. Load per Net Section(kg)	Max. Load per Compt. (kg)	Max. Running Load (kg/m)	Max. Floor Load (kg/m2)	Usable Volume (m3)
1	1	1013	2202		732	
	2	1189				
2	1	1189	3468			
	2	1189				
	3	1090				
3	1	1289	3587			
	2	1177				
	3	1121				
4	1	919	2083			
	2	1164				
5			1497			

12.5.3. CARGO HOLD DIMENSIONS



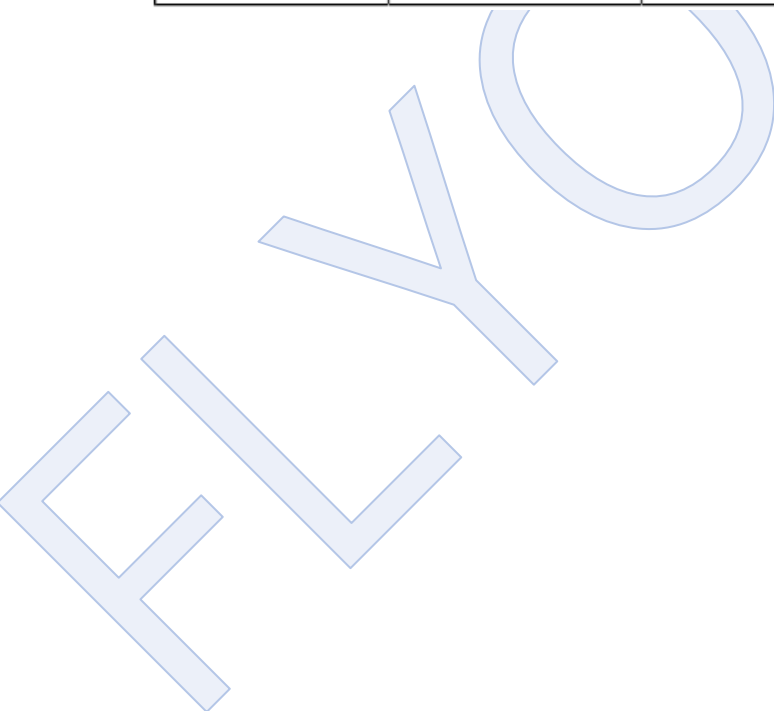
Compartment 5

12.5.4. MAXIMUM DIMENSIONS OF BULK LOAD

The maximum dimensions of cargo packages which will pass through the respective cargo door and which must be restrained in the respective cargo hold are shown in the following table. The dimensions are approximate and referring to rectangular package sizes. The following tables provide the maximum dimensions of the packages that can be loaded with the mandatory divider nets removed.

Forward Cargo Hold

Package Width (m)	Package Height (H)		
	H ≤ 0.746 m	0.746 m < H ≤ 1.014 m	H > 1.014 m
	Maximum Package Length (m)		
0.000	5.728	5.146	4.201
0.100	5.526	4.946	4.000
0.200	5.324	4.745	3.799
0.300	5.122	4.545	3.599
0.400	4.920	4.344	3.398
0.500	4.717	4.144	3.197
0.600	4.514	3.943	2.996
0.700	4.310	3.742	2.794
0.800	4.106	3.541	2.592
0.900	3.901	3.339	2.390
1.000	3.696	3.138	2.186
1.100	3.489	2.936	1.981
1.200	3.280	2.733	1.773
1.300	3.069	2.530	1.648
1.400	2.855	2.325	-
1.500	2.634	2.117	-
1.600	2.427	1.996	-



Compartment 4

Package Width (m)	Package Height (H)		
	H ≤ 0.746 m	0.746 m < H ≤ 1.014 m	H > 1.014 m
	Maximum Package Length (m)		
0.000	5.471	5.246	4.423
0.100	5.390	5.177	4.223
0.200	5.311	4.841	4.022
0.300	5.234	4.641	3.822
0.400	5.160	4.441	3.621
0.500	5.089	4.240	3.420
0.600	4.749	4.040	3.219
0.700	4.545	3.839	3.018
0.800	4.341	3.638	2.817
0.900	4.137	3.438	2.615
1.000	3.931	3.237	2.413
1.100	3.725	3.035	2.210
1.200	3.517	2.834	2.005
1.300	3.308	2.632	1.798
1.400	3.095	2.429	1.715
1.500	2.878	2.225	-
1.600	2.653	2.019	-
1.700	2.528	1.996	-

Compartment 5

Package Width (m)	Package Height	
	0.400 m	0.600 m
	Maximum Package Length (m)	
0.000	2.155	1.989
0.100	2.100	1.815
0.200	2.053	1.613
0.300	1.957	1.409
0.400	1.757	1.203
0.500	1.556	0.991
0.600	1.355	-
0.700	1.154	-
0.800	0.959	-

12.5.5. LOAD SECURING A321

The divider and door net in each compartment must be closed at any time. Additional tie down is normally not required except for individual items of load which by their nature, shape or density may constitute a hazard. They must be restrained, which can be achieved by filling the cargo hold or net section volumetrically, or by tie-down.

When filled up to 80% of height, the cargo hold or net section is considered to be volumetrically full. Packages weighing more than 150kg shall be restraint or individually tied down.

Single packages should be tied down. Tie-down of loads to aircraft structure is achieved by straps or nets connected to the tie-down points located on the cargo hold floor.

Each tie-down point is designed to an ultimate load of 906kg, in any direction.

Cargo compartments are marked with max loading height markers, in case marking is not visible, a minimum clearance of 5 cm must be kept between any load and compartment hold ceiling.

Beginning behind the AFT, each section has to be filled up to at least 80% of its volume, before the next section can be loaded. If a net section in CMPT 3 or CMPT 4 is not filled up to at least 80% of its volume, the BULK (CMPT 5) is restricted to a maximum of 250kg in total.

12.5.6. PRECAUTIONS AGAINST TIPPING

In order to avoid the possibility of the aircraft tipping, during loading or unloading, the following procedure must be followed:

- Loading, load forward compartment first, partially loading compartment 11 to allow access to 12, ensure passenger boarding has commenced before loading compartment 5.
- Offloading, off-load rear compartments first, starting with compartment 5 whenever possible. If this sequence cannot be followed, check with the flights crew for instructions about the correct offloading/loading sequence.

12.6. AIRCRAFT WEIGHTS AND CG DATA

Refer to FLYONE AHM560. Manual is available on FLYONE documents server <http://FOE.asqs.net/>

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13. LIST OF FORMS

The list of FLYONE forms that may be used by ground handling and cargo agents is available on the FLYONE server <https://FOE.asqs.net>

Only current revision of form should be used.

FLYONE

01 May 2025	GROUND OPERATIONS MANUAL	Edition	02
		Revision	00

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