



# Xfly Ramp Handling Manual

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Web Manuals

Authorized by: Vilma Oras  
Manager Ground Operations

/Signed digitally/

**0 Administration and Control**

**1 Aircraft Arrival Activities**

**2 Loading of Aircraft**

**3 Aircraft Servicing**

**4 Aircraft Departure Activities**

**5 Emergency Procedures and Reporting**

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## 0.1 Revision Log

Page	Comment
0-9	Manual distribution email changed
0-12	EFB added
0-12	New rev nr and date
0-13	Safety Policy updated as per MSM
0-14	Compliance Monitoring Policy updates as per MSM
0-15	Security Policy updated as per Security Manual
1-5	Chocks requirement clarification
1-6	Pictures for safety cones positions added
1-6	Safety cones positioning as per IGOM ref amended
1-7	Picture added for ATR cones requirement
1-8	ATR GPU info moved to nxt page, 1.8 amended with the attention to GPU hatch closure
1-11	Sub-chapter 1.12.1 renamed to General Safety Instructions. Contents aligned with IGOM. Basic Operating Requirements for Ground Support Equipment updated and aligned with IGOM. Text shifted.
1-12	New page added. Basic Operating Requirements for Ground Support Equipment updated and aligned with IGOM.
1-13	Basic Operating Requirements for Ground Support Equipment and Non-motorized Ground Support Equipment reviewed, updated and aligned with IGOM. Sub-chapter 1.12.4 moved to next page.
1-14	Safety rails requirement for the beltloaders added
1-15	Belt loader chapter reviewed, Elevating Equipment chapter reviewed
1-16	Elevating Equipment reviewed. Sub-chapter 1.12.7 renamed to Tractor/Electric Baggage Tug. Both contents updated and aligned with IGOM.
1-19	Editorial change
1-21	Chapter created and numbered - CRJ900 Entrance and Service Door
1-23	Chapter name changed to ATR 72 Entrance and Service Door, chapter numbered
1-24	Picture added, correct way of closing ATR entrance door
1-25	Content moved to next page
1-26	Note added - inform crew or maintenance if any covers, straps etc missing.
1-26	1.16.1 heading amended
1-27	CRJ engine covers must be installed if aircraft parked more than 3 hours
1-27	Chapter numbered, note added to inform crew or maintenance if covers missing
1-28	ATR Hotel Mode chapter added
1-30	Draining requirement table deleted. ATR water draining criteria described
1-33	ATR Ground Stability chapter amended
1-33	Ground Stability chapters numbered

(continued)

Page	Comment
2-4	Note added, ATR cargo access door control panel shall be closed when not opening/closing the cargo hold access door
2-6	ATR loading/unloading reference to added
3-5	Sentence of ground staff to check the level of water system deleted
3-5	Guidance not to use mechanical equipment during the ATR toilet handle turn/pull added
3-6	Pictures on handle positions added
3-7	Text shifted from previous page.
3-12	Same content twice-deleted.
3-16	Caution added
3-18	Picture added
3-20	Text shifted.
3-25	Supply of cabin equipment list changed, menu and inflight magazine requirement deleted.
3-29	Requirements for fueling with PWD on board deleted
4-2	Information about anti-collision lights added.
4-3	Pre-departure walkaround amended
4-5	Notes deleted
4-9	APU in connection to ATR Hotel Mode deleted to avoid confusion
4-10	ASU power requirements corrected
4-12	Landing gear ground lockpins info moved under responsibilities coordination table
4-13	Note rephrased, max turning angle deleted
4-14	Rephrased, no change in content
4-16	Explanation added to the CRJ turning limited to 80 degrees
4-17	Torque link disconnection requirement and pictures added
4-18	Added Responsibilities Coordination for CRJ900 Towing
5-7	Emergency Report form ref added

## 0.2 Table of Contents

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## 0.3 Purpose and Scope

Designated individual shall be responsible for the supervision and oversight of all ramp operations at all times.

This manual contains ground handling procedures applicable to the following:

- Regional Jet OÜ (doing business as Xfly) CRJ900 and ATR72 operations.

The content of this manual is generic unless a reference is made to the specific aircraft type.

This manual is aimed for Ramp Handling agents in the stations Xfly is flying to.

This manual contains of:

1. Procedures and information related to Ramp Handling,
2. Company rules and requirements,
3. Other aviation authorities requirements.

The user of this manual is required to:

1. Be familiar with the contents of this manual,
2. Follow the instructions given in this manual,
3. Maintain the confidentiality of the contents of this manual and not reveal it to any unauthorized persons not associated with Xfly,
4. Adhere to the procedures as described in this manual.

### **Form of publication**

Ramp Handling Manual (RHM) is issued only electronically.

The RHM is accessible to Xfly staff and available to stations (handling agents) via IQSMS Document Distribution Module (DDM).

All contracted External Service Providers shall be given a username and password, which enables them the access to the IQSMS DDM. All printouts are considered uncontrolled copies, if in doubt the service provider must always refer to the IQSMS DDM for the most recent update of the manual.

Ground Operations Manager (KO) is the mastercopy holder of RHM.

Xfly NP Ground Operations is responsible for the contents of this manual. Feedback regarding the contents of this manual may be delivered by e-mail [ko@xfly.ee](mailto:ko@xfly.ee).

## 0.4 Terminology

*Vacant*

## 0.5 System of Amendment and Revision

The content of Ramp Handling Manual (RHM) is revised when required due to changes in rules, regulations or internal procedures.

The manual uses revision bars (shown on the left side of the page) to indicate a revision, i.e. new information or a revised meaning of text. The revision bar is always placed beside the revised text.

### Revision

The RHM is given a new revision number after each revision. The revision number and the date of prepared revision are indicated in the header (top of page) for the chapters of this manual. Manual is effective when published on IQSMS Document Distribution Module.

Upon revisions, the relevant files will be updated on the IQSMS Document Distribution Module. The Mastercopy Holder will deliver an electronic copy to [manualdistribution@nagroup.ee](mailto:manualdistribution@nagroup.ee) for publishing.

IQSMS will send an automated notification of the new revision to the recipients.

### Distribution

RHM is accessible to Xfly staff and stations (handling agents) via IQSMS Document Distribution Module (user name and password required).

When RHM is revised, all stations and ACMI customers according to distribution list are notified via e-mail. It is ACMI customer responsibility to distribute RHM access info and/or revision notification to stations and handling agents involved.

The RHM shall be available at each station to all personnel engaged in Xfly aircraft handling duties.

## 0.6 List of Effective Pages

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### 0.7 List of Revisions

Revision No	Effective date
0	07.01.2016
1	15.08.2016
2	01.11.2016
3	15.05.2017
4	25.09.2017
5	15.12.2017

Revision Number	Revision Date
6	13-03-2018
7	01-07-2018
8	03-09-2018
9	01-03-2019
10	20-06-2019
11	06-09-2019
12	11-11-2019
13	30-04-2020
14	06-08-2020
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18	10-02-2022
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### 0.8 Distribution List

Location	Responsible
IQSMS Document Distribution Module User groups: <ul style="list-style-type: none"> <li>• Ground Operations</li> <li>• GH Supplier</li> <li>• Flight Dispatch</li> <li>• Production</li> <li>• Management Team</li> </ul>	Vilma Oras
Web Manuals Reader application on EFB: <ul style="list-style-type: none"> <li>• Flight Dispatch</li> </ul>	

## 0.9 Safety Policy Statement

### Safety Policy

We do not compromise on safety matters. Our objective is to be accident and incident free.

Management of safety is a primary responsibility of all managers and employees. Our goal is to provide our customers and our fellow employees with the highest level of safety achievable as far as reasonably practical.

We encourage everyone to report all hazards, incidents and occurrences that could affect the safety of our operations in any way.

All personnel should fully cooperate with the compliance monitoring audits/inspections and internal safety investigations for the sake of safety improvements.

We have a "Just Culture" where we ensure that no action will be taken against any employee who reports a safety concern through the safety reporting system, unless such disclosure indicates, beyond any reasonable doubt, gross negligence or a deliberate or willful disregard of regulations or procedures.

We will establish and operate hazard identification and risk management processes in order to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations or activities to achieve continuous improvement in our safety performance.

We will consider human factors principles as an integral part of our safety management, necessary to understand, identify and mitigate risks as well as to optimize the human contributions to our organizational safety.

We will comply with and, where appropriate, exceed, legislative and regulatory requirements and standards and seek to adopt best practices wherever practical.

We will establish and measure our safety performance against realistic Safety Performance Indicators and Safety Performance Targets and will work diligently to achieve these targets.

We will continually improve our management system and our operational safety performance through continuous monitoring and measurement, and regular review and adjustment of safety objectives and targets.

We will ensure that externally supplied systems and services to support our operations are delivered meeting our safety performance standards.

We will provide all the necessary resources and training to our employees for the implementation of the values outlined in this policy.

*/signed digitally in MSM/*

**Remco Althuis**

Accountable Manager

*/signed digitally in MSM/*

Gabriel Sanchez

Head of Safety

## 0.10 Compliance Monitoring Policy

### Compliance Monitoring Policy

We are committed to implement and maintain a Compliance Monitoring System which fully complies with the European Union and national regulations and recommended practices. All activities will be planned, monitored, evaluated, and corrected as required, with the objective of continuous improvement of the management system.

Our partners, sub-contractors and service providers are chosen after careful evaluation in aim to fulfill the expected standards and high level of service. This is monitored through regular inspections and audits.

Our Compliance Monitoring System comprises all the resources, people, guidelines, instructions and procedures that are used to steer and conduct the Company's business and operational activities. The system shall ensure that the entire organization works as an effective system, not as a group of independent units.

When we ensure that all flights are handled and operated by airworthy aircraft and in accordance with safe operational practices we also serve our customers in the best possible way. In addition, we will provide punctual operation, friendly and high standard of service by all our staff. Satisfied and loyal customers add our shareholder value.

The Accountable Manager has the overall responsibility for the Compliance Monitoring System including the frequency, format and structure of the internal management evaluation activities.

*/signed digitally in MSM/*

**Remco Althuis**

Accountable Manager

*/signed digitally in MSM/*

Mart Hansen

Head of Compliance Monitoring

## 0.11 Security Policy

### Security Policy

Xfly is committed to a culture that has security as a fundamental operational priority. Operating a safe and secure airline is the core of Company values. The aim of the Security Policy is to protect customers, shareholders, employees and the business from threats and risks, and to ensure compliance with national and international regulations and Company standards. The same level of responsibility must be demonstrated in any sub chartered, subsidiary, or contracted operation. This aim will be met by:

1. Assessing the threats and risks;
2. Establishing security objectives and security performance standards;
3. Setting policies and counter-measures commensurate with the assessed threats and risks;
4. Promoting security awareness and establishing a security culture;
5. Providing adequate resources for the successful implementation of the Security Policy;
6. Communicating the security requirements continually and effectively to staff and business partners;
7. Ensuring all staff and contractors receive training appropriate to their responsibilities;
8. Security programs embedded within all areas of the business;
9. Continual improvement of the security management system.

It is the responsibility of all employees to carry out their duties mindful of the need for safe and secure operations, whether working directly for the Company, or one of its contracted partners or subsidiaries. In relation to this policy it is expected that persons will encounter events and situations, which compromise the safe and secure objective. It is the responsibility of all employees to report security breaches or acts of criminality whilst on duty to the safety department using the safety reporting process.

In order to be satisfied with the security performance of the Company's program, its partners and subsidiaries, the periodic audits and performance testing to examine security compliance will be carried out by the persons having sufficient knowledge of aviation security and the Company.

Responsible acting and reporting is the key to a successful safety and security awareness. However, it should be remembered that disregard for this goal will be treated as misconduct.

It is our task to provide this environment that gives confidence to all operating with and for the Company.

*/signed digitally in Security Manual/*

**Remco Althuis**  
Accountable Manager

*/signed digitally in Security Manual/*

**Janis Krupinš**  
Manager Security

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## 1.1 Aircraft Dimensions and Clearances

See: IATA AHM 904

## 1.2 Actions Prior to Arrival

Prior to aircraft arrival at the assigned parking gate or stand, the person in charge must ensure that the parking stand and the handling team are properly prepared for the turnaround.

The ramp area surface is inspected and is free of debris that could cause foreign object damage (FOD) and free of contamination that could be hazardous to aircraft movement.

Ensured that the aircraft movement path is clear of objects and obstacles.

Personnel not involved in the aircraft handling are positioned outside the equipment restraint area (ERA).

Required GSE is available in good working condition and positioned correctly, clear of the ERA and aircraft's path.

Ensured that the positioning of all equipment is carried out correctly.

Appointed of appropriately qualified staff to service the aircraft.

Ensure equipment restraint line is marked or displayed on the apron.

Ensured that at night all vehicles waiting in the proximity of the arriving aircraft are positioned so that the headlights will not dazzle the flight deck crew. The vehicle lights must be in the dipped position.

Ensured that aircraft docking guidance system is operational, switched on, and correct aircraft type is selected before aircraft arrival or, if applicable, a qualified marshalling personnel is appointed and in place. Personnel are required to report an unserviceable docking system immediately to the Airport Authority.

Ensured that additional ground personnel (i.e, wing walkers or other) are present, if required.

Ensured that no personnel, vehicles or equipment may approach the aircraft until the aircraft engines have spooled down, the anti collision lights is off, and the aircraft has been chocked, and if applicable, ground to flight deck communication has been established.

Connecting the ground power is accepted before engines shut down and switching off the anti collision lights.

### **WARNING:**

The staff should use ear protection when the engines operate. The engines make sufficient noise to cause damage to ears.

### **WARNING:**

All persons must stay out of the dangerous areas that are forward/sides of the air inlet or propeller, and the aft of the engines. Approach the aircraft only after the engine has completely pooled down or the propeller stopped.

### 1.2.1 Prevention of Foreign Object Damage (FOD)

FOD applies to all loose objects that are a danger to the safety and integrity of aircraft and these items must not be left anywhere so as to constitute a hazard.

Handling Agents must comply with these requirements:

- Check the aircraft parking stand for foreign object debris prior to aircraft arrival. Remove and dispose of any debris into designated FOD containers, if available, or by any other means as per local airport authority regulations.
- When strong wind is forecast, the ramp manager/supervisor will instruct personnel to secure equipment.
- Include FOD inspections within their routine vehicle and equipment examinations.
- FOD must be removed from all ground service equipment (G.S.E) after every use.

## 1.3 Aircraft Marshalling

Marshalling is needed on ramp in case of the aircraft docking system failure or when using stands not equipped with a docking system.

No person shall guide an aircraft unless trained, qualified and approved to carry out the functions as a Marshaller.

A Marshaller will be responsible for providing standard marshalling signals, in a clear and precise manner, to arriving and departing aircraft.

The Marshaller should wear a distinctive fluorescent identification vest to allow the flight crew to identify that he is the person responsible for marshalling operation.

Wands, table tennis bats or gloves shall be used for all signaling. Illuminated wands must be used at night or in low visibility.

Only conventional hand signals defined in the IATA IGOM chapter 3.4 must be used in all marshalling operations.

## 1.4 Actions After Arrival

Upon aircraft stopping:

1. Position wheel chocks at Nose Landing Gear (NLG) wheels as per RHM [1.5 - Positioning/Removal of Wheel Chocks](#).
2. Position and connect the Ground Power Unit (GPU) as per RHM [1.7 - Ground Power \(GPU\)](#), if required, before engine shut down.

After the engines have been shut down, are spooling down and anti-collision lights have been switched off:

1. Position wheel chocks at the Main Landing Gear (MLG) wheels remove nose gear chocks (if required) and verbally/visually confirm to flight crew.
2. Confirm there is no damage on the cabin door area prior to positioning the Passenger Boarding Bridge (PBB).
3. Position the safety cones as per RHM [1.6 - Use Of Safety Cones](#).
4. Conduct an arrival aircraft exterior inspection to inspect for damage as per RHM [1.10 - Arrival Aircraft Exterior Inspection](#) before positioning GSE
5. Position and connect the external power, if required.

*Note:* "Spooling down" of an engine can be identified as follows: reduced engine noise, visible fan or propeller speed reduction, lack of exhaust heat/thrust plume.

**WARNING:**

If notified of a brake overheat do not approach the main gear.

**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.

**Hotel Mode on ATR**

This mode, available on the ATR RH engine - Eng. No.2, is exclusively used on the ground to provide aircraft autonomy in terms of air conditioning and DC power supply with the engines gas generator operating and the propeller locked by a hydraulic brake.

Note: When handling ATR aircraft ground staff should remain aware that Hotel Mode may be in use whilst beacon lights are off. Wing lights (located on both sides of the aircraft in front of the engines) remain ON to indicate Hotel Mode operation.

**CAUTION:**

Refueling the ATR aircraft while Eng. No. 2 is running in Hotel Mode is prohibited.

## 1.5 Positioning/Removal of Wheel Chocks

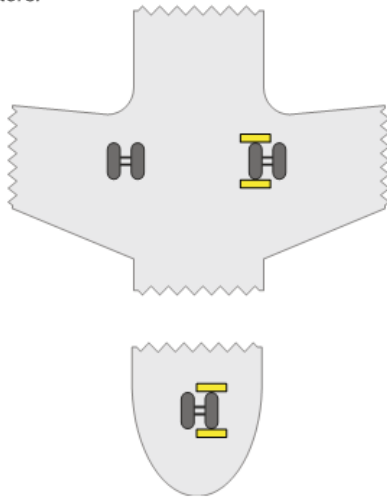
On arrival the aircraft may be chocked in accordance with the Handling Agent's own procedure, providing minimum of chocks as shown below is used.

### CRJ

A minimum of four (4) chocks (two pairs) must be used per aircraft 1 forward and 1 aft of the nose gear and 1 forward and 1 aft of the main gear. During night stop, long term and high wind parking the nose gear and both main gears must be chocked. Ref IGOM 4.2.2.

#### Aircraft with single axle main gear bogie Option 1

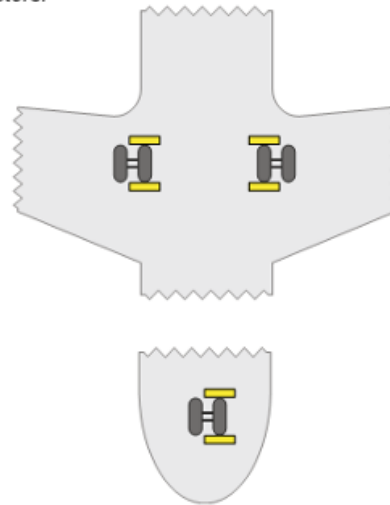
**Note:** No nose gear chocks on aircraft with spray deflectors.



**Note:** Inside or outside main gear chocks are acceptable

#### Aircraft with single axle main gear bogie

**Note:** No nose gear chocks on aircraft with spray deflectors.



**Note:** Inside or outside main gear chocks are acceptable

### ATR

Turnaround:

- A minimum of two (2) chocks (one pair) must be used per aircraft 1 forward and 1 aft of the nose gear.

Parking aircraft out of service, night stop or high winds:

- Minimum of six (6) chocks, 1 forward and 1 aft of the nose gear and 1 forward and 1 aft of the both main gears.

Personnel must NOT approach main gear wheels until the anti-collision lights have been switched off and engines have spooled down.

Chocks must be positioned both in the front and aft of wheel, they should also be parallel to the wheel axle and only lightly touching the tires.

Once the chocks have been positioned, staff must notify the Captain using the conventional hand signals or via the headset.

Chocks must not be removed from an aircraft until clearance is given by the responsible person supervising the ramp operations.

#### WARNING:

Personnel should be made aware of protrusions in the vicinity of the wheels, such as gear doors and antennas, which could cause injury.

## 1.6 Use of Safety Cones

The purpose of “coning” aircraft is to create a safety buffer around specific areas on aircraft that are susceptible to ground damage.

Cones must be positioned immediately at arrival as soon as the aircraft has come to a complete stop, the anti-collision lights are off and the wheel chocks are in place.

Ground support equipment, including fuel service equipment may approach the aircraft ONLY AFTER the cones are in place (not applicable for the PBB or GPU, if required).

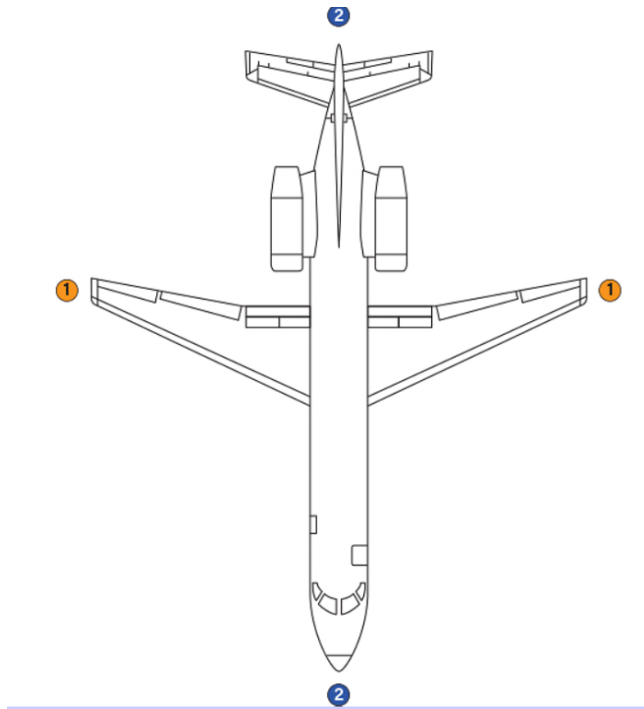
All required safety cones shall remain in place until GSE and vehicle activities around the aircraft have ceased prior to departure of the aircraft.

When not in use, safety cones must be placed in the designated storage area.

Ref IGOM 4.3.3.

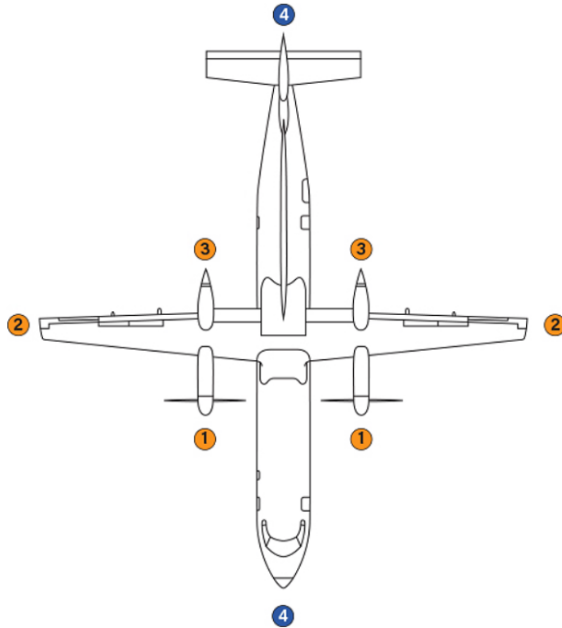
### CRJ

A minimum of 4 safety cones must be placed, one at each wingtip, one in front of nose and one behind the tail.



**ATR**

A minimum of 8 safety cones must be placed, one at each wing tip, one in front of and behind each engine and one in front of nose and one behind the tail.



## 1.7 Ground Power (GPU)

Ground power is connected to aircraft on its arrival and disconnected on its departure in order to provide electrical power to the aircraft power system during the ground stop, parking and start-up.

Position and connect Ground Power Unit (GPU) after the aircraft has come to a complete stop (if required, before engine shut down) and the wheel chocks are in place.

It is permitted to pre-position a Ground Power Unit (GPU) inside the ERA provided there is a marked GPU parking position.

Set parking brake/chock for the positioned GPU.

Ensure the GPU, while in operation, is positioned a minimum of 3 meters from any fueling vehicles and aircraft fuel vent exits.

Handling Agents are required to have internal procedures in place as how to operate and maintain the type specific Ground Power Units (GPU).

### **GPU requirements for CRJ900**

Voltage: 115 V  $\pm$ 5 V

Frequency: 400 Hz  $\pm$ 20 Hz

Only standard 115 V/400 Hz Ground Power units with compatible plug are allowed to be used for CRJ900. Connect and disconnect GPU only in switched off mode.

If the aircraft's APU is out of order, the ground personnel shall connect GPU before the engines are switched off to avoid a drop in voltage or aircraft mains failure.

**GPU requirements for ATR 72**

DC (Direct Current) GPU capable of 400 A, at 28 V and additional starter current of 1000 A at 12 V during engine start.

The primary power required for the ATR turnaround is 28 V DC.

AC (Alternative Current) 115 V power will only be supplied for engineering requirements.

The ATR aircraft is not fitted with an Auxiliary Power Unit (APU) but has propeller brake (referred as "hotel mode") that stops the right engine propeller, allowing the turbine to run and provide air conditioning and power to the aircraft without the propeller spinning.

*Note:* If the RED BAT ON light is on when the aircraft is not attended by crew, please inform Xfly OCC.

## 1.8 Disconnecting Ground Power Unit (GPU)

When instructed by the Flight Deck, switch off ground power supply and remove the power cable from the aircraft external power receptacle.

Do not disconnect power until authorized by the flight crew.

Ensure the power is switched off before removing the power cable as failure to comply may result in serious injury or death by electrocution.

*Note:* Ground crew and flight crew shall communicate disconnecting of ground power either using hand signals or headset

Particular attention should be paid to closing GPU hatch.

## 1.9 External Power Receptacle

The external power receptacle and control panel are installed on the right side of the fuselage nose section.

**CRJ900**

Providing power to the external power receptacle illuminates the AVAIL (green) light on service panel. IN USE (white) lights when the Flight Crew switches ground power to "ON".

**ATR 72**

The RED BAT ON light indicates that the Battery is discharging, the light is visible through a small window even when the cargo door control panel is closed. Could be caused by open passenger door, open fuel panel or open cargo door control panel or BAT SW ON and no GPU connected and selected ON.

If the light is on when the aircraft is not attended by crew, please inform maintenance or Xfly OCC.

## 1.10 Arrival Aircraft Exterior Inspection

On aircraft arrival, or after an aircraft has been unattended for a period, nominated person must carry out a visual inspection of the fuselage and wings before positioning equipment to that area.

Conduct an aircraft exterior inspection to inspect for damage on the following parts of the aircraft before positioning GSE:

- All cargo doors and door surround/frames
- All access panels and servicing access points
- Visible parts of the aircraft fuselage, engines, propellers (if applicable), landing gears
- All cabin doors and door surround/frames

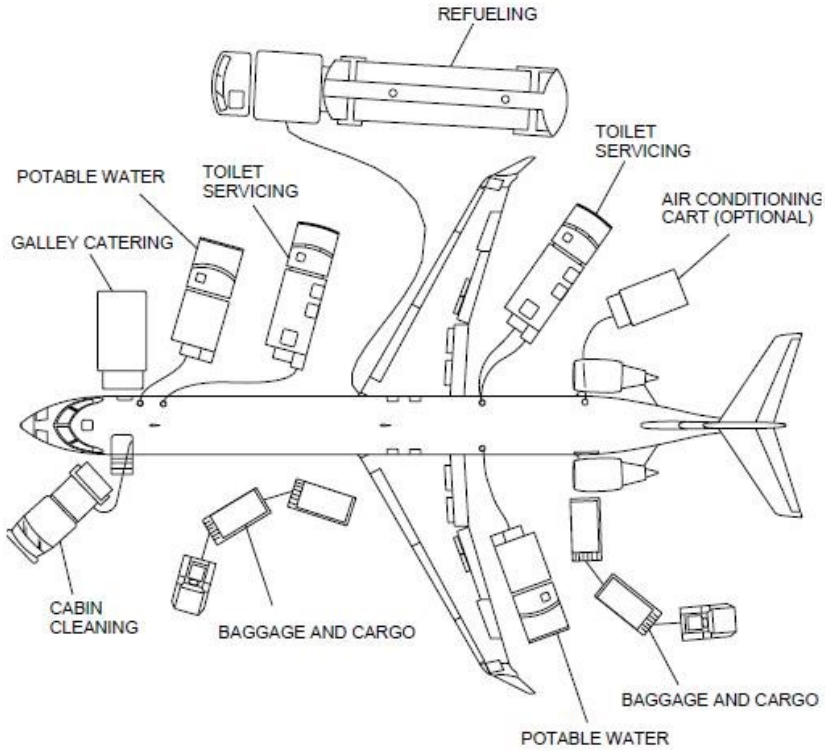
*Note:* If any damage is found, report it immediately to a supervisor and do not approach the aircraft with any GSE in the area where the damage has been found.

If any aircraft damage occurs during aircraft handling, stop immediately all operations and report to the Captain.

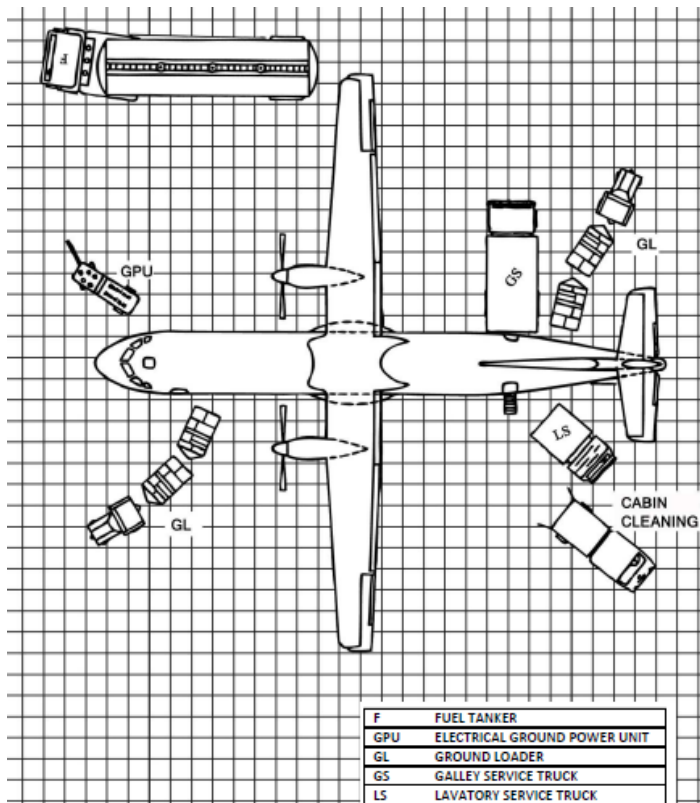
A Ground Incident/Accident/Damage Report must be issued according to local procedures and IATA AHM 650. Any evidence (e.g. witness paint marks) must also be recorded and photographs taken wherever possible.

## 1.11 Location of GSE (examples)

CRJ900



ATR 72



## 1.12 Safety Precautions in Ground Support Equipment Operations

### 1.12.1 General Safety Instructions

Only adequately trained, qualified and authorized personnel for that specific equipment type shall be permitted to drive or operate GSE.

All contracted/subcontracted handling agents shall have a maintenance programme for GSE. It shall include preventive maintenance plan for each type of GSE and system for recording maintenance completed on GSE. Maintenance programme must assure that GSE remains serviceable and in good mechanical condition. Unserviceable equipment should be clearly marked and must be removed from service and sent to the maintenance workshop.

GSE shall never move or drive across the path of a taxiing aircraft, or embarking and disembarking passengers on the ramp.

When operating any GSE, check the aircraft for possible damage in the equipment contact zone before positioning and after removal of GSE to/from the aircraft.

Immediately report any damage found, or where contact has taken place or is suspected to have taken place, especially for composite aircraft.

Where damage has been found or where contact has taken place or is suspected to have taken place, do not move any GSE to/from the aircraft in the area where damage has been found until inspection is completed, and clearance given to proceed.

Personnel working with and around vehicles and equipment must protect themselves from loose clothing, long hair, and/or hanging accessories/jewelry from becoming a hazard, e.g., caught or trapped in equipment.

### 1.12.2 Basic Operating Requirements for Ground Support Equipment

- Securely stow GSE cables and hoses, where fitted, prior to transportation and when not in use.
- GSE shall not impede the accomplishment of other aircraft handling operations in progress unless there is an important reason to do so.
- Check that all areas of GSE are free of contamination, FOD and safe for use prior to and throughout the operation.
- Operators shall check the GSE assigned to them prior to initial use, particularly the parking brakes, rubber protective bumpers, safety systems and in-life service date of onboard firefighting equipment's. If found to be defective, the GSE shall be reported, tagged as "Out of Service" and removed from operations, when applicable.
- All safety rails shall be fully retracted/lowered prior to positioning and removal, where possible.
- Extra personnel shall not be carried on moving GSE without an approved seat (i.e., apply the no seat-no ride principle).
- Seat belts shall be worn, where fitted, except where repositioning equipment is within the same operational area, e.g., within the parking stand or baggage makeup area.
- Before moving any GSE/Vehicle ensure all its doors are closed, where fitted.
- GSE shall not be operated while using handheld Portable Electronic Devices (PEDs), including cellphones, portable music players, portable game units or earpiece or headset.
- GSE shall only be used for its intended purpose, including for specific aircraft types.

- Prior to movement of any GSE/Vehicles, the intended travel path shall be checked and confirmed clear of personnel, equipment or other obstacles.
- GSE with lifting devices shall not be driven or towed in the raised position, except for final positioning onto the aircraft.
- The GSE platform shall not be operated while in motion.
- Use a guide person when vision is restricted. The guide person shall be able to accurately judge clearances and communicate signals to the driver/operator. Stop immediately if visual contact with the guide person is lost. Movement shall not continue until visual contact is re-established.
- Once motorized GSE is in its servicing position at or near the aircraft:
  - Apply the parking brake with the gear selector in park or neutral (if no selection for park).
  - Turn off the engine, unless required when in operating/servicing mode.
  - Install GSE wheel chocks, where equipped.
  - If equipped with stabilizers, ensure they are deployed before the GSE is used for servicing. Deploy other safety devices (e.g., active proximity sensors, safety rails), if fitted.
  - When motorized GSE is in operating/servicing mode, remain in a position whereby the emergency controls can be promptly accessed. This includes the immediate vicinity of the controls or an immediately adjacent and accessible location; for example, the cargo hold in the case of a ULD loader, where required to operate the aircraft cargo loading system (CLS), restraints and/or nets.
  - If motorized GSE is not fitted with external emergency controls, the operator shall remain in the operating position and in control of the equipment when in operating/servicing mode.

*Note:* As an exception for pushback tractor, the engines may need to be left running unattended. If unattended, apply the parking brake and place the gear selector in park, or neutral if no selector for park.

- When GSE is chocked:
  - Place one chock at the front and one chock at the rear of the same wheel.
  - Chocks shall be centered on and in contact with the wheel.
- When unattended motorized GSE/vehicle is positioned in or adjacent to the ERA, other than in its servicing position at or near the aircraft:
  - Turn off the engine. In extreme cold weather conditions where local procedures permit engines running unattended, the motorized GSE shall be chocked.
  - Apply the parking brake with the gear selector in park or neutral, (if no selection for park) and, when equipped, install wheel chocks.
- The ground power unit (GPU) and preconditioned air (PCA) may be left running unattended when connected to the aircraft, provided the serviceability and fuel levels are checked periodically.
- A No-Touch policy (i.e., GSE/PBB shall not touch the aircraft) shall be employed for all GSE/PBB types that are not equipped with self levelling sensors. The equipment shall be positioned in a way that ensures:
  - The protective rubber bumpers do not touch the aircraft fuselage.
  - The gap between GSE/PBB and aircraft shall not allow a person or large piece of equipment to fall through. As a guideline, a gap of 5 cm (2 in.) or two fingers should be maintained between the device and the aircraft.
  - Check that throughout the turnaround process a clearance is maintained between the GSE and the fuselage to allow vertical movement.

- For GSE and PBB equipped with self-levelling sensors. Continue movement until the protective rubber bumpers just touch the aircraft (but shall not be compressed against the fuselage) or the proximity sensors stop the movement.
- After positioning equipment on the aircraft, raise or extend all safety rails on conveyor belts, loaders, and other elevated devices, except where restricted by the aircraft type.
- GSE shall be parked in the designated airside equipment parking areas when not in use.
- Access to firefighting equipment or the fuel hydrant emergency stop switch shall not be obstructed.

### 1.12.3 Non Motorized Ground Support Equipment

- The following precautions must be taken when operating non-motorized GSE:
- When parked and/or when not connected to motorized vehicles, all non-motorized GSE shall have brakes set or chocks in place. Dollies/carts shall be connected as a chain, where possible. Exception: Aircraft towbars.
- The number of carts and dollies allowed is usually limited by the local airport authority or ground handling service provider, however, in critical conditions (e.g., slippery surface conditions, congested facilities, low visibility) the number should be reevaluated and might be reduced to ensure safe operations on the ramp.
- Know the dolly types as some dollies are not compatible with others. Follow the recommended towing combinations when transferring dollies from one place to another. Do not tow more units than the recommended sets or combinations.
- When connecting or disconnecting dollies/carts to/from the tow bar, hold only the tow bar handle and tow pin of the dollies/carts. Do not hold the tow eye when connecting or disconnecting.
- Position oneself beside the tow bar when connecting or disconnecting dollies/trolleys ensuring the tow-pin is properly inserted before towing and use the tow bar handle to connect and or disconnect dollies/trolleys.
- During transportation with carts and dollies, the load shall be properly secured using appropriate locks, stops, rails, curtains and straps.
- The overall height of loads shall permit safe lifting of each piece of the load during loading and offloading of carts by personnel standing on the ground.
- Light packages shall not be wedged between heavier items.
- When using tarpaulins, all straps shall be securely fastened to the baggage cart.
- If equipped with stabilizers, ensure they are deployed before the GSE is used for servicing or access. Deploy other safety devices (e.g., active proximity sensors, handrails), if fitted.
- If using maintenance stairs e.g., to open and close cargo hold doors:
  - The stairs shall be fitted with safety rails to prevent falls.
  - Maintenance stairs should be facing towards the panel which is being accessed. Retractable/extendable safety rails shall be lowered or retracted during positioning.
  - Raise or extend retractable/extendable safety rails prior to any personnel accessing the stairs.
  - Moving or repositioning the stairs is not permitted while a personnel are on the stairs.
- Towable air start units (ASU), PCA and GPU shall not be connected to the tow vehicle and aircraft at the same time, if possible. Before towing the unit away, the operator shall ensure the unit is disconnected from the aircraft.

### 1.12.4 Ground Support Equipment Safe Driving and Parking Inside the Equipment Restraint Area (ERA)

To verify serviceability of GSE and to test the apron surfaces, operators shall apply the following precautions when driving or parking GSE within the Equipment Restraint Area (ERA):

- Make one complete stop with all motorized GSE prior to entering the ERA or at 5 m from the aircraft.
- This action shall be carried out even if there is no equipment restraint line marked on the apron.
- GSE shall not be driven faster than 5 km/h or 3 mph (walking speed).
- Maneuver GSE carefully to prevent personnel injury and/or aircraft damage.
- Avoid performing sharp turns near the aircraft, particularly when towing equipment.
- When GSE/PBB is being moved near the aircraft or positioned to the aircraft, and when the vision of the operator is or might be restricted, the operator shall be:
  - Guided by a guide person using standard IATA signals. If visual contact with the guide person(s) is lost, the GSE operator shall stop movement of the GSE/PBB immediately. Movement shall not restart until visual contact is re-established, or
  - Assisted by means of appropriate proximity sensing and warning systems and/or visual aids such as cameras and mirrors.
- GSE that is not directly involved in the handling or servicing of the aircraft shall not be driven through or parked within the ERA.
- Any GSE (e.g., tractors, pallet transporters, carts and dollies) shall not be driven or positioned under the aircraft fuselage unless specifically required) e.g., lavatory servicing, aircraft maintenance, towbarless tractor etc.).
- Driving or parking under the aircraft wings not permitted. Exceptions due to aircraft type or local restrictions may apply. Prior operator approval must be given.

### 1.12.5 Belt Loader

The following precautions must be taken when operating a belt loader:

- Do not operate the conveyor belt or raise or lower the boom when personnel are on the belt.
- Do not stand or walk on the conveyor belt when the safety rails are lowered.
- Do not sit or stand on a conveyor belt while it is in operation, nor while the boom is raised or lowered.
- Belt loaders shall not be used to transport baggage, cargo or other items across the ramp.
- The boom of the belt loader shall never be positioned inside the cargo hold of any aircraft.

*Exception:* The rule does not apply to specially designed belt loaders which require the equipment to be extended/positioned inside the cargo holds.

- Position and remove a belt loader to/from the aircraft in a straight line.
- Position the boom at an angle to the cargo hold doorsill that will:
  - Allow tractors/trailers to access the belt loader without impeding slide deployment areas and passenger evacuation routes.
  - Prevent items and personnel from falling between the boom and doorsill.
- Once the belt loader is positioned ensure the wheels are left in straight ahead position.

**CAUTION:**

Speeding up operation of the conveyor belt using the accelerator pedal is not permitted.

- Where clearance allows, always raise the side safety rail as soon as the belt loader is positioned. Ensure it does not touch the aircraft fuselage.

**CAUTION:**

- Care shall always be taken when working around a moving belt. Personnel shall remain vigilant to trap hazards while raising/lowering the safety rails. Keep hands/fingers away from the edges/ends of the belt where they may become trapped. Belt movement shall be stopped before any attempt to clear any obstructions.
- The safety rail shall also be deployed when a belt loader is used to gain access to aircraft cargo holds or cargo hold access door controls.
- Ensure proper separation between articles and appropriate belt speed to avoid jamming.
- When unloading or loading items onto a belt loader, ensure they are stable, and correctly positioned on the conveyor belt to avoid items falling off.
- When unloading or loading items between the belt and aircraft cargo hold, ensure items do not come into contact with aircraft fuselage/cargo hold door.
- Adjust and control the back of the conveyor belt correctly to avoid dropping goods from the belt.
- The safety rail may be lowered to accommodate large items during loading and unloading.
- Ensure the boom is clear of the aircraft or other obstacles before making a turn.

## 1.12.6 Elevating Equipment

The following precautions must be taken when operating elevating equipment:

- For elevating equipment with a rear access platform, ensure all safety barriers/rails are secured in place prior to vertical movement of the platform.
- Ensure the load is properly secured (e.g., cart brakes, stretchers, wheelchairs) and all access doors and shutters are closed prior to raising or lowering the vehicle.
- Any elevating equipment doors not being used for servicing at the aircraft shall be closed and latched.
- The positioning of the elevating equipment shall allow the loading platform to be perpendicular and at the same level to the aircraft doorsill.
- The final position of the elevating equipment shall allow for a safe working area and minimize the length of the walking surface between the aircraft and the elevating equipment while in the raised position.
- Before accessing the platform at the front or the rear of the elevating equipment, ensure the platform is at the same level as the equipment cabin.
- Carefully place the portable ramp/bridge on the doorsill from the platform side, as necessary.
- Equipment (e.g., catering carts) and passengers in wheelchairs shall be pushed on and off the aircraft. Always ensure a hand-to-hand exchange. No elevating equipment is to be staged on the platform, and no loose items are to be transported on top of carts (e.g., catering equipment).
- Continually observe and be aware of the clearance between the aircraft door and the elevating equipment platform.

- When the servicing is finished, carefully remove the portable ramp/bridge from the platform side and stow securely. Close the cabin access door as per RHM 1.15 - Operation of Aircraft Doors
- The passengers and/or load shall be secured properly inside the elevating equipment. Passengers shall be seated and wearing seat belts. Passengers seated in wheelchairs shall have the wheelchair secured during elevating equipment movement.
- Visually check for any obstructions on both sides of the elevating equipment before lowering.
- Lower the truck body to the fully lowered position.
- Close and secure all the doors of the elevating equipment when the servicing is finished.
- Perform a walkaround to check for FOD and clearance around elevating equipment stabilizers.
- All elevating equipment shall stop operation when the wind speed reaches 40 knots (gusting).

**DANGER:**

Do not enter or place any part of the body inside the scissor area beneath the elevating equipment.

### 1.12.7 Tractor/Electric Baggage Tug

The following precautions shall be taken when operating a tractor or electric baggage tug (EBT) and towing dollies/baggage carts:

- Take care to avoid sudden sharp turns, jerks and stops.
- Prior to moving with towed load, ensure there are no personnel between or near the towed load.
- Baggage, cargo and other items shall only be transported on the tractor/EBT where the design of the equipment incorporates a designated location for the carry of such items.
- Use the remote push button control (inching operation) to connect dollies, carts, or towed load, where fitted.
- When Tractor/EBT is near the belt loader during aircraft handling, a gap of at least 1 m (3 ft.) shall be maintained.

**Note:** When necessary to position carts/dollies within 1 m (3 ft.) of the belt loader, adjust the position of the carts/dollies by hand.

- When removing carts during the loading on or unloading from smaller aircraft or aircraft with low wings, the tractor shall be positioned pointing away from the aircraft wing and the cart maneuvered by hand to the tractor, as required.

### 1.12.8 External stairs

For approval to use external stairs at any of the stations for CRJ or ATR, locally conducted risk assessment with supportive documentations shall be provided to Xfly Manager Ground Operations.

## 1.13 Positioning/Removal of Passenger Boarding Bridge (PBB)

### 1.13.1 General

The operator of the Passenger Boarding Bridge (PBB) must be trained and authorized to operate the PBB and shall:

- Check that the PBB is serviceable before use. Report any malfunction of the PBB to the appropriate person/authority.
- Check that the walking surfaces are free of FOD, obstacles and safe for use.
- Only personnel required for the PBB operation shall be in the PBB while it is moving.
- The PBB must be fully retracted or parked in its safe designated parking position prior to arrival and departure.
- The safety barrier must be in place whenever the PBB is not at the aircraft.
- Make sure the movement path is clear before moving the PBB.
- When positioning the PBB at doors and driver/operator vision is restricted, use a guide person. Make sure the guide person can accurately judge clearances and communicate signals to the driver/operator. Stop immediately if visual contact with the guide person is lost.

*Note:* A guide person is not required if the PBB is fitted with systems that enable the operator to accurately judge clearances and properly position it to and from the aircraft (e.g., sensors).

- Move the PBB slowly towards the aircraft, avoiding any aircraft sensors or protrusions, until either the protective bumpers just touch the aircraft or the PBB's proximity sensors stop the movement.
- Make sure the PBB does not contact the wing root leading edge fairing that extends under certain cabin access doors or any other sensors or fairings.
- Make sure any sliding rails and canopies on the PBB are fully retracted during positioning, and fully extended only once the equipment is in position.
- Maintain adequate clearance between the PBB and the bottom of the door, or as directed by the cabin door markings. This reduces the possibility that the aircraft door will rest on the PBB as the aircraft settles during loading and unloading.
- Engage any safety systems and auto-leveler features if applicable. If the PBB is not equipped with an auto-leveler, the PBB must be attended by an operator whenever it is positioned at an aircraft.
- Do not leave gaps between the PBB and the aircraft that would allow a person or large piece of equipment to fall through.
- Ensure that the cabin door is closed before removing the PBB.
- Where integrated with the PBB, ensure ground power cables and PCA hoses are disconnected from the aircraft prior to moving the PBB unless required for operational purposes.
- When positioning is complete, the PBB controls must be isolated, as applicable. PBB must be secured to prevent movement from non-authorized persons.

**WARNING:**

Great care must be taken within the vicinity of pitot heads particularly when positioning passenger boarding bridges and mobile stairs to aircraft. If damage occurs, the captain must be notified immediately.

**WARNING:**

Cabin doors shall only be in the open position if there is a 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.

### Removal of Passenger Bridge

The bridge must be returned to its correct/safe parking position prior to the movement of the aircraft from the gate.

*Note:* Reference: See [RHM 7 - Security](#).

On CRJ, in case there is no crew or other authorized persons on board during ground stop, the passenger bridge shall be removed immediately after passenger disembarkation.

For all aircraft type, crew or other authorized persons leaving the aircraft during ground stop must ensure the aircraft door is closed.

## 1.13.2 Passenger Bridge Operations CRJ900

### WARNING:

Using the bridge on CRJ900 is only allowed if clearly accepted by airport authorities. If gap leaves between aircraft and bridge sill, additional platform shall be used.

### Positioning of the Passenger Bridge

Before positioning the passenger bridge the staff must make certain that passenger bridge driving path area towards the aircraft is safe and there are no obstructions.

Before disembarkation the staff must make certain that the passenger bridge is:

- Moved slowly to the aircraft doorsill and stopped before the bridge makes contact with the aircraft leaving at least small gap of 5 cm so that the protective rubber is not compressed against the aircraft fuselage;  
*Note:* Bridge must be placed in such a way that larger than 15 cm gap between the aircraft and the bridge sill is covered with small platform (ramp);
- Positioned at forward passenger cabin door;
- Positioned at the aircraft with the aircraft door fully opened and handrails retracted;  
*Note:* Handrails shall be retracted only by cabin crew or aircraft maintenance staff;
- With canopy extended to fit on all three sides of the aircraft fuselage;
- Providing a safe ascent/descent to passengers as well as to staff to/from the aircraft door (free of ice, oils stains, etc.).
- If the bridge does not fulfill the above requirements, the bridge must be retracted from the aircraft and re-positioned.
- Ground staff handling the passenger bridge must give a clear signal to the cabin attendants before disembarkation may commence.
- Aircraft door can only be closed when passenger bridge is removed. Passenger bridge shall be removed with aircraft door fully opened and handrails retracted.

## 1.14 Intentionally Left Open

## 1.15 Operation of Aircraft Doors

When the aircraft is in operation (arriving from a flight or departing to a flight), the passenger doors may only be opened and closed by the flight crew. On aircraft arrival, ground staff shall knock twice onto the main passenger door followed by the opening of the door from the inside by cabin crew.

When the aircraft is parked and is being prepared for operation or for a maintenance check, ground or maintenance staff may open the doors. It is strictly forbidden to open the cabin doors from outside when the red stripe is across the cabin door illuminator.

*Note:* All station personnel with duties that include the operation of aircraft access doors shall complete appropriate training and evaluation, and shall be qualified to operate all applicable aircraft access doors.

During precipitation (rain, snow), the passenger door shall not be left open for a longer period than necessary. Due to the position of the door on the fuselage, water tends to run into the cabin.

Before opening the door, make sure the door open area is clear of personnel and equipment!

*Note:* It is forbidden for ground staff to open aircraft doors and hatches when the doors/hatches are sealed with security stickers unless ground staff approved to do so by the Xfly Security Manager. Ref [7.3 - Sealing of Aircraft for Night Stop or other Unattended Parking](#)

### **WARNING:**

- Before opening the aircraft entrance or service doors, make sure the door opening area is clear of personnel and equipment!
- Always stand clear of door during opening from outside!

### **CAUTION:**

When an aircraft is parked with GPU or ACU connected and all doors and outflow valves closed it may result in an undesired build-up of excessive differential pressure between the cabin and the outside environment.

As a result, this may cause an explosive door opening.

Follow the guidelines for respective aircraft type doors operation procedures for precautions and preventive measures to equalize pressure and release the doors safe.

## 1.15.1 CRJ900 Entrance and Service Door

To open forward entrance door (left):

- Pull the outer handle fully from its recess to disengage latches.
- Ensure the vent flap is fully open.
- Pull out on the outer handle until the passenger door begins to descend. Make sure it is fully open.
- Stand to the side when the door begins to descend.

To close forward entrance door (left):

- Push firmly up on the passenger door until it is in the closed position.
- Push the outer handle fully into its recess to engage latches.

**CAUTION:**

Do not touch the outer handle until the door is fully into the closed position.

Failure to obey this instruction may lead to damage to the door frame due to that the latch pins may ram the structure.

- Ensure that the vent flap is closed.

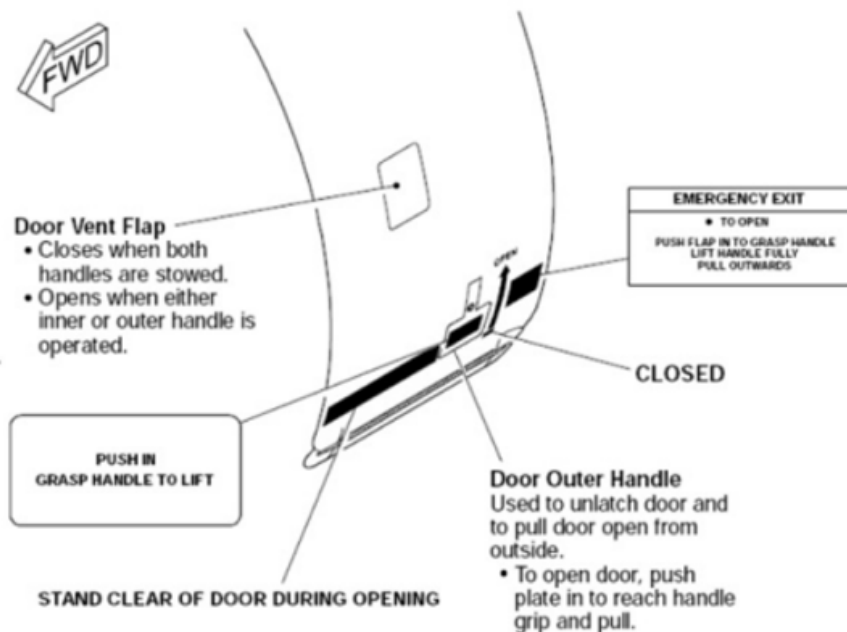
To open forward service door (right):

- Push the handle trigger. The door handle extends from the door.
- Rotate the handle clockwise.
- Pull the door outwards and push it forward until it engages the door lock mechanism.

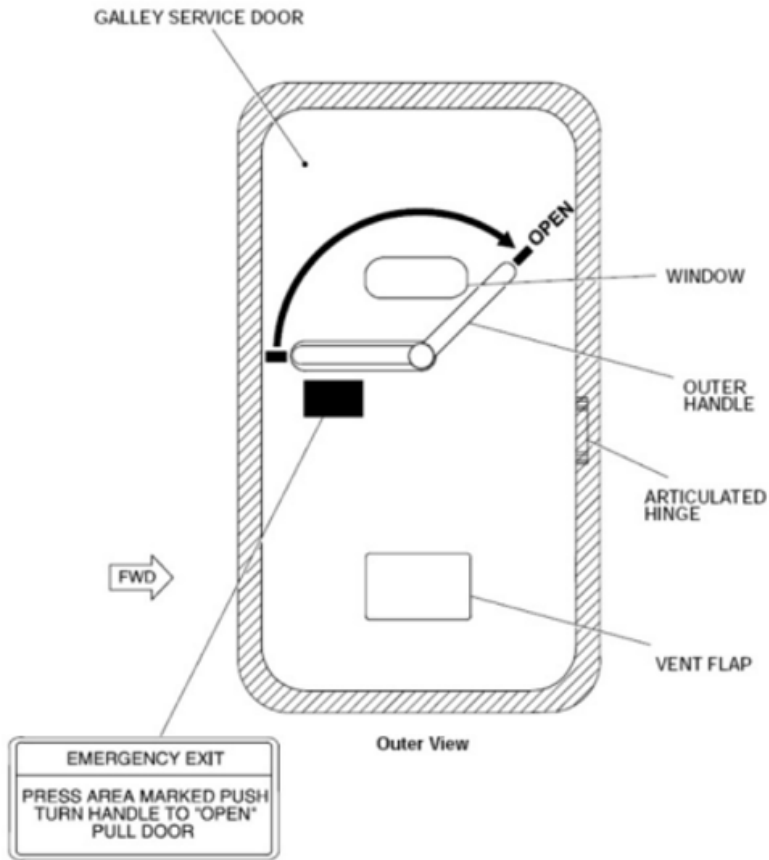
To close forward service door (right):

- Release the door from the stowed position by pulling the hinge latch lever.
- Rotate the door handle counterclockwise until the handle aligns with the handle recess.
- Release the handle and secure that the spring tensions pulls the handle into the recess.

CRJ entrance door (fwd LH)



CRJ service door (fwd RH)



Exterior Galley/Service Door

**IMPORTANT:**

In order to make sure that the ventilation is correct and to prevent the pressurization of the aircraft cabin leave the avionics bay door open.

### 1.15.2 ATR 72 Entrance and Service Door

To open aft entrance door (left):

- Pull the door control handle/lever downward, the door locking indicator turns stripy red and white.
- Restrain the door falling outward and downward.



#### IMPORTANT:

Difficulties may be encountered for opening the entrance door from outside. This will arise only when all aircraft doors, exits and outflow valves are closed and if:

- GPU is connected to the aircraft: a strong extract fan runs automatically to cool down the avionic/electric and electronic systems. This fan creates suction in the flight crew compartment, cabin and cargo (deflating) and the aircraft is in fact depressurizing itself on the ground or
- Air conditioning unit (ACU) is connected to the aircraft. It will slowly pressurize the aircraft on the ground (inflating).

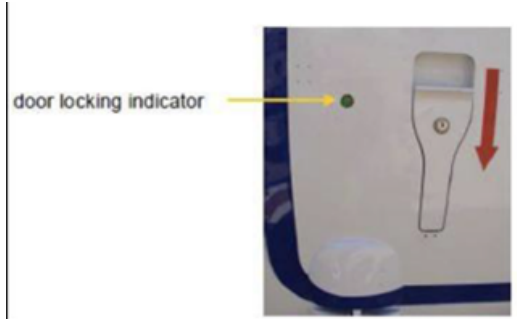
To equalize pressure and release the door:

- Slightly open the service door (from the outside). Move the door handle slowly (enough for the vent flap to open and equalize pressure) since opening fully and quickly could make the door popping out fast, with risks of injury for the operator; or
- Always keep the flight crew compartment document door opened (maintenance or flight crew responsibility); or
- Always keep the forward cargo compartment door handle open 50% (ground handling responsibility).



To close aft entrance door (left):

1. Lift the door and bring it upward against the fuselage.
2. Push the door control handle/lever upward to lock the door.
3. Check the green locking indicator to ensure correct locking of the door.



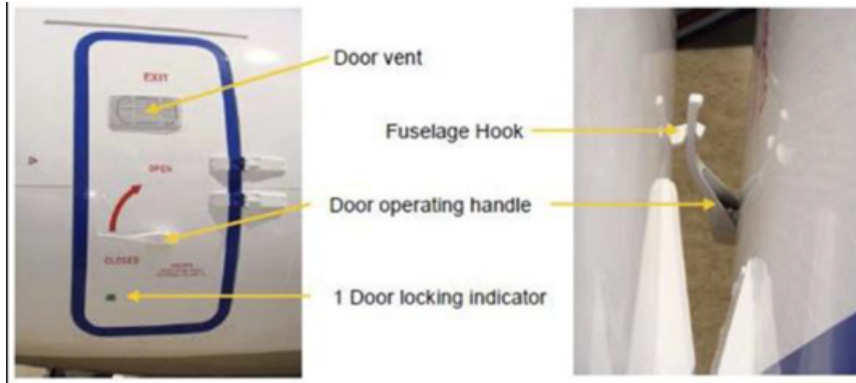
**Note:** Do not use the inner operating handle (bottom left on the photo below). This may cause the pins to stick out and damage the fuselage when trying to close the door.



To open aft service door (right):

- Rotate the door operating handle forward.
- Open the door and rotate it forward.
- The door will lock automatically against the fuselage.

*Note:* When the door is opened, it releases out a fuselage hook in order for the door handle to engage into the hook.



To close aft service door (right):

1. Push the gust lock button to release the door operating handle from the fuselage hook.
2. Bring the door backward and into the door frame.
3. Rotate the door operating handle rearward.
4. Check the green locking indicator to ensure correct locking of the door.

*Note:* The door vent located on top of the service door (visible from outside) prevents the fuselage pressurization to an unsafe level.

Pilot communication hatch (document door) is located at forward left-hand side of the fuselage, immediately below the captain's side window. This is provided to ease the communication and documentation exchange between the ground personnel and flight crew without the ground personnel having to access the passenger cabin.

## 1.16 Aircraft Parking

When an aircraft is not in service it must be parked to a designated parking stand and the following equipment, dependent on aircraft type must be positioned when parking in areas outside hangars.

- Landing gear locks
- Engine blanking covers
- Pitot covers
- Static port caps
- Ramair inlet caps
- Engine inlet covers
- Propeller covers
- Propeller straps.

Some equipment above may also be mandatory during night stop or ground stop, if required by local regulations.

If not instructed otherwise it is ground handling staff responsibility to conduct activities related to aircraft parking.

*Note:* Bear in mind to remove all covers, straps, caps and locks in preparation of the aircraft for departure!

**Note: If any of the covers, straps, caps and locks are missing, immediately inform flight crew or maintenance.**

### 1.16.1 ATR Propeller Straps and Covers

#### ATR Propeller Straps

Propeller straps shall be used whenever there is a risk for passenger or handling staff to be in contact with the propellers. Movement of propellers can be caused by wind, insufficient barriers, etc.

*Note:* The check for removal of propeller strap must be included in departure walk around check before start up.

#### ATR Pitot and Static Covers

Pitot and static covers must be positioned when parking for more than 4 hours in areas outside hangars.

Covers are located in aft cargo cpt 4 inside special box / Fly Away Kit.

#### ATR Fly Away Kit content list:

- QTY 2 Engine air intake covers
- QTY 2 MLG fairing air intake covers
- QTY 2 Wing NACA intake covers (for technical staff use only)
- QTY 3 Pitot covers
- QTY 6 Static port covers
- QTY 12 Propeller blade covers
- QTY 2 Propeller straps
- QTY 2 TAT probe covers (for technical staff use only)

*Note:* Bear in mind to remove and place back into the Fly Away Kit all covers, straps and pins in preparation of the aircraft for departure!

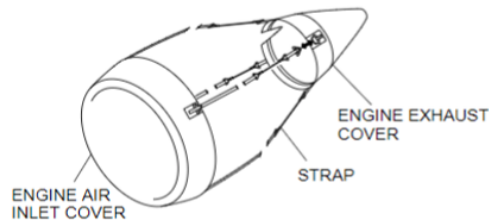


## 1.16.2 CRJ Engine and Pitot Covers

### CRJ Engine Covers

When aircraft is not in service or when parking for more than 3 hours in areas outside hangars the engine plugs or covers shall be installed (if available at the station).

- Put the ladder in safe distance when installing the covers to avoid any damage to the engine
- Install engine cover according picture below:



#### WARNING:

When you install the engine plugs or covers, make sure that the engine is cool. You can cause injury to persons and/or damage to equipment.

*Note:* Bear in mind to remove the engine plugs or covers in preparation of the aircraft for departure!

*Note:* If any of the covers are missing, inform immediately flight crew or maintenance.

### CRJ Pitot Covers

When aircraft is not in service or when parking for more than 3 hours in areas outside hangar install pitot covers. The pitot covers (3) are stored in the small locker in the fwd cabin.

*Note:* Bear in mind to remove the pitot covers in preparation of the aircraft for departure!

## 1.17 ATR Hotel Mode

Regional Jet is operating the ATR72-600 aircraft which is equipped with a propeller brake (referred to as "Hotel Mode"). That stops the propeller on the No. 2 (right) engine, allowing the turbine to continue running.

On the ground, Hotel Mode provides:

- Cabin heating in winter.
- Cabin cooling in summer.
- Power to the aircraft electrical system.

**When Hotel Mode is in operation, the servicing side of the aircraft should be treated as LIVE even if the propeller is not spinning.** Ground staff should remain aware that Hotel Mode may be in use whilst beacon lights are off.



- Whenever the number 2 engine is running in hotel mode it must be treated as any other running engine, ground crew must respect safe distances to the propeller and jet exhaust.
- Ground handling activities which are normally carried out via the AFT service door shall be carried out via the use of the AFT passenger door.
- Baggage loaded in AFT shall be offloaded through the passenger door. Any baggage for outbound flight in the AFT shall be loaded through the passenger door.
- All covers and straps shall be removed prior to start-up.
- Prior to starting ENG 2 in Hotel Mode it must be ensured that the area is clear.
- If Ground Crew is present ENG 2 start up must be coordinated with them. Establish visual contact with flight crew. Flight crew will indicate ENG 2 Start Up and Propeller Brake On using the following "adapted" hand signal (Shown as seen from Ground Crew):



- Ideally the ENG 2 Hotel Mode start up is best coordinated with the Flight Crew connected via the intercom.
- Refueling the aircraft while Eng. No. 2 is running in Hotel Mode is prohibited.

## 1.18 Parking in Cold Weather Condition

Make sure that appropriate local procedures and coordination is in place to prevent aircraft damage due to freezing pipes. Procedures in [1.16 - Aircraft Parking](#) are also applicable for parking in cold weather conditions.

During cold weather periods it is essential to prepare the aircraft's fresh water systems from freezing.

It is essential to make sure that all entrance, service and cargo doors are kept closed as much as possible to avoid chilling down the cabin and cargo compartments. Failure to do so can cause damage to the water system.

### CRJ

Both of the fresh water systems (FWD and AFT) and toilet system(s) must be drained in the following situations:

- If a planned groundstop exceeds more than 24 hours.
- When parked in cold weather conditions (0 °C to -19 °C) and external power and/or ground cabin heater cannot be connected.
- If it is forecasted -20 °C or colder and the ground stop exceeds 8 hours, or the aircraft will night stop.
- Whenever ordered.

*Note:* Potable water system(s) must be drained within 30 minutes from arrival.

See [3.3.2 - Potable Water Draining Procedure CRJ](#).

**ATR**

Fresh water system and toilet system must be drained in the following situations:

- If a planned groundstop exceeds 24 hours
- When parked in cold weather conditions (0 °C to -10 °C) and external power and ground cabin heater cannot be connected
- If it is forecasted -11 °C or colder and the ground stop exceeds 1 hour
- Aircraft will night stop
- Whenever ordered

**Note:** Potable water system(s) must be drained within 30 minutes from arrival.

Exception: Alternate procedure for the nightstop at the stations where cabin temperature can be monitored during the whole ground stop is allowed.

Alternate procedure:

- Fill in the potable water upon arrival
- Heat the aircraft during the nightstop controlling the temperature inside the cabin so it will not drop below +5 °C
- Toilet door must be kept open during the nightstop to get warm air into the area
- Drain the main tank if it is forecasted -15 °C or colder

Contact Xfly Ground Ops for the alternate procedure approval [ko@xfly.ee](mailto:ko@xfly.ee)

See [3.3.5 - Water Draining Procedure ATR](#).

**ATR Propeller Covers**

During winter operations, propeller covers shall be used when forecast or outside temperature is +2 °C or below and ground stop is more than 4 hours.

The propeller covers can be handled by Ground Handling or Maintenance staff.

Follow the procedure below for mounting the propeller covers:

- Check the propeller brake is off by rotating the blade.
- Turn the propeller into a position so that the tip of the blade is at a suitable height.
- Lift the propeller covers out of the box.
- Grab hold of the covers from the open widest end.
- Pull the open end of the cover over the tip of the blade and pull it up to the central cone of the propeller.
- Tighten the velcro strap fastened to the cover.
- Ensure the prop strap is fastened to the aircraft.

The propeller covers are placed in the special box stored in compartment 4.

**Note:** In order to avoid any de-icing fluid ingress in the engine air intakes, no propeller blade should be in front of the air intake or the air intake cover should be installed.

In case of air intake de-icing fluid ingestion, the area must be wiped out.

## 1.19 Adverse Weather Conditions

### 1.19.1 Wintery or Slippery Apron Conditions

Winter weather brings extra hazards which require more care and awareness working on the apron to prevent accidents.

Reduce speeds in slippery apron conditions. Adjust all activities and operations at the ramp to suit the conditions at the time.

Follow instructions in IATA IGOM 3.3.

### 1.19.2 Parking and Servicing in Strong Winds Condition

Handling Agents should monitor weather conditions, particularly strong winds (25 knots and above) that may affect their operations. The following actions must be taken when sustained winds and/or gusts of wind exceed 25kts are predicted:

Staff actions	25 to 39 kt 46 to 72 km/h	40 to 59 kt 73 to 110 km/h	Above 60 kt above 111 km/h
Secure bag/cargo carts, dollies, ladders/maintenance stands, tow bars and place near or against the building	X	X	X
Ensure parking brakes are set on all GSE	X	X	X
Ensure empty ULDs are secured and doors/curtains are closed	X	X	X
Ensure landing gear is chocked for high wind conditions	X	X	X
Remove safety cones	X	X	X
Suspend use of pre-conditioned air hoses and store securely	X	X	X
Remove FOD	X	X	X
Remove ULDs from the stand	X	X	X
Strap all propellers on propeller aircraft	X	X	X
Do not elevate cabin service/catering highlifts and stairs not equipped with stabilizers	X	X	X
Do not elevate cabin service/catering highlifts and stairs equipped with stabilizers		X	X
Close cargo hold, passenger doors and access panels		X	X
Do not elevate booms or deicers		X	X
Remove GSE from aircraft vicinity to a protected position and secure		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

If possible, park the aircraft in a sheltered position pointing into the prevailing wind. The aircraft position should represent the best compromise between the requirements of the airport and air traffic control, the wind direction and the proximity to buildings and other aircraft.	X	X	X
Applicable to ATR72 – load 400 kg ballast in FWD cpt.*	X	X	X

\*Parking the ATR72 facing the forecasted wind direction and loading ballast to the FWD cargo cpt is the primary means of protection against aircraft movement and damage. As an alternative move 200kg ballast (if available) from the AFT cpt to the FWD cargo cpt. Return ballast to AFT cpt 4 before the departure if applicable.

## 1.19.3 Storms-Lightning

Ref IATA IGOM 3.3.

On receipt of an ALERT:

Make preparations for the STOP phase.

- Suspend non-essential activities in open areas and ensure any staff using or about to use headsets are informed of the alert.
- Fueling operations can continue, however the proximity of the thunderstorm/lightning should be continually monitored.
- Avoid using highly conductive equipment.

On receipt of an STOP:

- Disseminate the order to stop all airside activities.
- Stop fueling. Fueling hoses cannot be left attached to the aircraft during any Thunderstorm/Lighting event.
- Discontinue aircraft communication by headset.
- Stop all ramp activity and clear ramp.
- Personnel should seek shelter inside buildings or inside metal bodied vehicles. No one should seek shelter under any part of the aircraft, loading bridge, near light poles, fences, under trees.
- In accordance with local procedures, the aircraft may come on stand but the aircraft doors should remain closed and ground servicing suspended.

LEVELS	ACTION
<b>Amber–ALERT</b> Lightning activity is detected at a distance in excess of 8 km (5 miles) from your operation.	Disseminate lightning warning to airside operating staff so they can prepare and plan their activities to be ready in case of a Red Alert in accordance with local regulatory requirements.
<b>Red–STOP/SUSPEND</b> Lightning activity is detected within 5 km (3 miles) of your operation.	Disseminate the order to stop all airside activities and seek shelter to all airside operating staff.
<b>Green–ALL CLEAR</b> Lightning activity has moved beyond 5 km (3 miles) and is heading away from your operation.	Disseminate the order to resume normal activities to all airside operating staff.

### Lightning Alert Callout

In the absence of an integrated airport notification system, all airside operating staff shall be aware of the following procedures:

- Use the counting method (IATA IGOM 3.3.3.3) to detect/predict lightning activity. Determine the corresponding level based on the counting method diagram below.

- The responsible person notifies all airside operating staff of the lightning alert 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 a Red Alert, proceed to a designated shelter.

## 1.20 Ground Stability

### 1.20.1 CRJ900 Ground Stability

**WARNING!**

There is a risk of tail tipping due to the length of the aircraft.

Follow the procedure in **4.5 - Aircraft Towing, Pushback and Powerback**, when towing the CRJ900 aircraft.

Parking under normal circumstances is without any ballast required.

Ballasting during parking is required in adverse weather or unfavorable conditions during heavy snowfall if the following conditions are present or expected/forecasted:

- The parking position is sloping backwards
- There is snow on the horizontal stabilizer or engine nacelles
- The wind speed is 40 knots / 20.6 m/s or more

The below minimum ballast loads for aircraft parking must be followed:

Snow layer	Ballast in FWD galley or	Ballast in FWD cargo CPTs
Up to 30 cm	200 kg or	400 kg
More than 30 cm	400 kg or	750 kg

*Note:* Ballast bags may not be loaded on top of each other, due to the running load limit.

When total planned or actual deadload in the aft hold of the aircraft exceeds 780 kg and there is no crew onboard, there is a risk of ground instability and, if aft load figures are increased further, finally also tail tipping.

This must be compensated for by the same or exceeding weight in the forward compartments.

*Note:* If there is flight deck crew and/or cabin crew onboard the aircraft, there is no risk for tail tipping the aircraft, in normal conditions.

Follow the procedures described in **2.5 - Loading of Bulk Load** when loading/unloading the aircraft.

### 1.20.2 ATR72 Ground Stability

**WARNING!**

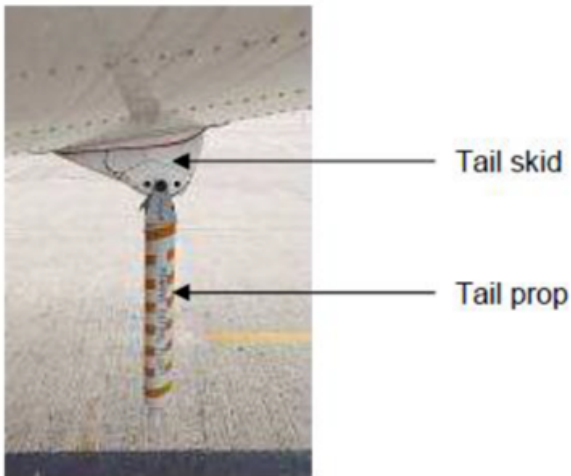
There is a risk of tail tipping of the aircraft.

To protect the aircraft from tipping:

- Install the tail prop
- Maintain the FWD cargo load at least equal to or higher than the AFT cargo load
- Board rows 1-10 first whenever possible

Tail prop must be attached when the aircraft is on ground. The tail prop is stored next to the rear cabin crew seat in stowage, or at aft cargo in stowage, or safely and securely in aft cargo.

The tail prop is metallic cylinder installed below the tail in order to avoid the aircraft to tip up on the tail in case of persons (above 7) moving around in the aircraft.



Upon arrival, tail prop must be handed to the ground handling staff by the cabin crew after opening of the passenger door. Tail prop must be installed prior disembarkation.

Tail prop metal pin has to be inserted into the aeroplane tail skid connector.

Tail prop must be removed by ground handling staff and handed over to cabin crew immediately prior to closing of the passenger door.

Follow the procedures below when loading/unloading the ATR 72 aircraft:

- Always load FWD cargo holds first and the AFT cargo holds second
- Always unload AFT cargo first and FWD cargo holds second
- If all bags, cargo and mail are to be loaded in the AFT hold, notify crew
- In case loading the FWD hold has not started prior to passenger boarding or the weight of the FWD cargo hold is lower than the AFT cargo hold prior to passenger boarding, notify crew

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## 2.1 Preparation of Loading

In spite of the time pressure under which loading operations normally take place, great care must be exercised to avoid damage to the aircraft, load and equipment.

Damage to the aircraft and load may jeopardize the safety of the flight and involve financial loss; therefore all efforts must be made to avoid such damage.

If damage in compartment or elsewhere on the aircraft is discovered, the Maintenance staff or the Commander must be notified.

Discovered errors/mismatches of actual load distribution on an incoming flight must be reported to the Load Planner, person responsible for the a/c loading or Commander.

On transit flights, a visual check of the actual through load shall be made to secure that the load corresponds with the through load figures on the loading instruction/report. Any suspected differences shall be reported to the Load Control function.

A careful planning of all activities must be made. Prepare as much as possible prior to the start of the unloading/loading, which may save time and be useful later in order to maintain scheduled operations.

The loading instruction must be brought along to the aircraft side by Loading Coordinator and used during the loading by the loading staff, in order to secure safe and correct loading of the aircraft.

*Note:* Any aircraft loading operation shall only start with the presence of the person who is responsible for loading and/or unloading.

Before loading, a check shall be made to secure that actual aircraft registration corresponds to the aircraft registration given on the loading instruction/report.

Before loading a visual check surrounding all cargo doors for detect possible fuselage damages shall be made.

Before loading, a visual check of all compartments for possible remaining ballast and/or other load shall be made.

Aircraft holds must be searched at any time between completion of the unloading and commencement of the loading of baggage, cargo, mail or other items.

Before loading the flight number, airway bill number and etc must be checked to secure correct and uninterrupted loading.

Before loading, a check of the correspondence between the actual weights of cargo and mail and the estimated weights on the loading instruction/report shall be made.

Before loading, a check of the physical condition of the load, (damage, leakage, etc) shall be made.

Before loading the number of actual cargo and mail pieces shall be checked against relevant documents (cargo manifest, airway bill, mail documents, AV 7 sheets).

Before loading the actual baggage pieces shall be counted and reported to Loading Coordinator.

The load on the carts must be protected with suitable covers against rain, snow, heat, cold, etc.

Sufficient loading staff and loading equipment (ballast, if needed) shall be available for immediate action.

## 2.2 Operation of Compartment Doors

### CRJ900

#### To open CPT 1 and CPT 2:

The cargo doors of CPT 1 and CPT 2 open outward and downward.

- Press the trigger plate of the secondary handle. Grip the control handle.
- Lift the secondary handle.
- Lift the door control handle to OPEN.
- Pull the door outward and then push it downward, until the latching hooks are activated.

#### To close CPT 1 and CPT 2:

- Pull both hook levers to release the latching hooks.
- Pull up the door with the control handle and push the door into the door frame.
- Close the control handle and the secondary handle.

#### To open CPT 6:

- The cargo door of compartment 6 opens inward and upward.
- Push in the trigger plate. The door handle will extend.
- Turn the door handle counter-clockwise towards "OPEN".
- Push the door in and up until the latch mechanism is engaged.

#### To close CPT 6:

Pull down the door into the door frame.

#### CAUTION:

- Make sure that you do not pull on the door proximity sensor cable. Failure to obey this instruction will cause damage to the door indication system.
- Turn the door handle clockwise to "CLOSED".
- Push the door handle into its recess. Ensure that the door handle stays flush in the recess.

## ATR 72

### To open forward cargo compartment:

Forward cargo compartments loading and off-loading is done through the dedicated cargo door, forward left-hand side. The door opens outward and upward.

- Depress the handle and pull lever no. 1 fully down.
- Pull lever no. 2 fully down.
- On cargo door control panel press selector to open door until fully open, make sure it returns to neutral.
- Lock hold open strut by locking collar.

Note: Do not operate the cargo door with a cross wind component of more than 45 kts.

Note: The holding strut is not a handle to ease the ground crew access into the cargo hold. Its purpose is to safely secure the cargo door. Any sustained actions on the strut may lead to damage to the strut and the actuator.

**Pull/push to lock in place, do not twist!**

Note: During closing of the FWD compartment doors the position of the hold open strut must be observed to avoid aircraft damage.



Note: The cargo access door control panel shall be closed when not opening/closing the cargo hold access door.

### Aft cargo compartment

Loading and off-loading is done through aft service door.

See [1.15 - Operation of Aircraft Doors](#) for ATR doors operation.

## 2.3 Compartment Door Size

### CRJ900

Hold	Door size (cm)	
	Height	Width
Fwd (CPT 1, 2)	50	106
Aft (CPT 6)	84	109

### ATR 72

Aircraft/compartment	Door size (m)	
	Height	Width
FWD compartment	1.53	1.29
AFT Pax door	1.79	0.78
AFT Service door	1.22	0.64

### 2.4 Compartment Dimensions

See [LCM 10.4.3](#) for ATR 72 and [LCM 12.4.3](#) for CRJ900 compartment dimensions.

### 2.5 Loading of Bulk Load

**CAUTION:**

Before loading or unloading check [1.20 - Ground Stability](#).

Follow the procedures below when loading/unloading the CRJ900 aircraft.

Loading	Unloading
<p>Before crew is onboard:</p> <ul style="list-style-type: none"> <li>• Do not load more than 780 kg in cpt 6, without loading or ballasting FWD first.</li> </ul> <p>Example: If it is supposed to be 975 kg in cpt 6, there will have to be 195 kg of load or ballast in cpt 1 and/or 2.</p> <p><i>Note:</i> It is prohibited to stack ballast bags on top of each other in compartments 1 and 2 due to running load limit.</p>	<p>Before the crew has completely disembarked the aircraft:</p> <ul style="list-style-type: none"> <li>• Make sure that there is not more than 780 kg in cpt 6. If there is more than 780 kg in cpt 6, ballast must be placed in cpt 1, 2 or the FWD galley.</li> </ul> <p>It must be compensated for by the same or exceeding weight in the forward compartments.</p> <p>Example: If there is 975 kg in</p>

Follow the procedures below when loading/unloading the ATR 72 aircraft [1.20.2 - ATR72 Ground Stability](#)

The following rules and standards apply for loading bulk loads:

- A written Loading Instruction must always be issued and adhered to when loading Xfly aircraft.
- Deviations to the Loading Instruction shall be decided by the Load Planner.

The Load Planner must immediately be contacted if unreasonable deviations are noticed between estimated weights shown on the Loading Instruction and:

- Actual transit load,
- Actual offload, and/or
- Actual onload.

Loading is permitted only in the regular compartments, and under certain circumstances in the cabin. Stowage is absolutely prohibited in toilets, galleys and flight deck.

Xfly does not accept any cargo and mail to be carried in the passenger cabin.

The condition of the load must be checked in order to detect leaking or otherwise damaged shipments. Special attention shall be given to dangerous goods, animals and valuable cargo. Packages with leaking contents must not be loaded.

The loading is not considered finished until compartment nets have been duly installed and all compartment doors have been properly closed.

If last minute load must be loaded after the compartment doors have been closed, the Loading Coordinator must be notified.

### **WARNINGS:**

#### **CRJ**

CPT 6 on CRJ900 has restricted loading area due to tail-mounted engine. Special attention shall be paid to avoid engine cowl damage during belt-loader maneuvering and loading of big items.

- Pull down the conveyor belt railings as far as possible before positioning the belt.
- Move and lift the conveyor belt very carefully below engine.
- After removing the conveyor belt, check that the engine cowling has not been damaged.

#### **ATR**

There are placards placed inside the cargo compartments on ATR that indicate maximum loading height limitations as well as safety net hooking and tightening instructions. The maximum loading height limitation must be respected to allow efficient extinguisher gas diffusion in case of fire fighting procedure.

### **ATTENTION!**

All compartment door nets and safety nets, including compartment separation nets shall always be closed and fastened before aircraft departure.

### Stowing rules

If nothing to the contrary is stated in the Loading Instruction, the different categories of load shall be stowed in the following sequence:

- Cargo, mail, baggage, so that the baggage will be located nearest to the compartment door in front of cargo and mail.

### Exceptions to stowing rules

The exceptions to the stowing rules shown below must be observed:

- In critical volume situations mail may be mixed with cargo and/or baggage.
- Heavy items (HEA) must not be stowed on top of other load.
- Heavy items (HEA) must not block baggage and mail.
- Last minute stand-by cargo (due weight or volumetric limitations) may be loaded in front of mail and baggage for the same point of unloading, unless it consists of heavy items (HEA).
- Load for the next stations must not be blocked by load for other stations en route.
- The load shall be separated in the compartments, per station of unloading or per load category as apparent from the Loading Instruction.

## 2.6 Baggage

In order to speed up delivery and transfer, baggage must always be stowed so that it can be unloaded first on arrival.

Baggage with priority identification tags shall be loaded nearest to compartment door.

Transfer baggage should be separated from local baggage according to Loading Instruction.

Stand-by baggage shall not be loaded until so ordered from the Loading Coordinator.

Crew baggage should be loaded together with passenger baggage to same destination or as stated on the Loading Instruction.

The pieces of baggage must be counted when they are loaded into a compartment. The total number of pieces and their accumulated weight shall be recorded on the Loading Report.

Baggage irregularities may cause passengers great inconvenience. Therefore, it is essential that the baggage is properly handled. Handle passenger's baggage with utmost care, as if it were your own!

Passengers may have two types of baggage when travelling with Xfly:

1. Checked baggage
2. Unchecked baggage (Cabin baggage).

Passenger and checked baggage must always be transported on the same aircraft. Checked baggage must arrive undamaged.

When baggage has been checked in and while being transported over Xfly network, the company assumes full responsibility for it.

Xfly may refuse to carry baggage which:

1. May cause damage to aircraft and/or load,
2. Has not been properly packed.

Except for diplomatic bags, the carrier has the right, but not the obligation, to verify the contents of the baggage, preferably in the presence of the passenger. Ascertain to the extent possible that the baggage consists of personal effects only.

In spite of the pressure of time under which deadload normally is handled at the ramp great caution shall be taken in order to avoid damage to load and subsequent claims.

Observe the specific instruction labels and marks such as "Fragile", "TOP", "This side up", etc.

Protect goods from bad weather and to avoid possible damage or collection of dirt, do not place them on the apron itself.

Give careful consideration to passenger baggage.

The baggage handles are particularly damage prone. Do not lift baggage just by the handle; use the other hand to support it.

Handle the suitcases with special care and do not place any other type of load on them.

Use only the carts permitted for baggage transportation.

When using carts for transportation of the deadload at the Ramp, the following rules must be observed:

- Spread the load as evenly as possible with the heavy items at the bottom.
- Do not wedge light packages between heavier items. When planning the distribution of/on load from one or different station(s) en route, the following principles must be considered:
  - The balance conditions of the aircraft and the total load in the carts must be within limits.
  - Special load procedures and restrictions regarding weight and size of the load must be thoroughly observed.
  - On arrival, all stations shall have direct access to the items to be offloaded, and baggage must be available first.
  - Stations should not be required to reload large amount of transit load for balance.

The distribution of deadload must make possible for each destination, the following priority at unloading.

1. Transfer baggage,
2. Passengers' baggage with Priority labels and crew baggage,
3. Other baggage,
4. Mail,
5. Cargo.

*Note:* Specific cases (e.g. urgent cargo in transfer spares AOG, etc) can justify that the sequence above should not be observed.

Do not overload. Aim for stability and balance so that no package may fall during transportation.

### **Special baggage tags**

In addition to the ordinary interline baggage tag, the Stand-by tag shall be used when passengers receive standby status at check-in. This applies to all passenger categories.

On Xfly flights, if applicable, Business Class and Certain Frequent Flyer Card holders' baggage shall be separated by using Priority Baggage Tag. This is to ensure fast baggage delivery to Business Class passengers at the arrival station.

Priority baggage shall be onloaded close to compartment door and offloaded/delivered first.

## 2.7 Cargo and Mail

The condition of the load must be checked in order to detect leaking or otherwise damaged shipments. Special attention shall be given to dangerous goods, animals and valuable cargo. Packages with leaking contents must not be loaded.

The loading is not considered finished until compartment nets have been duly installed and all compartment doors have been properly closed.

The exceptions to the stowing rules shown below must be observed:

- In critical volume situations mail may be mixed with cargo and/or baggage.
  - Heavy items (HEA) must not be stowed on top of other load.
  - Heavy items (HEA) must not block baggage and mail.
- Last minute stand-by cargo (due weight or volumetric limitations) may be loaded in front of mail and baggage for the same point of unloading, unless it consists of heavy items (HEA).
  - Load for the next stations must not be blocked by load for other stations en route.
  - The load shall be separated in the compartments, per station of unloading or per load category as apparent from the Loading Instruction.

Xfly does not accept any cargo and mail to be carried in the passenger cabin.

## 2.8 Company Mail (COM)

Company Mail (Co-Mail) is airline's inter-office correspondence carried by aircraft between airports.

International Postal authorities allow such mail to be carried on airlines' own aircraft without payment of postal charges.

Company Mail may be carried un-manifested, unless the laws and legislation acts of the country of destination are demanding otherwise.

Only members of Xfly staff and representative offices outside Xfly have the right to send and receive Company Mail.

Parcels, cartons or any object other than mail are not Co-Mail and they have to be sent as a service shipment.

The weight should be included in the baggage weight and COM loaded only to compartment preferably cpt 1.

At the airport of destination the handling agent delivers the co-mail in accordance with own its procedures.

Company Mail are:

- Correspondence between Xfly and the airlines and handling companies
- Documents
- Forms
- Advertisement and promotional materials
- Onboard magazines etc

### 2.9 Diplomatic Mail/Cargo

When diplomatic mail is carried under the surveillance of an official escort, it can be loaded on passengers' seats, on the following conditions:

- The seat(s) reserved to the transportation of diplomatic mail shall be protected with blankets.
- The diplomatic mail will not exceed 75 kg per seat.
- The diplomatic mail loaded in this way shall be properly secured. The security belt can be used for this purpose, but an additional fastening shall be performed, if necessary.
- When carried in the holds, the diplomatic mail shall be placed together with the load to the same destination.
- The diplomatic cargo in compartments should be handled as normal cargo.

### 2.10 Heavy items (HEA)

Definition – any item exceeding a weight of 150 kg is defined as HEA.

Heavy items (weighing 150 kg or more) must not be accepted if there are any doubts as to the safe performance of the loading and unloading operations.

Before accepting heavy items, due consideration shall be given to the length of the ground stops, available facilities and other factors at the station of loading and unloading which may affect load handling and on-time performance.

#### CRJ900

Maximum weight of one item is 80 kg.

#### ATR 72

Items weighing 200 kg or more may not be loaded.

#### Special requirements

If cargo item (piece) weight is more than 80 kg, it must be loaded onto a pallet.

Maximum weight per cargo item (piece) must not exceed 280 kg. All pieces weighing more than 280 kg are subject to a special pre-arrangement and acceptance must be confirmed by cargo department.

Special requirements	Pallet requirement	Max dimensions	Max number of items per fwd cpt	Max number of items per aft cpt
<b>Up to 79 kg</b>	No	See max. dims table	No limits	No limits
<b>80-149 kg</b>	Pallet	See max. dims table, max height 73 cm	Max 1 item, max height 73 cm	Max 3 items, max height 73 cm
<b>150-280 kg</b>	EUR pallet	120 x 80 x 73 (cm)	Max 1 item, max height 73 cm	Max 3 items, max height 73 cm

The maximum allowed weight per item depends on:

- Type of aircraft – aircraft limitations will not be exceeded. In case that interpretation of the regulations on this Manual does not seem obvious, Load Control should be contacted.
- Handling facilities – equipment and manpower.
- Ground time – capacity to observe the schedule.

Any pre-clearance request regarding the acceptance of a HEA, should mention:

- The weight of the piece in kg or lb.
- Dimensions of the piece (L x W x H) in cm or in.
- If not otherwise specified, it is assumed that the piece is regularly shaped.
- If the piece must be stowed with one specific side up, that must be mentioned.
- Certain general procedures applicable to the loading/handling, due to the HEA pieces weight are to be stressed:
- HEA items shall be adequately packed.
- Special care must be taken during loading/unloading in order to avoid damages to the aircraft/equipment/other load or personnel injuries.
- Generally, HEA items need to be loaded on platforms and individually tied-down.
- HEA items loading tie-down, specifically when bulk loaded on pallets (floating pallets or not) should be planned in advance and supervised by qualified staff.

*Note:*

Actual running load must be determined taking as a basis the length of the item's contact area or, when applicable, the length of the planks over which the piece's weight is spread.

The applicable max floor load cannot be exceeded. If a platform must be used, this one should correspond to the pattern shown under.

Lateral/vertical C.G. must comply with the regulations.

### 2.11 Human Remains

Carriage of human remains in coffins is subject to the following conditions:

- *Note:* Loading of HEA items is not allowed o/b Xfly CRJ900.
- The coffin should be kept as far as possible in a horizontal position during loading and stowage.
- Coffins shall not be loaded in close proximity of food stuffs.
- Coffins shall not be loaded in the same cargo cpt as dogs and other sensitive animals. When loaded on pallets at least 1 pallet bay shall separate the two categories of load.
- The carriage of coffins in the main deck of combi version is not allowed.
- The outside covering of coffins must be entirely neutral and must conceal the typical coffin contours in order to avoid recognition of the contents by outside persons.
- The captain should be informed by means of the NOTOC, loadsheet or any other form.

## 2.12 Valuable Cargo (VAL)

Valuable items are prone to pilferage and security measures have to be applied during all phases of transportation.

All valuables should be handled as a separate category distinct from regular air cargo.

The security measures to be adopted during aircraft loading and unloading, and ground transportation depend on local regulations and conditions, and should be arranged accordingly.

Valuable Cargo (VAL) shall:

- Not be shown separately on the Loading Instruction/Report.
- Be included in the general Cargo figure.
- Shipments of valuable cargo shall be stowed into valuable cargo pouches or security boxes with attached seals. The pouch or security boxes shall be capable of being locked/sealed.

The embarking Station shall always advise the transit, transfer or destination station(s) of flights carrying valuables by teletype message (priority code QU to be used).

Valuables are delivered to the Loading Agent at the a/c by the Cargo Responsible against a duly signed copy of Special Load – Notification to Captain that will be kept by the Cargo Department for filing purposes.

*Note:* Whenever the package(s) cannot be carried in the VAL special bags the procedures established for large consignments shall apply.

The Loading Coordinator will open the hold door and will hand over the consignment to the Cargo responsible against a duly signed copy of the Special Load Notification to Captain forwarded in the Route Folder, which will be kept by the Ramp Department.

All consignments, which either by weight dimensions, do not fit the VAL bags shall be loaded preferentially in the bulk holds. Loading on pallets will be made only as last resort.

In that case the consignment must be duly protected and placed in the central area of the pallet, far from the net, to avoid theft.

On multi-sector flights, valuable cargo should be stowed behind the cargo manifested to the same destination.

## 2.13 Wet Cargo

Shipments containing liquids or shipments which by their nature may produce liquids and which are not subject to the IATA Restricted Articles Regulations shall be designated as “Wet Cargo”

The following types of cargo are to be considered as “Wet Cargo”.

- Shipments of liquids in watertight containers.
- Shipments of wet materials not packed in watertight containers e.g. fish packed in wet ice, fresh or frozen meat, fresh animal guts, raw hides, etc.
- Goods, which may produce liquids, e.g. live animals.

In order to protect the aircraft and other load against leakage and/or spillage from wet shipments, the following precautions shall be taken:

- Plastic sheets or tarpaulin should be spread on the aircraft floor and walls, so as to catch any spillage or leakage.
- Containers shall be stowed upright, i.e. the closure must be at the top.
- Special handling instructions attached to the container (e.g. “This Side Up” labels) shall be strictly observed.

For Wet Cargo in containers, which are not, watertight secondary measures must be taken to avoid any spillage or leakage:

- Placing the shipment in another water tight container, or
- Using the plastic sheets or tarpaulin turn the edges up against the aircraft wall or other cargo so as to create a waterproof basin around the shipment.
- In case of damaged packages (e.g. packages with holes, traces of leakage defective caps or closure devices) or packages where damage can be assumed to fill in Cargo Damage Report.

### 2.14 Fresh or Frozen Fish

Fresh or frozen fish carried as "Wet Cargo" and is subject to special loading procedures as follows:

In order to achieve an effective protection of the a/c holds against leakage the Ramp Service of Loading Station shall be supplied with the following extra equipment:

- Plastic sheet measuring 2 x 2.5 m width and 1.5 mm thick.
- Stick tape in crepe paper or tissue (rolls).
- Ropes and tie down fittings.

The plastic sheet (cut from the roll with the length suitable to the total number of boxes to be loaded) will be stretched carefully along the compartment, to avoid tearing.

The edges of the plastic sheet will be then stuck to the compartment walls using adhesive tape.

The boxes containing the fish will then be loaded, taking into consideration that they must have the closure up.

After the loading of the boxes; the edge of the plastic sheet transversal to the aircraft will wrap up all the cargo on that side.

Whenever the size of the cargo loaded allows it, the plastic sheet shall wrap up the boxes containing fresh fish, acting as closure to all the shipment.

To finalize the operation, the block made up by the assembly of boxes will be fastened using the ropes to the tie-down fittings previously fixed to the front end the compartment.

### 2.15 Dangerous Goods

All contracted/subcontracted ground handling agents must hold the latest IATA DGR manual, including addenda as appropriate, for handling Xfly aircraft.

IATA DGR must be easily accessible at each location where ground handling and cargo operations involving the acceptance or loading of dangerous goods as cargo are conducted.

Dangerous Goods can be carried safely provided they are handled and stowed in accordance with the instructions in this topic and in Xfly LCM chapter [3.2](#).

Reference: See IATA-DGR section 9, for detailed information.

#### **State Variations**

Xfly does not accept and may not transport Dangerous Goods to/from/through countries where in accordance to IATA DGR State Variations operator must have obtained specific state authorization, permit or prior approval for the transport of dangerous goods.

Such countries/airports in European region are (Ref. IATA DGR 2.8.2):

- Italy (Class 7)
- Romania, within the Bucharest FIR
- Serbia.

### Reporting of occurrences

Dangerous Goods Occurrences shall be reported according to Management System Manual (MSM) Chapter [4.4](#) Incident Investigation and Reporting.

### Loading supervision

Handling and loading of dangerous goods shall only be performed by or under the direct supervision of staff who has received appropriate training.

### Checks prior to loading

The outer packaging of dangerous goods must be inspected prior to loading onto an aircraft. The following must be observed:

- It must be found free from visible leaks or damage. If evidence of damage or leakage is found, the dangerous goods must not be loaded on an aircraft.
- Aircraft type limitations must be checked and followed.
- Special handling instructions (e.g. CAO-label) must be followed.
- UN specification markings must be stamped or printed on the outer package.
- *Note:* Packaging shall not be accepted in those cases where the UN specification markings have been applied by hand or affixed by means of a sheet of paper bearing these markings.
- Single packagings containing liquid shall not be accepted unless overpacked by the shipper by use of, for example, a suitably sized wooden pallet to protect the base of the packaging.

### Damage on Dangerous Goods

In case of damage to Dangerous Goods, extreme care must be exercised particularly if radioactive materials or infectious substances are involved.

See [Dangerous Goods Emergency Procedures](#) below.

### Loading requirements

The requirements below must be followed when loading dangerous goods:

- Packages of dangerous goods must be protected from being damaged, including by the movement of baggage, mail, stores or other cargo. Particular attention must be paid to the handling of packages during their preparation for transport, the type of aircraft on which they are to be carried and the method required to load the aircraft, so that accidental damage is not caused through dragging or mishandling of the packages.
- Dangerous goods must not be loaded in an aircraft cabin occupied by passengers or on the flight deck of an aircraft.
- Dangerous goods marked "CARGO AIRCRAFT ONLY" must not be loaded onto a passenger aircraft.
- Special handling instructions (e.g. "THIS WAY UP" arrow-labels) must be followed.
- Dangerous Goods Packages must be located so that the hazard label is visible.
- Dangerous goods may never be loaded in the compartment door section.
- Radioactive material, yellow label, must always be stowed directly on the compartment floor.

- Incompatibility table must be checked for all hazards and restrictions followed.
- Minimum separation distances must be checked and restrictions followed.
- As a matter of principle, dangerous goods must always be secured by lashing. For exceptions, see Exceptions from lashing requirements below.

#### **Exceptions from lashing requirements**

Lashing is not necessary in a compartment if the package(s) is (are) restrained from moving horizontally or vertically. The net section must be filled completely with load.

- On the entire floor area
- Up to loading height of 15-20 cm below ceiling.

#### **NOTOC**

Pilots shall be notified in writing via Notification to Captain (NOTOC), prior to departure, that dangerous goods are loaded on board. A change in load and/or loading position at a transit station shall be reported to Pilot in Command.

#### **Dry ice (ICE)**

Dry ice (ICE) may not be loaded in the same compartment as AVI.

Live tropical fish and other fish for aquarium use may be loaded together with ICE, as they are packed in closed containers and are not dependent on the oxygen in the compartment.

#### **Wheelchairs or other Battery Operated Mobility Aids as Checked Baggage**

Reference: See LCM [3.2.5 - Provision for Dangerous Goods Carried by Passengers or Crew](#) for further details.

Before loading it must be verified that battery is securely attached to the wheelchair or other battery powered mobility aid, battery terminals are protected for short circuit (e.g. by being enclosed within a battery container) and electrical circuits have been isolated.

Wheelchair or other battery powered mobility aid with installed batteries must be secured, by use of straps, tie-downs or other restraint devices. The mobility aid, the batteries, electrical cabling and controls must be protected from damage including by the movement of baggage, mail or cargo.

The pilot-in-command must be informed of the location of a wheelchair or mobility aid with an installed battery, the location of a packed battery and the location of spare batteries, either in the cargo compartment, or for lithium ion batteries in the passenger cabin. (Reference: IATA DGR 9.3.14)

*Note:* This information must be presented to pilot-in-command on the NOTOC, loadsheet or any other form.

Where the mobility aid is specifically designed to have the battery removed (e.g. collapsible), the battery must be removed, the mobility aid may then be carried as checked baggage with-out restrictions.

#### **Wheelchairs or other Battery Powered Mobility Aids with Spillable Batteries**

A mobility aid with a spillable battery must be loaded, stowed, secured and unloaded in an upright position. If the wheelchair or mobility aid cannot be loaded, stowed, secured and unloaded always in an upright position or if the mobility aid does not adequately protect the battery, the battery must be removed. The removed battery must then be carried in strong, rigid packagings.

#### **Wheelchairs or other Battery Powered Mobility Aids with Lithium Batteries**

Any battery removed from the mobility aid and any spare batteries must be carried in the passenger cabin. The removed or spare batteries must be protected from damage (e.g. by placing each battery in a protective pouch).

#### **Reporting of restricted dangerous goods**

Any occasion when undeclared or misdeclared dangerous goods discovered in passenger baggage or cargo shall be reported to the appropriate authority of the State in which they occurred. This type occurrence regarding Xfly ground operations shall be handled as dangerous goods incident.

Reference: See RHM chapter [5 - Reporting](#)

### **Dangerous Goods Emergency Procedures**

In case of damage to Dangerous Goods, extreme care must be exercised particularly if radioactive materials or infectious substances are involved.

General emergency procedures to be followed comprise the following in the event of a spill or leakage involving dangerous goods is as follows:

- Advise immediate supervisor first and get professional assistance.
- Proceed with necessary action according to Dangerous Goods Emergency Response Chart.
- Where safe to do so, isolate the package by removing other packages or property.
- Avoid contact with the contents of the package.

If the contents come into the contact with body or clothes:

- Thoroughly wash off body with plenty of water;
- Remove contaminated clothes;
- Keep hands away from eyes, mouth and nose;
- Seek medical assistance.

Staff involved in such incidents should stay on site until their names are noted.

### **Contaminated Cargo or Baggage Handling**

If baggage or cargo not identified as containing dangerous goods has been contaminated and it is suspected that dangerous goods may be the cause of the contamination, the reasonable steps must be taken to identify the nature and the source of contamination before proceeding with the loading of the contaminated baggage or cargo. If the contaminating substance is found or suspected to be a substance classified as dangerous goods, the baggage and cargo must be isolated and appropriate steps taken to nullify any identified hazard before the baggage or cargo is transported further by air.

### **Damage to or leakage from dangerous goods**

In case of already loaded dangerous goods package is found to be damaged or leaking, it must be assured that such shipment is safely removed from an aircraft.

An aircraft in which dangerous goods has leaked or any aircraft or aircraft equipment which has been contaminated by dangerous goods must be taken out of service immediately. Proceed without any delay and according to local emergency response procedures with the removal of hazardous contamination from the aircraft. The aircraft or equipment must not be returned to service until it has been determined that there is no risk to the health of the staff and passengers. Re-assessment shall be made according to local authorities' procedures.

### **Damage to or leakage from radioactive materials**

In case of already loaded radioactive material package is found to be damaged or leaking, it must be assured that such shipment is safely removed from an aircraft.

An aircraft in which radioactive material has leaked or any aircraft or aircraft equipment which has been contaminated in such a way that the non-fixed contamination is more than the limits specified in IATA DGR Table 10.9.F, must be taken out of service immediately.

The aircraft or equipment must not be returned to service until aircraft is checked by appropriately qualified personnel and the contamination level is equal or less to the limits in IATA DGR Table 10.9.F

*Note:* Non-fixed contamination is contamination that can be removed from a surface during normal handling.

Reference: See IATA DGR Table 10.9.F for details.

### Dangerous Goods Emergency Response Chart (Ground Incidents)

Hazard Class or Division and Comp. Group	Cargo IMP code	Dangerous Goods Class	Hazard Description	Immediate Action
1.3C 1.3G	RCX RGX		Fire and minor blast hazard and/or minor propulsive hazard	<b>Minimize leakage and contact with other cargo</b>
1.4B 1.4C 1.4D 1.4E 1.4G	RXB RXC RXD RXE RXG	Explosives (acceptable on Cargo Aircraft only)	Fire, but no other significant hazard	<b>Notify Fire Department</b>  <b>Guard against fire</b>
1.4S	RXS	Explosives (safety)	Small fire hazard	
2.1 2.2 2.2	RFG RNG RCL	Flammable Gas Non-Flammable Gas Cryogenic Liquid	Ignites when leaking High pressure cylinder bursting Sub-cooling	<b>Notify Fire Department</b> <b>Guard against fire</b> <b>Evacuate goods – ventilate area</b>
2.3	RPG	Toxic Gas (acceptable on Cargo Aircraft only)	High pressure cylinder bursting and toxic inhalation	<b>Keep away minimum 25 m</b>
3	RFL	Flammable Liquid	Gives off flammable vapour	<b>Notify Fire Department</b>
4.1 4.2 4.3	RFS RSC RFW	Flammable Solid Spontaneously Combustible Dangerous when wet	Combustible, contributes fire Ignites in contact with air Ignites in contact with water	<b>Guard against fire</b> <b>Do NOT use water under any circumstances</b>
5.1 5.2	ROX ROP	Oxidizer Organic Peroxide	Ignites combustibles on contact Reacts violently with other substances	<b>Notify Fire Department</b> <b>Guard against fire</b> <b>Do NOT use water</b>
6.1 6.2	RPB RIS	Toxic Substance Infectious Substance	Harmful, if swallowed, inhaled or in contact with skin Causes disease in Humans and Animals	<b>Isolate area</b> <b>Obtain qualified assistance</b> <b>Do NOT touch</b>
7 Cat I 7 Cat II and III	RRW RRY	Radioactive-White Radioactive-Yellow	Radiation hazards and harmful to health	<b>Keep away minimum 25 m</b>
8	RCM	Corrosive	Hazardous to skin and metal	<b>Notify Fire Department</b> <b>Guard against fire</b> <b>Avoid contact with skin</b>
9	RSB MAG ICE RMD	Polymeric Beans Magnetized Material Carbon dioxide, solid (dry ice) Miscellaneous Dangerous Goods	Evolves small quantities of flammable gas Affects navigation system Causes sub-cooling/suffocation Hazards not covered by other classes	<b>Avoid contact with skin</b> <b>No immediate action required</b>

### 2.16 Live Animals (AVI)

Classification of animals into groups and aircraft type-dependent quantity limitations are found in the LCM.

Live animals (AVI) shall only be loaded into compartments released for the carriage of such shipments.

Check also incompatibility list for details with other load.

Pilots shall be notified in writing via Notification to Captain (NOTOC), Loadsheet or any other form prior to departure that Live Animals (AVI) are loaded on board.

Follow these steps when loading live animals (AVI):

Step	Action
1.	Put the cage/box with the live animal in a horizontal position.
2.	Put cats and dogs just inside the compartment door easily accessible for watering and feeding at intermediate stations.
3.	Lash the cage/box, so it does not shift during transportation.
4.	Protect the cage/box against damage by other load.
5.	Leave sufficient air space on all sides of the cage/box.
6.	Depending on the type and quantity of animals, as well as outside weather conditions compartment doors should be kept open: <ul style="list-style-type: none"> <li>• Until the whole loading has been completed</li> <li>• During transit ground stops</li> </ul>

Reference: See also IATA-LAR chapter 10 for handling procedures.

### 2.17 Loading in Passenger Cabin

Load in the passenger cabin can be accommodated either on the floor or directly in the seats.

Passengers' unchecked baggage (cabin baggage) may be stowed under the seats.

For all other categories of load, floor loading is not permitted.

Different items (musical instruments, sports equipment, electronics, etc.) may be loaded directly in seat, provided maximum quantities and dimensions of an item are observed as well as load is properly secured by use of passenger safety and extension belts.

- Maximum dimension of an item 150 x 35 x 50.
- Maximum quantities 75 kg per item and per seat.

*Note:* Purser in cooperation with the Commander always has the right to deny loading directly into the seat if the load cannot be properly secured.

As a general principle, Xfly does not accept any cargo and mail to be carried in the passenger cabin.

## 2.18 Loading Equipment

Loading equipment is not included in the DOW. It must be shown on the loadsheet.

Equipment stored at stations must be protected against damage by weather, moisture, dirt, etc.

After use on board the equipment shall be collected from compartments and cabin, be bundled and marked and returned to originating station without delay.

The following gives a list of loading equipment and on which aircraft it can be used:

Equipment type	Aircraft
Ballast bag	All
Net sack, green	All
Supporting plank	All
Tie-down ring, standard	All
Tie-down strap, 3 m	All
Tie down strap, 5 m	All

Unloaded ballast bags shall normally be returned, but in exceptional cases can be kept in stock at the station of unloading for later use.

Ballast shall be loaded only if requested in the Loading Instruction. Only undamaged bags may be loaded. Only bags clearly marked with gross weight may be loaded.

Green net sacks are used for company mail. The net sacks are made of nylon, and shall, when used, be tagged with special company mail tag.

Reference: See [LCM 4.4.4](#) for equipment in compartment loading requirements.

## 2.19 Supporting

The support planks width shall always be 15 cm. The following plank dimensions shall be represented:

- 100 cm, 1 inch
- 150 cm, 2 inches
- 200 cm, 2 inches
- 250 cm, 2 inches

Supporting planks are used to ensure that the maximum area load is not exceeded, whenever heavy and/or oddly shaped cargo items are loaded in compartments.

If an item cannot be loaded without exceeding the maximum area load, then planks should be used in order to distribute weight of an item over a larger area.

Use the following table to determine if supporting is needed:

Step	Action
1.	Determine the contact area with the actual length and width of the item and calculate the allowed maximum weight at the intersecting point. Use the following formula: <b>Length x Width x max floor load per compartment =</b> <b>= max allowed weight at intersecting point</b>
2.	If the actual weight of the item is: <ul style="list-style-type: none"> <li>• Less than max allowed weight, supporting is not required.</li> <li>• More than max allowed weight, supporting is required. Go to step 3.</li> </ul>
3.	Determine the number of planks in Plank capacity table which is required to support the item. <i>Note:</i> A minimum of 50% of the plank width must be covered by the item, in order to utilize the capacity of the plank.

This table shows different planks and their supporting capacity:

Length (cm)	Width (cm)	Thickness		Average weight of planks (kg)	Supporting capacity (kg)
		(cm)	(inch)		
100	15	2.5	1	3	100
150	15	5.1	2	7	150
200	15	5.1	2	10	200
250	15	5.1	2	12	250

It is possible to use Euro-pallets as support. The pallet is a loading platform made of wood.

The following rules must be adhered to when using the Euro-pallets as supporting material:

- The Euro-pallet must be clearly marked with the EUR symbol.
- The maximum weight of the load on the Euro-pallet is 280 kg.
- For supporting of weights exceeding 280 kg, use normal procedure.

## 2.20 Securing

Securing of the load can be achieved by:

- Lashing.
- Volumetrically filling the compartment or net section.
- Volumetrically filling means that the three-quarters of the compartment or net section heights are full.

Lashing is always required for:

- Dangerous goods items, unless they can be secured by means of other load surrounding them. Dangerous Goods Packages must be located so that the hazard label is visible.
- Live Animals.
- Items of piercing and penetrating nature, e.g. metal bars, javelins, etc.
- Items between 50-149 kg, if the compartment or net section is not volumetrically full.
- Items weighing 150 kg or more (HEA), when bulk loaded in compartments or net sections, even if the compartment or net section is volumetrically full.

It is an IATA recommendation that the load shall be restrained in such a way that:

- The load during flight cannot work loose and cause hazardous displacement of the center of gravity, injure passengers and crew or damage the aircraft.
- In case of a forced landing the load cannot cause injury to passengers and crew or damage the aircraft.
- Dangerous Goods cannot cause hazard to persons and/or property.

In order to prevent the load from moving at take-off, in flight and at landing, the following basic forces must be compensated for:

- Forward
- Backward
- Sideward
- Upward.

The rules below must be followed:

- As the forces will not act simultaneously it is permitted to use the same lashings for more than one of the force directions.
- Straps shall be tightened strongly, but not so tight that the load or rings are damaged. The lashing must be easy to remove at the station of unloading. The same tension must be applied to all lashings.
- Lashing should be located near the centerline of the load. Initial positioning of the load is of great importance to get the center of gravity of the load as low as possible and thus avoids overturning forces.
- Whenever possible, the longest dimension of the load should be placed lengthwise on the floor.
- The lashing shall be applied in all force directions, i.e. the compartment wall/net may not be used for securing/lashing of the item.
- Use of ropes is prohibited.

Tie-down straps are made of fire resistant nylon webbing, and are provided with a patent buckle, a hook and a tie-down ring at each end. The straps must be available in lengths of 3 and 5 meters, both with an ultimate strength of 550 kg.

The table below indicates the minimum number of straps and rings required for lashing of each load factor (force direction). The table is based on the following conditions:

1. The restraint is limited by the capacity of the straps.
2. When providing restraint for the same force the rings must be mounted with a minimum spacing of 50 cm.

Weight of item (kg)	No. of straps	No. of rings
0-149	1	2
150-480	2	4
481-720	3	6
721-960	4	8

Items for which lashing is required shall be tied down to withstand the following G-forces (times the weight of load):  
all forces 1.5 G.

## 2.21 Delivery at Aircraft (DAA) Baggage

The purpose of the Delivery at Aircraft (DAA) baggage procedure is:

- To meet flight safety requirements related to storage of cabin baggage on board.
- To reduce amount of cabin baggage.
- Speed up the embarking and disembarking of passengers' from/to aircraft.
- To have the hand baggage within the weight/size limitations described in company regulations.
- To improve service and satisfaction of customers (by having more personal space on board).
- To increase the level of safety in cabin by avoiding oversized unsecured cabin baggage being loaded in front of the seats where passenger is seated.
- To avoid cabin crew from handling heavy cabin baggage.

The procedure is applicable for cabin baggage when flight is operated by CRJ and ATR aircraft.

*Note:* On CRJ and ATR aircraft baggage categories also permitted to handle as DAA are baby-trolleys and passenger's own wheelchair.

### Dangerous Goods

*Note:* Baggage intended to be carried in the cabin that is placed in the cargo compartment must only contain dangerous goods permitted in checked baggage.

When baggage intended as carry-on cannot be accommodated in the cabin and is converted to DAA (Delivery at Aircraft) baggage to be loaded in aircraft cargo compartment the passenger **must remove** from such DAA baggage any dangerous goods which are only permitted in carry-on baggage including all spare (loose) lithium batteries and carry them in the cabin.

### The following must be performed at departure:

- Above mentioned types of baggage shall be labelled by gate or check-in agent with DAA tag.
- Passengers shall always be informed about the procedure.
- DAA bag shall be brought to the aircraft side by passenger.
- A baggage cart for DAA baggage should be placed near the passenger entrance door of the aircraft or a designated area for DAA baggage shall be available at passenger boarding bridge near the passenger entrance door.

*Note:* The DAA baggage must be under surveillance until loaded.

- DAA shall be left at the boarding bridge, at the a/c door or in the baggage trolley assigned for DAA baggage.
- DAA baggage shall be loaded in cargo hold by assigned staff.
- Preferred loading location for DAA for CRJ is at FWD compartments and for ATR at AFT compartments.

*Note:* Maximum dimensions for approved cabin baggage is 56 x 45 x 25 cm with maximum weight 8 kg. Passenger baggage exceeding dimensions 56 x 45 x 25 cm or weighing more than 8 kg does not qualify for DAA procedure and shall be accepted as checked baggage only.

*Note:* If a passenger has to disembark the aircraft before departure, he/she should be questioned about the DAA baggage and such baggage should be offloaded.

- Assigned staff at the aircraft side shall always inform PIC about the number and loading position of DAA baggage.
- Assigned staff at the aircraft side must ensure that bags labelled with DAA tags are left by the passengers at boarding bridge, at the a/c door or in the baggage trolley assigned for this and loaded cargo hold as last.

**The following must be performed upon arrival:**

- Cabin crew may allow disembarkation of passengers before and during offloading of DAA baggage.
- Cabin crew must receive clear OK sign from ground staff prior disembarkation may commence.
- Ground handling must ensure that passengers who need to collect their hand baggage at the aircraft side will be guarded and will not be permitted to walk in the restricted area.
- Cabin crew shall inform passengers that they need to wait near aircraft door after disembarking for their cabin baggage to be offloaded and placed next to the a/c stairs or passenger door.
- Loading staff shall always check all compartments for DAA baggage and prepare for immediate offloading.
- DAA shall be returned to the passenger near the aircraft door or at the boarding bridge directly upon arrival.
- The DAA should be placed on the baggage cart near the entrance door of the aircraft or DAA shall be placed at the designated area for the DAA baggage at the passenger boarding bridge.
- Loading staff shall inform cabin crew when DAA baggage is offloaded and disembarkation may commence.

*Note:* In cases, where a passenger does not collect his/her baggage marked with Delivery at Aircraft tag, the baggage shall be sent to the Lost and Found.

**Recording DAA on Loading Report and Loadsheets**

Cabin baggage with DAA tag shall not be recorded on Loading Report. Assigned staff, responsible for the flight, shall inform the Commander about the number and loading position of DAA baggage.

After the information is received, Commander shall evaluate recording the DAA baggage on loadsheets.

Standard weight for DAA baggage is 5 kg each.

If necessary Commander makes correction of LIZFW on the loadsheet and also checks balance against the correct balance limits.

**Recording DAA on Loadmessage (LDM)**

Assigned staff, responsible for the flight, shall pass the information regarding loading position and number of DAA baggage to the Load Control function immediately after aircraft departure for recording on Load Message (LDM).

The following format shall be used for recording of DAA baggage under SI on LDM:

DAA/2/4 (Delivery at Aircraft Baggage/compartments number/ number of baggage pieces).

<b>3</b>	<b>Aircraft Servicing</b>	3-1
3.1	Location of Servicing Points	3-2
3.2	Toilet Servicing	3-2
3.3	Water Servicing	3-6
3.4	Aircraft Heating and Cooling Procedures	3-16
3.5	Aircraft Interior Cleaning	3-19
<b>3.6</b>	<b>Fuelling Procedures</b>	<b>3-26</b>

## 3.1 Location of Servicing Points

See: AHM 904

## 3.2 Toilet Servicing

### 3.2.1 Toilet Servicing CRJ

To get access to the drain fitting, the flush port and the drain valve handle, you must open the service door.

Each time you do the servicing for the toilet tank, fill the system with the recommended quantity of the chemical precharge.

On all except the auxiliary waste tank, each time you service the toilet tank, fill the system with the recommended quantity of the chemical precharge.

It is not necessary to add the chemical precharge to the auxiliary waste tank.

*Note:* Fluid in the drain line can show leakage from the drain valve.

On the service panels without the levers for the flapper valve in the drain outlet, do these steps to connect the toilet service cart and to remove the drain plug:

- Connect the Y-fitting to the drain outlet on the service panel.
- Connect the flush line to the applicable flush port on the service panel.
- Remove the drain plug with the T-handle on the Y-fitting.
- Push the T-handle to engage the end of the rod with the mating part in the drain line plug.
- Turn the T-handle counterclockwise until the drain Line plug releases.
- Pull the T-handle out until it stops.

On service panels with levers that open the flapper valve in the drain outlet, do these steps:

- Connect the waste drain hose from the service cart to the toilet drain outlet on the service panel.
- Connect the flush Line to the applicable flush port on the service panel.
- On service panels with the OPEN/CLOSE levers, turn the OPEN Lever to open the flapper valve.

*Note:* If a Y-fitting equipped with a T-handle is connected between the service cart and the drain outlet, make sure the T-handle is fully extended. This will give clearance for the flapper valve at the drain outlet.

#### **CAUTION:**

Make sure that no person flushes a toilet that has a drained waste tank. A person who flushes a toilet that has a drained waste tank can cause damage to the toilet flush motor.

Do these steps to drain the toilet tank:

- Turn the handle for the waste drain valve until it is not Locked.

*Note:* The drain valve handle is not Locked when you turn it 90 degrees counterclockwise from the Locked position.

Pull the handle for the waste drain valve.

To lock the drain valve handle in the extended (open) position, turn it 90 degrees clockwise.

Let the waste drain into the toilet service cart.

*Note:* For the best flushing action of the drain lines, drain the toilet tanks one at a time.

Turn the drain valve handle until it is not locked and release the drain valve handle to close the drain valve.

**WARNING:**

Do not use too much toilet fluid during servicing. A leakage of toilet fluid can possibly enter electrical and/or electronic systems and cause a dangerous malfunction. This could cause an unwanted effect to the flight safety of the airplane and result as injury or loss of life to the persons aboard.

Do these steps to flush the toilet tank:

- Put a minimum of 30 liters (8 gallons) of water through the flush line to flush the toilet system.
- Make sure that the drain valve handle is not locked. While the water goes through the flush Line, pull and release the drain valve handle 5 times. This will cause the valve face and the valve seat to be clear.
- Stop the flow of water through the flush Line.
- Pull the drain valve handle and turn it 90 degrees clockwise to Lock the drain valve handle in the extended position.
- Drain the toilet tank until it is empty.
- Turn the drain valve handle until it is not Locked and release the drain valve handle to close the waste drain valve.

*Note:* Let the drain valve handle move suddenly into the closed position. This will make sure there is a watertight seal at the tank drain valve.

At this time you can charge the toilets and do a check for Leakage of the drain valve.

To Lock the drain valve handle in the closed position, turn it 90 degrees clockwise.

On service panels that service more than one toilet tank, do the steps again to drain and flush the remaining toilet tank(s).

On service panels with the drain plug in the drain outlet, do the steps that follow:

- Install the drain plug (if applicable) and disconnect the toilet service cart,
- Push the T-handle as far as you can and at the same time turn the handle counterclockwise.

*Note:* This decreases the friction between the drain plug and the drain tube wall.

Hold the T-handle in as far as you can.

Turn the handle clockwise to Lock the drain plug in its position.

**CAUTION:** Make sure the drain plug is correctly locked. If you do not feel the handle yield, the handle is not correctly locked. This can cause leakage at the drain plug.

Continue to turn the T-handle clockwise. If it is necessary, use more force to expand the drain plug against the drain tube until the Locking device is over center.

**CAUTION:** Make sure the drain plug is correctly locked. If the coupling handle does not disengage easily, the drain plug is not correctly locked and leakage can occur.

Pull the T-handle to disengage it from the drain plug.

Disconnect the waste drain tube from the service panel.

On all connections except the auxiliary tank, connect the chemical hose from the toilet service cart to the flush ports.

Fill the system with a recommended chemical precharge in the quantities shown on the service panel placard. The suggested amount CRJ900 8.7 liters (2.2 gallons).

The total chemical precharge quantity is shown on the service panel placard. If you use too much chemical precharge, the toilet tanks can become full with less use.

*Note:* If you use too much precharge in the system, the tank can become too full with usage.

Disconnect the chemical hose.

Make sure the flush/fill port is drained.

*Note:* The flush/fill port is fully drained when fluid no longer drips. The fluid could take as long as 6 minutes to drain.

Clean and dry all of the service panel components and the doors.

Close the cap for the flush/fill port (if installed).

**CAUTION:**

Do not let the toilet fluid touch the seals. If the toilet fluid touches the seals, it can cause the seals to deteriorate.

On service panels with a flapper valve, examine the flapper valve seal for damage or deterioration.

*Note:* If the seal shows damage or deterioration, you must replace it.

Examine the end of the drain tube and the seal in the drain cap for damage or deterioration.

*Note:* You must replace the drain tube nipple or the drain cap seal if they are damaged.

On service panels with the OPEN/CLOSE Levers on the service panel, do these steps to close the flapper valve.

Turn the CLOSE lever in the direction of the CLOSED arrow and hold the CLOSED Lever in the closed position.

Turn the OPEN lever momentarily in the opposite direction of the OPEN arrow to lock the flapper valve in the closed position.

Release both levers.

Close the drain cap.

*Note:* On the service panels with the interlocking drain cap/drain plug, the drain cap will not close if the drain plug is not installed correctly.

Close the service panel door.

**CAUTION:**

Do not permit the toilet fluids to touch the airplane structure. The toilet fluid can cause corrosion which can cause damage to the airplane structure.

Make sure there are no stains on the airplane skin. Stains on the airplane skin can be an indication of an inflight leakage or unsatisfactory servicing procedures.

Make sure there is no inflight ice buildup from the forward toilet service panel. If there is an ice buildup and it is released inflight, it can cause damage to the no. 2 engine or the airplane structure.

When you add antifreeze, make sure the quantity of chemical precharge and antifreeze is not more than the quantity shown on the service panel.

### 3.2.2 Toilet Servicing ATR

The aircraft is equipped with “potable” water system and waste disposal system. The potable water system supplies fresh water for the lavatory sink and for the optional galley sink.

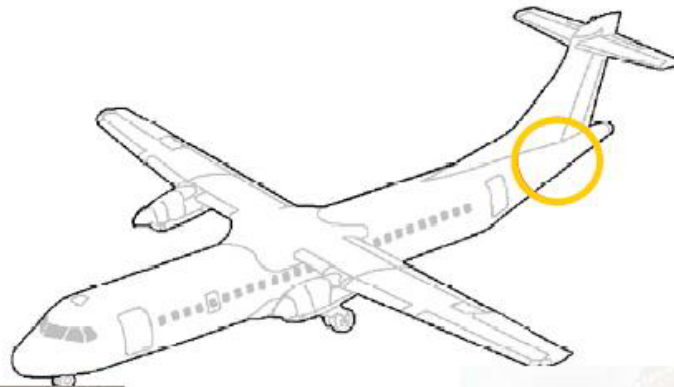
Fresh water for the toilet is stored in a tank located in the pressurized section of the fuselage. The water tank is filled from fresh water service panel located at the bottom of the rear fuselage.

The toilet flushing system is obtained from a motorized pump filter unit. The flushing cycle is automatically controlled by electrical timer. Draining, flushing and filling of the tank are accomplished at the toilet service panel, located underneath the rear fuselage.

Do not use any mechanical equipment during the turn/pull of handle as any stronger force will bend it easily. New handles move freely by pulling with just two fingers.

**NOTE:** Inform maintenance or flight crew in case of

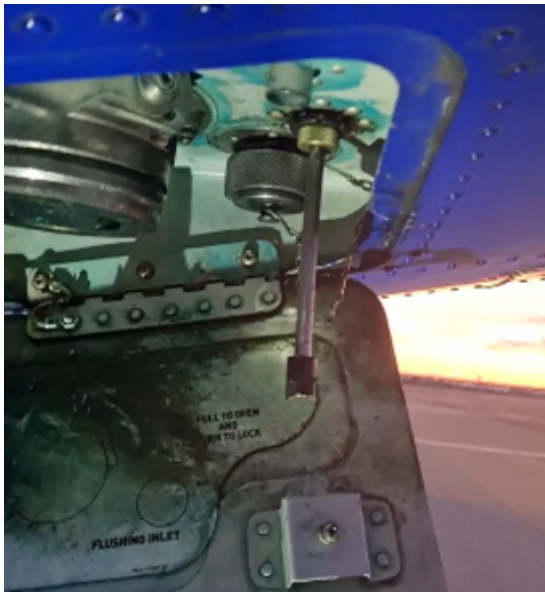
- Fluid leakage.
- The drain valve will not open.
- Waste tank can not be drained.



On the service panel, pull the handle and turn a quarter turn to drain the toilet tank:



Correct position when releasing the handle to close the valve (don't try to push it when it's in the position as on picture above):



Note: Do not use any mechanical equipment during the turn/pull of handle as any stronger force will bend it easily.

See [3.3.4 - Water Filling Procedure ATR](#)

See [3.3.5 - Water Draining Procedure ATR](#)

### 3.3 Water Servicing

Of all modes of transport, energy consumption per unit of weight is highest in air transport. Considerable savings in the fuel bill can be achieved by reducing inert weight carried on board aircraft.

Excessive amounts of potable water fall into this category. Carriers are therefore encouraged to monitor water consumption on their flights. This will enable them to adjust the volume of water carried according to route, flight time, uplift possibilities and, if desired, number of passengers.

Potable water systems are susceptible to contamination by bacteria and other micro-organisms. All water for drinking and other personal use made available to crew and passengers must be free from chemical substances and microorganisms which might cause illness in any form. It is therefore essential that potable water is chlorinated and that handling companies adhere to sanitary requirements.

Regardless of its origin, water destined for aircraft potable water systems must be chlorinated. Only products approved by the local health authority may be used for the chlorinating of drinking water. Total chlorine content at the point of filling into the aircraft must be in the range of 0.2-0.5 mg/l.

Once filled, the potable water servicer may only be used for aircraft servicing after a minimum of 30 minutes, in order to allow the chlorination agent time to react. The water should be circulated within the servicer during this time to ensure thorough mixing with the chlorination agent.

The filling hose connector must be of a different size as recommended by ISO 450. Aircraft — Connection for Water of Drinkable Quality.

Water samples for bacteriological examination from airport water supply systems, servicing vehicles and aircraft water systems should be collected regularly by health authorities and airlines. Sampling should be carried out not less than four (4) times a year. The frequency may be increased if the need arises. Bacteriological contamination of the water must not exceed the standards established by the World Health Organization (WHO) or those issued by the local health authority, if these are more stringent.

If the water supplied to the aircraft is checked by the local health authority, the results should be made available to carriers upon request.

Water from fill stands, water vehicles and aircraft must comply with the local authorities quality standards and standards established by the World Health Organisation (WHO),

- The microbiological examination of drinking water must be performed by a qualified local laboratory quarterly; the examination result shall be filed at the station.
- In the water truck or handling agent office there must always be a certificate confirming the purity of drinking water.

Potable water servicers must *not* be filled up from the same tap as toilet servicers.

Potable water servicers and toilet servicers must *not* be parked in the same area.

Personnel engaged in toilet servicing are *not* allowed to perform water service at the same time.

Before the fill hose is connected to an aircraft, a few liters of water shall be pumped to waste, to ensure thorough flushing of hose and nozzle. When the hoses are not in use, all nozzles or connectors must be protected from contamination either by covers or by immersing them in receptacles containing chlorinated water.

The contents of the potable water servicer must be drained not later than twenty-four (24) hours after filling.

The cleaning and disinfecting of servicing vehicles must be performed monthly.

**WARNING:**

If the potable water system is not drained or in normal service a minimum of one time each three days, the growth of bacteria can occur. If bacteria growth continues, and you drink the water, illness can occur.

### 3.3.1 Potable Water Filling Procedure CRJ

When servicing the aircraft during the cold weather season, additional tasks might be needed. These are included in the relevant steps in the procedure and are marked with the symbol “\*”.

1. Follow the steps below to fill the fwd potable water system:

*Note:*\* Under freezing condition, remove any ice using the special fresh water system steam cannon or use hot air. Keep the steam or hot air in the vicinity to the access door until the door and handle/latch moves freely. Open access/service panel – Forward Potable Water Service Door.

1. Open the filler port cap.
2. Connect the water supply hose to the water fill port.
3. Turn the DRAIN/FLIGHT/FILL handle to the FILL position.
4. On the servicing cart, open the water supply valve.  
**CAUTION:** Do not exceed the maximum allowable pressure limit of 50 psig (3.51 kg/cm<sup>2</sup>).
5. Observe the drain mast as the forward tank fills.
6. Close the water supply valve when the water starts to exit from the drain mast. Let the water fully drain from the drain mast.
7. Turn the DRAIN/FLIGHT/FILL handle to the FLIGHT position.
8. Disconnect the water supply from the fill port. Let remaining water drain from the fill port.
9. Close the fill port cap.
10. Wipe off the service panel and close the access/service panel.

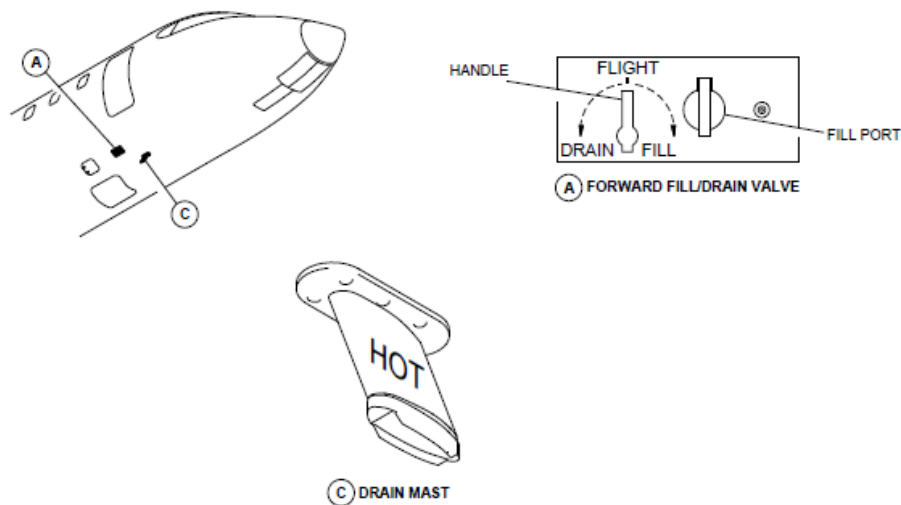
### 3.3.2 Potable Water Draining Procedure CRJ

When servicing the aircraft during the cold weather season additional tasks might be needed. These are included in the relevant steps in the procedure and are marked with the symbol “\*”.

It is necessary to fully drain the water system before you add a disinfectant or when you park the airplane in cold weather.

If it is cold weather and the aircraft is parked for a longer period of time with the cabin heating on, make sure that all entry/service doors, cargo doors and service doors in the pressurized area are closed, in order to keep the aircraft warm.

#### Illustration of fwd potable water system



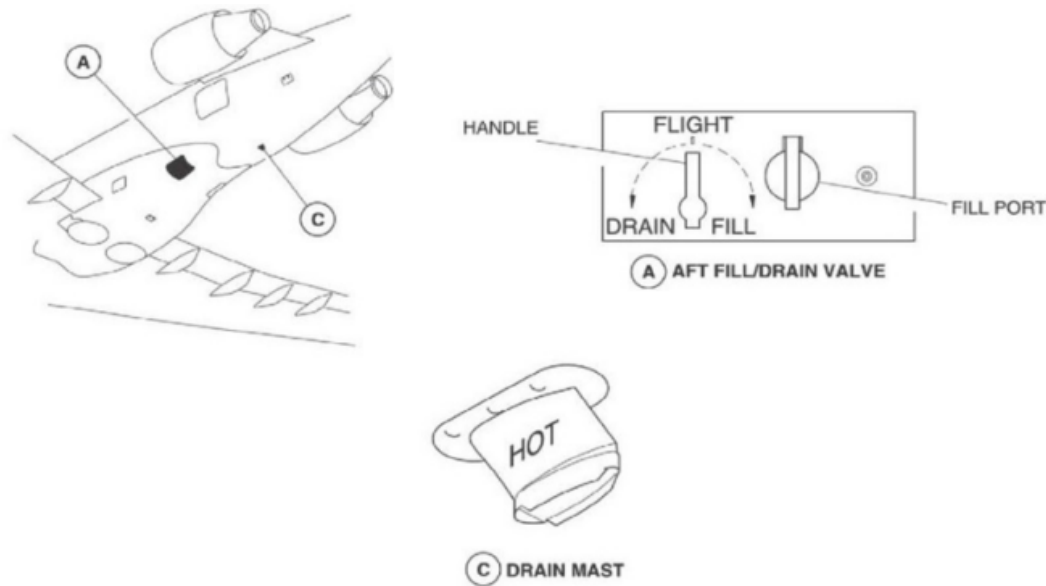
Follow the steps below for draining of the fwd potable water system:

- Open access/service panel – Forward Potable Water Service Door.

*Note:\** Under freezing condition, remove any ice using the special fresh water system steam cannon or use hot air. Keep the steam or hot air in the vicinity to the access door until the door and handle/latch moves freely.

- Put a container below the forward drain mast, minimum 60 l.
- Turn the DRAIN/FLIGHT/FILL handle to the DRAIN position.
- Observe the drain mast as the forward potable water tank drains.
- Turn the DRAIN/FLIGHT/FILL handle to the FLIGHT position when water stops to drip from the drain mast to ensure the service door can be closed.
- Remove the container below the forward drain mast.
- Close the access/service panel.
- Release gust lock and close the fwd potable water service door.
- Fill out and put the “Warning Tag” on the LH pilot’s column on flight deck, showing that the water system has been drained. Lessee’s tag may be used.

Illustration of the aft potable water system



Follow the steps below for draining of the aft potable water system:

- Open access/service panel – Aft Potable Water Service Door.

*Note:*\* Under freezing condition, remove any ice using the special fresh water system steam cannon or use hot air. Keep the steam or hot air in the vicinity to the access door until the door and handle/latch moves freely.

- Put a container below the aft drain mast, minimum 60 l.
- Turn the DRAIN/FLIGHT/FILL handle to the DRAIN position.
- Observe the drain mast as the aft potable water tank drains.
- Turn the DRAIN/FLIGHT/FILL handle to the FLIGHT position when water stops to flow from the drain mast to ensure the service door can be closed.
- Make sure that no tools, equipment or other unwanted material is left in the work area.
- Remove the container below the aft drain mast.
- Close the access/service panel.
- Fill out and put the “Warning Tag” on the LH pilot’s column on flight deck, showing that the water tank has been drained. If the aft system shall be drained, the “Warning Tag” shall be placed after both water systems are drained. Lessees tag may be used.

### 3.3.3 CRJ Toilet and Water Servicing In Cold Weather Condition

See additional tasks marked with the “\*” symbol in the procedures described in [3.3.1 - Potable Water Filling Procedure CRJ](#) to [3.3.2 - Potable Water Draining Procedure CRJ](#).

*Note:* Connect GPU at the same time as heater in case heating is provided less than 2 hours before STD or ETD. Inform flight crew. Do not fill any potable water until GPU has been connected and heating provided for minimum 1 hour.

See [1.18 - Parking in Cold Weather Condition](#) for additional considerations.

### 3.3.4 Water Filling Procedure ATR

The aircraft is equipped with “potable” water system and waste disposal system. Water filling must be stopped when water flows through the overflow port.

The potable water system supplies fresh water for the lavatory sink and for the optional galley sink. Toilet tank capacity is 15 l and galley tank capacity is 10 l.

It is necessary to reduce the pressure during filling of water tanks by bending/squeezing the hose or by using lowest pressure. Filling pressure must not exceed 1 bar (14 psi).

*Note:* During cold weather conditions heater must be connected minimum 2 hours before departure. Refill of the tanks not earlier than 30 minutes before departure with warm water (30 °C). Connect GPU at the same time as heater in case heating is provided less than 2 hours before STD or ETD. Inform flight crew. Do not fill any potable water until GPU has been connected and heating provided for minimum 1 hour.

### 3.3.5 Water Draining Procedure ATR

Complete water drainage can be accomplished following the 3 steps below.

Follow the steps below to drain the lavatory water system.

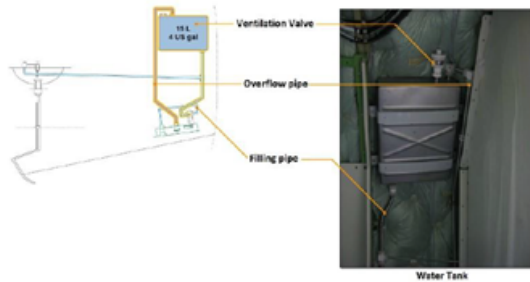
#### Step 1

- Connect the thick drain hose to the Fill/Drain connection of the Service Panel.
- Put the other end of the hose into the large drain container.
- Turn the Fill/Drain handle to “Drain” position (from 6 o'clock to 9 o'clock position).
- Water is now drained by gravity from lavatory tank and associated pipes.

*Note:* It is prohibited to drain water from the aircraft on the ground.



The drawing below represents the water system and non-visible water system elements which can be found behind the plastic wall covers.



The primary water tank will drain with relatively fast water flow. An extra 5 minutes the drain valve must be left open for water to drain from toilet sink faucet hose as it will continue to drain slowly, which will be seen as water dripping.

*Note:* Open Toilet sink faucet to examine and confirm the water from water tank and toilet sink faucet hose is fully drained.

**Step 2** (applicable during cold weather conditions)

- Follow the procedure below to drain the water from the galley tank.
- Turn the Drain Handle one quart of a turn, to the drain position



Water is now draining by gravity from Galley Tank and associated pipes, out through the drain mast located on the lower part of the fuselage (outside under the galley). Use a drain container to collect all the water from the drain mast.

The water, positioned above water boiler will drain with relatively fast water flow. An extra 5 minutes the drain valve must be left open as it will continue to drain slowly, which will be seen as water dripping.

Drain handle is in a rectangle shape.

Drain valve handle being in vertical position means the drain valve is OPEN.

Drain valve handle being in horizontal position means drain valve is CLOSED.

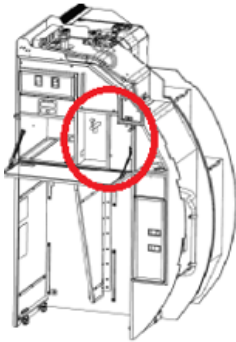
**Step 3** (applicable during cold weather conditions)

Follow the procedure below to drain the water from the galley water heater.

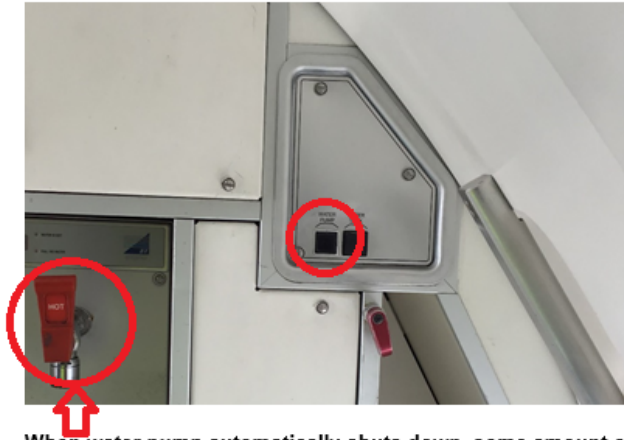
- Make sure 28V DC GPU power is connected to the aircraft.
- Use the drain kit, which is located in the LH aft emergency overhead bin and canister in the aft cargo (as per RJ loose equipment location).



- Connect the thin drain hose to the drain valve on the Water heater.
- Put the other end of the drain hose into the portable drain container.
- With the key from drain kit, on the Water Heater turn the drain valve counter-clockwise.



- Press the "Water Pump" button to ON, the Water Pump will now empty the Water Heater and the Galley Water Tank through the drain valve.



**When water pump automatically shuts down, some amount of water is still in the water boiler. Use the HOT water tap. It will allow the air to get into the water boiler and decrease the under pressure made by Water pump. Switch water pump ON and keep the water tap open. |**

*Note:* It is not possible to empty the Water Heater by gravity.

After steps above have been performed and it has been checked that no more water is coming out from either drain, also following has to be completed:

- Press the Water Pump button to OFF.
- Close both drain valves.
- Empty drain containers in appropriate place.

See [1.18 - Parking in Cold Weather Condition](#) for ATR water draining requirements in cold weather conditions.

*Note:* During cold weather conditions it is extremely important that the aircraft is drained completely. Make sure to drain all water in the pipes to the last drop!! Burst pipes and fittings are unfortunately very common on this a/c type, if water is left in the pipes and temperatures are below 0 degrees.

## 3.4 Aircraft Heating and Cooling Procedures

### 3.4.1 Aircraft Heating

#### Purpose

The purpose of heating the aircraft cabin is to provide a comfortable cabin temperature when the crew and passengers are embarking the aircraft and to make sure the seats have reached a comfortable temperature when chilled.

#### Freeze protection of aircraft

Heating is also needed to prevent the water system from freezing. If it is cold weather and the aircraft is parked for a longer period of time with the cabin heating on, make sure that all entry/service doors, cargo doors and service doors in the pressurized area are closed, in order to keep the aircraft warm.

#### Note:

- A heater shall always be connected to the aircraft in sub-zero temperatures.
- If the cabin heater is lacking in effect, unserviceable or if no cabin heater is available, always drain the water system completely according to [3.3 - Water Servicing](#).
- Do not fill any potable water until GPU has been connected and heating provided for minimum 1 hour.

**CAUTION:** When an aircraft is parked with GPU or ACU connected and all doors and outflow valves closed it may result in an undesired build-up of excessive differential pressure between the cabin and the outside environment. As a result, this may cause an explosive door opening. Follow the guidelines for respective aircraft type doors operation procedures for precautions and preventive measures to equalize pressure and release the doors safe.

#### Cabin temperatures

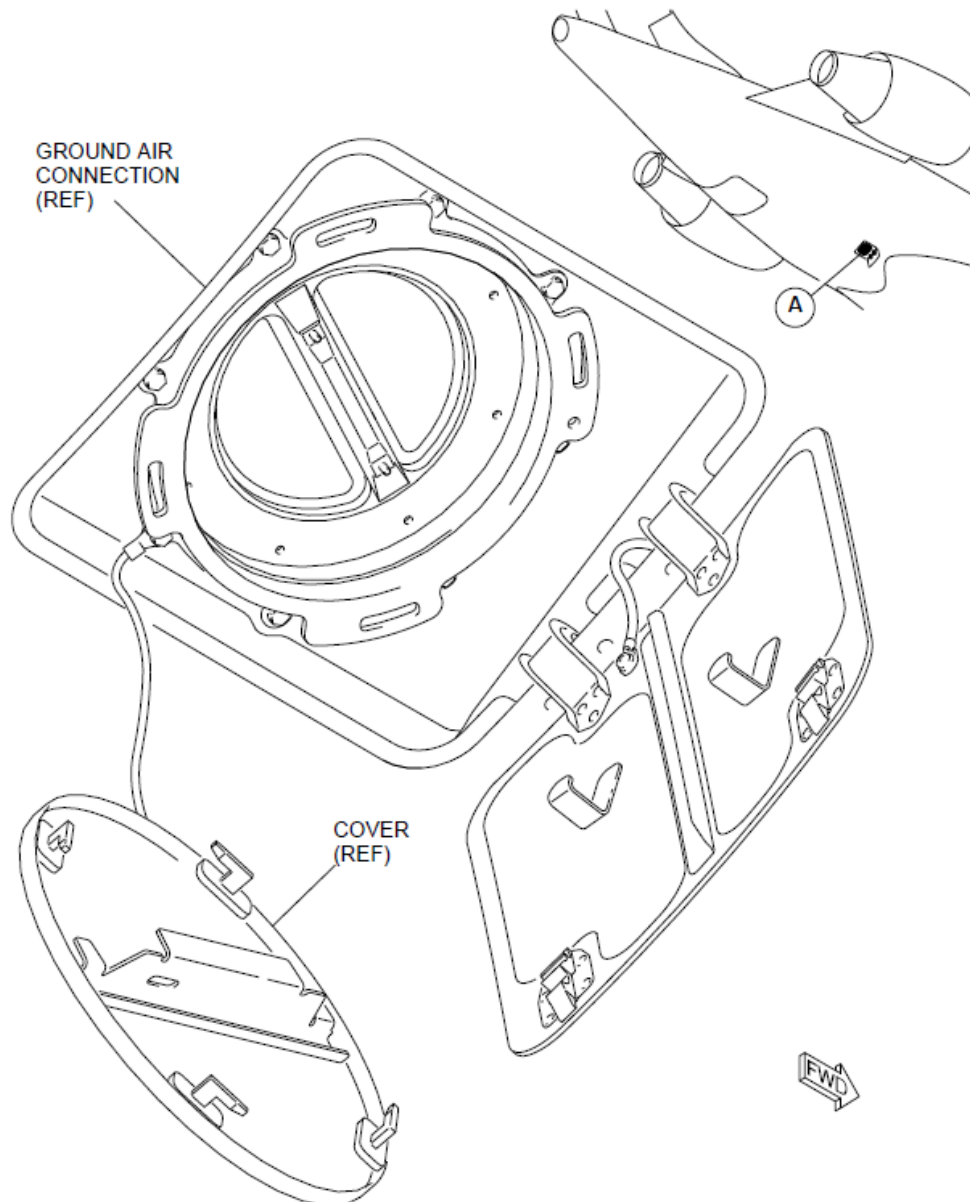
There is no absolute upper or lower cabin temperature limit for embarking the passengers. Recommended cabin temperature is not below +15 °C. If the recommended cabin temperature cannot be achieved or maintained, the decision to embark passengers rests on the Pilot in Command.

### Ground Air Conditioning Connection Point

When heating is provided with ground air-conditioning units, then cabin heating is allowed ONLY by connecting the unit to the ground air conditioning connection point.

#### CRJ900

There is a single 20.3 cm connection behind a hinged panel located on rear right side on and CRJ900, which will enable ground air-conditioning units to be used.



Follow these steps to connect a mobile air conditioning unit:

- Open the main avionic compartment door to avoid unintentional pressurization of the cabin.
- Park the air conditioning unit clear of baggage trucks to aft cargo compartment and to toilet service panel and make sure the air conditioning unit is turned towards the wind to prevent exhaust fumes from entering the air conditioning unit air intake. The air conditioning unit exhaust pipe is directed away from the aircraft to prevent exhaust from damaging the aircraft structure.

- Open the access door to the air conditioning ground connector and insert the fasteners on the supply hose connector in the slotted holes in the aircraft connector flange. Rotate and lock the supply hose connector to secure it to the aircraft connector flange.
- Make sure that the hose is not twisted.
- Start the air conditioning unit.
- Ensure that the air conditioning unit delivers the desired temperature.

**CAUTION:** HOOK THE COVER TO THE ACCESS DOOR. DO NOT LET THE COVER HANG. IF THERE IS HIGH WINDS OR JET BLAST THIS CAN PUSH THE COVER AGAINST THE FUSELAGE. THIS CAN CAUSE DAMAGE TO THE FUSELAGE.



Follow these steps to disconnect a mobile air conditioning unit:

- Shut down the air conditioning unit.
- Disconnect the ground air unit supply hose from the aircraft and make sure the check valve in the aircraft ground air conditioning supply duct is closed.
- Close the connector cover and securely close and latch the access doors for the air conditioning ground connection. Make sure that the connector cover is correctly installed and closed. Make sure that the pin on the cover is fitted into the corresponding hole on the top right of the connector before rotating it to close. Release the gust locks on the hatch before closing.
- Stow the supply hose on the air conditioning unit.
- Remove the air conditioning unit from the immediate aircraft area.
- Close the main avionic compartment door.

**WARNING:**

Do not operate space heater in position where down drafts or wind currents can force flue stack exhaust gas down to the heater intake duct. Do not park vehicles where exhaust gas can be drawn into the heater intake.

**ATR**

There is a single air conditioning connection behind a hinged panel located on the lower right side of the fuselage in front of the main landing gear on ATR 72, which will enable ground air-conditioning units to be used.

- Leave open door handle forward cargo door 50%, when heater is connected.

### 3.4.2 Aircraft Cooling

#### Purpose

The purpose of cooling the aircraft cabin is to provide comfortable cabin temperature when crew and passengers are embarking the aircraft.

#### Cabin temperatures

There is no absolute upper or lower cabin temperature limit for embarking the passengers. Recommended cabin temperature is not above +30 °C. If the recommended cabin temperature cannot be achieved or maintained, the decision to embark passengers rests on the Pilot in Command.

Aircraft cabin should be cooled in case outside temperature is more than +25 °C, planned ground stop exceeds 4 hours and cooling requested by operator.

*Note:* Only manufacturer certified or operator approved equipment shall be used for cooling the aircraft cabin.

## 3.5 Aircraft Interior Cleaning

This chapter describes aircraft interior cleaning services and their types. These should be communicated to external service providers who perform cleaning.

Cleaning should never affect the on-time performance. If the aircraft was delayed and it is not advisable to finish in time, make sure to agree with the Commander, the Purser and the Operations Supervisor upon how to organize the activities in a way to avoid a delay.

If the aircraft is in such a condition that it is not advisable to board passengers, make sure to agree with the Commander, the Purser and the Operations Supervisor upon how to organize the activities in a way to minimize the delay.

#### Cleaning Types

Types of cleaning are:

- Light turnaround cleaning (turnaround time is 25 minutes or less)
- Normal turnaround cleaning (turnaround time is above 25 minutes)
- Nightstop cleaning
- Deep cleaning

#### Light turnaround cleaning

Light turnaround cleaning service as specified below shall be performed.

##### Cabin

- Remove rubbish from seat pockets and other loose rubbish from floor and seats
- Safety belts hanging down in aisle must be replaced in aisle seats

##### Galley

- Replace the waste bags

##### Toilet

- Remove rubbish from floor
- Replace the waste bag

### Normal turnaround cleaning

Normal turnaround cleaning service as specified below shall be performed.

#### Cabin

- Remove rubbish from ashtrays on seat rests and on the wall outside the toilet door
- Remove rubbish from pockets on seat backs and other loose rubbish from floor and seats
- Remove rubbish from the luggage bins
- Check and arrange the seat pocket materials (safety cards, menus, inflight magazines, etc.), add necessary items
- Clean the seat pockets at the setbacks from big and small waste
- Clean seats from dust and crumbs with damp cloth
- Put the seatbelts accurately on seats
- Replace the headrests, if needed
- Put pillows and blankets in special packing. Remove from aircraft used cloth (headrest cover, blanket etc). Cabin crew leave used cloth on seats
- Clean the cabin sidewalls if there are dirty spots
- Vacuum clean the floor carpet
- Clean folding tables, wipe tables when necessary
- Supply paper towels, toilet paper, pillows, blankets etc. Only if requested by cabin crew.

#### Flight Deck

- Remove rubbish from floor.

#### Galley

- Replace the waste bags
- Clean the sink and the surrounding area.

#### Toilet

- Replace the waste bag
- Disinfect and clean toilets remove stains, add aircraft toilet sanitizer BLW
- Fill up with toilet equipment (paper, soap etc.)
- Clean the sink and the tap. Odorant treatment
- Clean and wash the floor and wipe dry.

## Night Stop Cleaning

Night Stop Cleaning as specified below shall be performed once per 24 hours.

**Remarks:** Any discrepancies in the interior discovered during cleaning should be reported, use cabin log.

### Cabin

- Remove rubbish from ashtrays on seat rests and on the wall outside the toilet door
- Remove rubbish from pockets on seat backs and other loose rubbish from floor and seats
- Remove rubbish from the luggage bins
- Check and add necessary items to the seat pockets
- Clean the seat pockets from big and small waste
- Clean seats from dust and crumbs with damp cloth
- Put the seatbelts accurately on seats
- Clean the chewing gum dirt from seats, floor etc. Clean out all dirty places
- Replace the headrests, if necessary
- Put pillows and blankets in special packing. If there is a need put additional blankets and pillow cases. Arrange blanket and pillow cases chemical cleaning, if necessary
- Clean windows and window blinds
- Clean the luggage bin doors with rag and cleaning polish
- Clean the cabin sidewalls if there are dirty spots
- Vacuum clean the floor carpet
- Clean all tables and table frames.

### Flight Deck

- Remove rubbish from floor and from ashtrays
- Remove loose dirt from seats backrests using vacuum cleaner
- Vacuum clean the floor
- Clean the pedals.

## Galley cleaning

- Remove rubbish and food residuals from the compartments, waste containers and shelves
- Replace the waste bags
- Clean floor, including floor behind and under the trolleys, mop and wipe dry
- Clean tables and shelves area, water boiler front, wash and wipe dry
- Clean ovens, including inserts, wash and wipe dry.
- Clean the sink and the surrounding area
- Clean and wash the waste containers (in and outside) and waste niches

## Toilet

- Replace the waste bags
- Fill up with toilet equipment (paper, soap etc.), if necessary
- Clean wash basin and taps, wash and wipe dry
- Clean toilet seat and lid, toilet bowl, toilet bench, wash and wipe dry
- Clean the mirror and shelves
- Clean the floor, mop and wipe dry

## Cargo Compartment

- Remove all loose dirt using a brush and/or a vacuum cleaner

## **Deep Cleaning**

Deep Cleaning service as specified below shall be performed twice per month.

**Remarks:** Any discrepancies in the interior discovered during cleaning should be reported, use cabin log.

## Cabin

- Remove rubbish from ashtrays on seat rests and on the wall outside the toilet door
- Remove rubbish from floor
- Clean table stowage compartment in seat armrest
- Clean the seat pockets from big and small waste
- Check and re-stock seat pocket supplies according to supply of equipment list
- Re-stock supplies into overhead bins or galley lockers and toilets according to supply of equipment list
- Clean seats, including seat frames and armrests, seat back pockets, wipe, remove stains. Seatbelts must be adjusted and placed in cross, armrests in down folded position
- Clean the chewing gum dirt from seats, floor etc. Clean out all stains and dirty places
- Replace the headrests
- Clean curtains
- Put pillows and blankets in special packing. If there is a need put additional pillow cases
- Clean overhead bins. Wash and wipe dry outside and inside surfaces. Remove from inside waste, grit, sand, etc., and clean stains.
- Clean the windows and window blinds at the inside of the cabin, wash and wipe dry. Window blinds must be placed in an open position
- Clean the sidewalls (especially in the bottom, overhead panels, passenger service unit's light, hostess call button and fresh air valve)

- Clean floors, wash and wipe dry
- Vacuum clean the floor carpet
- Vacuum clean and wipe off the dust with a wet rag on the front and back cabin walls
- Clean tables (folding tables and armrest mounted tables both sides) including table frames, wipe, remove stains. Folding tables must be stowed in an upright position.
- Clean emergency lights strips on the floor
- Clean curtains (Business Class and Crew Rest Area)
- Clean passenger entrance door carpet
- Change headrest covers, if necessary
- Clean doors and door handles, wipe, remove stains.

#### Flight Deck

**CAUTION:** Do not change any switch positions. The water bucket may not be brought into the cockpit.

- Remove rubbish from floor and ashtrays
- Remove loose dirt from seats backrests using vacuum cleaner
- Clean crew seats, jump seat, wipe armrest, headrest and levers
- Clean the side panels including the tables
- Clean floor, vacuum and mop, wipe dry
- Clean the pedals
- Clean the door and sidewalls in the cockpit
- Clean displays, wipe with dry micro fiber towel. Displays may not be vacuumed.
- Clean stowage compartments, top of oxygen mask holder, on top of glare shield, vacuum and wipe.
- Clean windows in and outside, wipe. (Outside only if windows can be opened). Clean window frames including handles, vacuum and wipe.

#### Galley

- Remove rubbish and food residuals from the compartments, waste containers and shelves
- Replace the waste bags
- Clean and wash the waste containers (in and outside) and waste niches
- Clean tables and shelves area, water boiler front, wash and wipe dry
- Clean stowage compartments inside and outside doors, latches, working counters, walls, ceiling, wash and wipe dry
- Clean ovens, including inserts, wash and wipe dry
- Clean the sink and the surrounding area
- Clean the wall panels and the ceiling panels
- Clean floor, including floor behind and under trolleys, mop and wipe dry
- Clean cabin attendant seats (vacuum or wipe), incl. seat frame and area below/behind seat
- Clean inter phones, brush, wash and wipe dry.
- Wipe emergency equipment storage.
- Clean forward and rear PA microphone

### Toilet

- Dispose waste, clean waste bins, wash and wipe dry
- Replace the waste bags
- Clean and wash floor, mop and wipe dry.
- Clean tables and shelves, wash and wipe dry. Polish mirror, if necessary.
- Clean wash basin and taps, wash and wipe dry. Odorant treatment
- Fill up with toilet equipment (toilet paper, soap etc.), if necessary.
- Clean toilet seat and lid, toilet bowl, toilet bench, wash and wipe dry.
- Clean the wall panels and the ceiling panels
- Clean door and door handle

### Cargo Compartments

- Remove all loose dirt using a brush and/or a vacuum cleaner
- Wash the floor, mop and wipe dry

**CAUTION:** No water buckets in the cargo compartment.

**Remarks:** Any condition, which may harm luggage should be reported, use cabin log.

### **Additional Cleaning Services**

Additional Cleaning Services as specified below can be performed at stations in accordance with agreements.

- Disinsection
- Disinfection
- Chemical Seat Cleaning / per seat
- Cargo Compartment Deep Cleaning

**Supply of cabin equipment list**

(may vary according to ACMI agreement or inflight service concept)

**Seat pockets**

- 1 safety card
- 1 airsickness bag

**Overhead bins or galley lockers**

- 1 roll of plastic waste bags (fwd)
- 4 rolls of toilet paper (2 fwd / 2 aft)
- 2 fresh-air spray (1 fwd / 1 aft)
- 1 pack of disposable plastic gloves (fwd)
- 2 hand cleansing gel or foam ((1 fwd / 1 aft)
- 2 packs non-stop paper towels (1 fwd / 1 aft)
- extra supply of headrest covers, hygienic bags

**Toilets**

- 1 roll of toilet paper in each holder
- Paper towels
- Soap container to be filled.

**Approved Chemicals**

Cleaning chemicals and disinfection products have to be approved by Xfly before use. Aircraft approvals and safety data sheets of these products must be sent to Ground Operations Manager (KO) before using them.

Xfly technical department will review and provide approval of use for each cleaning and disinfecting product / substance used.

In general cleaning chemicals and disinfection products have to meet aircraft cleaner specifications (AMS/ Aerospace Material Specifications).

All cleaning products and disinfectants used, in addition to their disinfecting properties and being health safe, must be aircraft-component compatible, meaning they must not have any negative effects on the individual parts or the structure of the aircraft, while also being nationally approved for use.

**Aircraft disinfection**

Disinfection of aircraft must be carried out in accordance to EASA Guidance on aircraft cleaning and disinfection in relation to the COVID-19 pandemic.

National guidelines, where available, for cleaning and disinfection, published by the national public health authorities must also be followed.

Cleaning and disinfection can be combined into one process if disinfectants are used during the cleaning.

## 3.6 Fuelling Procedures

### Purpose

The purpose of the aircraft fuelling procedures is to make sure that the fuelling is done correctly and that the fuel is of the correct type and correctly recorded.

### General

When required, water contamination check (Shell water detector test) shall be carried out before the fuelling is started.

The fuel receipt shall be delivered to the Pilot in Command so that he/she can document fuel figures in aircraft log.

A Flight crew member or a Xfly approved representative must be present during the fuelling procedures.

### Fuel for ordinary use

Xfly is using jet fuel (Jet A or Jet A-1). Fuel used must be free from contamination and of the correct grade and specification for Xfly aircraft types.

It is not permitted to use wide-cut fuel (e.g Jet-B or equivalent) for Xfly aircraft.

### Fueling Safety Zone (FSZ)

Fueling safety zone (FSZ) is defined as an area of at least 3 m (10 ft) in any direction from the center point of all fuel vent exits, refueling plugs, aircraft refueling ports, fuel hydrants, fuel hoses and fueling vehicles. This distance may be increased as required by local airport or civil aviation authorities.

Within the fueling safety zone FSZ, all personnel must ensure that they:

- Do not smoke.
- Only use company-issued and approved radios, radio telephones, pagers, flashlights/torches, lamps and lighting systems. Battery chargers must not be operated.
- Enter the FSZ only when required by your current job task/responsibility.
- Assume that fueling is taking place anytime a fuel vehicle is on the stand during aircraft servicing and fuel hoses are 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 equipment is kept a minimum of 1 m (3 ft) away from any fuel hose on the stand that is connected between a fuel truck and an aircraft.

### Safety During Fueling

The following general safety precautions must be followed when fuelling:

Avoid connecting or disconnecting the GPU while fueling operations are taking place.

No electronic devices can be connected/disconnected in the fuel tanks area.

Before commencing fueling operations the aircraft must be electrically grounded to provide dissipation of electrical energy that may develop. The equipotential connection is located on the RH main landing gear.

It is recommended that the grounding connection be the first item on and the last item off the aircraft.

If refueling commences without the grounding connection (equipotential connection) attached to the aircraft and the grounding cable is then attached, this may lead to the generation of sparks between the bonding connections and possible ignition/explosion may occur.

If during fueling, the grounding connection is accidentally detached from the grounding point, it is recommended to:

- Stop refueling.
- Wait for sufficient time for the accumulated charge to dissipate.
- Re-attach the grounding connection.
- Restart refueling.

During fueling operations, in case of fuel spillage or accident, all ground crew should be aware of the 'FUEL EMERGENCY STOP BUTTON' location on the fuel truck/pump. Following any fuel spill, the ground crew should follow the safety measures developed by the local authorities where operations are taking place.

### CRJ

The GPU or the APU may be started prior to the fuelling activity but can't be connected or disconnected during the fuelling.

### ATR

Before commencing fueling operations connect and start the DC GPU. Avoid operating any switches on the DC GPU during fueling operations.

**CAUTION:** Refueling the aircraft while Engine No. 2 is running in Hotel Mode is prohibited.

### 3.6.1 Fuelling with Crew or Other Persons Onboard

Basic requirements for fuelling with passengers on board are described in IATA AHM462 and IGOM 3.2.

Fuelling activities with passengers boarding / on board / disembarking is allowed.

Before fuelling, with crew or other persons on board, a person must be designated responsibility for the fuelling operation.

The flight crew is responsible for the fuelling at stations where no designated (other than the fuelling staff) ground personnel is available.

Start and End of Fuelling:

- The fuelling process starts at the moment when the fuel hoses are pressurized.
- The fuelling process ends at the moment when the fuel hoses are disconnected from the aircraft.

The definition “passengers on board” also implies embarking/boarding or disembarking the aircraft.

Commander must be informed about the need to board the passengers by the person responsible for embarkation, in order to initiate the requirements for fuelling with passengers onboard the aircraft. Commander also needs to confirm to the person responsible for embarkation that the requirements are fulfilled and boarding can be started.

In connection with disembarkation, the ground handling staff shall contact the flight crew prior fuelling, to make sure that the below safety requirements are met.

In addition to all other applicable requirements the following conditions must be fulfilled:

- Airport authorities / ATC (as applicable) have been informed. Local authority requirements may require the presence of fire and rescue unit. This must be checked before fuelling with passengers onboard starts.
- Ground handling staff is qualified for the task and is able to handle emergency procedures concerning fire-fighting, communications and initiating and directing evacuation.
- Flight crew must be present at aircraft for initiating an emergency evacuation if so needed.
- Ground handling staff responsible for fuelling (other than the fuelling staff) has established and maintains two-way communication with the flight crew via headset preferably. Flight deck radio (VHF), verbal communication and hand signals can be used. If hand signals are used a clear line of vision must be maintained between the flight deck member and the responsible person on ground and also between responsible person on ground and the fueller.
- Ground handling staff responsible for fuelling is posted close to the aircraft but not inside the cargo hold, so that they have control over the situation.
- Ground handling staff responsible for fuelling shall inform the flight deck crew and other appropriate personnel engaged in aircraft ground handling activities when the fuelling starts and when it is finished.
- If fuelling is in progress the person responsible for boarding must have Commanders approval to initiate boarding.
- Cabin crew and passengers must be informed that fuelling will take place.
- The passengers shall be prevented from entering the fuelling safety zone area (that is the area on the ramp within a 3 m radius around the aircraft fuelling receptacles, tank vents and around the fuelling equipment). This can be done by the use of wing cones, ropes, signs etc or by manual supervision.
- Flight crew or other qualified persons onboard the aircraft and the fuelling operator shall be notified and the fuelling stopped if any potential hazard is detected.

- No emergency exits or aisles intended for emergency evacuation may be obstructed during the fuelling. This requirement applies for all ground service equipment and personnel.
- Exits suitable for evacuation must be provided with passenger stairs or jet bridge.
- The ground area beneath the exits intended for emergency evacuation must be kept clear.
- Where a boarding bridge is in use, an interior access path must be maintained from the aircraft to the terminal.
- Servicing activities on board, such as catering, cleaning, etc., should be conducted in such a manner that these activities do not create any hazards, and in such a way that the aisles and emergency doors are unobstructed during the fuelling operations.
- When a passenger loading bridge is not used, as a minimum a set of aircraft passenger steps should be positioned at the door normally used for boarding. Aircraft fitted with integral stairs must have these deployed.

During aircraft fuelling operations with crew and other persons on board the following safety procedures must be followed:

- Bonding connection established between the fuelling vehicle and aircraft to provide for dissipation of electrical energy that may develop;
- Connecting and disconnecting electrical equipment to the aircraft prohibited;
- Damage to the fuel hose prevented;
- APU may not be started or stopped during fuelling operations. If APU is used, it must be running before fuelling equipment is attached and removed before APU shutdown;
- When it is determined that lightning is a threat, fuelling of aircraft must be stopped;
- Fire extinguishing equipment suitable for at least initial intervention in the event of fire must be readily available and personnel trained to use of such equipment;
- In the event of fire or major fuel spill, notify local airport rescue and/or fire fighting services immediately. APU sudden shutdown may not be initiated;
- In fuelling safety zone the use of any item (matches, welding equipment, flashbulbs, etc) that could be sources of ignition or fire is prohibited;
- In fuelling safety zone the use of portable electronic devices (mobile phones, portable radios, etc) is allowed only with a proper distance from aircraft fuel vents and/or fuelling equipment;
- Any equipment performing aircraft servicing functions shall not be positioned within a 3 m radius of aircraft fuel vent openings.

<b>4</b>	<b>Aircraft Departure Activities</b>	4-1
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## 4.1 Aircraft Departure

### 4.1.1 General

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 person in charge of the departure operation shall maintain continuous contact with the flight crew and is responsible for the ground maneuver.

### 4.1.2 Actions 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 that 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 the 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.
- In the event an Air Starter Unit (ASU) is required for engine start, communicate with the flight crew on ASU positioning and engine start sequence.  
*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 wings.
- No vehicles in the proximity of the aircraft are positioned so that the headlights will dazzle the flight deck crew. The vehicle lights must be in the dipped position.
- Vehicles and personnel remain clear of aircraft engine intake and/or blast areas during engine start.

#### Anti-Collision Lights

During a standard departure, once all aircraft doors are closed, the flight crew requests pushback clearance from ATC. Once the 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 shall stop until the aircraft has departed from the area.

**CAUTION:** If the anti-collision lights are switched on unexpectedly (other than in preparation for the departure or towing operation), ground personnel shall move away and remain outside the ERA. The ground staff member shall check with the flight deck before resuming ground handling activities.

### 4.1.3 Pre-departure Walkaround Check

The walkaround should start as soon as possible after all ground servicing activities have been completed. Walk around the entire aircraft at a normal walking pace. The check shall start as close as possible to departure time. If any part of the aircraft still has GSE engaged at the time of the check, or if GSE re-engages with the aircraft after the check, the applicable area(s) must be reinspected.

The pre departure walk around check shall include 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. *Exception: external power and headset panels until in use.*
- 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.

*Note:* In the event of the aircraft returning to the stand, the pre departure walk around check must be repeated.

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 shall stop until the aircraft has departed from the area.

CAUTION: If the anti-collision lights are switched on unexpectedly (other than in preparation for the departure or towing operation), ground staff shall move away and remain outside the ERA. The responsible ground staff member shall check with the flights crew before resuming ground handling activities.

**ATTENTION:**

If any of the above conditions or actions are not met, any defects, damage or other abnormalities found during pre-departure checks must be reported immediately to the flight crew and maintenance.

A Ground Incident/Accident/Damage Report must be issued according to local procedures and IATA AHM 650 as well as in accordance with Xfly Ground Incident/Accident/Damage reporting requirements stated in **5.2 - Handling of Occurrences and Reporting**. Any evidence (e.g. witness paint marks) must also be recorded and photographs taken wherever possible.

#### 4.1.4 Wheel Chock Removal

Headset Operator must:

- 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 towbar 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 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 the 'Chocks Removed' hand signal to the flight crew, and ensure the flight crew repeats the 'Chocks Removed' hand signal as confirmation.
- Responsible personnel must 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. Chocks may not be removed until confirmation of the flight crew is received.

### 4.1.5 Check for the Need to De-ice

When applicable perform Contamination and Clear-Ice Check according to Xfly De-Icing/Anti-Icing Manual [1.1](#) Contamination Check and [1.2](#) Clear ice check.

Contamination Check of the aircraft surfaces shall be performed prior to departure by the commander or by other trained and approved personnel qualified to report its results directly to the commander.

## 4.2 Preparation for Engine Start

### Communication during engine start

Coordinate the engine starting sequence with the flight crew by conducting a pre departure briefing and refer to engine start procedures in this chapter.

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.

*Note:* From the Pilot-in-Command's seat facing forward, the engine on his/her left is referenced as engine number one.

### Communication during engine fire

Alert the flight crew immediately via the headset if flames are noticed from the engine or engine pylon. If a headset is not available, the appropriate "Fire" hand signal must be used.

Alert the flight crew immediately if flames are noticed from the engine tailpipe during engine starting, 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

### CRJ

The operation of jet power plants is dangerous. While the engine operates, these dangerous conditions can occur.

There is a very strong suction at the front of the engine that can pull persons and unwanted materials into the air inlet.

Very hot, high speed gases go rearward from the turbine exhaust nozzle.

The fan exhaust at high thrust has very high speed.

When the thrust reverser is extended, the fan exhaust goes forward while the turbine exhaust goes rearward.

Inlet hazard areas are shown on the left and right fan cowl panels with stripes and placards.

There are red warning stripes, no entry placards, above idle – 13 ft hazard area placards, and warning placards.

Persons positioned near the power plant during power plant operation must be aware of the hazard areas aft of the inlet cowl lip.

This hazard area extends completely around the outer diameter and to the forward end of the power plant.

At idle power, the hazard areas start four feet aft of the inlet cowl lip.

At above idle power, the hazard areas start five feet aft of the inlet cowl lip.

If the surface wind is more than 25 knots, increase the distance of the hazard area by 20%.

If the ramp surfaces are wet or frozen, make the ramp clean to prevent injury to persons.

Make sure that persons that do not know of the hazard areas near the power plant cannot go in these areas.

**WARNING:**

All persons must stay out of the dangerous areas that are forward of the air inlet, and the sides of the air inlet. During the engine operation, there is sufficient suction at the air inlet to pull a person into the inlet. A fatal injury could occur.

**WARNING:**

The suction near the air inlet can pull in hats, glasses, loose clothing and wipe rags from your pockets. All loose objects must be removed before you work around the engine.

When the engine operates, it makes a low air pressure area in the inlet.

This low pressure area causes a large quantity of air to move from the forward side of the inlet cowl and go into the engine.

The air which is near the inlet moves at a much higher velocity than air which is farther from the inlet.

The quantity of the engine suction does not increase slowly and continuously when you go near the inlet.

The suction is small until you get near the inlet, where the suction increases suddenly.

The engine suction can pull small objects into the engine easier than it can pull large objects.

Before engine start:

- Make sure there are no tools, unwanted materials or objects in the air inlet.
- Make sure the area 12 m to each side and forward of the power plant is clean.
- Make sure the ground which is forward of the engine is strong and solid.
- Make sure the suction of the engine will not pull the unwanted material on the ground into the engine.

Make sure that persons with loose objects (such as hats, eyeglasses, loose clothing, or rags) do not go into this area.

It is recommended that ground persons stay outside of the inlet hazard area for at least 30 seconds after the fuel cutoff signal (start lever placed in CUTOFF position) from the flight compartment.

**WARNING:**

All persons must stay out of the dangerous areas that are aft of the power plant. during the engine operation, there are hot gases and high speed air which can cause injury to persons and damage to equipment.

When the engine operates, a large quantity of exhaust comes from the aft end of the engine.

The exhaust is hot and moves at high speed.

There are contamination and bad gases which were pulled into the engine by suction.

There are gases from the fuel that has burned or fuel which has not burned.

**WARNING:**

If surface wind is reported greater than 25 knots increase distance of inlet boundary by 20%. If ramp surfaces are

slippery, additional precautions such as cleaning the ramp will be necessary to provide personnel safety.

Ground personnel must stand clear of these hazard zones and maintain communication with flight compartment personnel during engine running.

At high power, the fan and turbine exhaust can blow loose dirt, stones, sand and other unwanted materials a distance of 300 feet.

The airplane must be parked at an area where injury to persons or damage to equipment or other airplanes can be prevented.

High temperature exhaust can be found 300 feet from the exhaust nozzle with the correct wind conditions. The exhaust temperature near the engine is sufficient to melt bituminous (asphalt) pavement. Concrete pavement is recommended.

When an engine is started, fuel that has collected in the turbine exhaust sleeve can ignite.

Long flames are blown out of the exhaust nozzle. All flammable materials must be kept clear of the exhaust nozzle.

There are gases in the exhaust that are dangerous to you.

Tests have shown that the amount of carbon monoxide in the exhaust is small.

There are other gases in the exhaust that smell bad and can cause injury or irritation to your eyes and lungs.

These gases will usually cause a watering or burning sensation to your eyes.

Less noticeable, but important, is the respiratory irritation.

You must stay away from small spaces where these gases can collect.

**WARNING:**

Use ear protection when the engine operates. The engines make sufficient noise to cause damage to your ears.

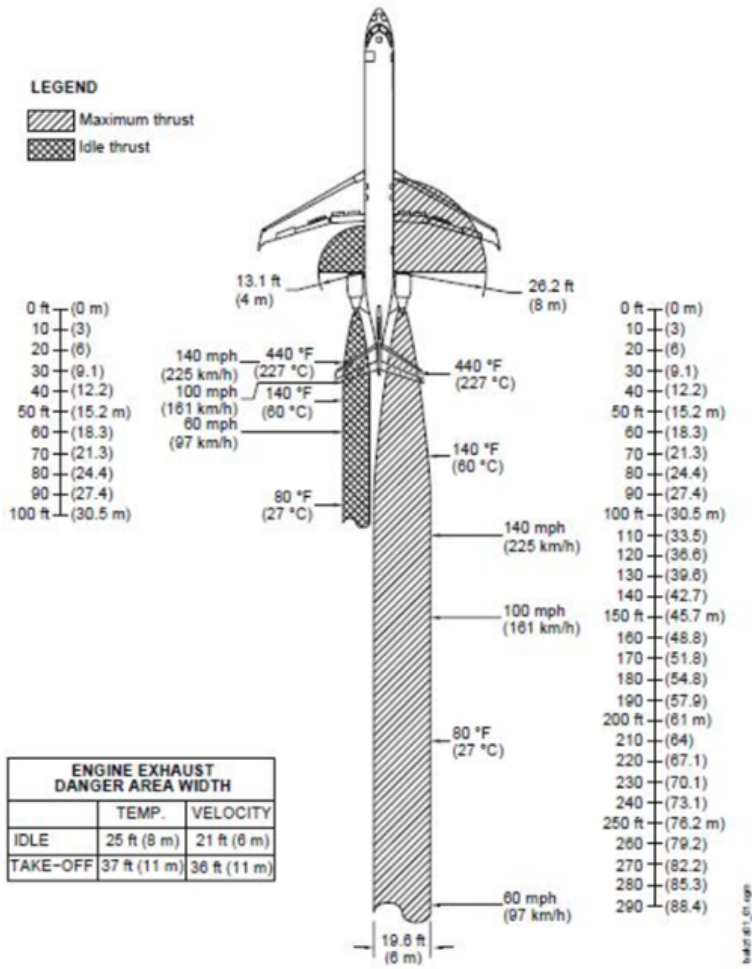
You can temporarily cause your ears to become less sensitive to sound, if you listen to loud engine noise.

You can become permanently deaf if you listen to the engine noise for a long time.

Noise can affect the ear mechanism and cause unsteadiness or an inability to walk or stand without reeling.

When you are near an operating engine, always use ear protection to decrease the quantity of sound energy which reaches your ears.

## Hazard areas CRJ900



**ATR 72**

Local procedures for start-up and taxi clearance shall be followed.

It must be ensured that there is adequate clearance between the aircraft fuselage/wing/tail plane and facility/equipment during pushback/powerback.

Engine start shall not be initiated until all passengers or deadload have been loaded, the exterior aircraft doors and hatches have been closed, and all non-relevant ground equipment has been removed from the vicinity of the aircraft.

When the aircraft is operating in Hotel Mode, the ground crew has limited access on the RH side of the aircraft. It is recommended that the ground crew perform a walk-around check at a safe distance from the aircraft. The service door must be closed during the start of Eng. No.2 for Hotel Mode. Wing lights (located on both sides of the aircraft in front of the engines) ON indicates Hotel Mode operation.

**Specific hand signals**

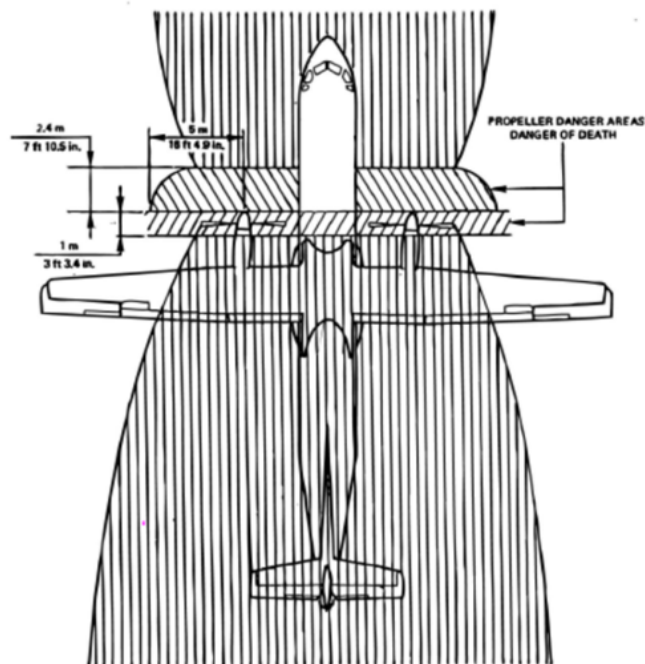
Ground handling staff must be aware of Hotel Mode start up prior start up. This is done by simultaneously showing two fingers with one hand, and closed fist with the other hand. This will indicate starting engine two with propeller break on Hotel Mode.

**Start up with pushback**

Engine two running in idle. Propellers must be running.

*Note:* Bear in mind to remove all covers, straps, caps and locks in preparation of the aircraft for departure!

*Note:* The check for removal of propeller strap and propeller covers must be included in departure walk around check before start up. Starting up engines with a propeller strap can cause serious injuries to persons and damage to aircraft.

**Hazard areas ATR 72**

### 4.3 Engine Start Using Air Start Unit (ASU)

When the APU is unserviceable or when APU running restrictions are in force an ASU may be required.

Ground pneumatic power is supplied through a 7.62 cm diameter service connector located on the right underside of the fuselage just aft of the leading edge of the main wings.

Ground Airstart Power Requirements:

- Output Air Temperature 149 °C
- Pressure 60 psi maximum
- Couplings 1 (Roylyn) 7.62 cm
- Height Above Ground 1.1 m.

There is a large hazard area in front of the aircraft and when starting the engines using ground air start unit there is considerable danger to ground personnel. The following procedures apply:

- Non-essential personnel and ground equipment must be removed from the immediate area of the aircraft and positioned within the recognized parking area.
- Any equipment not parked within the recognized parking areas must have an operator attending; this task should only be completed by trained and qualified personnel.
- If ground air supply is required, the engine furthest from the ground supply inlet must be started first to ensure safety of ramp personnel involved in the operation. The air supply is to be disconnected prior to starting the second engine using cross bleed air.

- No personnel, vehicles or equipment are to approach the aircraft whilst anti-collision lights are flashing except under the specific guidance of the person supervising the ramp operations. The permission of the Headset Operator is required prior to approaching the aircraft with anti-collision lights illuminated.
- During the airstart procedure the ASU must be positioned forward of the nose of the aircraft whenever practicable.
- The Captain will instruct the headset operator when to supply and disconnect airstart and ground power supplies.
- The headset operator will use the appropriate hand signal to instruct the airstart operator to supply or shut down the air supply.
- The airstart operator will disconnect air hose from the aircraft and close the airstart panel and remove equipment from aircraft side. To stow the air hose on the ASU personnel must walk back towards the nose of the aircraft parallel to the fuselage on the opposite side from the running engine and must remain outside the blast and ingestion areas at all times.
- On completion of engine start the ASU operators will give a thumbs up signal to the headset operator indicating their function is complete and that operators and equipment are clear of the aircraft.

### 4.4 Engine Cross Bleed Airstart

Cross bleed engine starts during the pushback process are forbidden.

Under normal procedures, starting of the 2<sup>nd</sup> engine using cross-bleed air will take place after completion of the pushback and when the aircraft is stationary on the taxiway in line with local airport procedures.

The Headset Operator must be in radio communication with the pilot in command. He should be positioned forward of the nose during this function and have visual contact with the engines.

The Headset Operator must ensure safety clearances are maintained and monitored whilst engines are running.

### 4.5 Aircraft Towing, Pushback and Powerback

Pushback and towing operations must be conducted in accordance with the established aviation standards and procedures and must comply with the specified aircraft and aerodrome procedures.

#### **Towbarless Pushback and Towing**

CRJ900 towbarless pushback and towing, Kalmar Motor TBL100E, TBL50-MK2, TPX-100E and LEKTRO type tugs are allowed. Xfly accepts for CRJ900 towbarless equipment certified by aircraft manufacturer.

Max towing speed limits below shall be followed.

Tug Model	Max Speed	
	Forward	Rearward
TBL50-MK2	20 km/h (12 mph)	5 km/h (3 mph)
TPX-100E	10 km/h (6 mph)	5 km/h (3 mph)

*Note:* These max speeds have to be lower depending on the tarmac conditions.

As a general rule for ATR 72 towbarless pushback and towing is prohibited.

Pushback and towing is only permitted with TBL 50 for technical reasons and during normal operations when technician is overseeing the process of connecting TBL and evaluating it is safe to proceed with towing or pushback operations. Technician overseeing connecting TBL and evaluating the safety of towing or pushback may not be in the aircraft during towing or pushback operations.

*Note:* Towbarless pushback or towing procedure for ATR 72 that have VHF antenna behind the nose wheel (ES-ATH, ES-ATI, ES-ATJ) requires to be extra attentive and careful while turning. There is a chance to damage the antenna if the turning angle is ca 30 degrees or more.

### **Aircraft Towing**

During aircraft towing there must be a qualified person in attendance who will ensure that:

- Sufficient trained personnel are available to carry out towing operations.
- The walk-around checks have been carried out.
- Towing movements must be carried out in accordance with the aircraft manufacturer's, Xfly and airport authority's requirements.

Notify the captain/breakman that chocks have been removed using the conventional hand signals or ground to cockpit communication.

### **Pushback with towbar**

Always move the tow-bar by hand to and from the aircraft.

Never move a tow-bar closer than 1 meter to the nose wheel with the tow-bar still attached to the push-back truck.

When maneuvering aircraft in restricted areas, additional personnel must be assigned at convenient location to give indication of clearance from buildings, other aircraft or obstructions. This would normally comprise two wingmen, one on each wingtip, and one on the tail depending on area concerned.

### **Preparation to Tow the Airplane**

Make sure that the airplane is within the center of gravity towing limitations and that the fuel is balanced. Refer to the Center of Gravity Calculations for Towing task, for center of gravity data.

See: **1.20 - Ground Stability** and follow Precautions and Warnings when towing CRJ900.

### **CAUTION:**

Do not tow the airplane with the nose gear fully compressed or extended more than 23.5 inches from the bottom of the inner cylinder to the bottom of the steering plate. You can damage the nose gear strut internally.

### **WARNING:**

If the nose gear steering lockout pin is not installed, make sure that the pressure in hydraulic system A is completely removed before towing the airplane. Failure to obey could result in injury to personnel and damage to the steering components.

### **CAUTION:**

To avoid damage to the steering components or the towing equipment, the depressurization valve knob must be depressed and held when the lockout pin is inserted.

Depress the knob and install the nose gear steering lockout pin in the steering depressurization valve or remove the pressure of the hydraulic system A.

**Note:** The nose gear steering depressurizing lockout pin from the aft of right nose wheel well door can be installed and removed without entering the wheel well.

- Make sure you have an approved brake operator or flight crew in the cockpit.
- Make sure that the ramp area is clear of all equipment and FOD at stands and in the towing path.
- Connect the towbar to the tow tractor and tow the airplane, if it is necessary.
- Put into position the wing, the tail, the tow tractor operator, and the ground crew so that all are in visual contact.
- Make sure that the break operator, the ground crew, and the tow tractor operator are in intercom or radio communication.
- Make sure that the wheel chocks are removed.
- Make sure that the hydraulic brakes are released.

**CAUTION:**

Move the airplane forward before you start sharp turns. Avoid sudden starts and stops.

If you tow the plane under high load conditions, such as towing with both tires flat on one main gear, towing on soft terrain, towing up inclines greater than 5 degrees, or other abnormal loads, refer to the tow airplane under abnormal loads task, as the nose gear towing limitations may be exceeded.

**WARNING:**

When you tow the airplane, all persons must stay out of the dangerous areas around the tow vehicle, tow bar, nose wheels, and main wheels. persons on the ground must know it is possible to be run over by the nose wheels, main wheels, and the tow vehicle. This is because the airplane will change position during pushback and towing. Make sure you keep a minimum of 10 feet separation between persons on the ground and the equipment that moves. If you do not keep the minimum distance, a fatal injury could occur.

**CAUTION:**

If you use a tow bar, you can cause the shear pins to shear if you use the airplane brakes while you tow the airplane.

Most towbarless tow vehicles do not have a shear pin to limit the loads if airplane brakes are used during towing. If airplane brakes are used while towing with a towbarless tow vehicle attached to the nose landing gear, the "hard landing or high drag/side load landing" inspection for the nose landing gear areas shall be performed.

**Note:** Maximum normal turning angle is indicated by red stripes on nose gear doors.

**WARNING:**

To prevent injury to personnel, stay clear of the nose gear when the steering lockout pin is removed from the steering depressurization valve if hydraulic system a is pressurized.

**Note:** A cockpit brake operator must be used at all times, towing without a cockpit brake operator is strictly prohibited. The cockpit brake operator must be authorised ground crew, maintenance technician, flight crew member, type-rated and authorised for the appropriate aircraft type.

The tractor and towbar/shear-pin combination should be suitable for the operation, considering the aircraft type and weight, the weather conditions, the apron surface conditions.

The tractor should be in the appropriate drive mode prior to the commencement of the operation.

Chocks should not be removed from the wheels until the tractor and towbar are fully secured to the nose gear and the parking brakes on the tractor are set.

CRJ900 has no by-pass pin and confirmation of nosewheel release shall be received from crew.

ATR 72 has by-pass pin and prior pushback (optional for pushback) or towing ground handling shall confirm to flight crew that by-pass pin is inserted and all external checks are completed. Locking pins installation is optional when you tow the aircraft for flights operations (e.g positioning aircraft for the flight crew at arrival or departure).

Prior to the commencement of any towing **operation check** should be made:

- the aircraft is "configured" correctly for the operation.
- the communications link between the tractor and the aircraft is functional.

In the event that the communications link between the tractor and the aircraft is broken during the tow the operation should be immediately stopped.

When towing on ice or snow the aircraft should be brought to a complete stop prior to making any turns, regardless of the angle.

When towing on a down slope, the operation should be at a very low speed to prevent the aircraft overtaking the tractor.

When towing during low visibility / night conditions, the aircraft should be adequately illuminated.

**Position wheel** chocks at the end of the towing maneuver, prior to disconnecting the towbarless tractor or towbar. Request permission from brake operator to disconnect the towbar or towbarless tractor. After permission received, disconnect the towbar or towbarless tractor and remove the bypass pin, if applicable.

### CRJ900 Pushback and Towing Safety Precautions and Warnings

Before towing operation starts, make sure that there is at least 907 kg of load on the NLG. Failure to obey this warning can cause the aircraft to tail tip, damaging the aircraft, towing equipment and injuring personnel. Follow the ballast requirements below when towing.

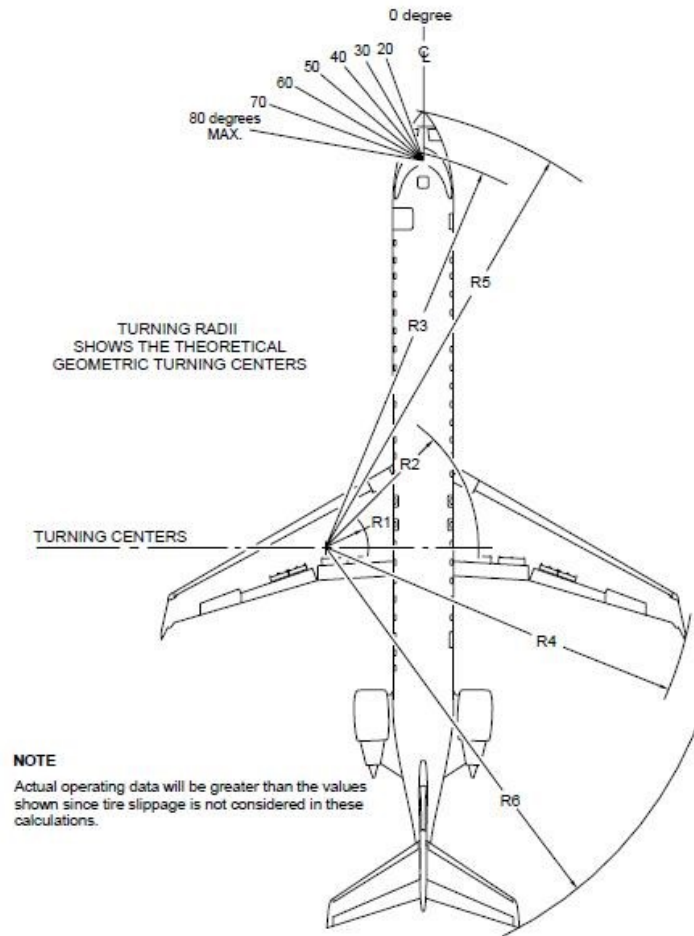
The need for additional ballast may occur when towing an empty CRJ900. In order to find out whether ballast is needed, do the following steps.

STEP No.	ACTION
STEP 1	Measure the length of the visible chrome part of the nose landing gear shock strut (see picture below). The chrome is marked with yellow vertical lines on all sides. <ol style="list-style-type: none"> <li>1. If the chrome length is less than or equal to 23 cm, no ballast is needed.</li> <li>2. If the chrome length exceeds 23 cm, proceed to Step 2.</li> </ol>
STEP 2	Find out the amount of fuel on board the a/c (ask from pilot or brakeman / maintenance personnel assisting the towing).
STEP 3	Calculate the amount of ballast bags required as per the following table. Load ballast in the FWD galley or the FWD cargo hold

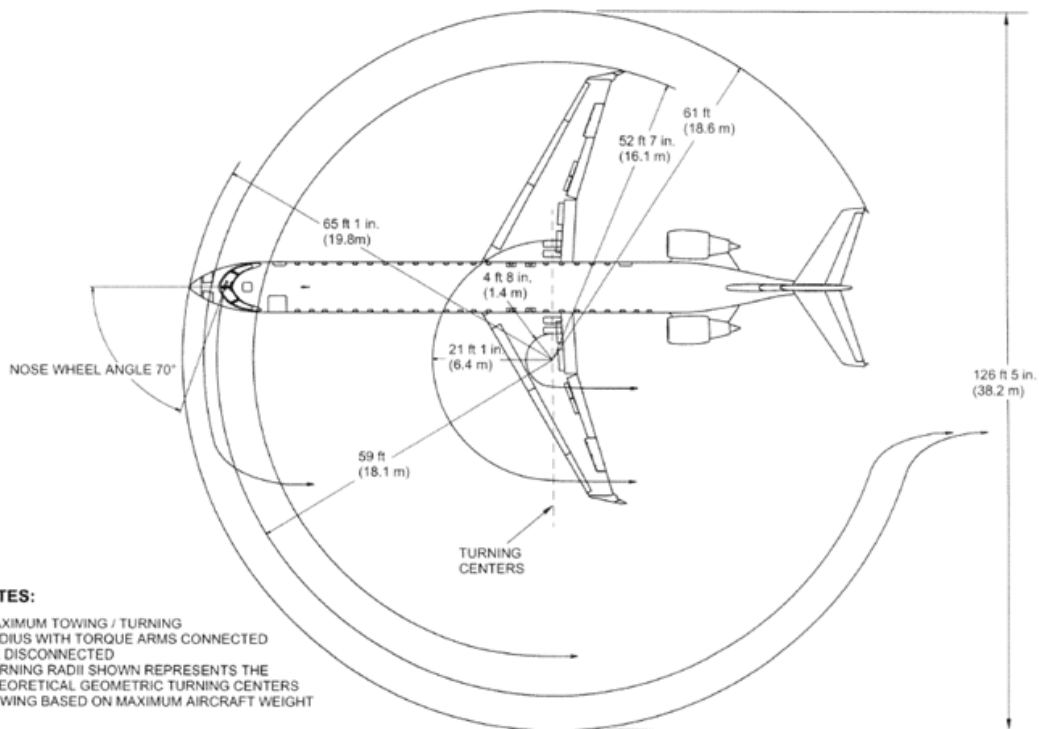
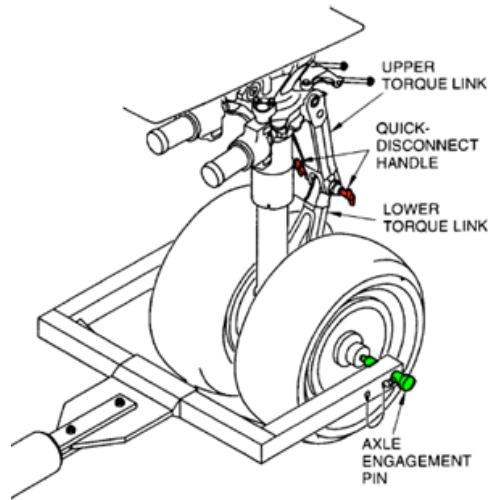


See reference for ballast requirements: [4.7.3.2 - Ballast Requirements for Towing – CRJ900](#)

Towing with Nose Landing Gear Torque Link Connected CRJ900 maximum turning angle is limited to 80 degrees.



For manoeuvres requiring sharper turns, the nose landing gear torque links must be disconnected. Torque links are disconnected and connected by maintenance staff.



**NOTES:**

- MAXIMUM TOWING / TURNING RADIUS WITH TORQUE ARMS CONNECTED OR DISCONNECTED
- TURNING RADII SHOWN REPRESENTS THE THEORETICAL GEOMETRIC TURNING CENTERS
- TOWING BASED ON MAXIMUM AIRCRAFT WEIGHT

CRJ-AG-09-00-0001.CGM

**FIGURE 32 - TURNING RADIUS - CRJ900**

## Responsibilities Coordination CRJ900 Towing

Task	Performed by	
	Contracted maintenance	Ground/towing staff
<b>PRE-TOWING ACTIVITIES</b>		
Removal of Wheel Chocks and Marker Cones on stand	✓	✓
Removal of GPU (by equipment owner)	✓	✓
Removal of ACU (by equipment owner)	✓	✓
Removal of engine covers (if applicable and as per local arrangements)	✓	✓
Removal of pitot covers (if applicable)	✓	
Storage of engine covers (as per local arrangement)	✓	✓
Storage of pitot covers (on aircraft)	✓	
Decision and request for ballast (if applicable)	✓	
Loading of ballast (if applicable)		✓
Installation of landing gear lock-pins (kept onboard)	✓	
Torque link disconnection	✓	
Agree upon means of communication (direct coms via radio preferred, if no visual contact established during towing operations)	✓	✓
Walkaround check		✓
Opening/Closing aircraft doors	✓	
Open hangar doors (if applicable)	✓	
Wingwalker with chocks during the towing of an unserviceable aircraft (if applicable)	✓	
Pre-pressurize Emergency/parking brakes or hand-operated brakes (if applicable)	✓	
<b>POST-TOWING ACTIVITIES</b>		
Positioning of Wheel Chocks and Marker Cones on stand		✓
Connecting of GPU (by equipment owner)	✓	✓
Connecting of ACU (by equipment owner)	✓	✓
Installation of engine covers (if applicable and as per local arrangements)	✓	✓
Removal of landing gear lock-pins	✓	
Torque link connection	✓	
Offloading of ballast		✓
Opening/Closing aircraft doors	✓	
Closing hangar doors (if applicable)	✓	
<b>OTHER</b>		
Wingwalkers from stand-to-stand towing operation (if applicable)		✓
Wingwalkers into hangar and out from hangar towing operation	✓	
Convey the aircraft's technical condition to the truck driver	✓	

### ATR 72 Towing and Pushback Safety Precautions and Warnings

The push-back can be performed in Hotel Mode, however NAC OVHT and ENG FIRE may be triggered during push back in hotel mode when a tailwind greater than 10 kt exists. If the tailwind is above this limit, the push back has to be done with propeller 2 running, respecting ground safety rules and airport local rules.

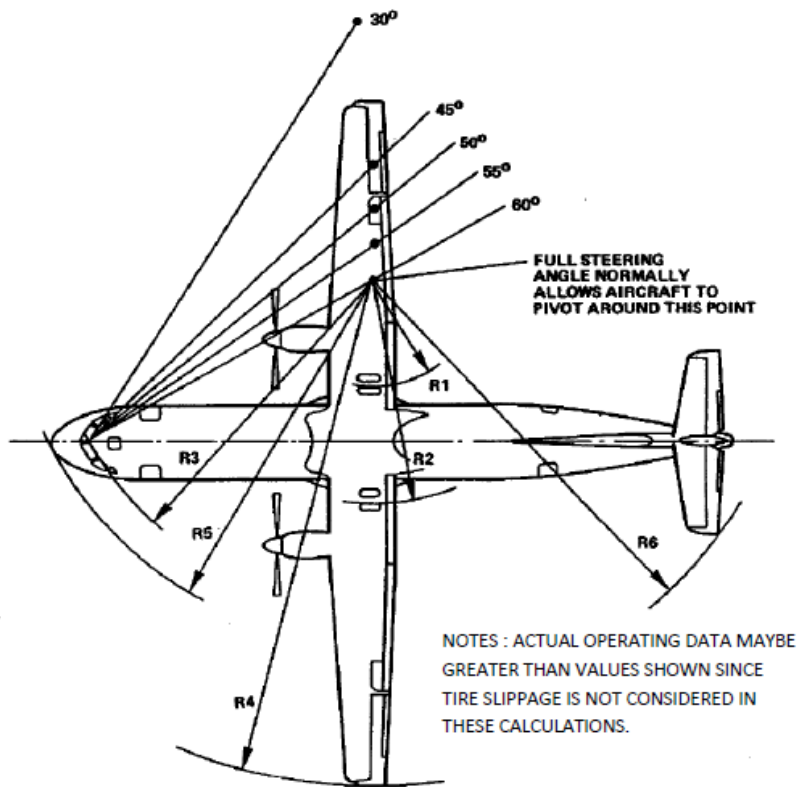
Avoid braking to stop while in a turn at any speed. Damage to the nose landing gear and/or supporting structure may result.

Turn the aircraft at low angles to avoid sliding of the main landing gear.

**WARNING:** Limit the movement of the aircraft to walking speed.

**WARNING:** The maximum turning angle for ATR aircraft is 91 degrees.

### ATR 72



### ATR 72 Powerback

It is recommended to minimize powerbacks (it should be done only at airports where it is unavoidable/necessary).

Cockpit Crew and Ground Handling must follow the essential elements to perform safe powerbacks:

- Good contact established between Ground Handling and Cockpit Crew,
- Timely turn signals,
- Slow speed.

## 4.6 Departure Communications

### General

An aircraft departure must always be conducted using interphone communications.

If proper contact cannot be established via interphone or the interphone becomes unserviceable the Commander and ground personnel shall agree on the respective hand or visual signals, which confirm, that walk around is completed, doors and hatches are closed, and ground is ready for push back / power back / start-up of engines. Conventional hand signals as defined in IATA IGOM chapter 3.4 must be used for departure.

Prior to departure a briefing must be held between the PIC and the ground agent responsible for the departure, including:

- Review of departure specifics (e.g., direction of movement, final positioning, taxi out direction)
- Review hand signals to be used, including emergency signals.

### ATTENTION:

All given instructions must be repeated or acknowledged in a manner clearly indicating that they have been understood and will be complied with.

Departure communications shown in following chapters are basic standard for both pushback and open ramp (taxi out) departures.

The specific dialogue contained herein 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 shall be made: "STOP PUSH BACK".

*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 pushback.

## 4.6.1 Departure Communication Dialogue

In case of an aircraft taxi-out, “Pushback” and “Pushback completed” phases are not applicable. The dialogue is a sample communication to be used for a departure:

Dialogue between Ground Staff and Flight Crew		
Phase	Ground Staff	Flight Crew
Preparation	Inform the Flight Crew about the use of a towbar or towbarless tractor (If applicable) <b>Call:</b> CONFIRM PARKING BRAKE SET	<b>Reply:</b> PARKING BRAKES SET <b>Call:</b> CONFIRM BYPASS PIN INSERTED/NOSE WHEEL STEERING DEACTIVATED (If applicable) <sup>1</sup>
	<b>Reply:</b> BYPASS PIN INSTALLED/NOSE WHEEL STEERING DEACTIVATED (If applicable) <sup>1</sup>	<b>Call:</b> CONFIRM CLEAR TO PRESSURIZE? (If applicable)
	<b>Reply:</b> CLEAR TO PRESSURIZE (If required)	
After completion of the pre-departure servicing checks	<b>Call:</b> PRE-DEPARTURE CHECKS COMPLETED <b>Call:</b> ELEVATING AIRCRAFT <sup>2</sup> <b>Call:</b> READY FOR PUSHBACK <sup>1</sup>	<b>Reply:</b> STANDBY
Pushback		<b>Call:</b> PUSH-BACK APPROVED (MENTION AIRCRAFT NOSE DIRECTION, START-UP POINT, PULL FORWARD, ETC.)
	<b>Call:</b> CONFIRM PARKING BRAKE RELEASED?	<b>Reply:</b> PARKING BRAKE RELEASED
	<b>Call:</b> COMMENCING PUSHBACK (MENTION AIRCRAFT NOSE DIRECTION, START-UP POINT, PULL FORWARD, ETC.).	
Engine start	<b>Call:</b> CLEAR TO START ENGINES.	<b>Reply:</b> STARTING ENGINES (MENTION ENGINE START-UP SEQUENCE)
Pushback completed	<b>Call:</b> PUSHBACK COMPLETED, SET PARKING BRAKE.	<b>Reply:</b> PARKING BRAKE SET.
Disconnecting	<b>Reply:</b> DISCONNECTING, HOLD POSITION AND WAIT FOR HAND SIGNAL ON YOUR LEFT/FRONT/RIGHT (DISPLAY THE STEERING BYPASS PIN (IF APPLICABLE TO THE AIRCRAFT TYPE) TO THE FLIGHT CREW	<b>Call:</b> CLEAR TO DISCONNECT.  <b>Reply:</b> HOLDING POSITION AND STANDING BY FOR HAND SIGNAL ON THE LEFT/FRONT/RIGHT

<sup>1</sup> Applicable to departures with towbar and towbarless tractor.

<sup>2</sup> If required, applicable to towbarless tractors.

### 4.6.2 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 aircraft's parking brakes are 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 must be pushed or/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 and engine start completed	Towbar/Towbarless Tractor disconnect	(a) Get confirmation that the aircraft's parking brakes are set. (b) Disconnect. (c) Remove the steering bypass pin, if applicable.
	Headset removal	(a) Get permission from the flight crew to disconnect the headset. (b) Advise the flight crew to hold position and wait for visual signal at left/front/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 the "All Clear" signal.

### 4.6.3 Re-establishing Communication After Departure

#### Initiated from the Cockpit

The flight crew sets the parking brake and re-establishes communication with ground staff via company channel or Air Traffic Control (ATC).

If visual communication with the responsible ground agent is still established, visual signals may be used.

#### 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 the 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 for 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 the pushback tractor in front of the aircraft in clear view of the flight crew to act as a safety barrier and prevent premature movement of the aircraft.

### 4.6.4 Open Ramp Departure

An open ramp is a taxi-in and taxi-out operation area.

- Complete all pre departure checks.
- Refer to Departure Communication (IGOM 4.6.8) and follow the required phases of dialogue.
- Ensure all staff and equipment is clear of the aircraft and 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.

## 4.7 Flight Deck Operation Activities – CRJ900

Xfly allows properly trained ground personnel to act as flight deck operators during towing.

The flight deck operator shall:

- Obey the person responsible for the towing operation.
- Coordinate signals and communication methods with the towing vehicle operator, or the marshaller, as applicable.
- Before towing starts, sit in the left-hand pilot's seat with the seat belt fastened.
- Adjust the brake pedals, so that the brakes can be applied immediately in an emergency situation.
- During the entire operation, be on alert for the hazardous situations and be prepared to operate the brakes.

### 4.7.1 Lights

This section describes the internal flight deck lights and the external aircraft lights needed when towing the CRJ 900 aircraft.

The operation of the following lights will be described in this section:

- Relevant flight deck lights.
- Position lights to be used when towing in darkness or in reduced visibility.
- Nose Gear Landing light, for the flight deck operator to signal to the tractor driver to brake in case of inter-phone or radio communication failure. The flight deck operator shall flash the Nose gear landing lights.

#### 4.7.1.1 General

Flight deck lights and external lights are operated on 28V DC power. Instrument integral lights and Logo lights require 115V AC power to operate.

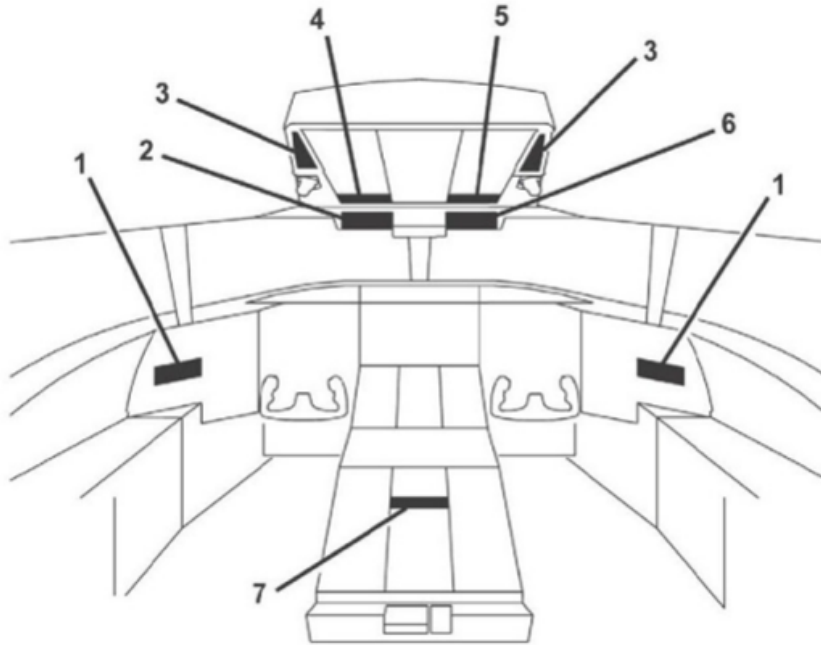
However, to preserve the aircraft's main and APU battery, do not operate the lights for long periods on batteries alone. Either connect External AC power or APU power.

#### 4.7.1.2 Illumination Requirements

Always adhere to local airport regulations regarding exterior light requirements during towing operations.

### 4.7.1.3 Flight Deck Overview

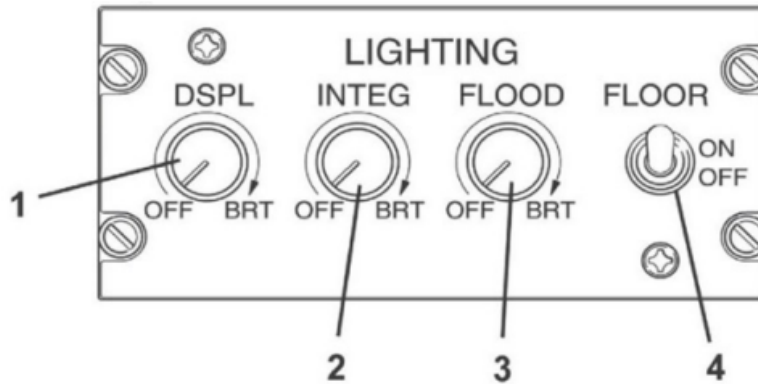
The illustration below shows the position of the Flight Deck light controls:



- 1 Pilot/Copilot lighting panel
- 2 Landing lights control panel
- 3 Pilot overhead Dome light controller
- 4 External lights control panel
- 5 Miscellaneous light control panel
- 6 Emergency lights switch
- 7 Center Pedestal lighting

#### 4.7.1.4 Pilots/Copilot Side Panel Light Controls

The illustration and table below shows the parts and functions of the pilot's Instrument panel light controls:



1 Turns on and adjusts the lights intensity on the respective pilots Primary flight Display (PFD) and Multifunction display (MFD).

2 Turns on and adjusts the integral lights intensity on the instrument panels.

3 Turns on and adjusts the Flood Lights on the respective pilot's side.

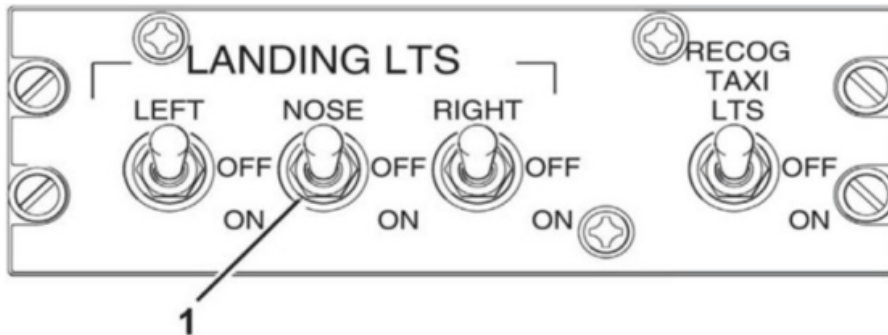
4 Turns on and adjusts the Floor Flood Lights on the respective pilot's side

**CAUTION:**

The display will get warm within 5 minutes. If you need to operate the displays for more than that, establish 115V AC and operate the avionic cooling fans.

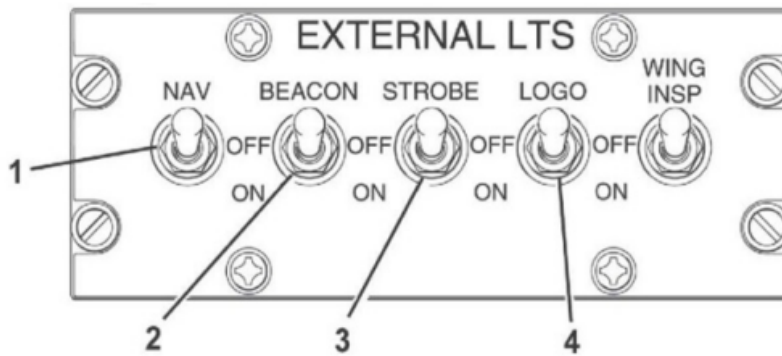
### 4.7.1.5 Landing Lights Control Panel

The illustration and table below shows the parts and functions of Landing light panel controls:



1 Turns on the and off the nosegear landing lights

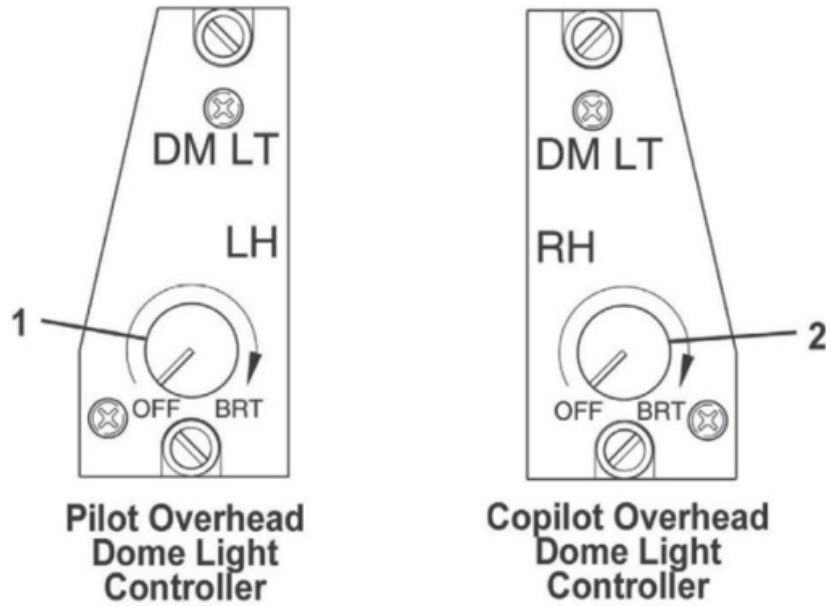
### 4.7.1.6 External Lights Control Panel



- 1 Turns on and off the Navigation lights (Red/Green/White).
- 2 Turns on and off the upper and lower anti-collision beacon lights.
- 3 Turns on and off the Anti-collision strobe lights on the wing tips.
- 4 Turns on and off the Logo lights on the engine stub wings.

## 4.7.1.7 Pilot Overhead Dome Lights

The illustration and table below shows the parts and functions of the pilot's overhead dome light controls:

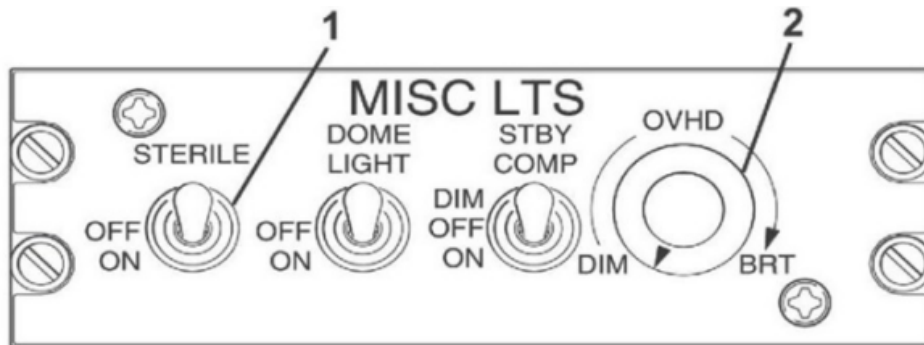


1 Turns on and adjusts brightness of the Overhead Dome light on the LH pilot's side.

2 Turns on and adjusts brightness of the Overhead Dome light on the RH pilot's side.

### 4.7.1.8 Miscellaneous Lights Control Panel

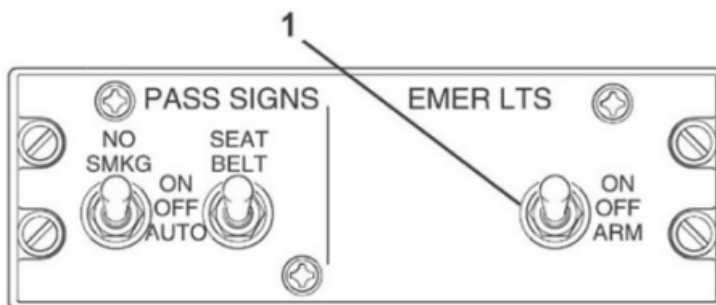
The illustration and table below shows the parts and functions of the Miscellaneous lights control panel:



1 Turns on and off all three Overhead Dome lights in the Flight Deck.

2 Adjusts brightness of the Overhead Dome lights.

### 4.7.1.9 Emergency Light Switches



**Emergency Light Switch**

1 Turns on, off or arms the emergency lights.

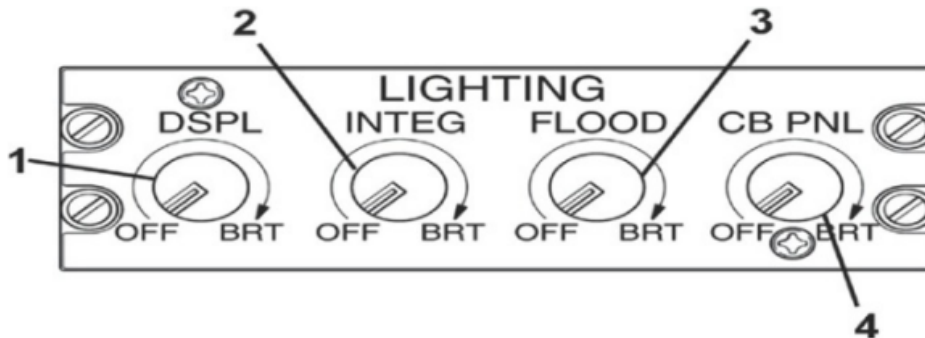
On: All emergency lights are turned on. EICAS displays EMER LTS ON.

OFF: All emergency lights are turned off. EICAS displays EMER LTS OFF.

ARM: Emergency Lights illuminate if there is no 115V AC available

#### 4.7.1.10 Center Pedestal Light Panel

The illustration and table below shows the parts and functions of the center Instrument panel light controls:



1 Turns on and adjusts the lights intensity on the EICAS primary and secondary displays, Control Display Units (CDUs) 1 and 2, Radio Tuning Unit 1 and 2 (RTU) display, the standby tuning control panel and the integral standby indicator.

2 Turns on and adjusts the integral lights intensity on the instrument panel and the edge lighting in the control panels.

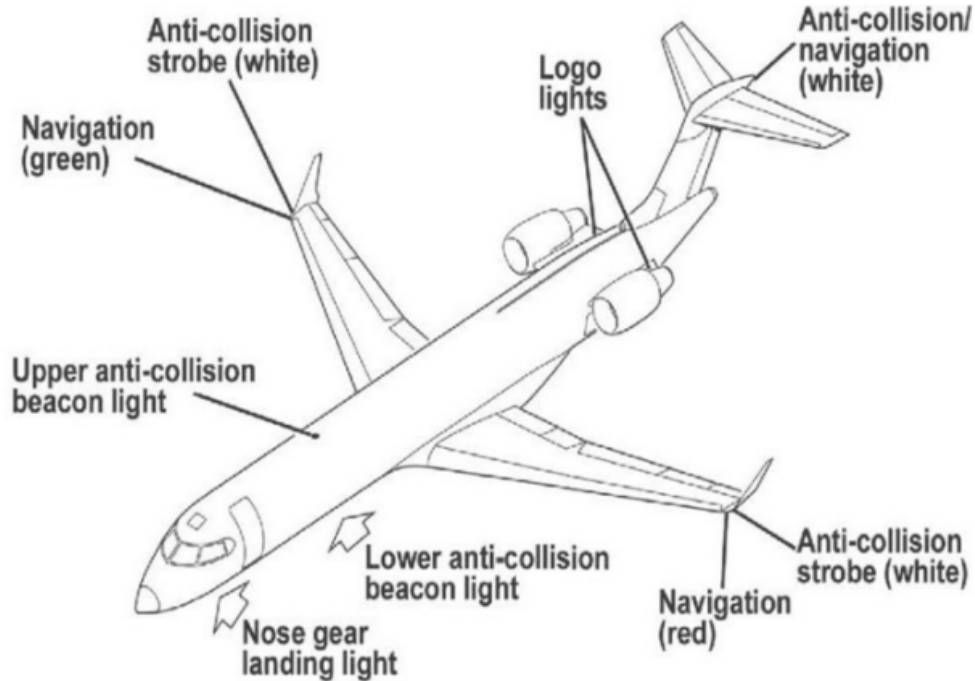
3 Turns on and adjusts the Panel Flood Lights on the center pedestal.

4 Turns on and adjusts the lights on the Circuit breaker panel.

#### 4.7.1.11 External Lights

The illustration below shows relevant external lights, for use when towing the CRJ.

Note: Local lighting requirements apply



#### 4.7.2 Operating the Auxiliary Power Unit (APU)

##### 4.7.2.1 Introduction

The Auxiliary Power Unit (APU) is a self-contained, constant speed gas turbine engine installed within a fireproof compartment located in the tail of the airplane.

The CRJ APU supplies bleed air for e.g. air conditioning, wing- and engine cowl- ing de-/anti-icing and engine start. An AC electrical generator on the APU provides an auxiliary 115 V/400 Hz AC power source for charging the aircraft batteries and operation of e.g. hydraulic pumps.

This section describes the control panels needed for operation of the APU and its related systems.

Note: As long as the APU is operating, the flight deck must be manned by a trained and qualified flight deck operator.

### 4.7.2.2 AC Power Priority

The aircraft has an automated AC power priority. There is no paralleling of AC sources. When a higher priority source is operational, it automatically takes over the 115 V AC power supply, when all three generator switches are in AUTO.

The order of priority is, in falling order of priority:

- On-side Engine Generator
- APU Generator
- Off-side Engine Generator
- External Power

**WARNING:**

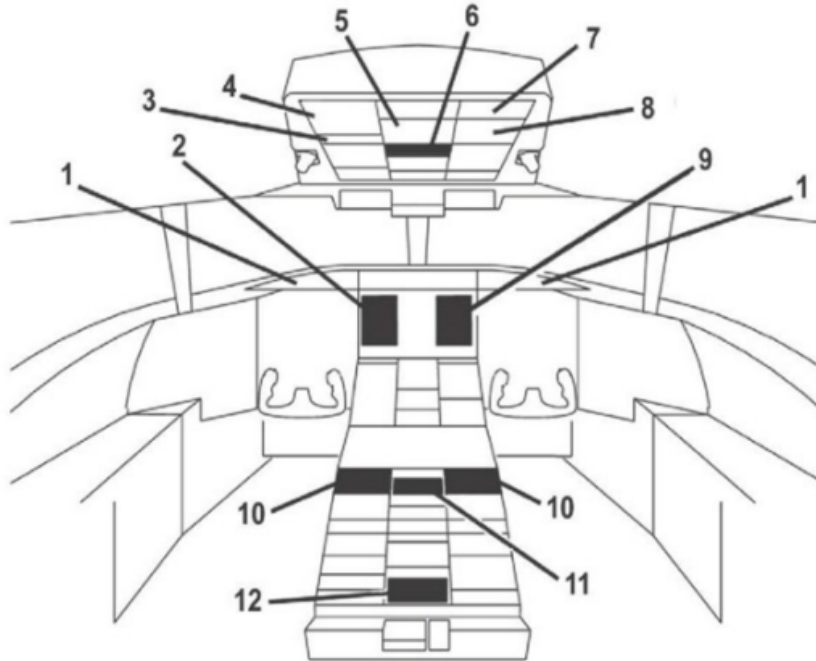
If a refueling operation is in the area, obey the warnings and cautions in the pressure refuel procedure before you perform the APU starting and operations procedure. If you do not obey the warnings and cautions, injury to person can occur.

**CAUTION:**

If you experience any abnormalities or malfunctions in the operation of the APU, displays or systems related to the operation, contact maintenance.

### 4.7.2.3 Flight Compartment

The illustration below shows an overview of the panels and indicators in the flight compartment, necessary for operation of the APU:



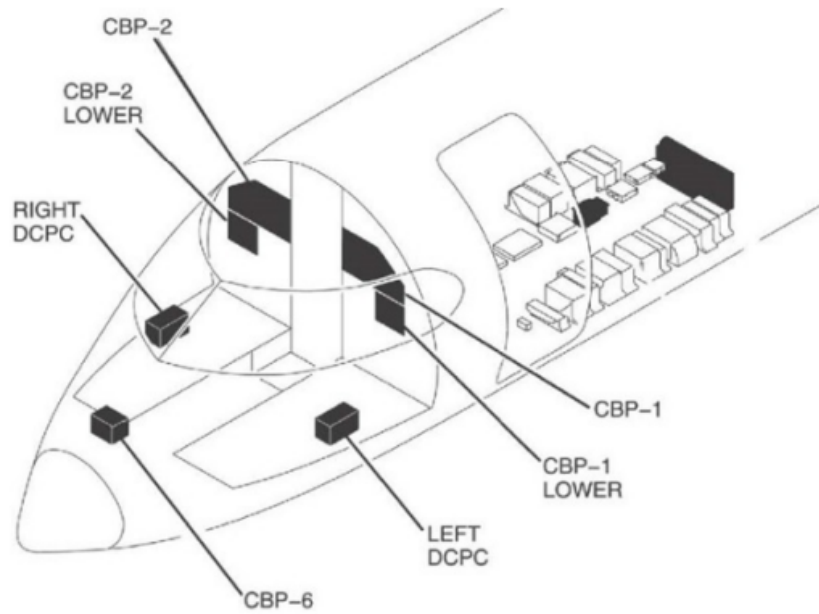
- 1 Pilot/Copilot Glareshield Panel.
- 2 Primary Engine Indication and Crew Alert System Display (EICAS).
- 3 Fire Detection/Firex monitor Panel with test button.
- 4 Electrical Power Control Panel (EPCS).
- 5 Bleed Air Control Panel.
- 6 APU control panel.
- 7 Cabin Pressurization Panel.
- 8 Air-conditioning Panel.
- 9 Secondary EICAS Display.
- 10 VHF communication Radio Tuning Units (RTU).
- 11 EICAS control panel.
- 12 Audio Control Panel (ACP).

## 4.7.2.4 Flight Deck lights

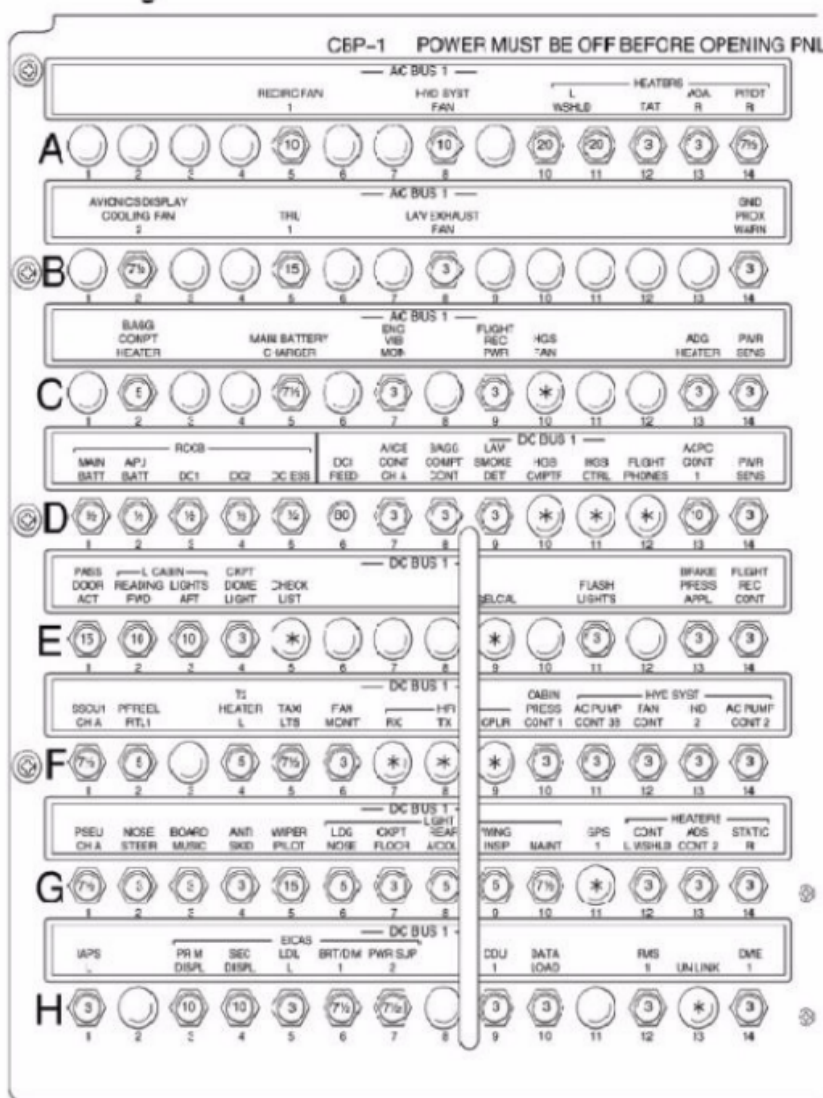
For a description of the flight deck lights, see [4.7.1 - Lights](#)

## 4.7.2.5 Circuit Breaker Panel (CBP)

Make sure that all relevant Circuit Breakers (C/B) on flight deck, are “closed”. (C/B in the “IN” position).



The below illustration is an example layout of a CBP-1. It is not to be used for operation of APU or related systems.



**CAUTION:**

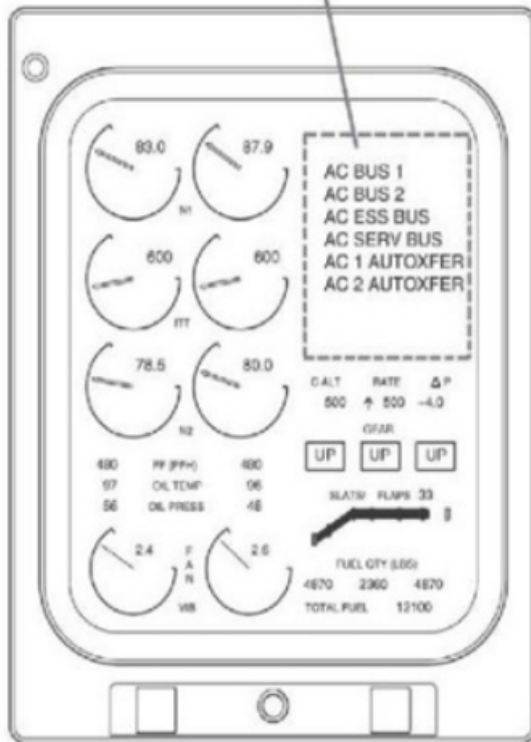
Do not operate any systems, if the corresponding C/B is "OPEN". Report the open C/B to maintenance support and await instructions. If you do not obey these instructions, you can cause damage to the aircraft systems.

## 4.7.2.6 Engine Indication and Crew Alert System (EICAS) Displays

The illustration below shows an example of the EICAS displays with the information given on the status page (STAT on the EICAS control panel, see below).

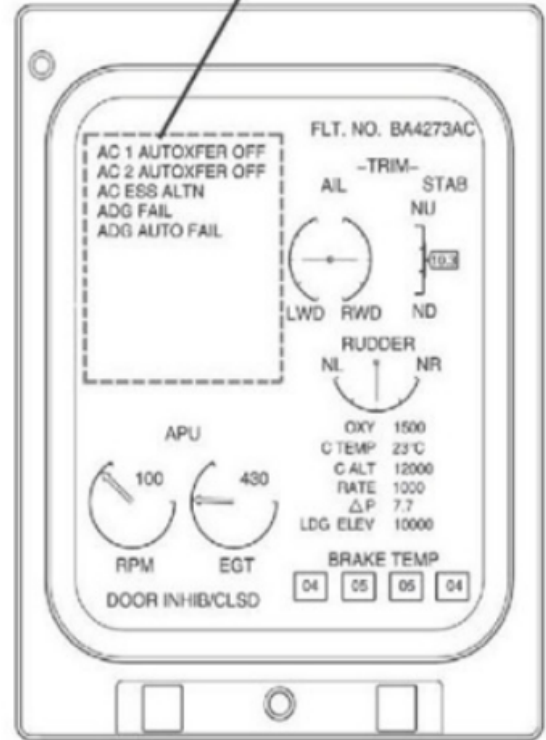
**Note:** Cautions are Amber and Warnings are Red.

### Warning/Caution messages (CAS)



**EICAS PRIMARY DISPLAY**

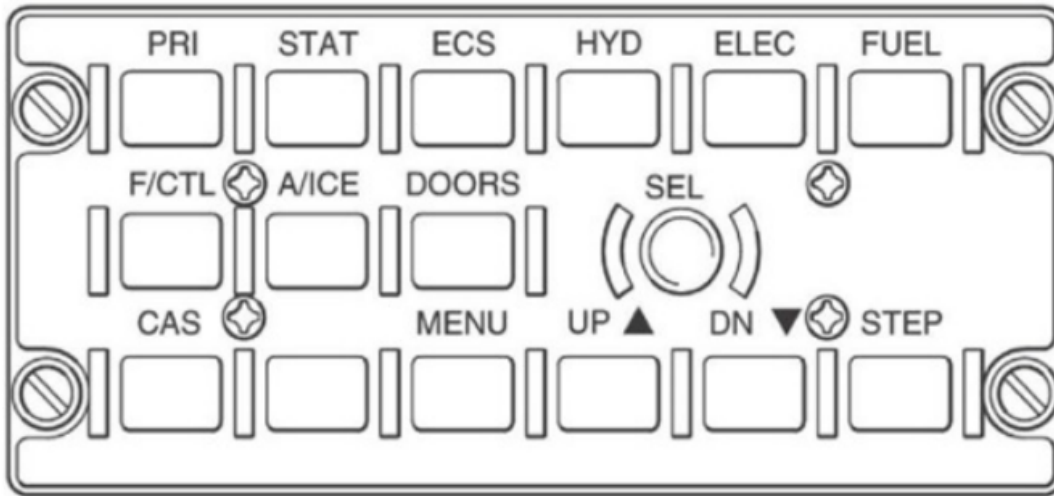
### Advisory/status messages



**EICAS SECONDARY DISPLAY  
STATUS PAGE**

## 4.7.2.7 EICAS Control Panel

The illustration below shows the EICAS control panel. Functions valid for APU operation are explained:



STAT Status page. General information, such as APU RPM and EGT and brake temperature. Push to toggle if there are several pages.

ECS Environmental Control System. Presents both air conditioning and cabin pressurization information, such as: Cabin and Flight Compartment temperature.

HYD Hydraulic Synoptic page. Information regarding hydraulic pressure and fluid quantity in the reservoirs. Indicates which HYD system supplies a certain user.

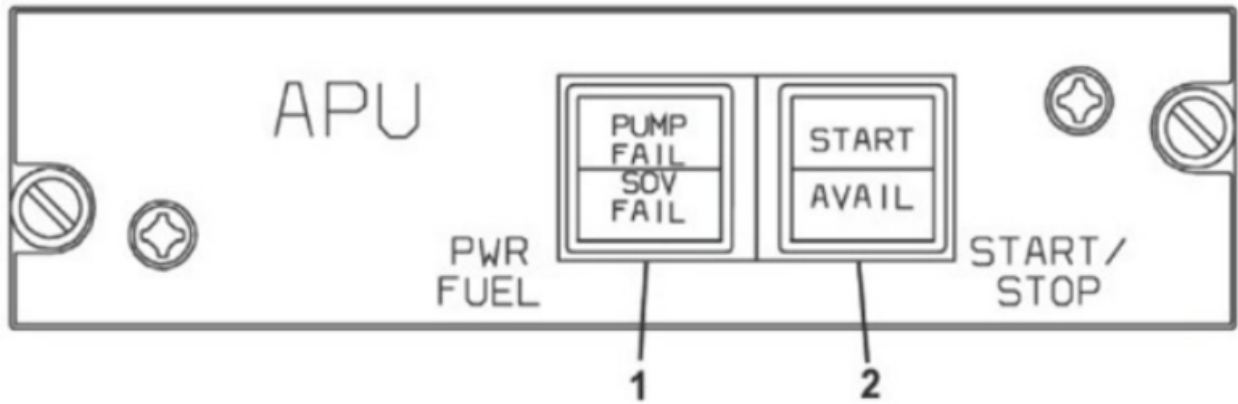
ELEC Electric Synoptic page. Information on the AC and DC electrical power. Push to toggle between AC and DC synoptic pages. Gives information on which AC source is active, APU GEN load, Volts, Hertz and powered electrical BUS:es.

FUEL Fuel page. Displays fuel quantity and fuel distribution system including boost pumps.

STEP Step. Used to step thru the EICAS pages in sequence.

#### 4.7.2.8 APU Control Panel

The illustration below shows the APU control panel:



1 PWR FUEL switch/light. Push and release the switch/light to start or stop the fuel pump for the APU. Illuminates (Amber) if there is a failure in either the pump or the Shutoff Valve (SOV).

2 APU start/stop switch/light. Push and release the switch/light to start or stop the APU.

**CAUTION:**

To operate the APU, use the latest edition of the applicable checklist.

**WARNING:**

- 1) Before operating the APU, make sure that there is no equipment or personnel in the exhaust danger area. Failure to obey this warning may cause injury to personnel or unnecessary damage to aircraft and equipment. Do not start or operate APU during refueling operation. An explosion can occur.
- 2) Before operating the APU, perform Fire Checklist drill. Failure to obey this warning may cause injury to personnel or unnecessary damage to aircraft
- 3) Before operating the APU, make sure that there is at least 227 kg of fuel in the LH main tank. Failure to obey this warning may cause injury to personnel or damage to aircraft.

**CAUTION:**

- 1) Do not exceed the starter duty cycle of one attempt/start, followed by two minute off. If the second attempt/start fails, please contact maintenance support. Failure to obey this procedure may cause damage to the APU.
- 2) Do not reset the APU generator more than once during start. If the APU AC generator fails to connect after one reset attempt, contact maintenance according to local procedure. Failure to obey this procedure may cause damage to the APU.
- 3) Do not operate the APU if the APU access door is opened. Contact maintenance support for advice according to local procedure. Failure to obey this procedure may cause damage to the APU.

#### 4.7.2.9 Fire Detection/Firex Monitor (FIDEEX) Panel with Test Button

The illustration below shows the FIDEEX control panel:



1 Fire Test push button. Pressing the button will test the entire fire detection system. It will also show indications as shown below:

(LH/RH) Master Warning lights, (LH/RH) ENG FIRE PUSH and APU FIRE PUSH illuminates, and;

The BOTTLE 1, BOTTLE 2 and APU BOTTLE ARMED PUSH TO DISCH switch/lights illuminates.

All switch/lights on the cargo/firex control panel illuminates

**Note:** No aural alerts are provided during the test.

A successful test is indicated by the text "FIRE SYS OK" on the STAT page on EICAS.

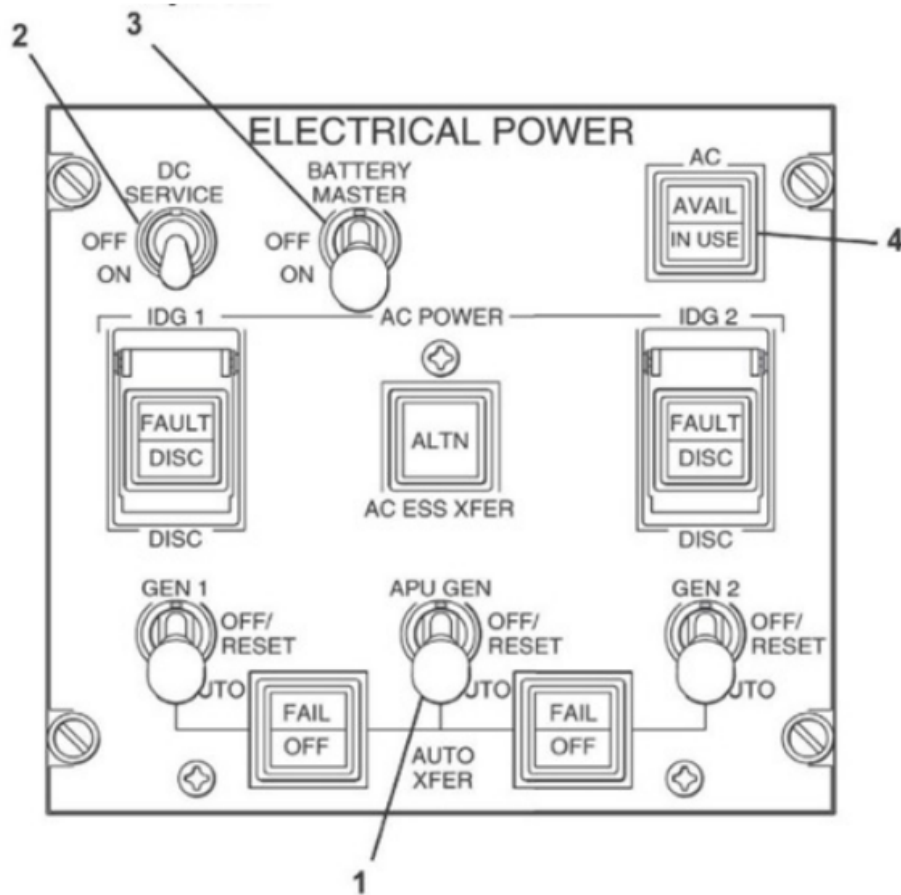
If the "FIRE SYS OK" is absent after the test, there is a fault in the system. A caution message will tell which component is faulty. Do not operate the APU in this case! Call maintenance support.

**Note:** If the fire detection/extinguishing system is functional, the APU will automatically be shut down and the extinguisher discharged. The fire drill shall however always be performed.



## 4.7.2.11 Electrical Power Control Panel (EPCS)

The illustration below shows the Electrical Control panel:



1 APU GEN Control switch.

- OFF/RESET: Disconnects the APU electrical generator and resets it if turned back to AUTO.
- AUTO: In this position, the APU generator supplies AC power to the AC buses when the APU is running.

2 DC SERVICE switch.

- OFF: Disconnects the APU battery.
- ON: Connects certain DC users to the APU battery. (E.g. Beacon lights and Navigation lights)

3 BATTERY MASTER switch.

- OFF: Disconnects the main battery direct busses from the battery bus.
- ON: Connects main batteries and the APU battery to the battery bus. The BATTERY MASTER shall be ON during APU operation.

4 AC AVAIL/IN USE switch/light.

- AVAIL: Indicates that external AC power is available for the aircraft. If depressed, the IN USE light will come on.
- IN USE: Indicates that an external AC power source is providing 115 V AC power to the electrical system.

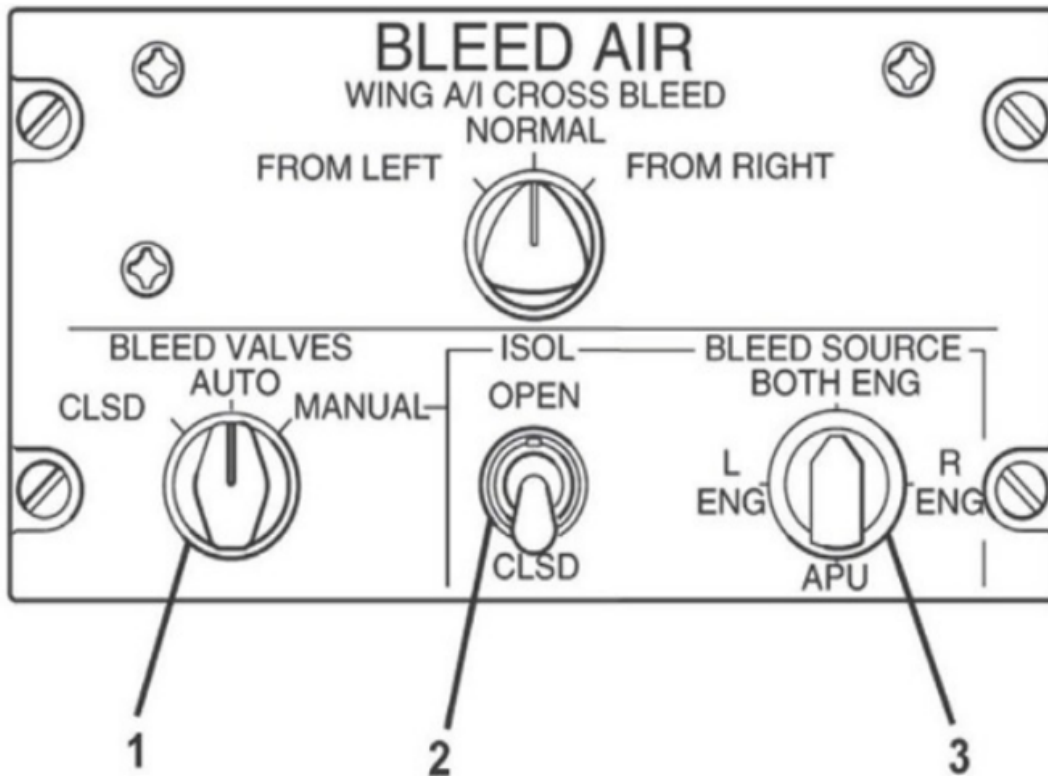
## 4.7.2.12 VHF Communication Radio Tuning Units (RTU) and Audio Control Panel (ACP)

Make sure that there are means of two-way communication between the Flight Deck Operator and the towing vehicle driver as well as a means to alerting the fire and rescue services. If you do not obey the warnings, injury to persons and total loss of the aircraft can occur.

## 4.7.2.13 Bleed Air Panel

Bleed air, produced by the APU, is used for providing air to the air-conditioning system, pressurizing the water tanks and/or high-pressure air to start the main engines.

The Bleed Air Control panel is used to select the bleed air source and to control the bleed air isolation valve.



1 BLEED VALVES control switch. Used to operate the bleed valves during the air conditioning procedure.

2 ISOL OPEN/CLSD switch. Operates the bleed isolation valve. Shall normally be CLSD during flight deck on ground operations.

3 BLEED SOURCE selector. Selects source for the bleed air. It shall point towards “APU” during ground operations.

**CAUTION:**

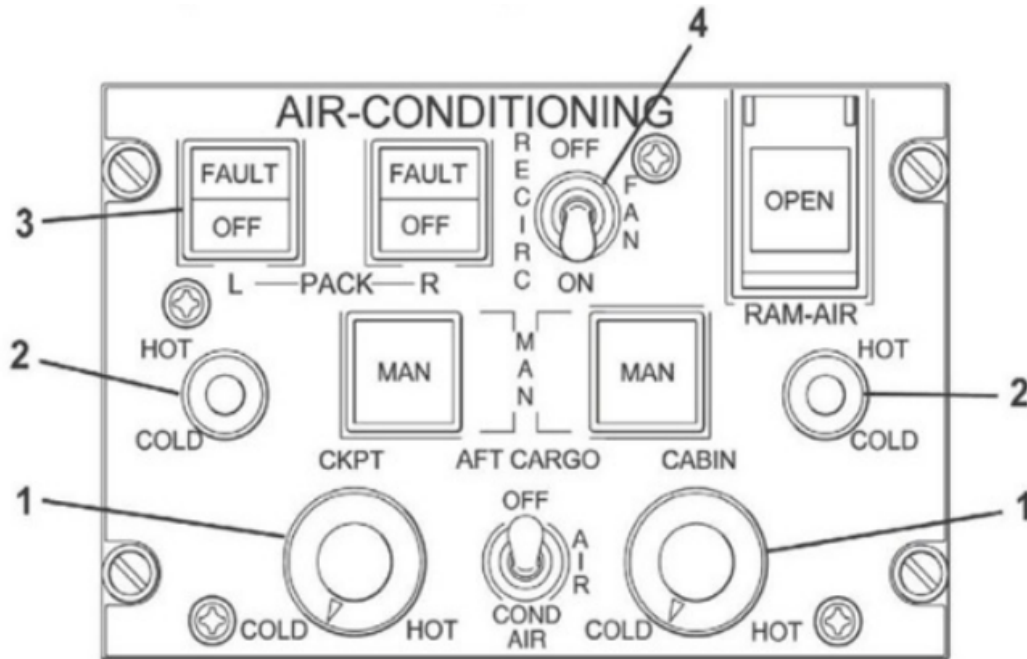
Before selecting bleed air from APU, make sure that there is no hi-pressure air unit from ground connected. Failure to obey this procedure may cause damage to the ducts and valves.

## 4.7.2.14 Air-Conditioning Panel

The Air Conditioning system provides the flight deck and the cabin with conditioned air to create a comfortable environment for passengers and crew.

Indications are shown on the EICAS PRI (Cautions) and ECS (Flow/ Temperature/ Cabin Pressure) pages.

The illustration below shows the Air Conditioning Control panel:



1 CKPT and CABIN COLD/HOT temperature control knobs. Turn to adjust the temperature in the Flight Deck or Cabin respectively.

2 HOT/COLD toggle switches. Directly controls the output of the respective air conditioning pack. Pack discharge temperature is shown on the EICAS ECS page.

**Note:** There is a time delay between moving the switches and the actual output in flight deck and/or cabin. Make small adjustments only.

3 L/R PACK FAULT/OFF switch/lights. Selects the Left or Right air conditioning pack ON or OFF.

- OFF-light indicates that the switch is in the OFF position.
- FAULT-light indicates a failure in the related pack operation.

4 Recirculation fans switch.

- OFF: Both recirculation fans are OFF.
- ON: Both recirculation fans are ON.

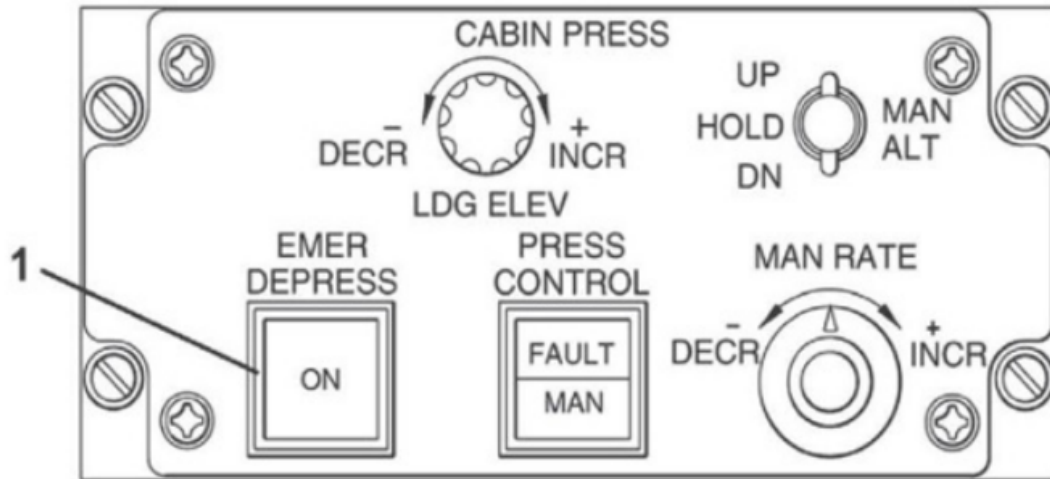
## 4.7.2.15 Cabin Pressurization Panel

Cabin pressure is normally automatically regulated on ground, through the ground valve. If the cabin for some reason should become pressurized during ground operations, the EMER DEPRESS (Guarded) switch can be depressed.

**Note:** If you have to emergency depress, report this to Maintenance or the Commander.

This equalizes the pressure in the cabin with the air pressure on the outside of the aircraft.

The illustration below shows the Cabin Pressure Control panel:



1 EMER DEPRESS switch/light. Lifting the guard and depressing the switch will equalize the pressure in the cabin with the outside air pressure.

## 4.7.3 Towing

### 4.7.3.1 Introduction

This topic describes the flight deck operation when towing CRJ. The topic includes the following:

- Landing Gear downlock pins
- Conditions for APU operation
- Brake pressure
- VHF Communication/Audio Control Panel
- Parking brake setting/releasing

#### **WARNING:**

- 1) Always use the latest issued checklists for towing and aircraft operation on ground. If you do not obey this warning, persons can be injured, and damage can occur to the towing vehicle and the aircraft.
- 2) Before towing operation starts, make sure that there is at least 932 kg of load on the NLG. Failure to obey this warning can cause the aircraft to tail tip, damaging the aircraft, towing equipment and injuring personnel.
- 3) During towing operations: Do not exceed the maximum towing speed of 20 km/h (12 mph). Failure to obey this warning can cause the aircraft to tail tip, damaging the aircraft, towing equipment and injuring personnel.

#### **CAUTION:**

- 1) Do not apply the brakes or oversteer the airplane when you use towbarless towing. If you do not obey these instructions, you can cause damage to the nose gear structure and the hydraulic systems.
- 2) Make sure that the Nose Wheel Steering is disengaged before connecting the towing vehicle or towbar. If you do not obey these instructions, you can cause damage to the nose gear structure and the hydraulic systems.
- 3) Do not exceed the maximum turning angle of 70°. Failure to obey this caution may damage the aircraft's nose gear assembly.
- 4) Ensure that the passenger entrance door is closed before connecting towbar or towbarless truck. Failure to obey this caution may lead to damage on the passenger door support wheel.

### 4.7.3.2 Ballast Requirements for Towing – CRJ900

This table shows minimum loads for aircraft towing:

Fuel (kg)	Ballast in Cpt 1 with one operator in CO seat	Ballast in Cpt 1 with two operators in CO seats	Ballast in FWD galley (Zero Operators)	Ballast in Cpt 1. (Zero Operators)
3600	0	0	0	0
3000	0	0	0	0
2500	0	0	25	25
2000	0	0	50	125
1500	25	0	100	200
1000	150	25	200	300
500	250	100	250	400
0	350	200	325	500

**Note:**

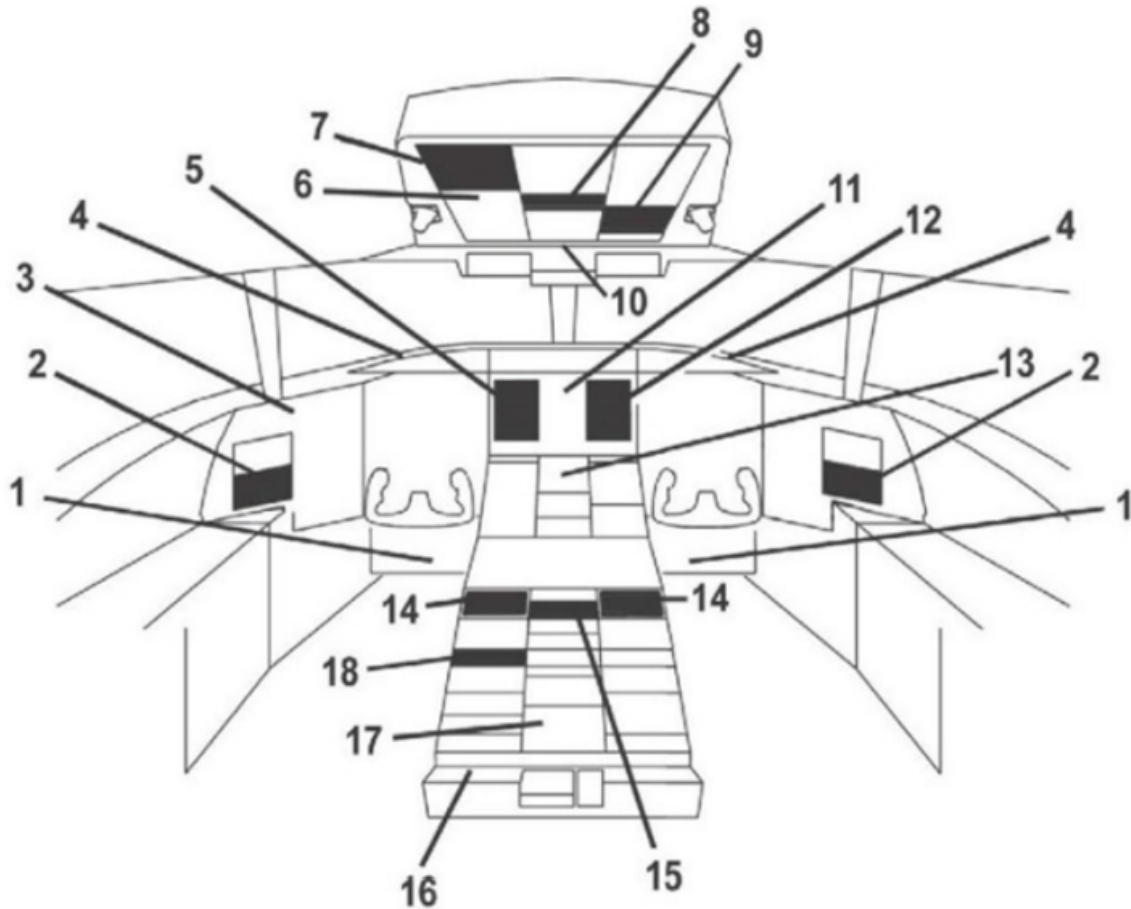
- 1) As an alternative procedure, 3 personnel on flight deck may be used. The minimum combined weight of these shall be 260 kg.
- 2) If the fuel figures in the table do not match the actual fuel on the aircraft gauges, use the lower fuel figure in the table to decide how much ballast must be loaded in the galley or compartment respectively.
- 3) Refueling of the aircraft shall only take place after order from the flight deck crew.

**CAUTION:**

Do not stack ballast bags on top of each other in compartments 1 or 2, due to running load limit in forward compartments.

## 4.7.3.3 Flight Deck Overview

The illustration below shows a flight deck overview:



- 1 Main Gear Brake pedals
- 2 Pilot/Co-pilot Windshield Wiper control panel.
- 3 Nose wheel steering panel
- 4 Pilot/Copilot Glareshield panel
- 5 Primary Engine Indication and Crew Alert System Display (EICAS)
- 6 Fire Detection/Firex monitor panel with test button
- 7 Electrical Power Control panel (EPCS)
- 8 APU control panel 9 Anti-ice control panel
- 10 Hydraulic Control panel
- 11 Integrated Standby Instrument (ISI)
- 12 Secondary EICAS Display

- 13 Landing Gear Control panel
- 14 VHF communication Radio Tuning Units (RTU)
- 15 EICAS Control panel (EPCS)
- 16 Parking brake handle
- 17 Audio Control Panel (ACP)
- 18 Radar Control panel.

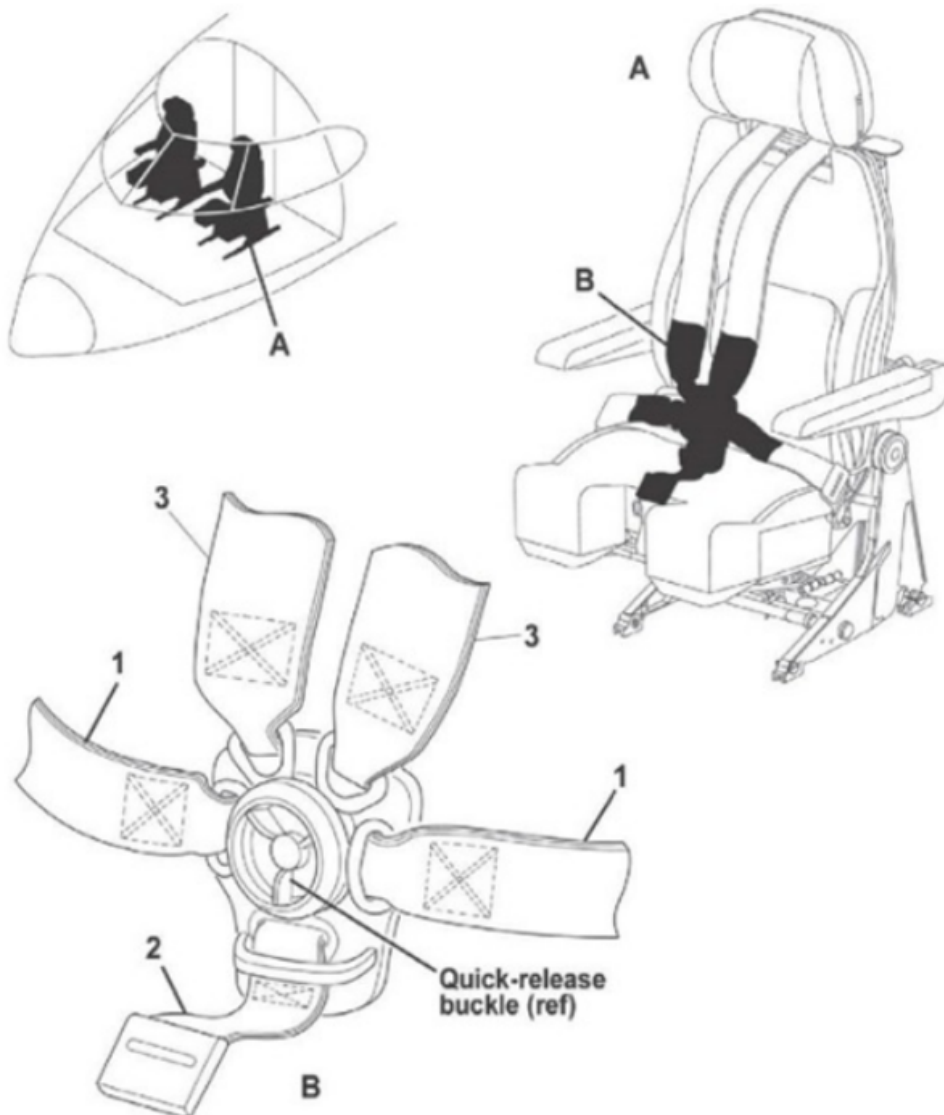
### 4.7.3.4 Circuit Breakers

Make sure that all relevant Circuit Breakers (C/B) on flight deck, are “closed”. (C/B in the “IN” position)

Ref: [4.7.2.5 - Circuit Breaker Panel \(CBP\)](#)

### 4.7.3.5 Seat Belts

The illustration below shows the LH pilots seat with the seat belt quick release buckle.



See previous page.

1 Lap Belt

2 Crotch strap

3 Shoulder harness

**WARNING:**

Always sit in the LH pilots seat with the seat belt securely fastened during towing. If you do not obey this warning, you can be injured.

### 4.7.3.6 Emergency Exit Light

Make sure that emergency exit lights switches are set in the OFF position before the towing operation starts.

Ref: [4.7.1 - Lights](#)

### 4.7.3.7 Landing Gear Downlock Pin Installation, General

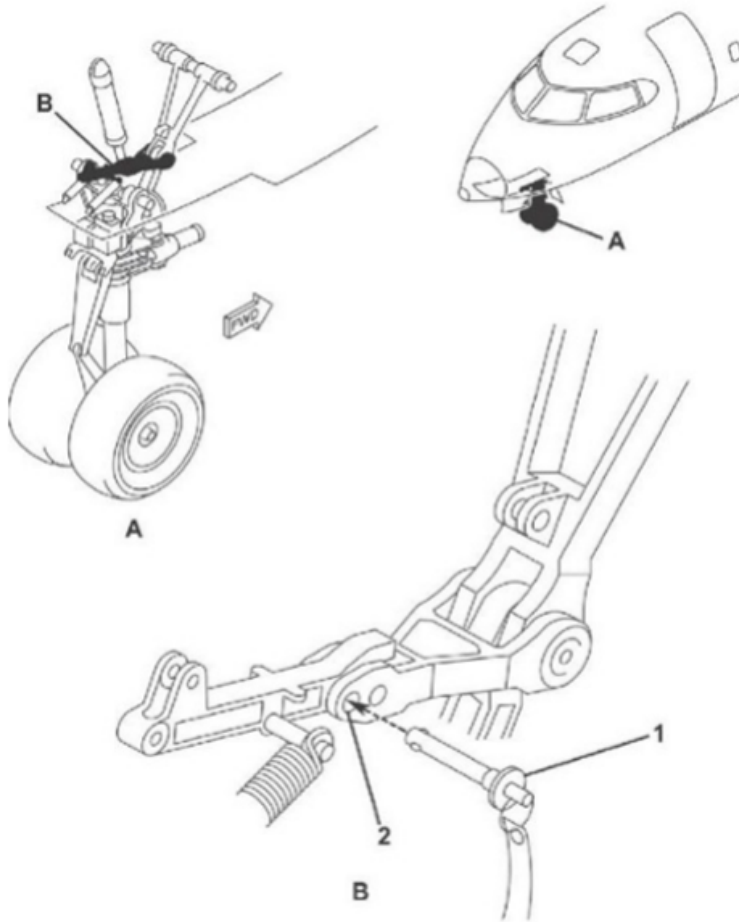
Before you pressurize the Hydraulic system: Make sure that the Landing Gear Lock Pins are installed as shown in the illustrations below. Note: Use the aircraft's own pins, which are stored in the galley.

**WARNING:**

If you meet resistance, when installing the Landing Gear Lock Pins, do not remain below the aircraft. The landing gears may retract, causing severe injuries or death to persons and serious damage to aircraft. Call maintenance support.

## 4.7.3.8 Nose Landing Gear (NLG) Downlock Pin Installation

The illustrations below show the installation of the NLG downlock pin.



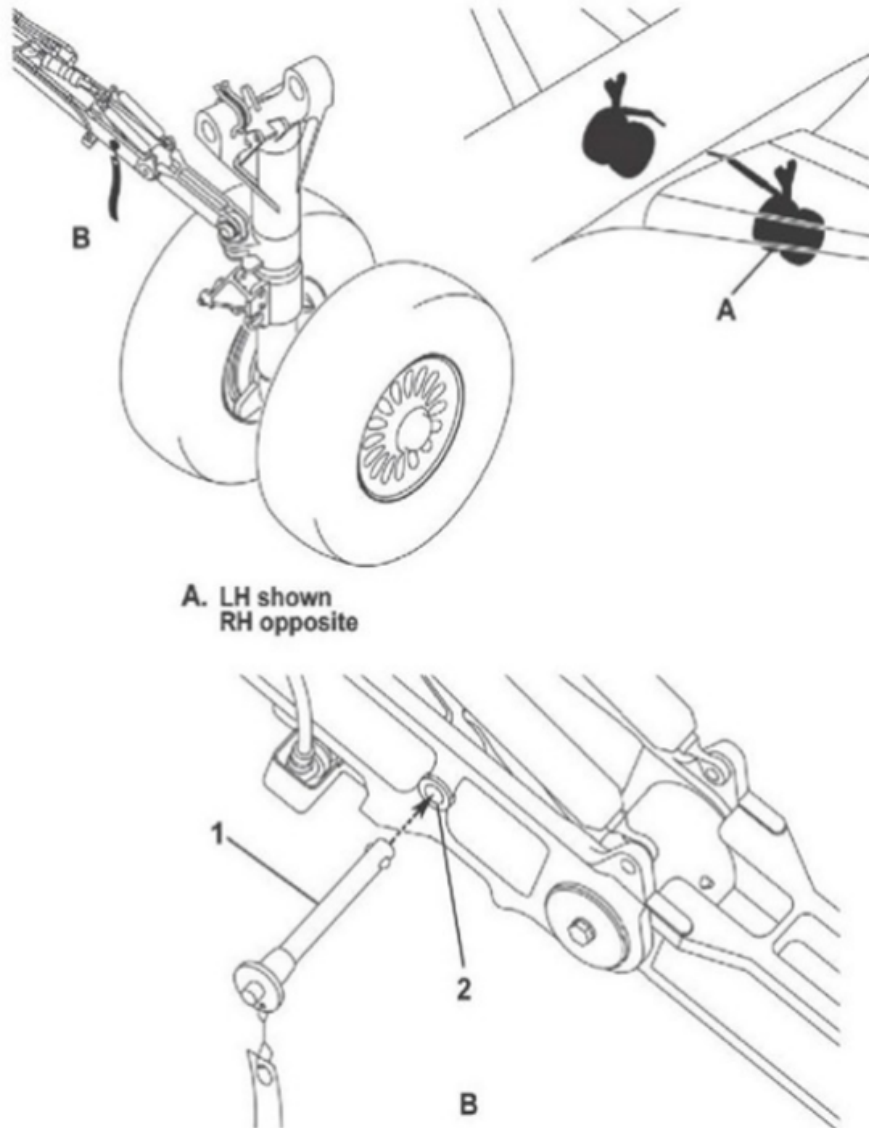
1 Lock pin.

2 Lock pin hole.

**Note:** Can only be installed from the right hand side.

## 4.7.3.9 Main Landing Gear (MLG) Downlock Pins Installation

Installation of LH pin shown as example only; RH pin must also be installed.



1 Lock pin.

2 Lock pin hole.

## 4.7.3.10 Landing Gear Downlock Pin Removal General

After towing operation: Make sure that the Landing Gear Lock Pins are removed. Remove the pins in the opposite direction of when installed.

**Note:** It shall be the aircraft own pins, stow them correctly in the galley/holder.

## 4.7.3.11 Torque Links

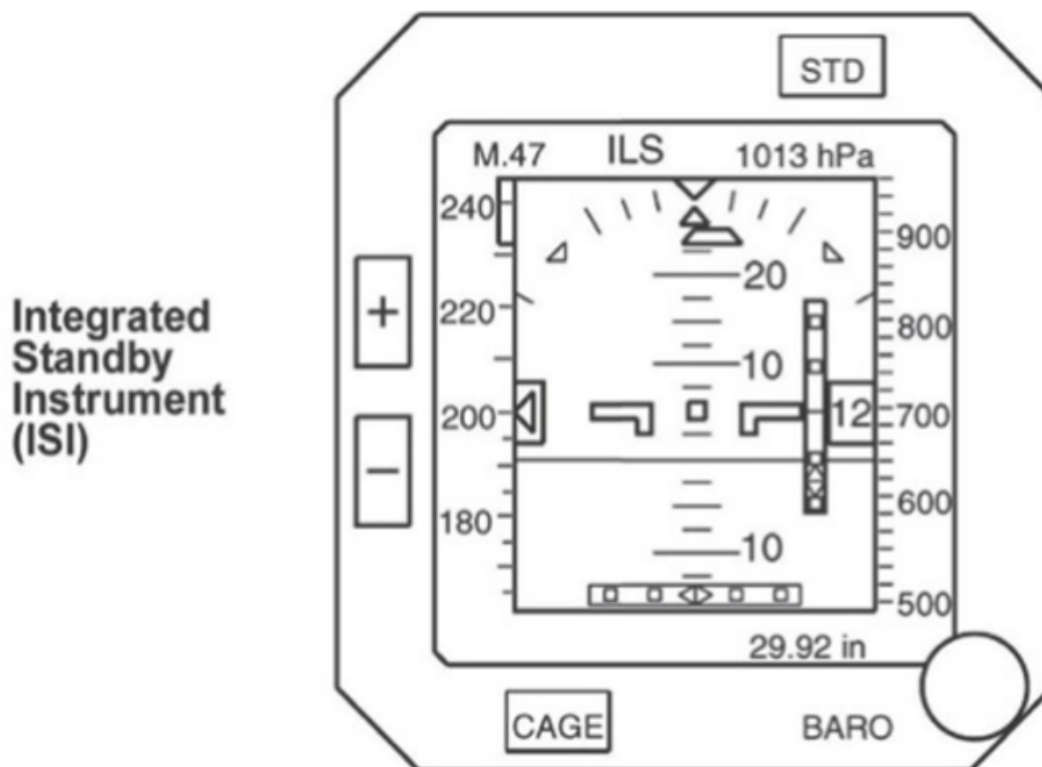
Torque Links shall normally be connected during towing and pushback operation. Only in special maintenance situations, where there is need for sharper turns, may the torque links be disconnected.

The torque link may only be disconnected by a licensed engineer.

**CAUTION:** For these special occasions always refer to the AMM volume 2, latest edition or contact maintenance or flight crew. The maximum towing speed with torque links disengaged is always 5 km/h (3 mph).

## 4.7.3.12 The Integrated Standby Instrument (ISI)

The ISI provides a secondary source of air data: Altitude, secondary Mach speed and calibrated air speed.

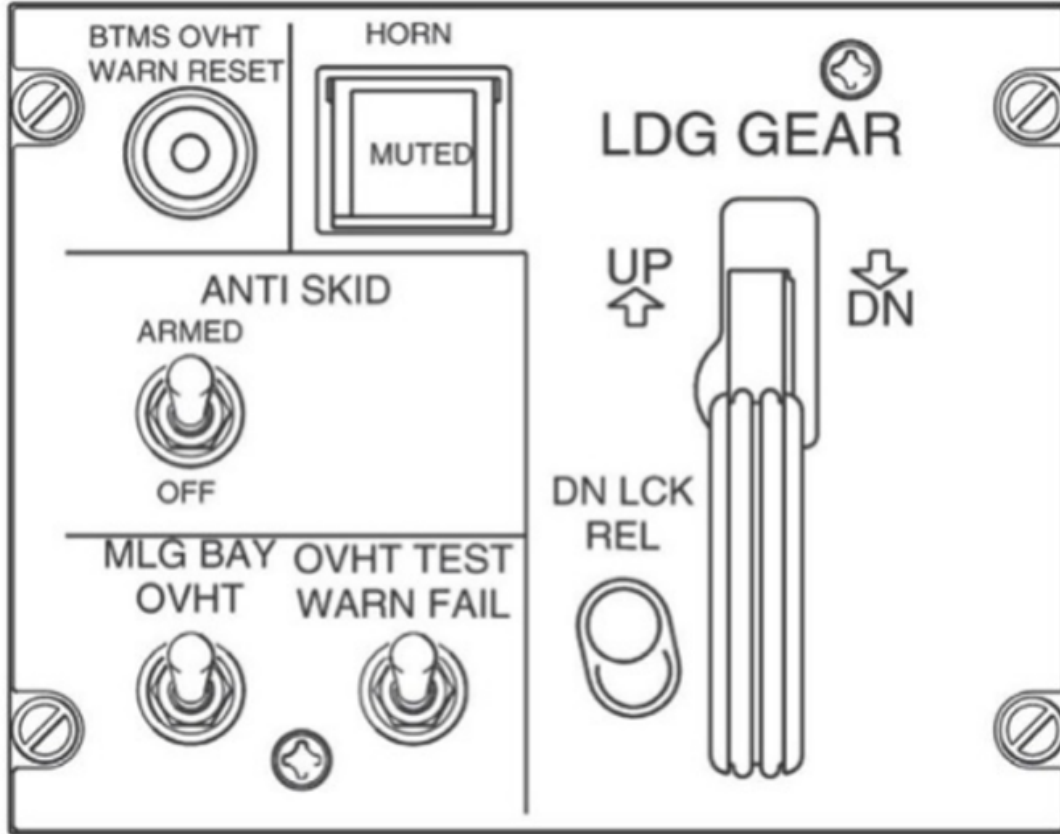


**CAUTION:**

- 1) Before towing, make sure that the flag "Aligning" is not shown on the ISI. If it does, contact maintenance support.
- 2) When the aircraft has come to its final parking position after towing, press the CAGE button on the ISI to align Primary Flight Display (PFD) with the ISI before turning off the aircraft BATTERY MASTER switch.

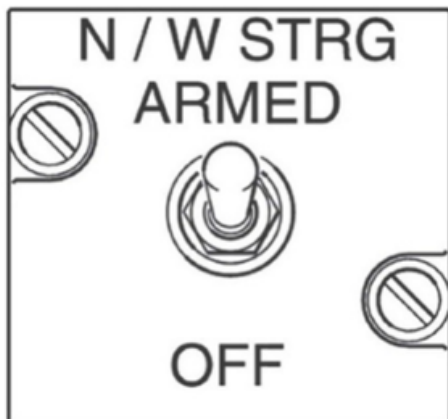
### 4.7.3.13 Landing Gear Control Panel

Before you pressurize the Hydraulic system: Make sure the control lever for the landing gear on the center instrument panel is in the DOWN position.



### 4.7.3.14 Nose Wheel Steering Switch

Before towing equipment is connected to the Nose Gear Wheel: Make sure the Nose Gear Steering Switch is in OFF position, or you may cause injury to persons and/or damage to the aircraft nose wheel assembly.



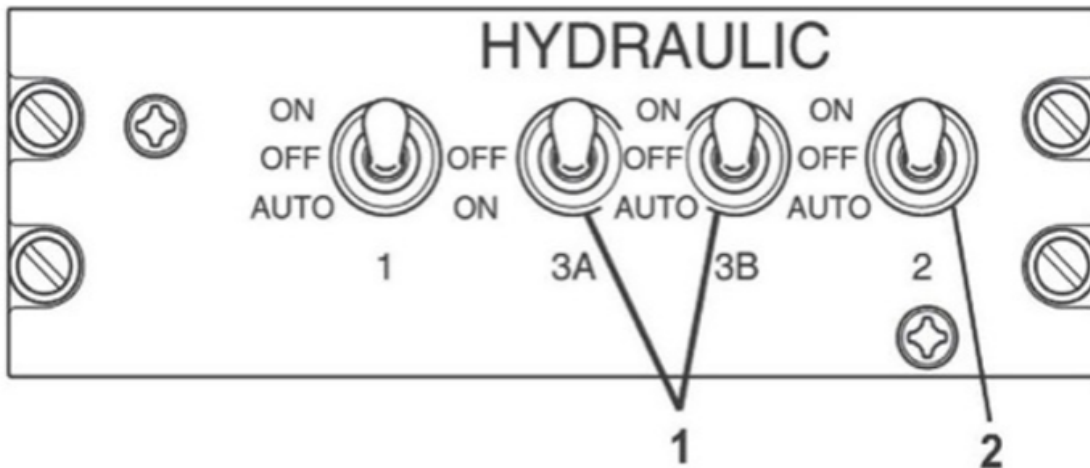
### 4.7.3.15 Conditions When APU Must be Operated

When one or more of the following conditions apply, the Auxiliary Power Unit (APU) must be operated during towing:

Condition	Description
Darkness, and no external wingtip lights are fitted on A/C, and the APU battery power is low.	Navigation light must be ON when towing in darkness or in reduced visibility. If in doubt, Navigation lights shall be ON.
Low brake pressure and no external power available during towing.	To start the Electrical Hydraulic Pumps and to fill the Hydraulic Brake Pressure Accumulator, 115V AC is needed.

### 4.7.3.16 Hydraulic Panel

Hydraulic pressure is e.g. used to operate the aircraft brakes and parking brakes. 115V AC powered pumps drive the hydraulic pumps for ground operation. The pumps are operated from the Hydraulic Panel and pressure is monitored on the EICAS Hydraulic Synoptic Page.



1 Hydraulic Pump switches for Hydraulic System 3.

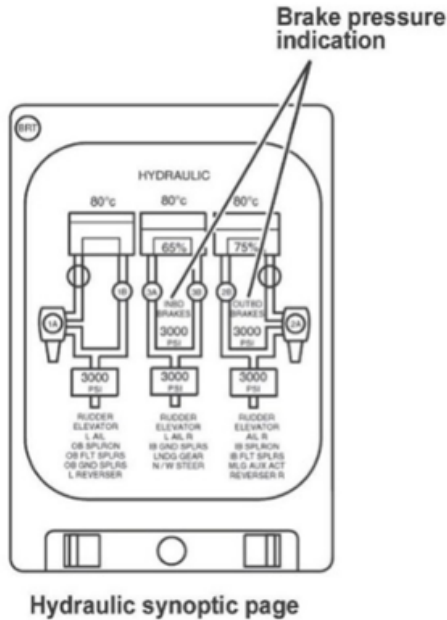
- On: The Hydraulic pumps are turned on. Used on ground.
- Off: The Hydraulic pumps are turned off
- Auto: Used in flight.

2 Hydraulic Pump switches for Hydraulic System 2.

- On: The Hydraulic pumps are turned on. Used on ground.
- Off: The Hydraulic pumps are turned off
- Auto: Used in flight.

### 4.7.3.17 Hydraulic Break Pressure Indicator

Brake Pressure is shown on the EICAS display. Normal Hydraulic pressure when the pumps are operating is 3000 psi +/- 200 psi.



Minimum Brake Pressure for Towing is 1500 psi in either the inboard- (Hyd System 3) or the outboard brakes system (Hyd System 2). If the brake pressure is less, pressurize the hydraulic systems 2 and 3 according to Hydraulic pressurization checklist before towing the aircraft.

**CAUTION:**

Pressure can decrease rapidly when the hydraulic pumps are not running. Therefore, keep the hydraulic pumps operating during the entire towing operation.

### 4.7.3.18 VHF Communication Panel

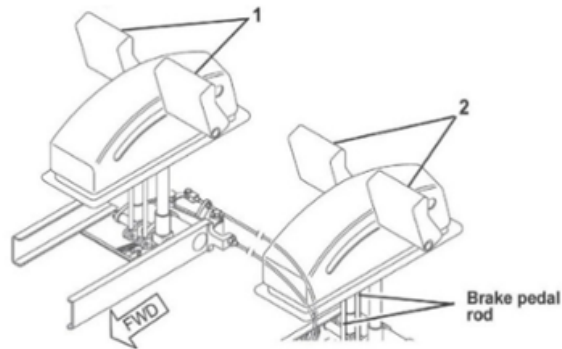
The VHF is only used as a back-up for UHF and Mobile phones in the towing process and will therefore not be described in this section for now.

#### 4.7.3.19 Break Pedals

The main gear brakes are hydraulically powered multi-disc brakes. Hydraulic System 2 and 3 (Hyd Sys 2 and 3) 115V AC electrical pumps provides the necessary hydraulic power. The flight deck operator applies the brakes by depressing the top part of the rudder pedals.

**WARNING:**

Make sure that the brake pressure is at a minimum 1500 psi before towing operations start. If you do not obey this warning, persons can be injured, and damage may occur to the aircraft and the towing vehicle.



1 Copilot's Main Gear Brake Pedals. To apply brakes, the operator shall depress the top of the pedals.

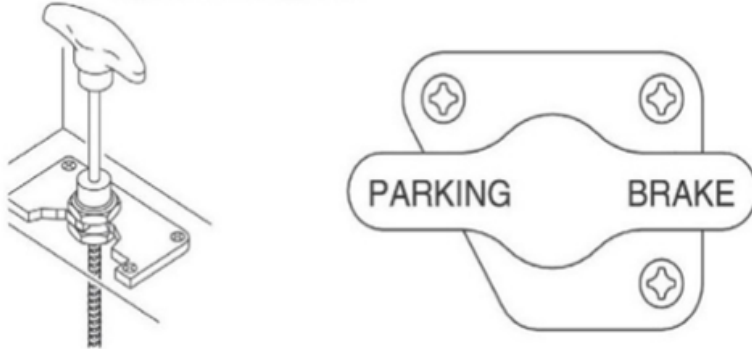
2 Copilot's Main Gear Brake Pedals. To apply brakes, the operator shall depress the top of the pedals.

**WARNING:**

Do not apply the aircraft brakes when you tow the airplane except to prevent emergency situations or when the aircraft has come to a complete stop at its final position. If you apply the aircraft brakes, you can apply loads to the nose landing gear that are more than the design load limits. If you do not obey this warning, persons can be injured, and damage will occur to the nose landing gear and the tow vehicle.

#### 4.7.3.20 Parking Break

The illustration below shows the parking brake handle.



**WARNING:**

Make sure that the towing vehicle is connected and has its parking brakes on or that the aircraft wheel chocks are correctly installed before releasing the parking brakes. If you do not obey this warning, persons can be injured and/or damage to the aircraft or equipment may occur.

**CAUTION:**

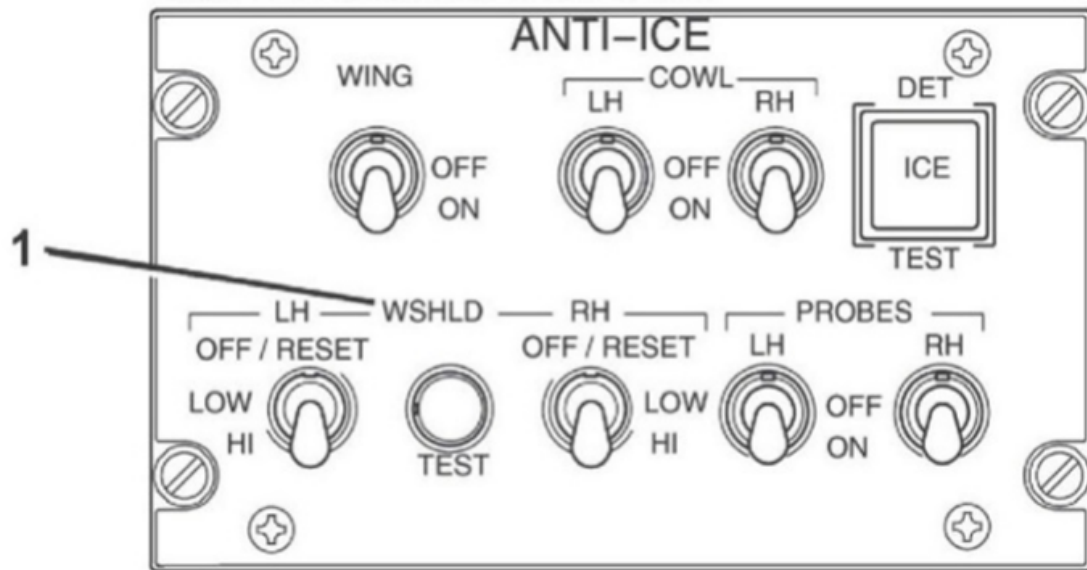
- 1) Do not turn the parking brake handle until it is fully pulled out. If you do not obey these instructions, you can cause damage to the parking brake internal locking device.
- 2) Do not turn the parking brake handle more than 90 degrees when it is fully pulled out and in locked position. If you do not obey these instructions, you can cause damage to the parking brake internal locking device.

**Note:** The parking brake can stay applied to a maximum of eight (8) hours after the power of the hydraulic system no. 3 has been removed. Apply wheel chocks as soon as possible after parking the aircraft.

Check for correct break pressure.

## 4.7.3.21 Windshield Anti-Ice System

The illustration below shows the Anti-ice Control Panel.



1 WSHLD LH and RH control switches. Three position Switches:

- OFF/RESET: Shuts off the windshield anti-ice system and resets the controllers;
- LOW: Used for de-misting and de-fogging;
- HI: Used for anti-icing of the windshield only. The respective side window remains on the LOW setting. The system will reach HI temperature after a warm-up period of approximately 5 to 10 minutes.

Note: The system requires powering the 115V AC system

**CAUTION:**

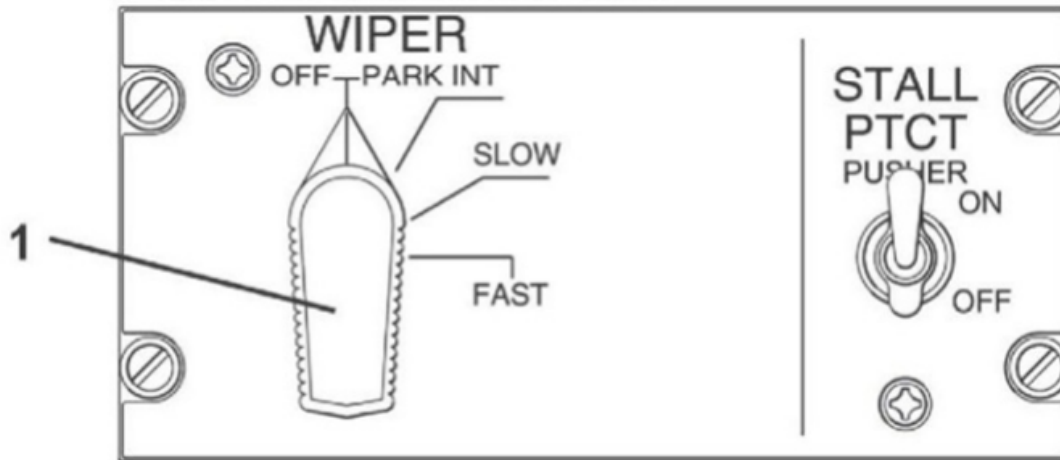
“HI” shall not be used during ground operations. Failure to obey this caution may damage the wind-shield.

**CAUTION:**

Make sure that the windshield anti-icing switches are set to OFF/RESET when the aircraft reaches its parking position. Bubbles in the windshield or window interlayer, is a sign of overheating. Report this to maintenance or the commander as soon as possible.

#### 4.7.3.22 Windshield Wiper System

The illustration below shows the Wiper Control Panel



1 Wiper control switch. The wipers will not start until an active choice of speed is made on the switch. The switch has 4 positions:

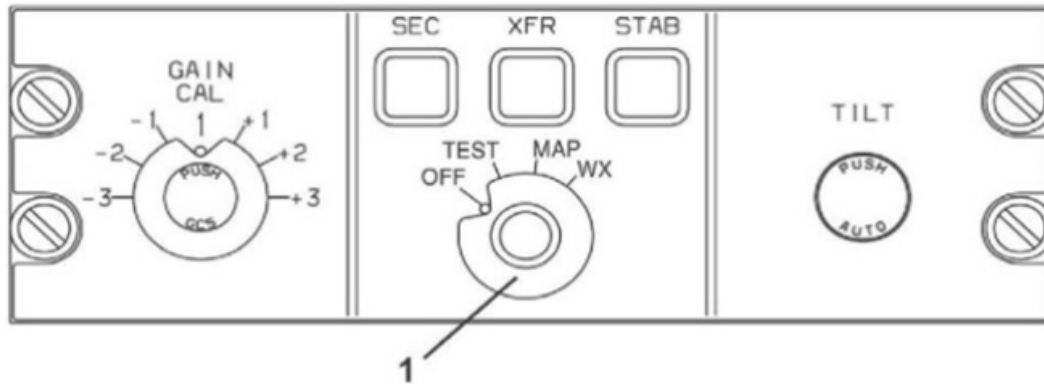
- OFF/PARK: Parking position. The wipers will return to this position whenever the switch is set to OFF.
- INT: Intermittent. There will be one wiper cycle every 5 seconds.
- SLOW: The wipers move at 80 cycles per minute.
- FAST: The wipers move at 125 cycles per minute.

**Note:**

- 1) Each switch (Pilot/Co-pilot) operates both wipers.
- 2) The system requires 28V DC power.

### 4.7.3.23 Radar Control Panel

The illustration below shows the radar control panel.



1 Radar Mode Selector knob. The mode selector knob shall always be in OFF position during ground operation.

**WARNING:**

Make sure that the Radar is OFF before energizing the electrical system. Failure to obey this warning may cause injury to personnel.

### 4.7.4 Flap/Slat Retraction

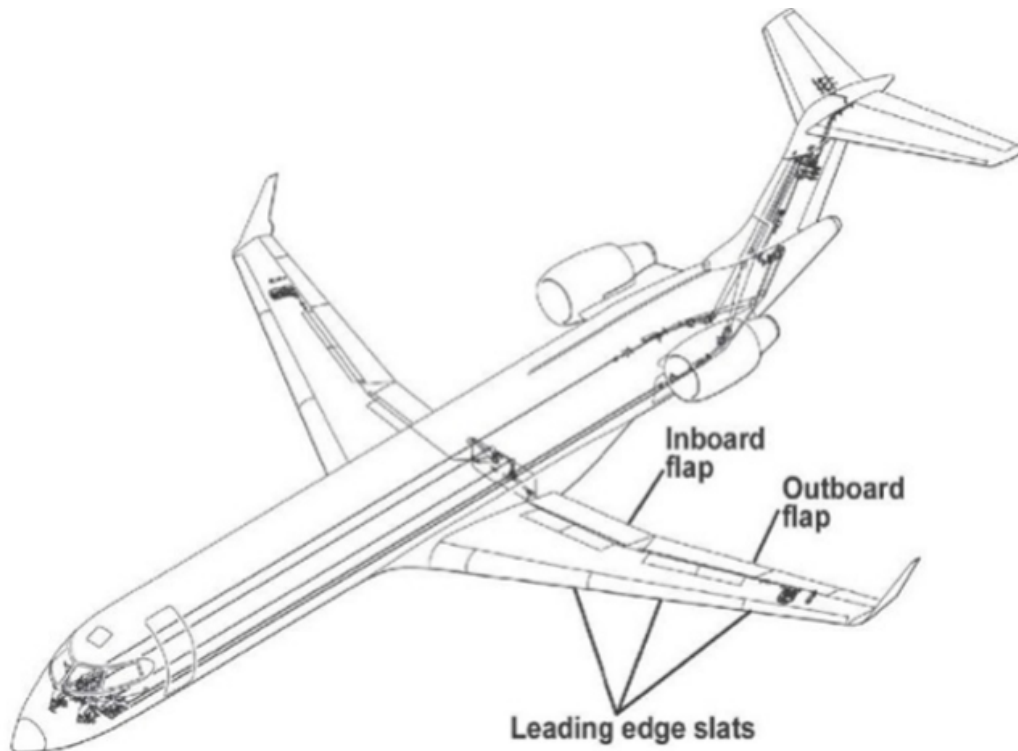
#### 4.7.4.1 Introduction

This topic describes the requirements for flaps/slats operation when working on flight deck.

The flaps and slats are electrically powered. To operate the flaps and slats, electric power must be established. This is provided by 115V AC external power or by operating the APU.

#### 4.7.4.2 Flap and Slats General

The illustration below shows the flaps and slats on the CRJ.



**WARNING:**

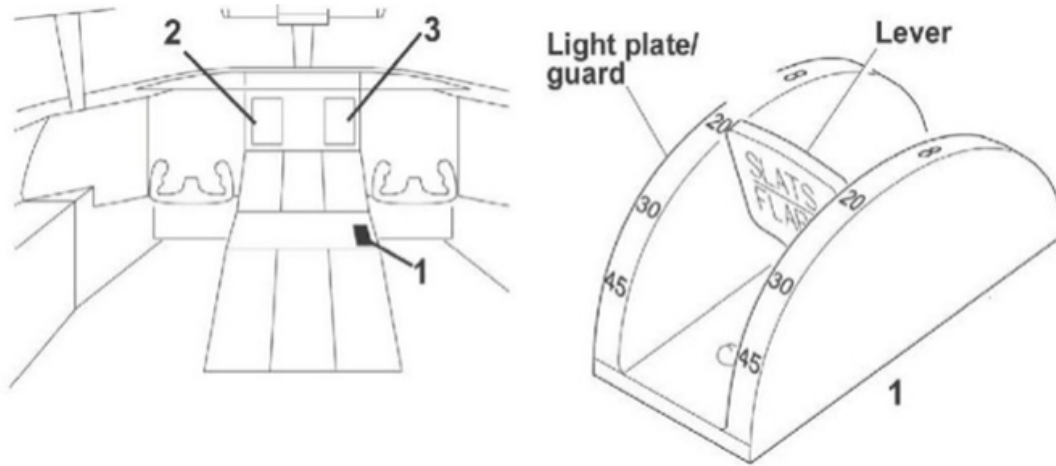
Before operating the flaps and slats: Make sure that there is no personnel or equipment within the area of flaps and slats movement. If you do not obey the warning, injury to persons and damage to equipment can occur.

**CAUTION:**

- 1) If you experience any abnormalities or malfunctions when operating of the flaps and slats, displays or systems related to the operation, contact maintenance.
- 2) Always use the latest edition of the checklist for operation of flaps and slats.

### 4.7.4.3 Flight Deck Overview

The illustration below shows the relevant panels on flight deck:



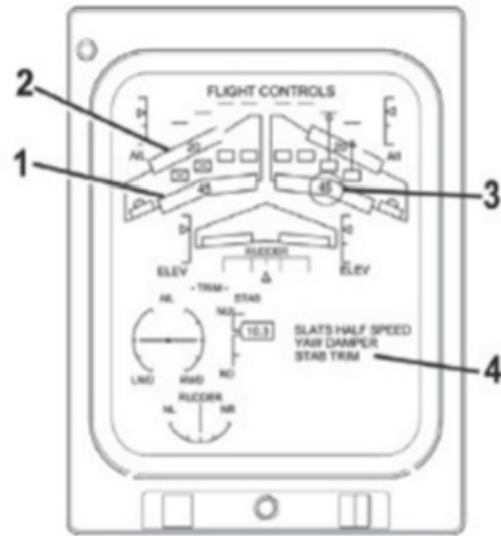
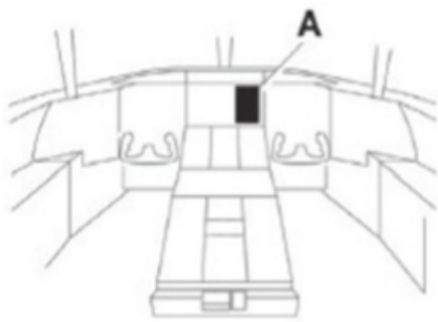
1 Flap/Slat lever. Extends and retracts the Flaps and Slats. Indications shown on the EICAS displays on the PRI and F/CTL pages.

2 Primary Engine Indication and Crew Alert System (EICAS) display.

3 Secondary EICAS display.

### 4.7.4.4 EICAS F/CTL Page

The illustration below shows where to find the essential flaps/slats information on the EICAS secondary displays F/CTL page:



**A. EICAS Flight controls synoptic page**

- 1 Flap contour. Illustrates the extension of the flap sections.
- 2 Slats contour. Illustrates the extension of the slat sections.
- 3 Flap contour indication. Shows the actual position of the flaps.
- 4 Caution messages.

### 4.8 Aircraft Operation on Ground Checklists – CRJ900

Form GRH-056 CRJ-900 CO OPS Checklist is available in IQSMS DDM Forms section.

**Note:**

When a flight deck operator is working together with a towing vehicle operator, the tasks may be divided between them. However, this division of tasks shall be described locally.

<b>5</b>	<b>Emergency Procedures and Reporting</b>	5-1
5.1	Emergency Procedures	5-2
5.2	Handling of Occurrences and Reporting	5-5
5.3	Reporting	5-6

## 5.1 Emergency Procedures

### 5.1.1 Aircraft Fuel Spill

- Activate emergency fuel shut-off, stop fuelling.
- Notify the Aircraft Commander or Emergency services and Airport Authority.
- Evacuate all persons, if required.
- Secure the area.
- Ensure fire extinguishing equipment readily available for initial intervention in the event of fuel fire and personnel adequately trained to use such equipment.

### 5.1.2 Aircraft Fire

- Notify the Aircraft Commander, Emergency services and Airport authority.
- If directed, evacuate passengers and staff.
- Attempt to extinguish the fire.
- Secure the area.

### 5.1.3 Dangerous Goods

- Notify the Aircraft Commander, Emergency services and Airport Authority.
- Evacuate all persons if required.
- Secure the area, isolate the consignment and identify source.

In case of damage to Dangerous Goods, extreme care must be exercised particularly if radioactive material or infectious substances are involved.

General emergency procedures to be followed in the event of a spill or leakage involving dangerous goods are:

- Advise immediate supervisor first and get professional assistance.
- Proceed with necessary action according to Dangerous Goods Emergency Response Chart (Ground Incidents). See [LCM 4.4.6](#).
- Where safe to do so, isolate the package by removing other packages or property.
- Avoid contact with the contents of the package.
- If the contents come into contact with body or clothes:
  - Thoroughly wash off body with plenty of water;
  - Remove contaminated clothes;
  - Keep hands away from eyes, mouth and nose;
  - Seek medical assistance.
- Staff involved in such incidents should stay on site until their names are noted.

If baggage or cargo not identified as containing dangerous goods has been contaminated and it is suspected that dangerous goods may be the cause of the contamination, reasonable steps must be taken to identify the nature and the source of contamination before proceeding with the loading of the contaminated baggage or cargo. If the contaminating substance is found or suspected to be a substance classified as dangerous goods, the baggage and cargo must be isolated and appropriate steps taken to nullify any identified hazard before the baggage or cargo is transported further by air.

In case of already loaded dangerous goods package is found to be damaged or leaking, it must be assured that such shipment is safely removed from an aircraft.

An aircraft in which dangerous goods has leaked or any aircraft or aircraft equipment which has been contaminated by dangerous goods must be taken out of service immediately. Proceed without any delay and according to local emergency response procedures with the removal of hazardous contamination from the aircraft. The aircraft or equipment must not be returned to service until it has been determined that there is no risk to the health of the staff and passengers. Re-assessment shall be made according to local authorities procedures.

In case of already loaded radioactive material package is found to be damaged or leaking, it must be assured that such shipment is safely removed from an aircraft.

An aircraft in which radioactive material has leaked or any aircraft or aircraft equipment which has been contaminated in such a way that the non-fixed contamination is more than the limits specified in IATA DGR Table 9.4.A, must be taken out of service immediately. The aircraft or equipment must not be returned to service until aircraft is checked by appropriately qualified personnel and the contamination level is equal to or less than the limits in IATA DGR Table 9.4.A.

*Note:* Non-fixed contamination is contamination than can be removed from a surface during normal handling.

Reference: See IATA DGR Table 9.4.A for details.

## 5.1.4 Security Incident

- Assess threat and follow the appropriate procedures.
- Evacuate all persons if required.
- Aircraft/equipment to be positioned as directed.

## 5.1.5 Spill or Leakage on the Ramp

E.g. fuel or oil from ground support equipment, feces from the toilet service unit, water from the water or toilet service units with freezing conditions in the winter, etc.

- Notify the Airport Authority (Apron Control) who activates contamination clean-up involving the Emergency Services, if necessary.
- Notify the Aircraft Commander, if required (e.g. danger of fire).
- Evacuate all persons, if required (e.g. danger of fire).
- Secure the area.

## 5.1.6 Spill or Leakage on the Aircraft

- Advise immediate supervisor first and get professional assistance.
- Notify the aircraft Commander or, if crew is not on board, directly the Flight Ops. Flight Ops shall notify the Maintenance Shift Leader.
- If safe to do so, isolate the package by removing other packages or property.
- Identify the nature of contamination before proceeding with loading/unloading of the damaged baggage or cargo. In case of damage to Dangerous Goods, proceed according to the Dangerous Goods Emergency Procedures (ref. [LCM 4.4.5](#)). If not, proceed according to the point underneath.
- Unload the damaged baggage/cargo and call for cleaning staff to clean the affected area.

Aircraft shall not return into service until it has been inspected by Maintenance. The release into service shall be given by authorized Maintenance staff, the aircraft Commander or Flight Ops by a telex.

In case of damage to cargo, fill in a Cargo Damage Report.

### 5.1.7 Spill or Leakage in the Cargo Facility

- Advise immediate supervisor first and get professional assistance.
- If safe to do so, isolate the package by removing other packages or property.
- Identify the nature of contamination. In case of damage to Dangerous Goods, proceed according to the Dangerous Goods Emergency Procedures (ref. **LCM 4.4.5**, **COM 4.3.10**). If not, proceed according to the point underneath.
- Clean the affected area.

In case of damage to cargo, fill in a Cargo Damage Report.

### 5.1.8 Aircraft Evacuation

#### In case flight crew is on board:

- Inform the Carrier's Flight Operations Department by phone and telex immediately.
- If possible, send a ground handling representative to the evacuation site for coordination purposes.
- Assist the rescue services and aircraft crew as required (order passenger buses, aircraft tow tractor, crew bus etc.).
- When allowed to do so, tow the aircraft to a parking stand.
- Report all actions to the Carrier's Flight Operations Department.

#### In case flight crew is NOT on board:

- Evacuate all personnel from the aircraft and at a/c vicinity.
- A designated person on board the aircraft would take charge of the emergency, co-ordinate the evacuation and direct personnel to the assembly point.
- Notify airport rescue services immediately.
- Notify the Carrier's Flight Operations Department immediately.
- If possible, maintain a ground handling representative near the evacuation site.
- Assist the rescue services as required.
- Report all actions to the Carrier's Flight Operations Department.

### 5.1.9 General items to consider

- Electrical devices, portable electronic devices (PEDs), camera's including flashes must not be used.
- Restrict all vehicle movement.
- Secure the area and comply with the emergency services directions.
- Control potential ignition sources.

## 5.2 Handling of Occurrences and Reporting

### General

The occurrence reporting scheme that is implemented at Xfly serves the purpose to:

1. Encourage and facilitate personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
2. Ensure mandatory reporting in accordance with applicable regulations;
3. Include analysis and management action as necessary to address safety issues identified through the reporting system.

The scheme is an essential part of the overall monitoring function and it is complementary to the normal day-to-day procedures and 'control' systems and is not intended to duplicate or supersede any of them. The scheme is a tool to identify and analyse those instances where procedures appear to have failed or where there was a failure to apply the procedures.

The occurrence reporting scheme consists of:

- Mandatory reporting – occurrences which are mandatory to be reported in accordance with relevant aviation safety regulations;
- Voluntary reporting – any other occurrences and hazards which fall outside the mandatory reporting requirements, but which the reporter deems necessary to report and which helps to raise the safety level.

The overall purpose of the scheme is to make the best use of reported information to improve the level of safety performance and not to attribute blame.

The objectives of the occurrence reporting scheme are to:

- Enable an assessment to be made of the safety implications of each relevant incident and accident, including previous occurrences of a similar nature, so that any necessary action can be initiated; and
- Ensure that knowledge of relevant incidents and accidents is disseminated, so that other persons and operators may learn from them.

### Mandatory Reporting

See [GHM 8.2](#) for ground occurrences that must be reported.

### Voluntary Reporting

The voluntary occurrence reporting scheme complements the mandatory occurrence reporting scheme in order to capture:

- a. Details of occurrences that may not be captured by the mandatory reporting scheme;
- b. Other safety-related information which is perceived by the reporter as an actual or potential hazard to safety, including safety deficiencies or concerns of the reporter.

A voluntary report may be submitted by any Company employee or by the staff of contracted service providers.

## Confidential Reporting

Xfly has implemented a confidential safety reporting system that is implemented throughout the organization to encourage and facilitate the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations.

Xfly encourages members of staff to use the confidential report option for the reporting of hazards and human errors in operations where the reporter would otherwise hesitate to report under his/her name.

## Occurrence Analysis and Follow-up

Reference: [MSM chapter 4.4.1](#)

## Immediate Response to Ground Handling Incidents/Accidents/Emergencies

All staff must be fully aware of the emergency procedures to be followed and prepared for their tasks. The management's task is to support the staff with necessary training and guidance and to develop local station procedures for the handling of incidents, accidents and emergencies.

Occurrence	See
Aircraft accidents and incidents	<a href="#">GHM chapter 8.2</a>
Ground handling accidents / incidents	<a href="#">RHM chapter 5</a>
Facility evacuations, fire, bomb threats against buildings	As per local station procedures

## 5.3 Reporting

### 5.3.1 Emergency Report

Any Station/Handling Agent, who are aware of an accident or incident involving a Xfly operated or chartered aircraft shall immediately relay information to:

**OPERATIONS CONTROL CENTER**

**Phone +372 6642 270**

**e-mail [ops@xfly.ee](mailto:ops@xfly.ee)**

Follow these steps in communicating with the OCC:

STEP	ACTION
1.	Telephone to OCC and inform verbally following the headlines in the Emergency Report (see next page)
2.	Send a written Emergency Report by e-mail
3.	Stand by for further communication with the OCC
4.	Initiate the Local Emergency Response Organisation when instructed to do so by Xfly Emergency Director or in accordance with local regulations

The following occurrences can be considered as an emergency:

- Aircraft accident/incident involving passengers and/or crew members,
- Aircraft hijacking,
- Ground transportation accidents/incidents involving passengers and/or crew members,
- Man-made or natural disasters involving passengers and/or crew members,
- Bomb threats,
- Passenger on board with a severe communicable disease.

*Note:* Do not delay informing OCC while awaiting further information. Itemize each point below and state “not known” if unable to provide information.

*Note:* Never release the *passenger/crew list* unless authorized to do so by Xfly Emergency Director.

EMERGENCY REPORT	
1.	Date and time of the emergency: [REDACTED]
2.	Accident site location/map reference (if applicable): [REDACTED]
3.	Flight number: [REDACTED]
4.	Aircraft registration: [REDACTED]
5.	Extent of the emergency: [REDACTED]
6.	Number of passengers on board: [REDACTED]
7.	Number of crew on board: [REDACTED]
8.	Time information received and from whom: [REDACTED]
9.	Other information in connection with the emergency: [REDACTED]
Name: [REDACTED]	
Department: [REDACTED]	
Company: [REDACTED]	
Contact telephone: [REDACTED]	
Contact e-mail: [REDACTED]	

FORM ERO-001 / Rev.2 / 01.06.2021

Ref. [FORM ERO-001/Rev.2/01.06.2021](#)

## 5.3.2 Ground Occurrence Report

### General

The occurrence reporting scheme that is implemented at Xfly serves the purpose to:

- Encourage and facilitate personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- Ensure mandatory reporting in accordance with applicable regulations;
- Include analysis and management action as necessary to address safety issues identified through the reporting system.

### Reporting Method

Any Company employee shall submit a report electronically through the Xfly safety management system not later than 72 hours after becoming aware of an occurrence or a hazard/safety concern, unless exceptional circumstances prevent this, in which case a report shall be submitted as soon as possible.

Contracted service providers shall report to Xfly all internal reports relevant to Xfly operations initiated in their respective reporting systems. Copies of external reports should be sent by e-mail at [safety@xfly.ee](mailto:safety@xfly.ee) not later than 72 hours after becoming aware of the occurrence, unless exceptional circumstances prevent this, in which case a report shall be submitted as soon as possible.

After a contracted service provider has sent occurrence report Xfly shall submit report electronically through the Xfly safety management system in case there is no company report made about same occurrence or the contracted service provider reports occurrence that identifies safety hazards, exposes safety deficiencies and raises safety concerns.

Ground Occurrence Report shall be used by ground operations staff to report safety related events occurring during the flight or on the ground. It can be used also to report non-safety related events.

The Ground Occurrence Report includes the following occurrences:

- Ground Damage
- Dangerous Goods
- Medical and Staff Injury
- Security Event.

Any relevant evidence (e.g. photos, scans, etc.), if available, should be attached to the report.

### Mandatory Reporting

OCCURRENCES RELATED TO GROUND SERVICES
To be reported by: Commander, ground operation department staff, contracted ground handling or cargo service provider
<ul style="list-style-type: none"> <li>• 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 loadsheet calculations).</li> <li>• Boarding equipment removed leading to endangerment of aircraft occupants.</li> <li>• 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.</li> <li>• 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 ICAO Technical Instructions For The Safe Transport of Dangerous Goods by Air (Doc 9284).</li> </ul>

- 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 or 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.

Reference: [MSM chapter 4.4.1](#)

### Ground Incident/Accident/Damage

#### General

Damage is defined as all damage to Xfly property when caused by accidental violent external means, fire or theft as well as damage caused by Xfly property or personnel involving legal liability towards third parties.

#### Applicability

Ground Occurrence Reporting procedure is applicable when damage occurs to Xfly aircraft (e.g. by ground support equipment), equipment stored at stations or other property.

Incidents falling under the rules for reporting are:

- All damages occurring from the moment the aircraft starts taxiing after landing run until the throttles are opened to commence take-off,
- All incidents when damage has been caused by leakage from inadequate packing of baggage or cargo,
- All damages caused by foreign objects (FOD),
- All damages discovered during the ground stop, even if they most likely happened at another station.

## Dangerous Goods Occurrence

### Definitions

#### Dangerous goods accident

An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage.

#### Dangerous goods incident

An occurrence other than dangerous goods accident not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence which seriously jeopardizes the aircraft or its occupants is also deemed to be a dangerous goods incident.

#### Reporting of Undeclared or Misdeclared Dangerous Goods

Any occasion when undeclared or misdeclared dangerous goods are discovered in cargo or mail during aircraft loading or when dangerous goods not permitted are discovered either in passenger baggage or on the person of passengers or crew members prior to boarding an aircraft shall be reported to the appropriate authority of State of the Operator and State of occurrence. This type of occurrence regarding Xfly ground operations shall be handled as dangerous goods incident.

#### Reporting of Other Dangerous Goods Occurrences

Xfly must report to the appropriate authorities of the State of the Operator and the State of condition origin any occasion when:

- Dangerous goods are discovered to have been carried when not loaded, segregated, separated and/or secured in accordance with provisions of the IATA DGR 9.2 or 9.3.
- Dangerous goods are discovered to have been carried without information (NOTOC) having been provided to the PIC in accordance with IATA DGR 9.5.1.1.

#### Reporting Dangerous Goods Occurrences to the Authorities

All dangerous goods incidents and accidents must be reported by Xfly to the appropriate authorities of the State of the operator and the State in which the accident or incident occurred, in accordance with the reporting requirements of those applicable authorities.

All Dangerous Goods incidents and accidents shall be reported in accordance with the reporting requirements of the applicable authorities. Dangerous Goods Incidents and Accidents must be reported to the Civil Aviation Authority of the Republic of Estonia **within 72 hours** and to the applicable authority of the country where incident/accident occurred in accordance with the reporting requirement of this authority.

The responsibility of reporting rests with:

- The aircraft Captain (or Flight Operations Department), if flight crew was on board during the incident/accident (i.e. a flight occurrence);
- The Nominated Person Ground Operations (KO), if flight crew was not on board during the incident/accident (i.e. a ground occurrence).

Dangerous Goods Occurrence Report standard form (IATA DGR Figure 9.6.A) should be used where the reporting format has not been specified by the appropriate authority. Other forms, including electronic transfer of data, may be used provided at least minimum information shown on the Dangerous Goods Occurrence Report standard form (IATA DGR Figure 9.6.A) is supplied.

### **Dangerous Goods Occurrence Report**

Unless not otherwise specified by the appropriate authority Dangerous Goods Occurrence initial and any subsequent report shall be as precise as possible and contain the following data, where relevant:

- Date of the incident or accident or the finding of undeclared or misdeclared dangerous goods;
- Location, the flight number and flight date;
- Description of the goods, the air waybill number, baggage tag number, ticket number, etc;
- Proper shipping name (including the technical name, if appropriate) and UN/ID number, when known;
- Class or division and any subsidiary risk;
- Type of packaging, and the packaging specification marking on it;
- Quantity;
- Name and address of the shipper, passenger, etc.;
- Any other relevant details;
- Suspected cause of the incident or accident;
- Action taken;
- Any other reporting action taken; and
- Name, title, address and telephone number of the person making the report.

Copies of all relevant documents and any photos taken should be attached to the report.

An initial report should be dispatched within 72 hours of the occurrence, unless exceptional circumstances prevent this. The initial report may be made by any means but a written report should be sent as soon as possible, even if all the information is not available.

If necessary, a subsequent report should be made as soon as possible giving all the details that were not known at the time the first report was sent.

Providing it is safe to do so, all dangerous goods, packagings, documents, etc. relating to the occurrence must be retained until after the initial report has been made.

<b>6</b>	<b>Duties and Responsibilities</b>	6-1
6.1	Supervision and Oversight of Ramp Operations	6-2
6.2	General Safety Policies	6-2

## 6.1 Supervision and Oversight of Ramp Operations

It is a requirement that handling agents provide a sufficient level of supervision and oversight of ramp operations in order to ensure that turnarounds are being managed safely and consistently in accordance with the appropriate ground handling procedures.

At each turnaround, a designated individual has to be appointed as a person (Loadmaster, Ramp Agent etc. in accordance with local procedures) responsible for the supervision and oversight of ramp operations.

The responsible person shall ensure the following:

- The ramp team is to be sufficiently manned for the operation and all members of staff shall be suitably trained and hold a valid authorization for the type of work.
- Ground support equipment is to be in good mechanical condition.
- FOD inspection is to be carried out prior aircraft arrival to the parking stand and prior aircraft departure from the stand.
- The Carrier's, handling company's and airport authority's work and safety procedures shall be adhered to.

Supervision of ramp operations shall also include the use of the handling agents' own turnaround inspections on a regular basis. Such turnaround inspections offer the ability to identify and correct specific failures, and to track trends. All findings on inspections must be actioned to ensure corrective and preventive action is put in place to prevent a repeat occurrence.

## 6.2 General Safety Policies

The Handling Agent shall have internal Occurrence Reporting System for collection, investigation and analysis schemes to improve the level of flight safety.

Airside Safety auditing procedures shall be established according to Xfly [Management System Manual Part 3](#).

Risk Management Procedures shall be established according to Xfly [Management System Manual 4.1.3](#).

<b>7</b>	<b>Security</b>	7-1
7.1	Protection of Aircraft	7-2
7.2	Closing External Doors	7-2
7.3	Sealing of Aircraft for Night Stop or other Unattended Parking	7-3

## 7.1 Protection of Aircraft

Reference: Security Manual chapter [4.2](#)

Crew must not leave an aircraft open and unattended at any time. After flight, responsibility for the aircraft must be handed over to an authorized person or the aircraft must be closed up. The authorized person is in the immediate vicinity of the aircraft carrying out his normal duties. All persons approaching and/or entering the aircraft must be challenged and their credentials checked before access is permitted.

The authorized persons can be:

1. Company Flight or Cabin Crew;
2. Authorized employees of Nordic Aviation Group companies;
3. Contracted ground handling personnel;
4. Contracted catering personnel;
5. Contracted maintenance personnel.

The unattended aircraft must be protected by:

1. Parked away from perimeter fences or barriers in well-illuminated areas; and
2. Doors and hatches accessible from ground level closed

In addition, if parked outside of critical part of security restricted area (CPSRA) of a Community airport or at a third country airport:

1. Doors and hatches accessible from ground level sealed; or
2. Aircraft is under dedicated video surveillance sufficient to immediately detect any unauthorized approach

Additional security measures shall be activated as per local airport authority regulations.

## 7.2 Closing External Doors

Ref. Security Manual chapter [4.2.2](#)

Due to legal constraints, in the context of this provision, aircraft cabin door is always considered '*open*' and '*accessible*' when the jet bridge is attached and the cabin door is not physically closed.

For unattended parking on the CSRA, the aircraft doors and hatches accessible from the ground must be closed. Exceptionally, the aircraft may be left unattended with its doors open, provided that either the doors are under dedicated electronic surveillance or the aircraft is placed in a hangar that is protected.

When leaving the aircraft, it is the responsibility of the active crew to either ensure that the aircraft doors and hatches are closed or that the aircraft is positively handed over to the authorized staff. By derogation from this rule, the service door may be left open when contracted catering loaders are present and loading or unloading of in-flight supplies is in progress.

When the status of the parking area of the aircraft is not on the CSRA, or is expected to be changed to anything other than the CSRA or when there is no certainty of the status of the parking area, aircraft doors must additionally be sealed.

## 7.3 Sealing of Aircraft for Night Stop or other Unattended Parking

Reference: Security Manual chapter [4.2.3](#)

### Purpose and Requirement

This procedure is to prevent aircraft from unauthorized entry from the ground when it is parked outside the critical part of security restricted area (C-SRA) of a Community airport or at a third country airport.

Sealing of doors is not required only if manned or electronic guarding (incl. CCTV) system ensures that unauthorized approach will be immediately detected.

### Sealing Procedure

If the sealing is applicable, the Commander or the authorised Ground Handling Agent shall wait until the aircraft servicing is completed, install the security seals, fill in and sign the respective aircraft type Security Label Control Chart.

Supply of Xfly security seals and Control Charts are on-board all aircraft, kept with aircraft documents.

*Note:* If approved by Xfly Security Manager, Ground Handling Agent may use other than Xfly control charts and security seals provided seals are tamper evident, individually numbered and supply of these seals are protected from unauthorized access.

Before placing the security seals, surface should be cleaned and dried to the extent practicable so to ensure that the seal sticks to the surface. Previously installed seals that are damaged or have other signs of tampering must be removed, whereas seals that are still in an acceptable state need not to be replaced (e.g. seal on the service door). New seals may not be installed on top of the previously installed seals or parts thereof as this prevents tampering to be evident.

The following areas shall be sealed:

#### ATR 72-600

- FWD left emergency exit
- Cargo door
- FWD right emergency exit
- Service door
- Passenger entrance door

#### CRJ900

- Forward service door
- Passenger entrance door

To seal the doors, the person performing the sealing shall:

1. Complete the Security Label Control Chart in one copy (leave 'Checked/Opened' field empty);
2. Attach smaller (right) parts of security seals to the corresponding boxes of the Security Label Control chart;
3. Store the chart in the cockpit;
4. Clean surfaces where seals would be installed, if required;
5. Install the bigger (left) part of the seal evenly over the door and fuselage, repeat for both doors.

When opening up the sealed aircraft:

1. Check the seals for evidence of tampering (missing, broken, text 'OPEN' and 'VOID' visible);
2. Remove seals from doors;
3. Check the seal numbers from Security Label Control Chart;
4. Sign off the Security Label Control Chart ('Checked/Opened');
5. Hand over the completed Security Label Control Chart to the Ground Handling Agent (unless re-sealing again). The form shall be retained in the trip file at the departure station for 3 months.

**Note:** Ground staff may NOT break any seals and should not open external compartment doors/hatches that are sealed on permanent basis.

If door seals have signs of tampering (broken, missing or seal number not corresponding to the Security Label Control Chart), it must immediately be reported to the airport security service provider and Xfly Operations ([ops@xfly.ee](mailto:ops@xfly.ee) or +372 664 2270).



Unopened security seal



Tampered security seal

When opening and re-sealing the aircraft, you must complete both opening and sealing procedure.

You may choose to either re-seal all doors (as described above) or hand-write the numbers of the seals that were not removed and only attach the small sticker of the seal that was replaced (see example on the right).

**REGIONAL JET**  
ATR 72-600 Security Label Control Chart

Station: OER  
Aircraft: ES-AT6

No.	Location	Seal Number
1	FWD left emergency exit	13518
2	Cargo door	13519
3	Radiote	—
4	FWD right emergency exit	13520
5	Service door	13521
6	Equipment bay door	—
7	Passenger entrance door	13514

Closed/Sealed: 01 SEP 19 1305z [Signature]  
(Date/Time/Signature)

Checked/Opened: 01/09/19 1735z [Signature]  
(Date/Time/Signature)

NOTE: Sealed parts are not applicable for security search.  
NOTE: Completed Security Label Control Chart shall be retained in the flight file at the departure station.

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**REGIONAL JET**  
ATR 72-600 Security Label Control Chart

Station: OER  
Aircraft: ES-AT6

No.	Location	Seal Number
1	FWD left emergency exit	35518
2	Cargo door	35519
3	Radiote	—
4	FWD right emergency exit	35520
5	Service door	35521
6	Equipment bay door	—
7	Passenger entrance door	13514

Closed/Sealed: 01 SEPT 19 2107z [Signature]  
(Date/Time/Signature)

Checked/Opened: \_\_\_\_\_  
(Date/Time/Signature)

NOTE: Sealed parts are not applicable for security search.  
NOTE: Completed Security Label Control Chart shall be retained in the flight file at the departure station.

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Leave the already completed Security Label Control Chart together with the new Security Label Control Chart on the control column chart holder or either pilots' seat.