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**ETHIOPIAN CIVIL AVIATION AUTHORITY**



**GUIDANCE INFORMATION FOR GROUND OPERATIONS ACTIVITIES**

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## **1. Introduction**


This section details ground handling operational related matters associated with the operations of an Air Operators Certificate holder for regular Public Transport (RPT) or charter operations in Ethiopian registered aircraft and ground handling service providers.

Ground Handling functions are assessed as part of the AOC application to ensure that there is appropriate management, training, control and safe application of these activities.

The assessment process is to ensure that the AOC applicants, given the fleet and the operations proposed has the ability to conduct ground handling activities relating to aircraft,

which includes fuelling procedures, pre and post flight documentation, aircraft, passenger and cargo handling, loading, parking, flight planning, weight and balance, procedures for, de-icing and anti-icing and any other ground operations necessary to ensure the safe handling of its flights and within the requirement of the applicable legislation.

The requirements detailed in this advisory circular (which are ECARAS requirements) are applicable if the ground operations activities are performed by the operator or its contractor. Operators may also establish other means by which they comply with the requirements of this circular/guidance if equivalent safety level can be demonstrated.

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**2. PURPOSE**

This advisory circular contains information and guidance for the servicing and ground handling of aircraft.

The aviation industry has found through experience that firm safety practices deter accident. This advisory circular contains generally accepted and safety practices that may help prevent injuries to personnel and damage to aircraft.

**3. APPLICABILITY**

This material applies to all Operators and ground handling service providers intending to operate in the Ethiopian territory.


**4. RESPONSIBILITIES**

**4.1.ECAA Responsibilities**

The AOC applicant’s ground handling assessment will be carried out by ECAA inspector, The ECAA Inspector must be satisfied that all ground handling functions can be practicably accomplished, and that ramp safety will be maintained during normal and emergency procedures.

**4.2.Applicant’s Responsibilities**

It is the operator’s and ground handling service provider’s responsibilities to clearly state that every employee has direct responsibility to work in a safe manner and to comply with both legislative and company requirements and safe work procedures.

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### 4.3.Operator’sResponsibilities

When all or part of the functions and tasks related to ground operations / ground handling has been contracted to a service provider, the Operator shall ensure that its ground handling activity responsibilities is permanently maintained.

Additionally, Operators shall, when contracting a service provider, ensure that:

- A written contract or service level agreement with the contractor is established prior to obtaining ground operations / handling services. The contract shall contain elements and requirements on operator’s groundoperations
- The service provider, if registered in Ethiopia, has been assigned an ICAO radio designator or three letter telephony to the ECAA.
- Personnel are aware and familiar with the Operator’s ground operations procedures, a copy of the operator’s relevant Ground Operations Section or Manual shall be issued to the relevant personnel.
- Proper standards are established for personnel of the contractor by supervisory means that include training, checking and monitoring programs acceptable to theECAA
- All licensed and authorized personnel from the contractor are trained, qualified to perform the requiredactivities.
- Individual training records of all contractors’ personnel are properlykept.
- Flight dispatcher when performing flight dispatch function holds a valid and current Ethiopialicense or equivalent authorization. Other personnel who requires company authorization to hold appropriate operator’scertificate.
- A contractor providing ground operations to aEthiopia operator is audited every 36 months. Audit is also required during initial, renewal or significant variation of ground operationsactivities.
- The ground operations activities contracted are part of the operator’s quality audit program and listed in the operators’ qualitymanual.
- Contractors have access to the relevant section of the ECAA regulation and the operator’s relevant part of the Operationsmanual.
- Pre and post flight records and documentation are retained and kept in accordance with ECAA regulations.
- ECAA is granted access and rights to audit, inspect and examine all safety aspects of the services operations.

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Under certain exigency, an operator may be permitted to use specific ground operations services available at an airport provided the operational standard have been evaluated by the aircraft commander to be equivalent to the relevant part of the operator’s Operations Manual.

## 5. PROCESS, PROCEDURES AND IMPLEMENTATION OF GROUNDOPERATIONS

The ECAA Inspector will verify that the AOC operator and the ground service provider has documented processes and procedures for the safe operation of ground handling and ground handling equipment. These functions include but are not limited to

- Organization Management control
- Load control
- Passenger handling (tarmac control).
- Baggage and cargo handling.
- Aircraft handling including servicing, towing and marshaling.
- Loading and unloading including load control ramp procedures and documentation completion.
- Operational safety during aircraft fuelling.

If an operator contracts the ground handling functions to an external service provider, the responsibility for legislative compliance is retained by the operator. For this purpose the operator must demonstrate that processes are in place to effectively monitor and oversight the contracted external service providers.


Certificate is issued on the basis that the Operator and the ground service providers can ensure safe operations which includes Ground Operations. Ground Operations elements and procedures shall be acceptable to the ECAA and shall remain in compliance with existing regulatory requirements. Operators are encouraged to adopt Ground Operations procedures and instructions based on the latest technical data and best practices.

## 6. ORGANIZATION AND MANAGEMENT

Operators and ground service providers shall demonstrate and implement the following requirements if applicable:

- (a) Necessary facilities, workspace, equipment and supporting services, as well as work environment, shall be available to satisfy operational safety and securityrequirements.
- (b) Management and non-management positions within the organization that are required to performfunctionsrelevanttothesafetyorsecurityofaircraftoperationsshall:
  - i. Be filled by personnel on the basis of knowledge, skills, training and experience appropriate for theposition

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- ii. Maintain competence on the basis of continued education and training and, if applicable for a specific position, continues to satisfy any mandatory technical competency requirements.
- iii. Processes and procedures to ensure safe and secure conduct or support of operations.
- iv. System for the management and control of operational records to ensure the content and retention of such records in accordance with requirements of ECAA.
- v. Safety Management System of the operator and ground service providers shall cover Ground Handling functions
- vi. Quality assurance program that provides for the auditing and evaluation of the management system, and of operations and maintenance functions.
- vii. Processes to ensure equipment or other operational products relevant to the safety or security of aircraft operations that are purchased or otherwise acquired from an external vendor or supplier meet the product technical requirements specified by the Operator and ground service provider prior to being used in the conduct of operations or aircraft maintenance.

## 7. LOAD CONTROL

The following systems, processes and procedures shall be demonstrated and implemented by operators if applicable

- (a) Procedures to ensure any verbal exchange of load information or data that could affect aircraft weight and balance calculations is manually or electronically documented and confirmed prior to flight departure.
- (b) Procedures to ensure, in the event of a potential discrepancy associated with the accuracy of weight and balance figures for a flight, the relevant or requested information is provided to the pilot-in-command (PIC) without delay and the discrepancy is reported.
- (c) Process to ensure operational load control records are retained in accordance with regulatory requirements.
- (d) Load control process to include a standard scheme that identifies specific loading positions within each aircraft type for the purpose of planning and positioning the load in the aircraft
- (e) Procedure for load planning that produces instructions to ensure aircraft are loaded in accordance with all applicable requirements
- (f) Procedures for calculating the aircraft mass and balance in accordance with regulatory requirements.
- (g) Process to ensure mass and balance calculations are based on current aircraft weight and balance data, consider limitations defined by the manufacturer and take into

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- account the previously planned load.
- (h) Procedures to ensure the load control process utilizes passenger and baggage weights for mass and balance calculations that are in accordance with regulatory requirements
  - (i) Procedure to produce and issue a Loading Instruction/Report(LIR)
  - (j) Procedure to produce and issue an Off-loading Instruction/Report when required for transitflights
  - (k) If the operator and ground service provider issues a manual LIR, the operator shall have a procedure to ensure the accuracy of manual calculations is verified prior to flightdeparture
  - (l) Process to provide the PIC, as soon as practicable prior to departure of the aircraft, with a notification that contains accurate and legible written or printed information concerning dangerous goods onboard theaircraft.
  - (m) Procedures to issue to the PIC prior to flight departure a manually or electronically generated Load sheet that has been crosschecked against the LIR and other information relative to the actual aircraft load and presents accurate load information, to include weight data and distribution of the load within the aircraft.
  - (n) Procedures to ensure the Load sheet, prior to issuance to the pilot-in-command, is checked to verify information on the Load sheet corresponds with the actual load on theaircraft
  - (o) Procedure to adjust the Load sheet to account for last minute changes(LMC)
  - (p) If an automated Departure Control System (DCS) is utilized, the operator and ground service provider shall have aprocess to accept the DCS.
  - (q) Procedures for the production and transmission of a load message (LDM), container/pallet distribution message and ULD Control Message(UCM


## 8. PASSENGER HANDLING

The following systems, processes and procedures shall be demonstrated and implemented by operators if applicable

- (a) Procedures for the transfer of information and data to the load control office to ensure passengers, carry-on baggage and other items loaded onto the aircraft as part of passenger handling operations are accounted for in the load controlprocess.
- (b) Procedures in accordance with requirements to ensure a boarding pass containing the passenger name is issued to each seated passenger during the check-inprocess.
- (c) Procedures to ensure, when receiving baggage during passenger check-inoperations

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- (d) Procedures in accordance with requirements for the check-in of heavy or overweight baggage, and to ensure such baggage is accounted for in the load control process
- (e) Procedures to ensure cabin baggage is in compliance with size, weight and quantity limits as specified in applicable regulations
- (f) If the operator and ground service provides utilizes scales to determine the weight of baggage during the passenger check-in process, the operator and ground service providers shall have a process to ensure such scales are periodically checked and calibrated
- (g) Procedure to address, prior to flight departure, passengers that are suspected of having a communicable disease
- (h) Procedures to detect and identify dangerous goods that are not permitted to be carried on board the aircraft by passengers
- (i) Procedure to ensure, when it is known that unapproved dangerous goods have been detected being carried by a passenger, or in passenger baggage, a report is submitted.
- (j) Process to ensure all passengers and their cabin baggage has been subjected to appropriate security screening prior to being permitted to board the aircraft.
- (k) Procedures for the handling of passengers and their cabin baggage in the event of a bomb threat condition; and an increased security threat condition
- (l) Procedures for the notification of the pilot-in-command, prior to flight departure, of passengers onboard that are persons required to travel because they have been the subject of judicial or administrative proceedings
- (m) Procedures for the handling of potentially disruptive passengers
- (n) Procedures for the handling of unaccompanied minors, incapacitated passengers, person with reduced mobility (PRM)
- (o) Procedures to deny the boarding of persons that appear to be intoxicated, or demonstrate by manner or physical indications that they are under the influence of drugs or alcohol.

**9. BAGGAGE HANDLING**

The following systems, processes and procedures shall be demonstrated and implemented by operators if applicable.

- (a) Procedures for the transfer of information and data to the load control office to ensure all baggage loaded onto the aircraft are accounted for in the load control process.
- (b) Procedures for the handling of special baggage items, to include items that have been removed from the possession of a passenger by security personnel that are conditionally


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acceptable for carriage in the aircraft hold, duty-free goods that require loading into the aircraft hold and other items removed from a passenger after the check-in process that require loading into the aircraft hold.

- (c) Procedures for the handling and reporting of undeclared weapons discovered in checked baggage
- (d) Procedures to ensure hold baggage and/or equipment, prior to release for loading into the aircraft, is inspected for signs of substance leakage, and, if leakage of dangerous goods is found, such baggage and/or equipment is prevented from release for loading into the aircraft.
- (e) A procedure to ensure, when dangerous goods not permitted for carriage onboard the aircraft are discovered in passenger baggage, a report is made to the appropriate authority of the state of occurrence.
- (f) Procedures for the acceptance and handling of battery-operated mobility aids for transport as checked baggage to ensure such devices are subjected to applicable dangerous goods handling and loading requirements and accounted for in the load control process.
- (g) Procedures to ensure baggage is protected from unauthorized interference from the point at which it is accepted or screened, whichever is earlier, until either the operator loads baggage into the aircraft, departure of the aircraft transporting the baggage; or the point at which the baggage is transferred to and accepted by another entity for further handling
- (h) A process to ensure items of originating hold baggage, prior to release for loading into the aircraft, have been individually identified as accompanied or unaccompanied baggage and subjected to appropriate security controls
- (i) Process to ensure transfer hold baggage, prior to release for loading into the aircraft, has been subjected to appropriate security controls
- (j) Process to ensure transfer hold baggage, prior to release for loading into the aircraft, has been subjected to appropriate security controls
- (k) A process to ensure, prior to release for loading into the aircraft, consignments checked in as baggage by courier services for air transport have been subjected to appropriate security screening
- (l) The operator shall have a process to ensure the reconciliation of hold baggage.
- (m) Procedures for the handling of hold baggage in the event of an increased security threat condition.

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## 10 AIRCRAFT HANDLING AND LOADING

The following systems, processes and procedures shall be demonstrated and implemented by operators and ground handling providers if applicable


### (a) General

- (i) Procedures that ensure aircraft loading information and data, to include the Load Instruction/Report (LIR), are accurately transferred to the load control office.
- (ii) Process to ensure transfer hold baggage, prior to release for loading into the aircraft, has been subjected to appropriate security controls

### (b) Aircraft Access

- (i) Procedures for the operation of aircraft access doors, applicable to each type of aircraft, at the station.
- (ii) Procedures that ensure the operation of electrically, hydraulically or pneumatically actuated aircraft access doors is performed only by personnel that have received applicable training in accordance with the Provider's aircraft access door training program, and are authorized to operate such doors
- (iii) Procedures for opening aircraft cabin access doors, applicable to each type of door operated, to ensure:
  - Doors are operated in accordance with the technical specifications of the aircraft original equipment manufacturer (OEM);
  - When a door is to be opened from inside the aircraft, communicate a confirmation to personnel onboard the aircraft utilizing non-verbal signals that indicate exterior equipment is in proper position;
  - Personnel retreat to a safe position before the door is opened
  - Doors are operated in accordance with the technical specifications of the aircraft original equipment manufacturer (OEM);
    - i) When a door is to be opened from inside the aircraft, communicate a confirmation to personnel onboard the aircraft utilizing non-verbal signals that indicate exterior equipment is in proper position;
    - ii) Personnel retreat to a safe position before the door is opened
  - Procedures for re-opening an aircraft cabin access door after it has been closed, applicable to each type of door operated, to ensure ground handling personnel do not commence the process to re-open a door unless specifically authorized by the pilot-in-command (PIC) of the aircraft.

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- Procedures for the placement of a safety device across the opening of a cabin access door that is open without GSE in position at the door.

**(c) Ground Support Equipment**

- (i) Procedures for the positioning of marker cones around specific parts of an aircraft for the purpose of preventing damage from the movement of vehicles or GSE.
- (ii) Procedures to ensure the movement of GSE operated in close proximity to the aircraft, when the vision of the GSE operator is or might be restricted, is directed by one or more guide persons and
- (iii) Procedures to ensure the operator of GSE drives no faster than walking speed when the equipment is approaching or moving away from the aircraft.
- (iv) Procedures to ensure the operator of motorized GSE being driven toward the aircraft makes a full stop as a brake check:
  - (1) Before entering the equipment restraint area;
  - (2) Again before reaching the aircraft side.
- (v) Procedures to ensure GSE that is being towed to a position at or near the aircraft, where possible:
  - i. Is driven along a path that does not require sharp turns;
  - ii. Approaches the aircraft on a path parallel to the side of the aircraft fuselage;
  - iii. Is parked in the parallel position
- (vi) Procedures to ensure unattended vehicles or motorized GSE, when positioned at or near the aircraft,
  - i. have the parking brake applied with the gear selector in park or neutral,
  - ii. if equipped, wheel chocks installed
- (vii) Procedures to ensure the operator of electrical or motorized GSE that is positioned at or near the aircraft, and is being utilized in the operating mode
  - (I) Remains in a position within easy reach of the emergency controls;
  - (ii) If the equipment is not fitted with external emergency controls, remains in the operating position and in control of the equipment.
- (viii) Procedures to ensure GSE, when positioned at the aircraft:
  - i. If fitted with stabilizers, has the stabilizers deployed;
  - ii. If fitted with an auto-leveling system, has auto-leveling engaged;
  - iii. Has handrails deployed in the raised position or fall protection is utilized in accordance with local requirements.
  - iv. GSE that interfaces with aircraft cabin access doors: has a platform of sufficient width to allow the aircraft door to open and close when the equipment is in position at the aircraft and the safety rails are deployed.

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- (ix) Procedures to ensure GSE attachment fittings, transfer bridges or platforms are correctly deployed when the equipment is in position at the aircraft accessdoor.
- (x) Procedures to ensure GSE, when positioned at the aircraft, doesnot:
  - i. Obstruct the evacuation of persons from the aircraft in anemergency;
  - ii. Prevent or obstruct the movement of a fuelling vehicle away from theaircraft;
  - iii. Unnecessarily impede the accomplishment of other aircraft handling operations inprogress
- (xi) Procedures to ensure, when passengers are onboard, or embarking or disembarking from, an aircraft beingfuelled:
  - i. Ground handling personnel are aware of the aircraft exits that have been designated for emergencyevacuation;
  - ii. The area beneath such exits is kept clear of GSE and/or otherobstructions
- (xii) Procedures to ensure GSE is not positioned at the aircraft with the protective rubber bumpers compressed against thefuselage
- (xiii) Procedures to ensure GSE is not removed from a cabin access door unlesseither:
  - (i). The cabin access door has been closed by an authorizedperson;
  - (ii). A safety device has been placed across the dooropening

**(d) Passenger Boarding Bridge andStairs**

- (i) Procedures to ensure the walking surfaces of passenger boarding bridges and/or stairs are inspected and free from conditions that could cause injury to passengers or ground handling personnel
- (ii) Procedures to ensure the passenger boarding bridge is parked in the fully retractedposition:
  - i. Prior to aircraftarrival;
  - ii. Prior to aircraft departuremovement.
- (iii) Procedures to ensure personnel, equipment and vehicles are clear of the bridge movement path prior to movement of thebridge
- (iv) Procedures to ensure, during the positioning of the passenger boardingbridge:
  - i. Only the bridge operator is in thebridgehead;
  - ii. Other personnel remain at a specified distance outside thebridgehead.
- (v) Procedures to ensure the passenger boarding bridge is moved slowly to the aircraft cabin access doorsill:
  - i. Until the bridge safety bar just touches theaircraft;
  - ii. In a manner that prevents damage to aircraft components protruding from thefuselage
- (vi) Procedures to ensure the passenger boarding bridge and/or stairs are positioned to the cabin access door in a mannerthat:
  - i. Minimizes or eliminates gaps in the walking surfaces of the aircraft andequipment;

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- ii. Precludes any gap that would allow a person or large piece of equipment to fall to the ramp surface below.
- (vii) Procedures to ensure, once the passenger boarding bridge is in position at the cabin access door, bridge safety systems are engaged.
- (viii) Procedures to ensure the passenger boarding bridge, when an operator is not at the controls, are configured to prevent operation by unauthorized persons.
- (ix) Procedures to ensure a safety device is placed across the forward opening of the passenger boarding bridge platform when the bridge is removed from the cabin access door.
- (x) Procedures to ensure passenger boarding bridge malfunctions are reported to the appropriate authority

**(e) Aircraft Servicing**

- (i) Practices and procedures for implementation by ground handling personnel during aircraft fuelling operations, which address:
  - i. Aircraft protection;
  - ii. Fuel safety zone;
  - iii. Fuel hose safety;
  - iv. Fuel spillage
  - v. Ground support equipment;
  - vi. Notification of persons onboard the aircraft;
  - vii. Aircraft evacuation.
- (ii) Aircraft toilet servicing operations procedures that address:
  - i. Operation of aircraft access panels or doors;
  - ii. Operation of aircraft servicing controls;
  - iii. Equipment-to-aircraft interface;
  - iv. Clean-up and leakage check

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(iii) If aircraft potable water servicing operations are conducted, the operator shall have procedures for the application of water quality standards in the preparation, handling and inspection of aircraft potable water to ensure no contamination when loaded into the aircraft.



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**(f) Aircraft Security**

- (i) Procedures for securing an aircraft for overnight orlayover:
  - i. The aircraft is searched after parking to verify no persons areonboard;
  - ii. Aircraft are parked only in secure areas within an airport operatingarea;
  - iii. Aircraft are parked under conditions that permit maximum security andprotection.
- (ii) Procedures to ensure an adequate level of available outside lighting is utilized during hours of darkness to dissuade and detect unauthorized intrusions to properties, parked aircraft and vehicles
- (iii) Procedures for conducting an aircraft search prior passenger boarding and immediately after passenger deplaning, and suspicious articles found are brought to the attention of the relevant authority
- (iv) Procedures for ensuring aircraft are guarded or otherwise secured during conditions of elevated securitythreat.

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**(g) Aircraft Loading****Operations****Loading Management****nt**

- (i) Procedures to ensure aircraft are loaded:
  - i. In accordance with written loading instructions;
  - ii. In a manner that satisfies weight and balance requirements;
  - iii. In a manner that prevents damage to the aircraft and injuries to personnel;
  - iv. In a manner that prevents movement or spillage during flight
- (ii) Procedures to ensure a qualified person is designated as loading supervisor for all aircraft loading and off-loading operations with the responsibility for ensuring the aircraft is loaded or off-loaded in accordance with applicable loading procedures and instructions.
- (iii) Procedures to ensure, prior to being loaded into an aircraft, ULDs and other items are inspected for damage or leakage and, if found damaged or leaking, are not loaded into the aircraft
- (iv) Procedures to ensure ULDs to be loaded into an aircraft are crosschecked by unit number with the Loading Instructions.
- (v) Procedures for ensuring, once an aircraft has been loaded, a Loading Report is:
  - i. Completed and certified by the supervisor responsible for aircraft loading;
  - ii. Communicated to Load Control

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**(h) Loading Positioning**

- (i) Procedures to ensure the ground stability of an aircraft during loading and unloading operations
- (ii) If the operator loads cargo, mail or stores (supplies) onto a passenger aircraft for transport in cabin passenger seats, the operator shall have procedures to ensure such cargo:
  - (i) Is properly secured by a safety belt or restraint device having enough strength to eliminate the possibility of shifting under all normal anticipated flight and ground conditions;
  - (ii) Is packaged or covered in a manner to avoid possible injury to passengers and cabin crew members;
  - (iii) Does not impose any load on the seats that exceeds the load limitation for these seats;
  - (iv) Does not restrict access to or use of any required emergency or regular exit, or aisle(s) in the cabin;
  - (v) Does not obscure any passenger's view of the seat belt sign, no smoking sign or required exit sign.

**(i) Loading Equipment**

- (i) Procedures to ensure ground loading equipment is positioned at the aircraft with adequate clearance between the aircraft and the equipment to allow for vertical movement of the aircraft during loading or unloading operations
- (ii) Procedures to ensure, once aircraft loading operations have been completed, ground loading equipment is moved to a position well clear of the aircraft.
- (iii) Procedures to ensure the guides and safety rails on ground loading equipment are properly deployed for loading and unloading operations.

**(j) In-planeloading**

- (i) Procedures for operation of the in-plane loadingsystem(s).
- (ii) Procedure to ensure any components of the in-plane loading system found to be missing or unserviceable (e.g. locks, nets) are reported.

**a. Aircraft GroundMovement**

- (i) Procedures, if applicable, to ensure the equipment utilized for aircraft ground movement is suitable for the specific operation to be conducted, and takes intoaccount:
  - i. Type and weight of theaircraft;
  - ii. Weatherconditions;
  - iii. Surfaceconditions.
- (ii) Procedures, if applicable, to ensure, prior to commencement of an aircraft ground movement operation, personnel involved in the operation understand and are in agreement withhow:
  - i. Communication will beperformed;
  - ii. The aircraft will bemanuevered.
- (iii) The Operator shall ensure, for each departure or arrival aircraft ground movement operation, a person is assigned responsibility for the safe performance of the operation, and such responsibility includesensuring:
  - i. The responsible person is known to all personnel involved in theoperation;
  - ii. Personnel involved in the operation are briefed of their individualresponsibilities;
  - iii. Only persons required to perform operating functions are in the operating area and involved in theoperation;
  - iv. Standard hand signals are used for non-verbalcommunication;
  - v. Personnel involved in the operation are positioned away from hazardzones;
  - vi. The general area of the operation is clear of ground support equipment and otherobstacles
- (iv) Procedures, if applicable, for an inspection of the aircraft exterior and adjacent airside areas prior to aircraft departure or arrival ground movement toverify:

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- i. The ramp surface condition is adequate for movement operations; The ramp surface is clear of items that might cause aircraft foreign object damage(FOD);
  - ii. For movement from parking, aircraft servicing doors and panels are closed and secure;
  - iii. For movement from parking, power cables and loading bridge are detached;
  - iv. Equipment and vehicles are positioned clear of the movement path;
  - v. Adequate clearance exists between the aircraft and facilities or fixed obstacles along the movement path;
  - vi. For movement from parking, chocks are removed from all wheels.
- (v) Procedures, if applicable, for making an assessment of the parking and surrounding areas prior to any aircraft departure or arrival ground movement to ensure an assignment of personnel necessary for safe movement operations. Such assessment shall take into account, relative to the type of aircraft movement:
- i. Aircraft type;
  - ii. Infrastructure;
  - iii. Ground support equipment utilized.
- (vi) Personnel that perform marshaling or wing-walking functions during aircraft ground movement operations utilize:
- i. Wands or paddles of a high visibility color during daytime conditions;
  - ii. Lighted wands during low visibility or night conditions
- (vii) Procedures, if applicable, for aircraft arrival and parking that address, as a minimum:
- i. Pre-arrival planning and preparation;
  - ii. Use of the aircraft parking guidance system, if applicable;
  - iii. Aircraft marshaling;
  - iv. Aircraft movement assistance;
  - v. Need to transition to towing;
  - vi. Aircraft parking;
  - vii. Aircraft engine shutdown;
  - viii. Ground-to-flight deck communication;
  - ix. Aircraft chocking;
  - x. Release of aircraft parking brake;
  - xi. Application of ground support equipment;
  - xii. Placement of aircraft marker cones.

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- (viii) Procedures, if applicable, for the conduct of aircraft marshaling operations, to include, as applicable to the type(s) of aircraft ground movement operations conducted:
  - i. Nose gear-controlled pushback and towing;
  - ii. Main gear-controlled pushback;
  - iii. Power-back;
  - iv. Power-in;
  - v. Power-out.
- (ix) Personnel that perform the marshaling function during aircraft ground movement operations:
  - i. Provide standard marshaling signals in a clear and precise manner;
  - ii. if applicable, are approved to perform marshaling functions by the relevant authority;
  - iii. Wear a distinctive fluorescent identification vest or jacket to permit positive identification by the flightcrew.
- (x) Procedures, if applicable, for use by personnel when providing assistance functions during aircraft ground movement operations
- (xi) Personnel that perform assistance functions during aircraft ground movement operations:
  - i. Utilize standard hand signals in a clear and precise manner;
  - ii. Wear a distinctive fluorescent identification vest or jacket to permit positive identification by the flightcrew.
- (xii) Process to ensure aircraft chocks used in operations meet recognized specifications for safety.
- (xiii) Procedures, if applicable, to ensure personnel, when positioning or removing chocks, are aware of and remain clear of aircraft protrusions that could cause injury
- (xiv) Procedures for aircraft chocking
- (xv) Procedures, if applicable, to ensure chocks, after removal from under the aircraft, are stored in designated areas that are:-
  - i. Dedicated for such storage;
  - ii. Clear of the aircraft movement areas
- (xvi) Procedures, if applicable, for aircraft pushback or towing and/or recommendations of the aircraft manufacturer for each type of aircraft, and such procedures shall ensure maximum nose gear turn limits are not exceeded
- (xvii) Procedures, if applicable, to ensure, during aircraft pushback or towing operations, verbal communication between ground handling personnel and the flight deck is conducted using **PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE**



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- common phraseology that has been agreed to in advance
- (xviii) Procedures, if applicable, for aircraft pushback or towing to ensure chocks are not removed from the aircraft main gear until the:
  - i. Parking brake of the tractor is engaged
  - ii. Tractor and tow bar are connected to the aircraft nose gear;
- (xix) Procedures, if applicable, for aircraft pushback or towing to ensure, for aircraft fitted with a nose gear steering by-pass system, the by-pass pin:
  - i. Is correctly installed prior to connecting the tow bar or towbarless tractor to the aircraft nose gear
  - ii. Is removed after the tow bar or towbarless tractor has been disconnected from the nose gear
- (xx) Procedures, if applicable, for aircraft pushback or towing to ensure, for aircraft not fitted with a nose gear steering by-pass system, the steering hydraulic system is depressurized or the nose gear steering torque links are disconnected
- (xxi) If the operator conducts aircraft pushback or towing utilizing a tractor and tow bar, the operator shall have procedures that provide instructions for connecting the tow bar to the aircraft nose gear and to the tractor
- (xxii) Procedures, if applicable, for aircraft pushback or towing operations to ensure, when a towbarless tractor is connected to the aircraft nose gear, there is verification that the aircraft nose wheels are safely locked in the tractor locking mechanism
- (xxiii) Procedures, if applicable, for aircraft pushback or towing operations to ensure the aircraft nose wheels secured to a towbarless tractor are lifted to a height above the ground that will preclude any contact between the nose wheels and the ground during the entire pushback or towing operation
- (xxiv) Procedures, if applicable, for aircraft pushback or towing to ensure a tractor connected to the aircraft is not left unattended with the engine running
- (xxv) Procedures, if applicable, for aircraft pushback or towing to ensure, prior to the commencement of movement, the tractor operator verifies:
  - i. If feasible, the tractor is in line with the centerline of the aircraft
  - ii. The wheels on the tow bar, if applicable, are fully retracted
  - iii. The tractor is in the appropriate drive mode
- (xxvi) Procedures, if applicable, for aircraft pushback or towing to ensure, prior to the commencement of movement, the tractor operator has confirmation that the aircraft parking brake is released

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- (xxvii) Procedures, if applicable, for aircraft pushback or towing to ensure the tractor operator, when stopping or slowing aircraft movement during the operations, make a gentle brake application.
- (xxviii) Procedures, if applicable, for aircraft pushback operations to ensure, prior to lifting the aircraft nose wheels with a towbarless tractor
  - i. Ground support equipment, including the passenger boarding bridge, is removed from the aircraft
  - ii. The flight deck is notified
- (xxix) Procedures, if applicable, for aircraft pushback operations to ensure, when the pushback operation is in progress, ground handling personnel do not attempt to step across or over the tow bar.
- (xxx) Procedures, if applicable, to ensure, during aircraft pushback operations:
  - i. Communication with the flight deck is conducted in a manner that eliminates the need for personnel to walk in close proximity to the aircraft
  - ii. A backup method of communication between ground handling personnel and the flight deck is in place for implementation should the primary method fails.
  - iii. The flight deck is notified immediately in the event any connection between the tractor and the aircraft is lost during the operation
- (xxxi) Procedures, if applicable, to ensure, when aircraft pushback operations are conducted in poor surface or weather conditions, aircraft movement is limited to a slower speed than in normal conditions.
- (xxxii) Procedures, if applicable, for aircraft pushback to ensure, when movement has been stopped and prior to disconnecting the tow bar or towbarless tractor from the aircraft nose gear, the flight deck is instructed to set the aircraft parking brake and to hold the existing position until receipt of visual

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- signals for final clearance to taxi. Procedures shall ensure confirmation is received by ground handling personnel that the parking brake is set
- (xxxiii) Procedures, if applicable, for aircraft pushback operations to ensure, when the pushback movement has been stopped and prior to disconnecting the tow bar from the aircraft nose gear, tension is released from the towbar.
  - (xxxiv) Procedures, if applicable, for aircraft pushback to ensure, after the towbarless tractor has been disconnected from the nose gear, but prior to removal of the nose gear steering by-pass pin, the tractor is positioned so it is visible from the flightdeck
  - (xxxv) Procedures, if applicable, for aircraft pushback to ensure, prior to the aircraft commencing taxi under its own power, ground handling personnel:
    - i. Provide a final clearance signal to the flightdeck
    - ii. If applicable, display the by-pass pin to the flightdeck
    - iii. Receive acknowledgement from the flightdeck
  - (xxxvi) Procedures, if applicable, for aircraft towing to ensure
    - i. Prior to commencement of a towing operation, communication is established between the tractor operator and the flightdeck
    - ii. Aircraft hydraulic brake system pressure is available during the towing operation;
    - iii. When communication is lost during a towing operation, movement is immediately stopped.
  - (xxxvii) Procedures, if applicable, for aircraft towing to ensure, if the aircraft is about to overtake the tractor, the tractor operator notifies the flight deck immediately to stop movement using gentle brake application.
  - (xxxviii) Procedures, if applicable, for aircraft towing to ensure, when towing on ice or snow, the tractor operator:
    - i. Avoids stopping movement in a turn, to the extent possible
    - ii. Maintains a reduced towing speed, particularly before entering a turn



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- (xxxix) Procedures, if applicable, for aircraft towing to ensure, when towing on a “down slope,” the tractor operator maintains a very low speed to prevent the aircraft from overtaking the tractor.
- (xl) Procedures, if applicable, for aircraft towing to ensure, when towing in low visibility or night conditions, the aircraft is illuminated so it can be seen.
- (xli) Procedures, if applicable, for aircraft towing to ensure, when the towing movement has been stopped and prior to disconnecting the tow bar or the towbarless tug from the aircraft nose gear, a chock is placed behind the aircraft main wheels.
- (xlii) Procedures, if applicable, for aircraft pushback to ensure, prior to connection of a tractor to the aircraft main gear, a check of the remote control system is made, at a normal operating distance, to verify the system is functional
- (xl iii) Procedures, if applicable, for aircraft pushback to ensure, while positioning a main gear tractor for connection to the aircraft, ground handling personnel verify the tractor unit is appropriately configured for the aircraft type
- (xl iv) Procedures, if applicable, for aircraft pushback to ensure the main gear tractor operator use standard terminology to communicate instructions to the flight deck for steering the aircraft along the desired rearward pushback path. Receive acknowledgement from the flight deck
- (xl v) Procedures, if applicable, for aircraft pushback to ensure the main gear tractor operator notifies the flight deck immediately in the event of an equipment malfunction during the operation
- (xl vi) Procedures, if applicable, for aircraft pushback to ensure the main gear tractor operator observes the unit indicator lights to verify the tractor rollers are fully open before giving an all clear signal to the flight deck.
- (xl vii) Procedures, if applicable, for aircraft pushback to ensure, in the event an emergency passenger evacuation is required during the pushback operation, ground handling personnel remove the main gear tractor if it is in a position that interferes with the evacuation process
- (xl viii) Aircraft power-back operations are conducted with a ground handling crew that comprises, as a minimum, one marshaled and two wing walkers; the marshaled is assigned responsibility for the safe performance of the operation
- (xl ix) Procedures, if applicable, for aircraft power-back to ensure wireless

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communication are the primary method of communication between the marshaled and the flight deck.

- (l) Procedures, if applicable for aircraft power-back to ensure the marshaled wear protective goggles in addition to normal personal protective equipment
- (li) Procedures, if applicable, to ensure aircraft power-back operations are not conducted when:
  - i. The departure gate is not approved for such operations;
  - ii. The entire area of the operation is not adequately lighted;
  - iii. Visibility is restricted due to weather conditions;
  - iv. An accumulation of ice, snow or slush is on the movement surface;
  - v. Verbal agreement is not reached between the marshaled and the flight deck;
  - vi. Any member of the ground handling crew is not properly protected.
- (lii) Procedures, if applicable, for aircraft power-back to ensure the marshaled:
  - i. Terminates the rearward movement of the aircraft with a “come straight ahead” signal;
  - ii. Provides a stop signal only after the aircraft has achieved forward movement

## 11. OTHER GROUND OPERATIONS SERVICES

Ground operations are not limited to those listed above. The following are the additional services that need to be controlled and managed:

- (a) Preparation and submission of Air Traffic Service (ATS) Flight Plan
- (b) Preparation of Operational Flight Plan
- (c) Compilation and supply of weather report and NOTAM
- (d) Flight dispatch and flight watch including ETOPS/EDTO (Extended Diversion Time Operations) and AWO
- (e) Obtaining over flight clearances and landing permissions.
- (f) Other authorizations when specified


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**APPENDIX 1- Sample of Ground Operations manuals contents**

1. Administration and Control of manual
  - 1.1 Table of contents
  - 1.2 TitlepageRevision
  - 1.3 Distributionlistof effective pages
  - 1.4 1.6 Record ofrevisions,RevisionhighlightsForeword

ApplicabilityIntroductionPolicy

2. ORGANISATIONMANAGEMENT
  - Organization Structure andresponsibility
  - Communication (link of communications in thecompany)
  - Resources (Schedule and their dutytime)
3. DOCUMENTATION ANDRECORD
  - DocumentationSystem
  - OperationalManuals
  - Records Systems (how do you control yourrecords)
4. SAFETY ANDQUALITY
  - SafetyProgram
  - Quality AssuranceProgram
  - Other quality system ifapplicable
5. GROUND HANDLINGINSTRUCTIONS/PROCEDURES
  - Fuellingprocedures
  - Aero plane, passengers and cargo handling procedures related tosafety

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Procedures for the refusal of embarkation  
De-icing and anti-icing on the ground  
Other procedures on the ground operations required

6. TRAINING AND QUALIFICATION  
Functional and inductions Training Program

Other training such as Security, Dangerous Goods, Airside Safety, Airside Driver, GSE Operations, Load Control, Passenger Handling, Baggage Handling, Aircraft Handling and Loading Training Program.

7. SECURITY MANAGEMENT

Detail of Security Policy, Control, management, Training & Personnel awareness related to handling agent.

8. GROUND SUPPORT EQUIPMENT


(GSE) MANAGEMENT Detail of  
GSE Operations and Maintenance

9. AIRCRAFT MONITORING COORDINATION

Describes how coordination's, monitoring position, distribution of communications between aircraft and operations.

**Note:**

1. Activities not covered by the organization may carry a statement not applicable; however, the format and numbering should remain the same.
2. An applicant may vary their manuals contents, however, the evaluations time required may increase.

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<b>PREPARED BY:</b>		
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