



CIRCULAR REF: ECAA/DG/GM/002

DATE: 15 May 2020

SUBJECT: CIVIL AVIATION SAFETY CIRCULAR

TRANSPORT OF CARGO IN PASSENGER COMPARTMENT

ATTENTION: Ethiopian air operators transporting cargo on passenger seats in an aircraft passenger compartment certified to carry only passengers, as well as to the transport of cargo in passenger compartments where the passenger seats have been removed for this purpose.

PURPOSE.

The purpose of this Civil Aviation Safety Circular is to provide guidelines to Ethiopian air operators during the current COVID-19 crisis for transporting cargo in a passenger compartment certified to carry only passengers, while complying with section 8.2.9.15 of Ethiopian Civil Aviation Rules & Standards (ECARAS) Part 8 and other applicable regulatory requirements.

This document also provides guidelines for the transport of cargo on passenger seats as well as the transport of cargo in passenger compartments where the passenger seats have been removed for this purpose.

For airworthiness aspects regarding transport of cargo on seats in the passenger compartment, or transport of cargo in the passenger compartment where seats have been removed, this document provides air operators with technical information to comply with applicable regulatory requirements, when no approved design change exists or related technical investigations are on-going.

BACKGROUND.

Air cargo services are vital for the economy and for fighting COVID-19, and Ethiopians and global supply chains depend on them being operated unhindered. Air cargo should therefore be able to continuously deliver critical products such as food, medical supplies and personal protective equipment (PPE), as well as other products which are vital for the functioning of sensitive supply chains. In order to facilitate the continuation of Air cargo services, which is vital for fighting the COVID-19 crisis, it is essential for the air cargo services not be disrupted so that critical cargo supplies such as food and medical supplies (e.g. masks, gloves, clothing, etc.) can be delivered. Some of the critical cargo supplies may be classified as dangerous goods, and



this would need to be taken into account as part of a risk assessment. Due to the increase in demand for the transport of air cargo, currently, underutilized passenger aircraft are increasingly needed to fly the mentioned type of cargo.

Following this, more and more operators are required to fly cargo using passenger aircraft. Air Operators may also refer to guidelines published by the aircraft manufacturers.

RECOMMENDED ACTION.

1. Operational Aspects for Transport of Cargo in Passenger Compartments

- a) Cargo shall only be transported by air operators holding valid Part 9 approval.
- b) Cargo operations in support of COVID-19 requests where cargo is to be carried in passenger compartments must be operated with a NO Passengers limitation.
- c) Required crew members only that are directly related to the operation of such cargo flights will be permitted, including Aircraft Maintenance Technicians, acting as additional crew members. They will be required to be trained with respect to their duties and have training records.
- d) These operations are to be allowed only on a temporary basis and as necessary given the current COVID-19 situation. The transport of cargo on passenger seats, or, in the passenger compartment, will require adequate restraint systems/means which must address the ground, flight, turbulence, take-off, landing, and emergency landing conditions.

1.1. Crew composition

- a) Operations without passengers shall require one or more crew members to survey and access all areas of the passenger compartment during all phases of flight. Any fire that might occur must be discovered and extinguished immediately utilizing emergency equipment. These crew members are considered additional crew members with specific duties assigned during the flight and would be in addition to the required flight crew members.
- b) The additional crew members must be provided appropriate seats that are not located near the cargo (i.e. first rows). These seats must be certified for use during taxi, take-off, landing, flight, and for emergency landing conditions. The additional crew members seating location must be provided with a means of two-way communication with the flight crew members.
- c) If there are three or more employees on board an aircraft, at least one of whom is not a flight crew member, one of them shall be a first aid attendant and have received the training on Aviation Occupational Health and Safety Regulations.



d) The additional crew members shall have received the following emergency procedures training:

- I. instruction in the location and operation of all emergency equipment;
- II. Recognition and suppression of fire in the air and on the ground;
- III. use of hand-held fire extinguishers, including practical training;
- IV. use of protective breathing equipment, including practical training;
- V. operation and use of emergency exits;
- VI. emergency evacuation procedures;
- VII. donning and inflation of life preservers (when equipped); and
- VIII. removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped).

1.2. Procedures

When cargo is loaded into the passenger cabin, the cargo shall not include any dangerous goods or live animals. It is of the utmost importance that operators are familiar with cargo transport before even considering such an operation.

a) A risk assessment shall be performed in order to identify hazards related to operating cargo flights using passenger compartment configurations which have been approved for transporting only passengers. The risk assessment shall be submitted to Ethiopian Civil Aviation Authority (ECAA). This risk assessment needs to address the specific configuration of the aircraft to be utilized for the transport of cargo in the passenger compartment whether, or not, passenger seats remain installed.

b) The pilot-in-command of an aircraft shall ensure that, prior to each flight or series of flight segments, the crew members of the aircraft are given a pre-flight briefing to address the type of operation being conducted and any additional information necessary for the flight, including information respecting unserviceable equipment or abnormalities.

c) The air operator must develop procedures to ensure cargo is properly located, stowed, and secured before each flight, during the flight, and prior to landing based on the ECAA recommendations contained in this Circular. These procedures may be performed by the Flight Crew and or the additional crew members. Once completed there shall be a means to record that the air operator's procedures have been complied with and that this information is shared with the pilot in command, which becomes part of the final verification procedure.



d) Operators shall establish procedures to manage emergencies in the passenger compartment; existing procedures may need to be amended to address this type of operation of the aircraft. The pilot in command is responsible to ensure that all crew members are appropriately briefed prior to departure.

e) Operators may require temporary revisions to their applicable operating manuals to include the new type of operations and the related procedures. This includes, but is not limited to, flight, ground, cargo loading, company operations and maintenance control manuals.

f) Operators shall establish procedures to address the required equipment for each flight to be operated considering the change to the aircraft configuration as well as emergency and other non-normal procedures when operated to transport cargo in the passenger compartment.

Typically, operators shall:

- 1) Perform a detailed safety risk assessment to identify hazards, evaluate and mitigate correlated risks. Some examples of possible risks include, but are not limited to, the following:
 - i) Operator general knowledge of cargo transport;
 - ii) If applicable, procedures to address the acceptance, handling and loading of Cargo Aircraft Only (CAO) dangerous goods;
 - iii) The detection of any smoke or fire and firefighting capabilities of personnel in the cabin;
 - iv) Qualification and abilities of crew member or other personnel to control and put out fire in cabin;
 - v) The provision, location and storage of sufficient firefighting equipment such as portable breathing equipment, fire extinguishers etc. for use by personnel carried in the cabin;
 - vi) Operational approval for cargo only flight, as applicable;
 - vii) The potential for misdeclared/undeclared or hidden dangerous goods within cargo;
 - viii) Unrestricted access to all cargo loaded into the cabin;
 - ix) Cargo leakage/spillage;
 - x) Unsecured / incorrectly loaded cargo;
 - xi) Incorrect loading and unloading sequence;



- xii) Operational weight and balance limits exceedance;
 - xiii) Qualification of ground staff to prepare and load cargo in accordance with applicable regulations and instructions;
- 2) Use crew members to survey and access all areas of the cabin during all phases of flight. This is to address any possible risk of fire, leakage or other unforeseen circumstances that might occur in the cabin during flight.
- 3) Use load master or other appropriately trained personnel to coordinate all loading/unloading operations.

1.3. Loading and Mitigations for transport of cargo in passenger compartment including on passenger seats.

Verified cargo may be carried in approved stowage locations within the passenger compartment. These locations include overhead stowage bins, closets, floor mounted stowage, and under seat stowage areas.

Note: It is not recommended to load mail in the passenger cabin unless the contents of the mail can be verified to exclude the presence of dangerous goods.

- a) Exact cargo weight and position in the passenger compartment and in the designated cargo hold(s) shall be reflected in the weight and balance documentation (load sheet) and weight and balance and loading control manuals, as applicable.
- b) The pilot in command (PIC) shall be informed of the content of all the cargo using Notice to Captain (NOTOC) or other approved operator procedures.
- c) The operator shall load the aircraft considering the different levels of available fire protections of the loading areas.
- d) For the bulkheads, or other passenger compartment monuments, such as overhead bins or galleys or stowage compartments, that have a placard indicating maximum capacity, the cargo items stowed in these areas shall not exceed the maximum capacity indicated in the placard.
- e) The maximum capacity limitations in the required safety placards (on or adjacent to the cargo approved stowage locations) shall not be exceeded. All stowage instructions specified in the placards apply.
- f) The weight of the cargo shall not exceed the structural loading limits of the floor, or seats, as published in the aircraft documentation (e.g. Limitation chapter of the Weight and Balance



Manual, Seat Component Maintenance Manual Limitations, etc.). Compliance with certification standards is expected.

g) The cargo placed in enclosed stowage areas shall not be of such size that they prevent latched doors from being closed securely.

h) The cargo items shall be stowed only in a location that is capable of restraining it to accommodate ground, flight, take-off, landing, and emergency condition loads.

i) The cargo stowage location shall be such that, in the event of an emergency evacuation, it will not hinder aisle access and egress.

j) The cargo shall not be placed where it can impede access to emergency equipment.

k) The cargo shall be checked to ensure proper stowage in the following instances (at the minimum): The additional crew members will be required to carry out these inspections/checks

I. Before take-off,

II. Before landing,

III. At frequent intervals during the flight (not to exceed 30 minutes), and

IV. Under orders of the pilot in command (PIC).

l) The aisles shall remain free of cargo to enable access to the cargo, and seats (if still installed), in case of smoke or fire.

m) Any smoke or fire within the passenger compartment must be easily detected and extinguished using the existing provided emergency equipment. Additional emergency equipment such as additional hand-held fire extinguishers and protective breathing equipment may be necessary to be installed to address the increased fire load of the cargo compared to passenger carriage. Thoroughly briefed additional crew members shall be on-board to survey and access all areas of the passenger compartment during all flight phases. There must be an adequate number of trained crew members acting as fire-fighter (not part of the flight crew) with sufficient amount of firefighting equipment. This equipment may be stowed in the passenger compartment using existing stowage provisions (overhead bins, stowage's) provided that the location is identifiable for the crew members. Specific details, including frequency of in-flight checks, must be coordinated with local regulatory authorities.

n) Additional crew members should be placed on existing flight attendant seats unless other suitable seat locations are available and acceptable for this operation. They must not share seat rows with cargo. There must be a clear separation of areas occupied by occupants and those



fitted with cargo during taxi, take-off, landing, and flight. At least one empty seat row between cargo and reserved occupant seats must be established. Any anticipated shifting of the cargo during flight must not interfere with the occupied seats.

o) 'Under seat stowage' is allowed only if the seat is equipped with a restraint bar system and the cargo items can be placed fully underneath the seat. The loading of the cargo under each seat should not exceed 9 kg (20 lbs). This is allowed only if stowage of cargo in these areas will not impede visual inspection during flight.

p) The cargo packaging shall be able to equalize the pressure so that it can handle the Delta Pressure (DP) during the flight, as applicable.

q) All smoke and fire detectors shall be maintained as per the applicable Instructions for Continued Airworthiness (ICA) or Component Maintenance Manual (CMM). Any areas where existing smoke detectors are installed such as in lavatories must not be used for cargo stowage if the smoke detection system is not operational.

r) The air conditioning and pressurization system shall be operational taking into account the nature of the cargo transported in the passenger compartment, the number and distribution of occupants, and any emergency procedure requiring their functionality.

s) If seats remain installed, the load should be evenly distributed across the seat row. The loading on each seat should not exceed 50 kg (110 lbs) in the case of cargo transportation.

t) If seats remain installed, the vertical center of gravity (CG) of the cargo must be equal to or lower than the passenger CG of the seat, provided by the seat supplier.

u) If seats remain installed, the cargo on the seats shall be adequately restrained and the restraint means must be attached to the existing seat, to the seat primary structure itself, or directly to the cabin floor seat tracks in accordance with structural load limitations. The restraint means shall address in particular upward, forward and sideward load cases. Seat backrest are typically not designed to hold emergency landing forward loads induced by cargo and are not to be used to restrain those loads.

v) If seats do not remain installed, the cargo restraint means must be installed to attach directly to the seat track in the passenger compartment floor and must be able to accommodate the ground, flight, turbulence, take-off, landing, and emergency landing conditions.

w) The standard portable safety and emergency equipment from the passenger configuration shall be retained in the aircraft and is expected to be available to the additional crew members,



such as portable breathing equipment (PBE), fire extinguishers, etc. The need for additional emergency equipment must be evaluated by considering the cargo to be transported (e.g. expected class of fire), the existing equipment installed and the operation (e.g. EDTO). For example, additional portable fire extinguishers may be required.

x) To prevent passenger compartment floor collapse into belly during depressurization, the passenger compartment cargo loading procedures are to ensure depressurization panels are unobstructed as per aircraft manufacturer instructions.

y) To prevent overheating of passenger compartment systems adjacent to cargo, entertainment systems, seat powersystems, unused galley systems and any other heat generating systems that are not required for the operation of the aircraft are to be turned off.

z) When cargo is loaded into the passenger compartment, the cargo shall not include any live animals.

2. Transport of Dangerous Goods

2.1. Dangerous goods (DG) shall only be transported by Operators holding an approval

a) In the absence of passengers, the limits for the dangerous goods can be those established in the Technical Instructions for Cargo Aircraft, instead of Passenger Aircraft. The operator shall nevertheless include this aspect in the risk assessment performed.

b) Additional training/briefing shall be given to the crew members, particularly letting them know whether the limits have been increased from those applicable to passengers to those applicable to cargo. This should, at least, include the following:

i) the risks and consequences of increasing the amount of DG in the hold;

ii) any changes in the emergency procedures and the emergency equipment that may be on board.

c) Relevant information on dangerous goods (e.g. affecting emergency procedures) shall be included in the briefing given to other people occupying the aircraft.

d) Dangerous goods shall not be carried in the passenger compartment and must always be carried in the hold and shall be transported under the conditions established by the Transportation of Dangerous Goods regulations.

e) Nobody other than a crew member, an operator's employee in an official capacity, Authority Inspector or an authorized person accompanying a consignment or other cargo may be present



on board. Any other person will be considered a passenger and, therefore, the aircraft will no longer be able to use the provisions applicable to cargo aircraft in regards to the transport of dangerous goods.

3. Airworthiness Aspects for Transport of Cargo in the Passenger Compartments

3.1. Transport of medical supplies under a design change approval

In the context of the emergency situation created by the COVID-19 pandemic, properly authorized organizations such as approved by FAA, EASA, Transport Canada, may approve such modifications and the operators must request ECAA for acceptance of such modifications, allowing for the use of passenger compartment seats or passenger compartments with the seats removed, when related to the transportation of medical supplies (e.g. masks, gloves, clothing, etc.) provided they are not classified as dangerous goods. This has to be indicated in the approval documents and AFM Supplement.

Since this kind of installation is a change in the scope of operation of the aircraft, and in the absence of dedicated operational requirements covering this kind of operation, the installation and the procedures for operation must be addressed taking into account the specific configuration of each aircraft model affected.

3.2. Transport of other cargo under a design change approval

For transport of cargo other than medical supplies as well as in case removal of seats are necessary to allow fixation of cargo onto the aircraft structure for cargo operation, a design change approval application is required. ECAA will accept such design change if it is made by the organization that holds proper authorization from appropriate authority.

GENERAL CONDITIONS

Ethiopian air operators utilizing these guidelines for the intended purpose must advise ECAA and should expect to demonstrate their compliance with all requirements outlined in this document.

Air operators shall submit a compliance matrix demonstrating all necessary elements have been met, as applicable.

ECAA will ensure that passenger compartment configuration changes (including any necessary approvals) and operational procedures are acceptable for the intended purpose of the operation.

ETHIOPIAN CIVIL AVIATION AUTHORITY



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Upon review, ECAA will issue an approval letter, if all elements identified as necessary have been met.

VALIDITY

This Circular is in effect from May 15, 2020 and remains in effect until the earliest of the following:

- a) Until September 30, 2020;
- b) The date on which this Circular is cancelled in writing by ECAA, where in the opinion of the Director General that it is no longer in the public interest or is likely to adversely affect aviation safety.

Approved By:


Wosenyete Hunegnaw (Col)
Director General

