



Advisory Circular

CAA-AC-AWS035

28 April, 2020

GUIDANCE FOR TRANSPORT OF CARGO AND MAIL IN THE PASSENGER COMPARTMENT FOR AIRCRAFT CONFIGURED FOR THE CARRIAGE OF PASSENGERS

1.0 Introduction

With the outbreak of COVID-19 and subsequent lockdown in the country there is an increase demand for cargo operations to transport emergency and humanitarian supplies as well as other essential goods using existing passenger category aircraft. Considering the challenging situation, the country is facing, the Authority has issued this Advisory Circular (AC) to guide all Air Operators that wish to use the aircraft configured for the carriage of passengers to safely transport cargo and/or mail, including loading cargo in the passenger cabin.

Passenger aircraft are not certified to carry cargo on passenger seats or cargo unit load devices (pallets or containers) in the passenger cabin secured on the seat tracks. However, some operators are evaluating the reconfiguration of passenger aircraft by loading cargo on the passenger seats or by removal of the passenger seats to increase the volume available for the carriage of cargo. Any reconfiguration of an aircraft in this manner requires full evaluation of cargo restraints connected directly to the seat tracks to ensure structural loads are within design limits and the appropriate restraint system is applied. Reconfiguration of the aircraft also requires a formal authorisation from the Authority.

Before considering such operation, Operators are required to perform a comprehensive safety risk assessment involving all the relevant operational departments (i.e. ground, cargo, cabin, flight and engineering).

Applicable cargo configuration

Cargo Type	Passenger Cabin				Cargo Compartment	
	Overhead bin / coat cupboard	Under seat	On the seats			On the cabin floor with nets and/or straps(seats removed)
			In cargo seat bags	With nets and/orstraps		
Humanitarian supplies / Medicines	✓		A	A	A + C	✓
General cargo and/or mail	✓		A	A	A + C	✓
Dangerous goods	x	x	x	x	x	B
Cargo Aircraft Only dangerous goods	x	x	x	x	x	D

Legend

A: require CAA approval.

B: operators holding a CAA approval to carry dangerous goods as cargo.

C: require acceptance by aircraft manufacturer.

D: operators holding a CAA approval to carry dangerous goods. Cargo Aircraft Only dangerous goods must be loaded into a Class C cargo compartment (not acceptable anywhere on passengers' seats)

This guidance will be updated as need arises.

2.0 Purpose.

The purpose of this guidance is to provide the means for operators to ensure an acceptable level of safety is maintained at all times for the utilisation of aircraft configured for the carriage of passengers for the transport of cargo and/or mail, including loading in the passenger cabin. This document provides information on the considerations for a safety risk assessment and recommendations on the carriage of dangerous goods, including dangerous goods restricted to a cargo aircraft.

3.0 General Guidelines and safety risk assessment.

Typically, operators should:

- a. Perform a detailed safety risk assessment to identify hazards, evaluate and mitigate correlated risks, using the provided safety risk assessment template in appendix A. 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. EDTO operations;
 - vii. Operational approval for Cargo Only flight, as applicable;
 - viii. The potential for mis declared / undeclared or hidden dangerous goods within cargo;
 - ix. Unrestricted access to all cargo loaded into the cabin;
 - x. Cargo leakage / spillage;
 - xi. Unsecured / incorrectly loaded cargo;
 - xii. Incorrect loading and unloading sequence;
 - xiii. Operational weight and balance limit s exceedance;
 - xiv. Qualification of ground staff to prepare and load cargo in accordance with applicable regulations and instructions;
 - xv. Occupational Health and Safety (OHS) risks associated with the new procedures.

b. 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.

c. Use load master or other appropriately trained personnel to coordinate all loading/unloading operations.

- d. Before the carriage of Cargo Aircraft Only (CAO) dangerous goods;
 - i. Review the approval issued by the Authority of the State of the operator to validate that there are no restrictions or limitations that prevent the carriage of CAO dangerous goods;
 - ii. Verify the classification of the underfloor cargo compartments for the aircraft type. CAO dangerous goods are only permitted in underfloor cargo compartments that are classified as Class C, see definitions of cargo compartment classification in appendix B.

4.0 Approved loading locations and requirements.

When cargo is loaded into the passenger cabin, the cargo shall not include any dangerous goods or live animals. For the purposes of this guidance document, the passenger cabin should be considered as a Class A cargo compartment. As such the operator shall ensure that sufficient cabin crew or other qualified personnel are on board to monitor the cabin throughout the duration of the flight for any indication of smoke or fire and when necessary to alert the flight crew and use the available firefighting equipment to fight the fire throughout the duration of the flight for any indication of smoke or fire and when necessary to alert the flight crew and use the available firefighting equipment to fight the fire.

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.

In these cases, the following limitations typically apply:

- a. Stowage maximum capacity shall not be exceeded;
- b. The mass of cargo shall not exceed the structural loading limits of the floor or seats; detailed information on allowances should be available in the manufacturer Weight and Balance Manual;
- c. The number/type of restraint devices and their attachment points shall be capable of restraining the cargo in accordance with applicable certification specifications;
- d. If the cargo is stored under the seats, then the seat shall be equipped with a restraint bar system and the cargo placed fully underneath the seat. The mass of each piece of cargo shall not exceed 9 kg (20 lbs.);
- e. Items shall not be stowed in lavatories or against bulkheads that are incapable of restraining articles against movement forward, sideways, or upwards and unless the bulkheads carry a placard specifying the maximum capacity;
- f. Cargo shall not be placed where it can impede access to emergency equipment or hinder egress in case of an emergency evacuation;
- g. Cargo placed in enclosed stowage areas shall not be of such size that they prevent latched doors from being closed securely;
- h. Checks should be made before take-off, before landing and whenever the fasten seat belt signs are illuminated as well as under orders of pilot in command to ensure that cargo is properly stowed.

5.0 Loading in passenger cabin with seats installed

Where an operator has received a specific approval from the Authority to load cargo on passenger seats, they should be loaded using appropriate restraint systems to ensure compliance with all applicable regulatory requirements.

- a. Recommend covering all seats with a protective material;
- b. The number/type of restraint devices and their attachment points should be capable of restraining the cargo in accordance with applicable certification specifications;
- c. Keep the cabin depressurization relief vents unobstructed;
- d. All aisles, and access to emergency equipment shall always remain free of obstructions;
- e. The cargo load shall not extend above the maximum height of the passenger seat in the fully upright position;
- f. Always adhere to the loading sequence as reported in the Loading Instruction report (LIR). As a rule, always start to load the cabin from FWD (front) to AFT and (back). Unload from AFT (back) to FWD (front);
- g. Avoid heavy items and/or shipments with sharp edges;
- h. Ensure seat backs are in the upright position;
- I. Position the seat belts behind the seat cushions;
- j. Where possible, fold up the inner arm rests
- k. Follow installation instructions provided by bin/cargo seat bag (CSB) manufacturer;
- l. Ensure all bins / CSB are properly secured, and straps are latched and tensioned across the seat.

Uganda Civil Aviation Authority.

Appendix A - SAFETY RISK ASSESSMENT TEMPLATE

No.	Event	Hazard	Consequence <i>(worst case scenario)</i>	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
					Probability	Severity	Rating				Probability	Severity	Rating
Cargo Operations													
1	Aircraft denied landing due to concern of pax o/b	Forced to divert	No fuel, hull loss				Intolerable	Notification on Flight Plan that aircraft is carrying cargo only, no pax on board					Tolerable (with mitigation)
Cargo Compartment													
2	Inappropriate handling and carriage of dangerous goods	Uncontained fire, corrosive material leaks	Hull loss	Approval issued by NAA for the carriage of dangerous goods as cargo Documented SOPs Approved training program Follow requirements in IATA DGR (acceptance checks)			Tolerable (with mitigation)						

No.	Event	Hazard	Consequence <i>(worst case scenario)</i>	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
					Probability	Severity	Rating				Probability	Severity	Rating
3	Undeclared / misdeclared or hidden DG (including high energy items)	Fire in cargo hold	Hull loss	Documented SOPs Approved training program Follow requirements in IATA DGR at cargo acceptance to check for signs of undeclared DG Shipments carried in class "C" compartment with appropriate fire detection and suppression systems			Tolerable (with mitigation)						
4	Movement of unsecured / misloaded cargo	Weight shift	Hull loss	Cargo loading / fastening recommendations from Manufacturers Weight and Balance and loading SOPs Training of loading personnel			Tolerable (with mitigation)						
5	Carriage of CAO dangerous goods	Improper loading Fire, spill leakage	Hull loss	Approval issued by NAA for the carriage of dangerous goods as cargo Documented SOPs Approved training program Follow requirements in IATA DGR (acceptance checks) Specific ULD build-up and loading requirements.			Tolerable (with mitigation)	Additional information to acceptance, warehouse and ramp staff on acceptance and loading of CAO DG Bulletin to Load Control on loading and segregation requirements for CAO DG Bulletin to flight crew on carriage of CAO DG					

No.	Event	Hazard	Consequence (worst case scenario)	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
					Probability	Severity	Rating				Probability	Severity	Rating
Pax Cabin - General													
6	Local structural Failure of floor/ seats/ bulkheads	Excessive weight	Major equipment damage	Manufacturer recommendations			Tolerable (with mitigation)	Follow weight and balance and loading SOPs and procedures				Tolerable (with mitigation)	
7	Undeclared / misdeclared or hidden DG (including high energy items) being carried in "Class A" cabins	Uncontained cabin fire Corrosive material or liquid leakage comprising aircraft systems	Hull Loss	Cabin declared class "A" cargo only BCF fire extinguishers			Intolerable	100% verification of contents of cargo to be loaded in the cabin Follow requirements in IATA DGR at cargo acceptance to check for signs of undeclared DG Prohibit carriage of DG in the cabin Documented SOPs assuring compliance with State and Manufacturer requirements				Tolerable (with mitigation)	
8	Collapse of load containing liquid	Liquid leakage compromising aircraft systems	Hull Loss				Intolerable	Prohibit loading of liquids in the cabin				Tolerable (with mitigation)	

No.	Event	Hazard	Consequence (worst case scenario)	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
					Probability	Severity	Rating				Probability	Severity	Rating
9	Removal of pax seats to accommodate cargo	Incorrect weight and balance for aircraft configuration Exceedance of linear, superficial, cumulative, and combined load limitations	Hull loss				Intolerable	Supplemental Type Certificate (STC) and / or Type Certificate approval issued by CAA / NAA. Develop new weight and balance, loading / unloading and restraint procedures to ensure correct loading of aircraft as per Manufacturer Training for new weight and balance loading				Tolerable (with mitigation)	
10	Movement of unconstrained / improperly restrained cargo in cabin beyond the structural capability of floor and bulkheads	Cargo shift / loss of control due to CG outside of certified weight and balance limits	Hull loss	Cabin Cargo loading / fastening recommendations from Manufacturers Weight and Balance and loading SOPs and Procedures			Intolerable	Load master (or equivalent with specific training) oversee the loading and unloading of cargo in the cabin Awareness / training for Cabin Crew use of fastening restraints				Tolerable (with mitigation)	

No.	Event	Hazard	Consequence (worst case scenario)	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
					Probability	Severity	Rating				Probability	Severity	Rating
Pax Cabin - Operational													
11	Use of belt loader and/or high loader for loading operation through cabin doors	Personnel fall from height Aircraft Damage	Fatality unainvorthy Aircraft				Intolerable	Provide devices such as safety harness to secure personnel to aircraft and/or equipment (e.g. high loaders) as applicable. Ensure proper training on ad hoc procedures Use most experienced personnel only Assess GSE dimension to be used in accordance with aircraft door location, door opening clearances, door dimensions, fuselage shape and pitot tubes and/or other aircraft sensors locations					Tolerable (with mitigation)
12	Untrained personnel operating pax cabin doors	Inadvertent slide deployment	Injury to persons outside aircraft - fatality Cost				Intolerable	Use trained personnel					Acceptable

No.	Event	Hazard	Consequence (worst case scenario)	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
					Probability	Severity	Rating				Probability	Severity	Rating
13	Overheating of cabin systems adjacent to cargo	Uncontained cabin fire	Hull Loss				Intolerable	Turn off entertainment systems, seat power systems, unused galley systems and any other heat generating systems that are not required for the operation of the aircraft					Tolerable (with mitigation)

Appendix B – Definitions

Cargo Aircraft:

Any aircraft, other than a passenger aircraft, which is carrying goods or property.

Passenger Aircraft:

An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorised representative of an appropriate national authority or a person accompanying a consignment

Bin or Cargo Seat Bag (CSB)

A specially designed container / bag to be fitted in a row of seats for the purpose of stowing cargo or mail.

Cargo Compartment Classification

These definitions reflect the classification requirements set out in the Civil Aviation (Airworthiness) Regulation, (FAR) Section 25.857 and European Aviation Safety Agency (EASA) Certification Standard (CS) 25.857, as shown in the ICAO document Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481) (red book).

Class A cargo or baggage compartment is one in which:

1. the presence of a fire would be easily discovered by a crew member while at his or her station; and
2. each part of the compartment is easily accessible in flight. Class A cargo compartment is not required to have a liner.

Class B cargo or baggage compartment is one in which:

1. there is sufficient access in flight to enable a crew member to effectively reach any part of the compartment with the contents of a hand fire extinguisher;
2. when the access provisions are being used, no hazardous quantity of smoke, flames, or extinguishing agent, will enter any compartment occupied by the crew or passengers; and
3. there is a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station.

Class C cargo or baggage compartment is one not meeting the requirements for either Class A or B compartment but in which:

1. there is a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station;
2. there is an approved built-in fire extinguishing or suppression system controllable from the pilot or flight engineer station;
3. there are means to exclude hazardous quantities of smoke, flames, or extinguishing agent, from any compartment occupied by the crew or passengers; and
4. there are means to control ventilation and draughts within the compartment so that the extinguishing agent used can control any fire that may start within the compartment.

Class D cargo or baggage compartment is one in which:

1. a fire occurring in it will be completely confined without endangering the safety of the aeroplane or the occupants;
2. there are means to exclude hazardous quantities of smoke, flames, or other noxious gases from any compartment occupied by the crew or passengers;
3. ventilation and draughts are controlled within each compartment so that any fire likely to occur in the compartment will not progress beyond safe limits; and
4. consideration is given to the effect of heat within the compartment on adjacent critical parts of the aeroplane.

Load Master:

The member of an aircraft's crew responsible for supervision and coordination of loading, unloading operations.

Other references

- Boeing: MOM-20-0239-09B Multi Operator Message dated 9 April, 2020.
- Airbus: FOT Cargo transportation in the cabin - REF.: 999.0028/20 Rev 00 dated 30-MAR-2020.
- AOM700-1161- ifybombardier Notification.