Quick Reference Guidance
(QRG)

Alleviation Title	**Operational and Airworthiness considerations for the transportation of cargo in the passenger cabin (TCPC)**
Version	**1.0**
Publication Date	**18 June 2020**
Relevant Standard(s)	Provisions related to the carriage of cargo are contained in multiple Annexes and include, among others, the following points: <u>Airworthiness (Annex 8)</u> • Crashworthiness and cabin safety • Emergency equipment • Modification requirements <u>Operation of Aircraft (Annex 6)</u> • Loading and Stowage • Flight preparation • Operations Manual • Crew training <u>Safe Transport of Dangerous Goods by Air (Annex 18)</u> • Requirements for transport of dangerous goods <u>Safety Management (Annex 19)</u> • Risk assessment and Operator SMS
CCRD entry required	No
Problem Statement	A number of operators are transporting cargo in the passenger cabin (TCPC). The passenger cabin is not certified as a cargo compartment and, therefore, it does not meet the applicable requirements for the transportation of cargo. Additional operational and airworthiness considerations need to be addressed when operating these flights.
Applicability/Pre-Requisites	• Applies for operators with an approval to carry cargo listed on their AOC.

	• Alleviation limited to the need to transport critical products such as medical supplies[1], PPE as well as other cargo which is vital for the functioning of sensitive supply chains affected by the Covid-19 pandemic. • Applies to TCPC without the removal of passenger seats[2]. • Cargo classified as dangerous goods and mail containing dangerous goods is not permitted in the passenger cabin. • The alleviation covers operations with only cargo carried in the passenger cabin, and not the combined carriage of cargo and passengers in the cabin for which additional risk assessments and operational measures are required. • Operations manual to be amended to take into consideration the specific type of operation. [1] *Some medical supplies may be classified as dangerous goods. These must not be carried in the passenger cabin* [2] *Removal of seats requires a detailed process which will include a review of operational and airworthiness considerations, and is considered beyond the scope of this guidance.*
Alleviation summary	This alleviation allows for operations with TCPC, either in approved stowage locations and/or on the seats, utilizing cabin crew or other trained personnel and portable firefighting equipment to detect, suppress and extinguish fire and protect the aircraft and occupants.
Operational context	• An aircraft carrying cargo in the passenger cabin is effectively operating with a cargo compartment that has no or limited built-in smoke detection, fire suppression systems and fire containment features. • Certification of the aircraft requires that the aircraft is fitted with cargo compartment fire detection and suppression system, which must be sized to protect the diversion in the event of a cargo fire. With cargo carried in the passenger cabin, these functions will need to be accomplished by trained personnel instead. • Review of Type Certificate Holder material will need to be conducted to verify the following: o Assessment of the location and quantity of fire firefighting equipment available in the cabin. Based on this assessment, it will need to be determined if the trained personnel carried for the purposes of fire watch have sufficient resources to extinguish any fire. o Required emergency exit signage and pathway markings remain visible following loading of cargo. o Loading restrictions o Restraint capabilities - Strap or cargo net/pallet assemblies, compliant with TSO C-172 (straps) or TSO C90 (cargo net /pallet) of adequate strength to restrain the cargo taking into account the flight and emergency landing (crash) loads.

	○ Mass and balance considerations ○ Procedures for loading and unloading (E.g. tip hazard) • Exact cargo weight and position in the cabin and the cargo hold must be reflected in the mass and balance documentation (load sheet). • Review of Rescue and Fire Fighting Services (RFFS) capability of aerodromes in the operational flight plan may need to be conducted e.g. if the aerodrome selection was initially based on RFFS criteria for passenger-carrying aircraft. • A risk assessment must be performed to identify hazards, evaluate and mitigate correlated risks related to the transport of cargo in the passenger cabin using cabin configurations which have originally been approved for transporting only passengers. The risk assessment should consider, as a minimum, the following points: ○ capabilities of the operator; ○ Type of cargo and hazards associated with the properties of the items to be carried in the cabin; ○ packing and packaging; ○ Cargo loading, unloading and restraint ○ Adequate clearance shall be maintained between the cargo and any vents used by the aeroplane decompression system. ○ Mass and balance calculation and loadsheet production ○ Fireworthiness (E.g. Type and quantity of additional fire extinguishers necessary on the main deck, Fire Detection, Fire Protection, Fire Suppression, and Smoke Penetration) ○ Environmental control system settings need to be revisited to minimize the harmful effects of smoke and extinguishing agent in the flight deck and cabin and to maximize the ability of a crewmember to detect a fire. ○ Cabin preparation and coordination between flight crew, cabin crew, and other relevant trained personnel ○ Crew composition (E.g. minimum number of crew members and trained personnel needed to effectively perform the allocated functions) ○ Additional training of crew and personnel who will perform duties on an operation authorized by this alleviation. ○ Impact of cabin crew and other trained personnel PPE (expand) on the performance of duties. ○ Review of procedures for the TCPC ○ Access to emergency exits
<u>Possible Mitigations</u>	• Availability of trained personnel to survey and access all areas of the cabin during all flight phases

	• Providing additional and suitable firefighting equipment to enhance the capability of the crew and/or trained personnel to extinguish a fire involving the cargo in the cabin. • Restricting the volume and/or type of cargo carried (including any protective coverings on the seats) to ensure firefighting capability is sufficient. • Enhanced crew emergency procedures for the TCPC • Selection of the crew member seats location to provide a direct view of the cabin for which the crew member and/or trained personnel is responsible (*See OPS QRG Minimum Cabin Crew Requirements when Transporting Cargo in the Passenger Cabin*) • Inspections of the cargo area performed regularly during flight and before take-off and landing. • Ensure the storage of cargo does not restrict access to emergency exits, emergency equipment and the inspection or firefighting of cargo. • Environmental control system settings to minimize the harmful effects of smoke and extinguishing agent in the flight deck and cabin and to maximize the ability of a crewmember to detect a fire. • Deactivate possible fire sources (IFE, seat power, galleys)[2] • Deactivate Passenger Service Units (drop-down oxygen masks) and fixed therapeutic oxygen systems[2] • Provision of adequate portable breathing equipment for crew and/or trained personnel as applicable. • Weight limitations in stowage (usually placarded), on/under seats and loading limits (seats, floors etc.) must be taken into account in loading. • Height limitations for cargo placed on seats must be considered. • For TCPC on aeroplanes engaged in EDTO, minimize the diversion time along the track, e.g. by identifying and selecting additional en-route alternate aerodromes. [2] Appropriate entries should be made in the technical log for deactivated systems
Alleviations likely to be unacceptable to other States	• Carriage of dangerous goods in the passenger cabin • Carriage of passengers and cargo in the cabin together
References:	Additional State and Industry best practice is linked via the Covid-19 OPS website: https://www.icao.int/safety/COVID-19OPS/Pages/Airworthiness.aspx *OPS QRG Minimum Cabin Crew Requirements when Transporting Cargo in the Passenger Cabin* ICAO Webinar on TCPC

	https://www.icao.int/Meetings/webinar-series/Pages/Cabin-Transformation.aspx ICAO Webinar on Management of Aviation Safety Risks Related to COVID-19 for CAAs https://www.icao.int/Meetings/webinar-series/Pages/Risk-Assessment-during-COVID-19.aspx ICAO Webinar on Safely Transporting Cargo during the COVID-19 Pandemic https://www.icao.int/Meetings/webinar-series/Pages/Safely-Transporting-Cargo-during-the-COVID-19-Pandemic.asp ICAO Global Aviation Training on TCPC https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=5097&language=0&region=&ITP=1 COVID-19 Safety Risk Management & Doc 10144 (ICAO Handbook for CAAs on the Management of Aviation Safety Risks related to COVID-19) https://www.icao.int/safety/SafetyManagement/Pages/COVID-19-Safety-Risk-Management.aspx Electronic Bulletin 2020/36: Implementing a Public Health Corridor to Protect Flight Crew During the COVID-19 Pandemic (Cargo, Maintenance, Ferry, and Delivery Flight Operations)
This guidance has been developed by ICAO with the support of SME's made available from States and Industry through different ANC panels, study groups and other expert groups.	