

Carrying cargo in passenger compartments

Combi-Lite

It is no secret that the carriage of cargo in passenger compartment is now an every day event and a great deal of ingenuity is being put into place to support the safe and efficient operation of these practices.

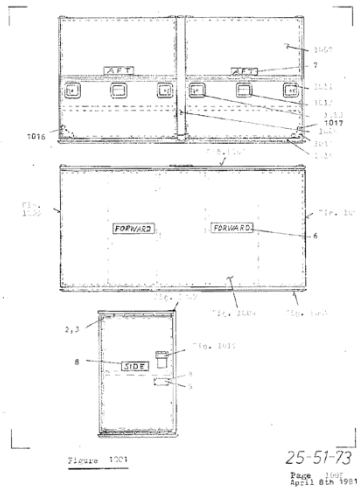
And during the IATA cargo webinar earlier in the week one question was in regards to whether the industry would see a return to combi aircraft, not an unreasonable question given the urgent need to put grounded passenger aircraft to use.

Creating Combi models of today's mainstream aircraft such as B777, B787 and A350 XWB would clearly take enormous amount of time and money, and also be non-reversible, but there are actually a couple of "combi lite" options that may be well worth considering, being low cost and avoiding complex and expensive aircraft modifications while enabling the use of container type loading reduce manpower and turnaround times.

Method A.

1. Back in the 1970's/80's a number of B747 /DC10 operators utilised a system whereby a lightweight non powered cargo loading/restraint system could be laid onto the floor of the rearmost compartment of the aircraft and secured to the seat tracks. The system was removable (maybe half a day to remove or install) and enabled the use of special cargo containers that were typically having dimension of 38 ins wide (to fit through the pax door) by 64" high by either 61.5 or 125" long. There was no significant modification to the airframe.
2. A number of airlines used these systems, Alitalia and Philippine Airlines, Lufthansa and Aer Lingus are four (also KL used on DC 10's), and they were manufactured by Transequip (now owned by Telair) and Brooks and Perkins

3. Certification was by STC, a search under the FAA's STC library at https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSTC.nsf/MainFrame?OpenFrameSet throws up a number of possible hits, most specifically SA3740WE and SA 2801WE .Although these are of course for 747-100 and -200 aircraft the principles would be the same.
4. The containers had a max gross weight of about 800 lbs, presumably to be capable of handling a 9G load as there was no 9G barrier net, and had to be loaded with doors facing aft.
5. The containers were loaded using either a a main deck loader or a modified catering truck and the cargo loading system provided a ball mat right up the door sill, so the containers could be easily moved into position.



6. There was some kind of aisle allowing passenger access to the rear toilets and lightweight vertical panels to close off the cargo holding area.

This is a proven concept, used by a number of airlines years ago but long since forgotten however it would seem very feasible to dust off this concept, adapt it to today's aircraft and put it into service within a realistic time and cost.

Method B.

Another alternative to the conventional cargo loading system used for placing ULD into aircraft was used by Airborne Express some years ago, initially on narrowbodied aircraft and then finally on B767F (<https://www.flightglobal.com/iai-snaps-up-airborne-767-freighter-contract/27656.article>)

Again the system dispensed with a wide cargo door and instead used narrow ULD that could pass through the standard passenger door. In this system the ULD were fitted with casters (somewhat similar to a galley cart) and the aircraft floor was equipped with a series of tracks and locks into which the ULD were rolled and then locked in place. While this concept was applied by Airborne Express to full freighters there would be no technical reason why it could not be applied to a particular zone of a passenger aircraft.



Both these methods, long since consigned to history, could actually be very applicable in today's situation, avoiding the expense and time involved to create a true combi, while enabling the efficiency of unitised cargo loading and handling.

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