

# Freighter Conversions:

## CHAMP's Weight & Balance supports pax to freighter conversions

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As the world was locked down and COVID-19 struck aviation to an unprecedented extent, CHAMP's Weight & Balance solution not only continued supporting the load planning of cargo aircraft in its customers' fleets, but also kept a close eye on airlines reconfiguring their passenger cabins for cargo. The new category of 'freighters' was born – a hybrid word formed out of 'passenger' and 'freighter'. It opened the opportunity for passenger airlines to boost capacity and serve the high demand to dispatch urgently needed PPE – and now the distribution of the much-awaited vaccines.

While it was and remains an essential service at an extraordinary time – airlines found it even more critical to their livelihoods to bring in much needed revenue wherever possible. CHAMP's Weight & Balance Product Team brainstormed ways of enhancing its solution (being a pure freighter handling solution) to meet this task for airlines with all passenger fleets.

### A massive undertaking

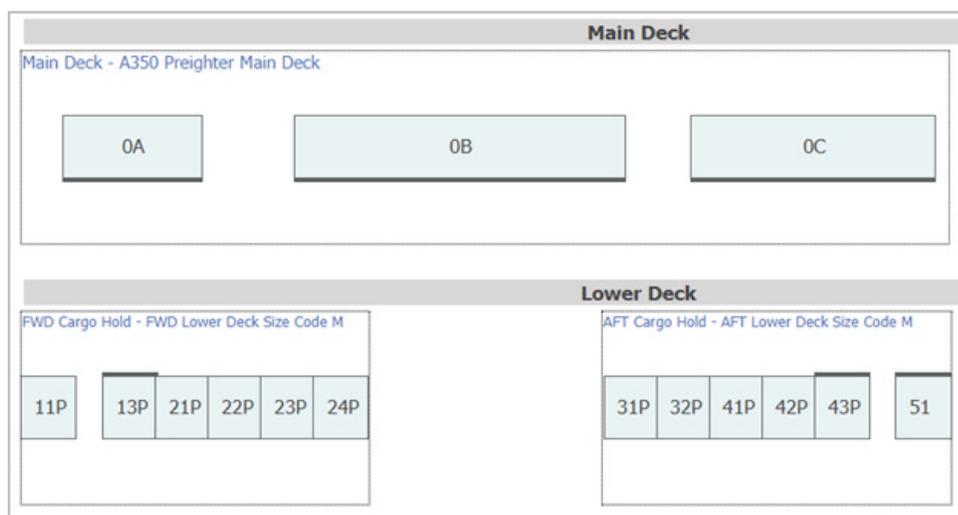
CHAMP initially approached some airlines to offer access to its prototype and collect some vital data to bring the system online. The IT provider identified that 'time' – the critical factor in air cargo - ultimately was the driver for its customers. When using an existing Departure Control System (DCS) to plan, load and dispatch a newly configured freighter aircraft, there can be extensive duplication of work for inputting the data. This can take up to 90 minutes to enter the weights into the system and produce the legal documents for the Flight Deck (Loading Instruction and Load Sheet). For a passenger cabin it was even more tedious, as these weights would be entered seat by seat with a mere estimated weight for each.

Making things more complicated, some airlines opted to physically alter their passenger aircraft for cargo. Also, we needed to take into consideration that many passenger aircraft, like the Boeing 787-9 Dreamliner, are not structurally designed to operate as freighters - they are made ideally for carrying passengers and their baggage with some capacity for cargo in the lower deck. So, for a start, the seats would need to be fully or partially removed and loading zones defined. Furthermore, strict rules would be required on the nature, weight, and volume of the bulk cargo to be loaded.

### The solution

In the freighter Weight & Balance solution, the "Cabin" is called "Main Deck" and cargo is mostly loaded through a so-called Side Cargo Door located in the back of the aircraft. Wide-bodied freighters will accommodate two rows of pallets or containers along a centerline. CHAMP translated this philosophy into the freighter approach and set up the passenger cabin as three loading zones.

These zones respect areas that cannot be reconfigured - such as Galleys and Lounge Areas (appearing white in the graphic below). The Weight & Balance system



interpolates the weight on every individual inch of the balance arms within that section and provides 100% accuracy and safety. Since the Load Controller now only needs to make one total weight entry and drag & drop it into the position, the time benefit is nearly 100%, reducing the actual planning time from 90 minutes to 10 seconds.

With this innovation, CHAMP Weight & Balance Product can aid other passenger airlines struggling to safely fly their passenger aircraft with cargo. If you are interested to learn more, please contact [info@champ.aero](mailto:info@champ.aero).

