

The trick of the tail

Specialist access requirements call for specialist equipment, particularly in the safety-conscious aviation industry. Specialist engineering design company Semmco has introduced many working at height solutions but by far the biggest is its new, made-to-measure tail docking system for UK airline bmi's fleet of Airbus A320 at Heathrow airport.

By adopting a programme of equalised maintenance - carrying out maintenance on a continual, on-going programme rather than taking the plane out of service for several days - bmi says it is making huge savings. Over a 12 month period, the reduced aircraft downtime of its fleet of 23 A320's has, it says, effectively saved the cost of a single plane as well as improving the safety of the aircraft engineering staff working at height.

The recent expansion of the aviation industry has introduced new health and safety challenges as aircraft turn-around times are reduced. Activities on the ground airside and during aircraft turn-around are the most hazardous, with around 40 reported accidents - including about 15 serious injuries - resulting from falls reported to HSE each year.

Bmi in partnership with Semmco have designed and produced a customised tail docking access solution for the A320's that allows maintenance staff to rapidly carry out fin and rudder inspections without compromising safety or wasting precious time in setting it up.

"Using the all-in-one 'blocked out' time for full 'C' checks would mean a plane being on the ground for a full five days a year," says Terry Dudley, maintenance manager for bmi Heathrow. "However for equalised maintenance to be effective, the engineers have to be able to get to work as soon as the plane arrives in the hanger. Working in a time slot of eight hours during the night, when the plane is not in use, means every minute needs to be used productively."

The Semmco tail docking solution comprises two, moveable 10 tonne sections, which surround the

aircraft's tail section once it has been reversed into the hanger. A special rail system means that each section can then be slid into place to surround the plane which reduces the driver error margin - which could result in damage to the aircraft - and speeds up the whole process. Maintenance engineers



Stuart McOnie in demonstration mode

can now have access to all rear areas of the plane within 15 minutes of it arriving in the hanger. Built on a steel base and using a substantial aluminium superstructure, the tail dock's access steps and platforms support work at four different height levels between 2.5 and 9.2 metres. Extendible edge sections ensure that gaps around the plane are kept to a minimum.

"The tail docking solution has changed the process of maintenance on the entire A320 fleet," says Dudley. "The previous all-in-one blocked out method also saw duplication of effort as parts would be dismantled, inspected and re-built, only to be dismantled again later in the week as part of another area being inspected."



Stuart McOnie shows off another access product



Extendible edge sections minimise gaps



The new variable height steps

"For bmi, safety is paramount in all areas of its operations so we designed the tail docking solution with safety as well as practicality and ease of use in mind," says Stuart McOnie, managing director of Semmco. "Dudley and his team knew exactly what tasks they were required to carry out, and we made this possible by creating a flexible and safe platform from which they can easily access the tail section of the aircraft."

"The tail docking solution has been fundamental in the successful implementation of equalised



maintenance," adds Dudley. "I have been impressed with how solid the structure is, and also pleased with the engineering staff's positive reaction to this new piece of equipment which has made their jobs not only easier, but safer."

Semmco also has several other access products for other industries. By teaming up with German partner Zacher, it has a range of lightweight, compact fixed and variable access steps and platforms. Made from high-grade aluminium, the products' modular design enables various modifications and expansions for specific customer requirements.

Its variable height steps have been shortlisted for this year's 'Innovation of the Year' at the Safety & Health Practitioner IOSH awards. Using a towable, easy to push around chassis and lightweight aluminium superstructure complete with hand rails, the steps have a height adjustable top platform which can be raised between 2.25 metres to 3.25 metres.



The rail system