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Top Stories

Safety boost

By Andrew Stackpool

PERSONNEL employed on the maintenance of C-130 fuel tanks, both at RAAF Base Richmond and overseas, will soon find their work more safe, comfortable and efficient.

New Ground Support Equipment (GSE) items have been tested, which will significantly reduce the risks and time associated with fuel removal and tank maintenance.

Last year, Explosive Suppressant Foam (ESF) began to be installed in Hercules fuel tanks to improve survivability in the event of the aircraft being hit by small arms fire.

Periodically, the foam has to be manually removed for maintenance.

The ESF project identified two OHS issues that impact on tank maintenance of foam-fitted aircraft. They are the Lower Explosive Limit (LEL), which is the least amount of fuel vapour in the air that can lead to an explosion, and the types of GSE and Personal Protective Equipment (PPE) needed to protect maintenance personnel from fuel exposure.

OHS standards require the LEL to be below five per cent for fuel tank entry. Using existing GSE and processes, up to three days venting of fuel tanks was needed to achieve the required LEL level before entry was permitted.



LAC Brendon Eggmossesse prepares the Spokane SealVAC connector.

Photo by LAC Guy Young

FAST FACTS

- * → New equipment has been tested for C-130 fuel tank maintenance.
- * → One of the equipment items will reduce the time needed to empty a Hercules fuel tank from three days to two hours.

Program personnel were concerned that the introduction of the foam might increase the time required to vent the tanks and make a five per cent LEL unattainable. They investigated and found new GSE to address the situation.

The systems are the Rhine Air Ventilation System, which creates more effective tank ventilation, and Spokane SealVAC dribble drain trolleys. The Spokane GSE are sealed fuel bowsers incorporating a compressed air vacuum, which facilitates the rapid removal of drainable fuel from the tanks. The system minimises the risk of fuel spillage and significantly reduces maintenance personnel's exposure to fuel.

The impact of both these systems was dramatic. Not only does the new GSE allow for the five per cent LEL level to be achieved with foam fitted, but it also significantly reduces the time taken to vent the tanks from three days to just two hours from tank opening.

Further changes to the GSE are also in train. Replacing the universal fuel tank repair trolley are a portable breathing air purification system, a confined space communications system that provides effective communications for up to six personnel, and anti-static ducting and splitter boxes that allow the TEK-300 aircraft air conditioning trailer to provide cold air for multiple tank entries.

In parallel with the OHS issues, the program obtained new personal protective equipment and clothing. Gone are the old cotton overalls and socks, to be replaced by Gore-Tex overalls, which are durable, washable and don't leave lint on the ESF. The Gore-Tex suits are currently undergoing a user trial sponsored by the Directorate of Air Force Safety.