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Antenna gaskets to save customers MILLIONS

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The Defense Logistics Agency Reliability Program is supporting applications engineering and logistics efforts across the services to field a series of new gaskets developed by the Joint Council of Aging Aircraft and the Office of the Secretary of Defense. The new gaskets are designed to inhibit corrosion on military aircraft.

“The gasket was developed by the Coast Guard, but it has also caught on with the Navy and others who operate aircraft in a corrosive environment such as [Operation Iraqi Freedom] and [Operation Enduring Freedom],” said Clifford Wolfe, program manager for the DLA Weapon System Sustainment Program. “The gasket has been recognized as a way to inhibit corrosion anywhere you are putting dissimilar pieces of metal together.

“In addition, there is a reduction in P-static during communications,” said Wolfe, who also is the DLA principal for the Joint Council on Aging Aircraft. “After a year-long carrier deployment, an EA-6B squadron reported no communications issues due to static interference with the new gaskets in place.”

The conductive antenna gasket is a pre-cured polyurethane antenna gasket with aluminum

carrier, which was developed for use as an environmental sealant, according to gasket developer Aviation Devices & Electronic Components, or Av-DEC.

According to Av-DEC, the flexible nature of this system provides for easy access for inspection or repair long after the original application.

“The gasket was designed with a wire grid built into a gel,” Wolfe said. “The metal grid in the gel allows the antenna to be grounded to the structure and the antenna, which improves the performance of the antenna in addition to grounding it.”

The key element of the gasket is its pre-cured polyurethane, Wolfe said. “The pre-cured polyurethane gel prevents moisture, sand and salt from getting into the joints and mounting structure which causes corrosion. This is especially true of the antennas on F/A-18 A-D aircraft and helicopters of various types.”

Wolfe pointed out that the F/A-18 A-D, EA-6B, H-60, H-1, H-46 and H-47 have between 10 and 15 antennas each, and whenever corrosion occurs between the mounting structure and the antenna, the antenna’s performance degrades to the point where it has to be replaced. “As you can imagine, it is quite a maintenance task to remove the old antenna, remove the old polysulfide sealant adhered to the aircraft and corrosion on the structure, prime

and paint where needed and install the new antenna,” Wolfe said. “That’s why one of the greatest features of the conductive antenna gasket is its reduction in antenna removal and replacement cycle time.”

The conductive antenna gasket has been so effective, according to Wolfe, that the Office of the Secretary of Defense provided funding for application of the gasket for several aircraft. “It has really been the program offices and several other offices trying to get this implemented as widely as possible,” Wolfe emphasized.

“The challenge now, since there is no gasket in the existing installation, is to ensure that the gaskets are readily available to the fleet,” Wolfe said. “Therefore, Defense Supply Center Richmond Aviation Engineering is now working to procure antenna gaskets and develop kit strategies for customers who would prefer gaskets and antennas provided as a kit.”

Currently, DSCR Customer Operations is obtaining forecasts from each weapon system program for the new series of gaskets and procurement actions are under way to address fleet needs, Wolfe said. The reliability program, managed by DSCR Aviation Engineering, is supporting the roll out of the gaskets for the Navy H-60, F/A-18 A-D, H-1, E-6, T-45 and Army CH-58 and AH-64.

“A great benefit of kitting is the convenience for the maintainers to have the antennas and gaskets delivered as one part instead of two or more piece parts,” Wolfe said. “A kit may cost a bit more, but the operational benefits far outweigh the kit cost. For the F/A-18 A-D alone, NAVAIR estimates \$55 million savings and cost avoidances over the next 10 years.” ❖



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