



## Disassembly Project to Provide Data to F-15 Maintainers

ROBINS AIR FORCE BASE, Ga. -- In a small building in Byron, five people are working on a painstaking project that could significantly impact the future of the F-15 Eagle.

The crew from S&K Technologies is completely disassembling an F-15D fighter jet. The purpose of the project is to give the Air Force a detailed look at how the aging aircraft is holding up and to provide data needed to update future maintenance requirements.

The plane was turned over Feb. 11 and the teardown is expected to be completed in November. The plane has 6,300 flying hours. It was tapped for this project after coming to Robins for programmed depot maintenance and some mechanical issues were found that were not economical to repair.

Although what is left of the F-15 in the building now barely resembles an aircraft, the project is listed as only 36-percent complete. The crew, however, is down to the real meat of the project, which is to break down and examine its internal structure.

The focus is to get down to those areas that are not seen even during PDM, said 2nd Lt. Amanda Alpaugh, an F-15 structural engineer in the 830th Aircraft Sustainment Group. She is the technical point of contact for the project.

"The teardown provides insight into any damage occurring in places that we don't normally inspect," she said. "It is a much more detailed look because we actually remove every single fastener on the critical parts."

Although a local crew is doing the teardown, it is actually an expansive, worldwide project involving other contractors and allied nations who also fly the F-15. Once a part is extracted, it goes through several progressively detailed inspections. Any parts with cracks, corrosion or other damage will be scrutinized even further and may be sent to laboratories for even more detailed metallurgical analysis. Such analysis provides insight into when the damage occurred and what loads or conditions contributed to that.

"This is critical data because it allows us to adjust our PDM work package to ensure we inspect the right places at the right time and address the wear and tear before it becomes a problem," said Lieutenant Alpaugh.

The teardown is actually part of a larger overall project intended to ensure the future viability of F-15. A second teardown will be performed on an F-15C as soon as the current project is completed. Another effort, being conducted at Boeing, is a full-scale fatigue test on an F-15C. While the teardowns provide data into what damage has thus far occurred, the fatigue test simulates flight loads, providing data into what damage can be expected in the future.

So how many simulated hours are they pushing it to?

"Until it breaks," Lieutenant Alpaugh said. "Two previous fatigue tests, around 1975 and 1991, both proved the robustness of the F-15 structure; unfortunately, both tests were halted once the test objective was complete. There was no life-limiting damage found at the end of those tests, so we don't know how much further those test articles may have gone. This time, we want to go all the way."

Col. Stephen Niemants-verdriet, the F-15 system program manager, said the F-15C is planned to fly until 2025, and the F-15E until 2035 or beyond.

"The teardowns and (current) fatigue test will provide the data we need to ensure we know what to look for and when to expect it, so we can put the right preventative maintenance in place to assure the continued safety and viability of the



Ben Rogers strips paint and primer off a longeron so it can be sent off for analysis. Rogers is part of a crew that is disassembling an F-15 in an effort to provide maintenance crews more information about the aircraft. (Air Force photo by Sue Sapp)



aircraft," he said.

Steve Hartley, site manager on the project, said photos are taken of every part, and visual observations are noted and logged. The crew is guided by a list of parts that are to be extracted, disassembled and inspected.

It's tedious work, but something Mr. Hartley and his crew find fascinating.

"You've got to love it," he said. "I really do enjoy it."

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