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Insights on Aircraft  
Programmed Depot  
Maintenance

An Analysis of F-15 PDM

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## Summary

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This technical report describes the F-15 programmed depot maintenance (PDM) process as it was performed at the Warner Robins Air Logistics Center (WR-ALC) in the FY 2004 through FY 2006 time frame.

### **The F-15 and Its Programmed Depot Maintenance**

The F-15 is an all-weather, extremely maneuverable tactical fighter designed to permit the Air Force to gain and maintain superiority in aerial combat. F-15s are on a six-year PDM cycle, i.e., they are to return for PDM within six years of completion of a visit. WR-ALC has a sequential process that F-15s follow when undergoing PDM. Fuselage and wing work are, however, performed in parallel. (See pp. 4–7.)

### **F-15 Programmed Depot Maintenance Durations**

The mean WR-ALC F-15 PDM visit completed in FY 2006 lasted 119.8 days. This total was down from 130.3 days in FY 2005 but similar to FY 2003 (123.1 days) and FY 2004 (117.5 days) mean durations. (See pp. 9–10.)

In FYs 2002 and 2003, the vast majority of WR-ALC F-15s completed PDM behind schedule. This problem was reduced in recent years, largely because planned durations became more realistic, i.e., longer. (See pp. 10–11.)

In FY 2006, the median F-15 was picked up eight days after WR-ALC completed work. Pickup lags for F-15s based overseas are expected, because they are typically flown overseas in pairs to make more efficient use of aerial tanker refueling. However, even for continental United States (CONUS)–based aircraft, it was not uncommon for operators to wait a week or more to retrieve their completed F-15s. (See pp. 11–13.)

There is considerable variation in how much time aircraft spend at specific steps or cells in the F-15 PDM process. (See pp. 13–14.)

### **F-15 Programmed Depot Maintenance Part Issues**

WR-ALC is concerned about part issues. The PDM line does not have a particularly high priority, so it can wait considerable periods for parts.

One symptom of and adaptation to part problems is “traveling work,” i.e., having an aircraft move forward through WR-ALC’s cellular flow without all the tasks prescribed in a cell being completed. When the missing part is obtained, the part “catches up” with the aircraft and is installed. (See pp. 15–17.)

Another symptom of and adaptation to part problems is cannibalization. Aircraft that recently entered PDM can serve as sources of cannibalized parts for aircraft that are scheduled to leave sooner.

WR-ALC data suggest that cannibalization is ubiquitous. Data on 99 aircraft entering use in FY 2004 found that every aircraft in the population lost at least one part to cannibalization; only six did not gain a part through cannibalization. (See pp. 16–18.)