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# Active Fleet Management for an Aging Air Force

By: Major Jeff Newcamp

Despite the production numbers of the Joint Strike Fighter, the Air Force's fleet is continuing to age. Studies conducted by the Congressional Budget Office, RAND's Project Air Force and the Scientific Advisory Board show that this is driving operations and maintenance costs at a yearly rate increase of approximately 3% [1, 2]. Perhaps the most tangible fallout for the logistics community has been a strain on the spares supply system due to Diminishing Manufacturing Sources and Material Shortages. Aging aircraft also strain the 309th Aerospace Maintenance and Regeneration Group (AMARG) at Davis-Monthan Air Force Base, tasked with desert storage of retired assets [3, 4]. Lastly, achieving combat capability thresholds for aging aircraft may prove difficult if not impossible.



**The first T-38 Talons flew in 1961**

Despite the disadvantages to maintaining aging aircraft, these assets are vital to the service-wide force projection capabilities. We must therefore ask ourselves where we can be flexible when it comes to funding and operating aging systems. It is not enough to apply archaic principles to the burgeoning problem of fielding capability using increasingly expensive, increasingly old aircraft. Spending more to offset the effects of our aging aircraft does not satisfy even the least forward-thinking policymaker. One proposal for seeing the problem through a new lens is active fleet management.

## **Using Active Fleet Management**

Active fleet management is a new concept – it entails a paradigm shift away from *allowing* aircraft to age and towards *creating* aging patterns for aircraft. Instead of waiting for the time to retire a fleet of aircraft, logisticians must pursue methods for ensuring the viability of a fleet through a choreographed exercise of altering aircraft utilization and basing. To prolong the oldest aircraft, move them away from bases marked by intense usage. To hasten retirement for a subpopulation, move those aircraft to the bases demanding the highest flight hours per tail and the most taxing mission profiles.

Proactively managing an end-of-life fleet provides ample opportunity for value extraction. This idea spawns from the realization that any residual aircraft lifetime on airframes resting in desert storage may never again be consumed. Retiring an individual aircraft that is 2,000 flight hours below its certified service limit is effectively wasting a significant fraction of that aircraft's acquisition cost. While there are many valid reasons to retire aircraft with residual value, consider the composite effect of policy that continually retires aircraft prior to their necessary retirement times.

## **Residual Aircraft Lifetime**

A 2013 retirement cluster for the A-10 Thunderbolt II sent aircraft to AMARG with a total of 30,456 unused (equivalent) flight hours. When you peel back the layers of this decision-making, you find ample good choices but also some poor choices. The cost of depot maintenance activities and modifications must be compared to the projected benefit of continuing to fly an individual aircraft. It often does not make fiscal sense to upgrade an aircraft with only one or two years of projected flying time remaining. It can also be perilous to continue to fly aircraft with identified design flaws, critical structural problems or aircraft whose cost per flying hour has skyrocketed.



**Some retired aircraft serve a second life as battle damage repair trainers**

Unfortunately, some retirement decisions are non-optimal. Budget changes can drive the need to retire an aircraft fleet with lots of remaining useful life. Also, a new acquisition like the Joint Strike Fighter can hasten the retirement of an existing fleet regardless of that fleet's status. Even changing mission needs can erase the demand for a particular aircraft type. Most of these complicating factors make active fleet management ripe with pitfalls, particularly if decision-making is short-sighted or executed prior to fully understanding the complex landscape of aging aircraft.

### **Methods for Active Fleet Management**

The logistics community possesses the skills and experience necessary to find ways for active fleet management to succeed. With the knowledge that even a rather modest savings for one aircraft compounds across an aircraft type then across the Air Force, this new paradigm must become the subject of increased discussion. When we think about the effort placed on the front end of the systems lifecycle for a major acquisition program and knowing that approximately 70% of the lifecycle resides in the operations and sustainment phase, it is sensible to increase the manpower devoted to changing the game from reactive to proactive management [5].

Fleet managers, logisticians and policymakers all play a role in active fleet management. They can ensure the least desirable aircraft are retired first. Aircraft most quickly gobbling up their certified service life hours should be rotated away from the most demanding bases and mission profiles. Training bases should be evaluated for their impact on airframes. Generally speaking, touch-and-go landings and low-level flight training cause the most damage and should be flown as necessary but sparingly. Lastly, resist bulk retirements. These cause the abandonment of common sense for the sake of meeting a requirement to retire a fixed number of aircraft. Surely, these decisions are made at the highest levels of leadership but the opportunity for making inputs often exists.

Beyond these concrete suggestions, this community of thinkers must be prepared to identify, investigate and enact policies which may positively impact the value of our aging fleets. Investing in individual aircraft monitoring technologies can provide valuable data for decision-makers, as can existing databases such as REMIS and CAMS. Even expending thought now for future contingencies may ease the burden of major fleet decisions when they arrive unexpectedly. Be prepared to think

about ways to extract more value from our aging fleet. As budgets constrict and aircraft age, there must be ways to do more with less.

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