Assessment of Large Aircraft Maintenance Inspection Strategies

Non-Refereed Research Abstract

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Complex equipment, such as aircraft, need periodic full or partial maintenance checks to assess needed repairs for continued vehicle availability. However, such checks are expensive and the associated aircraft downtime can reduce fleet mission effectiveness. United States Air Force Air Mobility Command headquarters staff plan to consolidate five current sites performing time-based (isochronal) C-5 aircraft major inspections into three. Isochronal inspections rely on a calendar method to schedule inspections, and disregards actual flying hours between inspections. By having the same cadre of maintenance specialists perform all isochronal inspections and by adopting commercial aircraft condition-based inspection strategies, the Air Force hopes to gain efficiencies in performing these inspections. However, the site phase-out schedule and reduced number of inspection locations raises questions on whether overall C-5 mission capability will be reduced. We simulated these proposed revisions in C-5 military aircraft maintenance schedules and locations in a designed experiment to assess the impacts to fleet availability and inspection site workload. We present our results and insights gained from this research.

Track: Supply Chain Management(1)