



An Introduction to Hawkers

From



A Brief (as possible) Introduction to the Confusing
Hawker Inspection Program

Aircraft Flexible Maintenance Schedule

The Hawker 700, 800, 800XP, 850XP, 750, and 900XP inspections come from a manufacturer's document called the Aircraft Flexible Maintenance Schedule, or AFMS. This document is not Chapter 5 of the Maintenance Manual, as it is with many other brands of aircraft, but it serves the same purpose. The AFMS is broken down into several Parts, with the major sections we're concerned with being;

Part 2 – Routine Inspections – These are the Hourly and Calendar controlled Phase Inspections. These are further broken down into sub-inspections, which can be accomplished within a particular time frame, allowing operators more flexibility to avoid lengthy downtimes.

Part 3 – Structural Inspections – This Part causes the most confusion for everyone. More later...

Part 4 – Out of Phase Inspections – Inspections they couldn't figure out where else to put.

Part 8 – Component Requirements – Components that have to be overhauled or tested on a repeating basis. Relatively normal stuff here.

Part 9 – Mandatory Life Limitations – This one will fool you. While this Part is in the AFMS, these life limited items aren't actually listed here. This just directs you to yet another document called the Airworthiness Limitations Document. This document serves the same purpose as Maintenance Manual, Chapter 4 from most other manufacturers, and actually lists all the life limited components on the Hawker aircraft.

Now on to explaining all this in a little more detail.

AFMS Part 2 – Routine Inspections

Hourly Inspections –

Phase A (300 Hour) (Models 700,)

This inspection (and interval) is called a 400 Hour Detailed Walk Around Inspection for the 800, 800XP, 850XP, 750, and 900XP. The tasks vary between models, but amount to a thorough pre-flight inspection.

Phase B (Sub-Phases B1-B12) (600 Hour Interval for 700 / 800 Hour Interval for all others) – Major systems looked at are flight controls, thrust reversers (if equipped), and landing gear.

Phase C (Sub-Phases C1-C12) (1200 Hour Interval for 700 / 1600 Hour Interval for all others) – Mostly concerned with all system cable tensions, but several other things get looked at.

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Phase D (Sub-Phases D1-D12) (2400 Hour Interval for 700 / 3200 Hour for all others) – This is a pretty small inspection consisting of some system function tests and filter changes/cleaning.

AFMS Part 2 – Routine Inspections (cont'd.)

Calendar Inspections –

Phase E (12 Month) (E1-E12) (Same Interval for all models) – This is a general look at the aircraft and is often selected to be part of a Technical Evaluation prior to aircraft purchase. A revision to the AFMS removed most of the required tasks for the 800, 800XP, 750, 850XP and 900XP. It's really not worth relocating the aircraft for just a Phase E for most operators.

Phase F (24 Month) (F1-F12) (Same Interval for all models) – Internal wing structure, landing gear components, and Pitot-Static system leak checks, are the major items.

Phase G (48 Month) (No sub inspections) (Same Interval for all models) – Numerous systems get checked. ***The MAJOR thing to know here is, this inspection triggers a whole series of Structural Inspections, which have several different intervals but are generally aligned with this Phase Inspection.***

The Phase G, and the Structural Inspections associated with it, is the biggest source of revenue in the Hawker Program. This is our “Bread and Butter” work.

AFMS Part 3 – Structural Inspections

There are nearly 100 different Structural Inspections that apply to the various models of Hawkers. GENERALLY speaking, most of them come due in multiples of 4 year intervals, that is 4 year, 8 year, and 12 year, but there are several exceptions.

There used to be 16 year Structurals, but these have been revised to come due the first time, between 15 and 18 years from the initial certification date of the aircraft, to allow operator's more flexibility in coordinating these major inspections with things like paint, interior refurbishment, etc. They then reduce down to 8 year intervals, with the others, on subsequent inspection cycles.

The Structural Inspections can be visual only, but some require various NDT techniques such as X-Ray, Eddy Current, etc.

When talking with operator's about quoting inspections, it's best to obtain a copy of their maintenance tracking program (CAMP, etc.) to provide them with the most accurate quote possible. Many operators that hire Directors of Maintenance will have a good idea of what is coming due. They may not provide access to the tracker, probably to get more consistent quotes from the various MROs, for comparison. Sometimes an operator will tell you he has a "96 Month" coming due or something similar. They are simply referring to a Phase G with the 8 year interval structural inspections, so don't let that confuse you.

Part 4 – Out of Phase Inspections

Sometimes you'll see this written as OOPs, a term generally avoided in aviation maintenance. This is where they put all the misfit inspections that don't fit well in the other categories. Fortunately, there isn't nearly as many as in the Structurals section.

Here you'll find things such as starter/generator brush/spline checks, some of the APU inspections (XPs), odd interval cable tension checks, Autopilot servo lubrication requirements, etc.

A quick note about APUs on Hawkers, and their inspections, since I brought it up. Among all the models of Hawkers, there are numerous APUs that could have been installed, depending on where the aircraft was outfitted. These are; Sunstrand T-62 T-39 (700 and earlier), Sunstrand T-62 T40-C8D1(800s and early 800XPs), Garrett GTCP36-92C (700 and earlier), and Garrett GTCP36-100H (700). The current build standard is to use the PATS STC Garrett GTCP36-150W.

APU inspections are troublesome to track down. The Sunstrand APUs have a Service Bulletin with 5 tables in it that list the required inspections. The early model Garrett APUs have them listed in various places, like the maintenance manual, etc. Recently, HBC incorporated the PATS STC for the GTCP36-150W into their Production Certificate. This moved the inspection program for this APU under their control and these inspections appear in the Out of Phase section of the AFMS.

Part 8 – Component Requirements

As I said earlier, this is pretty straightforward stuff, for a Hawker. Here is where you find all the components that have repeating overhaul or testing requirements.

These are things like Inverter and relay overhaul requirements, Fire Extinguisher hydrostatic tests, overheat sensor tests, CVR ULB tests, Landing Gear overhaul requirements, and on and on...enough said.

Part 9 – Mandatory Life Limitations – a.k.a. Airworthiness Limitations Document

This document is a rather lengthy dissertation of all the life-limited components on the airplane. It is organized by ATA code for all the various systems, and is a lot of the reason the tracking systems such as CAMP, are so long. There's a lot to keep track of here, but these tracking systems all do a pretty good job of it.

Conclusions

Most operators group the Phase Inspections together, by Hourly, Calendar, or a mixture of both. Normally some Out of Phase or Structural Inspections will be done at the same time.

The calendar inspections are the easiest to predict. Just add multiples of 4 years to the year of Certification for a given serial number aircraft, and you'll have a good idea when the Phase G event will be coming due.

Well, that's the highlights of the Hawker inspection requirements. I hope I've given you a better understanding of these rather odd airplanes, and how they are kept in good flying shape. If you ever need more details, I'm always at your service to help where I can.

Keep in mind I'm more than willing to accompany you on a visit to a potential customer to help build their confidence in our Company. We've had a pretty good success rate with this concept.

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