The Dreaded H-60 LCFCTC Factor

By HS-2's Aviation Maintenance Administrators

No, not some mystery illness, storyline for a science-fiction show, or tongue twister. The life-cycle fatigue component-time conversion factor (LCFCTC) is used to determine the life remaining on certain components. The formula is easy to use and should keep squadrons out of trouble. We say "should" because the slightest mistake can bring on the largest problems—like it did in our squadron.

While on a detachment to NAS Fallon, Nev., we discovered an HH-60 had the wrong calculated percentage of component-life remaining for the blade-fold hinges on the main-rotor blade. We had flown more than 100 hours over the limit and didn't know the component was even close to high time. Things got even worse when we contacted the contractor who manages the helicopter dynamic/finite life components tracking (DYCOMTRAK) program to research the installation data for the suspect hinge. We found that a second hinge on the same aircraft also had been flown beyond its penalty life limit.

Logs and records clerks in the H-60 community have the unique responsibility of tracking component life cycles for numerous components that are interchangeable among three different series aircraft—all with extremely different life-cycle times. The conversion of life-cycle time has been a serious problem in the H-60 community and has led to the discovery of many life-cycle components that have been flown well past their penalized life cycles.

Here is an example from the H-60 Periodic Maintenance Information Cards (PMIC). The blade-fold hinge for a main-rotor blade that is installed on an SH-60F or SH-60B will have a high-time removal of 12,000 hrs. The same fold hinge on an HH-60H has a high-time limit of 3,000 hrs. The PMIC makes allowances to convert back and forth between each type, model and series. We simply must calculate the percentage of life usage after the conversion. Here is an example of this conversion formula:

Item: MRH Fold Hinge

Hours: C4500 (TSN)

Gripe: Removed for cause from an SH-60B, and now being installed in HH-60H.

Photo by PH2 Patricia R. Totemeier

Acronyms for formula: (TSN) = time since new; (nm) = new model; (pm) = previous model; (RET) = removal time.

Sample formula: TSN (nm) = [TSN (pm)/RET (pm)] x RET (nm)

Formula for this case: TSN (nm) = [4,500/12,000] x 3,000 or 1,125 = 0.375 x 3,000. In this case, 37.5 percent of the life usage of the component has expired. In other words, 4,500 hours on an SH-60B equals 1,125 hours on an HH-60H. Subtract this number from the HH-60H removal time (RET) of 3,000, and you have 1,875 hours remaining on the MRH fold hinge that can be used on the HH-60H.

For the logs and records AZ, tracking life-cycle components can become quite difficult as components are moved among HH-60H, SH-60F and SH-60Bs because of cannibalizations, turn-ins for repair, etc. Components removed and processed through depots for repair also have had omissions in component-life accounting. This problem can cause the next "owners" to fly over the component's limit because of incomplete or inaccurate component-life documentation.

Make sure you understand and use the PMIC correctly. The DYCOMTRAK program can help to screen the various components that fall into this life-limit penalty situation.

Mech *doesn't get a lot of stories from AZs or AKs, but this story reports on a common problem. It also shows how AZs can cause mishaps that damage aircraft or kill aircrew and passengers. Some people forget how important it is to screen logs and records for high-time components. The effort to reduce mishaps demands that all maintainers review their procedures, manuals and paperwork. It's the only way we'll reach our goals. —Ed.*