

GENERAL AVIATION INSPECTION AIDS SUMMARY

AIRCRAFT FLEXIBLE FUEL HOSES

Numerous reports of fluid carrying flexible hose failures have been received. The reports indicated these hoses are generally located in the engine compartments of various model aircraft and include the wire-braided types supplied by Aeroquip and Stratoflex, etc. As these hoses are fabricated from synthetic rubber, their finite service life depends on factors such as age, shelf life, temperature (ambient and fluid), and other environmental conditions.

To assure continued hose integrity, it is suggested the following inspection procedures be accomplished after each 100 hours of operation:

1. For those aircraft having an auxiliary fuel pump, pressurize the flexible fuel lines with the fuel boost pump operating in high position. The fuel system of certain models of aircraft equipped with fuel-injected engines can be pressurized by activating the electric primer.

NOTE: Place the mixture control in the idle cutoff position prior to using either the boost pump or the electric primer for fuel system pressurization.

2. Examine the hose exterior for evidence of leakage or wetness.
3. Inspect for discoloration of the hoses and/or color bleaching of the end fittings.
4. Check the hoses for evidence of stiffness.
5. After pressure testing, allow sufficient time for excess fuel to drain overboard before attempting to start the engine.
6. On those aircraft having a gravity flow fuel system, the inspection procedures in steps 2, 3, and 4 apply.

It is suggested that any flexible hoses which are found leaking or which show a notable amount of stiffness be replaced. It is further suggested that all flexible flammable fluid carrying hoses in the engine compartment be replaced at engine overhaul or every five years, whichever occurs first. The aircraft manufacturer's service information, however, should always be followed if different from the above procedures.

During reinstallation of flexible hose assemblies, consider the following precautions:

1. Assure the hose is not twisted. High pressures applied to a twisted hose can cause failure of the hose or loosening of the B-nut.
2. Provide as large a bend radius as possible; however, never use a bend radius less than the minimum specified by the hose manufacturer.
3. Do not attempt to straighten a hose having a bend in it as this could result in damage to the hose. Rubber hoses will take a permanent set during extended service periods. Care should also be taken during removal and reinstallation of such hoses to assure they are not bent excessively and that they are returned to their original position.

AIRCRAFT TIRE CARE

With the onset of summer the high temperatures will be more detrimental to aircraft tires. Maintaining the correct inflation pressure in an aircraft tire is one of the most essential factors in obtaining maximum safe service life. Inner tubes and tubeless tire liners used in most automotive tires are made of butyl rubber. Most aircraft inner tubes and tubeless tire liners, on the other hand, are made of natural rubber to satisfy extreme low temperature performance requirements. Natural rubber is a poor air retainer when compared with butyl rubber. This accounts for the comparatively high daily air pressure loss and need for frequent pressure checks with aircraft tires.

Daily inspection of tires includes checking the pressure. This can only be done properly with calibrated gauges. Don't let an improperly serviced tire cause an aircraft accident/incident or personnel injury. Ensure that tire servicing equipment is in good working condition and properly calibrated.