

Maintaining Aerospace Hose Service Life

The actual service life of a given hose assembly, in a given application, is dependent on many variable factors. These variable factors may include, but are not limited to, operating pressure, pressure surges, flexing, operating temperatures (both fluid and ambient), installed bend radius, cleaning solutions, ozone and assembly routing.

Due to the variety of operating conditions and applications, the user, through their own analysis, testing and/or review of maintenance records and data, is ultimately responsible for making the final selection, or of decisions about replacement hose assemblies and assuring that all performance, safety and warning requirements of the application are met.

Generally speaking, unless otherwise directed by company, user or airline maintenance procedures, OEM maintenance manual instructions, Federal Aviation Administration (FAA) advisory circulars or air worthiness directives or other similar Maintenance document(s), it is recommended that hose assembly maintenance and/or replacement be conducted on an "on-condition" basis. However, to provide more clarity in the development of a maintenance approach towards hose assemblies, we offer these additional comments:

We recommend ARP1658* "Visual Inspection Guide for Installed Hose Assemblies" as an aid in conducting inspections of hose assemblies to determine time for replacement.



Hose Assembly applications may be thought of in three general categories:

- Normal Duty
- Moderate or Heavy Duty
- Demanding or Severe Duty

**Society of Automotive Engineers, Aerospace Recommended Practice*

Normal Duty Hoses

Typically, these are hose assemblies in less demanding applications, such as in-body, in-wing or other applications not normally exposed to the environment, cleaning fluids, continuous temperature extremes, heavy pressure pulsation, etc., and having infrequent maintenance actions associated with their installation.

Recommended Maintenance Approach: On-Condition



Moderate or Heavy Duty Hoses

Typically, these are hoses exposed to more frequent maintenance activity or major system removal, or hoses occasionally exposed to environmental conditions (e.g., upper wheel well hoses, APU hoses)

Recommended Maintenance Approach: Either On-Condition or based on user data and maintenance records

Demanding or Severe Duty Hoses

Typically, these are hoses continuously or routinely exposed to environmental, cleaning, or other harsh operating variables such as landing gear brake hoses, EDP hoses, etc., and associated with major systems requiring regular removal, repair or overhaul.

Recommended Maintenance Approach: Strongly consider replacement at time of major system overhaul



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