

# DUNCAN INTELLIGENCE

## **On-Condition Flexible Hydraulic Lines**

•*Scott Shefke*

Flexible hydraulic lines on a Challenger aircraft are an “on condition” service item. “On condition” however, is somewhat of a quandary. Lines can be inspected for obvious chaffing or evidence of bulging, but this does not account for internal breakdowns which are not evident from a visual inspection. This means that “on condition” takes on the form of component failure. If the item was not removed for obvious external reasons, then component failure is the only remaining reason for replacement. Since there is no replacement schedule, an aircraft could very well be running on 20 plus year-old hoses.

If you have an “on condition” failure, then this probably means you’re down. The costs are obvious; charters, support from a service provider, and increased parts cost for AOG replacements. Additional considerations may compound the expense and inconvenience. Did the hydraulic pump run dry and for how long? Should it be replaced? Did the hydraulic filters go into bypass mode? What is the determining factor to flush the hydraulic system? If the system is flushed, what about all the PCUs? Do they need to be pulled and sent out for possible FOD damage? As you can see, an “on condition” hose failure can quickly become a costly and challenging inconvenience. Being proactive in developing and adopting a self-imposed hose replacement schedule, say at engine mid-life, could be some of the most sensible and economical maintenance dollars ever spent.

## **Winter Landing Gear Care**

•*Scott Shefke*

As winter approaches and de-icing operations commence, landing gear components are subjected to a variety of elements that are not friendly toward maintaining a corrosion-free environment.

To help prevent costly overhaul replacement

parts, be proactive. Keep your gear clean and properly lubricated on a routine basis.

In regards to gear lubrication, Bombardier has put out Info Service Letters discussing landing gear lubrication. It is important to keep in mind there are two types of grease available, Aeroshell Grease 33 (type 1) and Aeroshell grease 7 (a type 2 grease). Both are listed as approved although they are not to be mixed. The Aeroshell Grease 33 came out as improved synthetic grease that contains corrosion and oxidation inhibitors and is thickened with a metallic soap base. Type 2, Aeroshell 7 grease, is thickened with clay.

## **Aircraft Water Systems**

•*Scott Shefke*

Aircraft water systems are an easily forgotten component and are often not part of continued airworthiness requirements. Poor sanitation practices can cause water to be unsafe for human consumption and may be a source of foul odor in the cabin. In order to find out if your system has filters and recommended sanitation procedures, see the aircraft completions manual. This should list inspection intervals, locations and part numbers for water system filters. If you cannot find intervals, Duncan Aviation recommends that an internal schedule be implemented or ask for a system clean and check at your next inspection.

For general sanitation, see an RV (recreational vehicle) dealer. They have treatment solutions such as chlorine dioxide. Another option is the old standby, household bleach, although this may leave a bad taste due to other elements added by the manufacturer.

Tip: Some operators safeguard their water system in winter by adding a bottle or two of an alcoholic beverage to the system to act as antifreeze.

