Australian Government
Civil Aviation Safety Authority

AIRWORTHINESS BULLETIN

Fatigue Failures of Copper Alloy Fuel and Oil Pipes	**AWB**	28-007	**Issue** :	1
	Date :	19 February 2008		

1. Applicability

All aircraft which use copper alloy fuel and oil lines.

2. Purpose

The purpose of this AWB is to highlight to operators and maintainers of all aircraft which have copper alloy fuel and oil lines to the possibility of unanticipated fatigue failure.

3. Background

CASA has received a report of an in-flight failure of a copper fuel line. This line delivered avgas under pressure into the engine compartment. Failure of this line at the attachment caused a large fuel leak and engine failure. In this instance the failure of the copper alloy fuel line was caused by fatigue due to work hardening.

Work hardening of metal pipes can be caused by normal engine vibration over extended periods of time, maintenance mishandling damage, including kinking and re-bending the pipes during maintenance, as well as over tightening during installation.

4. Recommendation

CASA recommends that registered operators and maintainers of aircraft which incorporate copper alloy tubing:

- Inspect all copper alloy pipes during each periodic inspection for condition, damage security and leakage.
- Replace any copper alloy tubing which has been in service for over 10 years or 10,000 hours. Or at intervals recommended by the engine or aircraft manufacturer.
- Replace any copper alloy pipes which show signs of damage or leakage immediately.
- Submit an SDR to CASA when a fault is detected.

5. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

AirworthinessBulletin@casa.gov.au

Or in writing, to:

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