**Australian Ultralight Federation Inc**
ABN 40 070 931 645
**U35/59 Wollongong St**
**PO Box 1265, Fyshwick ACT 2609**
**Ph: 02 6280 4700 Fax: 02 6280 4775**
**Email: tech@auf.asn.au**

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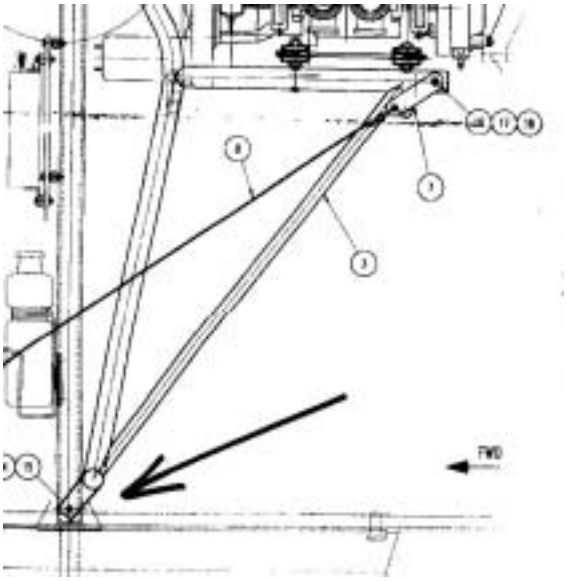
# DRIFTER MAINTENANCE ALERT – AUG 03
# ENGINE MOUNT STRUCTURE – LOWER ENGINE SUPPORT BRACKETS

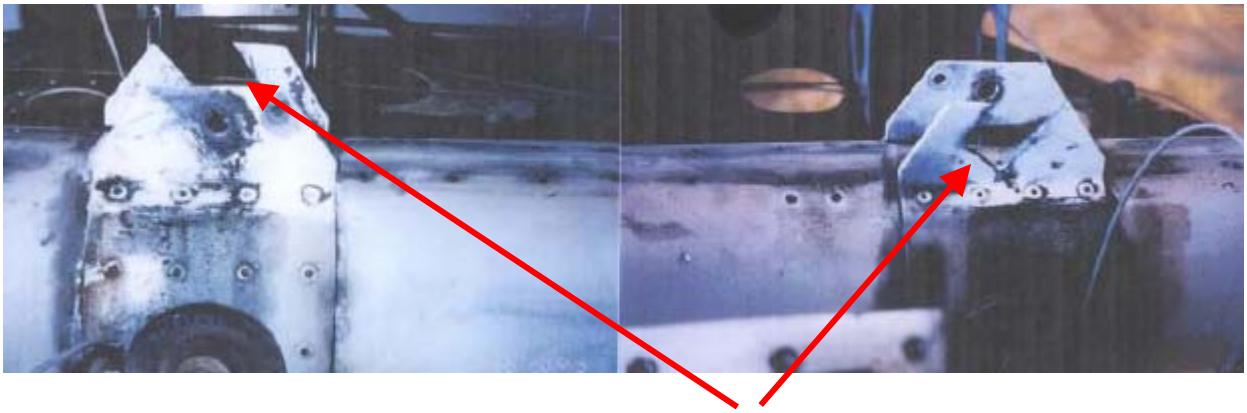
**The Problem and Background**
A well known Level 2 was recently required to repair a problem that the owner had found with the MTD-3D brackets which attach to the fuselage and anchor the up-tube and engine mount lower support Frame (see Diagram)



He had reported a problem in this area which involved cracking of the brackets in May 2001 and this was reported in the July 2001 issue of Australian Ultralights (also on the internet at http://www.auf.asn.au/airworthiness/drifterbracket.pdf)

Unlike the previous problem, this current instance is caused by vibration transmitted through the lower engine mount frame which resulted in fretting so severe that it completely wore away the attachment

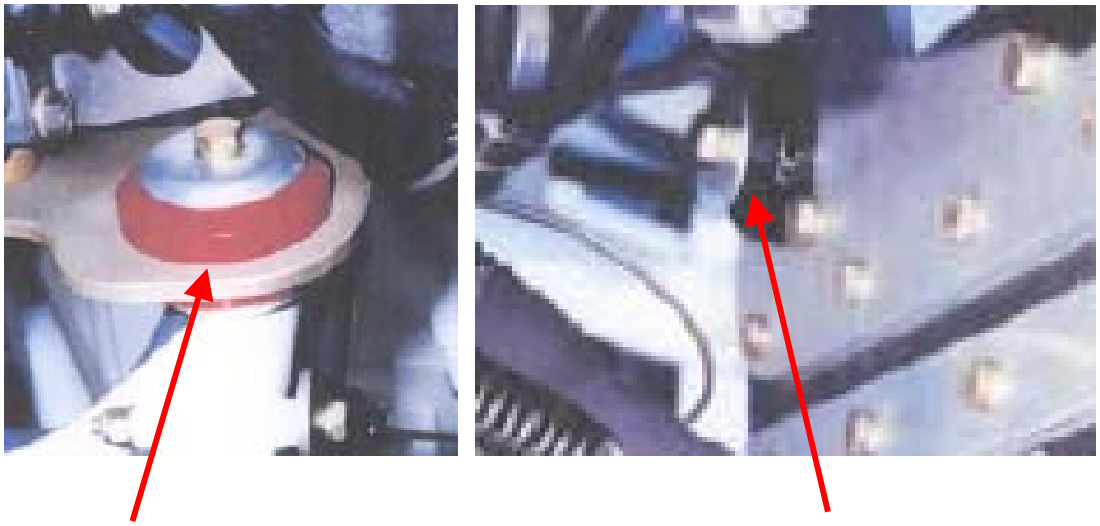
material of the aluminium bracket (see below)



**Pictures showing fitting worn through !!!**

To the knowledge of the L2 who has had vast experience with Drifter aircraft, this is the first he has seen with this type of failure in a strut braced Drifter. He states that the retaining bolt was still tight and the plastic “Top Hat” type bushing located between the bracket and the up-tube was still in place. Log book records suggest that the aircraft had operated about 300 hours with the suspect rubbers fitted.

This aircraft was one of only a few that has been fitted with the Austflight polyurethane machined type engine mount rubbers. (see below)



**Moulded Poly Mount**

**Typical Steel Neoprene (Black)**
**(Apologies for the clarity of the picture)**

The original design for these engine mount “rubbers” called for a Shore hardness rating of 70, but the submitter of this report notes that the manufacturer of the machined poly mounts advises that these parts have a Shore rating of at least 90 and that they are much harder. Apparently Austflight only produced a limited amount of these retro-fit mounts before it closed.

The up-right engine mount configuration Drifter aircraft utilised four types of rubbers in the engine mounts:

1. A one piece  steel mount with neoprene rubber inserts secured with a snap ring
2. A similar mount but to make it easier to replace in the field, it was machined with a flange to allow it to be secured with two ¼ inch bolts in lieu of the snap ring

3. A two piece polyurethane moulded mount – red in colour
4. A similar, but darker red polyurethane mount, machined from round rod stock. Machine marks are visible.

The submitter considers the mount machined from round rod stock is too hard and this transmits vibration down the tube causing vibration distress at the tube-to-fuselage bracket. A passing comment at this stage would be that surely fretting on this scale should have been evident to the operator before such a gross wear state had been reached. For various reasons, this cannot be followed up, but the lesson is obvious.

**Note:** Reference to other correspondence on Drifter Engine Mounts shows evidence of collapsing of a poly mount. The actual detail of that failed item – its hardness, evidence of porosity or any other problem with it or the installation - is not known but that matter coupled with this suggests that poly mounts should be checked regularly.

**Action Required.**
All operators of Drifters with up-right mounted engines are advised to check the whole engine mount structure of their aircraft paying particular attention to the area where the supports attach to the fuselage and to the types and condition of the “rubber” mounts.

If machined type poly mounts are fitted (machine marks are visible), fitment of replacement moulded mounts is recommended. The new Drifter factory is not officially on line yet, but a source of replacement mounts can be obtained by contacting the AUF Office.

Poly Mounts should be checked regularly for integrity,

Tech Manager