

FACTORY TECH TALK

MODIFICATIONS

Mandatory mods

The latest mandatory mod remains at Mod 70 – replacement of the tailplane mass balance arm.

TP18F – Butterfly

The ‘butterfly’ (TP18F) was designed and made, by popular demand, to enable the attachment of the cables originally fitted to the original mass balance arm to help centralise those that are not quite straight. It was designed so that the holes in its lugs are 9mm (0.35”) forward of where the holes in the lugs of the old mass balance arm were. The reason for this is that it is intended that shackles AN115-21 and pins SP4Y-B3 be used with which to re-attach the original cables, the shackle and pin assembly making the cable’s total length 9mm longer.

If turnbuckles are used in the cables - provided that a fork-ended type was used to attach to the lug - then no shackle should be necessary.

Nose leg bungee substitute – Mod 71

As is probably already quite well known, a modification to substitute the troublesome and difficult to replace bungee that secures the Tri-gear nose leg with a pair of steel springs has been developed. It has now been accepted by the PFA here in the UK.

This mod was pioneered by Nico Groot in Holland and has been flying on his and several other Dutch Tri-gear Europas for some years. Ian Rickard and Terry Clark, both Europa Tri-gear owners, recently got Nico’s permission to adopt the idea and they have made some subtle refinements to the design and produced a set of installation instructions. It has been increasingly plain to us lately that the problems associated with the bungee method of securing the nose gear leg was spoiling the experience of operating a Tri-gear, so it has been incorporated into the design.

There is a list of names on record of people who have expressed a desire to receive this mod, but before it is considered to be an order, please would you confirm it with us.

BUILD MATTERS

EUR 045 bolt – correction

In the October 2005 Tech Talk, under Build Matters and headed ‘Wing rear attachment bolts -EUR 045’, the 2nd paragraph states that the EUR 045 bolt is used at the top of the fitting. This is opposite to that described in the Builders Manual and should read that it is used at the bottom of the fitting.

Parking brake valve leaks

The tri-gear finger brakes’ parking brake valve is fitted with four screw-in hose couplings. The two that screw into the front face of the valve body can contact the check-valve’s push rod before the tapered thread has made a seal resulting in a leak,

and there is also the danger of damaging the check-valve. To avoid this happening, use sufficient PTFE thread tape to stop each coupling from being screwed in too far.

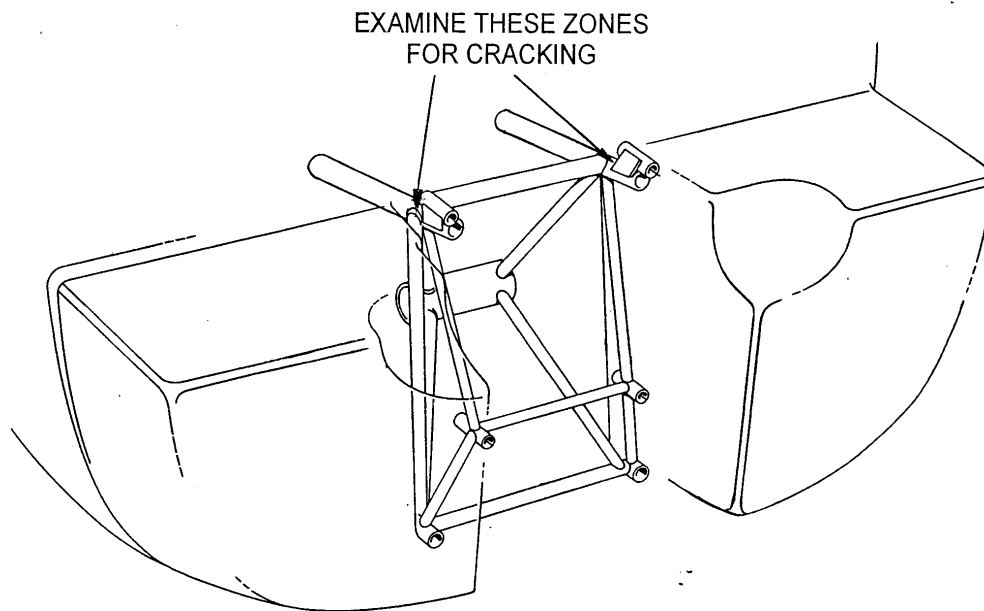
OPERATING ISSUES

Landing gear mounting frame failure

There has been a report of the failure of a landing gear mounting frame. The two upper tubes that the engine mounting frame / ring mount attach to were found to have failed.

Please inspect carefully for cracking of the two tubes on which the smaller diameter mounting tubes are welded to as indicated in the illustration, especially if the aircraft has experienced a heavy landing. Cracking would commence on the upper portion of the tube, so inspection should be straightforward.

We are investigating this issue more thoroughly so we would be grateful to be informed of any cracks found on other mounts.



Fuel hose

The currently supplied fuel hose can be identified by its fabric reinforcement being imbedded approximately half way between the outer surface and the bore. Prior to this, the hose had fabric reinforcement on the outside surface only, some having a steel braid over it too. This older hose was found not to be particularly robust and it was discontinued about five years ago, which is also the recommended maximum life of rubber products used on aircraft. If you are still operating your Europa with the earlier hose, or it is fitted but has yet to have fuel in it, we would highly recommend that it be replaced. The 912(S) engine requires 10m of 8mm hose and 4m of 6mm hose, whereas the 914 installation requires 12.5m 8mm hose and 1m of 6mm hose. The steel braided hose is no longer used.

Brake master cylinder seals– Tri-gear finger brakes

We now hold in stock replacements for the two seals that fit in the dual master cylinders for the tri-gear finger brakes. These seals have been found to ease operation of the cylinders. They are made from the same material as the original seals, so the DOT 5 brake fluid will still be necessary. Our search for reasonably priced replacement seals in Viton has turned out to be fruitless.

ROTAX ENGINES

Fuel pressure gauge/warning system

Having an instrument such as a fuel pressure gauge, that most of the time indicates approximately the same value, has the advantage that it will be quite noticeable should it indicate differently. A disadvantage is that it might become an instrument that tends to get overlooked until something else, like an engine cough or worse, catches your attention. Better to have an attention-grabbing indicator to cause you to anticipate a problem. An indicator alone won't give you the necessary information on which to base the safest decision on how to proceed with the flight though. The ideal therefore, would be an indicator to get your attention in a timely manner, combined with a gauge to give you more information on the developing problem.

Until recently, these two features were only available separately, but now a 0-7 psi, 2¼" diameter analogue fuel pressure gauge, combined with low and high pressure warning lamps, is available for both the Rotax 912 and 914 engines. Plumbing kits have also been designed to provide all the parts needed, except for the electrical connections, to install the system into your Europa.

As there is not always space available for an extra 2¼" gauge in the panel, we are currently working on a combined gauge/warning system using a multi-coloured LED bar display. Panel space required will only be 45mm x 20mm (1¾" x ¾"). We'll keep you posted on progress.

Throttle and choke cable routing

The throttle and choke cables supplied with the firewall-forward kits give the impression of being too long. This is not the case. The reason for the seemingly excessive length is to allow the cables to be installed without any tight curves in them. The bends in these cables must be as large as practical to avoid excessive friction within them that results in difficult control operation.

The cables should emerge through the removable firewall where the landing gear upper struts poke through; a pair each side and on the opposite side to the carburettor that it will connect to.

The choke cables should loop over the top of the engine and back round to the 90° cable guide that can be oriented appropriately to accept the cable. The throttle cables have to approach the cable bracket from the rear and the kindest route is to loop the cable upwards and rearwards towards the top of the firewall before continuing down then forwards (a bit like a barrel roll) to the bracket. If you wish to secure the cables to restrict their movement under the cowling, do so only lightly, ensuring that you don't cause the internal friction to increase.

Evans coolant

According to recent reports received, the Evans coolant, that has been suggested to be the coolant of choice for the Rotax engine, is continuing to cause cooling difficulties.

The replacement of the originally installed Glycol/water coolant with Evans coolant has already made several Europas difficult or impossible to operate due to its poor cooling properties.

Upholstery kit prices on back cover

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