

FACTORY TECH TALK

MODIFICATIONS

Mandatory mods

The latest mandatory modification is Mod 70 - replacement of the tailplane mass balance arm assembly. This mod is the result of the failure of the threaded end fitting part of the position adjuster. Fortunately the failure occurred whilst the aircraft was on the ground. Details of what work is involved may be found on the web site (europa-aircraft.biz).

In summary, the original mass balance arm is removed, the new assembly set up to match the old one and, before its fitting into the aircraft, a pair of low-friction guide strips are attached to the inside faces of the support structure for the pitch control stops. These allow the cables that were originally used to limit sideways movement to be omitted, making installation a lot easier.

Parts are being manufactured, the design having been approved by the PFA, and should be available from the beginning of May. We regret that we are unable to support the full cost of this mod, so a charge of £45 plus postage and tax will be made.

BUILD MATTERS

Braking system fluid – Tri-gear finger brakes

Because the rubber seals in the master cylinders are different from those in the brake callipers, the brake fluid DOT5 was selected for use in the tri-gear finger-brake system as it is compatible with both type of seal. As DOT 5 fluid has proved to be difficult to source for some people, an alternative solution is being sought. We are currently investigating a suitable source for the master cylinder seals, with not much success so far, to enable aviation type hydraulic fluid to be used. If we are unsuccessful in our search, we have the alternative solution available to change all the seals in the brake callipers and park brake valve instead to enable DOT 3 or DOT 4 automotive type brake fluid to be used. This latter solution is the least desirable of the two as it involves the replacement of 9 seals instead of 4 in the first.

Main gear installation – Tri-gear (1)

The forward pair of ribs that support the main gear leg sockets will conflict with the wing rear pin socket tie bar and gusset plate assembly unless the shape is changed from that shown by the relevant template. The forward, upper corner in each case must be lower to clear the tie bar and associated structure. The upper edge should remain a straight line rather than locally scalloping out and the 'uni' plies that run along the top edge should be uninterrupted from one end to the other.

Main gear installation – Tri-gear (2)

The installation of the tri-gear landing gear is recommended to be carried out after the two halves of the fuselage are bonded together. The disadvantage of doing this is that access to the baggage bay area to install the main gear sockets is somewhat restricted. It is acceptable to install the main gear sockets before the top is bonded on, provided that the lower moulding is properly supported in a cradle or similar.

Before starting work on installing the sockets, first carry out a trial fit of the upper moulding making sure that nothing moves, particularly in the area at the rear of the cockpit module where the landing gear is inserted, when you remove it.

OPERATING ISSUES

Stall warner – Mod 61A (retrofit type)

A difficulty in calibrating a mod 61A retro-fitted stall warner has been experienced recently on two aircraft. Having adjusted the pressure switch to achieve stall warning of between the stipulated 5 – 10 knots before the stall, in both cases the stall warning horn came on during landing but continued to sound after the aircraft had come to a stop. The reason was that the pressure switch had been adjusted so that the electrical contacts were touching when not subject to the differential pressure that is experienced when the aircraft is at speeds just above the stall.

The cause for having to adjust the switch beyond its normal range was found to have been that the hole in the probe at the surface of the wing leading edge was too small. This was because the probe had not been installed deep enough into the wing and, upon trimming the protruding portion off to be flush with the leading edge, the inner hose fitting tube had also been cut through.

The solution was to drill into the end of the probe with a 4.8mm (3/16" should also do) drill about 6mm (1/4") deep. This allows for a greater amount of the low pressure that is generated over the end of the probe near and at the stall to operate the pressure switch and so enable it to be adjusted within its normal range.

ROTAX ENGINES

Airbox pressure sensor – Rotax 914

On the latest version of the Rotax 914 engines, the airbox pressure sensor is already mounted to the engine rather than loose as before. It, therefore, does not need to be mounted to the bracket with the ambient air pressure sensor. Modify the bracket accordingly.

Magneto switch wiring – Rotax 912/912S/914

A recent change to the Rotax engines is that the connectors for the magneto grounding or shorting wires are no longer on a separate wire that emerges from each electronic unit but are now integrated into 6 pin connectors. In each of these connectors the ignition wire coming out of the electronic module is installed in one side, but the opposite side is vacant. It is into this vacant hole that your ignition grounding wire is to be inserted. First, though, you need to attach one of the pins that are supplied with the engine to your wire, along with a sealing grommet before inserting it into the connector until it clicks into place.