

NEW PARTS

EFIS instrument panels

To compliment the existing laser cut instrument panel fascias that accommodate conventional instruments, a new design is being developed based around the new Dynon D100 EFIS unit. The D100 is based on the successful D10 unit. The D10 has a 3.8" screen but the D100 has a 7" screen and only costs about \$200 more. Space constraints result in the panel being equipped with 2-1/4" ASI and Altimeter, leaving room for two 3-1/8" instruments under each respectively. These apertures may be used for a wing leveller and VOR/ILS or even the conventional turn co-ordinator and VSI as back ups, for example. See the illustration.

The omission of the vacuum system, vacuum instruments (AI and DI), turn co-ordinator and VSI saves approximately 14lb in weight (6.5 kg) and £1500 (\$2600) in average cost. An encoding altimeter will also not be required, saving an additional 1/2lb (0.2kg) and £85 (\$150).

The Dynon D100, including the optional internal battery pack, weighs in at 3lb (1.4kg) and the current price for them is \$2524 (approx £1450). So you can save at least 10lb (4.5kg), reduce complexity and have an EFIS panel at no extra expense.

GPS moving map

In concert with the EFIS, the feasibility of laser cut avionics panels are also being investigated to accommodate the AvMap EKP-IV (which has an impressively clear and large display) and the popular Skyforce Skymap II and III GPS moving map units. The size of these units determines that the Com and Transponder units are the 2-1/4" diameter type. There is a choice of two makes of these at least. The portrait orientation of the display shows more information ahead of track, although landscape orientation will fit in the panel. Feedback from anyone interested in these panel designs would be appreciated before a commitment to production is made.

The thought behind the EFIS and GPS units mentioned is that, as all are stand-alone in their operation this results in minimised complexity, and the prices are not unreasonable. There are plenty of other units on the market, but usually at a significantly higher cost. Not to exclude the choice of these other units, a version of both panel fascias is likely to be produced where the central area is blank. See illustrations at the end.

Knobs

A detail that has, up until now, not been covered by the factory is the availability of knobs for the various levers in the cockpit. The only knobs that have previously been made available are those that are included with the Tri-gear finger braking system. Now we are able to offer a complete set, including knobs that match the throttle lever, monowheel landing gear retraction lever and brake lever, door latch levers and motor glider air-brake lever. All are made from aluminium alloy and are hollow to keep the weight down – (every little helps).

MODIFICATIONS

Mandatory mods

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

Use of un-leaded fuel

It has been brought to our attention that all aircraft using un-leaded Mogas, that are flying under a UK Permit to Fly, must have fitted a means of draining the fuel tank(s). If your Europa does not comply with this regulation and you wish to use unleaded fuel then the Mod 33 – fuel drain kit should be fitted. Mod 33 is available from the factory at a cost of £59.95 + shipping and tax. You will find details on the web site.

SERVICE BULLETINS

SB 13 - Mono wheel outrigger operating link rod OR5. Soft material.

We believe that all monowheel builders that are likely to have been affected by this service bulletin have been advised and the replacement parts supplied, but if you received your wing kit within the period May 2001 and February 2002 and you have not been advised, please check the Service Bulletin on the web site for further details.

SB 14 - 912/912S exhaust silencer heat shield strap security.

This recently issued Service Bulletin affects all those who have received an exhaust silencer from Europa Aircraft (2004) to date. All silencers supplied after September 2005 will not be affected. If you haven't received a copy of the SB, please download it from the web site or contact us for a copy.

BUILD MATTERS

Wing rear attachment bolts – EUR 045

It is strange that only a few days ago it was discovered that the EUR 045 bolts that are in stock, and have been for the past couple of years or so, are the wrong ones! The strange thing is that no one has reported the problem before now.

One of these bolts is used at the top of each W26 articulating socket for the wing's rear pin and is fastened with an MS21042-3 nut. The offending bolt is a metric M5 bolt, so the thread will not easily allow the UNF nut on and the plain shank is also longer than on the correct counterpart. This problem only affects XS Europas and those fitted with Mod 52 – Gross Weight upgrade.

Having said all this, the 5mm bolt will be a suitable alternative provided that an appropriate stiff nut is used with it.

To identify the correct bolt, the head diameter is 0.310" (7.9mm) and the 5mm bolt head is 0.335" (8.5mm). Correct EUR 045 bolts will be supplied on request.

Sticky Stuff Resin Pumps

Resin pumps for the laminating resins are now available from the factory once again. The Sticky Stuff resin pumps had developed a reputation for being troublesome a couple of years or so ago but they have since been re-engineered by the manufacturer. Neville (who's now busier than he can remember, assisting several Europa builders) has had one on trial for the past few months and reports no problems with it at all.

The pumps are adjustable and the version of interest to Ampreg 20 and Aeropoxy users are suitable for mixing ratios of between 17:100 and 65:100. The ratio will be pre-set, provided that the resin type is specified on order.

Nose gear shaft thread

It has been discovered that some nose gear fork shafts have the thread cut insufficiently deep to allow the ½” castle nut to be screwed on, let alone permit adjustment of the shimmy damper. To correct this problem, it is necessary to re-cut the thread slightly deeper until the nut can be screwed on. You will need a ½” UNF die and suitable die-stock to do this. Use an appropriate thread cutting fluid to make the job easier.

OPERATING ISSUES

Tri-gear finger brakes

There has been some progress with replacement seals, at last, after a long period of inaction, it has to be confessed. A source of the master cylinder’s lip seals, that are compatible with automotive brake fluids (DOT3/DOT4), has been established and it has been reported that they are superior to the ones originally fitted. The O-ring seals that fit the brake callipers are a stock item, being that they are identical to the one used in the monowheel’s brake calliper. The parking brake valve uses seven O-rings of three different sizes. So, in summary, if you wish to use automotive type brake fluid in your finger brake system, seals are now available.

We are in contact with a seal supplier who has stated that they will be able to supply us with the lip seals for the master cylinders in the material (Buna Nitrile) that is compatible with aviation type hydraulic fluid. As the seals are not presently available in this material, it will involve a batch of seals being moulded specially for us. The cost of these seals will depend on the quantity, of course. We are presently awaiting a quotation. We have been advised that the lead-time from order will be approximately 10 to 12 weeks. Look out for news of progress on our web site.

Braking efficiency – Monowheel

When you become more adept at operating the Europa monowheel aircraft, sometimes it can be useful to brake hard to slow enough to safely make a runway turn-off - (never brake hard *whilst* turning, especially at speed). It may have been noticed that the braking efficiency will tend to reduce as the aircraft slows down such that you might well pass a turn-off that you had initially judged that you’d be able to make with ease.

This reduction of braking efficiency is suspected to be due to the inability of the brake disc to absorb sufficient heat. A thicker brake disc should therefore solve this issue. We are currently awaiting a new, thicker disc with which to conduct trials and see if the theory is borne out in practice. If you are interested in the results of these trials, please contact Andy.

AIRMASTER PROPELLERS

AC200 noise problem

The errant leads, as appealed for in the last Tech Talk, were promptly returned; thank you for responding. The leads are therefore available again on loan for those who find that they need to upgrade the AC200 controller’s firmware to eliminate the one pulse-per-second interference that may be experienced.

There's no further news on eliminating the noise caused by the prop pitch motor as yet. We'll keep you posted.

ROTAX ENGINES

Evans Coolant

Several Europa/Rotax engine operators have reported to us that switching from glycol/water, 50:50 mixed coolant to the Evans coolant has resulted in their engines running too hot, when beforehand they ran nicely within the original (and even the revised) temperature limits. Before you go to the trouble of doing a coolant exchange, please note that, contrary to common belief, the use of Evans coolant is not mandatory.

Rotax Service Bulletins

As mentioned in the last Tech Talk, relevant bulletins etc. from Rotax will no longer be issued from the factory but should be found on the Rotax web site <rotax-aircraft-engines.com>. We'll endeavour to advise you of important issues when they arise.

Service Bulletin SB-912-048UL/SB-914-033UL

Of note is a mandatory Service Bulletin that affects the carburettors of certain 912, 912S and 914 engines. For those of you whose engine were supplied through Europa in the UK or direct from Skydrive, the UK Rotax importer, please refer to the letter below from Skydrive.

The bulletin describes the problem to be the pin on which the carburettor's float pivots. A batch of pins is subject to the surface coating flaking off which could result in engine stoppage.

Letter from Skydrive

Dear Bulletin Subscriber, Aircraft Manufacturer, Kit Supplier, Engine Owner

SB-912-048 / SB-914-033

SB-912-048UL / SB-914-033UL

Replacement of Pin Part No. 929700 in Carburettor for Rotax Engine Type 912 / 914 (Series)

This Bulletin has been classified by Rotax as Mandatory, and requires the replacement of the pivot pin for the float bracket for a range of 912 and 914 engines as specified in the Bulletins.

Replacement pins for all affected engines will be supplied free of charge if correct application is made before 31st December 2005.

Further details regarding procedures for obtaining the parts and having them fitted are given below.

[PROCEDURE FOR REPLACEMENT OF CARBURETTER PIN \(929700\) WITH 929701](#)

(Ref. SB-912-048 / SB-914-033
SB-912-048UL / SB-914-033UL)

1) AT SKYDRIVE

a) REPLACEMENT ON LOOSE ENGINES

These engines will be converted free of charge at Skydrive premises, but the cost and responsibility to deliver and return the engine will rest with the owner. If any extra parts are fitted to the engine, or if any modifications have been carried out, which make the job more time consuming, then extra time spent will be charged for.

b) REPLACEMENT ON ENGINES FITTED IN AIRCRAFT

These engines will be converted with a free labour allowance of 1.5 hours. Any time taken above hours will be charged for. The cost and responsibility to deliver and return the aircraft will rest with the owner. Aircraft can be accepted on trailers, or may be flown in to our base at Shotteswell Airfield by prior arrangement.

2) REPLACEMENTS IN THE FIELD

Replacements carried out in the field will attract travelling costs – please enquire for details.

3) REPLACEMENT CARRIED OUT BY TRAINED AIRCRAFT MANUFACTURERS, KIT SUPPLIERS AND AUTHORISED REPAIR SHOPS

We hope these will be under the same conditions as specified in 1) & 2), but organisations are at liberty to specify their own charges.

4) REPLACEMENT BY OWNERS ETC.

Aircraft owners or their appointed representative may under special circumstances, carry out replacements on non-certificated UL engines. Skydrive, the Aircraft Manufacturer, Kit Supplier, Engine Supplier or Rotax can accept no responsibility, for any loss or damage if the replacement has been carried out by this method. A credit of £20 per engine will be given to help with the cost of fitting the parts, provided the information requested in 6) is supplied.

Alternatively owners may wish to remove the carburettors themselves, and send the carbs to Skydrive for replacing the pins. No responsibility can be accepted by Skydrive, the Aircraft Manufacturer, Kit Supplier, Engine Supplier or Rotax, for any loss or damage caused by incorrect reinstallation of the carbs. A credit of £10 per engine will be given to help with the cost of removing and re-fitting the carbs, provided the information requested in 6) is supplied.

The completed job will of course have to be inspected and signed off by the appropriate inspector (PFA or BMAA).

5) If you are a dealer who has sold engines on, please send a copy of the bulletins and this letter to all engine owners. If you are an individual who has sold your engine / aircraft on, please pass the bulletins and this letter to the new owner.

6) a) In order to obtain the replacement parts for self-fitting, the engine serial No. must be supplied to Skydrive.

b) In order to obtain the specified credits, the owner must supply the following information.

Engine Serial No.

Date of First Operation

Operating Hours

Aircraft Type

Aircraft Registration

Owners Name & Address

.....

.....

Name of Person fitting the new parts

To make it easy, this portion of the letter can be filled in and sent / faxed to Skydrive.

Thank you for your co-operation.

Yours sincerely

Nigel Beale

Rotax Bulletins and service information is available on the Rotax website at www.rotax-aircraft-engines.com

