



MISSION 108 BUILD

Moules et frites, chocolates, the EU Commission – and the Mission 108.
Steve Kember continues the build of his kit in Belgium.

As you all know, according to CAA/LAA regulations, I must complete 51% of the tasks during the construction of my homebuilt aircraft, a Lambert Aircraft Engineering Mission M108. The original objective of completing a build assist programme was to produce a capable, safe light aircraft with the minimum of fuss, drama and time. But for me the game has changed – I have discovered that I like building aeroplanes, even if I have to stay away from home to do it. I call it 'immersion therapy.' I am past the 51% requirement by now but thoroughly enjoying doing extra jobs just to make this aircraft that bit more special.

First job on my latest visit to the Lambert hangar in Belgium was producing control cable

The ECU mounted on left hand sidewall in the cockpit

connections using the Nicopress system. Clamping the cable sleeves with the crimper was particularly satisfying. The tool to perform this process resembles a heavy duty bolt cutter with preformed shaped clamps instead of blades. Incorporated along each cable produced is a turnbuckle for final adjustment and rigging. I

may need some help with that.

The fitting of the seats seems to be something of a milestone. The energy absorbing foam is covered in stitched, pierced and sculptured leather, very tasteful in light grey. The engine cowl has been temporarily fitted to check clearances etc and this gives me an opportunity to sit in the seats, control stick in one hand and make aeroplane noises imagining myself flying adjacent to the white cliffs of Dover (observing the 500ft rule obviously).

Having bolted the engine and ancillaries in place, provision had to be made to allow cables from the engine sensors to pass through the firewall. These could then be connected to the ECU located on the lower left hand sidewall of the cockpit. It is attached to a tubular structural member of the fuselage with 'P' clips that have rubber linings that will prevent chafing. Rotax also stipulates that





(Above) Fitting the plush leather seats is another milestone reached



(Right) Fixing the heat shield to the firewall



Using a template to drill the firewall

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certain electrical components be isolated from the aircraft's electrical 'ground'. A rectangular hole was cut in the firewall that would allow the largest of the five electrical connectors to pass through. Two aluminium horse-shoe shaped plates were produced by Steven Lambert, which slide over one another, to reduce the size of the hole so that the cables are immobile but not clamped. Three of these electrical connectors fit into the ECU. The other two connectors, labelled HIC-A and HIC-B connect to the ignition switch, fuel pump switches, ECU warning lights and outputs engine parameters to the PFD. (HIC = human interface connection in Rotax speak). The sophisticated design of the 912iS has many benefits, including two alternators, two voltage regulators, two fuel pumps etc, and a lot of built-in redundancy. A comprehensive briefing from Steven and Filip Lambert gave me a working knowledge of the intricacies of the engine installation on my aircraft. What at first seems complicated is in fact a well-thought-out installation that will be easy to use.

The layout of the panel was an area that got me thinking during the period between my work visits. I really wanted a second GPS fitted, as this may give my wife (a nervous flyer) something to play with during our epic sorties in search of that perfect £100 bacon sandwich (or will it be nearer £25 due to the

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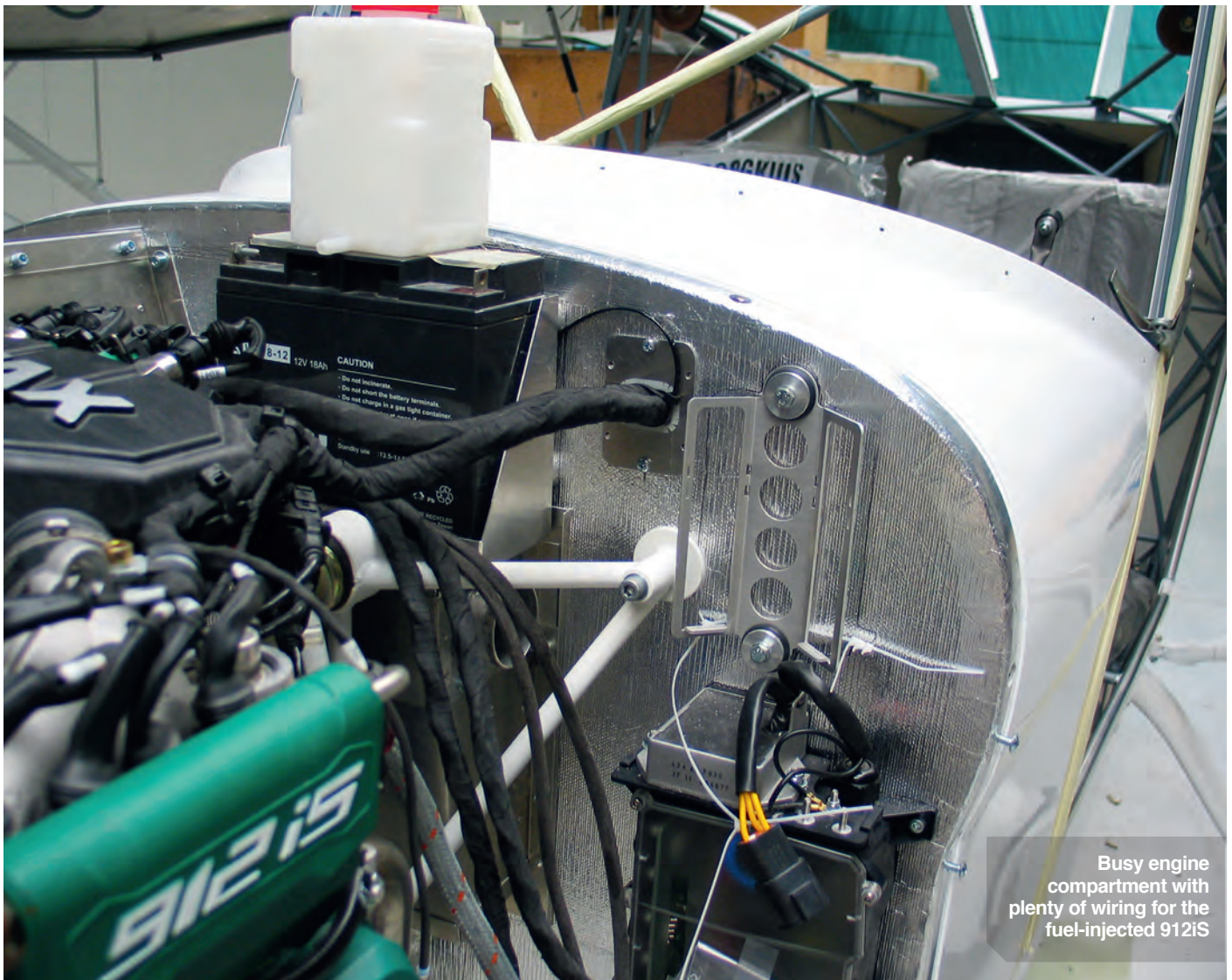
miserly fuel consumption of the 912iS?). The trouble was Filip Lambert's suggested layout was fine but spare space was scarce and there was no room for the second GPS, my trusted Garmin aera 500. This will have to be ditched or relegated to a suction cup type fitting on the side of the windscreen.

The panel will sport a Garmin 795 with a hum-dinging seven inch screen for uber clarity. I considered the 695 at first as it has less of the bling about it, but I found the joy stick thing a bit cumbersome to use. The 795 seemed more intuitive. For a bit of an

individual but military type look, I wanted a place for my wind-up chronometer and it is located top right. This is to cater for my love of all things mechanical and a bit of a nod to our flying heritage, even if it is Russian. One space saving idea came in the form of an LX BU57. Instead of having a separate ASI, altimeter and rate of climb stand-by instruments, all three are incorporated into just one instrument which has its own dedicated backup battery, which seems excellent on the face of it, but we will need to run this past LAA Engineering to see if it satisfies the requirements.

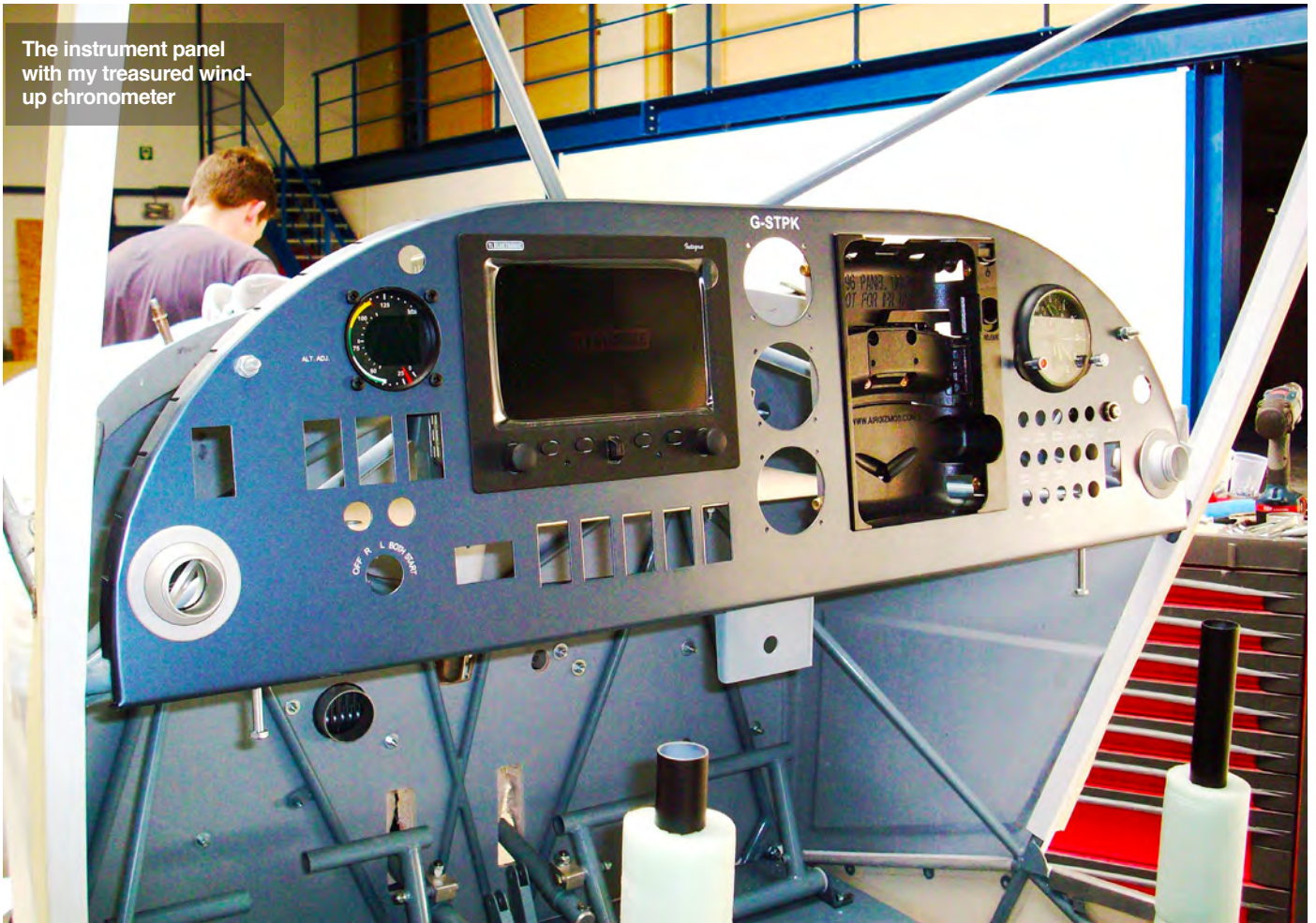
Just as I left the Lambert hanger after this latest build-fest, the decals/transfer decorations arrived, and it's going to look great! They included my blood group for the pilot's side door but I think it best that I do not include that, it'll probably make the passengers even more nervous!

Now a dilemma! I had arranged to have a used ATR500 radio installed at a very reasonable price. However, from November this year (2013) new radio installations must have 8.33kHz spacing. For aircraft already in service with installed non-8.33 compliant radios, the obsolete equipment can remain in use till end of 2017. So, should I bite the bullet now and fit the 8.33 radio at extra expense or cross that bridge when I come to it? What would you do? ■



Busy engine compartment with plenty of wiring for the fuel-injected 912iS

The instrument panel with my treasured wind-up chronometer



Almost there! I'm really enjoying the build but there's not a lot left to do