Westland Whirlwind Mk.I, P7056 'Pride of Yeovil'

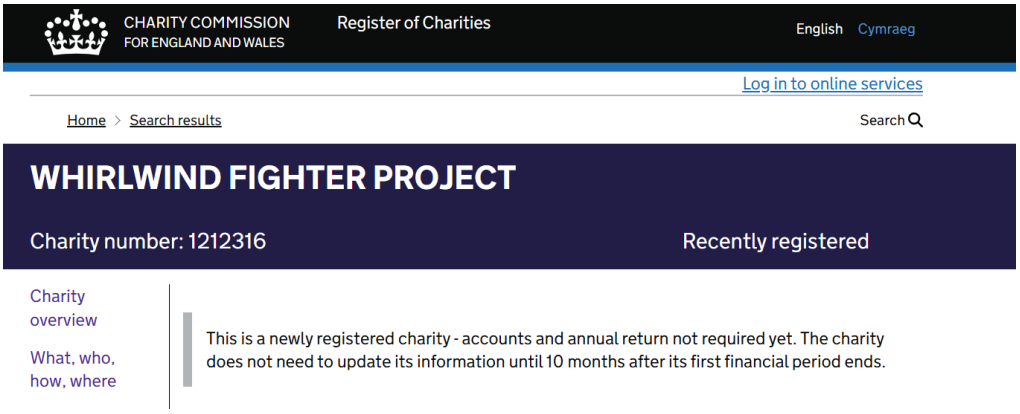
Whirlwind Fighter Project

Spring Newsletter 2025

Project News.

Project Organisation.

As trailed in a few recent newsletters – we have upgraded our charitable status from being a 'charitable unincorporated association' under the auspices of HMRC to that of a full charity under the aegis of the Charity Commission.
Our new charity number is 1212316.



The main driver for this is that our income – very largely from your donations (some regular, others occasional – large and small) and membership fees – has recently increased to over £5000 p.a. This all depends on the generosity of members and non-members alike – we feel the Project has achieved more notice through our steadfast progress and narrow focus on the aim.

One benefit is that we will be able to register to apply for the ability to claim Gift Aid from UK-based donations. Other benefits will accrue – this will help us improve our profile with banking institutions, for example. We hope to gain discounts on services now we can claim full Charity Commission status.

Under the excellent leadership of our Project Secretary – Chris Hayward – we have been operating as a full charity in having regular, minuted team meetings, members' Club nights, having a constitution and Annual General Meetings. This allowed the Charity Commission to readily agree we operate as a charity and needed to register as such.

Some Food for Thought.

We are a small group – membership has risen, though, to about 80 – and we are very much affected by the world's risk factors; more so these days with tariffs on goods and raw materials being levied. Since the hostilities in Ukraine started the cost of the main raw material – aluminium – has risen in leaps and bounds. Tariffs from the USA, and a concomitant EU response, are adding to that cost increase.

Prior to recent price shocks the cost of aluminium on the London Metal Exchange (LME) has been increasing by 9%, year-on-year. Russia has been a major supplier of the metal – but with embargos on supplies from there a shortage has been created – a greater demand on other global suppliers (China mostly) pushed prices up during 2024. This has been a hindering factor to our build efforts – causing difficulties in keeping to our build schedule.

The embargo at the LME has seen a 55% rise in costs to the WFP. Very recent tariffs of 25% on top, from the USA, are costs passed straight through to the consumer – us among them! The direct impact for the WFP has seen an increase in the price of a single sheet of aluminium from £32.28 in 2021 to £58 today, an increase of 83%.

Our recent increased income has, however, allowed us to invest in enough billets of aluminium to set by for when the wing centre section gets started. This has limited our exposure to risk by as much as we can. We envisage further price increases in this uncertain world – and there's been enough volatility to cause us to act while we can and as far as we can afford it.

Chief Engineer Pete Smith – through his own professional network – has achieved good discounts from our metal supplier – metals4u.co.uk. They are becoming an official supporter of the project – which is essential for us as we have a lot more of the aircraft yet to build! In numerical terms – the trade discount applied to our current purchase has saved us £512 on that purchase – which would equate to a probable saving of c£785 if we had delayed purchase of those billets to the year we expect to start work on that section of P7056 i.e. 2027.

Let's not forget the increase in the cost of plywood – a key material in the manufacture of formers and bolsters – every piece of formed aluminium needs two pieces of plywood cut to shape on Pete's CNC. Plywood of the grade we need has doubled in price over the life of the project.

Pete has been re-using plywood by cutting previously-used pieces down to a shape currently needed.

We do feel building upstream and downstream networks between us, suppliers and our solid partner – the Kent Battle of Britain Museum is demonstrating an ethos that the Charity Commission emphasises. It's a good thing to do in these early days of CC membership.

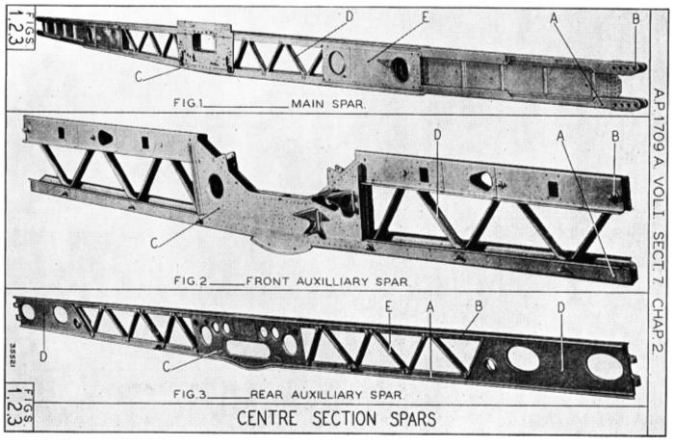
Finally, extended schedules for progress on the build of P7056 do imply that we need our wonderful membership to 'stick with us'; it might mean an extra year or two of requests for annual members to keep on renewing or those that contribute monthly (over and above membership) to demonstrate patience.

Build News.

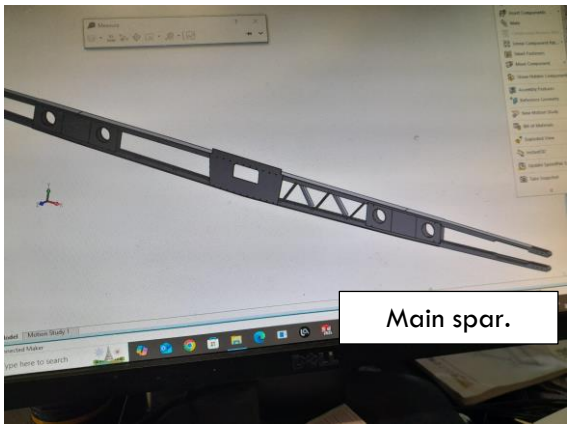
So – and wasting no time at all – with a willing supplier we now have in stock the aluminium billets that will make up two of the main wing spars, and the main spar web:

Exciting, eh? A couple of years of work (!) will see these take their part in these very large components in the centre section of the aircraft:

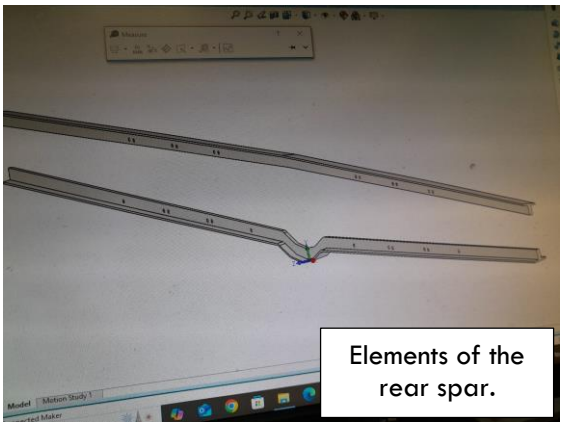
To be accurate – the front auxiliary spar is constructed of folded sheet aluminium – and is not made from the billets.



Our (Gunnar's) 3D models of these items as displayed on Pete's engineering package:



Main spar.



Elements of the rear spar.

Back to the present - There's plenty to do on the tail section – the lower fin section is largely completed – the high tail plane is the next part to be worked on. There will be lower monetary outlays for material needed for that - which can be paid for sequentially. There will not be a need for a big up-front outlay as in for the spars and webs of the wing centre section.

Going back to the turn of the year, however there was plenty of internal discussion regarding the make-up of the rear undercarriage doors, among a few other items. As with every other aspect of this re-creation of this aircraft, there's no detailed plans.

According to the AP the doors were double-skinned – although the port door looked single-thickness at the lower edge; the structure between the skins was a point for discussion. Contemporary descriptions and the spares schedule have proved invaluable in many regards.

Tail wheel compartment doors

14. Both doors (*see* fig. 1, item (D)) are arranged to hinge along the upper edge, and are opened and closed by adjustable tubes linked to the tail wheel oleo unit.

15. The outer duralumin sheeting of each door conforms to the shape of the fuselage and is reinforced by channel-section formers and an additional sheeting on the inside surface. The upper edge carries two welded-up bushed hinge brackets to engage with the hinge brackets on the fuselage. Resilient sealing strips are fitted around the edges of the doors.

One section of spares manual – displayed in Excel.

-	**DOOR, TAIL WHEEL, PORT, GROUP** (Drg. 69614)	1	-
80231	Block, packing (2" long) at attachment of rear hinge to door.	1	L3
80230	Block, packing (1½" long) at attachment of hinges to door.	2	L3
80288	Block, packing (2 " long) at attachment of forward hinge to door.	1	L3
DDS.1078/B/65	Bolt, csk. hd., 4 BA, .9" long, securing hinges to door.	4	S1
76207/1	Channel, stiffening, along top edge of door	1	L3
76274/5	Channel, stiffening (forward portion) along lower edge of door.	1	L3
76274/3	Channel, stiffening (rear portion) along lower edge of door.	1	L3
76226	Channel, stiffening, under bracket mounting operating rod.	2	-
76197/1	Former, No. 1, at forward end	1	L3
76198/1	Former, No. 2	1	L3
76199/1	Former, No. 3	1	L3
76200/1	Former. No. 4	1	L3
76201/2	Former, No. 5, at rear end	1	L3
-	Hinge, rear (male portion) (see separate group)	1	-
-	Hinge, forward (male portion) (see separate group).	1	-
†	Nut, 4 BA, for attachment of hinges to door (A.1.B.P.).	4	-
†	Pin, sealing ⅛" dia., 3/16" long, for rivets (Chobert K.3.PD).	QR	-
76360	Plate, gusset, secured to former No. 5	1	L3
81679/1	Plate, reinforcing	1	L3
†	Rivet, sn. hd., ⅛" dia., 3/16" long (Chobert TK.3.SD).	QR	-
DDS.1068/16	Rivet, csk. hd., ⅛" dia., ¼" long	QR	MG
DDS.1068/15	Rivet, csk. hd., ⅛" dia., 3/16" long	QR	MG
DDS.1069/36	Rivet, sn. hd., 5/32" dia., ¼" long	3	MG
DDS.1068/7	Rivet, csk. hd., 3/32" dia., ⅜" long	6	MG
†	Rivet, csk. hd., ⅛" dia., 3/16" long (Chobert TK.3.CD).	QR	-
69614/3	Skin, outer, 20SWG.	1	L3
69614/5	Skin, inner, 20SWG.	1	L3
81680/1	Strip, sealing (rear portion) along lower edge of door.	1	V7
81680/2	Strip, sealing (forward portion) along lower edge of door.	1	V7
†	Washer, 4 BA, for attachment of hinges to door (AGS.160/B).	4	-
-	Woodscrew, csk. No. 4, ¾" long, securing sealing strips along lower edge of door	7	-

Images from the AP and of existing Whirlwinds all play their part.

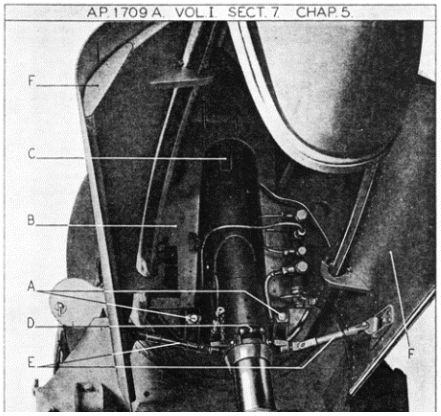
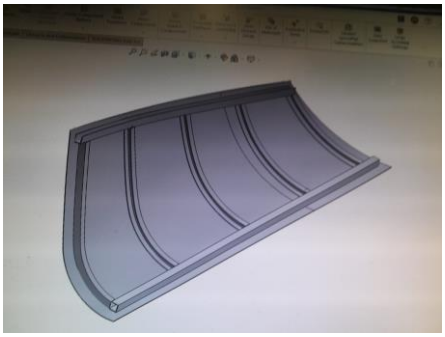


Image from crash-damaged P7103.

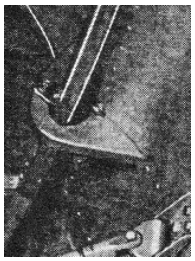
No stone is left unturned in the search for answers to the many, many questions.

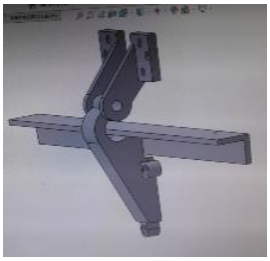
There's some complex geometries to be found just in the rear undercarriage doors – the hinges for opening and closing have to fit a shape with multiple curves.



Port undercarriage door as modelled. Formers are needed for those ribs – here they are:

Actual and modelled undercarriage door hinges:





Moving through late 2024 and early 2025 Pete, working in an often chilly workshop – has worked towards completing this large part of the tail assembly for installation this summer:

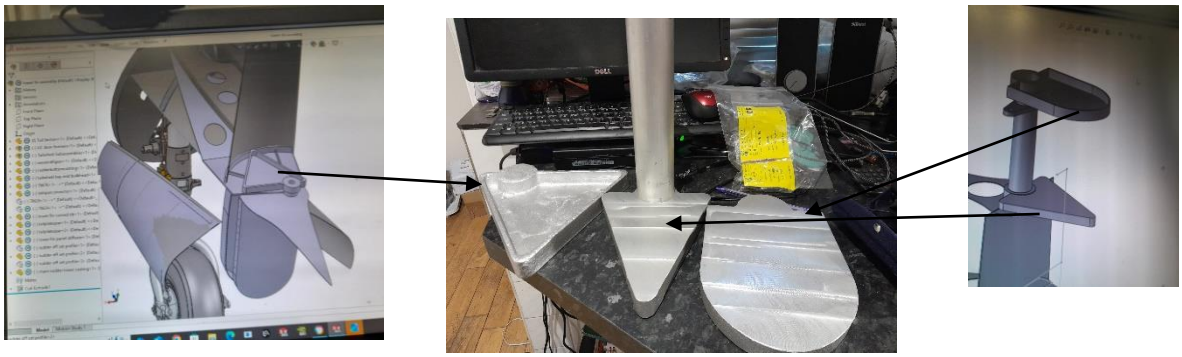
Most of this can be seen in his discussion of the genesis of the distinctive Whirlwind tail plane in his latest video:
https://youtu.be/IKsHCT258dU?si=AOwe08QIlw2OrHmc

The video featured work completed thus far on the fin as well. More has been completed throughout February – especially elements of the tail wheel bay.

A lot of the fin components featured in that video were green-fitted i.e. pinned together which is essential to ensure correct fit. Sub-assemblies were already riveted together. Soon Pete will be moving into a phase of committing rivets and skin to this structure, to complete the build of the fin section of P7056's tail, and in time for a delivery and install date of July/August this summer. There are still a few variables to pin down at the moment.

We'll keep you informed!

Moving into the spring he has also started on the engineering of the rudder, for delivery at a later date. Here's a sneak preview. First a few model images:



From model to metal….

More to come at our next P7056 Club Night – 13th April, 8pm.
Watch out for your invitations – book the night off!

The Whirlwind Fighter Project is registered with the Charity Commission
Charity number 1212316
The Whirlwind Fighter Project is a member of Aviation Heritage UK
The Secretary Chris Hayward: 57, Bramblefield Lane, Sittingbourne, Kent, ME10 2SX
email: whirlwindfighterproject@outlook.com
www.whirlwindfp.org