

Thames Valley & Waikato Chapter – Sport Aviation Assoc of NZ

Newsletter - July 2021

About:

We currently have about 72 people in our club email list which is impressive. Thank you to everyone for the great response to the email shout-out; 27 odd pages of building news is almost a magazine! I have used all the pictures sent in as they are for sure worth a thousand words and all interesting. I hope it gives everyone some encouragement to keep building and also helps to find some like-minded contacts to talk to. –Tony.

Committee News:

Dave Homewood reports: I have been appointed the SAA's new Administrator, after the sad departure of Adrienne Carter due to serious illness. I will also be continuing in the role of editor of Sport Flying, so I'd appreciate any articles or news people would like to send in, and I am looking forward to your chapter report before the deadline of the 10th of August. (Note: Membership renewal form attached to end of this bulletin for anyone who missed the AGM.)

Scott Montagu: Has separately emailed out the planned visit to Bart Bergers workshop in Taupo, next month.

Building News:

- **Gary Bodley emailed: RAF2000 Autogyro:** – he reports he is building from kit started by another builder. It has been stripped back, is re-doing electrics and doing mandatory factory mods that hadn't been done. The engine has been stripped and rebuilt. He is now has a mock-up engine mounted to allow design and building of a custom exhaust, suspension and engine wiring. Other aircraft: Model = Mosquito XE285 helicopter. Registered aircraft, flying currently on hold as factory in USA are in process of releasing an electrical upgrade, new exhaust and cooling system designs. Gary has added a couple of photos taken at Te Kowhai, showing the Mosquito XE285 helicopter.





- **Russel Ward emailed: Nord Stampe:** - I'm restoring a 1946 Nord Stampe, looks a bit like a Tiger Moth, but with 4 ailerons. The fabric work is complete, all fabric surfaces are up through Stits 'pink goop', (poly brush) tail feathers are waiting for their final colour coats, so its 90% done with 95% to go! *(Note, this is a common observation when building homebuilt aircraft...)*

Here's what it will look like one its finished, this one is a German example. Nord made about 1100 of them of which there are about 60 survivors. About 8 were fitted with an experimental fuel injection system. I believe mine is the sole surviving example.



Bart Bergers emailed: Full Scale Spitfire: – I always wanted to build a full scale spitfire and as a woods craftsman, wood would be the only option for me, a bit like the Mosquito was build all those decades ago. I acquired SAC plans developed by Russ Harmuth, based on the Clive du Cross concept but capable of have either a Merlin or Allison as a power source. I found my Allison 17/10/89 in Pirongia, overhauled in 2007, with log book and work done by Ace Allison. It is my intention to build a 2 seater, dual control, with only 1 canopy, a bit like Paul McSweeney had done for the P40 in Ardmore.

After first lock down I finally was able to get my materials to start the build. I use imported Oregon pine, Baltic balsa and Finnish birch ply. Just before lock down a friend delivered a CNC router which I purchased on Trade me and spend most of lock down to get myself familiarized with Fusion 360 (software) and how to operate the CNC router. That was a steep learning curve but I managed to get my fuselage panels done. At this stage I am placing all those panels into the fuselage layout and have worked my way up to frame 16, frame 19 being the sternpost.

I have had help of a great number of people and without them I would not have advanced as far as I have to date.

Bart also has a Facebook page on the build titled: Pegasus spitfire mk9. (*I asked about the weight and Bart replies*) “By the time I am finished it will be 2000 pounds lighter than the original one. No “Hun in the Sun” so armor plating is not needed and building out of wood makes it lighter as well and that with the same horsepower (1350hp) than the original one” *Three photos of this project:*





- **Clint Kraidy emailed: TEAM Airbike:** TEAM (Tennessee Engineering and Manufacturing) is a Tandem Airbike. I built the aircraft completely from plans purchased from Jordan Lakes Aero. I started the build in 2017 making a large 16' workbench with 8 castor wheels so it could move and be levelled accurately. The 32 ribs were built first then the spars on one side of the table and fuselage on the other side. After the fuselage was built the wings were completed on the table- West Systems epoxy used. The fuselage was TIG welded and the 4130 steel was purchased from Aircraft Spruce and AFWE in Auckland for the long lengths. Paint is PPG 2K. Brakes and wheels are BlackMax.

Tanks are custom made aluminium 60L total. The spruce came from Aerowood in Auckland before they closed and Aircraft Spruce. Covering is Stewart Systems with SolarGuard house paint. The engine is a Jabiru 2200 with a custom 66"x35" Rimu propellor. Total build time I estimate around 1000h. I estimate the build cost to be around 25k.

The aircraft could be built at a lower cost by: A different engine, A different covering system Buying materials in one go to reduce shipping costs.

The Airbike is in the test flying phase at present. It is flyable and has just completed several 'hops' by Phil Hooker then circuits by David Wilkinson at Waharoa. The plan is to get rated on the Airbike myself then fly off the remaining 40h before taking passengers.

(Clint has supplied 6 pictures which I have included. And welcome to the club Clint!)





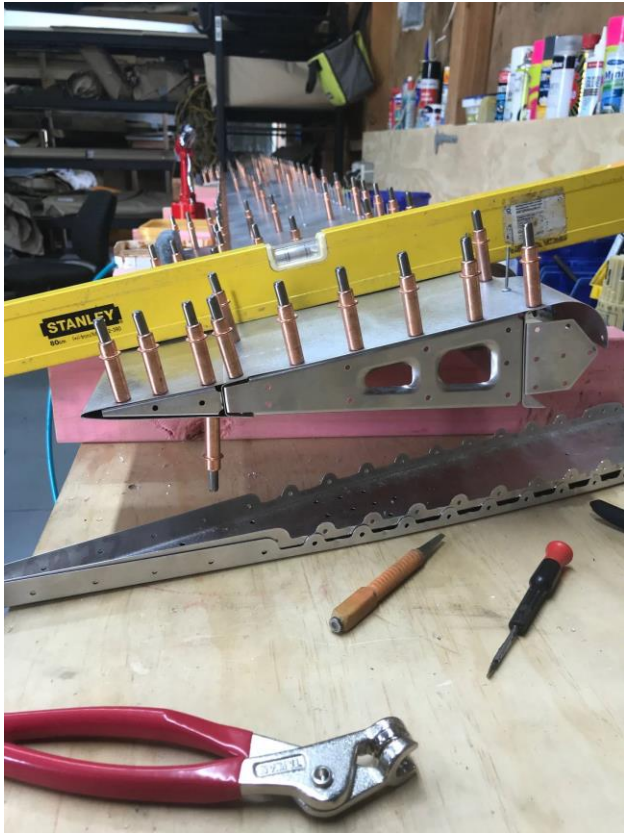




- **Dan Harcourt emailed: Rans S-21:** I'm about 1/3 through my build. All control surfaces done and both wings almost fully completed. Tail cone fuselage next then cage, engine mounting (0-320) and avionics. A friend and colleague is also building one across town and at about the same stage as me. A complete build in Wanaka is about to start test flying. *Dan's 9 pictures:*







- **Scott Montagu emailed: Corby Kestrel:** No real exciting news from my end. Winter maintenance now all complete on the Corby (Kestrel). Trig 21 ADSB transponder purchased and awaiting fit out. Will be a great safety feature going forward. Peter Mole got these photos of its first flight after the check. I had to replace the oil cooler. Found the cooler was rubbing on the cooler mounts. Pulled the old cooler off and modified the mounts for more clearance etc. Good to catch it before it started wearing on the cooling towers. *Two pictures showing circuits at Matamata:*



- **Bruce Macdonald** emailed: An interesting aircraft known as Silver Centenary was built in West Australia, no paper work at all ,all drawn up on the floor of the local Power House ,I assume this place powered the local village . The aircraft did fly satisfactorily [and legally] for a few hours. I followed this up after seeing a photo in a friend's collection in Mildura. He knew nothing about it. It seems to be a true homebuilt!

(Note: If you google 'Silver Centenary wiki' there is an entry in Wikipedia with a photo, looks a bit like a tiger moth but different engine. Was built in 1933. The story is worth a read.)

- **Grant Horn conversation: RV7a build:** Preparing to replace some primer on parts previously primed, with a new improved primer paint. Fuse and wings now in Hangar39 at Matamata airfield. After priming done, next step is to fit wing tanks and wing skins. Progress on stabilizer and fin mounts on rear of fuselage and also a number of smaller parts being cleaned up ready for priming as well. The old primer can be seen on the wings to the left, while the new greener primer on the fuse in the foreground. *Pic:*



- **Bruce Cooke emailed: Avian Adventurer ZK-CKE:** has completed the test flying programme for its shiny new propeller and is just awaiting CAA sign off of the amended flight Manual and Maintenance Programme. The original 3 Bladed variable pitch Ivoprop was proving unreliable in this installation, so has been replaced with a fixed pitch wooden propeller made by Gary Williams (Aero Performance Propellers). This work was not straightforward as it required a spacer, new spinner and changing the prop flange lugs. It also has a 3D Printed nylon front bulkhead. In the course of that work excessive wear was found on the engine valves which required replacement, so the aircraft was out of the air for over 18 months. As expected changing to a fixed pitch, take-off run is slightly increased, and cruise slightly decreased, but this is better than regularly having the Ivo stick in fine pitch. The next project is to improve its hot weather performance with a new radiator installation, probably during its annual inspection in a few months' time.

See next photo:



- **Tony Ashworth project: Flitzer Z21A:** Last two months I have been framing up fuselage parts aft of firewall up to end of June while the weather was warm for gluing. More recently progressing metalwork (375 flat and folded parts listed in my spreadsheet, mostly 4130) . I plan on making good progress on that over winter months. Fuse picture looking from tail to back of firewall, not yet glued, still checking fits and needing metalwork to progress further: *One Pic:*



- **Andrew Moir: Falcomposite Furio Build:** It's been a "couple" of years since I hosted a chapter meeting at my hanger so I thought it was time for an update on progress of the Furio build. Soon after the meeting, having completed the wet wing ribs and wing tank components (access panels, fuel pickups, level sender mounts, fuel cap installation, fuel drain installation, tank vents), I packed up all the airframe components (Fuselage, central wing section and wing skins) and trailered them to Ardmore to complete the wing closures and central section/ wing assembly bonding in the jigs at Falcomposite. The glue used in this procedure has a work time of only around 30 minutes so the guidance from Lapo and Giovanni (kit builders) and help from Peter Krieger (Furio build 007) and a couple of other friends was essential to a successful outcome. It's a whole lotta glueing and nota lotta time!! – *See next three pics...*





Back at my hanger again progress has been steady as follows..... #. Completion of laminated bonded seams from wing closures and central section/ fuselage union. #. Front wheel well bonded and laminated. #. Front tank installation. Includes shelf and removable bulkhead. #. Rudder/ Brake pedal fabrication and installation. Getting the master cylinder and linkage geometry right for pedal angle and correct brake force took some time. – *next two pics...*





- #. Canopy has been finalised with latches, slides, and acrylic installed. (I still have several oversized sheets (2 metres x 3 metres) of 3mm acrylic available if anyone is interested.)
- #. Cockpit floors and main wheel well completed.
- #. Elevator closure and pitch trim complete.
- #. Horizontal stabiliser fitted and installed. A spar is bonded at the rear of the hoz stabiliser after mounting hardware is installed for the elevator. *Next Pic:*



#. Centre console fitted, including mounting of... engine control cables, emergency gear deployment valve, fuel selection valve, *this pic:*

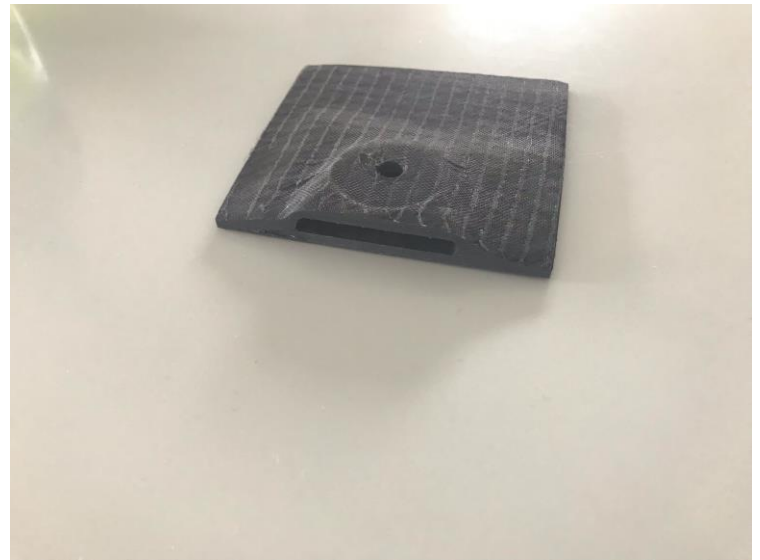


#. Rear seat installation occupies the area for the rear fuel tank in the standard configuration. The 3rd seat is a first for type and required removing a section of the turtle deck and reinstating the structural integrity of the fuselage with a composite beam.

#. Front Seats. I explored several options for adjustable seats but with the requirement to provide access to the rear seat the mechanisms were getting too heavy and I've opted for fixed seats with the ability to tilt forward enabling access for the rear seat pax and a tricky little rotary latch to lock them in place and provide easy access to systems installed under seats and centre console.

#. Mounting brackets for harnesses. The Furio doesn't have the structures for attachment points that an aluminium plane has so I've had to laminate carbon brackets and hard points to mount the harnesses.

Next two pics:



#. Engine mount, exhausts, and engine control complete. Initially I mocked up the exhausts in galv pipe and these, along with the stainless tube, were sent to Auto bend and the exhausts were CNC bent. Some adjustment was required but a good result in the end. Thanks to John Hansen for his guidance and welding expertise here. *Pic:*



#. Instrument panel cut from 3mm 6061 aluminium finished in gun metal grey Cerakote. (hard as stone) *Pic:*



#.Bodywork and primer. *Three pics...*





#. A couple of random pictures of 1000 words (and hours) Items in Firewall layout clockwise from top center. Ignition coils, Engine monitoring, Brake fluid resevior, hydraulic pump (gear) Gear control solenoids. Battery left center, and primary power bus top left. *Pic:*



Horizontal Stabilizer, closing out under vacuum bagging technique: *Pic:*



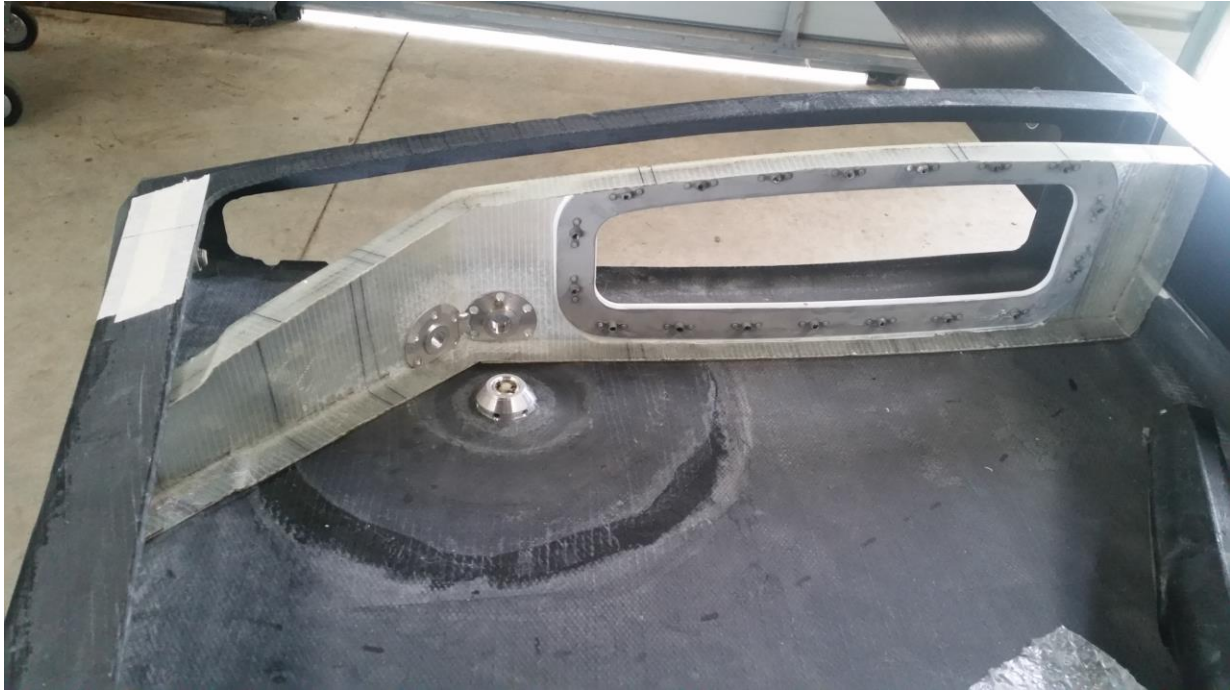
Paint on control surfaces: *Pic:*



#Autopilot Servo Mounted, Pitch on the bottom left, Roll top right in *Photo:*



Wet wing tanks before wing closure. Shows fuel level mount, fuel tank pickup center, and tank access panel in center right, wing spar top right and drain in bottom center with lower wing skin: *Pic:*



Belly pan install – green tape out lined right of retracting wheels: *Pic:*



Looking rearward at 3rd seat. Shows rear seat center top, fuel lines from wing tanks front center and flap torque tube in white center of *Pic*:



Seat Slide Mechanism: *Pic*:



- **Bruce Freemantle emailed: Auster : BLW** is in Hamilton at the tailors (Central Aero) getting a new suit of clothes. Just the main fuse is being recovered as the wings, tail plane, elevator and rudder have already been recovered with ceconite in the past. There was very little corrosion to be found. It has been blasted and repainted. They are going to use the Stuart Systems for the covering. Some of the cables have been replaced and I'm also using the opportunity to change the transponder to the new ADSB out. *5 Pics attached, showing stripped fuse, engine on crane, fuse on cradle:*







.... End.