**Electro Fosa**

Having secured the UK F3B league for the 14th year consecutively and having had reasonable success at international level primarily flying F3B over the last 35 years, the landscape of RC soaring is certainly in transition and like many others, Team Haley comprising of Bill, Steve & son Simon were drawn to electric powered soaring via the new class F5J in 2014. During our first year of electric flying, we experienced a more relaxed and social competition without the added work load of transporting, setting up, maintaining and line management of traditional electric winch equipment.

Over the past few years we have promoted electric powered F3B pilots to compete in our standard F3B class league using height limited local rules. We have integrated electric powered models with relative success and although compromises have been accepted by all pilots, we have attracted some ex F3B pilots back to our class via the electric format.

At the end of 2014, team Haley decided that we would switch to electric powered classes only. Therefore, given our F3B DNA, new electric F3B models would have to be sourced. I have flown Jiri Baudis models for the past 6 years in F3B with great success starting with the Ceres Lift, Cyril and for the past 4 years competed with the standard Fosa. Having flown man on man against the Fosa Lift, I didn’t really see much difference in performance other than perhaps in calm launch & speed conditions with neutral air.

Nevertheless, I had been communicating with the Baudis family for some time regarding the electro Fuselage option and I was delighted when I was informed that it was now ready for production. Most people will testify that upon receipt of any Baudis model, the first impressions are of proven design and construction, quality of ancillaries and ease of assembly. The electro fuselage is no exception and my task was to take two standard Fosa F3B spec glider wings and tail units and assemble to the new Electro fuselage.

![Steve Haley testing new Electro Fosa](image_url)
**Fuselage Assembly**

The layout of the new fuselage is very straightforward with the receiver and servos in the bottom of the fuselage behind the wing joiner with access via a moulded hatch, ESC, Battery and Motor in the front....real easy.

First job was to assemble and fit if necessary the existing wings and tail planes before you introduce electrics and pushrods etc. which took no time at all. Once I had a complete model assembled, making up and fitting the Multiplex sockets and wire looms was probably the most difficult part of the assembly. My existing wing has the male plug so therefore the fuselage would take the recessed female sockets and even though fuselage is slightly wider than standard this does not give much room to install either side of the elevator servos.

The fuselage servo mount was then installed leaving enough room to get the receiver in behind the servos and ensuring the wiring looms and servos would assemble correctly. Push rods were then cut to length and fitted to the elevon’s and this is made easier, as standard Baudis fuselage formers align up perfectly allowing the Carbon push rods to be withdrawn and re fitted with ease. To finish the rear assembly, the 2.4 rx aerials exit either side of the fuselage behind the wing trailing edge well away from any contact points.
Two extension leads from the receiver to the front compartment are also installed to plug into the speed controller for easy access.

Now to the working end of the fuselage and the all-important power train. Choice of motor would be the SlopeRacer motor with a 5:1 Reisenauer gear box. Other pilots including my Father Bill, have had great success last year flying Electro F3b league using the SlopeRacer motor [www.sloperacer.co.uk](http://www.sloperacer.co.uk) which is significantly lighter that the traditional Hacker motors and still delivers over 1.3 kw power using a 17 x 13 prop which is more than enough to drag a 4 kg F3B spec model up to launch height ballasted for speed. To control this power I use Graupner SR Hott 100 amp speed controllers (ESC) as I get real time telemetry directly back to my transmitter including RPM, Amps and current drawn which is invaluable for testing and set up purposes. These ESC can be purchased from Logic Rc [www.logicrc.com](http://www.logicrc.com) who are now the UK’s exclusive distributors for Graupner SR equipment giving first class technical support.

Power Train including:
- Slope Racer Motor
- 5:1 Micro Reisenauer gearbox
- Graupner SR Hott 100 amp ESC
- Turnagy Nano Tech 1.8 4s lipo
- Aero-Naut 17*13 Cam propeller
- 38mm HM Carbon Look Spinner
Electricity is provided from 1800 4s Nano Tech Lipo batteries

Once the motor bulk head has been installed to suit your motor configuration, all that’s left to do, is figure out the best layout of the Lipo and ESC to achieve the desired c/g without having the need for additional nose weight.

With the power unit described and testing different Lipo battery sizes, the desired c/g can be achieved (98mm from lead edge) without additional balancing weights which were important given the flying weight of 2.46 kg against my standard glider version of 2.1 kg.
Flying:

As you would expect with any Baudis designed model, the Fosa series of designs have been well tried & tested at the top end of international F3x competition by Jiri Baudis himself and many other world class pilots around the world with great success. The Electro Fosa pedigree follows on and although F3B Electro competition is in its infancy, early winter testing has confirmed that although the pitch characteristics feel a little different to that of the standard glider version, the overall performance of the electric version is still very evident. Now, the true potential for any model can only be realistically qualified flying against other models in competition or similar conditions and further testing is required to establish the best propeller combination for climb rate against drag in glider flight. Certainly with the power train used as detailed, indicated the climb rate with the height limiter set to 270m was taking less than 15 seconds to reach, pulling over 100 amps and drawing around 300 mah capacity is more than adequate with some to spare. Furthermore, evaluating different prop sizes will require further testing to minimise the frontal area drag on the propeller set up.
Flying weight for the new electro fuselage plus standard F3B layup wings and tail came out at 2.46 kg which was a little heavier than I had wished for. However, being able to ballast the Electro Fosa for competition tasks is important and although the new Electro design does not have the standard glider version fuselage ballast facility, the standard wing ballast (Lead) coupled with additional ballast in the wing joiner will still take the total weight up to around 3.8/4.0 kg which is the desired flying weight for F3B speed task. Obviously with the wing joiner in front of the centre of gravity, some balance adjustments are required depending on the conditions.
Sleek Electro Fosa nose design with conventional canopy design

The fuselage moment arm is slightly longer than the standard Fosa, which is more in line with the Fosa lift configuration and this coupled with the short nose gives a different perception and feel to the model. The Fosa has an aspect ratio above 18 and the wing is really stiff even at 3.2m wingspan.

There’s no doubt, that the new Electro Fosa fills a gap in the market for either sport, F3B electric or even FSJ classes, and given its competition pedigree, I am sure it will be both a popular and successful addition to the Baudis range.

Until next time.......Steve Haley