

[RC Groups](#)[R/C Blogs](#)Build Log [S800 Sky Shadow](#)**#1 gke**

Jun 04, 2017 07:47 PM

S800 Sky Shadow

9 Attachment(s)

Intended to be used as a fixed wing test platform for UAVXArm.

Bought on sale as a kit from Banggood but in hindsight could have bought a foam only kit for even less as I have plenty of carbon tubing :rolleyes:.

Used PVA for assembly but left wings unglued to make it a bit more portable. PVA tends to crack on high-speed crashes rather than tearing up the foam. PVA also tends to foam but can be contained using masking tape until it dries. Wings are fastened using woven fibreglass tape which lasts 1-2 seasons in our sunshine. In this case the tape has been fastened on the underside. Winglets are fastened using hot glue. Control horns are epoxied to the carbon rod in the elevons using a slightly oversized hole in the foam.

Motor is an AXN-2208-2150 which comes originally from an AXN Cloud and runs a 6x4.5" prop used on some of my multicopters. Current is around 19A and I am using a 30A Turnigy Plush ESC. Servos are HXT900 9gm and while I would have preferred MG one of the last two I had was DOA.

I am using a 1300 3s pack in the GoPro camera position which will give around 45min in still air with an AUW of 475gm. Predicted climb rate is around 9M/S. A 2200 3s pack fits in the main compartment but pushes the AUW to 560gm and only gives another 10 minutes of flight time. The VTX and camera roughly another 50gm.

CG set initially at 125mm as recommended but moved back to **135mm**. This is just forward of the main spar currently but I will most likely go back to 140mm which is on the spar.

Photos and video later.

#2 gke

Jun 12, 2017 09:54 PM

Flights & CG

3 Attachment(s)

I am using a large M8N Ublox but will replace with a microM8 later. Cockpit a bit messy but OK for now. It is a pity that the micro FrSky Rx does not have telemetry but hey then they would not sell the receivers that do. I may go back to a D4R II although the SBus digital packets have a lot to recommend them.

Major problem with hatch magnets and magnetometers on flight controller - always said South :eek:. I usually use GPS course over ground in any case for fixed wing aircraft but the magnets are gone and have been replaced by a simple velcro strap.

It is a pussy cat to fly with the **CG 140mm** back from the front edge of the "fuselage". This is right on the spar so just possibly someone actually knew what they were doing. Still requires about 3-4mm of up trim.

The logs for my last flight groundspeed was 30-70kmpH the low value being final approach and an average of 45kmpH; still air conditions. Throttle average for this flight also from the logs only 20% :D.

No videos yet.

#3 alfonsoirwin

Jun 15, 2017 01:12 AM

Hi gke.

I left a comment and question in Reptile S800 SKY SHADOW 820mm Wingspan FPV EPP Flying Wing Racer KIT or EPP block.

Thanks for your tips!!!

#4 gke

Jun 16, 2017 08:09 AM

Thanks. I will reply on that thread.

#5 alfonsoirwin

Jun 20, 2017 10:20 AM

Quote:

Originally Posted by **gke** (Post 37733478)
Thanks. I will reply on that thread.

Hi Greg.

Am sorry if I bother you writing here, but I asked in the forum and no one answer.. Here is the question:

I'm confused. If you move the CG back to a 140mm you need to add weight to the rear of the wing to get the right balance. Is that correct?

Thanks.

#6 gke

Jun 25, 2017 06:27 AM

Quote:

Originally Posted by **alfonsoirwin** (Post 37757188)

Hi Greg.

Am sorry if I bother you writing here, but I asked in the forum and no one answer..

Here is the question:

I'm confused. If you move the CG back to a 140mm you need to add weight to the rear of the wing to get the right balance. Is that correct?

Thanks.

Sorry for the delay. Yes but I suggest you just try moving your battery. The difference in flight behaviour is small between 125 and 140 and you would lose any gains by adding weight.

Cheers

#7 gke

Jul 12, 2017 05:52 PM

RTH Testing for Control Gains

3 Attachment(s)

The video was to check whether I have the control gains too high - checking for servo jitter while doing repeated returns top home. The last few minutes and short periods within the flight are under manual control.

[20170711 20170711 SkyShadow RTH with UAVXArm](#) (6 min 43 sec)



The plot shows how the aircraft coming in from a distance and overshooting the home position (0,0) repeatedly. I can have it approach tangentially at the turning radius in which case it will usually, after a couple of circuits, settle into a circle.

In the plot it swings out then heads back when RTH is switched off and then back on. Distances are metres and plot North vs East error.

The throttle was fixed at 35% during the RTH but not altitude hold so there is a climb of around 85M. The groundspeed was around 17 MPS and you can see the variation due to the light wind at the time of around 2M/S.

All times are GMT +10. The time now is 01:24 PM.