Newsletter of Aberdeen & District Soarers **July 2003**

ADS

Once upon a time, in a Galaxy far, far away...

A small group of visionary Imperial I/C flyers secretly start a rebel soaring club...

FLASH: Soaring Scot Nats venue change. See back page for update.

EDIFICATION *Derek Robertson*

Once again I'm going to start off the newsletter with some sad news. With only a couple of George Whelan's Task Days having passed in less than ideal conditions, his sudden resignation as ADS Events Organiser came totally out of the blue. His brief E- mail to the membership stated that for family reasons his weekends would be spent travelling to and from the Liverpool area for an indefinite period. Most of you will no doubt have heard by now that his father was seriously ill, and sadly passed away during the last week of May. I'm sure everyone in the club will join me in offering George and his family our deepest sympathies.

I'm also taking this opportunity to use the "ADS squeak" to offer sincerest apologies to Alan Stewart and George Thomson for my part in the demise of both their aircraft. A brief explanation is called for.

In our quest to produce an "interesting" newsletter, we tend to keep the photo count high and the waffle content to a minimum, hence the reason there's generally always a camera present during the flying sessions. So Saturday 12th April at Calder Park, there was I, camera at the ready, as the other 5 members models skittered up, down and around the field in the pleasant sunshine. But what particularly caught my eye was Alan's electrified "Flinger" and George's "Magpie" as they flew past one another. As different as chalk'n'cheese, red wine and Newcastle Brown ale, etc…. the "Flinger", a typical polyhedral glider planform and the "Magpie" with short stubby broad chord wings and a very deep, chunky fuselage (very Lazy Bee'ish)…. an interesting prospect if I could get a photo of both those aircraft flying together. The pilots seemed keen to give it a go. Both planes were excellent performers in their own right, but the disparity in performance and more importantly in size, made the job of getting them to occupy the same area of the sky, but close enough to the camera, very tricksy indeed. A number of attempts were made with little success. No sooner had I lowered the camera – and I sense you're ahead of me already here – when the Flinger sliced off the Magpie's starboard wing, resulting in a vertical dive into the ground by the latter. The Flinger didn't fare so well either, with the tailplane hanging off, it came to rest uncomfortably close to both pilots, removing a wing tip on impact. Stunned silence! The words "Beam me up Scotty" came immediately to mind, but I did the next best thing and hid myself and the camera behind the car until the heat died down.

Whilst approaching the Cairn, this particularly striking group of clouds caught my eye. A formation of Zagi's?

Apart from frothing at the mouth, both guys seemed quite philosophical over the loss and reckoned that repairs were possible. I sincerely hope so! As if to add insult to injury, I'm sorry to report that I didn't even get a useable picture of the escapade. If, in the future, I come up with any more of these bright ideas, please feel free to politely tell me to FOXTROT-UNIFORM-CHARLIE-KILO Off!

The **Model Air 100 Festival**, hosted by the Montrose Club on the 3-4th May, turned out to be a fiasco. For the 9 flyers from both Aberdeen clubs who turned up bright-eyed and bushy-tailed in the Saturday morning sunshine, disappointment was in store. The first task was to find the flying site. No sign-posting for the event and no sign of the Montrose Club. Someone at the Air Museum pointed us in the

Cover Pic: *Some of the motley crew who attended the ADS 25th anniversary night at the Cove Bay Hotel. A great night of endless banter and renewed acquaintances. We should do this more often!*

direction of the nearby football fields, but it was around 11:00 before the first of a handful of the Montrose lads turned up.

As it turned out, there was no event. No free flight, no control-line, no flyers at all from the central belt, and no catering facilities. What we now had was an informal fly-in. An area was marked out for the pilot's box and pits, Tx control established and some good flying enjoyed, despite being sandwiched between sets of goal posts on one side and a plantation of saplings on 'tother. Incidentally, we had brought down a selection of IC and electric models to the event, leaving Jim Ruxton to tread a lonely furrow, being the sole representative of the winch-launched gliding fraternity. By 14:30, the wind off the sea had picked up sufficiently to make controlled flight uncomfortably difficult, so most of us packed up and headed round to the Museum for a guided tour by former club member Graham Philips.

The Montrose non-event. Graham Donaldson's Tiger Moth on finals. The Handley Page HP 42 in the foreground belongs to fellow AA member John Cassell. Both models were beautifully detailed works of art and flew most realistically before being grounded by the ever strengthening wind.

So, what happened to the event? Two rumours surfaced. Firstly, the SAA had placed so many restrictions on the event, including all pilots participating to hold a "silver" qualification (as stated in the SAA safety code for public events), which would severely limit the numbers eligible. Or, the more straightforward explanation, cancellation because of lack of interest. Perhaps a combination of both?

Either way, it appeared blatantly obvious that we northerners were the only ones not aware of the events cancellation. However, all was not completely lost. The Montrose lads were a friendly bunch who ensured that we flew as much as we wanted to during our short visit. Add the historical interest provided by the Museum, and (best of all!), a red pudding supper at the Bervie chipper on the way home… yes, I can safely say I had a good day out! (A couple of photos should feature elsewhere in this issue.)

The annual weekend event at Hazlehead on the 7th / 8th of June looked set to fall by the wayside again, with the official competitions having to be scratched, our two most likely CD's being unavailable, and most of the competition-orientated flyers in the club having gone off on holiday. The event eventually went ahead as a fun-fly, but as usual the weather played a hand in the proceedings.

Saturday's warm, sunny weather was marred by high winds, which left the half dozen club members present to hurriedly grab the odd flight during the occasional brief lulls. Much time was spent chewin' the fat, with games of " I spy with my little eye……." being fiercely contested!

"...something silly beginning with H!" *Hazlehead. Brian Allen, Jim Ruxton and JB wait patiently for the rain to stop on a cold and windless Sunday morning.*

The weather forecast for Sunday didn't look good either. Arriving at the park, it was evident that yesterday's high winds had

Your Editor expounds on the aerodynamic technical superiority of the Multiplex TwinJet for F3J competitions while, in the background, Brian Allen discovers that it's easy to get a large model into a car, impossible to get it out.

completely gone, but within minutes of setting up, the rain started, leaving the footballers who were sharing "our field" looking as miserable as we felt! And yes, the prospect of another day's "I spy …." loomed large! However, by lunch time the clouds were thinning, the rain had stopped and the footballers had retired to the dressing room.

Conditions were now excellent and the growing number of flyers turning up banged in as much air-time as the frequency board would allow. At one stage we had 3 winches laid out, so the skies over Hazlehead were busy all afternoon as thermal soarers and electric gliders searched for the occasional thermal that did pass through, with conventional electric models occupying the lower air space... the likes of Brian Allen and Neil Davidson getting some useful stick time in the unexpectedly calm conditions.

Visitors Jack Fisher brought a competition winch for anyone who was game to try it out – only JB's Eliminator 134 stepped up to the plate – and Guy Taylor of Soarhigh Models, who indicated that the Taylor Trophy Competition might be up and running for next season, displaying a selection of brushless motors for us to drool over, as well as a cute little all-moulded 28 inch wingspan Mk 1 Mustang. This brand new product weighs next to nothing, is superbly detailed

(exhaust stacks, panel lines and rivet heads), finished in silver and complete with US markings. Hinges and torque rods are already installed, so all that's required to get it airborne is fitting the radio gear, battery and speed 400 motor (or a dinky little brushless if you're feeling flush!). £90 if I remember right.

Show stopper over the course of the weekend was undoubtedly the vertical performance of John Barnes' lightweight (sub 1kg) 1.8 metre Highlight electric soarer (only the manufacturer calls it a Nelly. Wonder why?). From launch to 200 metres in 10 seconds or so, and all on 30A... but more of that later I suspect? All in all, an enjoyable and incident free Sunday afternoon, except for the one misguided fool who thought he could fly an inverted low pass with his Twin Jet but sadly was not up to the job. Fortunately, a bin liner was only a 30 second walk away for me!

OK, enough of my ramblings for the time being …….. read on. Thanks to all who contributed to this edition of the ADS newsletter. ***DR***

Mike Pirie snoozes away the Sunday under the wing of his delightful scale ship. It winch-launches majestically, although an equally scale Pamela Anderson in the cockpit is required to render 100% authenticity.

ADS is 25 years old!

'*Would you believe it!*' - sums up the feelings of those, especially the 'older' ones, attending the buffet held on the evening of the 11th March 2003 to mark the occasion of the 25th anniversary of *Aberdeen & District Soarers*. To many, it seemed like just yesterday when a small band of soaring enthusiasts were gathering together for the inaugural meeting of what was to become the *Aberdeen & District Soarers* club. The date was 21st May 1978. Twenty five years later and the club is still going strong.

Of the twenty three people attending, it was particularly pleasing to renew old acquaintances with eight past members, namely, Graham Philip, Neil Logan, Sandy Tough, Gordon Diack, Andy Thoirs, Richard Holt, Tom Bartlett and Doug Patterson. Nostalgia (and beer) was flowing and the atmosphere was lively right from the word go. Old photographs, newspaper clippings and the complete collection of ADS newsletters helped the proceedings along, with memories flooding back and much talk of the early years – you know, that time when the wind always blew on Brimmond and Tuesday evenings were always warm and sunny! So much hot air in fact, it's a wonder nobody brought along a thermal glider!

First class catering by the Cove Bay Hotel ensured that everyone retired from the evening's shenanigans feeling suitably replete as can be confirmed by the display of hooligans on the front cover photograph of this edition. I'm sure the evening was enjoyed by all, not least the past members who wrote to me later saying how much they had enjoyed it. I for one enjoyed it immensely and only wished it could have lasted a bit longer – burp! ***MAP***

Superb conditions at the Cairn O' Mount on Sat. 31st of May. New member Clinton Reid (extreme right) attempted to fly his little EPP "Bullet" (held by his pal in the centre of the photo), but struggled in the light conditions. The guys with the soarers had a ball!

Your Ed with a much used and abused Phoenix 100 inch glider on the shallow slope which overlooked the Maryculter field. The colour scheme on this model changes by the week as pilot error and tightfistedness force repairs with whatever shade of Solarfilm comes to hand!

So guess who's been to see The Matrix Reloaded? An extremely chuffed Brian Allen (L) poses with his vice-free Pico Cub. Interesting to note that Neil Davidson's version fitted with a gearbox and larger prop has a substantial advantage when it comes to climb rate and duration. A very worthwhile mod on an already excellent model.

Balsa for Electrics

Mike Pirie

Balsa selection has always been important for us glider guiders, but now with the increasing popularity of electric models, it has become even more important to choose wood which will result in the lightweight airframes required. The main considerations when selecting wood, are grain direction, stiffness and weight. The first two are fairly self evident, but the third, the weight, is not always so obvious, and the only sure way of establishing its weight, or density, is to weigh it accurately.

With this purpose in mind, I devised, a few years ago, a table of multiplication factors (shown below) to aid in the calculation of densities for sheets of various sizes. Once the density has been established, I clearly mark the value on to the sheet using a felt tip marker. Balsa densities vary between 6 and 14 lbs/cu.ft. but heavier and lighter pieces are occasionally encountered. To use the table, simply weigh the balsa sheet in grams, and, using the appropriate multiplication factor from the table, calculate the density. The third column in the table is for an individual square inch and can be used for odd shaped pieces whose area in square inches, is known.

Remember to leave on the weight information on when cutting pieces off the sheet. This way even the small pieces which end up in your scrap box will be marked with the correct weight information shown.

With regards to weighing equipment, digital balances weighing up to 1200g in 1g steps can be obtained from Quicktest, but are rather expensive. A cheaper option would be the postal scales sold by Mike Woodhouse of Free Flight Supplies for £5.75. They weigh up to 100g in 1g steps.

Happy building. ***MAP***

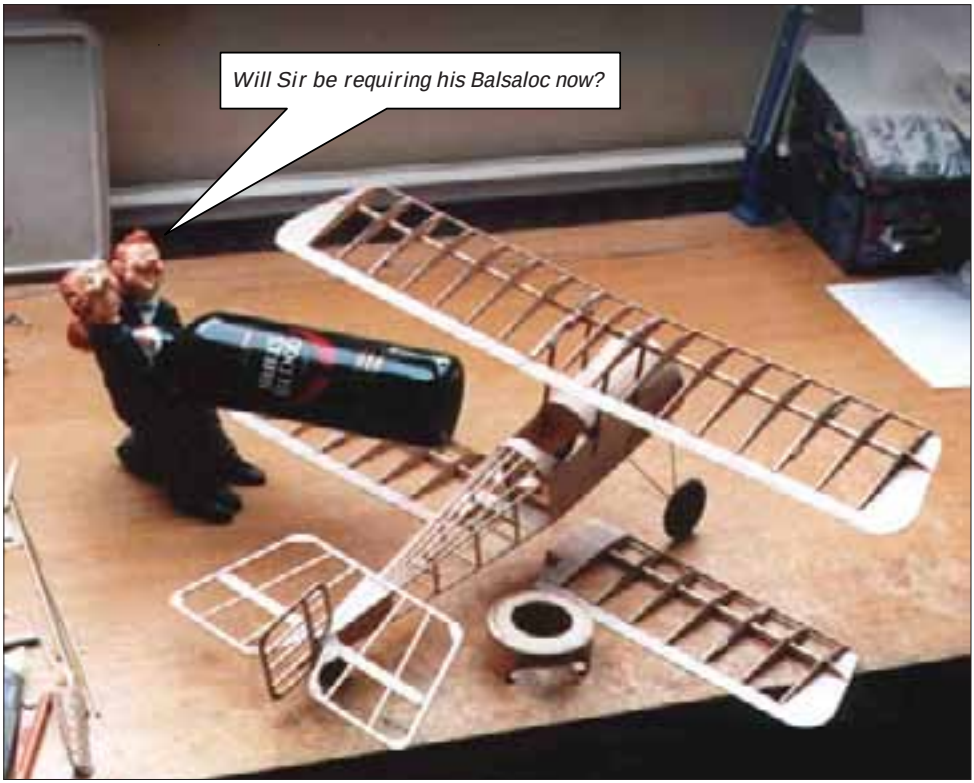
	3 x 36	4 x 36	1 x 1
Sheet	**D = W x MF**	**D = W x MF**	**D = W x MF**
1/32	1.129	0.846	121.90
1/16	0.564	0.423	60.95
3/32	0.376	0.282	40.63
1/8	0.282	0.212	30.48
3/16	0.188	0.141	20.32
1/4	0.141	0.106	15.24
3/8	0.094	0.070	10.16
1/2	0.070	0.053	7.62

My fling with a Scout ... *dib, dib, dib*!

Derek Robertson

The two main factors which seem to govern whether or not we can go flying is the available time and, of course, the weather. The latter we can do nothing about, with in my case, the former being restricted by my employment and the "head honcho" at home. Occasionally I find that I have a one or two hour window twixt domestic chores and work, but it's hardly worth loading up and making the trip across town to Calder Park or nipping out to Brimmond. So, even before the two recent indoor events at Inverurie, I'd been toying with the idea of building a park-fly/indoor model that I could take to the nearby University playing fields at Balgownie on just such occasions.

But what to go for? I fancied something with a scale look, that would take the inexpensive sub-minature gear and wasn't too difficult for someone with "club hands" to build. Obvious candidates were the attractive range of biplanes produced by GWS, Simprop or Robbe, but at £50 upwards for the basic foam kit (OK, you get the motor too!), this seemed like suitable grounds for divorce. Whilst browsing through a back issue of Model World, out jumped those two magic words... "FREE PLAN"! In this case for an attractive looking fully built up 26 inch wingspan WW1 Bristol Scout that required only a few additional sheets of the correct grade of balsa to be purchased, so construction could more or less start right away. (If you want to keep the weight down, see Mike Pirie's article on the importance of balsa selection or go on a low-fat diet.)



The basic structure completed with the help of my two best friends, who took care of liquid refreshments. No doubt in my mind that red wine is an essential part of the tool kit …… consuming half a bottle guarantees that every balsa component cut, sanded, or drilled, WILL result in a perfect fit! Now, where did I put that glass?

No need to bore you with an in-depth account of the construction because it was all pretty basic stuff ……. a bit like putting together a rubber model! However, I did "kit" all the parts before reaching for the cyano, using the sandwich method to produce all of the wing ribs. This sandwich thing was a first for me, and a lovely job it made too!

All the major components were constructed using cyano, then carefully covered in Litespan, with the upper surfaces getting a lick of Humbrol paint and the waterslide roundrels applied before final assembly. Joy of joy, no warps! ...another first for me! Whilst on the subject of painting, brushing the Humbrol onto the Litespan covering straight out of the tin produced a very streaky result. By thinning 30% with white spirit, slapping the paint on was now a doddle without so much as a run in sight, but a second coat of the same was required to build up the colour. Finally, a vac. formed pilot and WW1 wheels finished it off. It was only at this stage I became aware that the red, white and blue flashes on the rudder were the wrong way round ...one glass of plonk too many, I guess!

Now came the fiddly bit. The plan was a bit sketchy on positions for the radio gear, but after a bit of trial and error, I finally got the CG about right (my batteries and servos were a lot further forward than the designers photos indicated??). Shoe horned into the tiny airframe was a GWS 150 geared motor, a 7 cell x 300Nimh battery pack, Jeti Rex 5 receiver and two Hitec 55 servos (rudder / elevator) for an AUW of just under 7.5 ozs. Wow, I was impressed ...and it was actually within the target weight. Considering that my models generally carry that sort of figure in epoxy alone, a celebration was called for ...what difference will another glass make, eh?

A word of two on these light-weight battery packs. Mine were supplied by Overlander early on in the build. Sometime later I contacted Walter Wilkinson of Hillcott Electronics, who specialise in the park-fly/ indoor market, to order the motor/ gearbox and speed controller for the Scout. He told me that they now stocked a Lithium-Ion 800mah pack which was lighter than the Nimh pack that I'd be using. These new batteries, he assured me, were typically producing flight times of around 1 hour and could be field charged in 15 minutes or so. Bugger, if only I'd phoned him first! On the downside, they're a bit more expensive, with one pack and dedicated charger (as I recall) costing in the region of £40. Worth looking into if you fancy building small though!

Maiden flight took place on a calm, warm March morning at Calder Park. All the usual precautions were taken... double check the CG, range test and, of course, no sex the night before. I wanted to remain very focussed!

Mike Pirie was on launching duties and with full throttle applied away it went, straight into an uncomfortably steep climb and gentle stall. This was repeated a couple of times before enough down trim had been fed in to produce level flight. Phew! Once settled down (me, not the model) it flew quite happily on half throttle and at slightly more than what would be considered a scale speed. Nevertheless I was fairly chuffed, and after 7 minutes of cautious circuits pulled off a successful landing ...a gentle noseover in actual fact, because long grass and little wheels don't mix! For the following two flights a 7 gram lead weight was stuck into the cowl to make it slightly less

Somewhere on the Western Front of my garden!

sensitive to control inputs. This seemed to bring an improvement, but a light breeze had picked up which tended to throw the Scout around a little, so final trimming flights would have to wait for another day.

Several weeks on and half a dozen sorties in the uncommonly calm, settled spell of weather. With no room to move any of the gear further forward, I was disappointed at having to add 14 grams of lead to the nose (half an ounce to us oldies!), so my "rear" must be a little overweight despite having used the recommended grades of balsa.

But the Scout still purrs away happily for a full 10 minutes of circuits and bumps. Aerobatics are out of the question, with even a basic loop proving tricky ...diving on full throttle only results in a marginal increase in air speed, so it tends to run out of puff before reaching the top of the loop. Perhaps a change of prop would help here? So, am I disappointed by the Scout's limited performance and the restricted conditions that it can operate in? Not a bit of it! A wonderful ten minutes of gentle, stress-free stick time out of earshot of the wife! What more could a guy ask for? ***DR***

The Montrose lads ran a well-organised session. Wind sock, Tx control in the back of the van and comfy chairs behind the pits. This 8 foot span Fokker Eindecker, fitted with a four stroke motor, looked the part as it performed very slow, scale-like circuits over the site. The Cessna Skyvan in the foreground didn`t take to the air whilst we were present.

Oldies photo competition *The Ed*

Since this edition is steeped in nostalgia, what could be more appropriate than a "name the modeller" competition?

Here's what you have to do. Have a look at these 6 vintage photos, note down the picture number of each along with name of the person or persons featured and drop your ed an E-mail (address on the rear of the newsletter), or write your answers on a piece of paper which can be handed over at any flying session.

Feel free to swap information, because all correct entries will be put into a hat and the winner drawn at the next AGM. Still a long way off I know, but the winner will be presented with a bottle of quality malt whiskey, so don't let apathy rule, give it a go!

Thanks to all who donated pictures for us to abuse!

The year's 1959 and the Keil Kraft Caprice is almost overshadowed by this young chap's impressive "coos lick"!

Rumoured to be sometime last century, this young man poses with his Frog Venus before nipping out to scoop a few "dolls"!

Sadly no longer with us, this master modeller used to visit the club regularily, bringing goodies from afar!

Easiest one of the bunch! Still a fresh faced kid, but now with a mortgage, holding an own-design SG 38 Training glider.

Collecting trophies back in the days when fashion, hairstyles and rippling muscles were as much fun as the flying.

Indoor flying 1960's style! This teenager severly underestimated the power developed by the "rubber motor" on his Sleak Streak!

Graham Donaldson's impressive Kranich gets a less than perfect helping hand from our chairman!

A dark March afternoon on the Cairn with Bill Stark about to launch his Kyosho electic soarer. In his rush to leave, Bill's wife was concerned to discover he'd left his hat on the tea pot and hurriedly driven off wearing the "cosy."

A happy looking bunch at Calder with a fine range of electric models on show. From l to r, an Arriba, Fan-tac, Magpie, Elipsoid, and at the front, my at-that-time-still-in-one-piece Twin Jet.

Mike Pirie's adaptable and much loved Phase Lift on a steamy afternoon off Brimmond's NW face, some time before its wing folding incident during a winch launch. Ouch! Maybe he'll put it back together again, but certainly not until he's completed the current project, a 100 inch electric Lancaster

JB gets around to HLG's at last. Model is a 'Pearl', available from Guy at SoarHigh Models. Don't be deceived by the flimsy appearance (of the model, that is). It's designed to be discus launched, an entertaining alternative to mini-bungee use or straight javelin throws if you're on first name terms with your local A&E, so the airframe is mainly carbon and outstandingly strong.

Blue skies over Kerloch. Sandy Touch and Mike P. with electic soarers at the ready. about to go thermal hunting. Sandy's Carl Goldberg Mirage 550 in the foreground, a stable high wing electric "floater", produced some pretty respectable flight times itself in the benevolent conditions.

The Nelly

John Barnes

Or Highlight 1.8, or Omega E in the US. A 1.8m span, 5 function lightweight electric soarer for Speed 400 motors and beyond. At least the bare airframe is lightweight, mine tipping the scales at an interesting 9.6 ounces.

Mine flies like a dream straight off the board (at 34ozs), and it was fun hunting down TwinJets at the Hazlehead event. It also handled the very windy Saturday conditions with authority. I'm tickled pink with it.

What you get for £99 is a glass fuselage, composite D-box/open-bay, film-covered two piece bolt-on wing with full-span ailerons, and a pair of V tail halves. That's it.

There is no fittings kit and no instructions with the model from SoarHigh, so it requires some experience to see it through to completion. These items are not provided by the manufacturer, who Guy deals with directly (hence Guy's prices compared to other sources–typically £148 in the UK, $199 in the US). But, for example, the US version comes with a fittings kit and instructions which presumably the US distributor has put together, hence the higher price.

As I generally find it desirable–at times essential–to make up my own fittings kit when completing a model, the lack of these items wasn't a problem. The absence of a balance point (CG) for the model was an annoyance, although a US test report on this model gave some useful start-point setup tips.

The quality of the parts is excellent, but be warned. The impressively light V tail is foam with a very thin glass skin over it. While this form of construction is more than tough enough to handle in-flight aerodynamic loads, it is also incredibly easily dented. Dents are permanent–well, mine are so far–a reminder to everyone who sees it what a clumsy git handled it! My first error was forgetting to cut my fingernails before handling these items. My second was not taking the time to make up a protective transport bag for the tail before whizzing off to Hazlehead. On the journey in, a seat belt was laid on it to keep it in place. That's where the Britax logo on the tail has come from Rats...!

My build philosophy. If something can be accessed/removed for repairs, it'll never have to be. If it's glued in place or built-in, it'll break or need repairing. So I haven't glued in servos and I've made a removable V tail. But don't do this if you want the lightest model possible!

Lightness wasn't top of my list of priorities in completing this model, although the airframe weight after servo installation, fuselage reinforcement–for a 100A+ motor option–and heavy tail attachment system–two 3x25mm steel bolts–was still sub 13ozs. *(Note: reason for the overkill in tail attachment bolts was to get some weight at the back of the airframe so part of the battery pack would be forward of the TE!)*

I've used four Ripmax SD150 servos to drive everything, partly because they are just thin enough to go into the wings below rib height and partly because I like the side-mounting lug option which they come with, and mainly because it's all the shop had in stock at the time! I have to say that to me the SD150s looked too small for driving the large, very light ailerons when at higher flying speeds, but so far so good. There's no sound of flutter in power-off dives yet. As to longevity with this servo, with only c. 2 hrs of air time on them at the time of writing it's too early to say. The control surface/servo hook-ups are slop-free at present, so regular checks will reveal the onset of free play in any of the servo gear trains, at which point it'll be time to renew it/them. I'll let you know how this one develops.

A packed house. How to abuse a Speed 400-capable glider. The fuselage is strengthened internally with lightweight Kevlar from the nose to where it says 'CG'. The servos for rudder and elevator are screwed into hardwood blocks mounted on a 1/32 ply backing plate, this plate epoxied to the sides of the fuz just behind the LE. A Jeti 7ch Rx is velcroed to the top of the battery stick in the small gap behind the wing mounting screw plate, the aerial taken out of the fuselage immediately and taped to the RH V tail tip.

Extension cables required for everything other than the fuselage servos. Motor is a geared Kontronics 480-55 unit (5.2:1 g'box) which swings an Aeronaut Cam 11x7 folding prop at c. 8500 rpm on a pack of newly charged 8 x 1200 nicads on a diet of c. 30A average.

The pack is simply velcroed to the bottom of the fuselage, as is the motor controller immediately in front of it. In this configuration – c. 30A – the model uses the controllers BEC facility to power the radio system. A switch is not used, On-Off being achieved with a plug in the controller RX power supply lead, accessed from under the canopy. A charging lead is fitted to the nicad pack which also terminates under the canopy, so the wing doesn't have to be removed for charging (the controller/pack lead connection plugs are well back under the wing). Finished weight is 34oz.

Motor run time is 2:17 to BEC cutoff point, of which the 2 is the useful part. Motor can handle 50A continuously, over double that for short bursts. Whether the fuselage strengthening is up to the job remains to be determined...

NOTE: *This approach taken for higher power operation. Model can be finished much lighter & easier for Sp400, etc.*

The Gods? Well, I'm pretty sure that someone watches over me because my life has been riddled with lucky breaks, like, um, joining ADS. A little tale to demonstrate this fact.

The Ed kindly offered to come and assist with the test flight day at my local field, so Derek and me duly met up on a sunny, breezy day. As part of the prep work for the day, I'd been so impressed with the performance of the little 1200 nicad cells – first time I'd tried 'em – that I'd made up a pack of 8 for Derek to try in his TwinJet, reason being that the 1200 pack – 10oz – weighed about half what the 8 cell 3300 NiMh pack weighed that Derek was using in the model – 19.5oz, a difference of 25% in the model's weight.

Models assembled, Derek decided to try the TwinJet first. The Nelly was plonked in the grass, soaking up the sunshine for the next 20 minutes while Derek discovered that control throws for much lighter TJs can be handsomely reduced. As this was obviously an in-flight discovery, rapid on-the-job training was a mandatory exercise. Initial verdict: better with the heavy pack in the blustery conditions.

Now the Nelly's turn, where a function check before heaving it away revealed that both ailerons had jammed in their wing recesses at the tip end thanks to the afternoon sunshine. I'd been impressed with the closeness of fit of the ailerons in the workshop and haven't experienced this heating effect before on any model. 10 minutes work with a scalpel had both ailerons working freely. And they'd cool off in flight of course.

A clean launch, the model accelerating away straight as an arrow. A touch of 'up' to clear the trees, which rotated the model to vertical, where it continued for the next few seconds until it was high enough to perform exploratory handling checks. A touch of elevator trim correction (down) and a whisker of aileron trim (forget which way) and she just cruised sedately along like a trainer. Another climb to height, more fooling around, and another, and another... Later analysis of the onboard altitude logger (LOLO) results – also being tried for the first time – showed that I enjoyed eleven climbs to height during the first flight. Initial climb rate was 2500ft/minute, dropping to 1300ft/minute as the throttle timer approached the 2 minute mark. I landed before the BEC cutout activated because the model had become increasingly erratic in its control behaviour.

Derek, observing that the fuselage is jam-packed with bits and pieces so how does cooling air get through, tries to follow JB's explanation of quantum entanglement thermodynamic properties cleverly utilised in place of real air flow while also being reminded of where truly hot air really comes from!

The first landing was interesting. The ailerons were set-up to reflex up together for glide path control. Activating this function on the landing approach caused an attempt to fast roll, unexpected when both surfaces deflect by the same amount. Only this time they hadn't. One aileron was siezed in its tip recess again. So much for cooling off during flight. Scalpel, nurse! The field surgery took the clearance to about 1mm or so, and no jamming occurred during subsequent flights where the reflexed aileron trick worked a treat for landings, the 2nd flight coming to rest close to our toes.

If Derek hadn't been there and flown first, the poor old Nelly may not have survived its first flight, the almost complete absence of dihedral requiring the model to be flown most of the time. If it hadn't been sunny, I'd have been in blissful ignorance of the problem, waiting for the first hint of sunshine to pounce. And if I had wrecked it, by the time the bits were back in the shop for autopsy the ailerons would have cooled and the problem never been discovered. How lucky can one get? Thank you, God of Soarers. And Derek, of

course Now, where were we...

Interference. With the Rx as far back as it will go, the aerial was taken out of the fuz side at that point, taped part way down the fuselage and left to dangle. On its first flight the Nelly suffered the odd power-OFF glitch. On its second flight the glitching became more pronounced. For the third flight, the aerial was untaped from the fuselage side and routed directly to the tip of the V tail to get it as far from the fuselage as possible. This flight was glitch-free.

At Hazlehead, during the one flight on the blustery Saturday, there were again signs of the odd glitch, the motor kicking in gently on the glide as well. Sundays flights turned out to be glitch-free. Mmm? I've subsequently discussed this matter with a few folk and have been advised that some Jeti receivers aren't quite as good as others. At Hazlehead, ever-helpful Jack Fisher suggested I try one of the new Schulze units specifically designed for electric flight. Not only that, he had an 8ch one with him for me to try! Good on yer, Jack.

I haven't had a chance to try it in the Nelly yet, but was talking to Andy Lewis soon after about his Pike Plus (F3J soarer) experiences when Andy mentioned that he'd changed the Rx in his Pike + to a Schulze 8ch unit. Andy hadn't been suffering any flight range problems with the old Rx, but with the Schulze in place his Tx aerial-off range check distance has gone from 2.5ft to 25ft! (Tranny is a Mpx 3030). Reason for the change in Rx is that the Schulze apparently has very good interference handling capabilities. Anybody in the club have experience with these units they'd like to share?

The Nelly after six flights

1. Reflexed aileron landings are done tail-low or horizontal at best (well, that's what mine have been so far). This has resulted in the underside of the V tail, very close to the ground anyway with the super-slim rear end of the fuselage, being damaged by contact with grass tufts, weeds, etc, despite the fact that all landings have been gentle ones. The damage is in the form of scratches and creases in the glass skin. It is this skin which gives the weigh-nothing foam tail 100% of its strength, so an early modification will be to bond 2 thou carbon plate to the entire underside as a sump shield, the few grams well-worth the protection and associated in-flight peace of mind. This problem won't occur if your flying site is smooth, very short grass. Mine isn't. I'll pass this observation on to Guy to discuss with the manufacturer because the tail as-is has to be handled so carefully to avoid damage anyway.

2. Performance. The model is an absolute hoot to fly despite the fact that I haven't yet had time to spend harmonising controls or optimising the CG. At 34oz it has a wide speed range but can be slowed to a perfectly-mannered crawl without a hint of dropping a wing or stalling. I fitted two servos to get rudder control, but apart from testing that the rudder actually waggles the fuz from side-to-side I haven't used it as a control yet, finding that turns can be made very smoothly without it, so the ship will happily operate on ailerons/elevator alone, saving the cost, weight and space of the extra servo.

The roll rate is pretty sedate and barrelly, loops rapid and consistent, but inverted flight requires full down elevator – which is quite a lot on my set-up – to hold it level, a sure sign that the CG can come back a bit. I haven't tried aerobatics under power yet so don't know if it'll knife-edge loop, but it'll certainly hover!

The least efficient – but most fun – way to gain height is to do it with the fuselage vertical, and you can really only do that when it's pretty calm. On the very windy flight at Hazlehead, the wind was whistling over the tall tree line in front of us. The fuz angle was held at 45-50 degrees in the climb while the model ascended almost vertically, aided by the slope lift from the trees, all of which led to a much faster climb rate than previously experienced. Big grin stuff!

Verdict. A versatile, elegant, excellent design with terrific flight performance on modest power inputs. Highly recommended.

PS - it gets small very quickly. Don't blink! ***JB***

Connections - safety alert? *John Barnes*

One of the routine requirements of R/C flying is that servo leads have to be extended. The major radio equipment manufacturers provide accessory packs of servo wire bundles and connection plug kits to facilitate this requirement

Until recently I've used the wire but not the manufacturers connectors, preferring a very secure, very small connector type which I picked up a box-full at a trade show at one time.

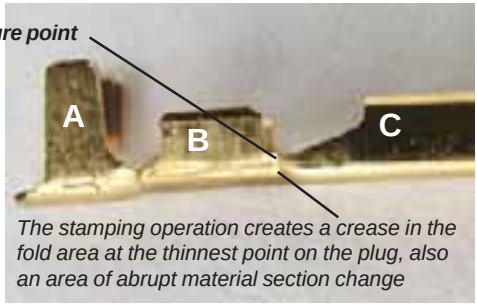
I recently ran low on these so had to try a pack of Futaba connectors. I've just come across a potential weakness with these connections which may – or may not – be a one-off with my batch. Or it could simply be my bad handling of the connector. As the problem could lead to the loss of an aircraft in flight, I thought it worth passing on.

The Futaba connectors are supplied on a stamped-out, gold plated metal strip and have to be removed from this strip for use. Good practice is to cut them off, but I found that with a gentle nudge either way they'd detatch from the strip easily.

On one such removal, a connector bent slightly part way down its length. No problem, I just straightened it out. At which point it broke in two at the bend area.

Very little force had been required to manage this destructive feat, so out of curiosity I looked at why it had failed so easily. Failure mode analysis is second-nature to long-term flyers!

Understanding why it had failed was also important because I detatch connectors from receivers by pulling on the wires, not because I want to do it that way but because there isn't another sensible way to do it. Inserting plugs into a receiver is one thing, but once all receiver connectors are nestled side-by-side there is no access to the plug body to aid removal. Understanding good practice is one thing, being able to always apply it another. So security of the wire to plug junction is essential.



The stamping operation creates a crease in the fold area at the thinnest point on the plug, also an area of abrupt material section change

The wire connection to these plugs is made by crimping exposed wire under **B**, then folding the tabs **A** over the wires insulation before inserting the plug into the plug body. I surmise that the action of folding tabs **B** to crimp the wire could also further weaken the fracture zone.

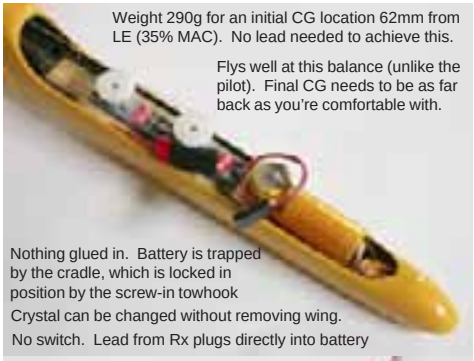
This method, while what the plug is designed for, does not provide any support over the fracture zone. Ponder, ponder...

...and out with the tiny soldering iron, magnifying glass and micro vice. A wire was stripped of insulation to create a length long enough to pass through **B** and nestle within **C**. The wire was crimped at **B**, tapped down between **B** and **C** to get it as low as possible then soldered at this point. It requires the briefest caress of the iron to achieve this. The solder – just a tiny amount required – flows instantly onto the wire and surrounding plug area, creating a strong support across the fracture zone and a level of connection integrity I'm much happier with. ***JB***

The untidiest one to date, but whizzed up for this article to show the general idea!

The Pearl HLG details

John Barnes



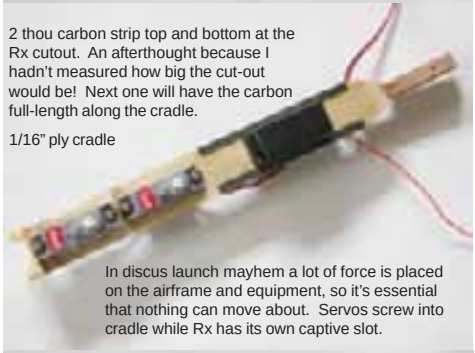
Weight 290g for an initial CG location 62mm from LE (35% MAC). No lead needed to achieve this.

Flys well at this balance (unlike the pilot). Final CG needs to be as far back as you're comfortable with.

Nothing glued in. Battery is trapped by the cradle, which is locked in position by the screw-in towhook

Crystal can be changed without removing wing.

No switch. Lead from Rx plugs directly into battery

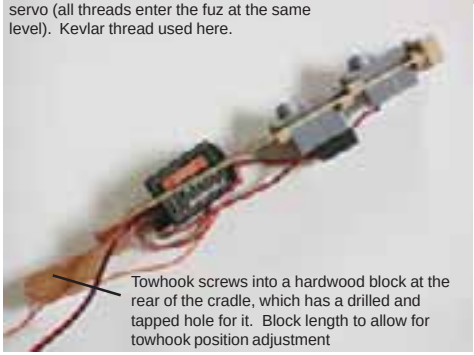


2 thou carbon strip top and bottom at the Rx cutout. An afterthought because I hadn't measured how big the cut-out would be! Next one will have the carbon full-length along the cradle.

1/16" ply cradle

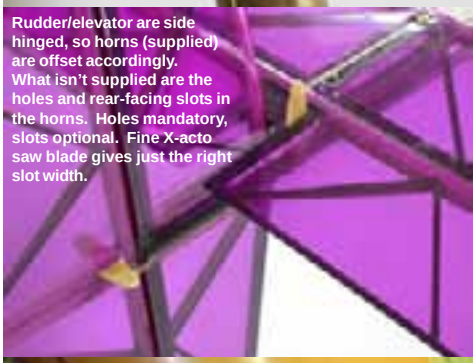
In discus launch mayhem a lot of force is placed on the airframe and equipment, so it's essential that nothing can move about. Servos screw into cradle while Rx has its own captive slot.

Foam block stuck to rear servo to achieve correct cradle height at the front. Note that the front servo is mounted higher to provide thread clearance from the rear servo (all threads enter the fuz at the same level). Kevlar thread used here.

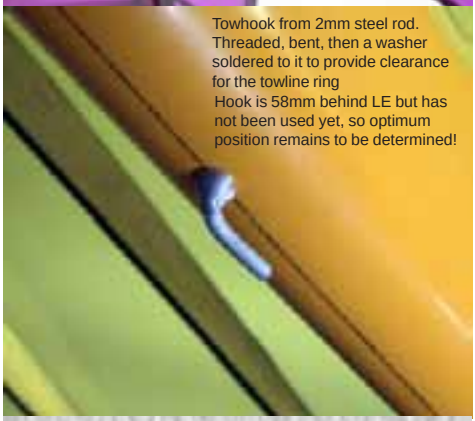


Towhook screws into a hardwood block at the rear of the cradle, which has a drilled and tapped hole for it. Block length to allow for towhook position adjustment

Drive thread fuz exit at TE.



Rudder/elevator are side hinged, so horns (supplied) are offset accordingly. What isn't supplied are the holes and rear-facing slots in the horns. Holes mandatory, slots optional. Fine X-acto saw blade gives just the right slot width.



Towhook from 2mm steel rod. Threaded, bent, then a washer soldered to it to provide clearance for the towline ring

Hook is 58mm behind LE but has not been used yet, so optimum position remains to be determined!

Sanyo 270mAh pack made up to fill as much of the nose space as possible. Can't be removed with the cradle in place.

And finally, a scoop from our SA correspondent Dave Greer (the man who put the Pee in paparrazi).

A PSS Fournier, built by Pete Milne of Surf City, Durban, the latest in a string of PSS models by Pete. Pete's 80 this year, and despite losing an eye in an argument with a surfboard a couple of years ago he remains a very active slope flyer.

Highly detailed model (check out the cockpit shot) is scratch-built, so bad luck ARTF fans!

Pete is an artist (Dave says his aircraft paintings are magic) and eyeballs his own drawings from photos.

Now, there's an idea for the scratch fan Mike Piries/Derek Robertsons of the world. Just use the centre picture and decide a scale using Pete as reference. For a decent size Fournier assume Pete is 6' tall. For HLG size, just assume he played R2D2.

Simple when you know how!

Super looking model, Pete.

Thanks, Dave.

ADS CALENDAR FOR 2003

Fun Fly & task days will start at 11:00. Venue notification by e-mail. These will generally be held on the third Sunday of the month, this will allow for attendance at the National Competitions which usually take place over the Bank Holiday weekends. Cove Bay Hotel meetings start 7:30pm.

Task flying strictly voluntary – have as many attempts as you like.

Launch by winch, HLG, bungee or electric motor – 60 secs for can type motors, 45 secs for rare earth or brushless motors.

14th January	Cove Bay Hotel.	Electric models—demo's—motor testing—running in—battery packs—bring your model and equipment.
11th February	Cove Bay Hotel.	Video Evening—bring your fave video (flying!)
11th March	Cove Bay Hotel.	**ADS 25th Anniversary buffet.**
20th April	Venue by e-mail.	Fun fly & task day.
3rd – 4th May	Montrose	Model Air 100 festival – take a model, FF,C/L,RC.
18th May	Venue by e-mail.	Fun fly & task day.
24th - 26th May	Venue TBA	Radioglide
7th & 8th June	Hazlehead Park.	Saturday 100S and 30 min electro. Sunday BARCS Open rules. Entry closing Date 26th May. £3.00 entry for 100s & £3.00 for Open
22nd June	Venue by e-mail.	Fun fly & task day.
20th July	Venue by e-mail.	Electric Fun fly & task day.
2nd - 4th August	~~Mossmorran~~	Scottish Thermal Nats
17th August	Calder Park.	Club BBQ, Fun fly & task day.
23rd - 25th August	Barkston Heath	BMFA Nationals
21st September	Venue by e-mail.	Fun fly & task day.
19th October	Venue by e-mail.	Fun fly & task day.
11TH November	Cove Bay Hotel.	AGM

****** Scottish Thermal Nationals now at Maybole, Ayrshire ******

Contact Rick Lloyd *(ricklloyd1@btopenworld.com)* for further details and entry form

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ADS welcomes any material of modelling interest for publication, so a few words (& photos please) about one's latest aeronautical creation/experiences/hints'n'tips will be warmly welcomed.