Committee - George Whelan 208617, Derek Robertson 821368, Neil Davidson 712458

NEWSLETTER APRIL 2000

The 2000 season commenced with a social evening at the Cove Bay Hotel on Tuesday 15th February with the usual suspects attending plus 3 welcome visitors from Huntly. An informal discussion took place on the issue of club insurance and liability and whether we should be in the SAA, or BARCS or BMFA. While no conclusion was forthcoming it gave the membership an insight into how the club must protect its self in this litigious age. This was a good lead in to the task, which faces the club over this season, as at the next AGM we must be in a position to vote on a way forward.

The second club night on the 14th March featured had a decent turnout of about 12 people, a couple of flying video's where shown which was hopefully suitably inspiring. Vote of thanks to Neil Davidson for arranging sandwiches.

As it is now British Summer Time we are starting our Tuesday evening slope flying, assemble at Brimmond car park, weather permitting, be sensible, if it is flat calm head for Calder Park.

The current situation with Calder Park is that it goes before the full Aberdeen planning committee on 31st of March.

The first attempt at Saturday slope flying was blown out, I listened to Dyce ATIS at 10:00hrs and the wind was 39-45 knots and rising - gusting to 55 knots. 2 hardy souls did turn up and had the cobwebs blown away but that was about all.

The second slope day was better with ATIS giving 15 knots at 220 degrees, although it was actually higher than that on the hill. The wind was south-west so seven hardy souls adjourned to Barmekin hill at Echt. A good days flying was had with some brick lifting thermals coming through. This is a nice hill to fly for most directions and is very handy for Aberdeen. The downside is that there are no natural pathways up from the carpark so the climb can be strenuous although not too long.

A draft-revised constitution and club rules has been drawn up by Neil Davidson and will be mulled over by the committee during the season; we will probably issue it for comment with the newsletter due at the beginning of October. This will give everybody 6 weeks to scrutinise it prior to the AGM in November where we can agree changes and adopt the revised constitution and rules.

Over the forthcoming flying season we will try to implement some safety rules at our flying sites based on one of the national organisation recommendations and we ask your co-operation in applying them. This year you must put your **SAA / BMFA** membership card on the pegboard when you fly as proof that you have current insurance. **Not your ADS card, NO CARD - NO FLY**

The club are currently in possession of three trophies, the NOWSCO trophy, the Sparrows Shield, and the Brian Sherriffs Trophy, anybody out there know what these where originally awarded for?
This month we have a couple of contributions from other ADS members. For information the issue dates for the newsletters is 1st December, 1st February, 1st April, 1st June, 1st August, and 1st October. I would like to include any proposals for the AGM in the October issue to give people time to think about it. Send any proposals, suitably seconded to myself for that date.

Neil Davidson wants to know if anybody is interested in going to Leuchers air show, if there is enough interest it may pay to hire a mini bus and spread the cost amongst participants. Names to Neil please.

The Anatomy of a retrieve - Jim Ruxton.

I shouldn't have flown that day. It was blowing a gale and was certainly no day for a lightweight aeroplane like an electric powered Whiffler. However my Aussie friend Dennis who is a modeller (and also a full size gliding instructor of many years standing in Oz) was leaving for home the next day and I wanted to show him the benefits of electric flight. He was a sceptic and wouldn't believe that this model of mine could really fly. His temporary home was in Strathdon in a cottage on the Candacraig Estate and my wife Jane and I set off one day; complete with the Whiffler to say our farewells to him and his wife. After a bit of nosh Dennis and I set off to seek permission to fly in a fairly large flat field about half a mile up the road. Permission was duly given by a bemused farmer - two grown men with a small toy aeroplane!

The field was surrounded by trees but I was certain that I could control the model within the confines of the park. I duly launched and the model climbed steadily into a strong wind. Dennis was impressed. I decided to do an orbit but as the model climbed above the tree line and after a 180-degree turn the model proceeded down wind at high speed. I brought it back into wind and tried to bring it back but the wind had really gripped it and an involuntary orbit took place with the model becoming a speck. By this time it was over the dense conifer trees on the side of the hill. I decided that it was not going to come back under its own power and another orbit would have seen it disappear. I chopped the power and watched the model disappear into the trees. Dennis is a pretty practical guy and shouted, "I've marked the spot". Now that remark was the first part of a fairly scientific retrieve (in my humble opinion!). I think he has experience in such matters. He then told me to put the transmitter down beside him and he guided me to the southern boundary of the field (the model had flown south) in line with the descent point. I then marked this point. By this time I had recovered from my sudden loss and started to work out the next part. I then asked Dennis at the top of my voice to go back to the north boundary of the field and lined him up with the transmitter to get another reference point. A coat would have done but it was bitterly cold and we didn't want to take off our anoraks. I now had a marker at either end of the field and I was fairly certain that the Whittler lay on an extension of this line to the south.

Now the complication set in. The River Don flowed along the south boundary and we couldn't cross it. Luckily there was a bridge not too far off so we got in the car and managed to get to the south side of the Don and on a path. However we couldn't see the flying field. It was beginning to get dark so I decided that I would need to come back the next day with equipment to solve the problem.

The next day started with blizzards but with my long-suffering wife Jane we set off to the south side of the Don. We arrived at the field with some poles with yellow dusters attached - for visibility, numerous white plastic shopping bags, and my Silva compass. The scientific approach continued, I set the poles at the marker points on the north and south boundaries and then went south side of the river working my way to a point where I could see the poles. I then set out a reciprocal bearing in the dense woods and Jane put out 2 more marker poles.

I knew the model was a fair bit up the hill from the river so I lined Jane up with the poles and asked her to advance up the hill on my compass bearing. As she did so she scanned the trees for the model. She also tied plastic bags to the trees to show that we had been there. When she got out of site, which wasn't far, I came up to join her and then the process continued until we were up the hill beyond o point where I reckoned the model would be. No luck.

We came back to the bottom of the hill and repeated the process about 20 metres to the east. No luck. By this time it was lunchtime and it was a white out. I forgot to say that the wood already had about 500mm of snow in it. After lunch we decided to have another go - blizzard or no blizzard. The snow eased so we moved 20 metres west of the original line and I guided Jane up the hill. When she was about half way up she let out a jubilant yell "I've found it". I struggled up the slope and sure enough there was the Whiffler about 4 metres up a tree. I rummaged around and found a really long branch which just reached the model. After a bit of poking it was released and fell to the ground. It was only slightly damaged. We set off home in growing darkness quite pleased with ourselves.

I learned the following points from this retrieve: -

1) Don't fly in strong winds near trees.
2) Mark the spot where the model drops and establish markers at the boundaries of the flying field. You can do this on your own but it is a lot easier with help.
3) Use a compass to keep you on track.

PS The shopping bags are still tied to the trees!

The following article is a download from a very good internet site for Phoenix models. Stan has developed a range of models over the years that are good quality, reasonably priced and they fly well, Stan also sells a range of EPP models. This is one of several very good articles found at that site and we may print others over the next year.

Prepare to Fly

by STAN YEO

INTRODUCTION

All too often over the years I have seen modellers arrive at the flying site full of enthusiasm with a new, untried, model only to depart a few minutes later in bitter disappointment. Post-mortems reveal three main reasons for the failures.

1. Full pre-flight checks were not carried out prior to leaving home.
2. The conditions / site were unsuitable for the model.
3. The modeller did not have the experience necessary to fly the model on that occasion.

The purpose of this article is to provide a simple checklist / advice on navigating your way from building board to successful maiden flight with the minimum of aggravation. The article is geared towards slope soaring simply because it is my specialisation but the majority of the advice is applicable to all forms of fixed wing radio control flying.

PREPARING FOR FLIGHT

This is the last phase of the building operation and probably the most important. If the model is not correctly set-up it WILL NOT fly properly and, will in all probability, be more difficult to fly. Included in this phase of construction is the installation of the radio equipment. Servos should be mounted securely on balsa bearers or if you prefer non-flexible self adhesive tape. Controls should be connected as per the plan with full and free movement. Bowden cables should be supported every 10cms, avoiding sharp bends and with the minimum of slack. The Receiver battery should be installed as far forward as possible so that it does the minimum of damage in a crash and reduces the nose weight required to get the Balance Point correct. If you are in any doubt as to how to install the radio equipment or set up the controls etc. please seek advice from a more experienced modeller or purchase and read a radio control primer book.

When hinging the ailerons seal the gap with trimmed down 6mm sq. soft self-adhesive Draft Excluder, available from most D.I.Y. stores. Sealing the ailerons makes a considerable difference to both the performance of the wing and the response of the ailerons. Fit the hinges to the rear spar before fitting the Draft Excluder. Use a *new* scalpel blade to trim the down to size. Below is a list of some of the items that should be checked as part of your pre-flight preparation:

1. Check wing for warps (see notes below).
2. Check the wings and tailplane are at the correct angle (incidence) to each other and the fuselage.
3. Check the controls operate in the correct sense i.e. moving the Rudder control to the Right moves the Rudder to the Right, Down Elevator moves the Elevator Down and Right Aileron moves the Right Aileron Up.
4. With the trim in neutral, the servos and the control surfaces should also be in neutral.
5. Check the range of movement of the control surfaces agrees with the plan.
6. Balance the wings (spanwise) by adding weight to the tips as required.
7. The position of the 'Balance Point' (Centre of Gravity). Point' (CofG) is as shown on the plan or slightly forward but NOT aft. Mark where it should be on the underside of the wing with a 'permanent' pen.
8. Check structural integrity i.e. everything is securely attached.

9. Range check the installed radio equipment. In the absence of specific instructions expect a range in excess of 100 metres with approximately 150mm of aerial extended.

WARP REMOVAL

If the wing has a warp (twist) it must be removed before the model is flown. With a built-up wing this is best achieved by pinning the wing to your building board with a small amount of warp in the opposite direction. The covering is then, either softened using a thin coat of dope if it is a doped finish, or is re-shrunk to it's new position if it is covered in heat shrink film. The wing is then left to settle for a few days before removing from the building board. The procedure is similar for a foam veneer wing except that a cradle is built to accept the warped wing panel. Set the anti-warp component to approximately the amount of warp you wish to remove. Thoroughly heat the wing using a heat gun. Get the wing as hot as you dare *without* damaging the wing or covering. Once again leave to settle for a few days before removing from the jig. If the above is not successful try again but this time increase the anti-warp factor. My experience is most wings are recoverable.

BALANCING

Balancing the wing is one of the last operations that should be carried out on the model prior to flying. The method I use is to insert a Map Pin into the wing leading and trailing edges at the wing centre. The wing is then suspended by these pins and weight is added to the wing tip of the high wing until it balances. This weight is then 'buried' in the wing tip and the finish restored.

After balancing the wing the model must be balanced. A rough balance point can be found by balancing the model, on your fingers, under the wing near the wing root. For a more accurate method make a simple balancing cradle (see diagram) to support the model. Mark the position of the Balance Point on the wing, at the root, either side of the fuselage. Suspend the model in the cradle with the cradle pivot aligned with the balance point marks. Add weight to the nose or tail as required until the model is balanced with a slight nose down attitude.

TEST FLYING

Unless you have experience with a similar or higher performance model to the one you are about to test fly I strongly recommend that you seek the help of someone who has the necessary experience. This particularly applies to *ab initio* pilots and those graduating to an aileron model for the first time. Newcomers to Slope Soaring will find it very difficult at first. The chances of an inexperienced pilot test flying a new model successfully are poor. I know because I learnt that way, not through pig headedness but through a lack of experienced slope pilots (it was in the mid sixties!).'

When you are ready to test fly your model ensure that the radio equipment is fully charged and serviceable. Wait for a day when the weather is suitable (how many times have you been told that?). Do not be tempted to test fly your new model in marginal conditions. It is a recipe for disaster. If you are a newcomer to radio control flying please establish contact with the local model flying club that specialises in gliding / slope soaring. Find out as much as you can about the local slopes i.e. the most suitable wind strengths and directions and perhaps, more importantly, take out third party insurance before you fly (BMFA and ASP Insurance are both sufficient and reasonably priced, see modelling magazines for details).

On the day of the test flight take your current model along and fly that FIRST to get yourself attuned both to flying and the conditions. If you need a more experienced modeller to test fly your model insist that he/she has a flight with their own model first for the same reasons. Carry out the usual pre-flight checks i.e. the model is correctly assembled, your frequency is clear before switching on your transmitter, all controls are connected and operate in the CORRECT sense and trims are neutral (the controls should have been set up with the trims in neutral). Ask a competent modeller to launch the model for you just in case a panic response is required immediately the model is launched. Finally before launching the model check the whereabouts of other flyers' models. Launch the model gently but firmly into wind with a slightly nose down attitude. Do NOT give it a tremendous 'heave'. It is not necessary. It will only cause the model to climb violently, due to the excess airspeed, and stall into the ground unless you are lucky enough to recover in time. If the model has been properly built and prepared it should fly 'straight off the board' as they say with the minimum of trim adjustments. Be prepared for different flying characteristics and if you are moving up to a higher performance model be prepared for an increase in flying speed and control response. Take care when slowing the model up,

particularly near the slope just in case it enters a spin. Get to know the model by trying out different manoeuvres but please allow a greater safety margin just in case things do not work out as you intended.

TRIMMING FOR PERFORMANCE

The control set-ups given on the plans are often conservative. The reason is that two conflicting groups of flyers have to be catered for, namely the inexperienced and the experienced. Consequently control responses are often set mid range and can be changed a small amount if desired. Despite meticulous setting up it is still possible that the model will require further trim adjustments. This could be for a number of reasons i.e. prevailing weather conditions, flying site constraints or simply personal preference. If the model does require further adjustments only make one adjustment at a time and keep notes for future reference. Below are a few notes to help with the adjustment of the Balance Point. The model will not necessarily exhibit all the symptoms mentioned.

Centre of Gravity too far forward.

1. Requires excessive up trim
2. Flies faster than normal or expectation.
3. Prone to diving.
4. Sluggish elevator response.
5. Requires a lot of up elevator when flying inverted.
6. Reluctant to spin.
7. Restricted aerobatic performance.

Centre of Gravity too far Back

1. Requires excessive down trim.
2. Model gets 'blown back' easily (poor penetration).
3. Unstable in pitch i.e. cannot find suitable elevator trim position.
4. Prone to diving (result of a flat stall).
5. Twitchy elevator response.
6. Has a tendency to enter a spin when slowed down in a turn.

It is imperative that the elevator control is set-up correctly as an over / under sensitive elevator can make flying the model very difficult. Too much elevator movement can result in the tailplane being stalled during aerobatics. A tailplane stall often manifests itself as a flick roll in the pull up for a loop or a slow roll at the bottom of a bunt on the application of more down elevator. Both can be very disturbing if you are not expecting it.

LANDINGS

Landing is the most difficult manoeuvre in slope soaring and requires a lot of simulated practise plus good basic flying skills. If you are inexperienced ask an experienced flyer to land your model for you. If you are going to land yourself PLAN your circuit. Think about what you will do if the model is HIGH or LOW in the circuit. Start your circuit with the model in the RIGHT place and DO NOT go back behind the hill (you can always go around again). Practice imaginary landings in front of the slope before committing yourself to a landing, you may find the model (or is it the pilot?) behaves differently when close to the ground! Familiarise yourself with the model's behaviour when close to the stall and learn to recognise the symptoms that precede a stall or spin. The more you know about the model's flying characteristics the more confidence you will have and the better the chance of making a safe landing. Landing with reduced control responses i.e. with rates selected, may help to overcome the tendency to over control in pressure situations. Also if it is a basic trainer type model a small amount of down trim will not only increase the speed slightly and reduce the risk of stalling but it will also reduce the buffeting caused by the turbulence close to the ground. Landing and landing techniques is a complete article in itself and has been covered in the July '94 issue of RCMW.

SUMMARY

In a short article like this it is only possible to take a cursory look at the topics covered. Most paragraph headings could be expanded into complete articles if supporting theory is added. In my travels around the country visiting model flying clubs, delivering talks on various aspects of modelling, it is my experience that few modellers are interested in the nitty gritty theory. The majority rely heavily on trial and error and just want to know the basics needed to get the optimum performance from their models hence the absence of theorems in my articles.

INVENTORY OF CLUB EQUIPMENT @ 31st March 2000

Herewith is a list of club equipment made known to myself, if you know the whereabouts of any other equipment please contact me.

1	**Graupner club winch.**
1	**Winch battery.**
1	**Peg-board.**
1	**Bungee.**
1	**SAA Megaphone.**
1	**SAA Fleet radio, spare transmitter and buddy lead.**
1	**Sanwa radio set.**
1	**2nd Sanwa radio set.**
1	**Rookie club trainer with engine and radio gear.**
1	**Osprey club trainer.**
1	**Aquilla club trainer - wing tip broken.**
1	**Frame tent - poles in need of repair.**
1	**Wind break.**
1	**Tool box.**
1	**Card laminator.**
1	**Frequency scanner.**
1	**Frequency scanner.**
1	**20 metre tape measure.**
1	**Mechanical stop watch - working.**
1	**Digital stop watch - not working.**
1	**Part roll red / white marker tape.**
1	**Barcs rule book & slot matrix.**
1	**NOWSCO trophy.**
1	**Brian Sherrifs trophy.**
1	**Sparrows shield.**
	Various small trophies.

FORTHCOMMING EVENTS

TUESDAY EVENINGS IF WINDY ASSEMBLE AT BRIMMOND - IF CALM CALDER PARK.
SATURDAYS - THERMAL FLYING AT CALDER PARK.

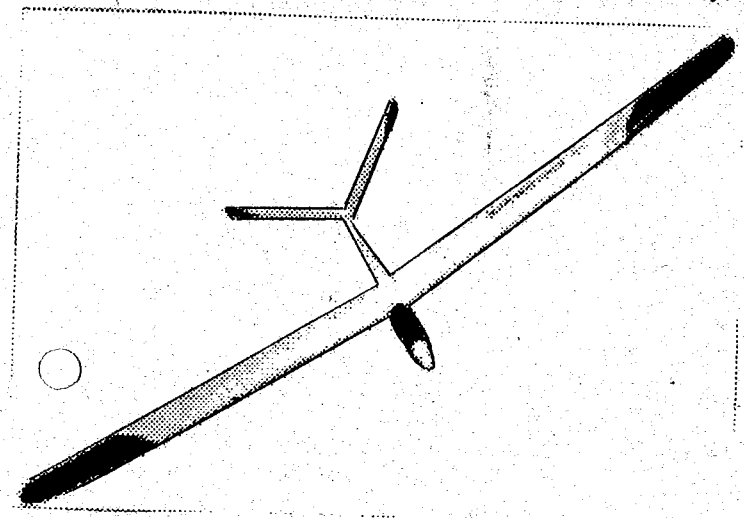
2nd April	**F3J at Mossmorran**
9th April	**Slope & Thermal Fly - in at Fairlie.**
16th April	**BARCS open, Plotcock farm. Stair**
23rd April	**F3F, 60" Pylon and Foamies, Bishop Hill, Kinross, Fife**
30th April	**100S at Mossmorran**
7th May	**Club slope fly - in. Venue tba.**
14th May	**F3F, 60" Pylon and Foamies, Bishop Hill, Kinross, Fife**
21st May	**BARCS Open, Linlithgow**
27th - 29th	**May - Radioglide at Doncaster.**
3rd - 4th	**June - Club comp in Hazlehead Park.**

NB I have moved the club barbecue to 30th of July, hopefully this will give us a good chance of summer weather.

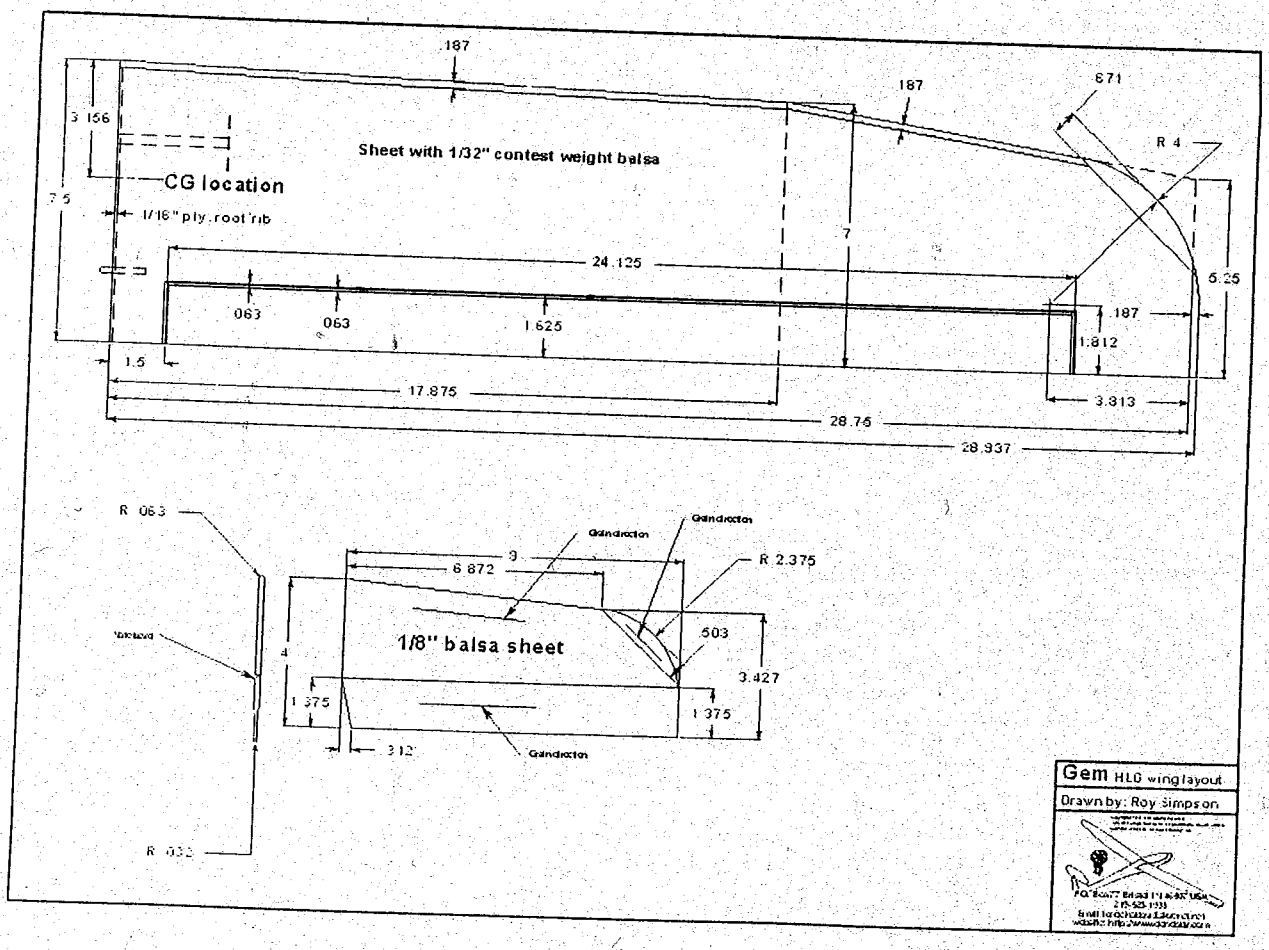
This issue offers 2 models for your perusal:-

1) Gem HLG currently marketed by Dream Catcher Hobby inc in the USA. This model was formerly manufactured by Airtronics. I think there is enough info if you fancy making your own model.

2) Again we have a download from an excellent internet site set up by Mike Shellim, lots of good info. This is Mikes review of a John Stevens Kit, his Eliminator 60" slope racer. In my opinion not the most elegant model but it certainly does the business on the slope.



Specifications		
	Root Cord	7 1/2"
	Break Cord	7"
	Tip Cord	5 1/4"
	Airfoil	S-4083
	L. E. Material	3/16" Balsa
	Wing Area	388 ins/sq
	Tip Block	3/16" Balsa
	Main Panel Length	17 7/8"
	Tip Panel Length	10 7/8"
	Core Material	1# "B" bead EPS
Cores come with beds, 1 RH and 1LH Main & Tip cores in one set.		



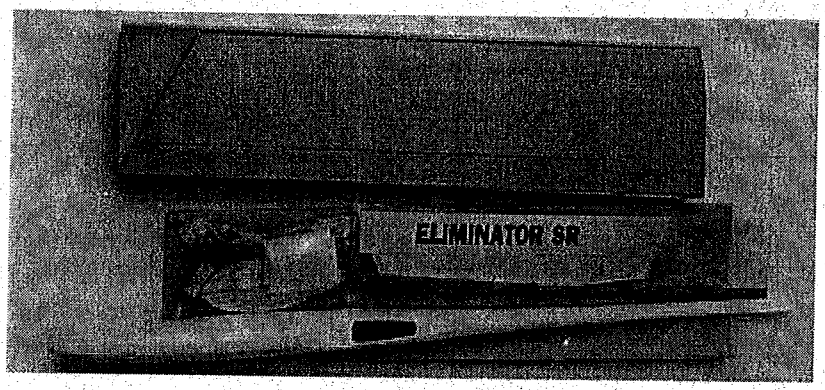
Eliminator SR 60" reviewed by Mike Shellim

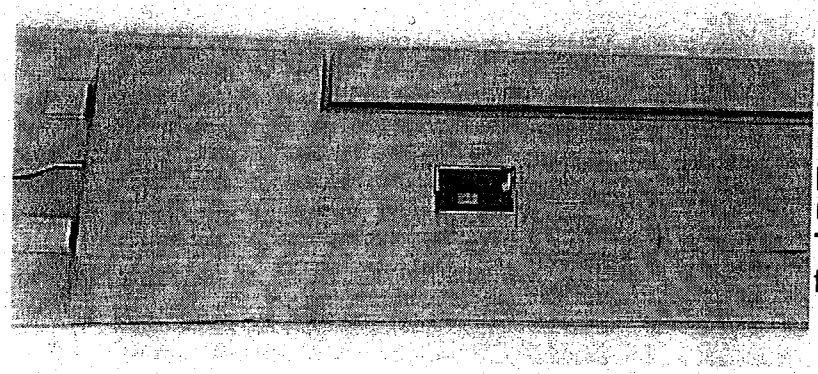
The Eliminator SR is a two-function 60" pylon racer from John Stevens, well-known UK competition flyer and kit manufacturer.

The model is probably the most popular Pylon racer in the UK and has gained an enviable reputation for quality and performance.

Two versions are available with V- or conventional tail.

The Fuselage is glass/epoxy with extensive carbon and kevlar reinforcement. A servo tray is moulded in. A slip-on nose cone completes the package. Quality is excellent.





The RG15 Wings are pressed blue foam/glass/veneer construction. A carbon fibre leading edge is moulded in place. No surface sanding is required. Quality is first class. **The Stab** is cut and shaped from good quality ¼" balsa.

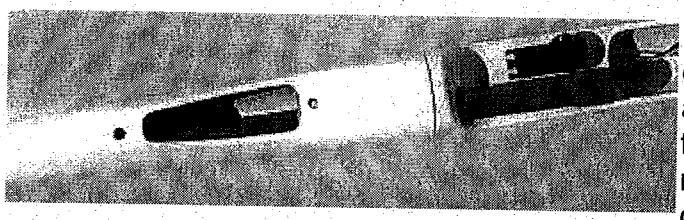
Assembly

There's a fair bit to do, but if you follow the instructions you shouldn't have any problems. The instructions are brief but clear, the only niggle is lack of detail regarding

the elevator linkage geometry. Other points:

- There's a choice of a bolt-on or permanent tail fixing. Bolt-on means more work but it's it makes it easier remove the tail unit. Make sure the elevator linkage does not obscure access to the stab retaining bolt.
- Guide lines for cutting the ailerons are already drawn the wing. 16 knife cuts are required to separate the ailerons. You *must* use a non-slip straight edge for this - sandpaper glued to one side of a steel rule worked well.
- The V-tail join isn't all that strong. I beefed it up with a glass and epoxy fillet in the V. Some folks use a carbon dihedral brace.
- A computer radio is recommended, although a simple two function radio could be used quite happily with the aileron servos on a Y-lead.
- Get the adjustable brass aileron horns from Brian Anderson. They are excellent and everyone seems to use them. They are epoxied into 4mm holes in each aileron.
- There's little guidance for the V-tail linkage in the instructions. The secret is to make sure everything lines up at right angles and you should be OK. Beware that there is very little room for mistakes.
- I covered my model in glass cloth and epoxy but you could use film on the wings. I'd be happier with a glass finish on the tail though.
- A number of items are not included: Ballast tubes, ball-links and metal clevises are available as extras from the manufacturer. Adjustable brass aileron horns are available from Brian Anderson. Not included nor listed as extras are: the elevator pushrod, 2mm wire for the elevator torque rods, and a 3mm bolt and some ply for the optional detachable stab mount – these will have to come from the spares box.

Radio and ballast installation



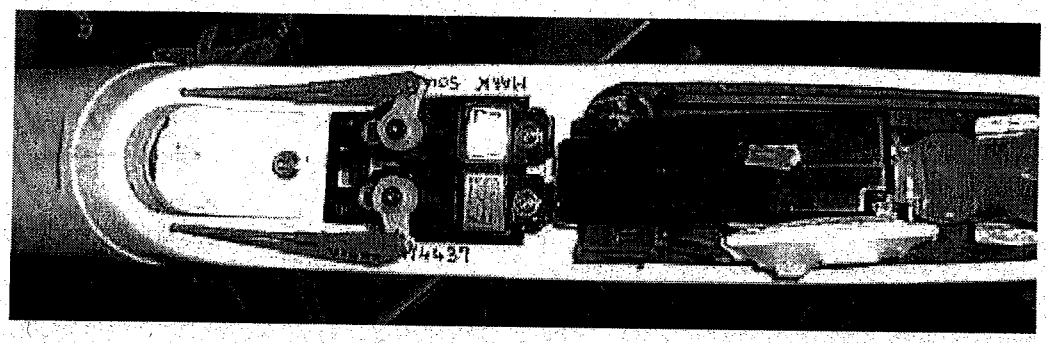
Fitting the optional ballast tube simply entails making a hole in the bulkhead and a smaller one in the servo tray for the securing bolt. Ballast slugs were made by melting lead into four sections of 15mm dia plumbers' copper pipe.

The test machine was equipped with Multiplex Pico 4/5 receiver, two Volz WingMaxx servos for the ailerons, a Futaba 9601 for the elevator and a 450 mAH Nicad pack - 2/3AF size fits best.

Weight was 38oz, resulting in a wing loading of 13 oz/ft^2. Ballast adds an additional 20oz upping the loading to just under 20 oz/ft^2.

CG was set initially at the recommended position 70mm from the leading edge – two ounces of lead were required to balance. Control movements were set according to the instructions.

UPD Adding a rudder



The photo above shows a rudder conversion I saw at an F3F meeting. Each servo drives one control surface - requires a computer Tx with a V-tail mixer. Note the ballast tube has been relocated down the centre line and has a ballast retaining cap which is secured by a bolt. Two mini servos either side have 1/4" push-rods which just squeeze between ballast tube and fuselage sides. Works well.

Flying

- The model can handle a good Force 4/5 without ballast.
- Stall behaviour is exemplary with little tendency to drop a wing at normal attitudes – a point in favour for pylon racing. Aileron response is also good up to the stall.
- Roll rate using recommended movements is adequate, but I increased the movement to get a crisper response. In addition, thermal turns benefit from some differential – in the end the ailerons throws were 14mm up, 6mm down.
- Tight 180° pylon turns are good. Little loss of speed once the wings are working.
- Four point rolls are sort of OK as long as you don't dwell too long on the points. A rudder would help here for the knife edge parts.
- With a fast entry towering stall turns are possible - the model converts speed to height well, and vice versa. Accuracy at the top of a stall turn is a little hit or miss though because of lack of a rudder though.
- With the CG at the recommended 70mm position, inverted flight needs a fair amount of down elevator to hold a level attitude. Move it back, and at 76 mm the model holds inverted for long periods with only a small amount of forward stick but it's much twitchier in pitch. I'd be happier with the CG closer to the recommended position for sport flying or pylon racing.
- Adding ballast adds to the fun. The increase in stall speed makes it important to keep the speed up - a loop with insufficient speed can result in an impressive flick. Pylon turns must be kept wider than normal when loaded up for the same reason.
- In marginal conditions, the model thermals well despite despite its 13 oz/ft^2 wing loading but ultimately it's no match for a floater.
- To control the rate of descent during landing approaches, I mixed about 20 ° of aileron reflex to act as a spoiler, à la the Mini Ellipse. There is a nose up trim change which I mixed out from the transmitter.

Summary

The model is a classic pylon racer – simple layout, handles well, flies fast and turns on a sixpence.

Sport/fun flyers will also enjoy its speed and good manners.

Aerobatic pilots will want to add a rudder control to extend the repertoire – I'd like to see some guidance for this in the instructions.

The price is at the higher end of the range for this class of model, however quality of materials and manufacture are absolutely first class. The important bits – the wing and fuselage - are likely to be very durable. It therefore represents good value for money.

Post Script: I've built two Eliminator SR's for the 1999 Pylon season, and both show the same excellence of manufacture. For example I've needed to mix and match different wing panels (because of mid-airs) and the sections have matched absolutely perfectly at the root. John Stevens also provides first rate service.

The only mod I've made is to the tailplane, replacing the M2 steel bolt with M4 nylon. This resists crash damage better - the nylon bolt sheers instead of pulling through the tailplance platform on heavy landings. I've also reinforced the stab with a full depth CF dihedral brace which makes it a lot stronger.

Specs and Contact Details

Model:	Eliminator SR
Manufacturer:	John Stevens 7 Rosemead Avenue Oadby Leicester LE2 5SB Tel: +44(0) 116 2720257
Price:	£129.95 + £8.00 p&p
Adjustable aileron horns:	Brian Anderson Tel: +44(0) 191 3887649