

Sticks and Tissue No 94 – September 2014

If you can contribute any articles, wish to make your point of view known etc please send to or phone 01202 625825 JamesIParry@talktalk.net The content does not follow any logical order or set out, it's "as I put it in and receive".

Thanks to Mark Venter back issues are available for download from <http://www.cmac.net.nz>
Writings and opinions expressed are the opinion of the writer but not necessarily the compiler/publisher of Sticks and Tissue.



John Taylor's Lancer, photo taken a couple of hours ago at DMFG flying site. A few more photos below.



From Dick Baxter - An ornithopter experiment...

Here is my ornithopter picture. To explain, it is a biplane with the upper wings flapping 180 degrees out of phase with the lower ones. They almost meet at the closing travel limit. There was a Scientific American article about biplane bugs long ago that discussed this arrangement. The aerodynamics is called "clap and fling" and is supposed to produce better propulsion efficiency and a pair of isolated flapping wings. The thing does fly, but is not a record setter. My excuse is that I want my birds to climb under power and then glide down.

Real birds do this, high performance model ornithopters don't.... but do fly lots longer....

Climbs up and glides down..... good for 30 second or so.

good flying any way you can



From in USA Skip Keyser

Question: inasmuch as I do free flight rubber, I stick with aliphatic resin emulsion glues (yellow glue). My brother-in-law uses cyanoacrylates. Although I have downloaded all back issues of S&T that I can locate, I'm not certain I recall a blurb/article on safety precautions relating to the use of CA glues. If this hasn't been covered, perhaps someone can do so. If it's already been covered, I'll search again. Thanks.

Anyone willing to write a few lines please? JP

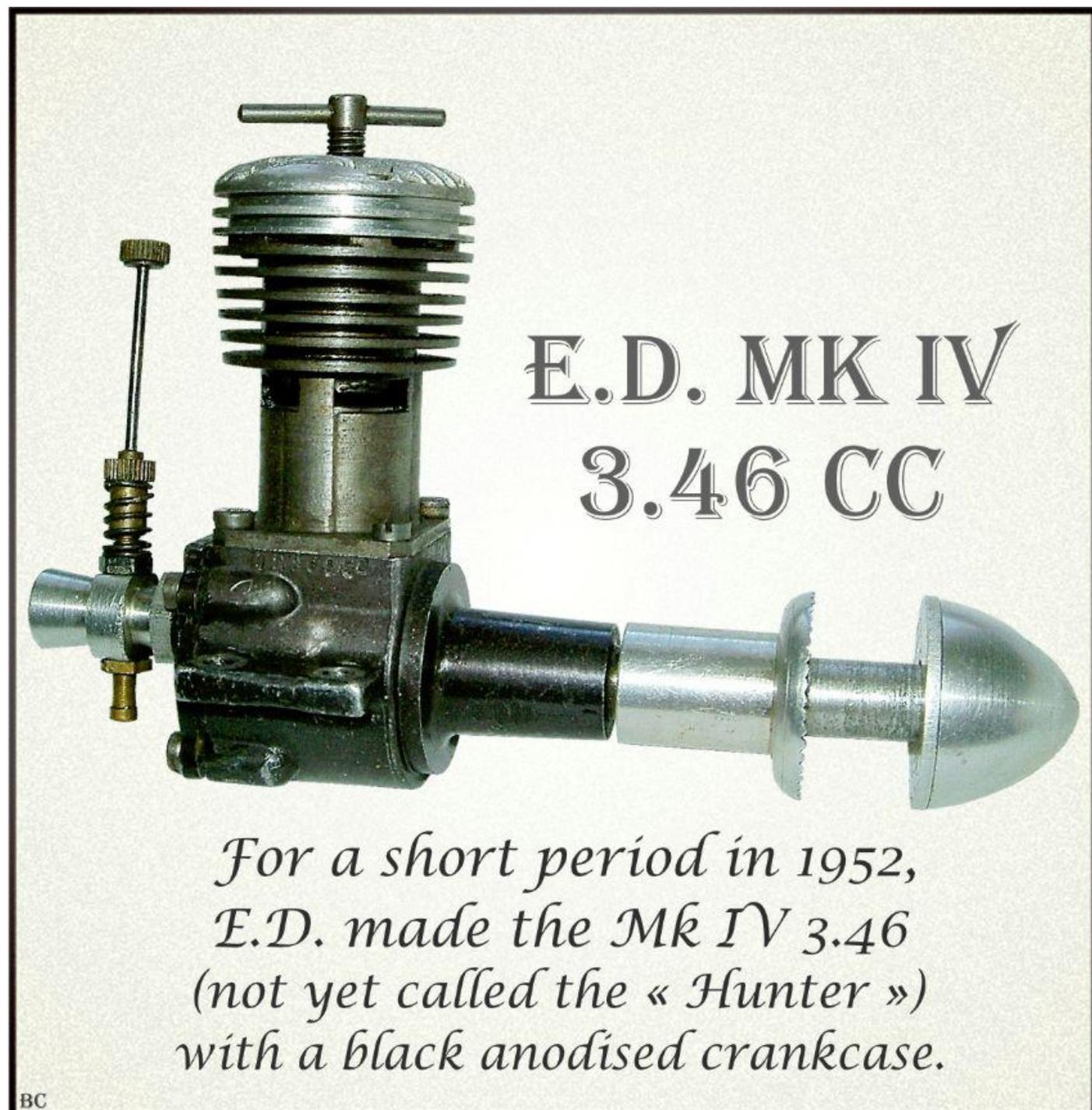
From Martin Dilly

"As you probably know there is a BMFA project to preserve and celebrate the history of model flying, hopefully via a museum, possibly in conjunction with a national flying site and HQ. Jim Wright and I are keen to get things moving on this before more of the material is lost as people who were involved topple off their perches.

We need more in the way of leads to models and artefacts that were significant in the development of RC flying . Are you or any S&T readers aware of where we might find an original Ruddervator? This was the system that had a freely rotating angled vane at the rear of the aircraft, which could be stopped in one of four positions to give left, right, up or down. Google is in this case not our friend, as all that comes up is a lot of

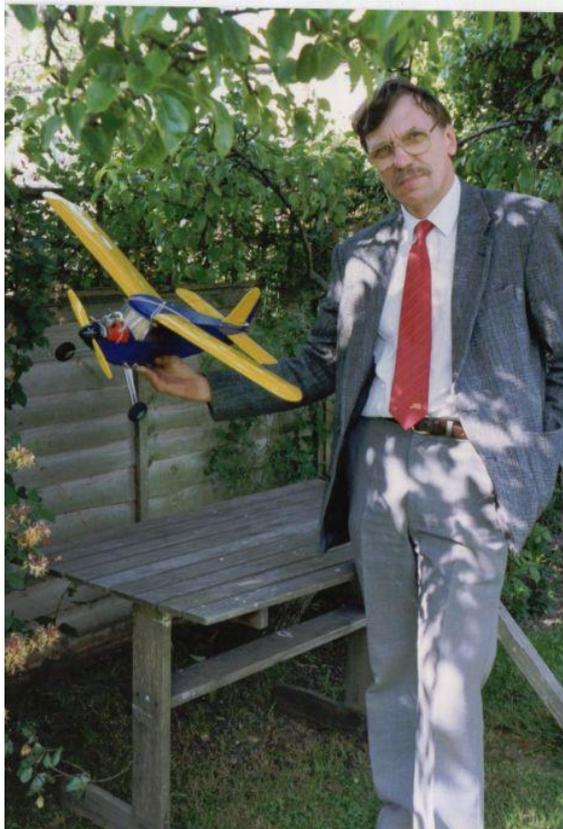
stuff about V-tails and mixers, rather than what we're after. Roy Tiller has sent drawings of two Ruddervator models from the Model Aviation Planbook by Dean & Warring about August 1949, but what's needed is the hardware. Any help would be welcome, or even an offer to re-create a Ruddervator unit or model. Please contact either Martin Dilly on martindilly@compuserve.com or Jim Wright on jim.wright@dsl.pipex.com.

Please contact Martin Dilly at: martindilly@compuserve.com



From Tony Tomlin

Hope your hols went OK. Couple of photos attached of TT with Chatterbox No 1. lost when launched and not switched on! Also chatterbox No 2 twenty years later. Young man in photo No 1 is now an old bloke on photo 2!!.



(New Chatterbox was built from The Old School Model Aeroplane kit)

Few photos attached from Sundays Middle Wallop meeting. Sure you will recognise the faces. Briefly 26 signed on. Great day, pleasantly warm with very little wind. 5 in Tomboy 3s [winner James Collis]. 8 in Tomboy Senior [winner Peter Rose]. No serious crashes.



Line up of Tomboy Competitors



Roger Briggs



Angelo Piacentini and twice size Tomboy



Sylvia Briggs and Pamela Tomlin looking after things

More photos next month

Sparrow by Reinhard Roeser from Model Aircraft December 1951

This interesting and unorthodox post-war German design is the second of its type to be produced by



Reinhard Roeser. Basically the same as that which we now present, the prototype was of all-ply construction, rib capping-strips being of drawing paper. As would be expected, this model was considerably heavier than the balsa version and its gliding capabilities were less. Designed primarily for slope-soaring the first Sparrow" had a fast sinking speed. On a normal tow-line, instability was somewhat marked but towing became practicable by the use of the L.S.A.R.A. "Rolling Bobbin" and tow-hooks at the wing tips. For those readers who are not familiar with this method, it should be explained that the tow-line terminates in a bobbin through which runs another line with ring at either end. These rings attach to the tow-hooks on each wing of the glider and, should it slew to either side when being towed up, the bobbin runs along the line and the tow pull has the effect of righting the model in its flight-path. The designer warns intending builders that a few test flights may be necessary before the handling of this type of glider becomes familiar.

Glider exponents will, no doubt, be surprised to discover that "Sparrow" has the NACA 0012 symmetrical wing section, with its 12 per cent. thickness ratio, more usually found on control line stunt models.

Many readers will remember another interesting tailless of this type, although considerably larger than either of the above, which was featured in the "Operation Research" article in May, 1950. This was the scale XFGI of 13 ft. 6 ins, span by the Dynamic Model Unit of Dayton, Ohio. Dropped from a full-size aircraft, it was radio-controlled and carried a safety parachute for landing. From the data obtained, a full-size glider of similar layout was built and flown.

Complete instructions for building are issued with each full size reproduction of the 1/5th scale plan opposite, price 6/- post free from the Aeromodéller Plans Service.

Reinhard Roeser

*Aged 20a keen German sailplane exponent. .
. with particular interest in tailless design . . .
also keen on Jetex and f/f power, photography
and chemistry... has been
modelling since he was eight.*



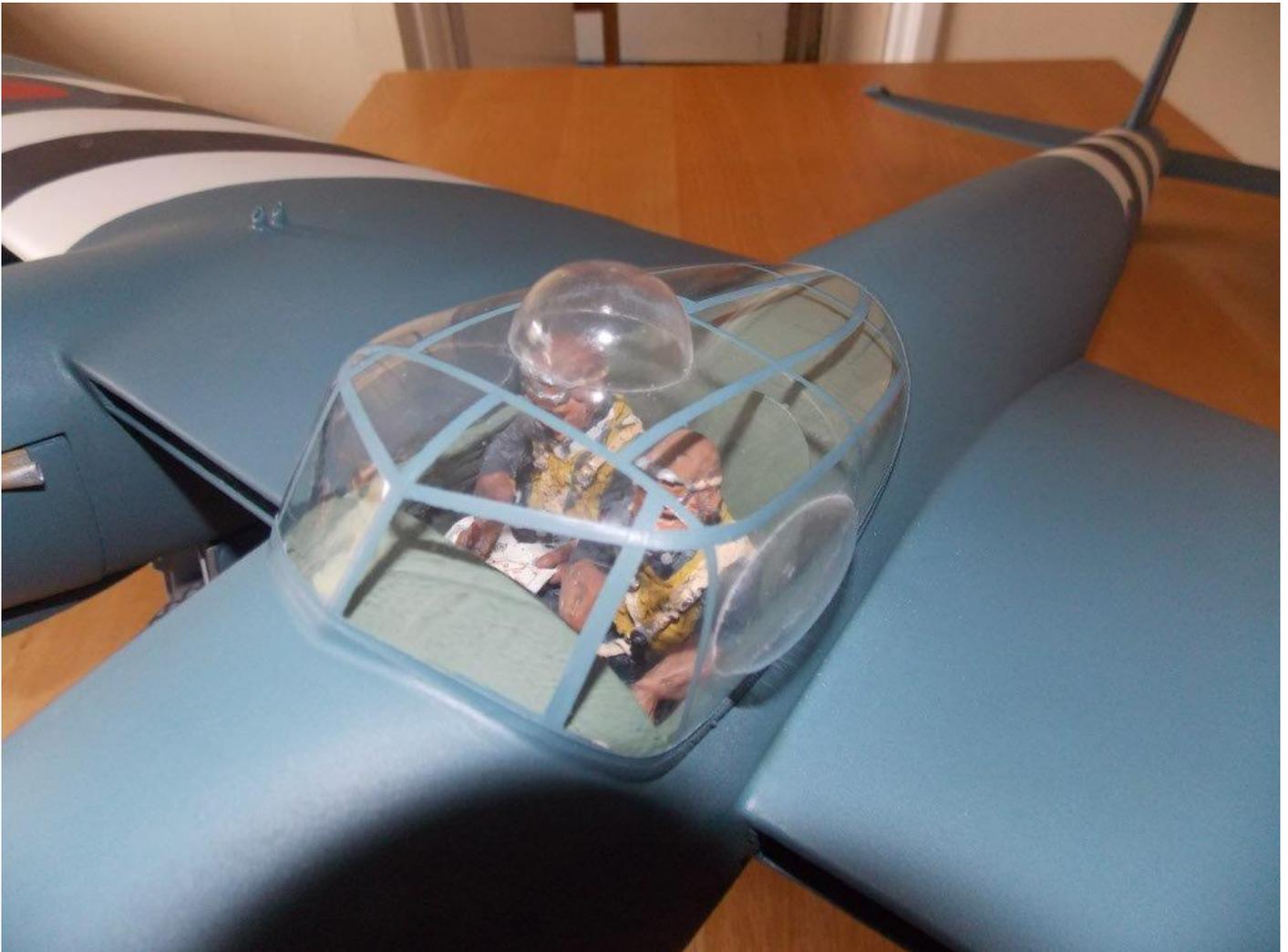
From Bryan Passey

I thought readers of S&T might like to see my latest control line scale effort,so I enclose some recently taken photographs.

This particular Mosquito was built from the old Aeromodeller plan as seen in the Christmas 1954 edition. Theirs was powered by two ED Racers whereas mine has two AM 2.5cc diesels,that,as can be seen are almost hidden in the cowlings.I did make a few alterations along the way,mostly for scale appearance,especially the undercarriage and cowlings.The two crew members in 1/17th scale were made by those nice lads down there at Real Pilots,and are of a pilot holding the spade type control column and in full length,while the navigator also full length, is sitting there on his bench type seat (no comforts for him) holding a map on his lap (of Gloucestershire) with his sharpened pencil at the ready.The canopy and nose transparency was a joint effort by my good friend Lindsey Smith at Small Scale Custom Services and Sean Barrett at Real Pilots.

The model was spray painted with Humbrol Matt enamels thinned with cellulose thinners,and fuel proofed with Ronseal Matt varnish also sprayed on.

The only thing left to to is to apply the registration numbers just in front of the tail plane,and then fly it.And if it flies as well as it's predecessor,the Halifax, I'll be content to move on to another control line multi,perhaps the Shackleton,or the Vickers Viscount,both Aeromodeller plans of the past ,but I have a hankering to build a Constellation,ah choices,choices!







BOURNEMOUTH CLUB CLASSIC RUBBER - Middle Wallop 24 August 2014

By Martyn Pressnell



Mike Turner - Club Classic winner with the cup

Saturday the 24 August was unique, with sun all day, light southerly breeze and some good thermals to snatch the unwary aloft. Something like 250 people came and fourteen entered Club Classic, both figures well above normal for Middle Wallop. This was a day when we knew why we are all model flyers.

Nearly half the field (6) reached the fly-off which was flown to a 2.00 minute limit along with the other events. I heard no complaints about this established practice and it seems to have produced a satisfactory result. It seems to me that the time limit set is more or less inconsequential, the highest flying model being the most likely to win.

Again Uchins (4) and Last Resorts (4) were the most popular designs, but again it was Flip Flop that proved supreme, this time flown by Mike Turner (well done Ron Warring). Andrew Longhurst was again well placed at second and Ted Tyson made third spot. It was again my pleasure to act as CD and may I congratulate all fourteen who had a dabble and re-asserted their interest in Club Classic Rubber. See you all next time, March/April 2015?



Andrew Longhurst with Mentor



Bob Taylor with Yard stick



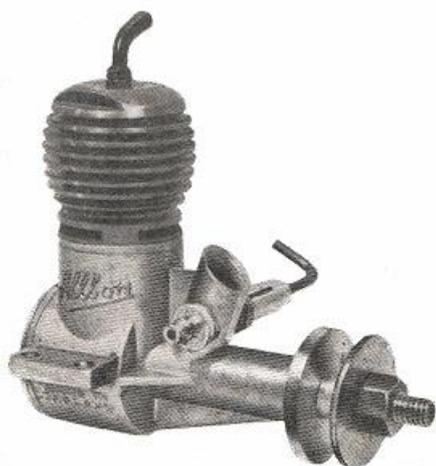
Ted Stevens with Flip Flop



Ted Tyson with Last Resort

Results

1	Mike Turner	Flip Flop	6.00 + 3.25
2	Andrew Longhurst	Mentor	6.00 + 2.49
3	Ted Tyson	Last Resort	6.00 + 2.29
4	John Oulds	Boxall	6.00 + 1.57
5	Bob Taylor	Yard Stick	6.00 + 1.44
6	Ted Stevens	Flip Flop	6.00 + 0.52
7	Ron Marking	Urchin	5.48
8	Peter Jackson	Urchin	5.43
9	John Andrews	Last Resort	5.43
10	Martyn Pressnell	Last Resort	5.33
11	John Lancaster	Urchin	5.31
12	John White	Last Resort	5.06
13	John Huntley	Last Resort	4.42
14	Richard Fryer	Flip Flop	3.46



Allbon Dart .5 cc lightweight diesel Aeromodeller January 1951

Modern design, and the latest manufacturing methods, when applied to the ultra-small diesel engine promises interesting results, and in the Allbon ' Dart ' we have an opportunity of seeing this combination in action. It is, indeed, in engines of this small capacity that progress should be most beneficial, for it has been pointed out before in these pages that the miniature engine does, by reason of its very size, suffer a severe handicap in power/weight ratio when compared with engines of large capacity.

Thus, other things being equal, power/weight ratio is very much in the favour of the large engines. The figure of .575 b.h.p./lb. obtained for the Dart engine is a big advance on anything previously found for engines of under 1 c.c. capacity, and compares

favourably with many engines of four or five times the size. This factor, coupled with the large b.h.p. output, should; open up a wide field for those modellers who favour the smaller engines. As a matter of fact, another quite new and strange problem may have arisen for those model flyers who favour the small engine because it enables them to build a small aeroplane the manufacturers of the Dart state very emphatically that the span of the flying machine should be between 42 and 48 ins. while for a pylon lay-out the span should not be reduced to below- about 36 ins ! At this rate of progress we shall have to await the development of engines of around .01 c.c. before we can indulge in real waistcoat-pocket power machines.

Apart from these considerations, this latest Allbon product is interesting in itself purely as an instance of the capabilities of the modern small power plant. Considered objectively as one-and-a-quarter ounces of machinery the b.h.p. output of .0445 certainly gives cause for thought.

The manufacturers recommend this engine as being well suited to the beginner in power modelling, and its easy starting characteristics would support this. At the same time, such a small unit requires intelligent handling (yes, I know that all aeromods are intelligent types !), because this engine is definitely in the "hot" class, and as such may be easily damaged by mal-adjustment of the compression lever.

TEST

Engine : Allbon "Dart" .5 C.C. Diesel.

Fuel: Mercury No. 8.

Starting: Extremely good. Care must be taken not to flood the engine when run in an upright position, as the air intake of the carburettor is then vertical and may become filled with fuel.

Running: Very Steady over a wide range of speeds, but careful adjustment of the fuel-control needle is necessary at speeds above about 13,000 r.p.m.

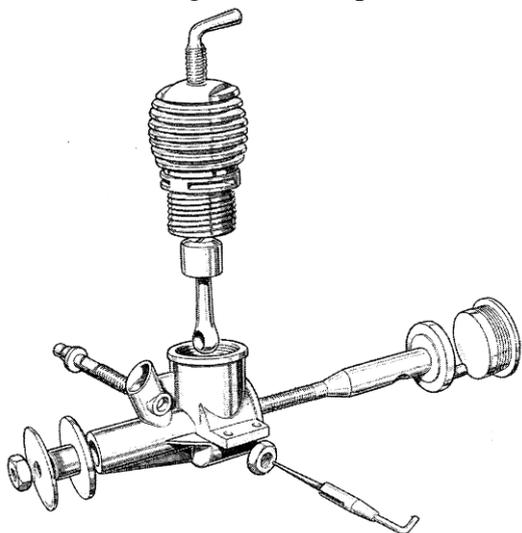
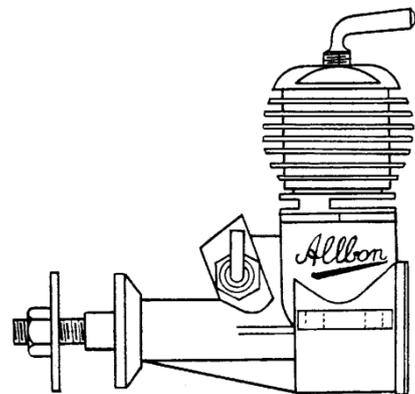
B.H.P.: Starting at .012 b.h.p. at around 5,000 r.p.m., power rises steadily to a peak output of .0445 b.h.p. at 13,300 r.p.m. The engine

may be considered to be running efficiently at speeds between 11,000 and 13,500 r.p.m. so that a fairly wide choice of airscrews is presented.

Checked weight: 1.25 ozs. less fuel tank.

Power / weight ratio: .575 b.h.p./lb.

Remarks : Tests were carried out with two separate engines, and the performance of one was better at the peak speeds. This may have been due to more careful running-in on the one engine, the latter having had two hours at about 6,000 r.p.m. with a fuel containing an added amount of lubricating oil.



The .033 cubic ins. capacity prompts a comparison of Dart performance with that of contemporary American glow-plugged miniatures of between 035 and 045 cubic ins.

Having operated the Dart quite successfully with an 8x4 ins. propeller, we would have little hesitation in stating that here at least is a capacity at which the diesel shows superior power over its glow-plugged equivalent. No doubt many of our friends in the U.S.A. will find this motor a must for their "half A" classification of contest models.

GENERAL CONSTRUCTIONAL DATA

Name: ALlbon "Dart ". Manufacturers: Allbon, Engineering Co. (Sunbury) Ltd., 51a, Thames Street, Sunbury-on-Thames.

Retail Price : 52s. 6d. plus purchase tax. Delivery: Immediate.

Spares: Full spares and repair services available. Type: Compression ignition.

Specified Fuel: Mercury No. 3 or No. 8. Capacity: 54 c.c., 033cu. ins.

Weight: 12 ozs.

Compression Ratio : Adjustable.

Mounting: Beam, upright or inverted.

Recommended Airscrew : 6x4 ins., or 7 x 3 ins.

Bore : .350 ins. Stroke : .350 ins.

Cylinder : Meehanite. Radial ports, 3 exhaust, 3 transfer. Cylinder screwed into crankcase.

Cylinder Head : Dural screwed on to cylinder. Crankcase : Aluminium pressure die casting.

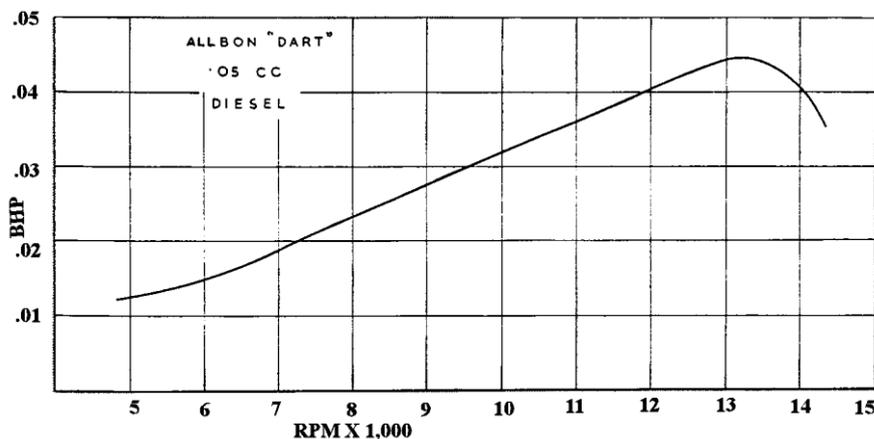
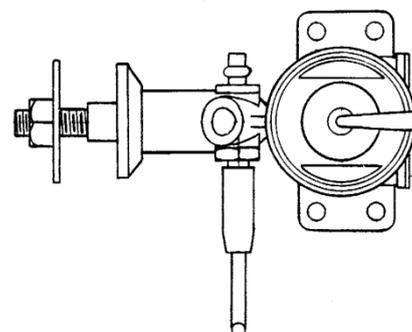
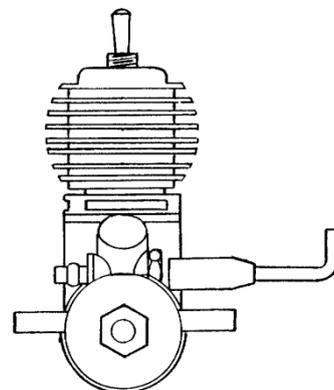
Piston : Meehanite, dural gudgeon pin carrier, conical top.

No rings. Connecting Rod: Dural. Crankpin Bearing: Plain.

Crankshaft: Nickel chrome. Hardened, ground and lapped.

Main Bearing: Plain. Little End Bearing: Plain. Induction: Rotary shaft inlet valve.

Special Features : Gudgeon pin being retained inside piston prevents scoring of cylinder bore.



From Bill Wells

In the March 2011 edition of Sticks and Tissues I mentioned and produced pictures of my Sun Bird. Because of work commitments I never had the time to travel to Auctions but on this occasion the timing was perfect. I was recuperating from a hand operation so was able to hitch a trip to the Isle of Man to attend the Auction of the late Peter Fisher's (Performance Kits) models and engines. It really was a fascinating Auction and well attended. I had my eye on the engine in the model of Lot 2 a Sun Bird Mono Plane!!! The model was in a poor way so not much opposition I got it for £16.88 including Tax. The hitch back with two models and a bag full of bits, with a hand that was not working too well was interesting but I finally got back to the shack with my buys. The engine had problems and still awaits my attentions!!! The fuselage was stacked vertically against a wall and remained there for three years. While busy with other projects I kept looking at the poor thing and finally gave in and decided it could be rebuilt. This was definitely going to be a different model. For a start it was a Biplane but with a reverse stagger the top wing was behind the lower wing. There were no inter-plane struts and the remaining wing had very thick aerofoil not unlike that of a control line stunt model. Looking in Mr. Fisher's book I would not be surprised if this isn't the very same model as shown in the book. The markings looked the same and it sported a 1970s 27 Mhz Staverly receiver. The control wires were thick red rust and the servos looked ancient. So you never know I might just have the prototype! Looking at the minute picture there did not appear to be any ailerons on the missing lower wing which looked the same span as the upper. A thought crossed my mind that as this was described as an aerobatic model it was not too different to the layout of the designer's control line Lynx model. Could this be the reason for the thick wings? Having got as far as thick aerobatic wings they wouldn't need wire bracing or inter-plane struts! A bit of a pity really because the idea of a biplane was that the wings could be made thin (streamline) without the need for thick wing sections to house deep main spars. The lift from the wings being supported on wires the main stresses on a biplane are taken up outside the wing structure. Having two self supporting wings rather defeated the idea of a biplane! I was being a bit careful with the wording of the last sentence because as it happens the Sun Bird Wings did not have a main spar or a dihedral brace!!!

The upper wing was broken at the join between the centre section and the wing panel. A wing panel consists of 5/16 square leading edge set at 45°, a 1/16 top and bottom trailing edge and along the top and bottom of the wing are 3 x 1/4 square runners (I am reluctant to call them spars). These panels are very much like scaled up versions of small rubber powered models. The centre section is of similar construction but with the end ribs angled for the dihedral. So amazingly the whole lift from a wing panel was taken up on two glued together balsa ribs!! The centre section of the upper wing housed one standard servo which worked the ailerons through a crank in each wing. I made a new centre section and glued the panels as described. I then cut the centre ribs so that I could fit a plywood dihedral brace which fits against the middle 1/4 runners. I used a half size servo inside each upper wing panel for the ailerons. The lower wing was made as a copy of the upper wing but without ailerons. The fuselage was basically a clean up and re-gluing amazingly the old nylon covering was in relatively good condition so I suspect the model had been stored out of direct sunlight perhaps in a garage roof. The original fuel tank was history and contained some very sticky almost black goo presumably decomposed castor oil. The tail plane elevator fin and rudder were all in good condition as was the coverings but here there was a problem. The tail plane had been made as a separate unit and covered in nylon then the nylon cover was glued to the lower longerons!! I made some alterations and a lot of re-gluing. The tail wheel was locked solid with corrosion and there was No give in the short very thick supporting wire. I did look everywhere for a suitable replacement tail wheel but ended up making a new hub and reusing the rubber tyre. The wheel is now supported on a much smaller diameter wire which at least has some give in it. The main undercarriage was really heavy being made out of a very thick alloy, I replaced this with a much thinner one of the same design very slightly longer for better prop clearance. The only suitable available engine I had was OS LA46 and as luck would have it the width between wooden engine bearer was just right for it. I covered the model in Solartex using the original colour scheme of Orange and Blue although the Orange in this case was much brighter (more yellow).

The first flight was interesting. I made sure I had plenty of room in case I had to abort the take off or to land ahead if things were not going well. Taxying was easy the rudder is really too powerful and its use during take off must be kept to a minimum. It took off very quickly and climbed just

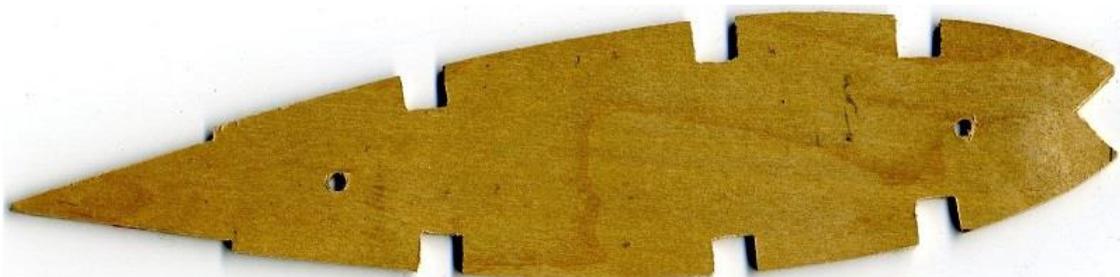
like a trainer. I got plenty of height and tried some gentle turns it all went well. As the model turns, the 'side on' the view is of a long blue fuselage with a large fin whereas as 'head or tail on', the orange light coloured wings of relatively small span makes the model look much smaller. It does look strange in the air a bit like a huge dragonfly. I had given a bit of thought to the first landing making sure it was well over the hedge before easing back on the throttle. My worries were completely unfounded as it lands just like a big control line model. It is aerobatic but initially it was noticed that during rolls the lower wing tip rose up towards the down going upper wing. At first, I thought I was seeing things, then other club members saw the same thing. I tried seating the lower wing on Velcro then the penny dropped use thick rubber bands on either side of the lower wing and a few thinner ones across the diagonal. The model does have one nasty little trait if flown slowly with just a bit of power the model turns right, should aileron be used to correct the situation it rolls more rapidly right. The correction is to stick the nose down and full power as the model is at the stall. Unfortunately if close to the ground the situation gets out hand very quickly full power with a rapidly rolling model isn't good news. The recovery is stop the turn with Left rudder applying full power at the same time then climb away. Exhaust oil began to seep under the upper wing so I put an exhaust extension on but the lower wing got in the way so I turned the extension upside down ducted the exhaust over the top wing. Taxying out if the exhaust has collected a bit oil in the silencer it makes the model look more like steam train puffing out white smoke/steam.

A while ago I Googled Sunbird and eventual found a Web site with a PK Sunbird kit in original box for sale!! Otherwise apart from Mr. Fishers book I have no information about the model.

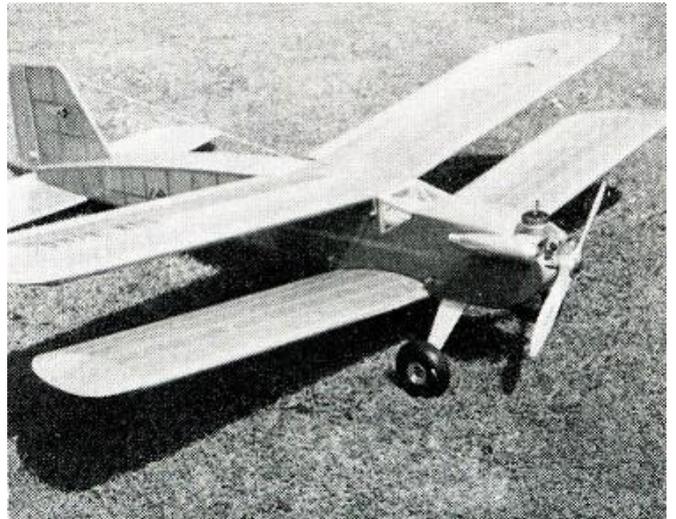
I must confess I got some pleasure from the rebuild and it was interesting to see what Mr. Fisher was flying 40 odd years ago. It is one of those not so attractive models to assemble and pack away again. It really would be quite happy with being powered by an LA 40, it is well overpowered with the 46. The rebuild took a while as I had no plan as a guide so I was continually trying to overcome problems

Specifications Span 50½ inches Wing chord less ailerons 7½ inches. Aileron width 1 inch on the upper wing only. Length 47 inches Weight 5lbs

Has anybody else got a PK Sun Bird?







The
DAVID OWEN
T2.5

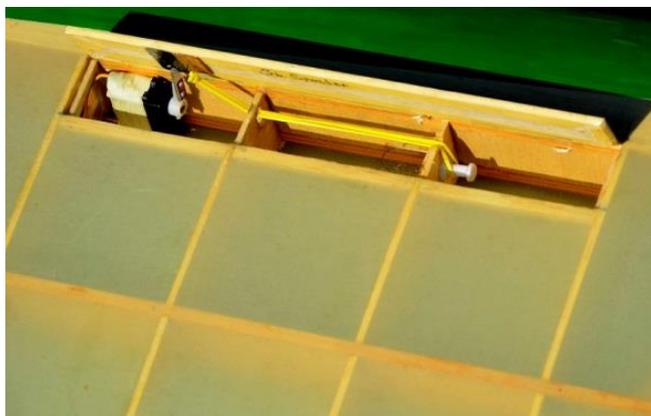
Competition
Diesel



A quality 2014 engine,
based on Gordon Burford's
1957 Taipan 2.5 Mk 3.

From Ronald in Belgium

My radioQueen nowadays flies with an enlarged (20%) Buzzard Bombshell wing. The RQ port wing was totally destroyed by misjudging a distance during landing approach and hitting my open car boot lid. Not really properly reparable and no time to build a new wing. Luckily, I had this Buzzard Bombshell wing lying idle in my workshop. I retro fit spoilers on the wing, moved the aft dowel a bit further aft and presto, the RQ could fly again, in fact even better than before. The Laser 70 swings a Bolly 12.5 X 6 and the summer weather improves the flying enjoyment again.



From David Bishop Old Warden - Modelair.

The final meeting of the three Modelair events took place at Shuttleworth's Old Warden on the weekend of September 27-28 - 2014. Weather wise, it was a huge success with the slightest of winds making for some superb free-flight aeroplanes to perform at their best. Thermals were there in abundance.

For those readers of Sticks & Tissue who have never been to Old Warden, the place is part of a large country area in the county of Bedfordshire. One end is for the agricultural people and a large college. The other end is for one of the finest aviation museums in the world with so many original aeroplanes that are still regularly flown and demonstrated publically much to the many thousands visitors delight. There is an Old Warden modelling club that flyers can go to every day and fly their radio controlled models. The rule is that when a full size aeroplane is using the airfield then quite naturally models are grounded for that period, otherwise members can fly all day, until dusk. There is an excellent restaurant which sells a cracking "full English" (and other food,) at reasonable prices. Also there is a bookshop, that anyone who is interested in aeroplanes can drool over the many books on sale. As well as all that, there is the full size aviation museum of so many historic aeroplanes statically displayed, which are rigorously kept up to AID standard by the team of aircraft engineers, which include apprentices.

Modelair events were started at Old Warden some years ago with three meetings a year arranged and the main organisers were Ken Sheppard and Mike Reynolds. Mike had already 35 years of experience with running other shows and events including the best and (then) the largest in Europe show, at RAF Halton, which the RAFA funds benefitted annually. Ken was accompanied by his wife Sheila and Mike had the help of his wife Joan. The first event of the three was held in the beginning of May, the second in the middle of July and the third in the last weekend of September. The flying field is split up into two parts and the largest area is on the left (with your back to the main hangers) which is where the free- flight, control line, and small radio assist models, are based. All of the large area on the right is for the radio control modellers and they have a small team of people (now) that ask very politely for everyone to fly safely in the nominated area. I say (now) because there was until recently a considerable problem there which regularly upset some of the flying modellers. That has now stopped and this last event of the 2014 years flying, was packed with so many aeroplanes of every sort of discipline enjoying the perfect weather all under the kind guidance of the few (quietly) speaking marshals. The Saturday evening (which many attended) was spent with a thank you drink and nibbles event laid on by Sheila Sheppard. It was held to say goodbye and thanks for the many years of assistance to the event of Mike and Joan Reynolds. There were so many signatures of thanks written on a large card from so many people and also a super framed aeroplane picture was presented to a "very humbled" Mike. They are such a great couple and so helpful that they will be sorely missed in the future events planned for Old Warden still under the name of Modelair, in next year's events. Note that the Modelair events are not a show as such. It is a totally different affair unlike the days when Ron Moulton ran shows there. Those of you who went in the "good old days" will remember the way that all weekend campers were parked across the main road (excepting for yours truly, and some traders) and the whole of the airfield was filled to capacity (including overflow parking areas) with hundreds of cars. Scale competitions with good prize winning trophies were the "norm" and the place teemed with entertained spectators. There was a long roped off area of the many radio controlled aeroplanes that spectators could view, inspect and photograph. Modelair introduced the popular "Ebenezer" fun fly with hundreds of models all flying together and also this year a children's "build and fly" competition. Another "winner" was a Mike Reynolds idea of celebrating the 100th anniversary of World War One, that terminated with a thrilling massed fly past. There will be more of this sort of thing next year 2015 which will include a special day of the many Flair kitted aeroplanes and again the children's "build and fly" event.

So look out for the adverts for next May, July and the end of September, when you can bring along any model and share the talk (crack) and friendship of so many people who are totally dedicated aeromodellers. Every modelling discipline is covered along with a "must do" visit to the most famous full size actual historic original aeroplanes in the world. Couple up that with a whole long line of traders that have almost everything needed for our hobby. Camping and daily visitors are welcome and it is nice to report that the car park area was filled this last weekend. The reason is that Modelair are doing it right, at the right place. Hope to see you there.

Dave Bishop of DB Sound. emails to davebishop_dbsound@yahoo.co.uk



A nice radio controlled trainer.



Ex Lincoln member and 7 times Gold Trophy winner, Jim Mannall, shows his electric 6 cell E Flight Splendor, 55" wingspan.



One of the nicest and most polite flight line marshals is James Gordon of the Croydon and Caterham clubs with his Mohawk.



Another full years building from Roger Godley resulted in this superb model of the "oldest existing flying Tiger moth in the world". Its first flights were a joy to witness.



I have proudly presented world scale champion Ali Machinchy (seen with his son 8 years old Xavier) in this and other countries to many thousands of people. Xavier is another champion in the making and they both flew in a sync painted pair over the weekend. Ali is "on leave" from Horizon in the USA.



The welcoming transmitter control team (yes there were lots of Tx's on 35 meg's) with over 80 of them



A lovely couple Brian and Pat Ball with his Frankenstein and a PAW up front. in all checked in.



Brian and Brenda Jenkins with his Courtesan It has. It has a Irvine .75 Mills up front



We all love this fantastic builder with his amazing eyesight (no glasses needed to build whatsoever) seen with his twin electric paralleled motored Kingcobra.



Ali Machinchy of Al's Hobbies had many flights with his DB Biplane Cardinal with a Mills .75. His wife Jane was "minding the shop" and was extremely busy on both days.



A couple of chaps having free-flight fun with the very original Ebenezer biplane.



Robin Fowler's superb 4 electric motored and radio controlled, Stirling MK4 bomber at 117" wingspan. AUV is 20 lbs.

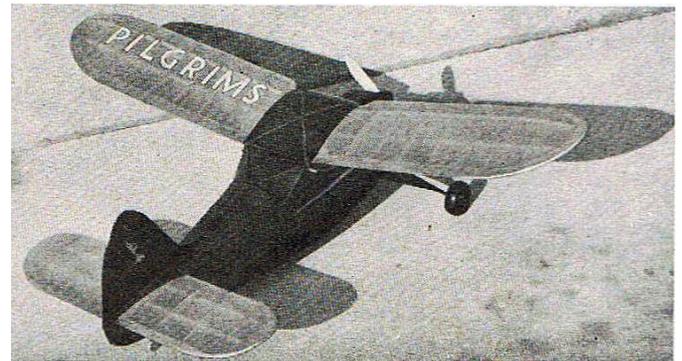
POPSIE A 38 1/2 inch SPAN MODEL FOR LIGHTWEIGHT RADIO CONTROL EQUALLY SUITABLE FOR SPORT FLYING BY VIC SMEED from Aero Modeller December 1951



The stubbiness of this little model is the result of an attempt to produce the smallest practicable model suitable for nonnal light-weight radio control, allowing as much radio space as possible. The prototype has not as yet flown under radio, having been used as a sport job, but it has been ballasted and subjected to every extreme of trim, etc., and has proved entirely satisfactory. The underlying idea behind every part of the design has been the ultimate installation of a set, and all the known desirable features for successful R/C models have been

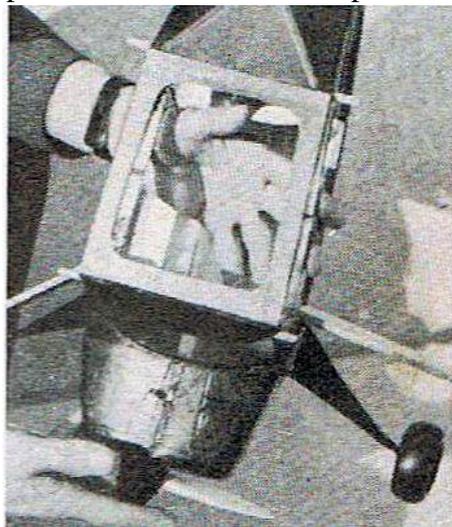
incorporated as far as possible. The following design points may be of interest to any builder who contemplates fitting this model with a radio outfit.

A fourteen-ounce wing loading was considered the highest desirable for a small job; allowing 15 ozs. for the airframe and 7 1/2 ozs. for radio, this gives a wing area of approximately 1.6 sq. ft. The use of a fairly low aspect ratio enables a compact and sturdy wing of 38 1/2 ins, span to be employed. Because of the resulting large chord and the desirability of using a short moment arm for overall compactness and manoeuvrability, a 37 per cent, lifting tailplane is advisable and is therefore utilised. The fuselage is laid out to give ample cabin room and accessibility with adequate strength, and is of sufficient width beneath the leading edge of the tailplane to permit the easy mounting of an escapement. This width also ensures a firm tailplane seating. The C.L.A. is low and sidemounting the motor enables a high thrust line to be employed as well as cleaning up the nose entry. The undercarriage is designed to absorb a vast amount of punishment and also to give trouble-free R.O.G. It is not necessary to hold the model off the ground for starting—an advantage, since the width of the fuselage makes a firm grip difficult. In fact, initial ‘power-glides’ on inadequate power resulted in ‘Popsie’ landing in quite long grass with the motor continuing to run. The rigging angles and sections used give similar climb and glide characteristics and speeds, and the rudder should be about equally effective in power on and off as under power, the wide body produces a blanketing effect on the slipstream.



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This blanketing gave a little trouble on early flight tests with 7 in. airscrews, but this was overcome by using a slightly larger prop. Turns of 100 ft. diameter can be made in either direction without loss of height, and recovery from ‘unusual positions’ is good. A Mills 75 c.c. was used for sport flying with the prototype and it is recommended that an ED. Bee is used for radio work. Fully detailed building instructions are supplied with the plan.



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Three-quarter rear clew choirs sturdy but clean lines of the prototrpe. Close-up of fuselage gires indication of the ample cabin space.

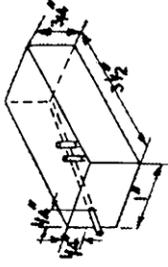
I included this full Popise article (The plan was included in a previous S&T) as there seems to be quite a few of these models being flown with RC, enlarged to about 60”, possibly due to the kits being available

from both Old School Moder Aeroplance factory Derek Foxwell (02086471033)

derekfoxwell@btinternet.com and Belair <http://www.belairkits.com/detail.asp?id=936> 01362 668658

ALUM. CAP. FORCE FIT
BALL BEARING TO ENGINE 12 G. BRASS
TO TANK BODY 5/16" DIA. TUBE
DURAL OR ALI ROD

SECTION OF NON-RETURN VALVE
USED BETWEEN ENGINE & TANK
USED WITH AMCO 3.5 TO
PREVENT FUEL RETURNING
TO TANK AFTER CHOKING



EXTERNAL DIMENSIONS OF
COMMERCIAL TANK USED

1/16" Balsa
SILK OR NYLON
TAILPLANE & ELEVATOR
LAMINATIONS OF 1/16"
Balsa WITH A LAYER OF
SILK OR NYLON BETWEEN

CUT OUT FOR
ELEVATOR
MOVEMENT

1/16" PLY PLATE
SEC. DD

1/4" x 1/16" STRIPS COVERING
CHANNELS ON UNDER SIDE

SOLDER

ENLARGED
VIEW OF
LEAD OUT
CHANNEL
& COVER
STRIP

INLaid 1/8" PLY
PIVOT SUPPORT

RECESS FOR
BELLCRANK MOVEMENT

WING AREA 144 SQ. INS
TWO PIECES 3' x 3' x 3/16" MED. Balsa

WEIGHT LET IN
OPPOSITE WING TIP

CELLULOID TUBING FROM
BALL PEN REFILL

9' x 8' TRU FLO PROP
NEEDLE VALVE
ON STBD. SIDE
NUT SOLDERED ON
AFTER CONTROL ASSEMBLY

GROOVE TO FACILITATE
ENGINE REMOVAL
1/2" x 3/8" HARDWOOD
THIN CARD
INSTRUMENT
PANEL

SKYSTREAK 40'
CELLULOID CANOPY

1/8" SHT. BULKHEAD
INSIDE OF FAR
WALL OF COCKPIT

ENGINE BEARERS COWL
REMOVABLE
WITH CANOPY
BLOCK
GLUED TO
LOWER FUSELAGE
BLOCK
1 1/2" x 1/8" DIA
METAL
SPINNER

AMCO 3.5
PLY RING SPLIT
ON DATUM
EXHAUST SLOT

LONG REACH
COMPRESSION LEVER
GLUE IN DEFLECTOR BLOCK
1/2" x 1/8" PLY AFTER U.C.
ASSEMBLY

3-6 B.A.
BOLTS
SHAPE AFTER
GLUE HAS SET
ON INSERTION
IN FUSELAGE

2" x 1/2" STREAMLINE
WHEELS

COWL
TANK
WING
SEC. AA

DATUM
WING
SEC. BB

BOLT HEADS SOLDERED
INSERT BOLTS BEFORE
GLUING BEARERS TO
TIN PLATE

3/8" B.A.
ENGINE LUG
BEARER
TIN PLATE

SPRING WASHER
LENGTH BEFORE
BENDING 6 1/2"

12 S.W.G.
TRACK 7 1/2"

PARALLEL WITH DATUM
PUSH ROD
POSITION
SEC. CC

TYPICAL FIN
SECTION
METHOD OF LAYING OUT
LOWER FUSELAGE BLANK

CENTRE JOINT SPOT
GLUED TILL FINAL
ASSEMBLY

DATUM LINE & JOINT BETWEEN TOP
& BOTTOM PORTIONS OF FUSELAGE SHELL

1/4" SQ. BRACES

WING SLOT

WING

SEC. AA

SEC. BB

SEC. CC

SEC. DD

SEC. EE

SEC. FF

SEC. GG

SEC. HH

SEC. II

SEC. JJ

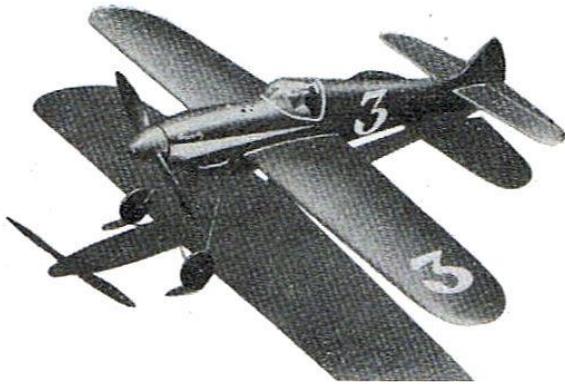
SEC. KK

SEC. LL

GREENFLY
MA 133 C. S. WEST 3/6
SPAN 31" LENGTH 24 1/2"
COPYRIGHT MODEL AIRCRAFT
23 GT. QUEEN ST. LONDON W.C.2

Greenfly by C S West from Model Aircraft July 1952 A winning Class B team racer

This model is the outcome of a desire to build more “eye-appeal” in a team racer, and in doing so to boost



the spectator interest demanded by this sphere of model flying. That this has been achieved without loss of performance has been borne out by the fact that Greenfly placed third in the Davies Trophy finals last year.

The construction is unusual in that the fuselage is built up on the sandwich principle from four layers of 1/2in. sheet balsa. This enables us to save wood by fretsawing out each lamination separately to a minimum size, while the glue seams will give a stronger result than by carving from the solid. The writer strongly recommends that a glue of the “Certofix” type be used throughout, as cement is less able

to stand up to vibration over long periods.

Fuselage

This is built in three main parts : 1-Lower main section with engine bearers and lower cowling. 2-Upper rear section and fin. 3-Front upper section including cockpit cover, completely removable for access. Trace the fuselage parts on to 1/2 in. medium balsa, remembering when sawing out to cut away the inside of the cowling as shown. At this stage the wing slots and exhaust vents may also be cut out. Glue the engine bearers in position on the outer sections, after fitting the engine bolts, the heads of which should be soldered to tin plates to prevent twisting. Now glue the laminations together, merely spot-gluing the centre seam, so that after shaping the outside, the fuselage can be separated and the inside finally shaped. The other fuselage parts are made similarly, but not assembled until control gear, crossbraces and undercarriage are fitted.

The undercarriage wire should be partly formed as shown into a U-shape and bolted to its ply bulkhead with tin straps. The bulkhead is then glued into place, threading the U/C legs through holes in the fuselage. Final bending to shape should be done when the glue has thoroughly hardened.

Wings

Glue together two 3/8 in. medium balsa sheets edge-to-edge, and weight down on a flat surface until dry, then cut to outline shape. After carving to the section shown, cut out the control-plate recess and glue in the ply pivot-bolt mount. On the underside of the port wing carefully cut the leadout channels, then assemble the control-plate unit and attach the “Laystrate” leadout wires. After laying these in the channels and threading them through the celluloid tubes in the tip, cover in the channels with strip balsa and sand smooth.

Use cement in this one instance to prevent the wires binding. Finally recess a suitable lead counter balance weight into the starboard tip, cover in with sheet and sand flush. The wing is now ready to be glued into position in the fuselage.

Tailplane

Here again the construction is unusual. Cut out two tailplanes and elevators and glue together, sandwiching a layer of silk or nylon in between. This forms an efficient hinge without external tapes and also greatly increases the strength of this often abused component. Fit the control horn, connect the push-rod to the control-plate and glue the tailplane in position with everything at neutral. Fit in position the 1/4 in. square fuselage cross bracers and the cockpit rear bulkhead. The upper rear half of the fuselage with the fin can now be fitted over the tailplane and glued firmly down on to the lower half. After making sure that the removable front cowling clears the internal gear, fit a cycle spoke and nipple as shown to hold it in place. The ply bulkhead in front of the tank will key it in position. A suitable commercial bubble canopy may be adapted to fit and cemented on, leaving the junction with the rear fairing unstuck.

Liberally dope as much of the interior of the model as possible and sand well before covering the entire airframe with rag tissue, doped on. Apply three coats of coloured dope, preferably sprayed, rubbing down between coats. Finally apply a coat of fuel proofer.

A non-return valve in the fuel pipe was fitted to the original model and made for easy starting with motors where the fuel tended to run back to the tank after choking.

Best flying results were obtained with a 9 X 8 Truflo prop, and 45-60 laps per tank were achieved at 75-80 m.p.h. with the Amco 3.5.

From Roger Cooper

Just been scanning the tethered race car feature – not aeroplanes but just as interesting so don't accept any criticism from ANYBODY!! This might be repeat information, in which case put it down to my failing memory and ditch it without comment.

Years ago – through my interest in Scott motorcycles I got to know Norman Reed in Manchester, one of whose other interests was tethered car racing.

I guess that the stakes might have been a bit higher than the subject of your article because the preferred engine was the Dooling 29 glo (one helluva 'n engine!!).

The racing was done in the very large works canteen at English Electric on the East Lancs Road on the outskirts of Liverpool.

Norman, with some glee and not a little amusement, told me of the time one of the cars was circulating at a speed which made it difficult actually to see the thing going round when all of a sudden there was dead silence, and no car. Now to prevent folks inadvertently wandering into the circle they used to tip the very heavy canteen tables on their side, legs out, to surround the complete circuit. These table had tops about an inch thick, and I guess in those days it would be solid tree wood, not MDF.

Anyway after silence folks started to try to find out what had happened and they discovered the car had broken from its tether and gone clean through one of the table tops and out the other side!!! OOOOPS! I wonder if they clubbed together to buy EE a new table or whether the guy who hooked up the car took sole responsibility – can't ask Norman now, sadly he passed away some years ago!

Serious stuff this tethered car racing - government health warning essential for those living in the nanny state!!

EVENTS

CONTROL LINE – 12 October 2014

Wimborne MAC at Cashmoor in Dorset on A354 between Blandford Forum and Salisbury will be holding a control line extravaganza on Sunday 12 October 2014. Sport flying but Spitfire Scramble will be flown, Chris will bring along some spare models for those who wish to have a go. 6 grass circles and BBQ. There is a portalo. These control line events are excellent and anyone with any interest will thoroughly enjoy the day. <http://wimbornemac.org/> Further details from myself JP 01202625825 jamesiparry@talktalk.net or the CD for the day Chris Hague christopher.hague@ntlworld.com

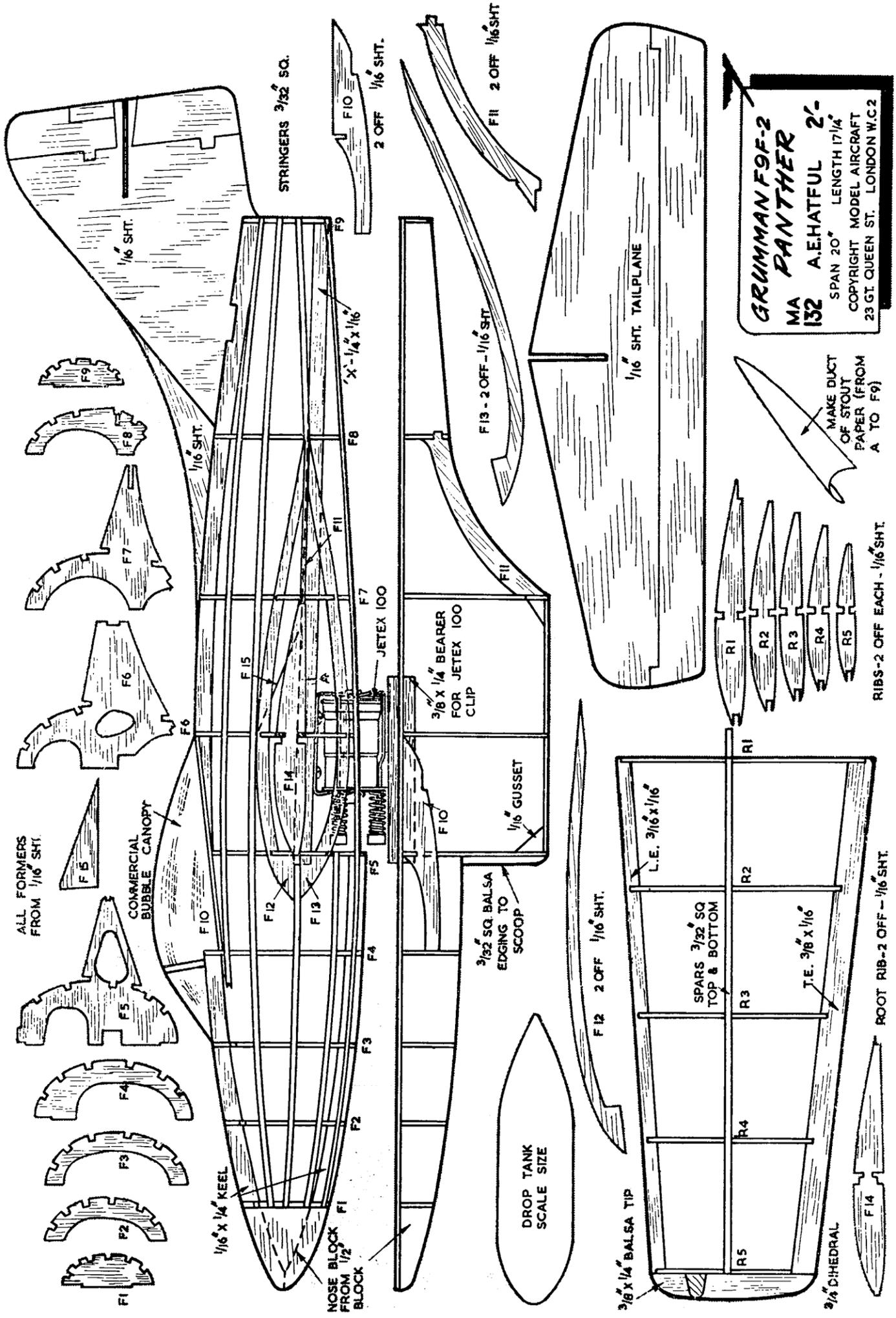
VINTAGE R/C AT COCKLEBARROW – 12 October 2014

No need to mention any more you all know what a great RC vintage event this always is

RC FUN FLY – 26 October 2014 DMFG near Bladford Forum

Also includes control line and free flight. We will be running the final of the Wessex Aeromodellers Tomboy Competition, this too will be the last ever Tomboy comp we will be running. RC models to be scale, classic or Vintage or anything modern but a bit more sedate than flat out and prop hanging, IC or electric the only absolute exceptions being large petrol aerobatic models or any turbine power.

For those who have been here before there is a big change. The Steam Fair resulted in damage to the strip in that where mud built up prior to the event due to traders getting on site we returned to find the strip in two parts with addition of edges ploughed up. The best area 25m x 20m was untouched. After a hissy fit and with the calming tones of John Bainbridge and elbow grease from group members we now have a circular flying strip, at present elliptical, at 60m x 45m but with repairs made and grass coming through that will be increased to a diameter of 80m plus a taxi way doubling as a strip which will be some 140m long and of course pits as usual. If needed we can extend run way to 280m but I doubt that will be necessary. More info from me JP 01202625825 jamesiparry@talktalk.net



**GRUMMAN F9F-2
MA PANTHER**
132 A.E.HATFUL 2'-
 SPAN 20" LENGTH 17 1/4"
 COPYRIGHT MODEL AIRCRAFT
 23 GT. QUEEN ST. LONDON W.C.2

ALL FORMERS
FROM 1/16 SHT.

COMMERCIAL
BUBBLE CANOPY

1/16" x 1/4" KEEL

NOSE BLOCK
FROM 1/2"
BLOCK

STRINGERS 3/32 SQ.

F10 2 OFF 1/16 SHT.

3/32 SQ. BALSA
EDGING TO
SCOOP

DROP TANK
SCALE SIZE

F13 - 2 OFF - 1/16 SHT

F11 2 OFF 1/16 SHT

F12 2 OFF 1/16 SHT.

3/8" x 1/4" BALSA TIP

1/16" SHT. TAILPLANE

L.E. 3/16" x 1/16"

SPARS 3/32 SQ
TOP & BOTTOM

T.E. 3/8" x 1/16"

3/8" DIHEDRAL

RIBS - 2 OFF EACH - 1/16 SHT.

MAKE DUCT
OF STOUT
PAPER (FROM
A TO F9)

ROOT RIB - 2 OFF - 1/16 SHT.

Grumman Panther F9F-2 by A Hatful from Model Aircraft July 1952

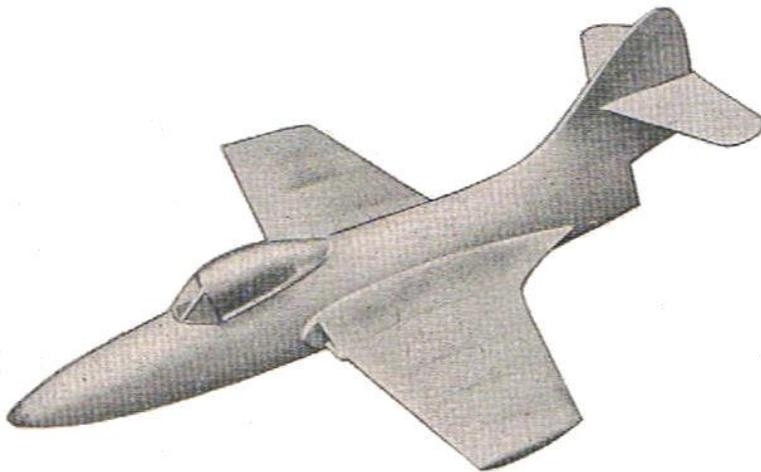
The first model Panther was built soon after the Jetex "100" came on the market. The unit was mounted within the fuselage, completely enclosed except for a ducting arrangement made from cartridge paper and utilising the wing root intakes which were intended to carry air past the unit. Unfortunately, this first Panther proved too heavy to provide the sort of performance we expected and it was evident that the thrust from the "100" was not being used to advantage. By lowering the unit out into the wind into a position which brought the thrust line of the motor coincident with the lower contour line of the fuselage a marked improvement in thrust was obtained. After building a lighter version, with not quite so much dope used in finishing, the Panther flew very well and helped collect information which led to the construction of several smaller Jetex "50" models of jet fighters.

Fuselage -

Cut the outline pieces from 1/16 in. sheet balsa and pin in position on plan together with piece F15 and strip "X" of 1/4 x 1/16 in. Cement the formers in position using a piece of 3/32 x 3/32 in. to line up the notches. The notches in formers F2 to F8 may be cut slightly oversize in order to obtain a smoother stringerline. Add F11, F14, F12, and F13. Cement the 3/32 X 3/32 in. medium hard balsa stringers into the notches in the formers, then add F10, which forms a base for the cockpit cover. Lift this side from the plan and construct the other. Cement on the two halves of the nose block, instal the piece of 3/8 in. x 1/4 in. for the Jetex clip, then fine sand paper the fuselage all over.

Wings

Pin the lower 3/32 x 3/32 in. spar to the plan, then the trailing edge (after notching for the ribs). Cement the ribs in place, remembering to lean rib R1 inwards to obtain approximately 3/4in. dihedral. Cement the leading edge in place and add the top spar. Roughly shape the balsa blocks for the wing tips, then cement in position and finish off with fine sandpaper. Although it is a little more awkward for covering it was found to improve the wing-to-fuselage join if the wings were assembled to the fuselage before covering. Check for equal dihedral each side.



The original was covered with Jap, but lightweight rag tissue has been used since and found to be just as effective. The wing-root fairings look very smooth if you are able to cover them with notepaper top and bottom. Water shrink the tissue and make up a rough jig using several books to hold the nose and tail of the fuselage and the extreme tips of the wings; this should prevent any severe warping taking place.

Continue sand papering the fin, dorsal fairing and tailplane until all sawmarks have disappeared and they are glassy smooth, then cement them in place.

Attach the cockpit cover by running a neat fillet of cement around its edge while held in correct position on the fuselage. Clear dope the whole model holding the fuselage and wing ribs as before until dry to stop warps. Make a "channel" from notepaper to fit into the arched recesses in formers F7 and F8 and extending from the rear edge of the clip to former 9 as shown on the plan. Use colour dope thinly and finish either silver, silver grey or a very dark blue (almost black). Affix the American star insignia on either side of the nose between F2 and F4 and on the port upper and starboard lower mainplanes. Try not to exceed an all up weight of 1 1/2oz. There is a variety of cigar containers made from aluminium and shaped like a torpedo, which when cut and fitted with a balsa tail cone, provides a realistic lightweight drop tank. With the model finished and complete, balance it roughly at the wing spar position, then start test gliding. If there is a slight breeze don't be satisfied with a tilting, half-coming-back-towards-you glide; add weight to the nose until with a good hard hand launch the glide is fast, flat and straight. Now load up your "100" and try a power flight. You may have to remove some of the weight from the nose, but remember the Panther flies fast so try to launch it that way.

queens mostly managed just one), Elgar's stuff was of Empire days when chaps with a tent and a Boy's Own or two sailed for Africa or India or to plant the flag in frozen wastes. Where possible a wind-up HMV gramophone introduced the Enigma Variations to the populace, Elgar an enthusiast of the device (I have one too), and no doubt Pomp and Circumstance was heard along the Khyber Pass.

Still Read Widely

School reading lists turning in favour of UK authors, it's sad that unless sparked to do so youngsters may never discover Gatsby or Munroe Stahr, both based on real people. Education should open doors not close them.

Coventry Cat

Past sixty but well fit as they say these days, this rare MkV Jaguar is busy on the wedding circuit. Seen close to at a Chelsea bash and rich in fine leather, polished wood and thick carpet, a 3.5 litre Standard engine with Weslake head produced a crisp exhaust as the happy couple drove away. Other Jaguars are available on 07889 912 913.

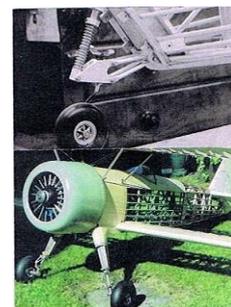


Phil's Fliers

The building season here, do remember the long list of Phil Smith's plans published in S&T this year. Further back there's the Phil Smith Story over several parts in S&T. If more than a plan is required, Ben Buckle kits await in stout boxes all the way up to the Keil Kraft Falcon, towed around in the good old days by Eddie himself as models filled the sides over Fairlop or Northern. Heights (so much action then that printed programmes appeared in booklet form - collectable now). More on other kits next month.

Work In Progress

More views of the Alan Walker Stearman: sprung and steerable tailwheel and a view of the radial built with Williams parts above the u/c carrying 6in wheels. Fairings of litho plate wait to be fitted. The cockpit area in green will carry all instruments and levers. Mighty impressive at 8ft span.



By Wire

First an engine for tethered cars, the Oliver powered Alfa in May's Speaks is all metal and looks good. I have one but with thinner front tyres. In the days of Farina and Fangio the 158/159 Alfa cleaned up despite a massive fuel consumption that got worse. Finally Ferrari countered with an unblown car of modest thirst and the screaming Alfa's days were over. See them now at the super Alfa Museum near Milan. Steve Betney shares my deep enthusiasm for these delightful things that whiz around on wires - cars and VTRs.

Getting The Point

Trenches at times so close that raids were part of the Great War scene, men at the sharp end developed spiked clubs, gear wheels welded to lengths of tube or spring, and dagger-equipped knuckleduetters. Then there was the hat bayonet patented by solicitor Philip Baker, fearsome in a head-down charge. Perhaps £3000 at auction? Cer'tainly rare.



Rolls-Royce Mag

Built to order, a UK firm is offering powerful Garfield Wood-type speedboats driven by Merlin V12 engines. For ages the aero engine has found itself in cars and boats for record purposes or just fun, to my mind far more peep-worthy than a Jet engine. The boat comes with a build file and much info on the engine, fully restored with chromed acorn nuts and gleaming paintwork. Here a Bentley with 42 litre Packard power fires up at Brooklands.



From Alan Abriss

Great job on the newsletter. Always big fun to read (and look at photos) about modeling activity across the pond.

I'd like to know if you could possibly put a mention about my latest video production at the end of a future issue of S&T. It's a 2 hour documentary covering the 2014 FAC Nationals in Geneseo, NY.

I've attached the press release and photo of the DVD for your use.

Thanks and thermals,

<http://www.homegrowntv.com>

Free Flight Videos now has secure internet credit card facilities.

The 2014 FAC Nats DVD and The 2014 Free Flight Nats DVD are now available.

alan@alanabris.com



Homegrown TV Productions

Alan Abriss

94-20 66th Avenue Suite 1G Rego Park, NY 11374

www.homegrowntv.com www.alanabris.com

718 Press Release

10/5/2014

Alan Abriss is pleased to announce the release of his newest project, The 2014 Flying Aces Club National Championships. This 118 minute DVD features highlights from this year's 4 day contest.

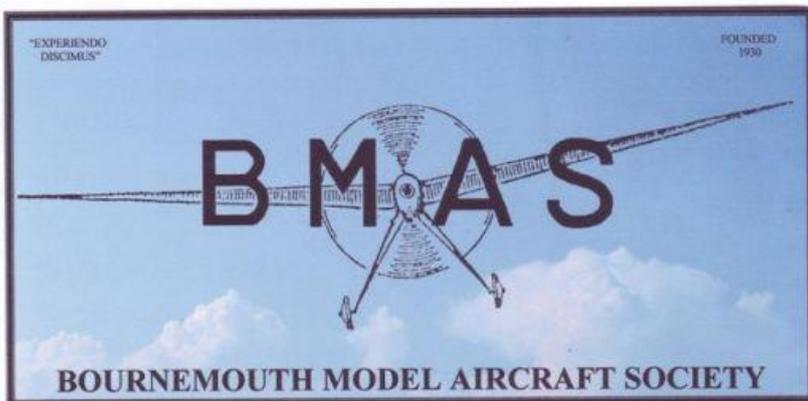
Every two years in the middle of July a group of scale model airplane builders, the Flying Aces Club, meets at the National Warplane Museum's HAG field in Geneseo NY to fly their models.

The airplanes these model builders fly are highly detailed miniatures of real aircraft. Most of these models are of museum quality. But unlike models seen in museums these models fly, and fly very well indeed.

The FAC Nationals DVD captures the fun and camaraderie of the modelers as they fly their airplanes. Featured are individual flight demonstrations and mass launches. In a mass launch as many as 30 models take to the air at the same time in mock dogfights and air races. They are very exciting to watch. The members of the Flying Aces are a great group of guys and gals. They build some amazing airplanes and it is these airplane models that are the true stars of this DVD!

If you attended the FAC Nats then this DVD will make a nice souvenir of the contest. It is also good opportunity to see the action you missed while flying your models. If you did not attend then this is your chance to see the best scale model contest of the year.

The DVD is \$20.00 plus \$4 S&H available from Alan Abriss 94-20 66th Avenue Suite 1G, Rego Park, NY 11374 Make checks payable to Alan Abriss. Credit cards can be used for secure online ordering from <http://www.homegrowntv.com>



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FREE FLIGHT ONLY

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TUESDAY 25TH NOVEMBER 2014
7pm to 10pm**

**ALLENDALE CENTRE
HANHAM RD. WIMBORNE BH21 1AS
FREE CAR PARKING IN PUBLIC CAR PARK IN ALLENDALE RD**

**COMPETITIONS incl GYMINNIE CRICKET LEAGUE
ALL FLYERS MUST HAVE BMFA INSURANCE
FLITEHOOK NORMALLY IN ATTENDANCE
Adult Flyers £5 Spectators £1.50
CONTACTS: JOHN TAYLOR**

Flitehook Indoor meetings at Totton - Southampton

Sunday 12th October 2014

Flitehook Indoor Free Flight Meeting, Totton Community Centre, Hazelfarm Road, Totton, Southampton, SO40 8WU. 10.00a.m. to 4.00p.m.

Contact Flitehook Tel. No. 02380 861541

Sunday 9th November 2014

Flitehook Indoor Free Flight Meeting, Totton Community Centre, Hazelfarm Road, Totton, Southampton, SO40 8WU. 10.00a.m. to 4.00p.m.

Contact Flitehook Tel. No. 02380 861541

Sunday 11th January 2015

Flitehook Indoor Free Flight Meeting, Totton Community Centre, Hazelfarm Road, Totton, Southampton, SO40 8WU. 10.00a.m. to 4.00p.m.

Contact Flitehook Tel. No. 02380 861541

Sunday 8th February 2015

Flitehook Indoor Free Flight Meeting, Totton Community Centre, Hazelfarm Road, Totton, Southampton, SO40 8WU. 10.00a.m. to 4.00p.m.

Contact Flitehook Tel. No. 02380 861541

Sunday 8th March 2015

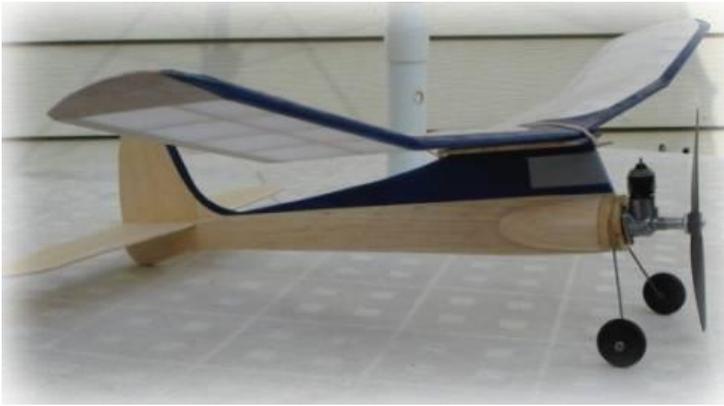
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Contact Flitehook Tel. No. 02380 861541

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