

## Sticks and Tissue No 60 – November 2011

I'd like to thank all the contributors, without whom this newsletter would not be possible.

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](mailto:JamesIParry@talktalk.net)

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. The content does not follow any logical order or set out, it's "as I receive and put in".



One a few photos sent by Jörgen Daun, somewhere in Sweden looks fantastic

## Old School Model Aeroplane Factory

The plan was to bring news of another kit along with photos however that has changed.

Derek Foxwell sadly has had a heart attack and is now in hospital on the road to recovery. I guess it may be a month or two before he can even consider producing more kits. His wife Val is trying to post out orders and will do although no new orders will be taken however she too is under additional pressure as it is her father's funeral this week so please be patient and hopefully things will get back on track in the New Year with more kits in the pipeline. I'll update the situation in next S&T.

### Colin Smith has an email address!

Now it is dead easy to get hold of him and order plans etc

[csmithbmth@gmail.com](mailto:csmithbmth@gmail.com)

### From Ian Mander

Hi James, I hear that David Kinsella has been reminiscing about the ME via you magazine and wondered where I am. Well we now live in New Zealand and have a few acres and are trying to live the alternative life. We grow all our own fruit, veggies and meat, keep bees and generally are self sufficient. I still build models but not so much now as this type of life does not leave a lot of spare time or finances but the satisfaction of producing all your own with your own hands and in the sunshine is worth it. I do miss the UK modelling scene but you can't have everything. I would be grateful if you would pass this to David as I used to enjoy his company and would like to contact him again. Ian Mander

### Tomboy Worldwide Postal Event 2010 -11 From Tony Tomlin

The Tomboy Postal event for the 36" R/C Tomboy finished 31st October 2011.

The entries were a slight improvement on previous years but still poor when considering the number of R/C Tomboys flown throughout the year.

Thanks go to all the keen Tomboyists who made an entry and congratulations to Curzio Santoni.

Tony Tomlin.

Name	Date	Time	Location
Curzio Santoni	19.07.2011	19min 37secs.	Rieta Italy
Stephen Powell	24.04.2011	16mins 38secs	Middle Wallop Hants UK
John Strutt	22.08.2011	16min 00secs	Landion Essex UK
Jeff Fellows	24.04.2011	13mins 44secs	Middle Wallop Hants UK.
Allen Teal	27.11.2010	12mins 47secs	Thames NZ
Tom Airey	24.04.2011	11mins 11secs	Middle Wallop Hants UK.
Tony Tomlin	24.04.2011	11mins 02secs	Middle Wallop Hants UK.
Lustrati Silvano	25.09.2011	9mins 57secs	Rieta Italy.
Neil McDougall	26.02.2011	5min 26secs	Levin NZ
Graham Main	24.09.2011	4mins 46secs	Matarau NZ
Tascone Valeriano	25.09.2011	3min 50secs	Rieta Italy
Wessely Gianfranco	25.09.2011	2min 30secs	Rieta Italy

*(2012 I reckon all should make the effort to email times to TT and there could be 50+ competitors JP)*



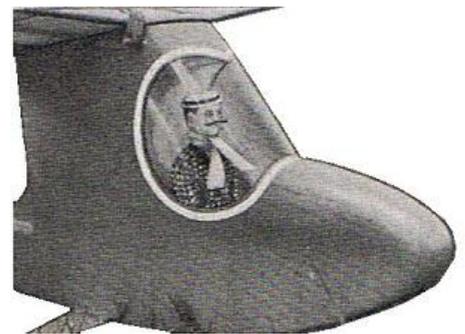
**Vic Smeed's '53 Bowden Trophy Winner a 44" pusher sport model for engines up to 1 c.c. Super-stable, this is the 'plane for perfect r.o.g. take - off and landing. From Aero Modeller October 1953**



Just about all of a model's ailments centre round, or affect, the C.G. To design a trouble-free model is therefore simple—don't let it have a C.G. "Pushy-Cat" is one model which definitely hasn't one, for, although it balances where indicated on the plan, the vertical factors bring the true C.G. to a position almost one inch outside the airframe, in thin air! Does this produce visions of the model scudding away and leaving its C.G. standing?!! Seriously, "Pushy-Cat" is an attempt to get out of the rut while still retaining reasonably simple construction, easy trimming, and good flight characteristics. The appearance is not far from scale (remember the "Scheldemeuw" and the "Carden-Baynes"?) and the lay-out is of particular interest to concours builders, since the only part of the model likely to be affected by fuel is the leading edge of the fin, and the all-sheet fuselage offers an excellent base on which to build up a high finish. The configuration also lends itself to flying-boat adaptation, and a suggested removable "shoe" is shown on the plan.

One minor snag is that rotary-valve motors will require a left-hand air screw, since they will not run "backwards". A plastic prop of suitable diameter can be warmed in an oven until soft enough to be twisted to reverse pitch, or a wooden prop carved from a beech blank as illustrated, which takes less than twenty minutes. Sideport engines, such as the Mills 75 used on the original, can use an ordinary airscrew put on "back to front", the engine being run in the opposite direction from normal.

Building the model is Very, straightforward; use softish balsa and keep colour-doping to a minimum if a .5 cc motor is to be used. Space bearers as required, but check propeller clearance. The cabin top front and rear engine fairing are the only awkward spots; very soft block



may be used at these points if desired. Cover the entire model with lightweight Modelspan. The small strip of aluminium cemented on the rear of the rudder enables the 1/16 in. sheet to be bent slightly across its grain for rudder trim, without springing back straight. Balance the model on the engine bolt as shown, using ballast in the box provided, if necessary (none was needed on the original). Tailplane packing for glide trim should not exceed 1/16 in. —add or remove ballast if more is necessary. Slight left rudder will give a straight ahead or wide left-hand glide circles, which proved most satisfactory on the prototype.

## Belair

Pushy Cat by Vic Smeed Partial Kit. Plan is included and shows RC assist conversion. Suits 400 electric or 075 i/c. Price: £38.00 Partial kit includes fuselage sides, formers, wing ribs, tip shapes, fin/rudder, u/c mount, just add strip and sheet to complete. Kits include a laser cut and folded alloy undercarriage.

<http://www.belairkits.com/Productdetail.asp?Id=562>  
01362 668658



Jörgen Daun's Pushy Cat built from the Belair short kit.

## From George Stringwell

I thought people might like to know about the "Frog Build Off" which is running on the Ezone currently, with a finish date of 30th April 2012. It was partly inspired by the success of my Frog Tom Tit Senior Series model scale-up (S&T No. 58) and encouraged by the support of other fans of Frog models I decided to give it a try, with a starting date of 1st October. As the plan for the scaled up Widgeon was not ready, I decided to get a flying start and built the framework of a 33" "Zephyr" from a plan I already had over an intensive weekend 1st/2nd October. Ray Jennings from Northern Ireland also made a prompt start on his 3.5 times (42 inch) scale-up of the 12 inch "Speedy" from the Junior Series, but he kept up his momentum rather better than I did and the model was finished and flown on the 10th October! Inspired by the Speedy's distinctly "Spitfirish" lines he subsequently applied a delightful minimalist decor scheme - see below



Not content with that feat, Ray has subsequently completed another scale up from the Junior Series, a 5 times (60 inch) "Scamp", this time with ailerons, which as at the time of writing (13th November) is

awaiting test flying - see below. These feats of high speed construction have earned him the nickname "Billy Whizz" on the forum! These two models emphasise again how well the delightful lines of these little Frog rubber jobs respond to the scaling process.



You can find the Frog Build-Off thread at <http://www.rcgroups.com/forums/showthread.php?t=1510260>, so far a total of 12 models have been listed, five build threads have been opened three models completed and two have flown (links to the build logs are in the first post on the Build-Off thread), not bad for the first six weeks! Needless to say, if anyone feels like joining in, please feel free, the more the merrier - no prizes although there will be a vote for people's favourite model at the end, but you finish up with a great model, or two, and I find that joining in with something like this gives a great incentive to get cracking and build a model that you may have been fancying for a while.

After my initial quick start I couldn't keep up with Ray but did manage to finish and fly my "Zephyr", photos are attached. This was by way of a nostalgia trip for me, as I built a Zephyr fifty-odd years ago, free-flight of course, and the last I saw of it was as it disappeared at great height into the distance with my cherished Frog 50 on board! Thanks to modern electronics, that shouldn't happen again. The finished model weighs 9 ounces and performs perfectly on around 35 watts from a little outrunner electric running off a 2S 450 lipo which gives either 12 minutes of full throttle whizzing around or up to 20 minutes of more genteel flying.

Hopefully the build-off will produce lots of interesting models over the next five months, there are certainly plenty of attractive Frog designs to choose from. I was going to start the 1.5 x Widgeon, but as someone else in the Build-Off is already doing a Widgeon, I decided in the interests of variety to draw up a double size "Mamba", the jet-style 19 inch rubber model which used similar construction to the Senior Series models. With aileron and AMT controls and a 200 watt outrunner this should be fun! Details when it is built.

By the way, I have just finished drawing up the plans for the double size Tom Tit for Q&EFI, and it should be appearing there at some point in the future.





*The following is the start of a series over the next few issues of anecdotes and photos sent by Jim Newman, all interesting stuff and a great read. It speaks for itself here's part one.*

### **From Jim Newman - Greetings from a very soggy Michigan.**

Thanks to my good friend, Don Stewart in the upper half of Michigan, I am now able to capture your wonderful S & T Newsletters, then relive some of my mis-spent youth with the Swindon MAC, back in the late '40s, followed by many happy hours flying f/f on Cranwell's North 'drome, with my fellow RAF Apprentices and often at RAF Lyneham where my father was the SWO. I also enjoyed some wonderful slope soaring above RAF Yatesbury, up by the White Horse on the A4 near Calne, using a single channel version of Dick Twomey's Cobra glider, that was published as an AM plan.

Following my career in the RAF, followed by some time at BAC on the Concorde project, among other interesting things, I came to the USA to join Carl Goldberg's....then, later, Midwest Products establishment. It was while at Midwest that I had a very interesting experience. As you might imagine, being in the hobby industry, I made many good friends among other manufacturers and model magazine.

Editors.....especially since I often did some writing and linework for several of them, Model Airplane News and Flying Models in particular. One of those Editors was Bill Northrop of MODEL BUILDER. Now I think it can be said that most avid aeromodellers can look at a published plan then - many years later - recall every line and word on it. I was no exception.

Imagine my interest that quickly turned to horror, when I identified a plan of the Blackburn 1912 Monoplane published in MODEL BUILDER.... and I quickly realised that every line and arrowhead, was identical to the AEROMODELLER plan published several years earlier and reproduced here, in this S&T 59, Batch 7. What is more, I KNEW the modeler who had submitted it to Model Builder for publication. That same modeler frequently appeared at Midwest "to visit" ....and the less said about that the better.

That AEROMODELLER plan had been traced, line-for-line, then sent along to the delightful Bill for consideration. Being very familiar with the Copyright Laws, I immediately 'phoned Bill Northrop to advise him of the "lifting". To his great credit, Bill Northrop immediately withdrew the plan from his catalog and issued an apology. It seems pretty obvious to me that the offending modeler did not recognise what a very small aeromodelling world this is.... and how very quickly the word can be spread.

As a matter of interest..I STILL possess my ED "penny slot" 2cc AND my Albon Dart .5cc that I often flew with the Swindon club, up at RAF Wroughton, some 62 years back. That ED was purchased for me as a birthday gift in '47, right after Dad came home from Burma, in that bitter 1947 Winter, brown as a berry and wearing two RAF overcoats! (Somebody had to turn out the lights over there.)

In those days the ED 2cc cost 4 Pounds and 4 Shillings. A sizeable chunk out of a Warrant Officer's weekly pay. Every weekend I would cycle from our home at RAF Lyneham, up that notoriously steep Cliffe Pypard

Hill to Broad Hinton....thence along the A361 to RAF Wroughton. The return journey was no picnic either. I was pedalling into the prevailing Westerly all the way....and with that huge cardboard model box tied across my back. Couldn't win for losing.

This past year I was delighted to again have contact with John Hodey, who STILL is a member of the Swindon club. He took over as the Junior Rep when I left to do my worst to HM's equipments. I must say that, to its great credit (and the taxpayer's relief), the RAF managed to survive my machinations relatively intact! I now see that the UK politicians are now doing what I failed to achieve!!!! Happy landings....to the Swindon MAC in particular.

Per Ardua Ad Astra.....Jim Newman, Kent City, Michigan, USA.

*After the above I asked Jim if he had any photos etc etc*

I'll check the police files, James....and with any luck I might find one or two where I am not holding that number across my chest! Seriously.....As a typical "almost broke" RAF Apprentice, the expense of a camera, film and balsa expenses did not go hand-in-hand, but I might find a snap or two. Just in case you wonder, I am the same "bod" who did the two pages in Model Airplane News for 26 years. Title of the column was HINTS and KINKS. Ugh! The late Walt Schroeder was responsible for that dreadful title.

In more recent times I wrote and illustrated A VIEW FROM HERE in Flying Models for five years. It was one page of text describing a full size aircraft, its construction, a bit of its history, a little service humor.... where appropriate....and some technical stuff, accompanied by a WREN style aircraft caricature...and a full-page 3-view drawing. A selection of the columns now is available in book form from Carstens Publications (the publisher of FM).

I have to admit that the pages were greatly inspired by AEROMODELLER's E.J. Riding's work, many years ago. I was an avid AEROMODELLER and AEROPLANE SPOTTER reader from early 1943 and onwards. I also drew inspiration from the late Chris Wren, who became a good friend, a long time back.

He offered me many pointers in caricaturing aircraft.



A poorly lit "Brownie box" shot of TROLLEYBUS, 1952.

The elegantly manicured finger nails are those of "Willy" Wilmore.

Yours truly at age 15, back in the Stoneage (1949). I had just run the length of South Cerney (Glos) airfield!

This was an extremely successful flyer that picked up many "firsts" for me. Very attractive lines and I flew it in some horrendous winds (I didn't know any different!) despite its largely 1/8" square construction (including spars) for its 60 inch span.

I saw a photo of this glider in a magazine and managed to obtain a copy of the plans from an airman (then serving at RAF Lyneham) and who also was a member of the West Essex club with Cyril. I STILL have all the rib templates in my rusty 1949 biscuit box of such items!



Taken at RAF South Cerney in 1949, near Cirencester, Glos., on a very grey day, following a club contest. I am at the far right in the white tee shirt and holding my Cyril Mayes glider. To my left, in uniform, is Warrant Officer Ron "Digger" Ewins of the R Australian AF and who was on an exchange posting to RAF Lyneham. He was a Flight Engineer on the Hastings and is holding my Elfin 1.8 cc Angular Angus that was designed by clubmate Merv Greenwood.

With the Agreement of the club, I loaned Ron my model in order that he might compete with us. He won! At lower left of the photo. Kneeling, in his white shirt, is then 18 year old John Bunting from Box, then an Apprentice Meteorologist at RAF Lyneham. His superb workmanship on his models defied all description and his APS Fugitive glider, that he is holding, was NO exception. The last I heard he was restoring ancient pianos at Farnborough, some years ago. To John's Bunting's left, in the jazzy pullover is Merv Greenwood with his o.d. Angular Angus in front of him.



Immediately under the right wing of the Black Magic (center) is Jim Cavanagh (with open jacket)... the, then, proprietor of the Swindon Model Shop and who always turned up at clubmeets with a bootful (trunkful?) of merchandise and spare props! The lady beneath the model's left wing is Sylvia Smith....the delightful lady wife of Ron Smith, the very efficient and organised Club Chairman. Ron Smith is in the white, open neck shirt and kneeling at center. To the left of Sylvia Smith is my old Chippenham Grammar School classmate, Ted Backhouse, who also



was one of my strongest sprint competitors at school! John Hodey is also in there somewhere. One thing that sticks in my mind is that, after the meet, while a member was flying his new control line model off the taxiway, with a lot of us standing around....an idiot in a Morris Eight drove slowly into the circle, amid many shouts of "Stop!" ....and arrested the model mid flight with his windscreen! When W/O Ron Ewins left to return to Australia, he came down to our Married Quarter and left for me a magnificent f/f Frog 45 and its Frog 100 diesel. It was like a piece of furniture....finished in medium blue flying surfaces and a glass-like, natural balsa fuselage. I flew it for many years at Lyneham. However, I always felt that the '45 could have done with a shade more dihedral.

Swindon MAC as it appeared in the SWINDON EVENING ADVERTISER.

I think this was my first ever scale model.....a 26" o.d. SE 5a, with an Albon Dart .5 cc. On those calm summer evenings it flew circles so stably ....usually landing only a few yards away.

One evening it landed on the port wing of a nearby parked Handley Page Hastings (a row of which were just out of sight at the left of the photo)....taxiing to stop between No. 1 and No. 2 engine nacelles.

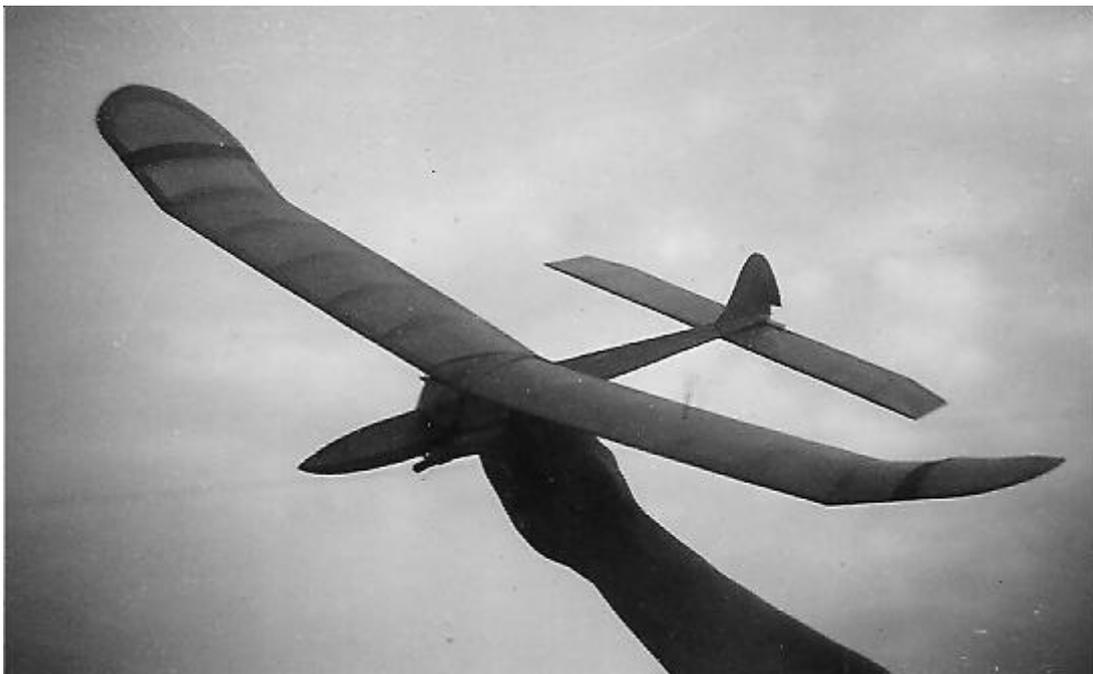
Cycling up to the servicing hangar, I accosted a Flt Sgt who was a nearby neighbor. I told him of my dilemma, gave him the aircraft serial number...and without any further question he handed me the aircraft key!

As you might imagine, this 15 year old was able to open the rear door, go up the fuselage, open the left over-wing Emergency Exit window, retrieve my model, replace the window, lock the aircraft and immediately return the key! I think the whole hangar servicing crew (including the Engineering Officer) gathered around my little SE 5a, while I gave them chapter and verse on the history of that aircraft in WW1....!!!!!!

Can you imagine that happening today?

While at Cranwell, during 1952 I had a stab at Jetex and this is what came off my bench...an o.d. Jetex 100 model. I think span was about 18". Fuselage was a tissue covered diamond at the front end, ahead of the Jetex. The rear boom was just a simple, flat bottom triangle. The profile was 1/16" balsa along with a 1/32" sheet horizontal crutch and small triangle formers to keep it all aligned. Covering was red and yellow tissue.

It flew extremely well, but on the few 'bob' a week allotted to an RAF Apprentice, after buying Brasso, Blanco, stamps, toothpaste and shoe polish, there was not enough in my budget for on-going Jetex fuel expenses, let alone a "char" and a "wad" at the NAAFI! In the end I gave it to somebody more "well heeled" that was I.....



*(Lots more from Jim over next few months JP)*

## **Help needed with Keil Kraft plans From Derick.**

I am trying to collect the larger flying scale rubber model plans by Albert Hatfull and Louis A Heath. I have the following Louis A Heath ones. Curtiss Tomahawk 25", Boulton Paul Defiant 27", Heinkel He 112 21" and Spitfire 24". The Heinkel is numbered as kit 14 which implies there was at least that number of models in the range.

I also have the Albert Hatfull ones, Typhoon 26 ½", Spitfire clipped wing 22", Piper Cub 26 ½" Zeke (Mitsubishi Zero) 24" Focke Wulf 190 25" and Tempest 26".

From the 1949 Keil Kraft handbook I can see I am still missing Lysander 22", Mustang 24", Hurricane 25 ½", Thunderbolt 27", Barracuda 25", Firefly 25"

Any help getting these would be gratefully appreciated as I am trying to create a library of these models for posterity. I have no need to keep any plans, I just need to scan them so they can be kept as a record of Keil Kraft history.

I am also trying to trace plans for the Keil Kraft Brigand 60" cabin free flight model, Consort 72" r/c low wing semi scale model, Student r/c sport/trainer model and the Jiffy c/l team racer plans.

Contact me on 01524 62910 or email [modelplans@talktalk.net](mailto:modelplans@talktalk.net)

## **Cocklebarrow Farm Meeting Loses to the Weather By Tony Tomlin.**

Sunday, 9<sup>th</sup> October saw another vintage R/C meeting ruined by the weather, as so many have been in 2011. Twenty-five fliers signed in at the control tent for the third Cocklebarrow Farm event this year. Although some regular faces were missing, the turnout was good but with many models staying safely in the fliers cars.

As the fliers gathered, the wind was just about flyable but soon gusts of 15 -18mph were recorded. Flying was just possible with Rob Smith [Scorpion], Ian Andrews [Stentorian] and Nick Skyrme [Privateer], showing the way, but having problems with landing due to turbulence. Tony Tomlin lost out to the conditions as his Peter Fisher designed Meson, gliding in on a 'dead' engine, was literally hurled against one of the unyielding, drystone walls surrounding the site, breaking the engine plate and other damage. A new model to most of the fliers was the twice size, 88" span Tomboy of Boycott Beale. An electric model, it did manage some impressive flights very early in the day.

The final rounds of the 2011, R/C Tomboy League for the Mills.75 powered Tomboy3s and the larger Mills 1.3 powered, Tomboy Seniors class were to be held. After some proving flights by Tom Airey and Andrew Fellows, it was obvious that, unless the wind moderated a little, the two closely contended events would not take place. At 12.30 the conditions had worsened, with the wind gusting at 22mph, and regretfully it was decided to cancel the competitions and proceed to the league awards presentation.

Val Howkins, who with husband Paul has been running the Cocklebarrow Farm events for over 20 years, [thank you Val and Paul] presented the excellent glass trophies, kindly donated by the Parry family. The winners were father and son team, Jeff [Tomboy 3] and Andrew Fellows [Tomboy Senior], who had flown consistently over the year. Second place in both classes went to Tom Airey, with Tony Tomlin 3rd [Tomboy3] and Derek Collin 3rd in the Tomboy Seniors. For the full result list see below.

There had been 9 Tomboy events planned over the year but due to the weather conditions only 6 took place. Two were run in what could be considered good conditions and it was less than ideal [windy] for the others. The numbers of entrants were down on previous years but, considering the poor weather, this was understandable.

It is hoped to run a similar number of events in 2012. In the future, after a number of requests, the MP Jet .06 will be eligible for the Tomboy 3 class, fitted with its metal 2cc fuel tank.

For further information on R/C Tomboys in 2012 please contact:

Tony Tomlin, 02086413505 / email [pjt2.alt2@btinternet.com](mailto:pjt2.alt2@btinternet.com).

### **Tomboy 3 League Results**

1/ Jeff Fellows 46 pts      2/ Tom Airey 43pts.      3/Tony Tomlin 37pts.

4/ Stephen Powell 27pts . 5/ John Strutt 22pts. 6/ Brian Ball 20pts.  
 7/ Paul Netton 17pts. 8/ James Collis 16pts. 9/ Brian Brundell 10pts.  
 10/Chris Bishop 8pts. 11 /George Ford 6pts =12/Tony Overton / Derek Collin 5pts 13/  
 Derek Etheridge 4pts 14/Steven Roberts 3pts 15/ Bob Young 2pts. 16/ Dave Stock 1pt.

**Tomboy Senior League Results**

1/ Andrew Fellows 28pts\*\*. 2/ Tom Airey 28pts\*\*. 3/ Derek Collin 14pts.  
 4/ Tony Tomlin 11pts. 5/ Stephen Powell 9pts. 6/ Brian Ball 8pts.  
 =7/ James Parry / Tony Overton 3pts. 8/ George Ford 2pts.

\*\* final position based on number of highest scores



*Val Howkins and Tony Tomlin*



*The victorious Fellowes*

**From Bill Wells**

Last month was not good weather wise so I was pleased to meet up with my old mates who I had not seen for a while for a chat at the local Model Aircraft ‘Bring and Buy’, one evening. Being a tight fisted Pensioner the man at the door had almost to bring me round when he said, ‘£3 to get in mate’. As I stood there mumbling under my breath he said, ‘Sorry mate but we have to pay for the hall but yer entrance ticket goes into a raffle, you might be lucky’. I have never been lucky enough to win a raffle yet, I think. So what happened I won the raffle prize, an ARTF (new in box) Xtreme Stick! As I get back to my seat my mate says, ‘I am surprised you accepted that’. ‘Why’, I asked. ‘Well you will be drummed out of Sticks and Tissue if they get to hear about you having an ARTF, Polycote, laser cut all singing and dancing RC model’.

Well I hope you are not too offended!! Let's get back to the mid 1960s. In the previous years I had managed to get my father to buy me a DC Merlin and a DC Sabre now I wanted something bigger. I had the choice a DC Rapier or an ED Racer. Father lashed out and bought me the Racer. Apart from the rear induction which limited the tank space a bit the Racer was ideal for an APS Crackerjack. As far as know The Crackerjack was designed by H. G. Hundleby and first appeared in the October 1948 edition of Aeromodeller. Even in the 1960s the Crackerjack was considered an old model even though it was a sidewinder and had a drop off undercarriage. That said it flew extremely well and could fly continuous loops or do horizontal eights on 50 foot lines. But duration was a meagre just 10 laps. So once off the ground you had to get on with it as the flight time was limited. With the drop off undercarriage it could be self lunched using a stogie.

My problem was still transport so I decided to make another Crackerjack but make it with a detachable wing!! This simplified the fuselage construction. I made this model a year or so after the original Crackerjack. The engine used for this model was OS 19. Interestingly in recent times I was careless enough to mention I had an OS19 in front of a young 'Know it all' model Flyer. He said I had got it wrong it would be a 20 or 25 as OS never ever made a 19, they made a 20 but never a 19. 'Oh dear' I do meet them!! I felt rather smug as I said, 'Well if you say that OS didn't make a 19 then you must be right'!! After the problems with the duration of the Original Crackerjack I made sure the tank in this model was big enough. Performance wise it was similar to the Original except it was faster.

If we now roll the clock forward 30 years or more. The OS 19 powered, modified Crackerjack was up and running again on 10th September 1995 there have been the odd flights since then up to 2007. Recorded speeds were 56.4 to 64.9 mph. The nylon covered wing has lasted well but it is now warped with the passage of time (a bit like the owner) and bunts tend to loose line tension quickly!

My original Crackerjack did not survive well. The tissue covering hardened and cracked revealing a considerable amount of damage to the left wing at the root. This took some time to get round to fix. It was last flown in December 2001 at a speed of just under 45 mph.

The Crackerjack design is a blast from the past. It has a very large elevator and no flaps. Just look at that small frontal area and the general light weight construction. A very early stunt model with a drop off undercarriage. A model ahead of its time?

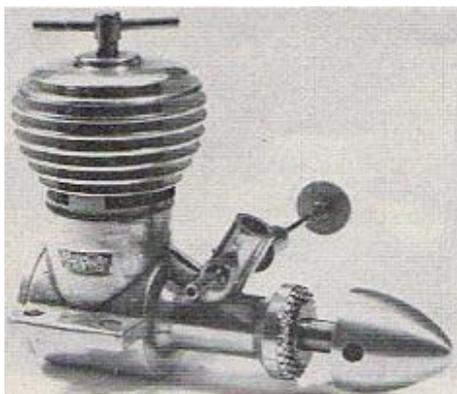




## ENGINE TEST By Peter Chinn From Aero modeller February 1967

Alouchery Cormoran l.c.c. Diesel Engine

. . . an interesting different design, attractive in appearance, easy to handle . . . “



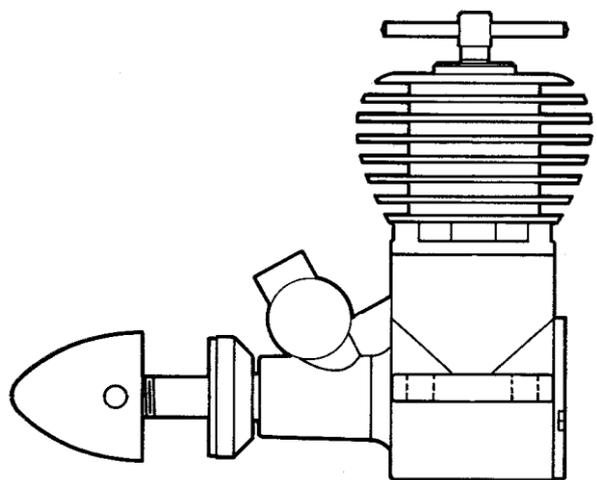
As we mentioned in last month's "Latest Engine News", the Allouchery Eclair engines were among the very first diesels to be manufactured. As with most French makes, they are currently made in only very small quantities and are little known outside France. Unlike the older Eclair models still in production, the Cormoran is a relatively modern design, employing shaft-valve induction and a compact short-stroke layout. It nevertheless has some features that take it out of the rut. These include multiple transfer passages within the 'wall of the main casting and, most unusual of all, rotary-valve timing that is decidedly at variance with accepted practice. Externally, the engine is distinguished by large diameter cooling fins and an all-over polished finish.

The design and construction of the Cormoran is basically conventional insofar as it uses a cast aluminium alloy crankcase with integral crankshaft bearing and screw-in rear cover; a hardened steel cylinder liner externally threaded to screw into the crankcase and a screw-on machined alloy finned cooling jacket. The crankshaft, of heat treated steel, has a full disc web and no counterbalance. It has a 6 mm. dia. journal and a 4 mm. solid crank pin. The gas passage through the shaft is 3.8 mm. and is fed from an oval port in the crankshaft. This allows a normal induction period of 160 degrees of crank angle but is positioned to give uncommonly early opening and closing.

### Unorthodox valve timing and transfer porting

It is unusual for a rotary-valve, whether shaft, disc or drum type, to open earlier than 30 degrees after bottom dead centre. Most do not open before 35-45 degrees and some open much later: for example, the current DC Spitfire, tested in this series last July, was timed to begin admitting gas at 85 degrees ABDC - though it must be remarked that this is almost as unusual, in lateness of opening, as the Cormoran is unorthodox in earliness of opening at only 5 degrees ABDC. Even more unconventional, however, is the fact that the Cormoran's rotary-valve closes 15 degrees before TDC. In every other model engine we have tested to date (and these number several hundred), the induction port has closed after TDC, normally not less than 40 degrees ATDC and as late as 50-60 degrees ATDC in a high-speed racing type motor. The Cormoran's induction timing of 5 degrees ABDC to 15 degrees BTDC might be expected to result in some unusual performance or handling characteristics. In fact, one would not normally notice any marked change but performance tests, as we shall see in a moment, did reveal some differences which may well be attributable to this departure from orthodox timing diagrams.

Ahead of the main journal, the shaft is reduced to 5 mm. for the prop shaft length, the intervening section being tapered to provide a friction drive to the machined alloy prop driver. A hexagon nut and washer, plus an optional machined spinner-nut, are provided. The shaft runs direct in the crankcase material, no bushing being used. The bearing length has a minimum o.d. of 10 mm. and no webs are used to brace it to the crankcase except at the top behind the air intake. The air intake, bored 4.4 mm., is raked forward 30 degrees from the perpendicular and carries a brass



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spraybar, externally threaded for needle-valve adjustment, via a soldered on brass split thimble. There is a wire circlip around the thimble which maintains just the right amount of stiffness in the adjustment. The needle-valve stem terminates in a large diameter brass adjusting knob. That part of the crankcase casting which forms the lower cylinder casing is internally threaded to accept the screw-in cylinder liner. The wall of the casting is 2.8 mm. thick at this point and, instead of using transfer flutes in the casting or the cylinder liner, this thick wall is employed to transfer the charge by means of twelve 1.5 mm. dia, holes bored vertically through it and spaced at 30-degree intervals.

An annular chamber is formed at the top of these multiple passages and, from this, the gas is fed into the cylinder via three groups of three small transfer ports. through the cylinder wall immediately below the flange. These ports which also have a diameter of 1.5 mm., are inclined at approximately 30 degrees to the cylinder axis and each group is spaced at 120 degrees around the cylinder, breaking into the bore between the three exhaust ports. They open approximately 15 degrees after the exhaust ports have opened. Cylinder port timing, according to measurement of the test engine, was: exhaust 63 degrees of crank angle each side of BDC; transfer 48 degrees each side of BDC.

The piston is of simple design, with shallow conical crown and a thick (1.5 mm.) skirt. The gudgeon-pin is fixed in the piston, apparently by peening the ends, the pin being unhardened for this purpose, and the connecting-rod is a very substantial item of hardened steel.

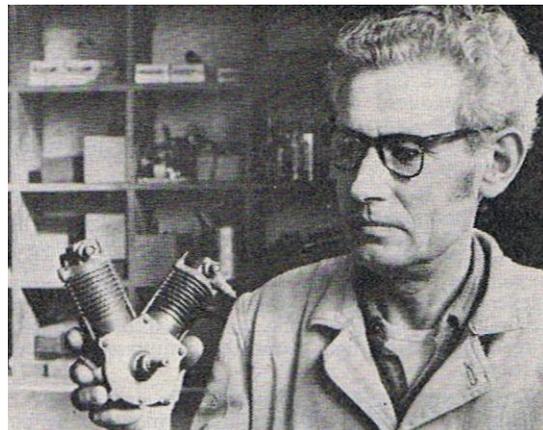
### **Performance**

The Cormoran test sample was acquired by the Editor, while in France, from the manufacturer and it was obvious that the motor was already adequately run-in as received. We nevertheless gave it a further thirty minutes running time prior to actual testing. No silencer was supplied with the engine and so far as we are aware, Allouchery does not, as yet, offer such accessories. The Cormoran was therefore tested "unsilenced".

The Cormoran liked to be port primed when cold but started easily at all times. Except when re-starting the engine quickly after a run, we found it best to open up the needle-valve slightly, from the best running position, and to then close the needle again only after the engine had warmed up and the compression adjustment had been re-set. If the needle-valve was closed too soon, there was a tendency for the engine to cut out abruptly during compression adjustment. Maximum torque recorded by the Allouchery on test was 8.4 oz. in. at 8,000 rpm. This is quite good for a 1 cc. engine. Beyond this speed, torque declined at an ever-increasing rate and when plotted, indicated a peak bhp of just on .085 at 12,000 rpm. This is somewhat less than the output delivered by the most powerful of current 1 cc class engines and it seems reasonable to suppose that the very early closing of the rotary-valve (which must inevitably limit the breathing ability of the engine at high speeds) is, to some extent, responsible for this.

These performance characteristics are, of course, reflected in the speeds achieved with various props, which, when compared with the performance of other 1 cc. engines, clearly show that the Cormoran is at its best on props no smaller than about 7 x 4 in. On test, for example, we obtained 7,600 rpm on an 8 x 5 PAW, 8,200 rpm on an 8 x 4 Top-Flite nylon, 8,800 rpm on an 8 x 4 Top-Elite wood, 10,300 rpm on a 7 x 4 Top-Elite nylon, 10,750 rpm on a 7 x 4 Top-Elite wood, 11,600 on a 7 x 3 PAW, 12,100 on a 7 x 3 Top-Flite wood and 13,100 on a 6 x 4 Tornado nylon.

At the lowest speeds tested (6,000-9,000 rpm we experienced a fair bit of vibration. This decreased as load was reduced and, as diesels go, the Cormoran was quite smooth at speeds corresponding to the peak of the power curve. There was no power loss with warming up at these speeds. Controls were easy to adjust and held settings firmly. The contra piston was obviously a good fit in the bore. It did not seize when the engine was hot and would return to a lower compression setting immediately when the compression screw was slackened. At the same time, the contra piston fit was still close enough to obviate any risk of unwanted movement which might cause the compression screw to loosen.



***Prosper Allouchery, veteran engine designer with a 1919 vee twin of about 35 c.c. which he used in a model. His son Serge is also in the business.***

To summarise, the Allouchery Éclair Cormoran 1 cc. diesel emerged from our examination as an interestingly different design, attractive in appearance, easy to handle, not too heavy and with a performance adequate for all but hot contest models.

Power/Weight Ratio (as tested): 0.50 bhp/lb. Specific Output (as tested): 89 bhp/litre.

**SPECIFICATION**

Type: Single-cylinder, air-cooled, reverse-flow scavenged two-stroke cycle, compression ignition. Crankshaft type rotary-valve induction. Plain bearings. Bore: 11 mm. (0.4331 in.) Stroke: 10mm (0.3937 in.) Swept Volume: 0.9503 cc. 0.0580 Cu. in. Stroke/Bore Ratio: 0.909 :1 Weight: 2.7 oz.

**General Structural Data**

Cast aluminium alloy crankcase and unbushed main bearing unit. Hardened steel crankshaft with disc web, 0.236 in. dia, journal, 0.157 in. dia. crankpin and 0.150 in. bore gas passage. Screw-in hardened steel cylinder liner, flanged at exhaust belt. Screw-on machined aluminium alloy finned cooling jacket. Lapped cast-iron piston with fixed 0.118 in, dia, solid non-hardened gudgean -pin and hardened steel connecting-rod. Lapped cast-iron contra-piston. Machined aluminium alloy screw-in crankcase backplate. Machined aluminium alloy prop driver fitted to taper on crankshaft. Machined aluminium alloy spinner-nut or plain steel hexagon-nut and washer. Brass spraybar assembly.

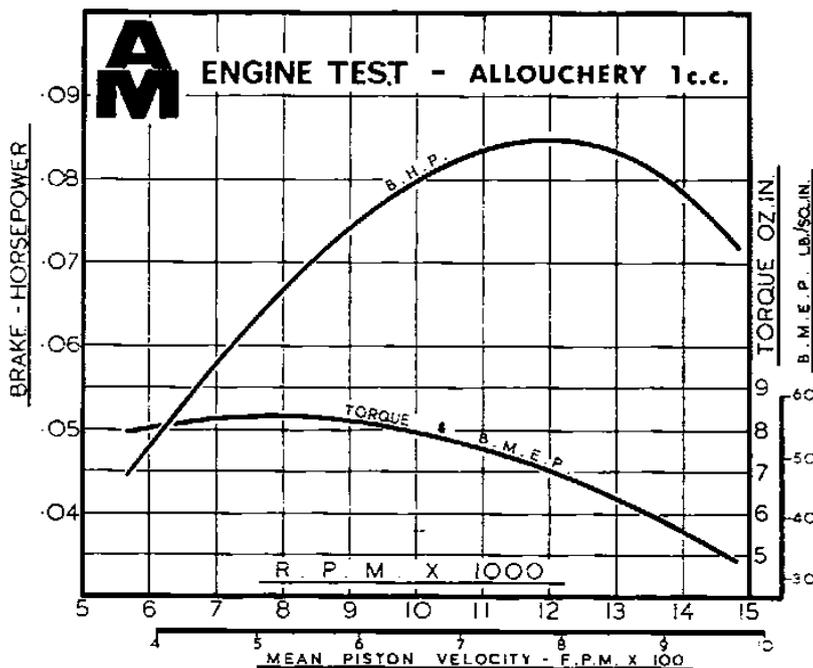
Beam mounting lugs.

**TEST CONDITIONS**

Running time prior to test: Manufacturer's use 30 mins. Fuel used: Keilkraft diesel, Atmospheric temperature:44 deg. F. Barometer: 29.1 in. Hg. Silencer type: Nil.

**MANUFACTURER**

Moteurs Eclair Allouchery, 10 rue de la Maison-Rouge, 94 Fontenay-sous-bois, France.





board and glue. Glue laminated tips together from soft 3/32in. sheet, cross the grains and remember to insert brass lead out tubes into inboard tip. Make a 1/16 in. plywood rib template and cut ribs from medium close grained 1/8in. balsa sheet and one centre 1/4in sheet rib, making holes for controls in the inboard ribs. Pin 1in, square hard balsa leading edge to building board and cement all ribs to it except the centre rib. After sanding trailing edge to shape, slot and glue to ribs on board. Shape the 1/2 in x 1/2 in beech engine bearers, add spacer, glue and screw together. Remove framework from the building board and cement engine bearers over leading edge, add centre rib then allow to dry.



Cut out developed tank shape from tin plate and solder up with air vents and fuel feed pipes. Fix tank in position using Araldite, riblet W4 and 1/4in. sheet fillet. Cement on 1/16 in bottom sheeting, and glue on laminated tips, adding 1/2oz of lead weight to outboard tip.

Bind and solder Bowden cable extensions to 20 s.w.g. wire leadouts, solder to bellcrank, add 16 s.w.g.

pushrod, bolting unit to 1/8 in plywood bellcrank mount, then glue into position. Add 1/8in. sheet and 1/4in. sheet gussets, also cement top in, sheeting in place. Double cement 1/2in soft balsa sheet fuselage sides and nose block to engine bearers. Carve and

sand fuselage to streamline shape. Drill engine mounting bolt holes. Round off leading edge and sand the framework smooth. Bind and solder loops on the end of lead out wires. Either bandage or fibre glass the engine pod wing joint area. Dope framework with one coat of clear dope,

cover in nylon and apply three coats of dope. Cut, 1/16in.

plywood booms, drill holes for the 20 s.w.g. wire hinge then cut 1/8 in hard sheet elevator. Slide booms on to the hinge wire, bend to shape and sew it on with carpet thread and cement well. Cover elevator with nylon, add 1/16 in plywood elevator horn mounts and elevator horn. Double cement booms to model and fuel proof. Connect up control system. Bolt in your 2.5 c.c.—3.5 c.c. engine? silencer unit and "Turncoat" is finished.

To make "Turncoat" fly fast, build light but strong Aim for around 15 ozs. all-up weight, taking great care in choosing the right wood for the job.



## Spektrum DSMS and DSMX compatibility (From the Spektrum website)

DSM2 transmitters are forward compatible with DSMX receivers and DSMX transmitters are backward compatible with DSM2 receivers. And because DSM2 and DSMX share the same wideband DSSS foundation, all Spektrum users will enjoy superior range, speed and precision whether they're using DSM2 equipment, DSMX equipment or a combination of both.

Are DSM2 transmitters eligible for a DSMX add-on?

Yes, but DSM2 users who rarely, if ever, fly in big events or other "noisy" 2.4GHz environments may find the DSM2 equipment they have now is all they will ever need. The difference DSMX makes is only apparent when hundreds of 2.4GHz systems are in use at once. To see if your transmitter is eligible for the DSMX add-on, please visit [horizonhobby.com](http://horizonhobby.com) for more details.

**WANTED** - Gary Davie is looking for blueprints of model engines can anyone help. He would like to draw up in 3D. [garyiandavie@gmail.com](mailto:garyiandavie@gmail.com)

## More photos from Peter Renggli and Urs Brandt



Eduard Wyman and Knilch 1,4



Paul Salvisberg and Kadett Graupner



Urban Uebelhart and electric Tomboy



Christian Tanner and Riedstern



Anders Maurer and KÖC



Thomas Ghisler and Borzoni



Pilot 4



Knilch







Many of these delightful Swiss models are available as plans from:-  
Albatros Bauplan Archiv:  
Walter Wolf  
Forstweg 21  
CH-2545 Selzach  
Switzerland  
e-mail. [walter\\_wolf@bluewin.ch](mailto:walter_wolf@bluewin.ch)

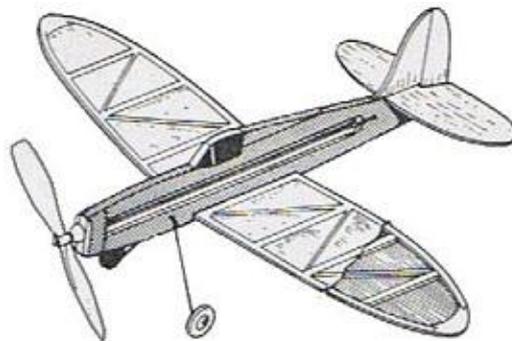
## From Peter Renggli

Enclosed a picture of the progress of my Ben Shereshaw \*Cumulus\* Nov. 2011 Under the huge wings of a 1:3 Scale (5 meter) Olympia Meise 1937 it looks neat.



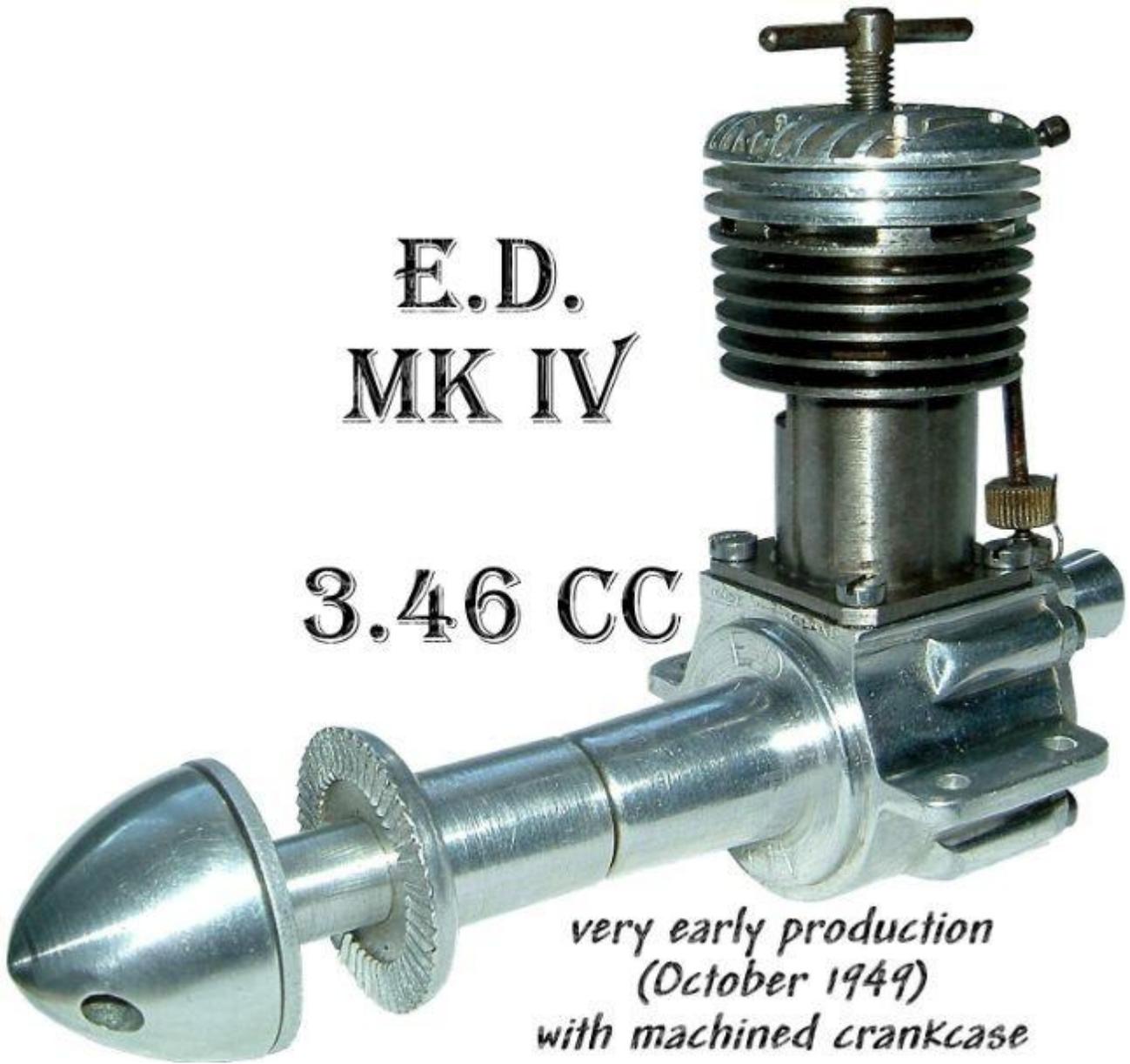
## For Sale

Ian Andrews has for sale a Fleet XP/FM transmitter, 9 servos and two receivers etc. If interested contact Ian on [ianandsara@o2.co.uk](mailto:ianandsara@o2.co.uk)



E.D.  
MK IV

3.46 CC

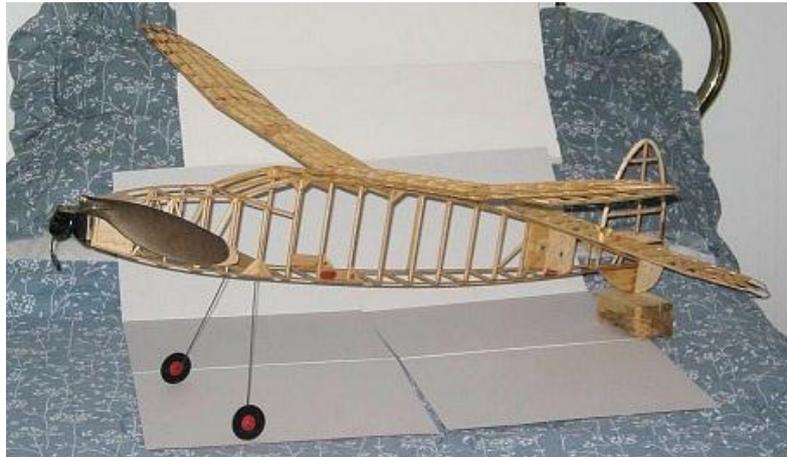


*very early production  
(October 1949)  
with machined crankcase*

**From Karl Gies '39 Korda Wakefield Winner**

I built this Korda whilst living and teaching in Butte, Montana, in 1968. At the '95 SAM Champs in Colorado Springs a '39 Korda Mass Launch event was held and I augured this model in. There was moderate damage to the nose section and minor damage to the wing and stab. After all of these years it was time to repair it. I am going to cover the fuselage with Japanese tissue over polyspan and the flying surfaces with Japanese tissue over /14 mil mylar. I am also going to make a free wheeling prop assembly/nose block. Prior to building this I had built the 1938 Burd Korda which has a free wheeling prop and just tip dihedral in the wing. The Burd Korda was a better flyer than this one. I am going to experiment with flying it using the free wheeler and the poly dihedral wing and also try my Lanzo Duplex wing, just tip dihedral, which is very similar in all regards to the Burd Korda wing. This model was built with Ambroid, everything double glued and still has good glue joints. I put the Japanese tissue on by doping the model and brushing thinner through the dope. It was a real chore to get the tissue off and involved many sanding sessions. Lanzo/Korda/Reich, all members of the Cleveland Balsa Butchers certainly left us many great designs. The well-known Cleveland Balsa Butchers model club came into being in 1937. After World War II, the club became the

Cleveland Society of Model Aeronautics. The CBB/CSMA has had the distinction of having its members represent the U.S. in World Championships no less than 10 times! Both Korda and Reich won the Lord Wakefield Cup. My wife says that I am definitely a hoarder when it comes to model airplane and fly fishing stuff. cheers, cccnh



### From Jörgen Daun





## New competitions for 2012 (JP)

The end of 2011 is in sight and with the hope of better weather for 2012 attention for organisers of events is being focussed on dates, classes of competitions etc etc. For my part there are club events and also the growing in popularity Wessex League which along with ace organiser Chris Hague any rule changes felt necessary as a result of 2011 have now been made, very few, and introduction of new league events. So what is new for 2012? Well a revamp of a competition that sort of not really got going in 2009 will go ahead albeit in a slightly different format. Will be known as George Fuller Event. (Before anyone says b\*\*\*\*y cheek cashing in on George Fuller, I have spoken to him and he is happy for it to take place). But why such an event?

Over past couple of years various power duration events have been proposed and run as no doubt readers of SAM Speaks and S&T have noted. Indeed stalwart Bill Longley has been working on and running his Tasuma RC power duration along and as part of Wessex League and this for last year and next has been extended nationally. With I hope I've got this right six classes for a potential competitor to choose from and therefore no shortage of motors one or more of the classes will appeal to anyone who has a weakness for power models. In fact Bill has been very busy organising, writing rules, getting hold of kits and plans, motors etc. Photos and write ups have appeared in S&T.

Anyway in the mould of the Tomboy competitions as mentioned a couple of years ago an initial stab was made to get a power comp off the ground (Intended) but lack of this that and the other meant it did not mature although several models were built. So as an introduction to flying such models a new event as named above was decided upon. The emphasis on Wessex League events is that they should be very simple, cheap and as far as possible utilise engines, airframes etc which are easily available, cheap and easy to build.

What could be better than one of George Fuller's iconic designs, powered by a PAW plain bearing engine, rudder, elevator and throttle. All flown as per Tomboy e.g. a couple of 4 minute maxes and then a fly off. So that basically is one of the new Wessex League comps. Bill is of course still running a fantastic variety of power models comps and hopefully if you have a go at the GF comp you may be tempted into greater things. The GF models will be eligible for Bills events.

Next new event is control line. What sort of event well its name gives part of a clue Spitfire Scramble. This has been run a couple of times at the Wimborne Club CL meets and what great fun it is. Reminiscent of the first Phantom racing that was held at Croydon Airport by Three Kings club. I seem to recall it was dreamt up by Alan Jupp? But anyway the first race, must have been in the in very late 80's was terrific so to now run this SS will rekindle that time however with strict but simple rules it is hoped that it will not end up like Phantom racing eventually did as regards simple and basic.

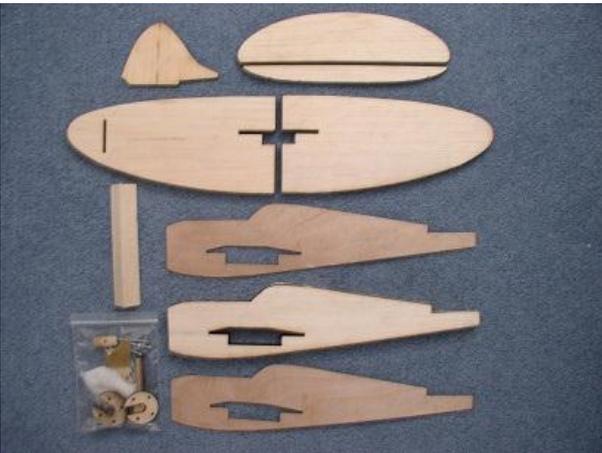
The idea came from Paul and Ollie Harris who developed a profile Spitfire powered by a Cox 049 and flown on 25' lines. This is essentially the Scramble event with two teams competing at once over 15 laps. It works really well and is fantastic fun to both compete in and watch. You can download the plan or Paul and Ollie will supply a kit for £18.00+P&P and it is very good. The Cox 049 Sure start can be bought for £15.00 +P&P from Dens Models and lines are fishing type (No steel) with 30lb breaking strain. (Line will be available at events at cost price).

These events are in keeping with the League ethos of simplicity and cheapness with maximum fun. There should be 5 events during 2012 for each of the classes two at Wimborne Club in conjunction with their CL and vintage meets and three at Middle Wallop. More details of dates etc next month. The rules for both new events are set out below but full details are on the Wessex League website [www.wessexaml.co.uk](http://www.wessexaml.co.uk)

So get building your George Fuller model and put together a Spitfire. If you do wish to compete in any of the Wessex events and have not done so in the past please contact me so I can get a rough idea of numbers. Oh before I forget there are no plans at the moment to charge an entry fee apart from normal gate charges to get in to Middle wallop [jamesiparry@talktalk.net](mailto:jamesiparry@talktalk.net)

A few photos below of Spitfire scramble to tempt you. (photos were in a previous S&T)





*The kits as received and built by Chris Hague*



## The Alpha Corsair (Ed Beshar 1939)

During the course of searching for a more involved model to produce as a kit I came across a photo the Alpha Corsair featured in the Plug Sparks Section of Model Builder Magazine about 1980.

The design had great character and a noted good flight performance although the twin rudder set up for R/C gave me a little cause for concern. Not easily deterred I wrote to John Pond Plans Service and duly obtained the plans a few weeks later. Now it's fair to say that I have seen a fair number of plans in my time but this particular plan looked like a railwayman's nightmare with the fuselage drawn from Left to Right.

The plans appeared to be from the company kitting the model in the early 40's but took some deciphering but nevertheless I couldn't resist the idea of trying it as a kit. The plans were carefully re-draughted with all parts on separate sheets.. Also If memory serves I am fairly certain that the plans showed a porthole window arrangement and this was also detailed on the new plans.

Eventually 3 prototype models were built powered by the OS 40FS. One was built more or less as per the original structure but this was found to be far too flexible in the fuselage area and in addition the stab flexing during operation was a concern. However, the model showed great promise during test gliding.

The Second Prototype had wing L/E planking and the stab also had additional L/E Planking to prevent warping during operation of the R/C. This is before the days of cheap micro servos, I used snakes and pushrods.

The twin rudder arrangement and successful operation of same was definitely a difficult problem to solve. In addition the weight of the Stab/Rudder area had to be carefully watched. Eventually the twin rudders were set up by using carefully mounted bellcranks and ball joints. Great care was taken to make certain of free operation without binding and when I was satisfied with the result the model was balanced with additional nose weight plus the OS 40FS and test flown. This model flew straight out of my hand on half throttle and was perfectly stable with good control response and had a great glide. The final prototype had ply window surrounds to improve the look of the model and to increase the strength of the cab area.

The third model was covered with nylon and dope with decoration in coloured model span. It Is as good today as the day it was made 30 years ago. If by any chance you come across the old Prokit Alpha Corsair kit buy one, you will not be disappointed. Consult S&T37.

Only 26 Alpha Corsair kits were produced amongst which 22 were sold and 4 partial kits remain.

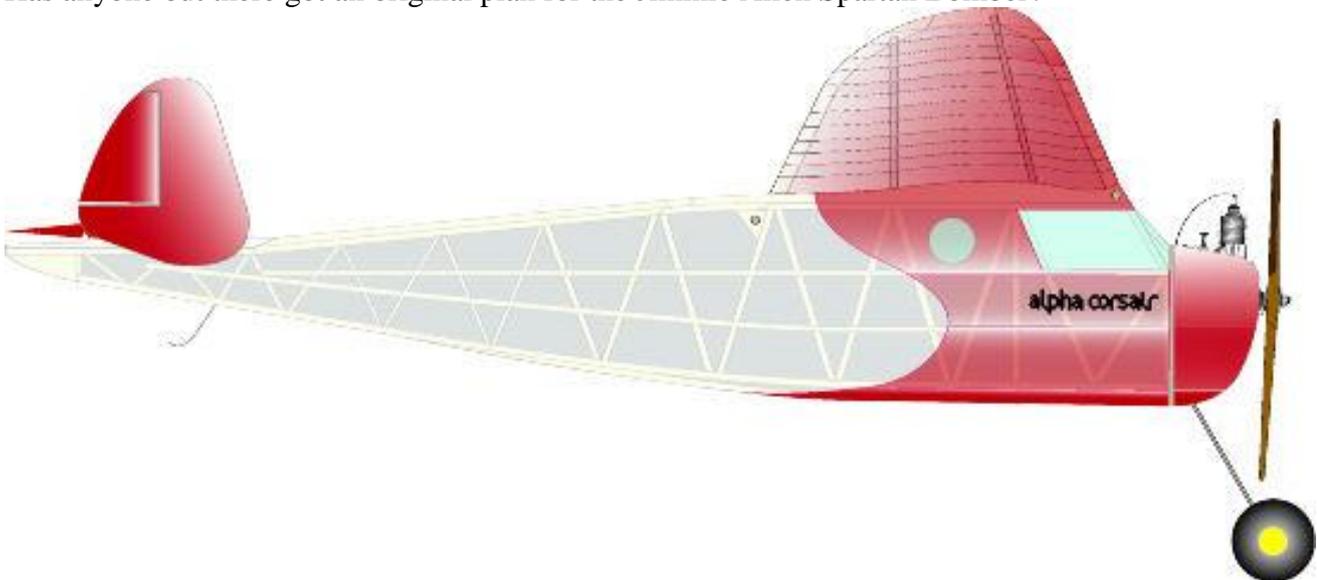
The Alpha Corsair is a fine antique flying model with great presence in the air and is capable of giving a great flying performance. Please note that the Alpha Corsair requires care and patience and a degree of experience to build. It is a model kit for true Aeromodellers.

If anyone wishes to obtain a partial kit for the Prokit Alpha Corsair please feel free to contact me.

Gary Davie 07535 449700 [modelkraft@gmail.com](mailto:modelkraft@gmail.com) Many other antique flying models are available.

Next Month flying the Peerless Ionosphere and the Pacific Ace Sportster (Coddling 41)

Has anyone out there got an original plan for the Jimmie Allen Spartan Bomber?





How's this for a neat little indoor flier,—simple to build and inexpensive. Abstract Ant can provide hours of fun, and under calm conditions even outdoor flying could be contemplated. This is the historic Antoinette monoplane simplified to the maximum degree, but no matter how hard one tries to simplify, the charming character of this classic still remains.

Bill Hannan's Ant has made take off ground flights of over 25 seconds, all from a mere 12 in. wing span! Choose the lightest possible wood you can find and make sure the density is as even as possible.

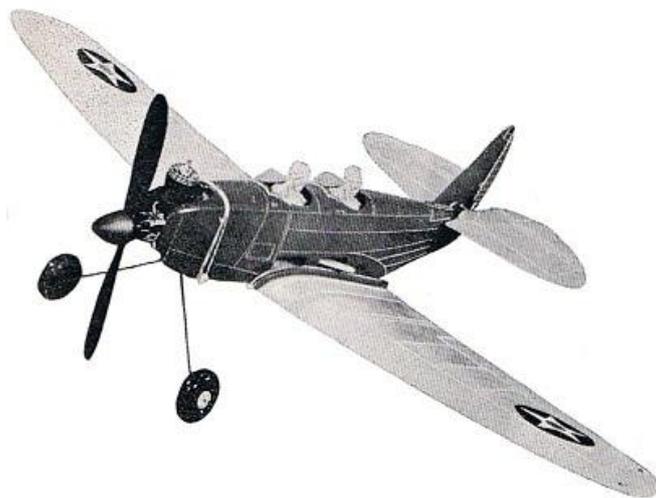
The 1/32 in. sheet wing halves only have one rib and this is also from 1/32 in sheet, positioned at the root to help join on the fuselage the rest of the wing forming its own camber. Next, cut the 1/32 in. sheet tailplane sections and cement edges together with the grain directions as shown. Make up the engine from 3/32 in. sheet, with 1/8 in. diameter cylinders, then use a hollow aluminium rivet as the propeller shaft bearing, bending the shaft from 20 s.w.g. piano wire with a hook at one end for the propeller hub and a



loop at the other for the rubber band motor. Bend the undercarriage legs and nose skid from 20 s.w.g. piano wire, attach Acetate and sheet cardboard wheels as shown, then shape the king post with a bend to clear the motor. Select firm and light 3/32 in. sheet for the fuselage. Rub down to a smooth finish then glue on engine/propellor unit, wing halves, tailplane, undercarriage and 1/32 in. sheet

fin above and below fuselage. Sand smooth all over. Press rear rubber motor hook into fuselage, in front of fin, and king post directly in line with undercarriage attachment point.

Lightly dope or Indian ink the radiator lines engine unit and fuselage number, then add thread rigging as shown. Alternatively, the racing number and radiators may be drawn on thin tracing paper and glued to fuselage. All that now remains is to get Abstract Ant into the air. For a motor either use 1/16 in. square rubber strip or a suitable elastic band and wind the motor from the rear then replace onto the hook.



### ***A 1/2A Control Line Curiosity – Part 1- by Den Saxcoburg***

There's an old maxim, 'bigger is better' and when it comes to model aircraft this is generally true. Bigger models are more stable to fly, are less affected by the weather and are easier to build, so why then, are small models still popular?

For some of us of a certain age the attraction probably set in early and started with inappropriate choices from the rubber powered flying scale ranges produced by Keil Kraft and Veron. The model shop owner told us that a sensible, larger and simpler model was recommended, but the



I was wondering how best to explain the impact of Walt Musciano and his 1/2 A 'Hollow Log' designs on the American model aviation community when I hit upon an inspiration. As I type this I have before me a 1961 issue of *American Modeler* magazine, opened to the two page ad for the *Scientific Model Airplane Company* of Newark, New Jersey. Being a 'Baby Boomer' born in 1949,



I grew up looking at these ads and dreaming of the planes that were illustrated - no less than 68 on the two pages! The vast majority of these were Walt Musciano Hollow log designs, so called because the fuselages were pre-shaped from a single piece of balsa. Walt correctly assumed that these 18 inch wingspan models would bring airplane modeling to the masses because of their reasonable price (most sold for less than \$2.00) and simple but durable construction. Walt and the Scientific Model Airplane Company literally changed the

face of model aviation in the USA. Like many kids, I built several of Walt's planes on the kitchen table (which is why Walt called them 'table top' designs) and gained my first flying experiences piloting one of these little gems.

Fast forward to 2006 and I discovered a company called Black Hawk Models was reproducing many of these kits. Like many of us who are a bit greyer but no less passionate about model aircraft, I began to re-live the flights of my youth with these great little airplanes. Even better, there were contests being held on both coasts featuring these designs exclusively. Being in Michigan which is in the middle of the country, a group of us decided to host a contest of our own. The event was a great success and the topper was that Mr. Musciano honoured us with his presence! At 86 years young, he is still an avid designer and writer. Walter and I have since become good friends and correspond regularly. For me it is an amazing experience to be on a first name basis with a man who I idolized as a boy.



Many of us are now introducing our grandchildren to flying using Walter's designs. Considering the facts that: Walt has been building model aircraft for 75 years; that he has been designing them

for 61 years; and that a third generation of American modelers is now enjoying model aviation using his designs, his contribution and his iconic status cannot be overstated.

Perhaps Walt put it best when I asked for his thoughts regarding control line flying. He responded, *"It's a hobby for everybody – Fathers, Sons, and Grandfathers – everybody! Control line is really marvellous and should be paramount in the eyes of everyone. It's how youngsters learn. A kid couldn't build and learn to fly R/C on his own, but control line is different. It gives a kid something he can feel in his hand, and that's the secret. That's the way to go. Anyone can learn. It's why I did so many beginners' models. You can fly control line on a dead end street – something you can't do with R/C or FF. In addition, kits (then and now) can be produced that are within the reach of every kid's pocketbook.*

Next time we will look at a UK building and flying review of one of these hollow log models

### ***A 1/2A Control Line Curiosity – Part 2 - by Jim Elsegood***

Part 1 was an introduction to the history and background of the Musciano Scientific hollow log 1/2A CL designs.....Now over to Jim Elsegood for a UK review of a Black Hawk Models Musciano Golden Hawk kit:-

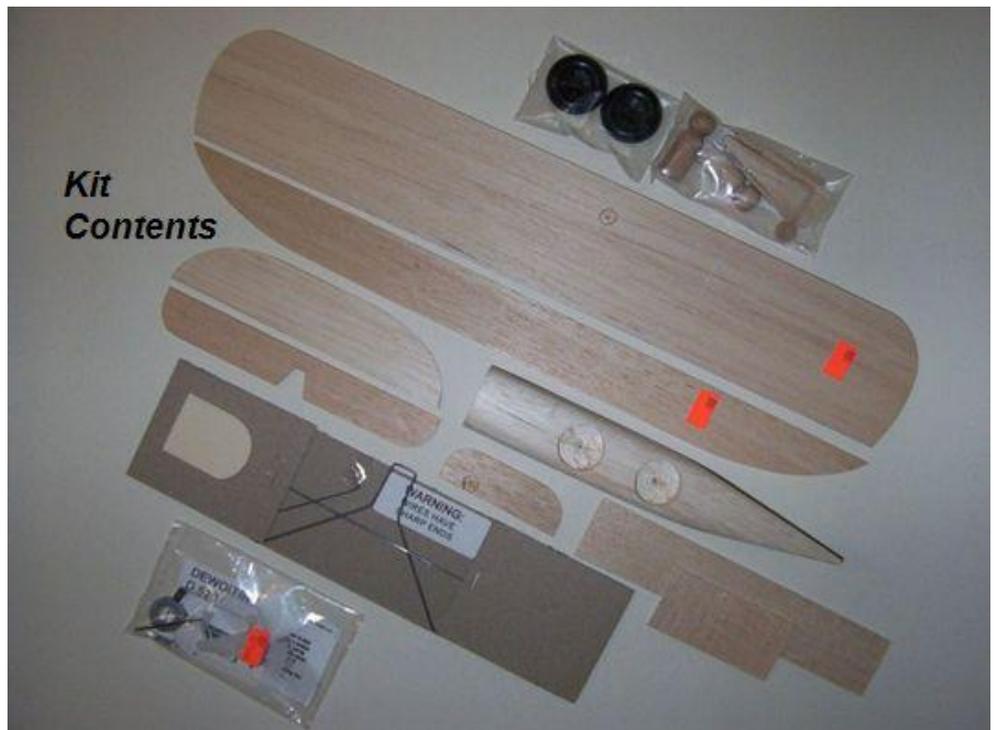


The kit came mail order from Den's Model Supplies, unwrapping the parcel revealed a box that is rather plain and basic compared to the packaging of many modern R/C models but at least this keeps the cost down. Once inside the box you can see exactly where your money has gone, it's packed full.

The balsa was well selected and each piece was of the correct grade, all parts are accurately cut with no crushed edges. There is

also a fair amount of pre-shaping and hollowing done to the block fuselage. The hardware pack is excellent, including, bellcrank and horn, a selection of small screws, two turned hardwood pilots, a pair of sensibly sized wheels and even a pair of small wheel collets! All wire is pre-formed and a nice touch is that it's packed in cardboard so as not to damage any of the balsa parts. The instruction leaflet supplied briefly covers each stage of construction and there is also a three view drawing to help identify where everything goes.

Construction is straightforward to anyone who has built a C/L model before, and even a complete novice should finish up with a model that will fly. All parts go together well and the model rapidly builds up. I started with the wing, this comes in two parts, the larger front portion which is pre-shaped with a taper to the rear where the second smaller part attaches rather like a fixed flap. A quick sand to shape up the leading edge and you have a basic aerofoil, round off the tips and it's done. The tail is straight forward but I had not come across the hinge method before, it uses a cloth strip glued to the underside of the tail and runs full width across it's span. I did wonder how stiff this would turn out should the hinge become accidentally coated in glue/dope/paint/fuelproofer? To avoid this I decided to draw a line top and bottom, along the centre of the cloth strip using a wax crayon before joining all the parts together.



The wing, tail and engine bulkhead were all added to the fuselage using slow set epoxy, these being critical joints that I didn't want fuel seepage to weaken. It's probably easier to give the fuselage block a final 'shape up' before you make a start with the glue. Also I sanded the front face of fuselage before fitting the ply bulkhead to give a small amount of engine offset to the outside of the flying circle, this is not essential, it's just a personal preference of mine. Once dry, adding the rest of the bits from the box soon completes the basic airframe.



Next, came a bit of a play around with the hardware, I offered up the engine (Cox .049 Bee) and drilled the mounting holes, watch this as they have to be good and firm, the U/C is trapped between the radial mount of the engine and the bulkhead so these screws are doing two jobs! After a dry run fitting the engine I removed the screws and just bled a small amount of cyano into the screw holes to firm up the threads.

The bellcrank mounts onto a small turned hardwood boss which plugs into the underside of the wing, I liked this, it's neat and strong but it would be better if the boss were pre-drilled during manufacture as it would be easy for a novice using a hand drill to make a mess of, and it does do a very important job. The only thing I found that could be confusing was that there was no mention

in the instructions of using a tip weight, although there was a 1" washer provided which I assumed was for this purpose.

The engine cowling is made from a sheet of 1/64th ply, looking on the Black Hawk website it appears as though many builders choose not to use this item, however my feeling is that the cowl really adds to the look of the model. There is no template for cutting out the cowl and I didn't think I could copy the shape shown on the assembly drawings, so I ended up with a best guess, a combination of looks, strength and still being able to get to the mounting screws. The cowl was added to the fuselage using 5 min epoxy, I couldn't work out how to clamp it up while it was drying so I just held it until the epoxy cured (a job you need more than two hands for as you only get one go at it.)

At this point I would say this kit can truly be built 'on the kitchen table' there is no need for sawing, filing, hammering or soldering. The basic model only takes a couple of evenings to build and the whole thing was ready for finishing within a week. Tissue is not included in the kit but I would recommend covering the model before painting. My personal preference is to use coloured tissue as I can add colour and strength in one go. The pilots were painted up and given silk scarves (I was going for the 1930's flying school look) and the cockpit wind shields were added, I could not work out how to stick these on without making a dreadful mess, finally I decided to push the screens into two slits cut in the top of the fuselage and held with epoxy.

The model was now getting close to being ready to fly and only needed the engine and hardware adding. It was now that I discovered a problem, the undercarriage legs have tapered fairings fitted, these are balsa held on with cloth strips. After fitting the engine and U/C, I discovered that the position of the bellcrank would foul the U/C fairings. A quick email to Larry Rice at Black Hawk Models revealed that he had recently moved the bellcrank position in the kit to take advantage of the thicker portion of the wing, touching the U/C fairings had been an oversight and the bellcrank would revert to its original position in future kits. For me this was not a problem as the original bellcrank was over 2 inches long, I just cut it down and re-drilled the leadout holes.

The finished model weighed 5½ oz, CG was ½ in behind the LE and the Cox was fitted with a 6x4 prop.

And so to the flying field...

Waiting for a good day took ages, at times I never thought one would come, every time it was dry enough the wind would be far too strong and the Golden Hawk isn't an all weather model, by March things were much better. A quick check of everything needed, some freshly charged batteries and a run-up of the motor at home to go on forever. find a good setting and we were ready.

The field I fly from gets pretty churned up over the Winter so we chose to hand launch, I was using 25ft lines made from braided fishing line for this small model, the last thing I needed was for the model to come in on me because of long or heavy lines. The spring start on the Cox works well and after a prime and a couple of flicks the motor was soon screaming and we were up in the air.

First impression is "wow its light on the lines", although there was good line tension at all times, even at high angles (that large tip weight, engine and rudder offset all doing their job) there isn't much feedback at the handle, the model doesn't really groove and I didn't feel I could take my eye off it for a second, part of that is probably down to me being out of practice having not flown



since last autumn. The next thing you notice is that on short lines its feels really quick, I was using hot pull-start buggy fuel and that tank that ran empty in a flash at home now seems to go on forever. I settled down, tried not to trip over my own feet and watched the pilot's scarves blowing in the slipstream, at least on short lines you can admire your creation. The landing was shall we say 'ugly'. The motor slowed and died rather than sped-up and cut, so the glide was nonexistent, the ground coming up to meet the model very quickly followed by a cartwheel landing as a finishing touch, no damage though and I dare say the model could stand countless flights like this.

Once your head has stopped spinning and you've got your breath back you realize how much fun the Golden Hawk is and it's hard not to fill up the tank and go again. On a good day the model would be fine on 30ft lines and there is adjustment on the bellcrank to give less throw just to steady things up a little. Black Hawk Models have many similar Musciano designs in their range and I can see how after a few sessions like this it would be tempting to build another, perhaps a biplane?.....if you are interested here's where to get all the goodies

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as an afterthought for interested parties, it really is worth reading Walt Muscianos autobiography here:- <https://www.modelaircraft.org/files/MuscianoWalter.pdf> It's an amazing tale and well worth a read. Attached are some pictures of Brian Green's Musciano Tyro Trainer Bye for now Den





### **Bernard Dereudre, St Denis, France**

When I was young, I built and flew a KK Slicker 50, as you can see in the black and white photo, with a Southener Mite. The engine was an ED 1.46. The Slicker flew very well and one day she "landed" at the top of a very big oak near Calais. She stood there some weeks, after a big storm she falled down from the tree.

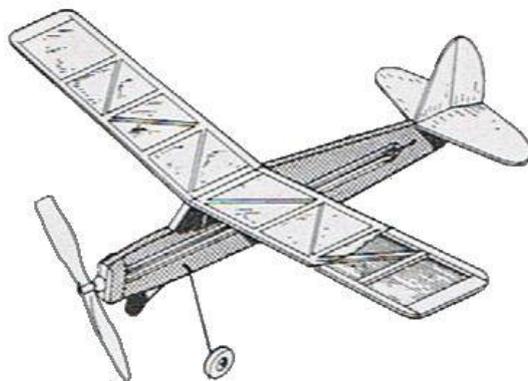
I changed the covering and my Slicker flew again, with some small holes in the tailplane. During her stay on the forest we tried with the gamekeeper, to shut her down! Impossible. Twenty years ago I built another Slicker 50, the color photo. Just in case, I radio-equipped



the new Slicker. First with a OS 2 cc engine. Five years ago I retrofit the Slicker with an electric motor and she's still flying well. I have some electric vintage models but the Slicker is the best flyer.

## From Mike Burke

Glad you liked it built it about 5 years ago flew it a couple times at my local flying fields but told not to bring it back as it was considered to big sold the engine been wrapped up for a couple of years I might give it to my local museum hope the weather is better next year and i will try and come down to one of your meetings all the best Mike



# FOX COMBAT SPECIAL .35



MK I

1957

## David Kinsella's Column

### Magnificent Moss

Sixty years ago and famous, drives with Alfa and Ferrari declined, here young Stirling hurries the uprated BRM along the deadly Dundrod course. Six miles from Belfast, cars were driven from the docks to the track where banks of earth, ditches, hedges and metal poles lined the bumpy and narrow surface. Frisky and with a narrow power band, worse still when it was wet, the high revving V16 with a RR Spitfire-type supercharger could be heard all over the circuit. First, winning at Dundrod in a Jaguar XK120, it was excellent experience for further wins and the ultimate test posed by the Mille Miglia and Targa Florio of 1955, both won by Stirling in the Mercedes-Benz 300SLR. Grand Prix Legends (0844 887 8888) lead with models of these cars.



### Bryan Reminded Me

Good to see the Taplin Twin in Bryan Targett's White Wings rebuild (S&T No 55). Master of Scale with models still on show in London, Cesare Milani favoured the big twin for his models along with the Anderson Spitfire and other 60s from the USA. His Kensington hotel close to the parks, his Bristol Fighter Fokker DVII, Ansaldo or Dornier bomber, not forgetting the amazing Caproni and Heyford bombers of the Johns and Biggles era, were frequently seen on their way for a spot of Sunday morning flying, all within sight of London's famous red buses and Ron Moulton's approving eye. On Glendower Hotel writing paper Cesare advised me to build big and seek help from the Smithsonian in Washington, both of which I did to good effect. Anyone on a trip to the USA should regard the Smithsonian as a vital must-see and reserve two days for the experience.

### What They Did

John McKenzie's magnificent work on the FE2b bomber of the 1914-1918 war (s&t No 47 etc), now fully signed at Hendon, impresses with its detail and great size - and here's how it could be flown in action. Not for the fainthearted, if a DVII or Albatros was closing from astern it was up boys and at 'em and hold on tight. Top gongs were won doing this. Lots of Lewis to hand but, of course, no parachute or harness. One FE was even landed fully on fire, the crew staying aboard to the end.



### Finding Alex

Flyers new to the Vintage scene should hunt down the many articles written by Alex Imrie, several strong on the American; scene of the 1930s and '40s. As mentioned above Alex was a friend of Willy Gabriel, DVII pilot in the 1914-18 war who gave valuable assistance when Alex wrote his highly detailed book on a famous German fighter of the period. Gabriel - his DVII famous with red nose, yellow/orange stripe and striped tail - didn't get on with Goering and possibly his combat score suffered as a result.

### Got The Jersey

First seen on a TV in Milan, characters like this fellow appear during the Tour de France. Massive coverage during its progress around the country, stages of 100 miles and more each day apart from a rest day or two, it's a dream for agencies hired to promote well, almost anything. Tough climbs, bullet-like descents controlled by tiny tyre prints the size of a thumbnail (tyres rock hard), furious charges to the line, the Tour is tough. In my cycling stuff I have the Sanson/Luxor TV Jersey worn by Phil Edwards, in Moser's team for the Italian. Giro, another tough event.



### Biggles Business

A recent article on the Boy's Own Paper and Biggles lays emphasis on Biggles in World War II. It's ok, I suppose, but Johns and Biggles were much more of the Kaiser War and the silver biplane era which followed. True, some yarns were tweaked into WWII stuff (changes can be spotted) but read The Rescue Flight, where a gaggle of Albatros scouts are closing on a fleeing Brit, and you're right there with the watchers in their Sopwith. Camels (it happens around page 47 or so). Along with The Tatler and Yachting World, Boy's Own was read around the Empire and along the Western Front. Johns wrote masses of stuff, much on gardening, pirates and cowboys for a start.

### Mighty Stand

Young Arthur Collins scored more than 600 runs in an epic school match. A Clifton boy, he was soon famous in wha. became known as the Collins Match. But like the Pals and thousands more, Arthur and his chums were soon engaged in a match of world proportions - the Kaiser War begun in 1914 as cricket was in full flow. Arthur and many of the Collins Match never returned. Yet another reminder of Newbolt's great poem which begins on the cricket field, where there's an hour left and the last man in.

### What Happened?

Appearing on postage stamps, his name in daily use around the world, the man who gave us ignition by compression - Rudolf Diesel (1858-1913) – and so opened the door for Mills, ED and many more, ended his life in mystery. Born in Paris, living in England, moving to Augsburg and later at the MAN works, the great discovery/invention occurred in the late 1890s. But in 1913, sailing from Antwerp to London on a business trip, Diesel vanished from his cabin. Days later a body was found by a Dutch boat, items on it known to be Diesel's. But was it him? It was, after all, 1913.....

### David Delivers

First published in the 1930s and with a forward by Hermann Goering, then General of Aviation Berlin., Kaiser War combat is described in detail by a pilot who flew in it. Translated in the USA and not easy to find these days, David Bancroft (01983 759069) found a mint copy for me, Plenty of pictures include one of the writer with his hound by a line of fighters somewhere in France, he soon to be Richthofen's adjutant in JG I. He met them all - Goering, Udet, Gabriel (Imrie's friend), Boelcke, even Hitler - and like Captain W E Johns was daily up close to the action. JG I accounted for 644 Allied machines.



### The Information

Enthusiasts reading S&T for the first time may also be engine collectors, for certain inspired by the many fine examples seem in it. Ron Moulton, Peter Fisher, John Goodall and Mike Clanford. (scores of pictures) have all put information within covers and then there's the Blue Book, several copies of defunct Model Engine World and a good ten or so books available from Woody Bartelt of Galesburg MI 49053, USA. Model Engine Reviews covers 1935 to 1955 over 213 large pages. MECA may be contacted via John Lorenz of 704 Flamingo Circle, Burleson, TX 76028, USA.

### Love It

What a beauty, the dainty KK Ladybird built from an original kit by David Danvers (S&T No 56). Returning to the hobby, that first pong of diesel brings waves of nostalgia flooding back, back to the days when Castles and Kings ran through what will always be Great Western country. Cheers, David!

### Bill Boddy

Feigning a cold, young Bill snuck off to Brooklands - only to meet his boss who'd also taken the day off for a spot of racing! Aged 10, he bought the first issue of The Brooklands Gazette (which became Motor Sport) and later saw to the preservation of old cars, various clubs and, of course the great speed bowl that is Brooklands, writing the book on it (S&T No 51). Linked to the green 'un for 81 years, Motor Sport with Jenks reporting on the Mille Miglia and other titanic struggles was required reading. Vintage aviation appeared regularly in MS, and I last wrote to Bill in May this year. WB, as he was always known, was probably the last link with the Bentley Boys, Cobb, Campbell, Kidston, Thomas and other heroes of the biplane era.

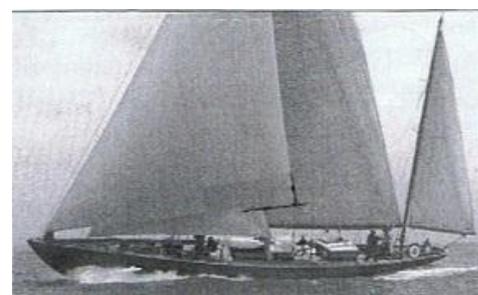


### Receiving Stuff

I'm happy to send info to modellers in need of help. But please let me know via S&T that it has arrived and is ok. Is more required? A reply is kind and always a good idea after all.

### Windfall Racer

Designed by Henry Gruber and built by top yard Burmester, 85ft Nordwind was a Windfall and now fully restored (26 men working on her for 4 years) sails in the Med and West Indies and recently came up from New Zealand to New York and then crossed to the UK, trimming a week off her best Atlantic time. Once



Grand-Admiral Karl Doenitz helmed her, then with 100 or so others she became a Windfall Yacht at the end of the war, crews bringing them to the UK from the Baltic. Another was Marabu, built for the Luftwaffe in 1935 and possibly sailed by Goering. Sixty ton Nordwind held the Fastnet record for 26 years.

### Tiger Boys

Sporting one of the later designs we were pleased to see in our boxes from John Oliver, here Alex Whittaker and Mike Parry fly the flag for the mighty Tiger, illustrious beyond measure. Snapper and scribe for AMI (in which we can still enjoy Aero Modeller, now a healthy 76) Alex and Mike fire up the pages we turn to and return to. Their coverage of tributes to Ron and Boddo was full of action and anecdote, each of the six pages a blaze of colour and action. Full marks to the production team at AMI. A fine effort.



### Windermere Matters

Sailor, author, journalist and some say spy and agent, Arthur Michell Ransome (1884—1967) and his Swallows and Amazons books continue to boost tourism in the Lake District. Arthur had several boats, built a couple and chose Trotsky's secretary as his second wife. Beau Brummell, however, was wedded to London and Brighton, declined a postinng to Manchester and relied on his man to advise on the Lakes and which one was best. The servant told his master that it was Windrrnere. The enthusiast of starch agreed that it was indeed Windermere. Ten or so Ransome boats sail today.

### Headgear

SAM 35 President and noted scribe in his Wires column, promoter of Weatherman events, editor with Brian Waterland of the SAM 35 Yearbook, Brian Lever was snapped with me at Old Warden during the highly successful Ron's Day boosted by Ken Sheppard of RC Model Flyer. Edited for several years by Peter Michel (and that means mighty dedication and hard work) the return of the Yearbook as a handy store of a variety of aeromodelling subjects is wonderful news. Between covers is the only secure way to store information long term. As well as big cars like the Thunderbird and Paxton-blown Avanti, Anne Fleming told me that Ian had a passion for the written word and first editions which built into an impressive collection. The Bond yarns, helped in later years, and in a holiday setting away from the golf course could Oddjob have sported a boater like mine but with a steel rim hidden beneath the straw? Frisbee-like, the straw boater can fly over considerable distances. And it's about time that a blue plaque was, put on Fleming's house in Victoria Square.



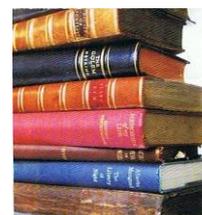
### Tuning Matters

Dick Roberts continues to give good measure in his eagerly awaited column, a full eight pages sometimes. His view of the rare/unique 5cc Carter VTR motor (also covered by AMI in September together with Model Aircraft pages for June 1963) was a treat and reminded us of watchmaker Fred Carter's contribution to Speed and Team Racing at the highest level. More info on Carter's achievements with 5cc power reside in Ron Moulton's celebrated Engine Encyclopaedia. An area worthy of deep research who, for example, got the best from the Italian engines such as Rossi and OPS? Who was the McCoy maestro? Who did it for Dooling? There is much still to record.



### Piled High

Worlds End Bookshioip (0207 352 9376) on the King's Road in SW3 is crammed with hardbacks on practically everything and is strong on factual stuff, and if it's not on the shelves the boys have extensive contacts just waiting to help. Lots of adventure by Rider Haggard, Kipling and Henty with jackets to suit and on the shelf in September was the super rare Grand Prix Car by Pomeroy last seen by me forty years ago (but now a touch expensive)



### Gas For Aces

Aboard Willy's 109 fighter Majors Hartmann and Barkhorn racked up astonishing combat scores of 352 and 301 respectively. Not easy to land or take off due to the narrow and weak undercarriage, once in the air life was a gas – literally. The inverted Daimler-Benz engine carried a supercharger into which could be fed nitrous oxide for extra boost. Meant for short bursts, up to 300bhp could be gained from the mixture carried in an unarmoured space behind the cockpit. And as we know, it's also known as laughing gas.

### Jolly Good Fun

A great evening at RPMAC let us see the first of Ian Russell's excellent Oliver Majors, Ian donating a roll of VTR plans to the club archives. Thanks to Barry I'm now the proud owner of a stunning Air Trails Annual for 1952. Packed with info over 100 A4 pages, all aeromodelling areas are covered but Team Racing - note that cover! - is right up there: Calhoun Smith on Ole Slippery (K&B 29), quotes like "Team Racing is probably the best thing that has happened. ...since glow fuel was invented", Keith Storey's The Key and The Quest selling as kits through Berkeley Models of New York. Dyna-Jet Speed at 179mph, scribes warning of terrific acceleration and line-pulls of up to 20lbs, and conventional stuff like Hell-Razor nudging 160mph, pans in magnesium available from Consolidated of NY. Dupont swings in with Nylon spinners, cowls and spats. Truly a mint copy stuffed with stuff for bold sticks who cleave balsa for the greater good. Cheers, Barry.



### Another Big Show

The Midland Air Museum, Coventry, hosted the GAvA in what proved to be a splendid display of aviation art opened with a bang by the RAF Red Arrows. Perfect weather, a fine buffet, the opening speech by Sir Peter Rigby set the scene and reminded us that more than 400 aeroplanes were built in the area. A picture I noted showed aeromodellers flying at Epsom, possibly Peter Michel in the distance. A great success for The Guild of Aviation Artists following their 450 picture display in the Mall, at the end of the day I had my Mr Toad moment when driven away in a green Alvis Speed 25. Chris Heath for the Guild and Harry James for the Museum gave many enthusiasts a day to remember\_and that 1938 Alvis was appreciated!

### Bang-Bang

Recently Jane Green reminisced on the heady days of Farnborough and the arrival of the Jet Age, full pages in our magazines telling of RAF careers and the mighty V-Bomber Force of Vulcans, Victors and Valiant impressive in white. Mad on the KK Scale range, I was building my Jetex-powered Hunter as Neville Duke was making headlines with his (one red, one light green). It was bikes for us lads back then, tree-houses and long summer days, and my trusty treader had a lion on the front and was a 4-speeder in green from Phillips, the Sturmey-Aroher a boon with this all-steel bike on hills. We'd seen a Paris Galibier but otherwise knew nothing of the lightweight scene of Campag groupsets, Curly Hetchins, Curly Hetchins, tubs varnished onto narrow alloy rims and the rest of it. Saddlebags were big and carried a repair kit in a yellow tin, a few spanners and lots of sandwiches and pop for the long journey to the air show. We'd seen Sound Barrier (Lean/Rattiga. 1952) several times and listened for the bang or bang-bang when a Swift or Hunter went through it. De Havilland, Hawker, Avro and Supermarine were on the way.

### Ouch!

More than a few headache pills needed here. Ancients and onwards under sail like a good figurehead to guide them and ward off evil spirits. For a time a collection of these things was held aboard clipper Cutty Sark. Owned by an amazing character who decorated his house like a ship - portholes, ropes not banisters, beams and bulkheads, coloured flags run up - an eyepatch covered the space left by an eye removed on his mother's kitchen table (home ops were common up to 1900) following an accident. Ace Andy Peters will restore this head and in France complete a 10ft lion for a replica frigate at La Rochefort.



### Bill's Best

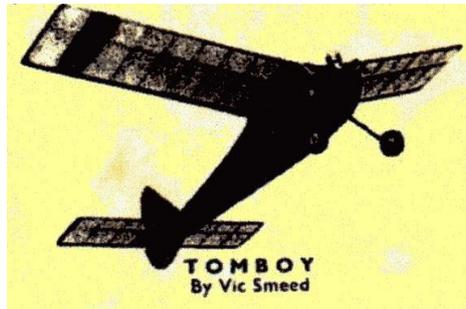
Designed during, fire watching duties in Coventry, the ground-breaking Jaguar six and the cars it powered caused Mike Sedgwick, NME curator at-Beaulieu, author and friend to remark that Bill Lyons set his prices below possibility! The Jaguar chief said it was done by accepting modest profits of £300,000 or less. Such different times! Like the casting of the Ford V8 ages before, the 7-bearing ohc six was designed for long term mass production and was a huge success on road and track. A resounding first from Brown's Lane.

### Stampede

The stunning arrival of A4 Dominion of New Zealand at Waterloo caused clerks and bankers to swerve to platform 16 and crowd along the side of the huge engine and two tenders back from a trip to the coast. Beautiful in blue with red wheels and polished steel trim, the A4 is really Bittern owned for many years by a Spitfire pilot. Sold on for restoration (virtually a £1 million labour of love) it was a memorable sight, seen earlier that July day when the express set off from nearby Victoria, Pullmans suiting, her perfectly.



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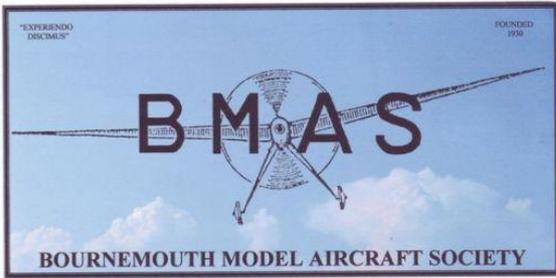
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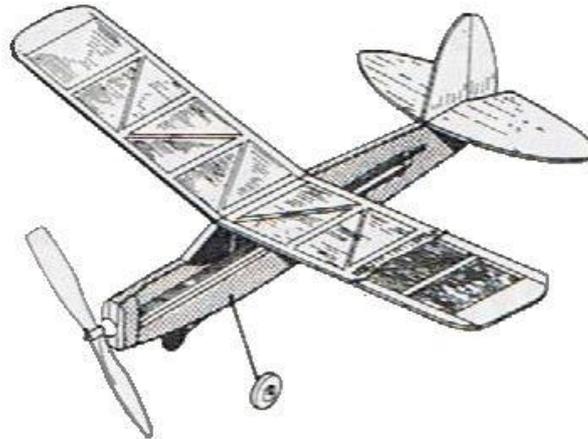
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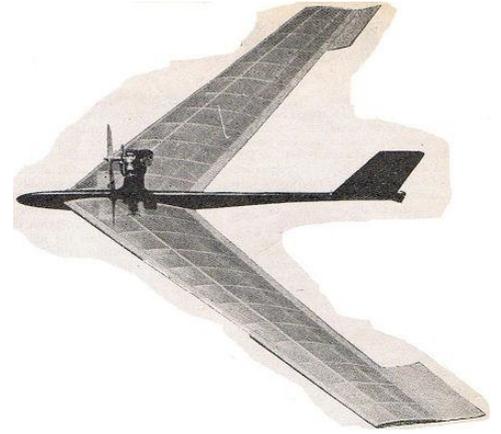
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Rake by Len Ranson a free flight tailless sports power model suitable for engines of about .5cc 42" span  
From Model Aircraft March 1963

The purpose of this design was to produce an out-of-the-ru sports model that was easy to fly, hard to damage and, at the same time, have that sleek, functional look which we associate with the contemporary trend. Too often the powered tailless model is given to a chunky, sawn off appearance and to avoid this, a slim, glider type, fuselage was chosen, with a high, raked back fin and a thin plywood engine mount. To add to the general rakish appearance and to get the best structural and aerodynamic - advantages, a tapered, rather than a parallel chord wing, was selected.



The wing, with its inbuilt tip wash-out, may not be the easiest kind to construct, but is worth the extra effort, especially as this is more than compensated by the simplicity of the rest of the model. All in all, total building time is less than for an orthodox cabin sports model of similar size. Just how realistic a functional model can look in flight was demonstrated when, on one of its test flights, it climbed swiftly away over Chobham Common. The raked wing, slim lines and high fin giving every suggestion of a modern jet!

#### Wing

Rib outlines can be traced on to the 1/16 in. medium sheet balsa by using light carbon paper. Notice that the spar slots are oversize to the spar sections. This allows for the extra width required in the diagonal setting on the sweep back. Also note that the leading edge cut on the ribs affected by tip washout is canted back. Other spars affected by the wash-out should be steam or heat twisted, to avoid adverse tension and trailing edge droop. End ribs, both at the root and tip, are mere blanks. It is best to cut these slightly oversize and sand to a smooth finish. The root rib must, of course, be slotted to take the wing tongue.

The leading edge is cut from 1/8 in. medium sheet and laminated. The hard balsa trailing edge is of the ready formed type, but care should be taken in cutting the taper. The two forward spars are of spruce or obeche, but very hard balsa will do. Hard balsa, too, should be used for the rear spar. Remember that swept wings tend to droop if not structurally rigid.

The wing boxes are made up of plywood and balsa sheet as shown in the plan diagram. The 1/8 in. sq. spacers are of spruce or obeche, but again, very hard balsa will suffice. Where hardwood is to be jointed "Evostik" or similar impact glue makes for an instantaneous fixing, without need for the joint to be kept under prolonged compression. Glue the boxes firmly into the rib apertures. You may find the latter slightly undersize, if so, they should be carefully opened out with a flat file. See that the box ends are covered with a strengthening film of cement. Peg holes should not be drilled until the wings can be assembled on the fuselage for accurate alignment.

The 1/16 in. sheet elevons should be steam or heat curved and set to the angle given on plan.

The correct degree of wash-out and elevon setting is essential to good fore and aft trim.

If in any doubt, err on the side of too much negative set, rather than too little.

#### Fuselage

The centre engine pylon-cum-wing-tongue is fretted out of 3/16 in. good quality plywood. This section can be laid directly on to the plan, and the other parts of the 3/16 in. thick keel added. Whilst still on the plan, build up the fin, notching the spars into the keel as shown. Before removing the keel from the plan, one of the 1/4 in. sheet sides can be cemented on, leaving open the spaces above and below the wing tongue slot. Remove from the plan and add the other sheet side similarly.

Next glue in the wing tongue. This is made up of two laminations of 1/16 in. plywood. Cut along the centre and break in the dihedral before fixing the laminations together with impact glue. When the wing tongue is correctly aligned and glued into its slot, fill in the remainder of the 1/4 in. sheet sides around the wing tongue, cutting each piece to suit the dihedral angle.

The fuselage can now be carved and sanded to the cross sections shown, finally doping and sanding to a smooth finish.

#### Covering

Fuselage, wings and fin are all covered with heavyweight tissue. Water spray the wings and fin and give one coat of dope and two thin coats of fuelproofer. The fuselage should be doped and sanded and several coats of fuel proofer applied, sanding lightly between coats. Wet sanding is advised if you want a professional looking finish.

#### Flying

Rake should balance where shown on the plan. If nose heavy on hand glide (this should be fairly vigorous as the model is a fast flyer) check elevon angles and bend up slightly. If the model stalls and you are satisfied that washout and elevon angles are not undervalued, add a small amount of ballast to the nose. On no account must the washout, etc., be less than stipulated, as the model will be unstable. The high pylon has the effect of reducing torque. By mounting the engine on the left-hand side of the mount, sufficient offset is given to allow for a sweeping left-hand turn under power and a generous right-hand turn on glide. To adjust the glide, bend up the left elevon to give more left turn and ditto on right elevon for right turn.

The 0.5 c.c. motor gives a good, lively, but not too spectacular performance. If you wish to experiment with a larger engine, then the pylon should be heightened and set back, to compensate for the increase in weight.