Sticks and Tissue No 157

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

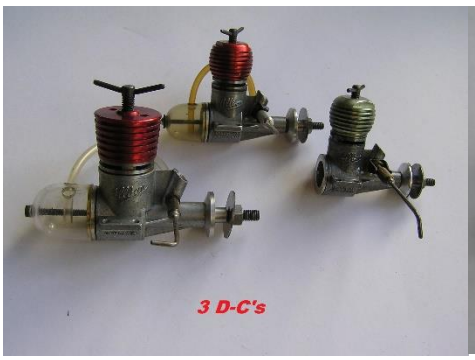
Thanks to Mark Venter back issues are available for download from http://sticksandtissue.yolasite.com/

Writings and opinions expressed are the opinion of the writer but not necessarily the compiler/publisher of Sticks and Tissue.

Bill Winter's Drake painted by Mike Cummins of RPMAC

From Peter Scott
On the 12th day of Christmas, Santa brought to me…

12 vintage sparkies
11 British diesels
10 Mighty Atoms
9 Frogs (assorted)
8 more diesels
7 different Pfeffers
6 E.D. Babys
5 old Mills
4 Kalpers
3 D-C's
2 Garcic Johns
and a Webra Piccolo



From Jim Hammond

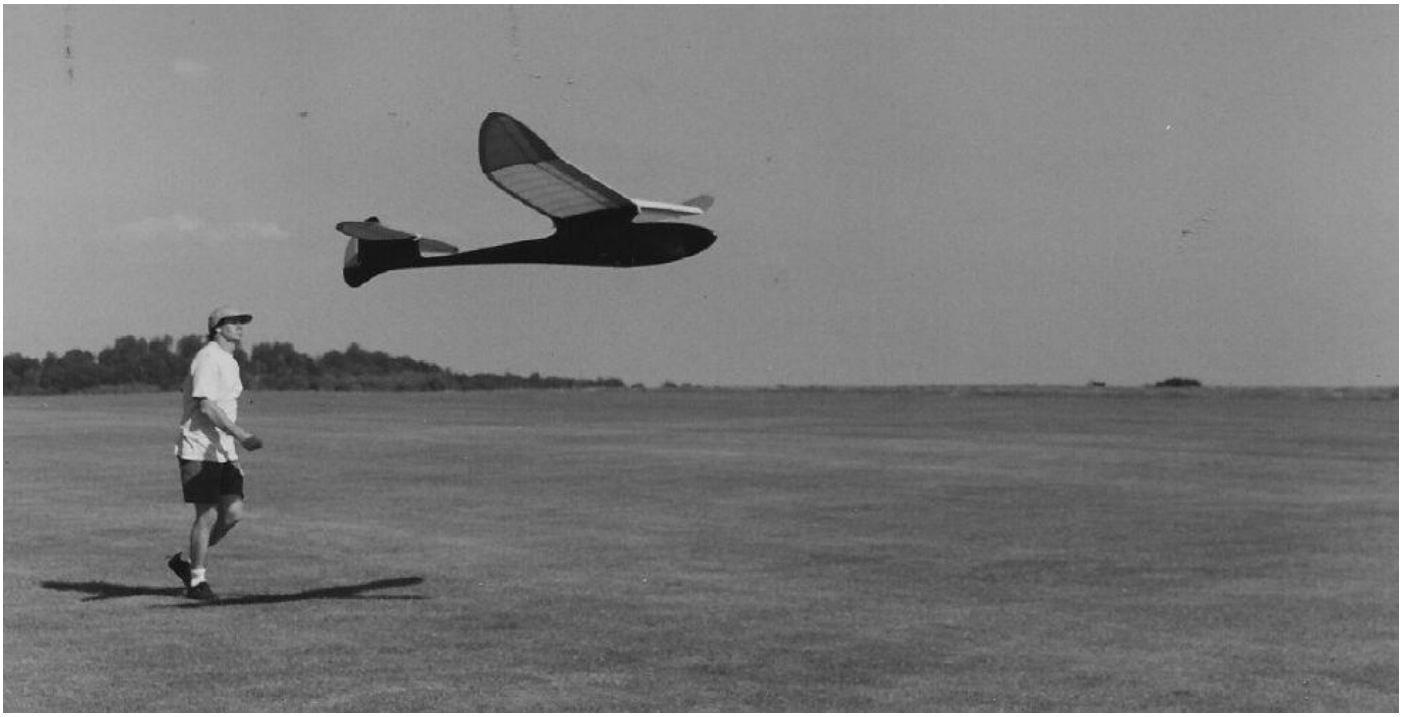
Hi James

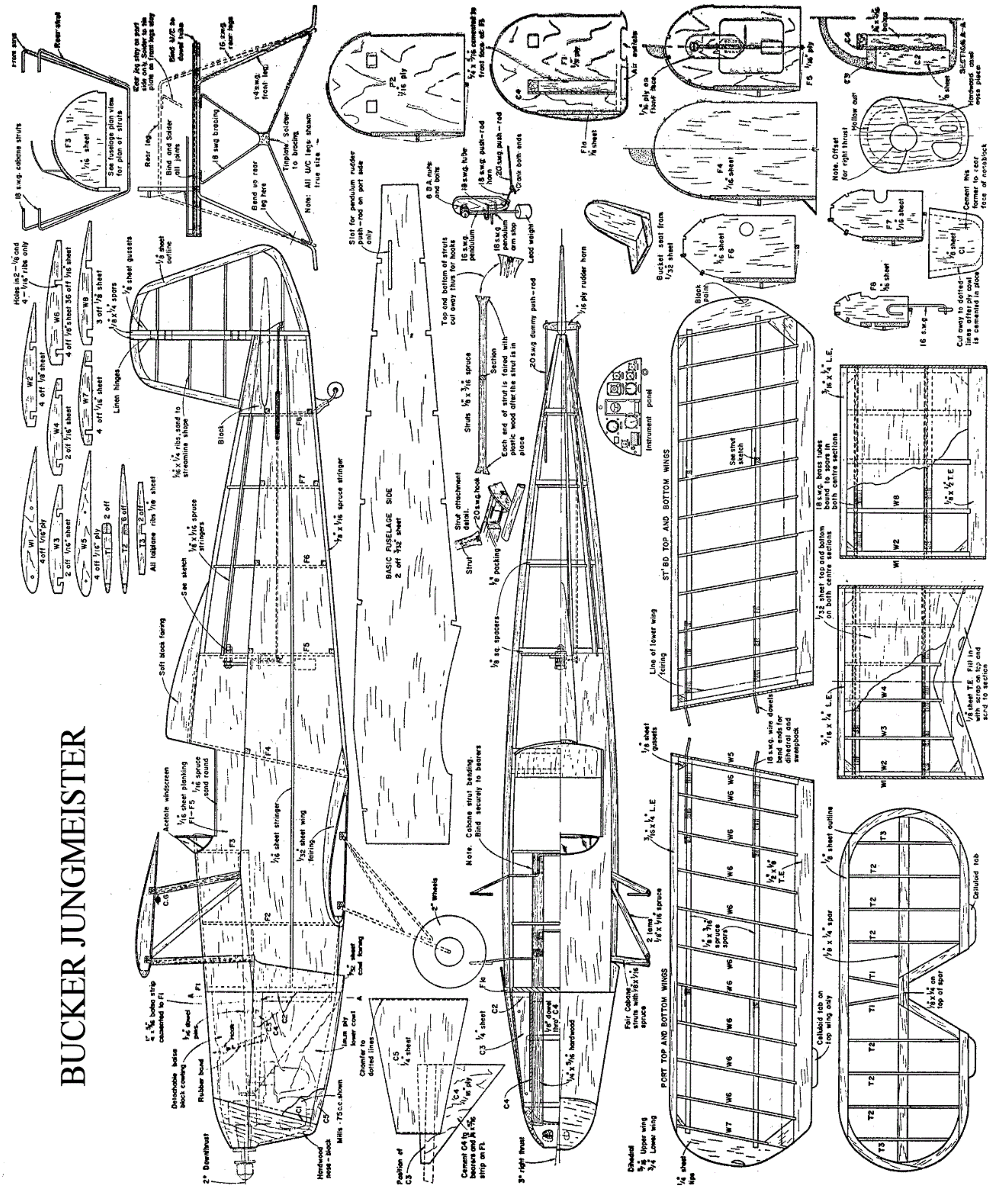
Just some flying at Violettown and we test flew Marks super 60 –Today. It is the yellow and red model in the photos I sent you, my son Greg test flew it, rudder quite touchy on the climb at full power it flies at half power -and it was thermalling in lift one flight, easy to land not like my Veron Cardinal it is a hand full at full throttle on the climb as it too fast on full throttle can get into dutch rolling to the point it rolls, ok at less power still got to watch the turns -great fun

(hope to sort it out a bit more next year)

From Dick Twomey

(Three photos, self-explanatory)





Bucker Jungmeister an easy to build 26% inch free flight scale model for .5 - .8 cc described by W Lister flight tested by W Newman from Aero Modeller November 1961

Designed in 1935 as an advanced aerobatic trainer, the Bucker Jungmeister is considered among the world's top aerobatic pilots to be one of the finest aerobatic mounts available. One look at the trim lines of the little

Jungmeister, brands it as a machine just asking to be modelled, and what a corker for scale it is. Our prototype, designed by W. Lister was flight proven by Bill Newman who added several practical features to aid and simplify construction.

Start construction by cutting out the basic fuselage sides. Set these out upside down over the plan and fit the cross pieces. Cement in position the formers from the cabin forward and then from the cabin back to the stern post. Secure the bearers and 1/16 in. ply C4's. Shape the cabane struts and bind to the bearers. At this point the pendulum should be fitted and cabin detail added if required. Stringer the fuselage and plank as shown to the rear of the cockpit. Cut two C3's from 1/4in. sheet and cement to engine bearers. Carve the nose block, hollow out to suit motor and bearers and part into two pieces across the thrust line of the cowl. Cement the lower half to the bearers with C1, then add C2 followed by C5, the cowl underside. Spot cement the top of the noseblock in place and then carve the top cowl block to shape, removing both (now as one) and hollow out. Wrap round the 1 mm. ply cowl sides cementing to Cl, C2, C3 and CS, and the rear cowl fairing round the lower part of the fuselage.

Build the wing centre sections top and bottom, laying down leading and trailing edge and spars and adding ribs. When set, remove from the plan and bind in the metal tubes. Bind the upper C/S to the cabane struts and cover with 1/32 in. sheet. Shape the under carriage and bind to the lower wing C/S. Sheet this also with 1/32 in. balsa and cement to the fuselage fairing with 1/32 in. sheet. Lay down the leading and trailing edges and spars of the outer wing panels add ribs and tips and finish. When set, remove from the plan and bind in the

locating wire dowels, bending for a sweepback and dihedral angle and the interplane strut fixtures.

Cut the fin and rudder outline from in. sheet cementing together over the plan, packing up 1/16 in. Pin in position the 1/8 x 1/4 in. spars and cement the 1/16 in. x 1/4in. rib blanks in place. When set, remove the fin and rudder from the

board. Fit the pendulum rudder horn and tape the two components together. Sand the unit to section. Repeat for tailplane laying down the outline on 1/16 in. packing. Lay down the 1/8in. x 1/4in. spar flat on the plan and add the rib blanks. Remove from the plan and sand to shape.
Carve and shape the stern block, cutting away the underpart to accommodate the tailplane, slightly exaggerated to allow variation of tailplane incidence for trim and cement in position over tailplane.
Add fin. Sand the whole model and cover with heavyweight tissue. Add the cockpit fairing and other external details. Give two coats of clear dope and finish.
The prototype was finished silver overall with red fin and black markings. Those who require a very finely detailed model, besides a proven flyable design should refer to the article on the Bucker Jungmeister in our famous Biplane series, published in our October 1958 edition.

From Bill Wells

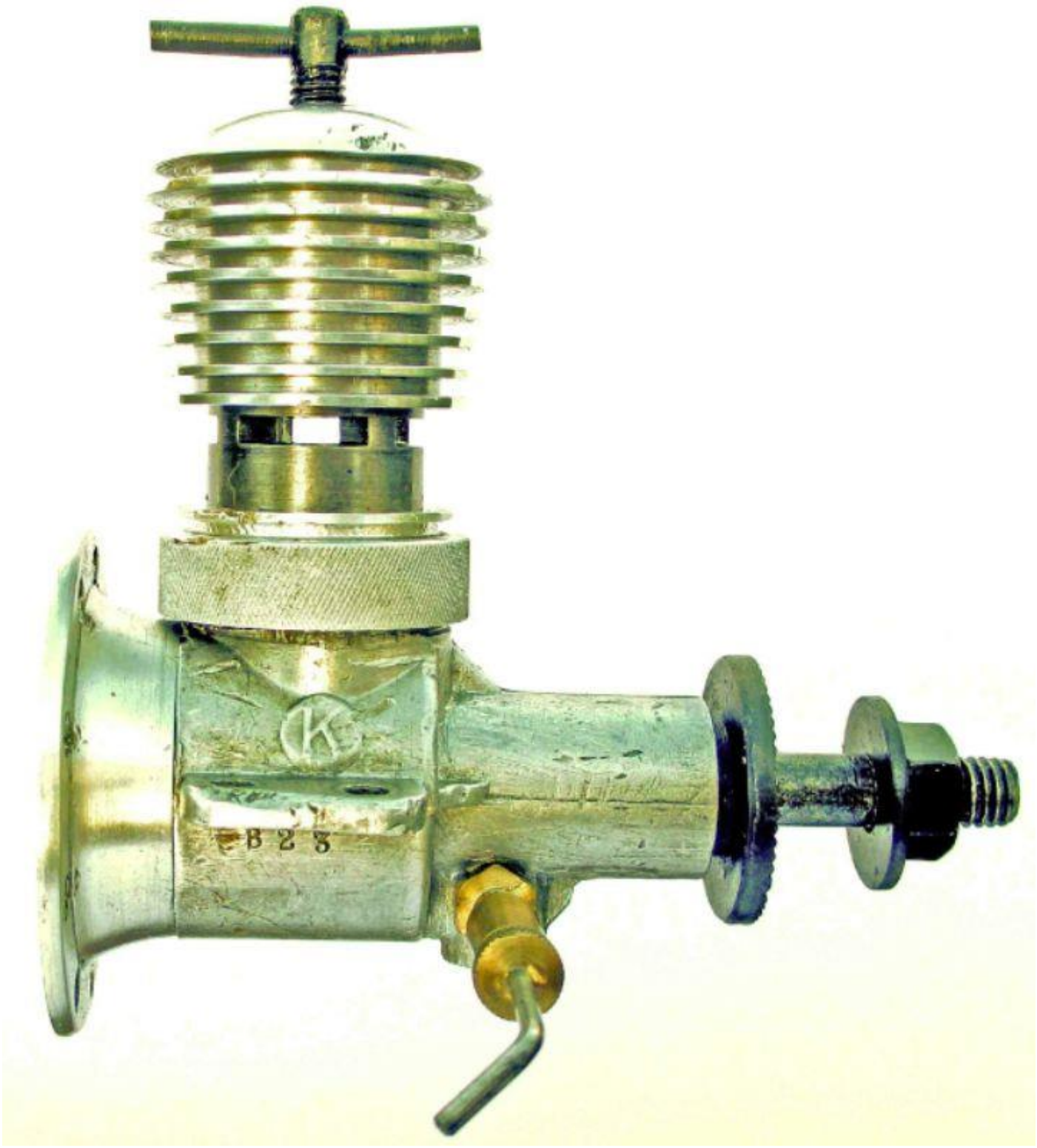
'K' Kestrel

Following my pictures of 'K' Vulture here are pictures of the smaller 2cc version, the Kestrel. This engine also has the same features as the Vulture. A ball joint little end, a radial transfer port, a replaceable disc with threaded spigot for the compression screw. The Kestrel was a development of 'K' Falcon which looked very much like a smaller version of the Mk. III Vulture except for the carburettor intake which is positioned below the crankshaft. As all the parts are held together with their own threads there are no annoying little screws to fiddle with or lose! The 'K' Company made an alternative screw in back plate that formed a radial mount for the engine, a modern idea for an engine made 71 years ago! Now days most internal combustion engines used by modellers have beam mounting, which RC modellers convert to radial mounting by using plastic or metal engine mounts. So yet another idea ahead of its time. If you want to know more about 'K' Model Engines or the earlier Kemp designs there is a huge amount of information on Adrian Duncan's Website.

To sum up this is a very modern looking engine considering it was made in 1949. Like the Vulture it has modern features, some of which, years later, have been incorporated in model engine design. This particular engine clearly shows signs of use but it starts easily and runs well. It is 1.96 cc and weighs in at 4½ ozs.

All the Best for Christmas and the New Year,

Bill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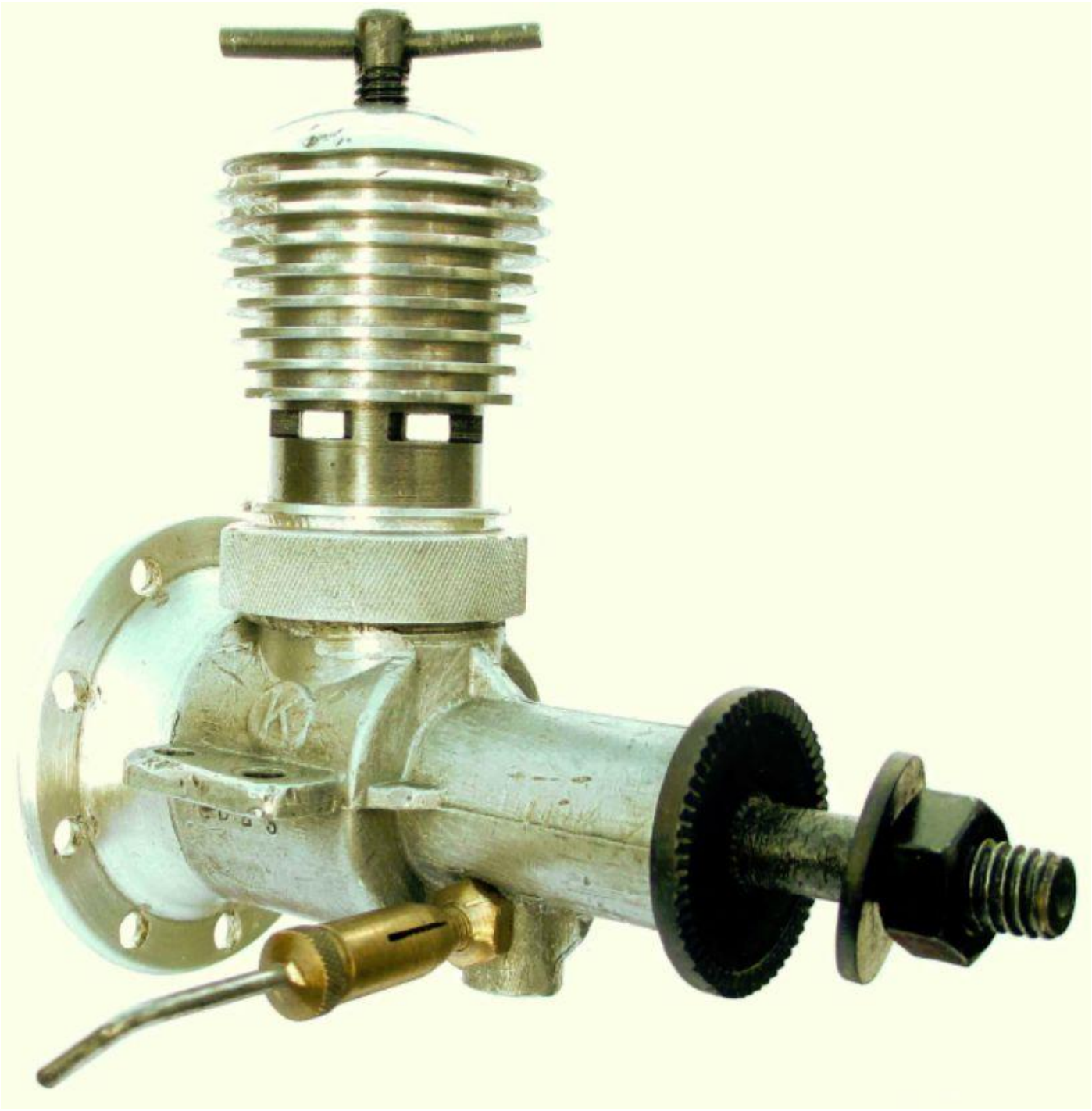
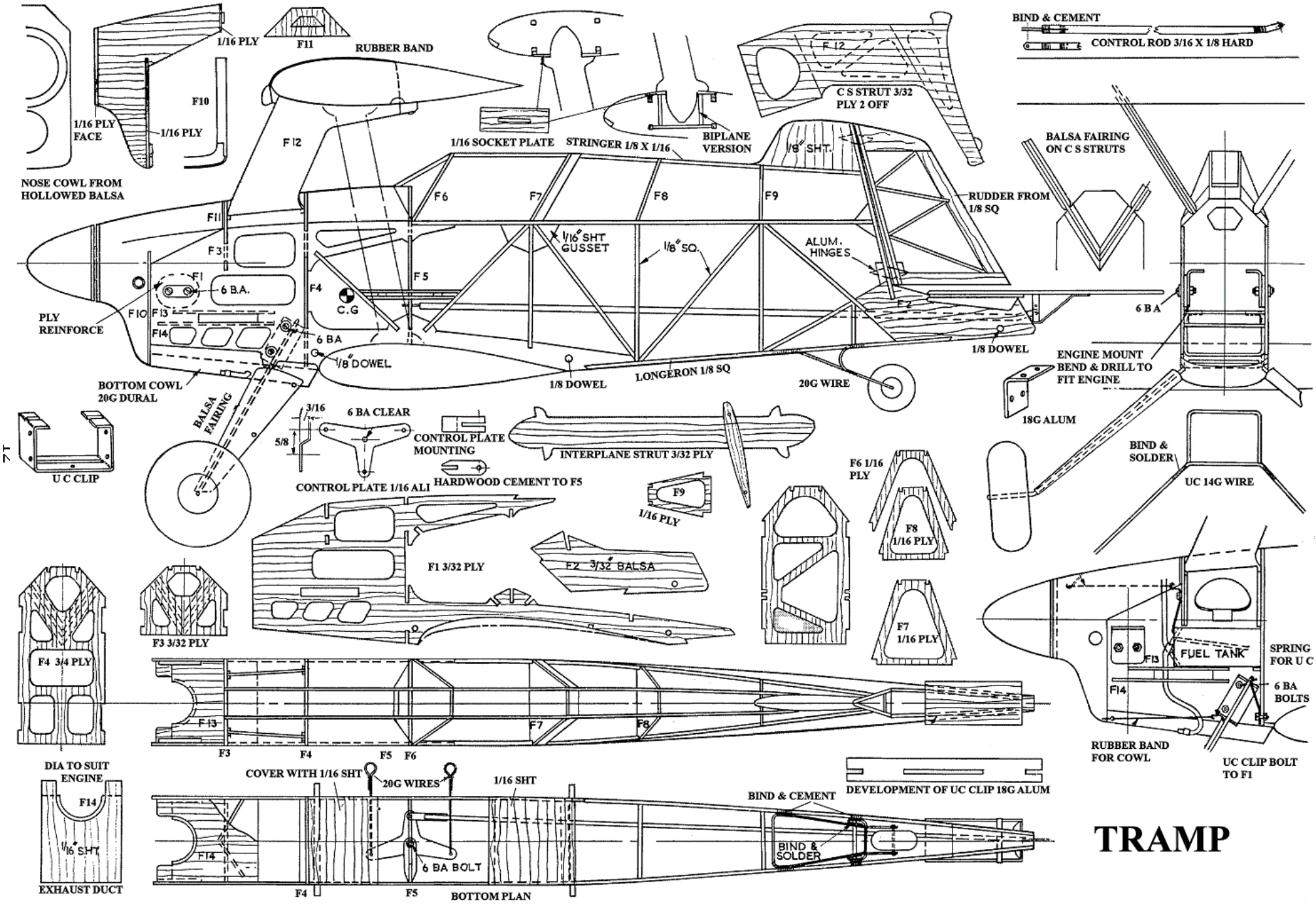
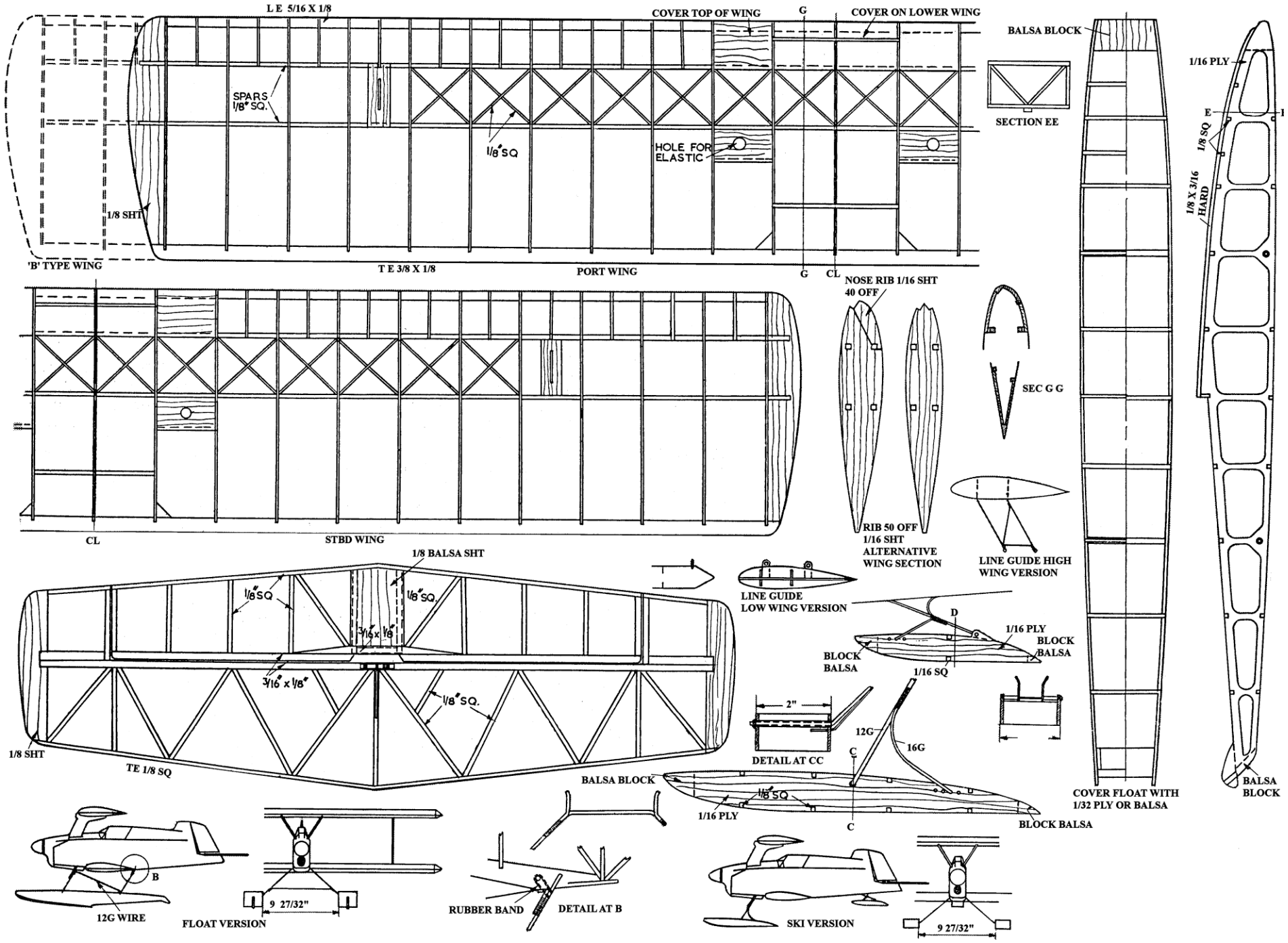



1/16 PLY
F11
RUBBER BAND
F10
1/16 PLY FACE
1/16 PLY
NOSE COWL FROM HOLLOWED BALSA
F12
1/16 SOCKET PLATE
STRINGER 1/8 X 1/16
BIPLANE VERSION
1/8" SHT.
C S STRUT 3/32 PLY 2 OFF
BIND & CEMENT
CONTROL ROD 3/16 X 1/8 HARD
BALSA FAIRING ON C S STRUTS
F6
F7
F8
F9
F11
F3
F1
6 B.A.
F4
C.G
F5
F10
F13
F14
PLY REINFORCE
1/16" SHT GUSSET
1/8" SQ.
ALUM. HINGES
RUDDER FROM 1/8 SQ
F2
6 BA
6 BA
1/8" DOWEL
1/8 DOWEL
LONGERON 1/8 SQ
20G WIRE
1/8 DOWEL
ENGINE MOUNT BEND & DRILL TO FIT ENGINE
BOTTOM COWL 20G DURAL
BALSA FAIRING
18G ALUM
3/16
6 BA CLEAR
5/8
CONTROL PLATE MOUNTING
INTERPLANE STRUT 3/32 PLY
U C CLIP
CONTROL PLATE 1/16 ALI
HARDWOOD CEMENT TO F5
F6 1/16 PLY
BIND & SOLDER
UC 14G WIRE
F9
1/16 PLY
F8 1/16 PLY
F1 3/32 PLY
F2 3/32" BALSA
F7 1/16 PLY
F3 3/32 PLY
F4 3/4 PLY
F13
F7
F8
FUEL TANK
SPRING FOR U C
F14
6 BA BOLTS
F3
F4
F5
F6
RUBBER BAND FOR COWL
UC CLIP BOLT TO F1
DIA TO SUIT ENGINE
COVER WITH 1/16 SHT
20G WIRES
1/16 SHT
DEVELOPMENT OF UC CLIP 18G ALUM
BIND & CEMENT
F14
1/16" SHT
F14
6 BA BOLT
BIND & SOLDER
EXHAUST DUCT
F4
F5
BOTTOM PLAN

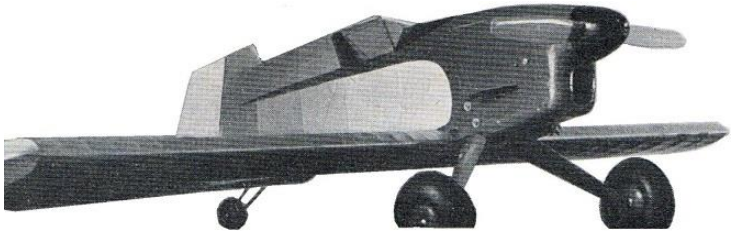
TRAMP


L E 5/16 X 1/8
COVER TOP OF WING
G
COVER ON LOWER WING
SPARS 1/8" SQ.
1/8 SQ
HOLE FOR ELASTIC
1/8 SHT
'B' TYPE WING
T E 3/8 X 1/8
PORT WING
G
CL
BALSA BLOCK
SECTION EE
1/16 PLY
E
I
1/8 SQ
1/8 X 3/16 HARD
NOSE RIB 1/16 SHT 40 OFF
SEC G G
CL
STBD WING
RIB 50 OFF 1/16 SHT ALTERNATIVE WING SECTION
LINE GUIDE HIGH WING VERSION
1/8 BALSA SHT
1/8"SQ
1/8"SQ.
3/16" x 1/8"
3/16" x 1/8"
1/8"SQ.
1/8 SHT
TE 1/8 SQ
LINE GUIDE LOW WING VERSION
D
1/16 PLY
BLOCK BALSA
BLOCK BALSA
1/16 SQ
2"
DETAIL AT CC
12G
16G
C
C
BALSA BLOCK
1/8 SQ
1/16 PLY
BLOCK BALSA
COVER FLOAT WITH 1/32 PLY OR BALSA
BALSA BLOCK
B
12G WIRE
FLOAT VERSION
9 27/32"
RUBBER BAND
DETAIL AT B
SKI VERSION
9 27/32"

The Tramp Suitable for 2.5 – 5 cc engines An all in one 35 ½" span CL composite from Poland by Wiestaw Schier from Model Aircraft October 1957

The Tramp is unique among C/L designs, as it can be readily converted to fly in many different versions. If you are fed up with a biplane, remove one of the wings and fly it as a monoplane, or in winter when snow makes normal flying impossible fit the skis and get a new thrill out of control-lining. Or again, perhaps summer rain has turned your flying field into a pond, then there's still no need to he grounded, fit the floats and keep flying.
To those who are accustomed to looking at the all-sheet, pre-fabricated, tip-from-box, squeeze-tube-of cement, shake-well, allow-to-dry and it's ready-to-fly type of C/L model that is so popular nowadays, the con-struction may appear a little tricky.
This is not so, however, and although some of the constructional ideas used may appear strange to your eyes, they - have been thoroughly flight proven.
The total possible variants for this design are many but the following list will give some idea of the different models that can be obtained by merely rearranging various components.

- The biplane with non-symmetrical wing section is the basic version, and fitted with any average 2.5 c.c. engine it will make an ideal trainer, capable of the simpler aerobatic manoeuvres, which include wing overs, loops—single and consecutive and inverted flight.
- The special biplane stunt version differs from the above in having a symmetrical wing section, and its wing area increased by adding two ribs to each tip; accordingly the wing struts should be repositioned two ribs further out. Fitted with a suitably powerful 3.5-5 c.c. engine it is capable of the full stunt schedule. Because of the greatly increased speed it is necessary to use the un balanced "B" tailplane to avoid elevator flutter and vibration.

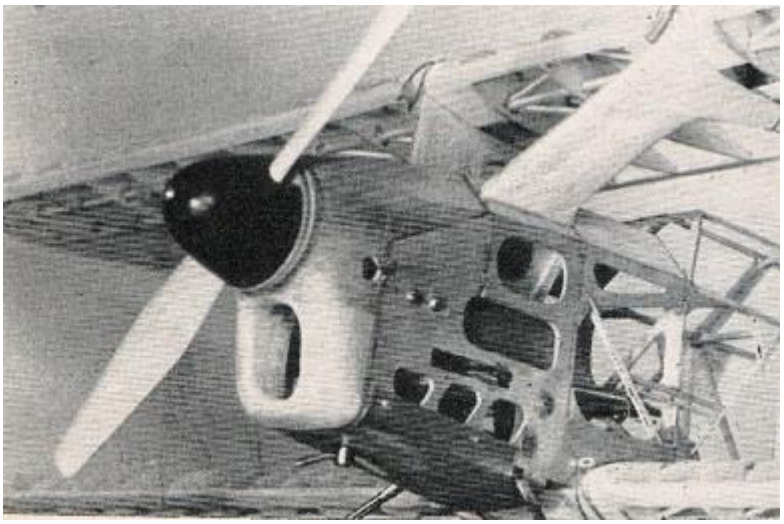


- The low wing version is obtained by removing the upper wing from either. The only other change necessary is to use the smaller tail " C."
- A parasol version of 3, is obtained by removing the lower wing. However, the flying characteristics are completely different, the high wing giving the model a very lively performance.

- The Class B team race version can consist of either 3 or 4, it only being necessary to use a 30 c.c. tank, positioned in the fuselage at an angle to ensure that all the fuel is used.
- By merely fitting floats or skis any of the variants can be converted into a completely different machine, not only from the point of view of appearance either, one must try flying a control liner from water to really appreciate that it is a new branch of flying. .

To obtain all these variations it is assumed that all the different components have been constructed, but if desired one can, of course, simply construct one particular type. The only constructional doubt that might remain after studying the detailed two sheet plan, is the composite hardwood/balsa construction, but provided a suitable cement such as Durafix is used for the hardwood or hardwood-balsa joints - no difficulties should be experienced.

It would, however, be a good idea to pre-cement all joints. Strip hardwood such as spruce, birch, pine or obeche is obtainable from most model shops, but should there be any difficulty very hard balsa maybe substituted. Incidentally, if you intend to use an engine of low power, the weight of the model must be kept as low as possible to ensure a good performance, so it would be quite in order to use balsa wood throughout in such a case.



To obtain the best performance, particularly with the smaller engines, the propeller is most important, and various pitch/diameter combina tions should be tried until the best results are obtained. Generally, for training and stunt flying, a fairly large diameter fine pitch prop is best, i.e., 9 x 6, 10 x 5, etc., but for team racing or fast flying a coarser pitch is necessary, and an 8 X 8 or 8 x 9 should be tried.

The length of line will, of course, depend on the motor used but a good, average would be between 40-50 ft. for 2.5 c.c. versions; up to 6o ft. for the 5 c.c. stunt version.

I hope that this brief description of Tramp has shown how versatile the design is, and that those who build it will get as many hours of fun experimenting with the different layouts as I have had.

From David Lovegrove

Vintage Model Company / Performance Kits Hornet Moth

I was amused and, I confess, somewhat relieved to read Stephen Winkworth's review of his build of the VMC's laser-cut version of the Performance Kits' Hornet Moth. Amused, because he identified most of the faults I found with kit plus a few that I didn't (my review/conversion tips appeared in the Aero Modeller about a year ago). Relieved, because I was half expecting him to say that my less than complimentary comments were unjustified. That he didn't fully vindicated my frustrations with the kit! The fact is that if I hadn't committed myself to producing that article I honestly wouldn't have bothered trying to finish the model. It was a pig.

Thankfully, the guys at VMC were in full agreement that the kit had too many serious faults to allow it to be let loose on an unsuspectiing modelling public. When I fed back to them my many observations, they promptly deleted it from their range. At which point it must be said that this rogue 'un is certainly NOT representative of their offerings. I believe the Hornet Moth snuck in as one of a number of kits they acquired from the now-defunct Replikits concern.

Incidentally, in compensation for the execrable Hornet Moth, they kindly offered a replacement kit – I chose their excellent Sopwith Camel.

So, for completeness, may I add my thanks to Stephen for verifying my findings. As a matter of record, my version of the model did fly, not entirely convincing to be sure, but good enough and it's still in one piece, albeit retired to the top of the wardrobe in our spare room . . .

In these ways we learn.

Hornet Moth follow on from Stephen Winkworth

STOP PRESS

Following my its maiden flight on December 12 I decided that, not only would the Moth benefit from a bit of nose ballast, but there might be a danger of tip stalling. Biplanes sometimes have their lower wing set slightly aft ('positive stagger') and at a slightly lower incidence than the top wing. So there might be something to be gained by washing out the tips of the lower wing. To accomplish this I devised an instrument of medieval torture – appropriate really, since the word 'torture' comes from the Latin *tortura,* meaning twisting – and, after applying another coat of dope to the affected area, left the beast suspended on the edge of the worktable overnight (see photo). The tips of the lower wing were thus twisted to two or three degrees negative. I then added a small lump of lead to its 'chin', bringing the CG to just forward of the top main spar.

My Hornet Moth has now been flown several times, thanks to a calm sunny Christmas Day. It flies a little awkwardly, owing to the lack of dihedral, but is able to sustain a gentle climb on less than half throttle. It has taken off several times from a tarmac runway and provided I keep the power to no more than 2/3 throttle, it shows no sign of being about to 'sting' its builder. I just wonder how it would have performed for any intrepid modeller back in the middle of the last century who managed to complete it and fly it under rubber power!

Maiden flight

Today the Hornet Moth had its maiden flight. It would have been yesterday, but on approaching the club field I could see a group of local flyers and I thought it would be too much distraction. It's bad enough having the dog with me. So I chanced it this morning, despite a forecast of strong winds.

The field was deserted and apparently calm, though chilly at 5deg. As I was about to launch Hornet Moth a little breeze sprang up from the northeast, an unusual direction. As soon as she was airborne the wind grew gusty, and I had a hard time keeping her on an even keel, as her nose kept pointing skyward and threatening a stall. The rudder was perfectly effective, though the gusts - far too turbulent for a featherweight model like this - kept throwing her around, and it was all getting beyond me so I decided to kill the motor and bring her round for a landing, and not a bad one at that, considering what a struggle I had had with her in the rough air.

The wind died down again and conditions didn't seem too threatening for another larger model I had brought with me (not THAT large, though, at 200gm for a 95cm span). So I flew that, searching for lift and finding the barest sign of it in a couple of spots. After landing it and throwing the ball a few times for the dog I launched the larger model again. This time there seemed definitely to be a patch of lift developing in an unusual spot, so I let it circle a few times with the motor off, noticing a modest gain of altitude as it drifted downwind. A burst of throttle to bring it back resulted in a little more height gain, then another few circles in the thermal, and suddenly a gust of turbulence had it on its side, climbing steeply, then twisting uncontrollably, now fully inverted - wow, that's never happened before - righted but shooting up like a rocket, getting hard to see and very far downwind - and then I was seriously afraid of losing it as the wind got really violent and it was being swept away, a small dot high in the sky.

Thanks to years of practice with model aircraft I was able to keep the nose pointing in the right direction, and held down to escape the powerful lift, but it was touch and go and it took several anxious minutes before I could really see it clearly enough to know that it was getting lower and closer, and aiming for a safe landing in the field.

So, quite an eventful day in the Winkworth model world. I really must wait for some more settled weather. It is that quality of near catastrophe which is part of the allure of these things.

Toture of the Hornet Moth

From George Stringwell

Whilst enjoying the latest S&T it struck me that it is a good while since I contributed anything. This is not due to lack of modelling activity, in fact the last two years have been some of the most active flying-wise I have enjoyed for some time. This due to finding, just ten minutes drive from home,a great little group of modellers with their own private and excellently appointed flying field. Pierre-Yves is the "patron" of the group and is a long-time modeller of considerable skill and experience, albeit mainly involved with larger R/C models, along with his son Vincent. Most of the others fly, as is the way these days, ARTF models but have all been most interested in my mostly vintage scratch-built collection and, being retired, the 24/7 availability of the field means that I can take advantage of the best of the available weather to the extent that this year's flying score is close to 500 flights and 70 hours airborne. Doing so much flying has rather slowed my building rate down, but with over 30 models ready to go (all electric) this may be a good thing as storage space is becoming an issue!

Herewith are pictures of a couple of this year's builds, a little RET trainer, the Vayres Cub which I built as a present for Pierre-Yves delightful young grandson Pierre-Olivier who is a great help in saving my arthritic knees when I land too far away! He is, needless to say, rapidly becoming an extremely competent pilot, not surprising as a third generation modeller. The other new model is my rendition of Tom Hunt's "Elipstick 260" tailless which, after a few scary minutes with a rearward CG, has been tamed to be an extremely satisfactory perfomer delivering quarter of an hour of aerobatic fun on a 2S 1000 lipo. Also attached are a few shots taken at various times at the Vayres field, together with a couple of my wife Alison's excellent in-flight portraits of my favourite model, the double size Frog Tom Tit, now 7 years old and approaching 250 flights.

Photo Captions:

Best regards from rural France
George Stringwell

Pierre-Olivier was surprised and delighted when I gave him the Vayres Cub I designed and built as a present

My favourite 2x Tom Tit, 7 years and 250 flights old.


F-TM

The Lipstik 260 is very lively

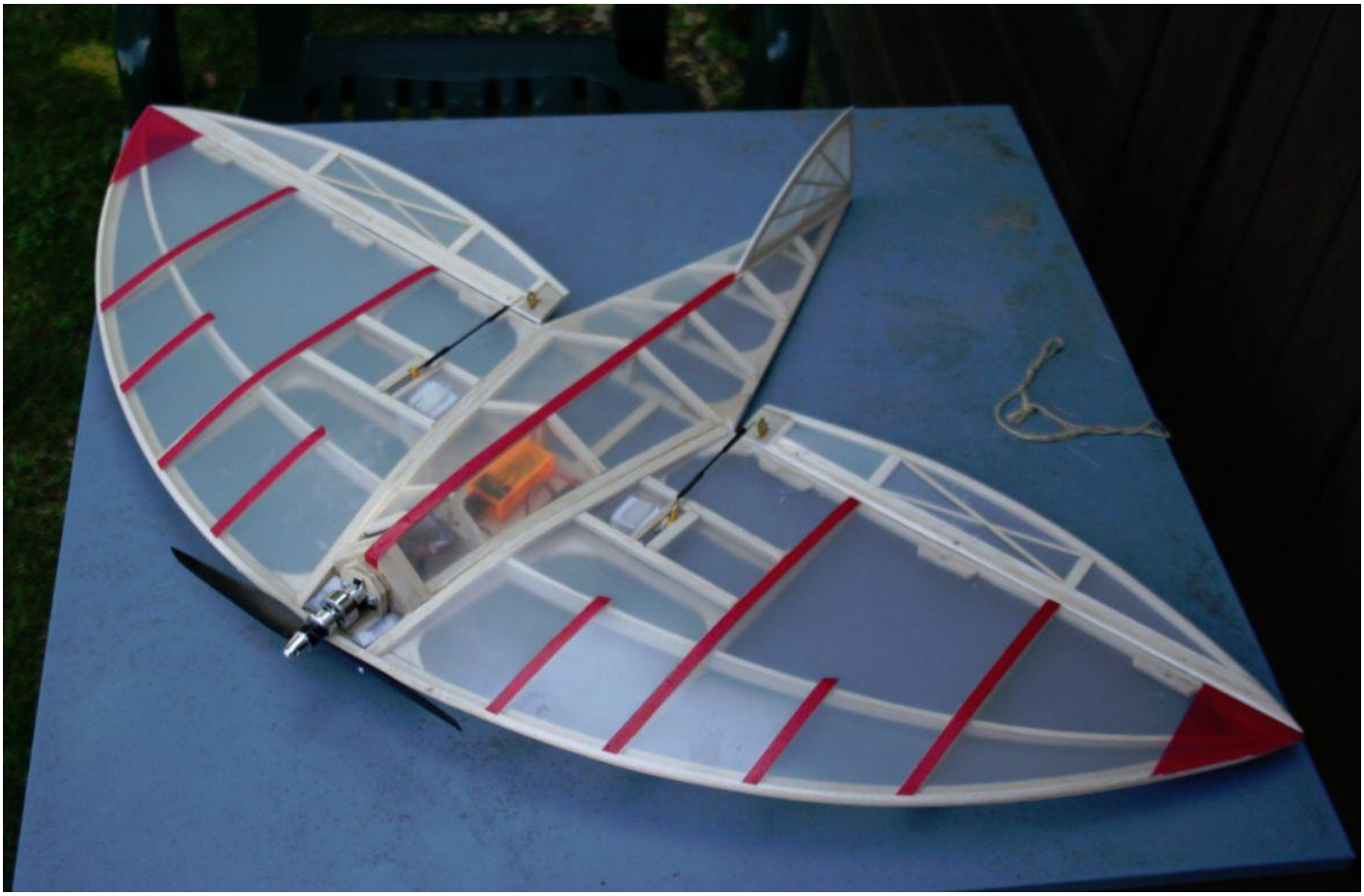
My electric version of John Barker's "Lulu" encourages lazy flying!

Pierre-Yves and me with my Bill Winter "Airknocker"

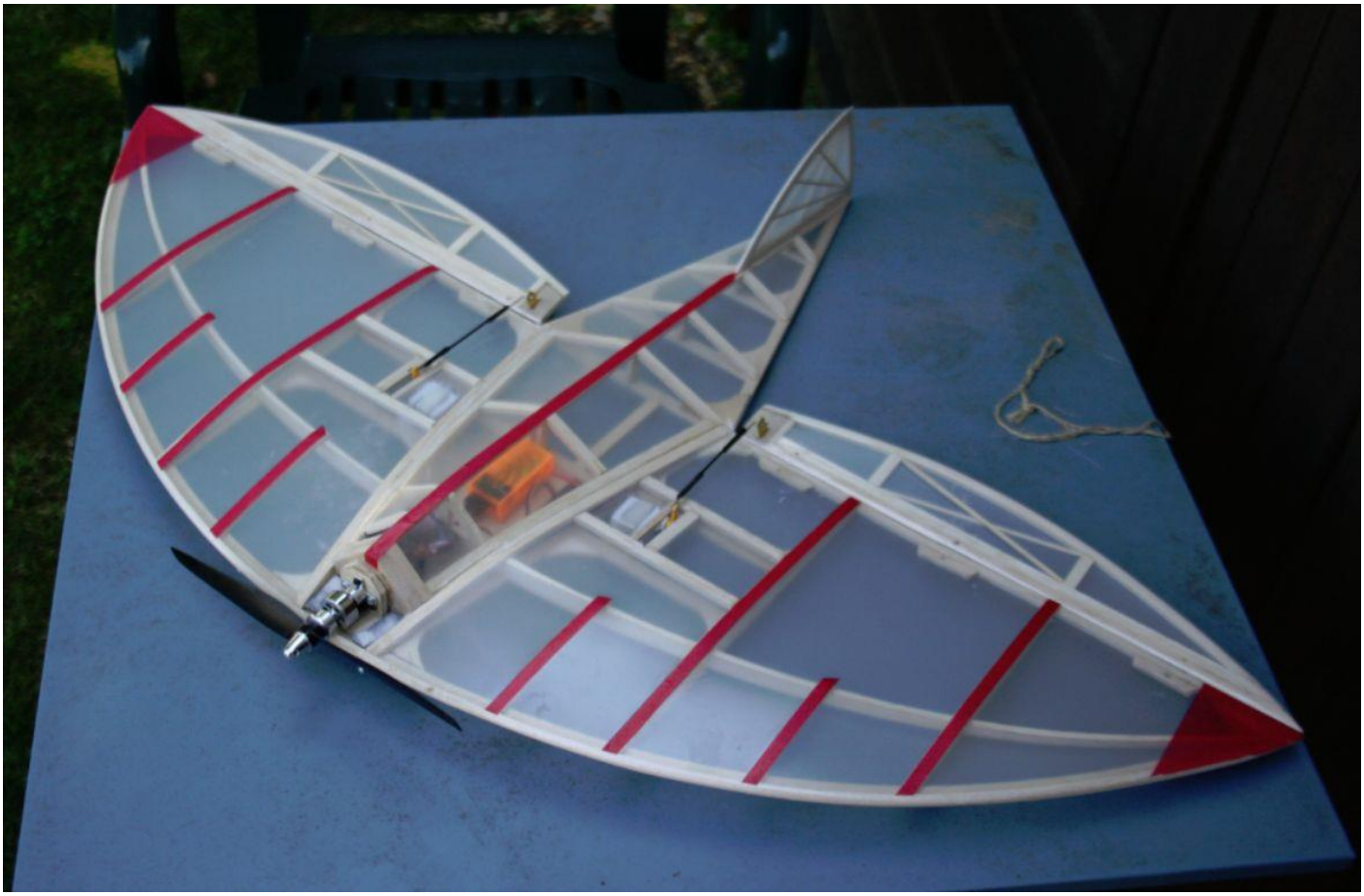
Typical of the relaxed flying summer evening atmosphere at Vayres - but this was taken in February 2019 when we enjoyed a week of amazing weather.

The field shelter provides very necessary and welcome shade during the summer months.

The "Vayres Cub" has proved to be an excellent trainer



My "Elipstik 260" cost very little in materials, weighs not a lot and is a blast to fly - but you have to keep your eye on it!



JETEX REMEBERED

by

John Ralph

Some ten years ago I wrote a piece on JETEX for my local clubs monthly magazine (WITHOUT FEATHERS) which has been put together for many years by Ron Marking one of the founder members the club , " CORNISH VINTAGE AEROMODELLERS " (CVA) . Ron sends copies of (WF) to " Free Flight Quarterly " which is published " Down Under " in Tasmania. and they asked if they could reproduce my offering in their journal. We were pleased to say yes and since the story was fairly long it was run over two editions.

Fast forward to the present when I was browsing through my collection of "Can't give away yet publications" I came across the Free Flight Quarterlies from 2010. which I had been sent . Apart from a few editorial errors which needed putting right the story seemed to read quite well so I asked James if he would be interested in carrying it in S&T .He agreed so off we go :-

Once upon a time…….. No I can't start like that because it all really happened and the beautiful fairy did not come along until later!!

It's June 1948 and model aircraft enthusiasts opened their copies of "The Aeromodeller" to be made aware of a new form of propulsion on offer.

"SELFRIGES PRESENT JETEX- THE NEW MINATURE JET ENGINE THAT WILL REVOLUTIONIZE MODEL AIRCRAFT FLYING " stated the advert from the prestigious London store. Fig 1

fig 1.

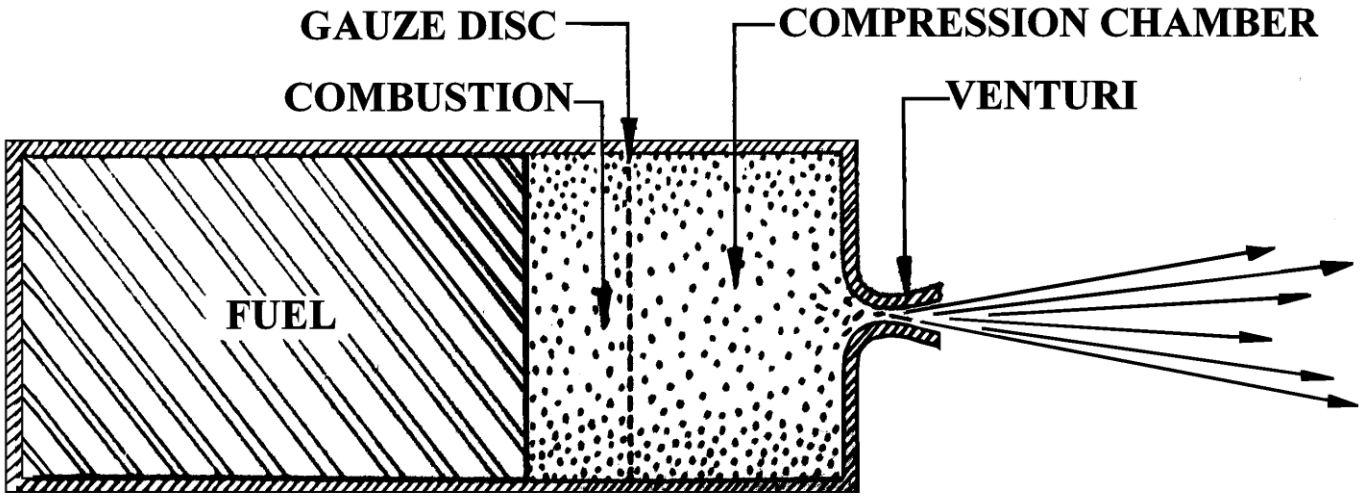
The editorial a few pages on revealed the name of the pioneering outfit responsible for "JETEX" as:-"WILMOT, MANSOUR & Co. Ltd." Who were based in Totton, near Southampton. Fig 2.

fig 2.

It was further stated that Aeromodeller technical staff had cooperated closely with the new company with a view to quickly offering designs suitable for the new “Miniature Jet Engines”.(Two were offered in the June issue).

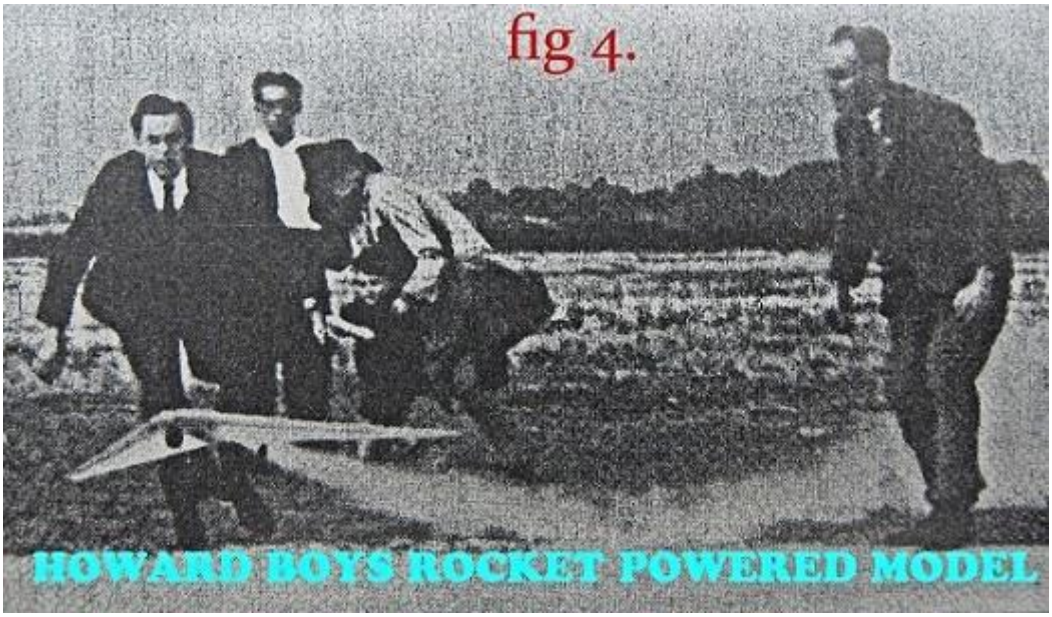
Now we all know that JETEX are not “Miniature Jet Engines” (The latter would not be on offer for a further 45years!) but re-usable slow burning solid fuel rocket motors.
Fig 3

April 1949, Aeromodeller Fig 3



PRINCIPAL OF JETEX UNITS

from the April 1949 Aeromodeller shows the principle .
JETEX were slow burning compared to “Firework rockets” which had already been tried by a few brave souls (notably Howard Boys who was also a RC pioneer) . (Fig 4)



The clever people at “W&M” had realized the potential market for a reliable small jet propulsion system to use in models of the many full size jet turbine aircraft appearing worldwide and had set to work to provide one. Bill Willmot and Joe Mansour had a wealth of commercial modeling experience already having produced the famous “FROG” brand; but this was a very new venture.
Similar slow burning solid compounds to that developed by ICI. For “W&M” were being used to start some aircraft engines and to propel military missiles so that was a help no doubt. The fuel for Jetex was fairly safe even for youngsters to handle but the fumes were not very nice in confined spaces. Surprising then that Selfridges were staging “Indoor Demonstrations” as part of their initial publicity!

I learned that the fuel was essentially “Guanidine Nitrate” the “Guanadine” part having been first produce many years before by the oxidation of something found in bird poo! The clue to this can be seen in the name which is pretty close to “Guano”! Not many people know that!

The first Jetex units on offer were the “100” and “200” reckoned to give thrusts of 1&2oz’s respectively. The empty weights were 3/4oz.&11/80z. ; Not a bad thrust to weight for a reusable system. Fig 5.

shows a few of my present collection of JETEX units including my original 200 which I used most.

The “burn” time for the units was about 14sec. per charge but the 200 could use two charges unlike the 100 which was limited to one.
The initial excitement of reading about the new power units was a bit dampened for me when I came to the price tags:- 27/6 and 37/6 was a lot of money for a young lad about to start work at “Gloster Aircraft Co”(GAC). My weekly wage was only going to be 19/3 a week! (And we lived in a cardboard box..etc!!). The fuel pellets at 2/- for a box of ten for the “200”was also expensive, although W&M always maintained that Jetex was overall the cheapest form of power flying.

I kept abreast of the developments at "W&M" in the coming months as more adverts appeared and the local model shop started to get their first stock. Soon another unit, the "350" (which could use three charges) was added to the "stable". This new unit was even more expensive than its fore runners at 50/- ! There was a brief reduction in price when an attempt was made to get Jetex out of the "Toy's" classification for the purposes of "Purchase Tax" (1/3) but this failed and the prices went back up again!

All three of the early Jetex units were essentially of the same design. An aluminum alloy closed end barrel with an end cap held down by strong spring loaded hooks. The jet orifice was steel and screwed into the end cap. Asbestos based washers were provided to help ensure a seal against the escape of the propellant gases. Ignition was achieved via a copper cored wick held down onto the top of the charges by a nimonic gauze disc. The tail of the wick was exited through the orifice during loading ready for lighting prior to "Blast Off".

Aluminum alloy mounting clips were provided to mount the units in models with small sheets of asbestos! also provided to place under the clips to reduce the risk of fire! The latter was a real possibility particularly in models with enclosed motors like the Gloster Meteor offered by Aeromodeller in the June 1948 issue. A more practical layout was adopted for many scale models in later years by the use of an open trough under the fuselage. But I digress, that was to come; back to the future!

By late 1949 I was earning a bit more money and had witnessed some quite exciting Jetex powered models being flown by club mates so I scraped together the money for a "200 .". While I was deciding what type of model to build for it, scale or duration, the choice of the latter was immediately made when I read of "The Glittering Prizes" on offer from W&M.

The Nov. 1949 AM. Carried a photograph of a smiling Dick Twomey holding a large trophy in one hand and an interesting model in the other (Fig 6).

No wonder he was smiling, he had just won the 1949 ICI. Challenge Trophy AND £20! The model was "Firecrest Special" Dicks design for a Jetex 200. The other top fliers in the W&M sponsored event, held at Fairlop, had been awarded £15; £10; £5 and every one had been paid their expenses to attend. (Fig 7).

WOW! their was money to be made at this JETEX lark if you were good enough, so I was determined to have a go!

My first design had a layout very similar to Dicks winning model .The "200"unit being mounted on top of the fuselage, ahead of the wing with a cockpit in front to reduce drag and enhance the appearance. Unfortunately I do not have a photograph of this early model only the subsequent ones. I can't recall it being pranged during trimming but there were probably a few near misses until I got it right! I soon learned that the lack of any torque required quite a lot of side thrust to balance any glide turn since the speed builds up rapidly in the last few seconds of "The Burn". Further knowledge was accumulated regarding the need for careful cleaning of the end cap lip and the case to avoid wasteful gas leaks. The latter can significantly reduce thrust and was often caused by the failure to extract the fuse core from the jet orifice in the first second or so after ignition. Jetex fliers were always easy to spot on the flying field, by just looking at their soot covered hands!!

Sometime in the early part of 1950 both myself and fellow Glevum club mate Gerald Dwyer (then a school boy) were "selected" to fly in the second W&M sponsored duration event for the ICI. Trophy, again to be held at Fairlop in September of that year. Neither Gerald nor myself can remember what the "selection" process was, we think from the evidence of the models seen later at the contest, it just might have been a demonstration to a club official that your model could fly reasonably well!!

Anyway "Selected" we were and duly boarded a train early on September 30th 1950 to make our way via Paddington to Fairlop.

Conveniently a local London train stopped right adjacent to the disused airfield and we were able to walk, clutching our model boxes, to were some activity marked the preparations for the contest. I can remember the weather conditions clearly; hardly any wind but low gray

clouds with a bit of light drizzle occasionally. However, apart from the latter the details of the day are a bit sketchy in both of our memories (well it was nearly 70years ago!).
Dick Twomey was again flying (Fig's 8 & 9.)

Jetex CONTEST

fig 8.

In dull rainy weather conditions, twenty-nine finalists competed for the I.C.I.Trophy and generous cash prizes in the Second Annual Jetex International Contest held at Fairlop Aerodrome, Essex, on September 30th. The fliers came from all parts of the country. Their travelling expenses having been paid by the organisers, Messrs. Wilmot, Mansour & Co., Ltd., and there was one entry from the United States which was flown by proxy.

During the contest, some excellent flying was seen and P. B. Allaker of the Surbiton and District M.A.C. made two very consistent flights with his Jetex "200" powered model, to win the I.C.I. Trophy and the £20 cash prize.

(1) P. B. Allaker of the Surbiton and District M.A.C., winner of the Second Jetex International Contest, with his model.

(2) The winner with the I.C.I. Trophy about to receive the cheque for the £10 1st prize.

(3) Three of the competitors in the finals with their models.

(4) O. C. P. Twomey of R.A.F., Cottesmore, winner of the 1949 contest, who also flew in the finals this year.

(5) Not entered in the contest, the Jeticopter is shown in this photograph on one of its impressive demonstration

The JETEX

fig 9.

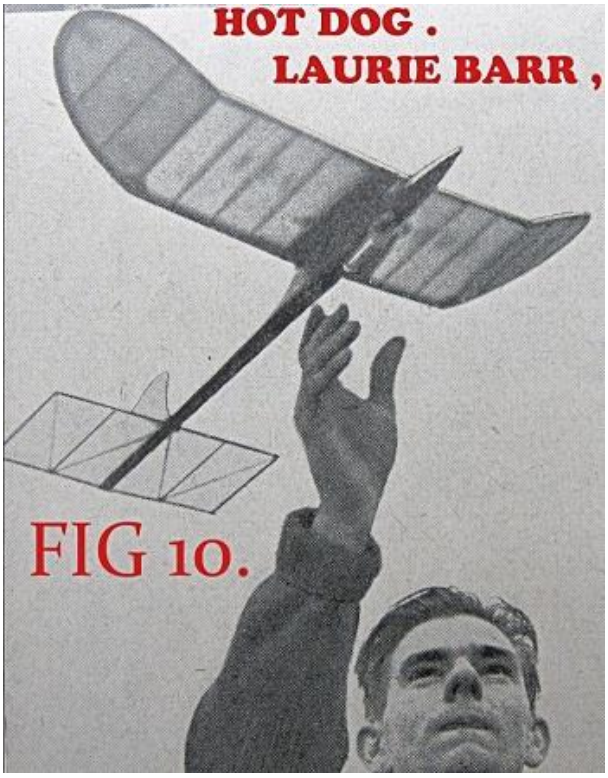
CONTEST

In circle, P. B Allaker of Surbiton, winner of the I.C.I. Challenge Trophy. His design was simple yet effective enough to produce a ratio of 8·76. Left, a group of competitors featuring last year's winner, Dick Twomey (centre) and M. Pitel (right), who placed 4th this year.

TWENTY-NINE "fag and fizz" boys assembled on a somewhat wet and chilly tarmac at Fairlop on Saturday, 30th September, for this second "Jetex" contest. The somewhat depressing drizzle that persisted throughout the day in no way damped any fuses or enthusiasm, and the flight performance of the majority of the models was a pleasure to behold. There is no doubt that a large number of enthusiasts have gone into the trimming and flying of this type of model very thoroughly as was proved by the average flight duration figure of some two minutes. Results were adjudged on a ratio basis with set figures for engine run according to the size of unit and the number of pellets used. Apart from the flying, the somewhat dreary weather conditions were brightened by the refreshments laid on by Messrs. Wilmot Mansour who had everything organised in fine style.

RESULTS

and although of very similar design layout to his 1949 model, the 1950 job was scaled up and powered by TWO “350” units! The performance of the model in the contest however was disappointing particularly as the same model fitted with only one motor had won the RAF Championships earlier in the year
.A “200” powered model again won the event .P B.Allaker of the Surbiton Club. achieved a two flight ratio of 8.48 using one charge (14sec run). Laurie Barr took second place with a nice lightweight “100” powered model with the fitting name of “Hot Dog”. (Fig 10).



J’OD’s brother Hugh was awarded the prize for juniors (under16) having scored a 5.08. My club mate Gerald was well under 16 but his little “50” powered job was having an off day .

Most competitors used a single charge in the multi charge units but I was one of the few exceptions and it almost worked . I would have placed if my second flight had been as good as the first. The latter was 2min 56s. which was the longest flight of the day giving me a ratio of 6.28 according to the report in the December issue of “Model Aircraft”. (Fig 11).

fig 11, H. O'Donnell of Salford qualified for the best flight by an under 16 competitor (prize £5). His ratio was 5.08, using a 200 motor. Longest flight of the contest was by J. Ralph of Gloucester, who put up 2 min. 56 sec. in the first round with a 200 fitted model. Even though two pellets were used, this still gave a ratio of 6.28, but a poor second flight of 1 min. 25 sec. robbed this competitor of a high placing on the results list. It is interesting to note that none of the five winners used more than one charge for each flight. Many familiar names appeared in the list of competitors ; including Norman Marcus, Barry Haisman, W. Henderson, who

I think the model was flying in drizzle on its second flight but whatever the reason it only managed a pitiful 1min.25s! Never mind, we had a memorable day out with all expenses paid. Gerald still has his receipt for the day which shows we were given £2.1.5d each , which probably amounted to a couple of months pocket money for him!!
Many years later when I got to know Dick Twomey at the Middle Wallop events I mentioned my "error" in using two charges in the 1950 ICI Event. Dick pointed out that it was not necessarily an error since he too had used two charges to win the first ICI. Contest with a flight of 9min. 54s.No one else got near the latter time and Dick put it down to the height he reached with the 28sec. run.
It was my intention to try again for "The Glittering Prizes" in subsequent years and I designed and built another model during the coming Winter .It had a different layout to Dick Twomey's " FIRECREST " (Fig 12) .

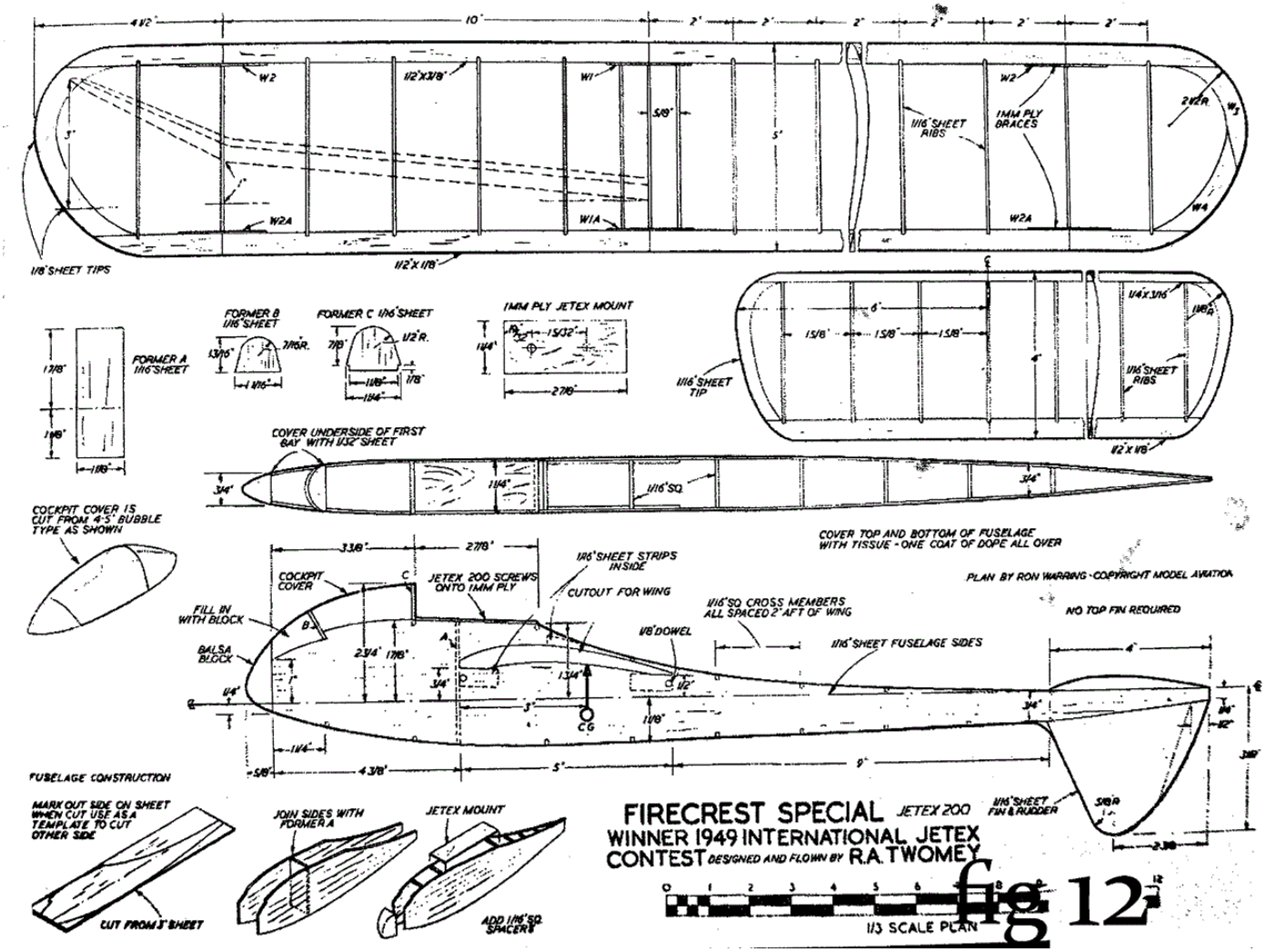
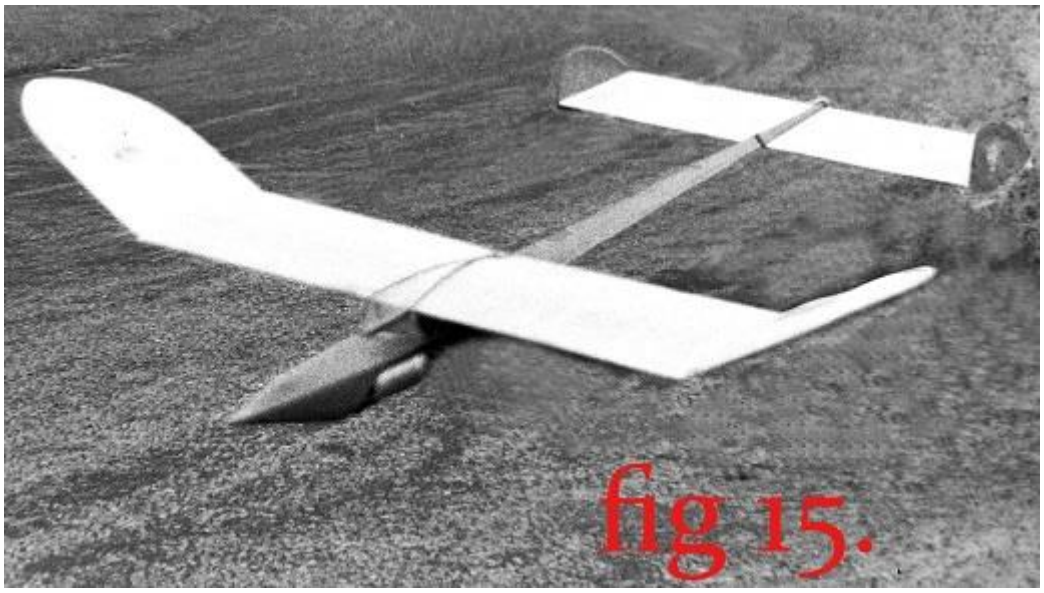


Fig 12

I do have photos of this model AND the actual airframe ! (Fig's 13 &14) .

fig 13 .

The fuselage is of triangular cross section (1/32 sheet)with a 26in. span- 125sq.in cambered section wing .The AUW of the airframe is 43g, probably lighter than my first effort. As can be seen the Jetex motor in this model and the twin fin one, which followed soon after (Fig 15),



is mounted under the nose which worked well .The arrangement seems to have been adopted by the majority of the successful contest fliers over the first few years(1950; 51; 52; of the ICI.Trophy contests even though Dick Twomey chose otherwise at the first meeting. Fig 16

fig 16.

Jetex CONTEST 1952

On a dull autumn afternoon at Fairlop this year thirty-seven finalists (which included one Canadian, one Belgian and four New Zealand proxy fliers) competed for the I.C.I. Trophy at the Fourth Annual Jetex International Contest. The competitors came from all parts of the country. There were many different types of models and the standard of flying was high. J. O'Donnell, by winning, added yet another triumph to his long list of contest successes this season.

PRIZEWINNERS

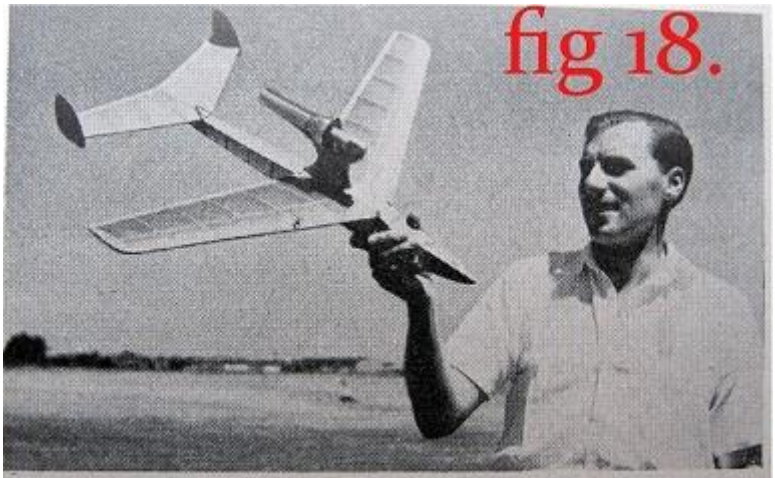
J. O'Donnell (Whitefield)	18·92 ratio	£20 and I.C.I. Challenge Trophy.
B. Wheeler (Birmingham)	15·44	£15
W. Henderson (Grange)	12·37	£10
Cpl./Tech. Edwards (R.A.F. Binbrook) ...	11·28	£5
J. C. Joy (Dagenham)	7·05	£5 (Junior)

gives a report of the 1952 contest and fig 17

shows a smiling young John O' Donnell with his winning model .
The little “Snowflake” design (Nov.1960 AM. Plan) which won the 1957 SMAE. Jetex Cup(the latter was introduced in 1951 in recognition of the new class) is another of the few exceptions with a high mounted motor.

I recall some good flights with both of my later “200” models; the twin fin model in particular was very spectacular as it was even lighter than the Mk II. The wing had a hollow LE. & TE. And the main spar was of “T” form. (I must have had some patience in those days!). The D/T I used on the Mk.III was of the “Drop off wing” type! The wing stays attached to the model off course, being tethered by a strong line to the end of the fuselage. The wing attachment band is burnt through by the D/T fuse allowing the wing to rotate above the fuselage which hangs down like a pendulum! The set up works well for light small models but needs one important device inserted in the tether line- a SWIVEL. I was made aware of the importance of the latter after one of the Mk III’s early flights. I was flying it at Colern near Bath when it caught a boomer. I had set a D/T but the model was very high when the wing eventually popped off. The thermal was strong and the descent spectacularly slow with plenty of time for onlookers to joke that the model was or was not actually coming down. There was little wind however and the model stayed close allowing me to pluck it out off the air when it eventually did make it down. One thing was immediately apparent once I looked at the tether line. It had been wound up so tightly by the rotating wing that the latter was nearly touching the end of the fuselage! I was surprised the line hadn’t broken so you see why a swivel is needed.

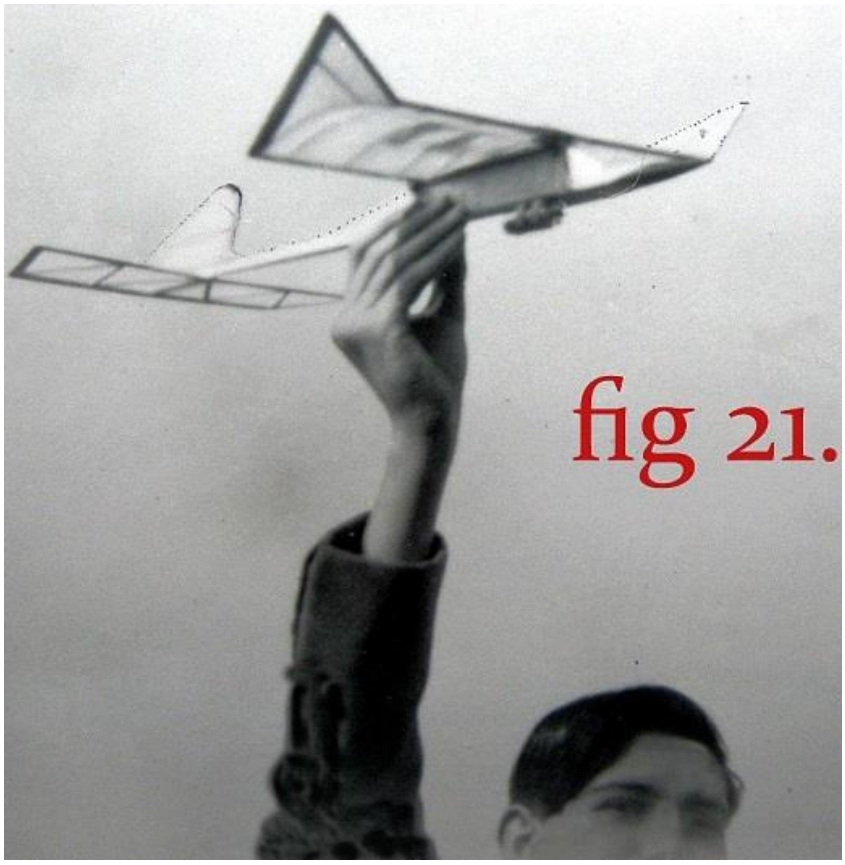
The ICI Challenge Trophy events were run for several more years after the 1950 and the SMAE added a further annual event which confusingly was called “The JETEX CUP”. I did not enter a national JETEX event again after 1950 even though I had a couple of good models. Generous prizes were still on offer though by W&M and they also sponsored the SMAE events I understand.
The W&M Company flourished and soon, thanks to the early employment of experience aero modelers like Bert Judge and Ian Dowsett (Both of Wakfield fame), was offering a range of their own kits and other Jetex motors. (Fig's 18 & 19).



Bert Judge and flying test-bed he built for the prototype Jetmaster. Note short augmenter tube.

The motors were also being exported to other countries and various clones were apparently made which have since become quite collectable I understand. The original “JETEX 50”, was introduced in May 1949(it was available until 1954) (Fig 20)

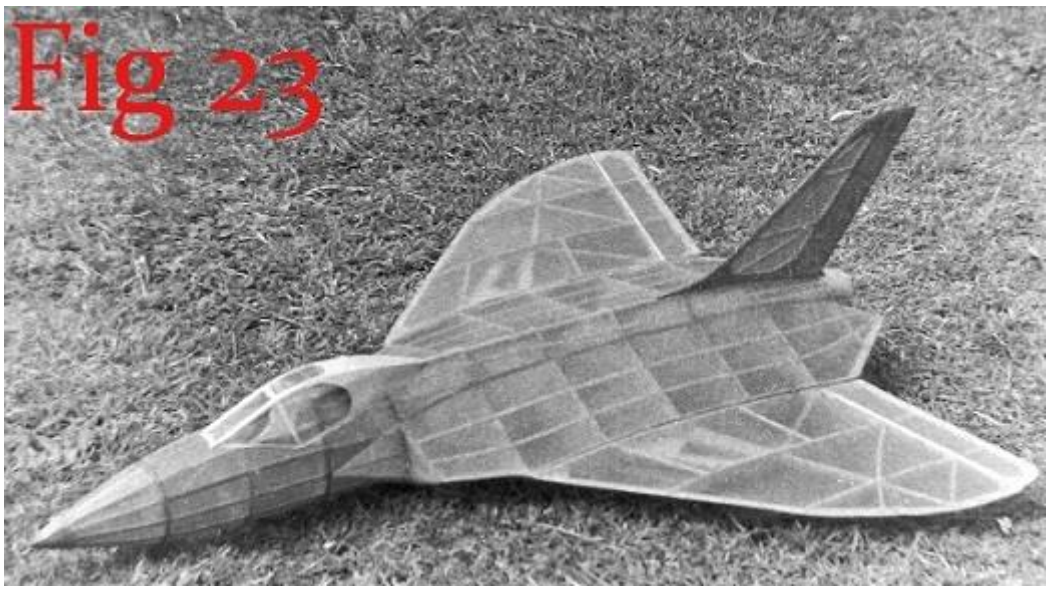
and soon proved to be very popular in view of its relatively low cost. I must have bought one soon after it appeared and built a little duration model of my own design which flew well enough but was nothing like as potent as my “200” models. (Fig 21).



The “50” was also put to use in a couple of scale models; a Vampire and a Swift, both built from kits. Fig 22

show a couple of others on offer.

I also built a “Sky leader Skyray” which was meant for a “100” but I put my “200” in it which made it a spectacular performer! (Fig 23).



I remember flying the scale models in my lunch breaks at GAC’s flight test airfield at Morten Valence which was a few miles south of Gloucester. I often had a few of the lads

from the flight test department and sometimes a couple of the test pilots as spectators. Some of my colleagues were enthused enough to have a go themselves even though they were not aeromodellers. Several Jetex 50 scale models were built and we ran a few lunch time events for these. The head of the instrument section even managed to install a retracting undercarriage in his W&M “Skyray”! A bit of a change from his work building automatic flight recorder systems for the prototype “Gloster Javelin”!

The “ JETMASTER” shown in Fig (5) was introduced in1952 and this improved “100” sized unit could take 11/2 pellets giving a run of about 20sec. It was easier to load than the “100” having just one sprung roller clip retaining the end cap. The latter was long and shaped to assist air flow around it, particularly important when the motor was used with an “Augmenter tube” . The latter was a thin aluminum tube with a bell mouth which was placed concentric with the motor to improve total thrust .It was shown it could do this if the tail pipe was kept short but it was rarely used for contest models due to the extra weight and drag.

The motor itself was a nice little unit and the only one as far as I am aware to employ a non-parallel jet orifice. A special tool was supplied to clean the orifice as it was of convergent /divergent form, the latter being of a smaller angle than the inlet. The idea was to increase the thrust by accelerating the flow into the supersonic region which can only be done smoothly by this method. The “JETMASTER” certainly produced more thrust than the “100” but whether it was mainly as the result of the special (but still short) nozzle is unclear since the fuel may have been altered as well. I would think that all the Jetex units and fuel combinations were developed so that the pressure in the chambers was sufficient to just reach so called “critical” where the flow is close to Mach 1 at exit. If the pressure is above critical a relatively wasteful (in terms of specific thrust) uncontrolled expansion to atmosphere occurs. The relatively sophisticated general design of the Jetmaster was let down by the mount supplied which needed modifying to hold a consistent thrust line each time it was remounted.

The augmenter tubes were of most use in scale models and W&M produced a couple of nice kits which used them. The Hunter and Swift kits were quite novel in that pre-molded wood shells were used instead of stringers etc. The prototypes, designed as tested by Bert Judge, were of the latter type but the models built from the kits were much more realistic (but expensive) (Fig's 24 & 25).

fig 24.

Another fighter kit will soon be on the counter from Wilmot Mansour Ltd., this time of the famous HAWKER HUNTER. Prototype shown, held by Miss Pat Deane, was demonstrated at the recent Jetex contest; actual kit will be entirely preformed.

fig 25.

Somewhere in an Aeromodeller or other publication of the time I remember seeing a photograph of a very young Prince Charles being helped by "DAD" to build a Hunter ; I wonder if it flew?

The last couple of motors introduced by "W&M" (in 1953) were the diminutive "Atom35" and the specialist competition unit "Scorpion" which took one "350" charge. My little collection includes both of these motors but I obtained them long after my "Jetex Years" were over.

Although I never owned a helicopter that was Jetex powered no article on the latter would be complete without a mention of them. Only the "50" and "100" versions were offered commercially but I saw the 70in rotor "350" powered prototype perform both at Fairlop and RAF Halton (Northern Heights Gala Day). The hinged rotor blades which permitted a smooth transition to auto-rotation as the power ceased was a clever feature of these "Jeticopters". They looked and performed far more realistic than any of the rubber powered helicopters of the period. (Fig 26).

fig 26.

"W&M" were not slow in offering models other than aircraft and cars and boats were soon available but these had a relatively small following I think.

Apart from the various Jetex motor and fuel "clones" that appeared in the 50's around the world, one oddity which was developed in the US. Around 1955 was a Turbo-Prop unit .This used a "50" to provide the gas supply for twin tangential jet pipes. The prop, jet tubes and motor all rotated together on a common shaft! It was next to useless compared to a small IC engine but has become very collectable apparently.

My trawl through my collection of Aeromodeller's as an "aid memoir" in writing this piece showed that as the 1950 decade drew to a close "W&M's" adverts ceased and a new

company “SEBEL” took over. They initially just offered the original Hunter &Swift etc but soon added some new models including the Fairy Delta 2 and later the “LYNX” an attractive semi- scale model. (Fig’s 27 & 28).

AERO MODELLER 278 **fig 27.** May, 1957

FAIREY DELTA 2

NOW A ‘TAILORED’ KIT IN MACH I+ SERIES
World’s finest model of the 1,132 m.p.h. world record holding aircraft. Accurately die-cut (“Tailored”) parts; two pre-formed all balsa fuselage shells and complete with Dural Augmenter tube and motor clip for Jetex 50B motor, transfers, etc. Special cardboard building jigs, full size plan, clear instructions—plus Jetex “Tailoring”—make Jetex “Tailored” Kits the world’s easiest. *Get your Jetex Delta 2 at your model shop.*

Jetex Fairey Delta 2. Length 15”. Span 8¼”. Weight without motor 1oz.

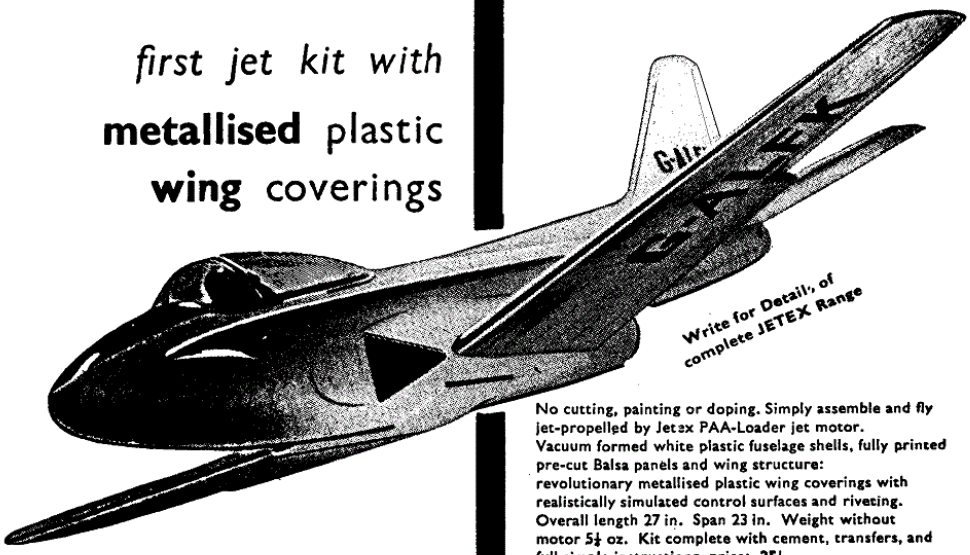
ALSO IN MACH I+ SERIES: P.1., GNAT, HUNTER, SKYROCKET, SUPER-SABRE AND SKYRAY.

JETEX

SEBEL PRODUCTS LIMITED 177 WEST STREET, ERITH, KENT. TEL: ERITH 3020 (5 LINES)

AERO MODELLER 626 **fig 28.** December, 1960

first jet kit with **metallised** plastic **wing** coverings



Write for Detail’s of complete JETEX Range

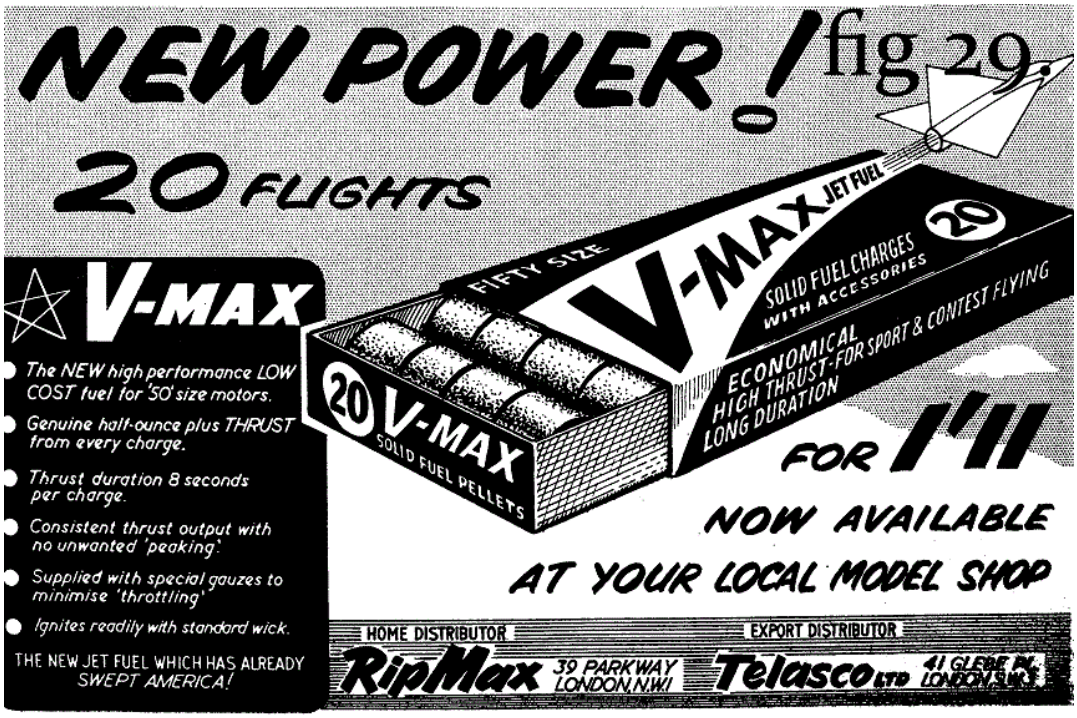
No cutting, painting or doping. Simply assemble and fly jet-propelled by Jetex PAA-Loader jet motor. Vacuum formed white plastic fuselage shells, fully printed pre-cut Balsa panels and wing structure: revolutionary metallised plastic wing coverings with realistically simulated control surfaces and riveting. Overall length 27 in. Span 23 in. Weight without motor 5¼ oz. Kit complete with cement, transfers, and full simple instructions, price: 25/-
PAA — Loader Motor, price : 18/11

JETEX **LYNX**

A PRODUCT OF THE JETEX DIVISION OF D. SEBEL & CO. LTD, West Street, Erith, Kent
Tel.: Erith 33020 *'Grams: Sebelco, Erith*

A motor called a “150 PAA Loader “which could take up to 3 pellets was mentioned in the LYNX advert but I have never seen one and can’t tell you much about it!

Around 1958 Ripmax briefly advertised “V-MAX” fuel for 50’s which was cheap at 1/11d for 20 pellets. (Fig 29)



but after about 1961 even SEBEL’s ceased trading and the original “JETEX ERA” was over.

Some thirty years or so elapsed before nostalgia for the latter prompted a UK company:- “Aerographics” to re-introduce a “50” size unit and a new fuel to run it. (Fig 30).

The name “JET-X” distinguishes these motors from the originals but Aerographics still failed to deal with main objection to the system which is the cost of the fuel. At £11 for 40 short pellets, (a fully charged motor took 4) meant over a £1 a flight!! Further, I understand, the “burn” of the charges was a bit erratic. I know Laurie Barr was not very impressed with the latter or he may have been tempted to have a go again and perhaps recapture a bit of the magic of his early “JETEX YEARS”.
The last “Small Jet” free flight scene a decade ago used “RAPIER” rockets which you may have read about or even used. I personally think the cost of these units rendered them of questionable interest particularly for youngsters.

A friend of mine, the late Ken Forty and myself way back in 1947 strapped a CO2 sparklet bulb on top of the wing of my “KK INVADER “and made some quite spectacular flights. The jet of gas was achieved by driving a gramophone needle into the seal of the bulb using a rubber driven ram! We got the idea from a commercially available jet driven model car. Ron Marking recently reminded me that years ago at MW we chatted to a guy who was flying a small CO2 driven jet model using what he hoped was going to be a commercially available unit via RIPMAX. It has never appeared for some reason. ?
Small electric ducted fans are I think the best approach for scale jets in these days of efficient electric motors and batteries. Some of you may have seen an article on my ducted fan version of the “ SKYLEADER SKYRAY” which Dave Boddington published way back in the 90's . (Fig 31).

That used an early fan unit driven by 3 50mA Ni Cads. It flew OK but would be transformed if I updated it with modern kit.

I seem to be wandering off the original topic so time to end I guess.
Those of you who are members of "SAM 35" may have seen the "Smoke Trails" series by Roger Simmonds in "SPEAKS". Before that, back in 1993, Terry Kid also wrote about JETEX including the "SYNJET" units being made in the Czech republic at the time.
Roger gave much of the history of JETEX which I have related above and if you are an internet user far more could be learned a few years ago at: - "JETEX.org" & "JETEX UK". Both of these sites drew heavily on the articles in Aeromodeller etc. since the people who run the sites had no direct involvement, in the early years at least. However I learned quite a lot from the information displayed particularly about the scene in other countries. I never knew there had been so many copies of the JETEX system while the originals were still being made in England.
In New Zealand there were "VELOJET's 100&200's" which had screw on caps!; in Japan they had "TIGER ROCKETS", cloned 50's; in Austria a "NOVA-JET", which again screwed together(with a relief valve this time!) ; while in Germany the Motox Toy Co. of Dusseldorf offered a "MOTOX 12" , also a cloned "50" apparently. There were other model companies too in Europe, including French and Swedish ones also producing jet models. W&M seem to have had some hand in the US. Company "TELASCO" since a range of very similar but cheaper motors to their own appeared in the USA. The "TELASCO 600A" seems to have been very similar to the original "JETEX 350" for example.
As far as I am aware there have been no purely duration JETEX events since about 1961. I guess then you could say that, like many of our vintage interests the 1950's were "The Golden Years"-in fact "The only years".
It was nice remembering old times as I put this piece together, if you have managed to wade through it, well done you deserve a medal!

Over and Out from John Ralph "Way out West".

North Cotswold MAC from Gray

Last year, the North Cotswold MAC turned 70 years old. We'd hoped to celebrate our anniversary at our popular annual Fly For Fun event in August at our field at Moreton-in-Marsh, Glos.

Unfortunately, we chose the wettest and windiest weekend of the summer and we reluctantly had to cancel the show.

In 2020, we're hoping to have better luck with the weather by holding not one but **two** Fly For Fun events!

The first will be on Sat/Sun May the 16th and 17th. Regular camping & facilities will be available. Our informal fun comps for this weekend will be:
On the Saturday, Own Design models and on the Sunday, a Slow Pylon Race!

The second will be on August 8th and 9th.

Further details on both events to follow.

Shilton events 2020 from Boycott Beale

Hi all. These are the dates for our fly ins

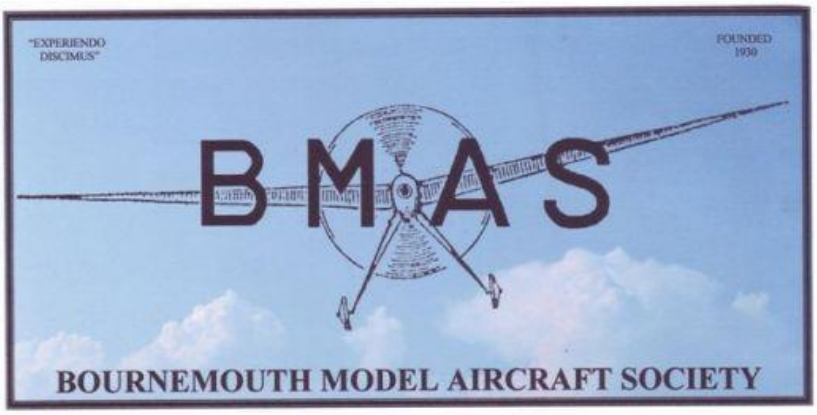
Weekend ~ 16th 17th May vintage

11th 12th July E soar

12th 13th Sept vintage

As before any fixed wing electric models on the Saturdays with the Sundays for the designated model class.

Campers / caravans as before welcome on site from mid day on the Fridays till Monday.



BMAS Indoor Flying 2020

We Have Moved - Again!

Unfortunately the venue at Boscombe was not a suitable location for a number of our regular flyers and so we have re-located back to our old venue of The Allendale Centre in Wimborne. Flying sessions commence again in January. Below are the dates for the first half of 2020.

Tuesday 28th January
Tuesday 25th February
Tuesday 24th March
Tuesday 28th April
Tuesday 26th May

Sessions will be 7.00pm to 9.30pm

Fees will be: - Flyers £6 Juniors £3 Spectators £1.50

Hope you can make it. Regards, Keith Fredericks

FLITEHOOK

Indoor Free Flight Meeting West Totton Centre, Hazel Farm Road, Totton, Southampton. SO40 8WU

Contact: Tel. 02380 861541 E-mail flitehook@talktalk.net

Sundays 10.00a.m. to 4.00p.m. Café on Site

Flyers must be BMFA Members Flyers £8 Juniors & Spectators Free

12th January 2020
9th February 2020
8th March 2020
12th April 2020

INDOOR F/F MEETING

Waltham Chase Aeromodellers

Waltham Chase Aeromodellers, in association with South Hants Indoor Flyers, are pleased to announce the continuation of the Indoor F/F Meetings held at the Main Hall at **Wickham Community Centre, Mill Lane, Wickham, Hants PO17 5AL.** These meetings will be held on the following dates:

Tuesday, 4th. February 2020
Tuesday, 3rd. March 2020
Tuesday, 7th. April 2020
Tuesday, 5th. May 2020
Tuesday, 2nd. June 2020
Tuesday, 7th. July 2020

All meetings will run from 7.00 p.m. to 10.00 p.m. The Main Hall at Wickham Community Centre is particularly suitable for indoor free flight models of all types, with a ceiling free of obstructions. Tables and chairs will be available in the hall, the organisers are always grateful for assistance with moving furniture. A hot drinks machine is available on site.
Admission to the meetings will be £5 for fliers and £1 for spectators, whilst accompanied children will be admitted free. Junior fliers will be charged as adult spectators. Fliers will be required to show proof of insurance. No R/C models may be flown at these events.
Flitehook, who carry a large stock of indoor models and accessories, will attend many of the meetings.
Waltham Chase Aeromodellers look forward to welcoming all indoor F/F fliers to these events.
For further details please contact:

Alan Wallington, "Wrenbeck", Bull Lane, Waltham Chase, Southampton, Hants. (Tel. 01489 895157)

(e-mail: WCAero@outlook.com)

or see our web site: https://wcaero.bmfa.org

1939 Korda Wakefield

Ref: ot-39kor

A parts kit for the famous 1939 Wakefield Winner.

The Belair kit includes wing ribs, fin outline, stab ribs, motor mount, ply wheels, fuselage sheet. Just add a plan and strip.

This kit is only designed for the Bob Jones plan available from Mike Woodhouse.

Price: £30.00 Inc VAT

33.00 **USD** | 35.51 **EUR**

Bazooka Parts Set

Ref: ot-bazpk

A great performing rubber job that will do well in Mini-Vintage comps. Good wing with sheeted leading edge. Quick to build.

Price: £15.00 Inc VAT

16.50 **USD** | 17.76 **EUR**

Magician Stunter inc plan

Ref: ot-magcl

Parts set and plan for the Magician designed by J Silhavy published in Technical Model Specs - 48in span for 40 size engines

Includes all shaped balsa and plywood parts, such as fuselage sides, doublers, wing ribs, shaped and notched spar, tip shapes, upgraded 3/16" tailplane and fin/rudder, ply bellcrank mount, plus smaller items.

Full size plan included. Builder to supply stripwood and other items to complete. 3 inch bellcrank and leadout kit available below.

Price: £55.00 Inc VAT
60.50 **USD** | 65.11 **EUR**

Lofty Lady Parts Set and plan

Ref: ot-loftlad

The **Lofty Lady is a 52" span cabin model**, originally designed as the smaller Loftie Lassie by Vic Smeed. The design has been redrawn by Andy Brough and is presented as a Parts Set containing all the shaped balsa and plywood parts, such as fuselage sides, wing ribs, tip shapes, bulkheads, formers, dihedral braces, gussets and many smaller items required to build the basic airframe. Builder to supply stripwood and covering. Full size plan included.

The Lofty Lady suits 1 to 1.5cc engines and single channel radio assist and is exclusive to Belair Kits.

Price: £45.00 Inc VAT
49.50 **USD** | 53.27 **EUR**

Spook 48 Parts Set and plan

Ref: ot-spook48

Parts Set and full size plan for the Spook 48. This model retains all the unique characteristics of the original including the gull wing.

The parts set includes all the balsa and plywood parts to build the basic airframe, such as formers, bulkheads, cowl sides, wing ribs, gull wing dihedral braces, tail and fin parts, shaped spars, tip shapes for wing, tail and fin. The gull wing is not too hard to build and the plan guides you on how to build it strong and quickly.

Saves hours of tedious cutting, just add stripwood to start building today. 48" Span for small i/c engines or electric. Our model uses and Enya 09.

Price: £50.00 Inc VAT
55.00 **USD** | 59.19 **EUR**

Contact us

Our opening times are Monday to Friday 9.30am to 5.00pm

PLEASE NOTE - Between 4-5pm, an answering service may sometimes take calls during our busy packing period. We hope this does not cause any inconvenience, please leave your details and we will call back.

To contact us please use one of the following;

By phone : 01362 668658 or International 00 44 1362 668658

By post : BELAIR, 86 HOLT RD, NORTH ELMHAM, NORFOLK NR20 5JS

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http://belairdigital.co.uk/