



## Points of Interest:

- From the President - Peter Scott.
- Coota Cup Update - Grant Manwaring.
- R/C Scramble Rules for Coota Cup.
- Oldtimer Glider - Grant Manwaring
- Building Nibbio Oldtimer Glider - Basil Healy.
- Y-Bar for the Burford Event.
- Death of a Cormorant - Jim Rae.
- Heating Piano Wire and  $\frac{1}{2}$ A tuning tips.
- Frank Ehling  $\frac{1}{2}$ A Postal Event.
- The Back Page.

# NEWSLETTER No. 183 July-August 2013

## WORTH NOTING:

### 2013 MAAA Inc. OLDTIMER RULES.

The 2013 MAAA Rules Conference has approved, adopted and published Oldtimer rules changes and the following is a summary by Mick Walsh, Queensland member of the Oldtimer Rules Sub-Committee.

"The rule changes that were approved were:

- 1/2A Texaco maximum flight time be 7 minutes
- Burford event engine run time for BB be 38 seconds
- Banning Gyros etc
- David Owen replica PB engines be treated as BB 38 seconds
- Engines in Burford of 1cc to 2.5cc allowed
- Accept rules of Electric Flight Assoc for electric OT
- Field layout suggestion (to be applied where physically possible)
- Determining whether model is in or out of defined landing area

I would assume they come into effect next year (ie January)."

A copy of the 2013 MAAA Inc. Oldtimer Rules can be downloaded from:

<http://www.maaa.asn.au/wp-content/uploads/2013/08/Australian-Rules-S5-Old-Timer-Rules-2013.pdf>

A copy of the rules has been circulated as an attachment with DT 183.

### PARKES OLDTIMER WEEKEND CANCELLED AND RESCHEDULED TO 16-17 NOVEMBER, 2013.

From Peter (Condo) Smith:

It was wet and windy at Parkes and forecast was bad so the event was cancelled mid day Friday.

BUT, as usual, no one bothered to send an email the week before the event to say they were coming .so it became hard to almost impossible to contact them. Finally managed to contact some at Canberra, some at Cowra, some just outside of Parkes and a few at Bilpin..

Given the tenure of the week's weather and the forecast it was surprising no one bothered to call beforehand to find out what was happening with the event.

Good news is the event is rescheduled for 16th and 17th November, The events will be the same, as advertised in DT182. See page 12 in this DT. Note - will be flying to the new 2013 MAAA Inc. Oldtimer Rules.



## **EASTERN STATES GAS CHAMPS - WANGARATTA**

5-6 October, 2013, at Wangaratta MAC Flying Field.

Saturday, 5.10.2013 9.30am - '38 Antique, followed by Burford,  
then Lunch followed by Duration.

A social Dinner in the evening will be organised when we get numbers.

Sunday, 6.10.2013 9am Tomboy - finishes at 9.45am sharp.  
10am -  $\frac{1}{2}$ A Texaco, then Lunch followed by Texaco.

\*\*\* All comps will be run to MAAA Rules \*\*\*

Catering on field by Wangaratta Club.

**INFORMATION - Grant Manwaring - 02 6241-1320.**

Duration Times is the official Bulletin of SAM 1788

## SOCIETY OF ANTIQUE MODELLERS OF AUSTRALIA 1788 Inc.

President:	Peter Scott	44 Ravel Street, Seven Hills. NSW. 2147.	02 9624-1262.
Vice President:	Jim Rae	40 Garden Circle, Merimbula. NSW. 2348.	02 6495-3530.
Secretary:	Grant Manwaring	7 Arthaldo Court, Nicholls. ACT. 2913.	02 6241-1320.
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Newsletter:	Ian Avery	17 Kalang Road, Kiama. NSW. 2533.	02 4232-1093.

Committee Members: Basil Healy, Ian Connell.

Email for Duration Times - iwa@internode.on.net

### Oldtimer Events for 2013.

September	7-8	Belconnen/Yass Club Oldtimer Weekend	Yass	Grant Manwaring	02 6241-1320.
October	5-6	Eastern State Gas Champs	Wangaratta	Grant Manwaring	02 6241-1320.
October	16-20	Cootamundra, Coota Cup	Cootamundra	Grant Manwaring	02 6241-1320.
November	16-17	Golden West Old Timer Competition	Parkes	Peter (Condo) Smith	0423 452 879.



### From the President:

I'm getting withdrawal symptoms! I must have prepared my old timers and driven them miles without having a fly. So, please let Yass be dry, sunny and not too windy to fly.

After some consideration by the committee it has been decided to re-schedule the Parkes Oldtimer event to the weekend of 16-17 November, 2013. This will replace the Muswellbrook Oldtimer weekend. This action was taken after consultation with the Muswellbrook club and it is planned to promote the Oldtimer event at the Hunter Valley Champs instead.

So we now have a second opportunity to fly Oldtimer at Parkes this year in a more favourable time of the year and take advantage of the great facilities of the Parkes Club. Please let Condo know if you are planning to be there so appropriate arrangements can be put in place and don't forget about the camping possibilities on the field. I for one am looking forward to this event.

The 'Nats' schedule is out and it looks very attractive. It is a bit of a shame that it's not at Albury, but we all know the Wangaratta club's field well - and there's a nice tree for Jim to land in.

Gail and I have booked our accommodation, and Steve Gullock is contest director so everything will go well. All we need is an entry form. Any enquiries to Steve 0428464505 or email: coodgiebear@bigpond.com.

Before all this is Coota. I went out with my tomboy to see how I would manage with the standard model for the scramble. I did not want an engine run over two minutes as that would need a powered landing - Not a good idea! So, I fitted a smaller prop to increase the fuel consumption. I got 1 ¼ min engine runs and glided in just under the two minutes. I think this should be a close contest. I may yet build another, smaller model but it was not found to be really necessary.

I had to strip 2 four-stroke motors recently that had been left for some months after being run in models - NO, they weren't mine! The bearings were rusted, as were the shafts; valves stuck etc. So, remember, when putting a four-stroke motor to bed, for a long time, treat it to some Inox, ATF etc so that it will be as good as new next time.

The good news is that the bearings for the Saito 62 and the OS71 were available from the local bearing supplier at a very reasonable price.

Hope to see you all at Yass.

Peter Scott.



### From the Secretary - Coota Cup Update

As outlined in the last issue of Duration Times arrangements for the Coota Cup are in place to make this a very enjoyable event.

The programme and entry form are included with this issue of Duration Times.

A reminder to get your accommodation booked and complete the entry form and send to me.

I need to advise on numbers camping at the field and for on field catering and also for the presentation dinner.

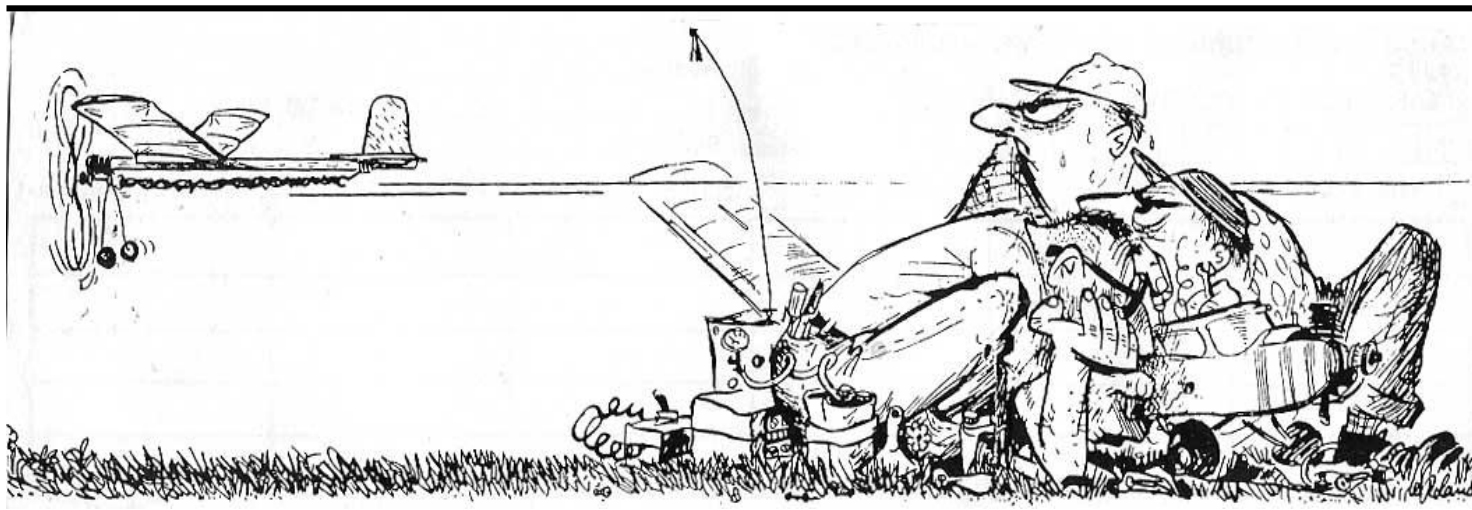
If you need a winch set up for test flying could you please let me know.

See you at Coota. Grant Manwaring

## Scramble Rules for Coota Cup Event:

- Model:** Any cabin, or semi scale sport model designed before 1960. e.g. Tomboy, Cardinal etc.
- Motor:** Any up to 1.5cc engine or replica thereof produced before 1960. (.6cc MPJets diesel engines also permitted)
- Flight line:** Models to be launched from flight line into wind. Must land behind flight line and not closer than 15ft to flight line - safety line to be marked. If any part of model crosses safety line when landing - zero flight score.
- The model may land anywhere else behind this line.
- Transmitters must remain on flight line whilst model is retrieved.
- The model must have the motor stopped BEFORE returning the model to the flight line.
- The motor must be hand started, no electric fingers.
- Minimum flight to count is 10 secs.
- Maximum flight is 2 minutes (120 secs)
- All flight times to be recorded.
- Most time in the air, over the allotted time, wins. (At the Coota Cup contest it is 3/4 hour)
- No runners allowed. Retrieve the model yourself.
- Time Keeper:** Please arrange yourself a time keeper beforehand.
- Scoring will be written down in minutes and seconds only.

This really is a standard Free Flight scramble, but as models are R.C. it should be more fun.



## R/C Old Timer Glider

From Grant Manwaring

This issue we have a construction article from Basil Healy on his new Nibbio glider, a glider that looks good and performs as well. Thanks for doing the article Basil. I also hear there are gliders under construction in Western Australia and also in Victoria for the SAM1788 Champs in 2014.

To help prepare for Canowindra 2014, the glider test days are on again. The first will be held over the weekends of 23-24 November, 30 November-1 December or 7-8 December. The reason for proposing multiple dates is to allow flexibility for weather and local conditions. The test days consist of test flying and trimming with the addition of a postal competition, 3 rounds, 2 to count flown to the MAAA rules with a fly off if required. Event co-coordinators will send me the results so as to publish in the Christmas edition of Duration Times (DT 185).

Event co-coordinators will be Dave Markwell in South Australia, Ian Dixon in Western Australia, and Basil Healy on the NSW central coast and me in the Canberra area. Each of the co-coordinators will use the most suitable date, please let me know which venue suits you best.

The Canberra site is the Lake George Soaring League club site and is great for gliding. A second event is planned for February 2014 with prizes for each event presented at Canowindra 2014.

Yes, with these practice days, there should a classic thirty minute fly off at Canowindra in 2014.

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Wallerawang NSW 2645  
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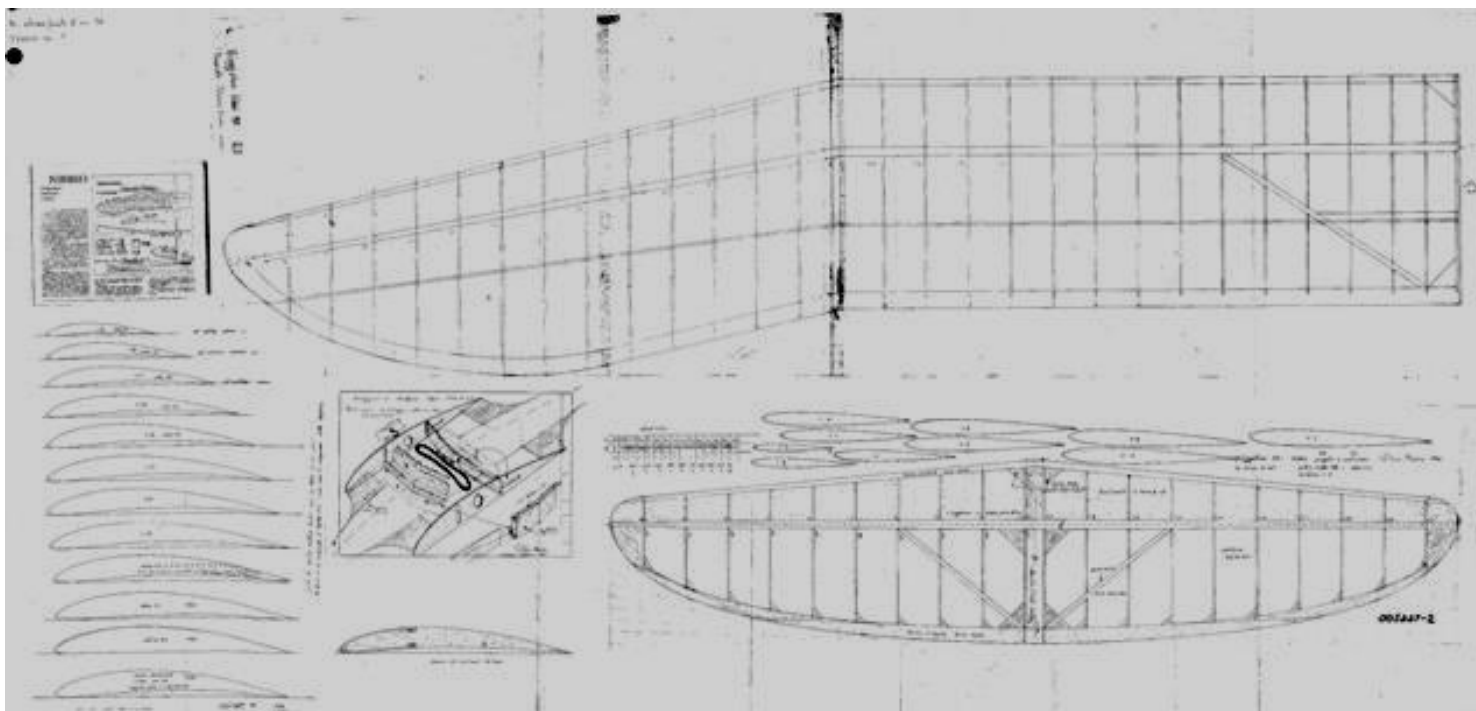
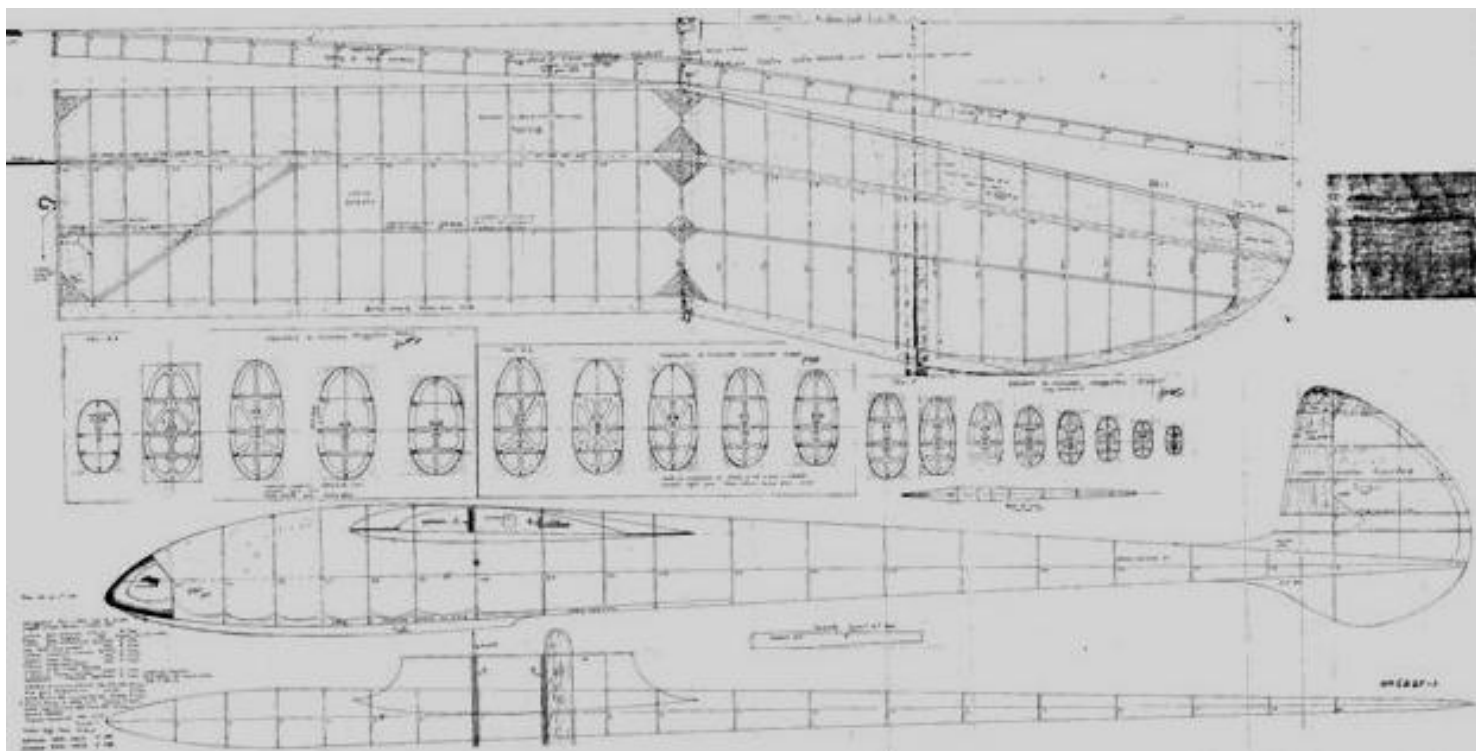
## Building "Nibbio" - An Oldtimer Glider.

From Basil Healy.

For some time I had agonized over whether to build a new Oldtimer Glider. My MF-7, built in 1995, was still giving good service but was a bit of a hassle to transport due to its 3.5metre span and 1.8metre long fuselage. Add to that the fact that it is not easy to hand launch, hence my preference to R.O.G. it, and I had a fairly good case for a new model.

I considered that my previous Oldtimer Glider, "Ghibli" (still being flown by Paul Farthing), was just a little bit small at 2.5metre span so I was looking for something a bit larger. Some time ago I was given an A3 size drawing of "Nibbio" by Bruce Knight, so I dug through my plans and found it. At 3.0metres span it was just about the size that I wanted with a nice thin NACA 6409 wing section, but Oh! That fuselage was fully sheeted and of a double ellipse cross section. Anyhow, I set to and drew up the full-size plans last December and started building it in January.

First operation was to cut out the 19 fuselage bulkheads, 10 of which were of plywood. Then they all had to be cut in half on the vertical centre line. After sawing up the spruce longerons I could finally pin the two longerons on the upper and lower centre line to the building board and add the 19 half bulkheads. Then add the third longeron on the horizontal centre line. After the glue had set the half fuselage was removed from the building board and the other 19 half bulkheads were added. It was immediately apparent that some kind of jig was now required to keep the fuselage straight and free of twist while the wrapped sheeting was applied from the wing to the rear and the planking was applied to the forward portion of the fuselage.

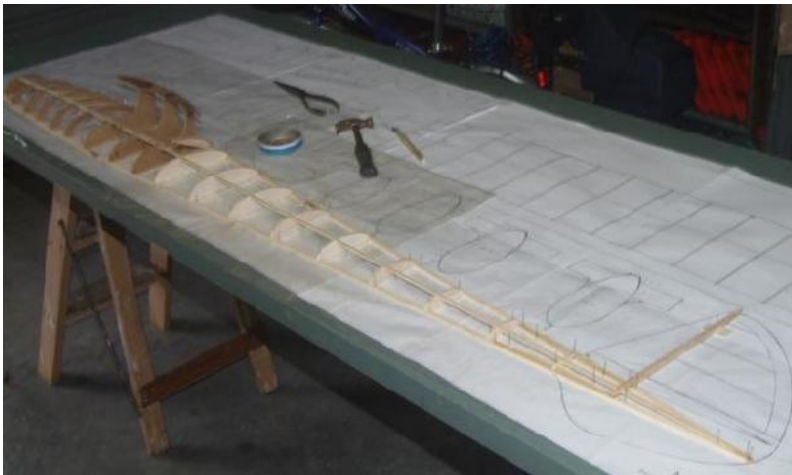


Accordingly a cradle was made to support the fuselage in four places while the sheeting and planking was applied to the upper half of it. Before this could be done however, drinking straw conduits for the rudder and elevator control cables had to be installed. The wrapped 3/32" sheeting on the rear fuselage was softened by pouring boiling water on the outside only when it immediately acquired a substantial amount of curvature and not a great deal of effort was needed to make it fit the bulkheads. A problem encountered at this stage was that the pins used to hold the sheeting in place rusted overnight and left dark stains on the sheeting. This was nothing that a bit of grey undercoat would not cover up!

This may all sound reasonably simple, but the rear fuselage was sheeted with four separate pieces, each covering from the vertical to the horizontal centre lines. Also, after the top sheeting was completed 3/32" had to be removed from the cradles to allow for the thickness of the lower sheeting. All in all it was a slow and tedious process and I started to wonder why I had started in the first place. Planking the nose porting was equally as tedious because each plank had to be tapered and the edges beveled slightly to allow for the curvature of the bulkheads. There was an area above the wing to fuselage junction which had to be left open to allow for the wing joiner tubes for be fitted after the wings were completed. Large balsa blocks were fitted to the front and rear at this junction and these were eventually carved to form the elegant wing fillets. Somewhere along the line the sheet metal tow hook was bolted and epoxied to the keel longeron and to the two adjacent bulkheads.



tow hook was bolted and epoxied to the keel longeron and to the two adjacent bulkheads.



On completion of the planking and sheeting the nose block was carved from western red cedar and hollowed out with a high speed wood bit to take the lead shot nose ballast. The final work on the fuselage involved the balsa blocks to form the tailplane and rudder fillets and building the fin and under-fin. Once more the cradle had to be modified with a slot to take the under-fin.

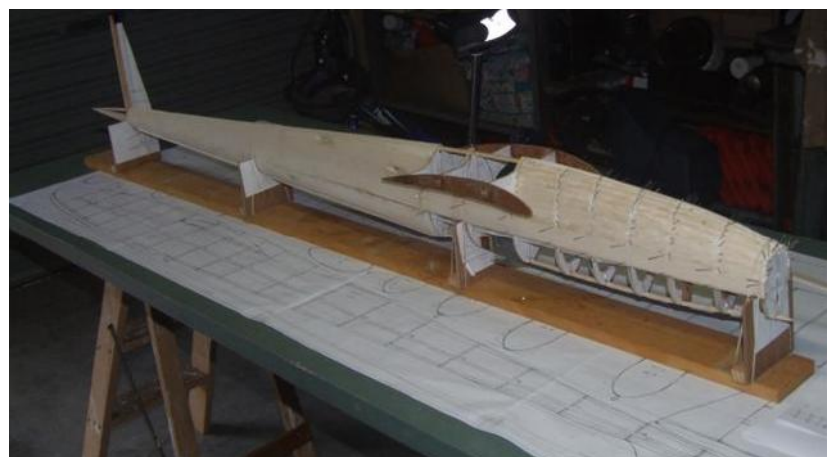
Construction of the two halves of the all flying tailplane was relatively straight forward until it was realised that the rudder was going to hit the control horn necessitating moving it on rib further outboard.

Construction of the wings started with making the ribs for the parallel centre panels. Ribs for the tip panels varied from 41% to 104% of the chord of the centre panels.

These were printed out on the photocopier and two of each were made. Another tedious job! Due to the thin NACA 6409 wing section it was decided to put the two main spars level with the top and bottom of the ribs and but the leading edge sheeting up to the spars rather than lay it over the top and the bottom of the spars. Although not shown on the original drawing, 1/16" plywood shear webs were fitted to the rear of the two main spars of the centre wing panels and in addition shear webs were also fitted to the front of these spars for the three inner-most bays after the wing joiner rods were set in place with epoxy and micro-balloons. Balsa shear webs were used in the tip panels.

There is a saying in the aviation industry that when you have 90% of the aircraft assembled you still have 50% of the work to do. They are not wrong! At this point it was three weeks to the SAM Championships and I had all but given up hope of getting it finished but then a wet week-end intervened, allowing me to put in a couple of long days in the workshop.

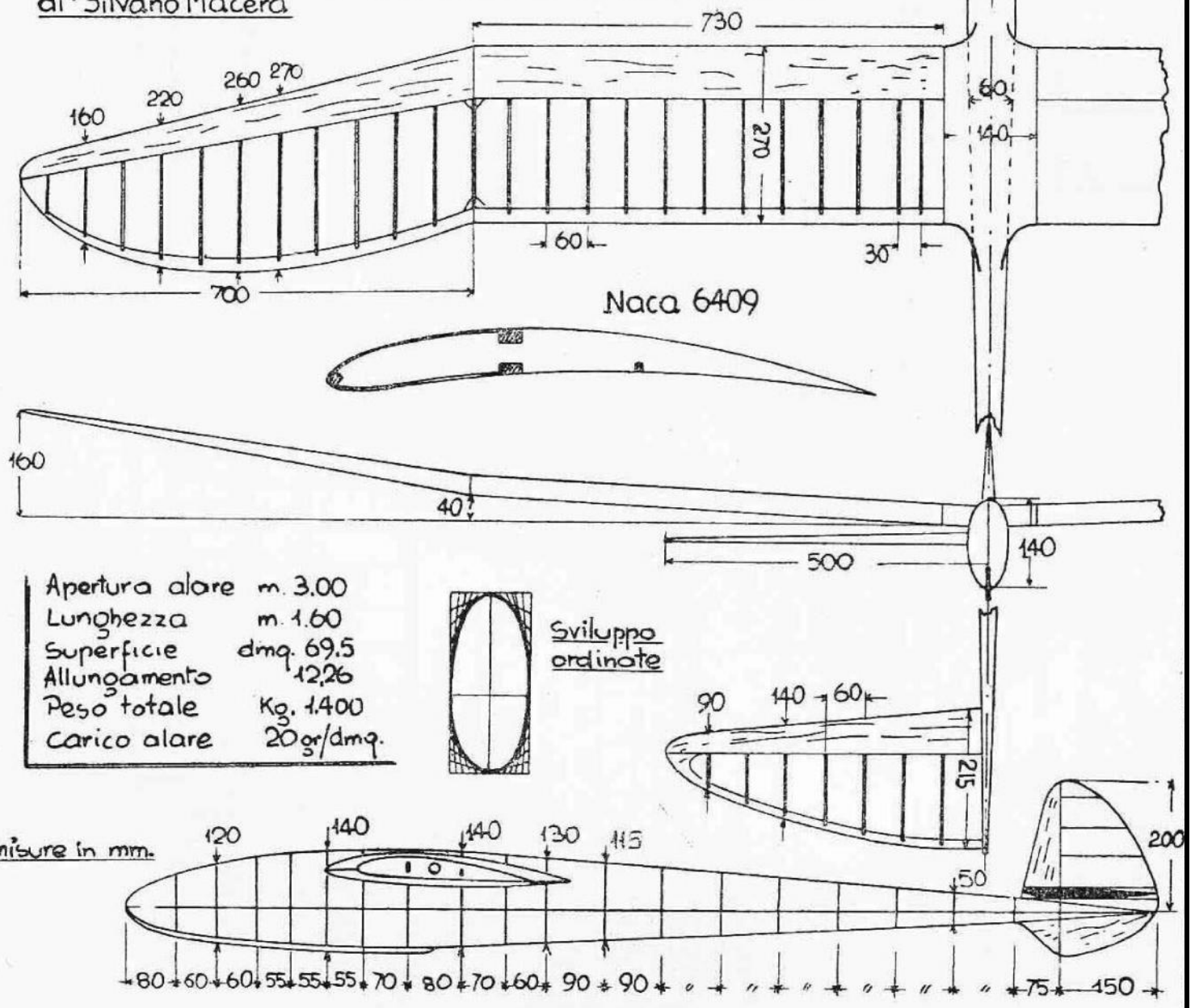
Balsa chips flew, sandpaper dust was thick on the work bench and I had got two coats of dope on all the parts to be covered. Two days of fine weather and I had all of the covering and doping done and the fuselage undercoated. Control systems were installed and a final



# Veleggiatore

## 1. Mace. 32 " Nibbio..

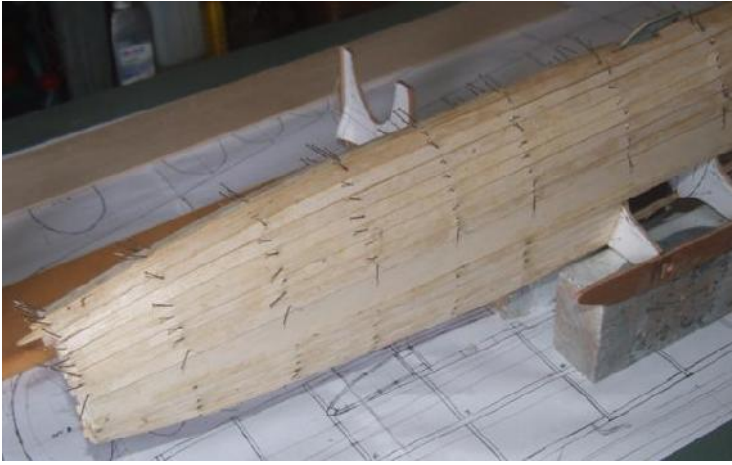
di Silvano Macera



coat of white was sprayed on the fuselage exactly one week before we were due to leave for the Canowindra SAM Champs. Two days later we test flew it. Centre of Gravity position and tow hook location proved to be perfect but rudder response was so poor on the first flight that I was having grave doubts about getting it down anywhere on the field. Fortunately, by keeping the speed up, I managed a landing close by. By moving the control cables inward on the rudder horns and increasing the servo travel to 120%, the second flight was much more controllable and a bit of thermal soaring was carried out. A third flight confirmed that it had very good thermal capability so it was time to call it a day. Back at home I fitted a longer output arm to the rudder servo to increase the rudder travel even more. This was the configuration used at Canowindra and I certainly could not be happier with it. It handles just like any modern thermal glider - not bad for a 1940's design!

"Nibbio" translates as "kite", a small hawk of the falcon family.





*ODENIMAN'S 1950 NORDIC A2* Swedish Championship glider, placed second in the first World International in 1950. Acknowledged trend sett, probably the best vintage Nordic A2 glider before the Classic era of 1951. Published in Sweden.



*Odenman's 1950 vintage A2 from Sweden. Built by Vic Driscoll.*

June, 1955

301

AERO  
MODELLER

Easy to build, high performance  
contest design for 1.5 c.c.  
from the Farnborough flier  
**TONY BROOKS**

## THE Y - BAR

FOLLOWING A SERIES of contest power designs emanating from the keen group of modellers among the student apprentices at R.A.E., Farnborough, the Y-Bar is a successor to the *T-Bar*, *Buzz-Bar*, and the eminent American expert Ray Mathew's design the *Fu-Bar*. Tony Brooks has given this particular model a very suitable name for the symbol  $\gamma$  as used in mathematics, usually designates height—one of the characteristics to be expected of this model.

First one built was powered by an Arden .099, glow-plugged, and proved to be very satisfactory so a new one was made for an Elfin 1.49. This also proved "hot" by placing 8th in the Keil trophy, and 1st at the All Britain Rally 1954. The only features which may be unusual for a contest model are the flat bottomed wing section and the rear mounted fin, though these are by no means new features, each contributing to the stability of the design.

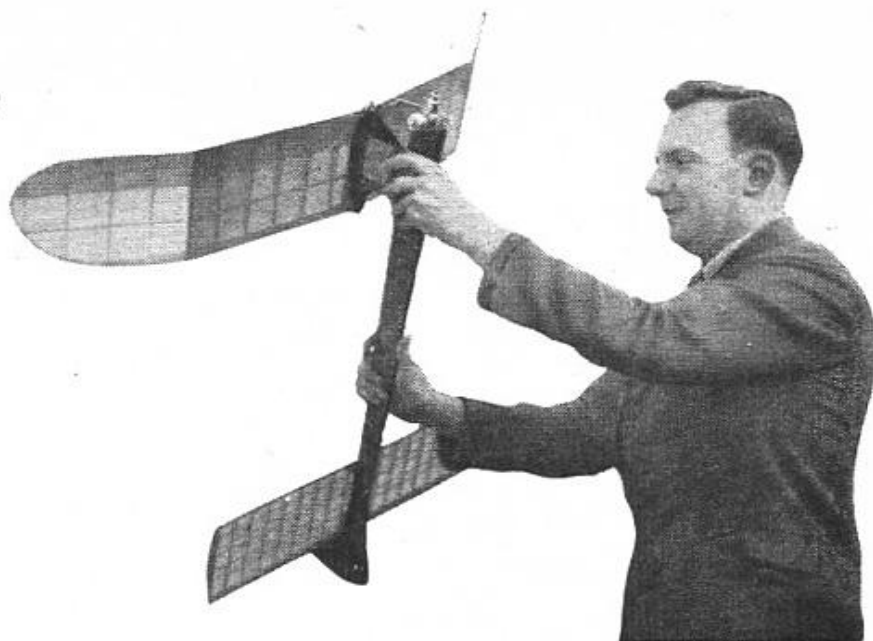
Construction of the wing and tail is simple enough for even a relative beginner to the hobby to tackle with confidence, and only the fuselage requires a few notes regarding sequence of assembly. This is as follows:—

Cut out all parts: Cement ply gussets to bearers: Build up basic frame: Cut slots for pylon and fin: Trim rear fuselage in plan view: Cement in pylon and fin: Cover sides with  $\frac{1}{16}$  sheet: Add wing platform, tail platform, etc.

### Trimming

All flying surfaces must be flat, except for approximately  $\frac{1}{8}$  in. to  $\frac{5}{32}$  in. "wash in" on righthand inner wing panel. Tilt the tail until righthand tip is about 1 in. above the level position. (It is easier to cement the tail platform at this angle

*Vertical release is a natural for this fast climbing lightweight, large 50 per cent. tailplane keeping the climb under full control. Rear mounted integral fin, profile type fuselage and small 40 in. span make building and transport easy. Full-size copies of the 1/4th scale plans reproduced opposite can be obtained, price 46d. post free from the Aeromodeller Plans Service at Watford*



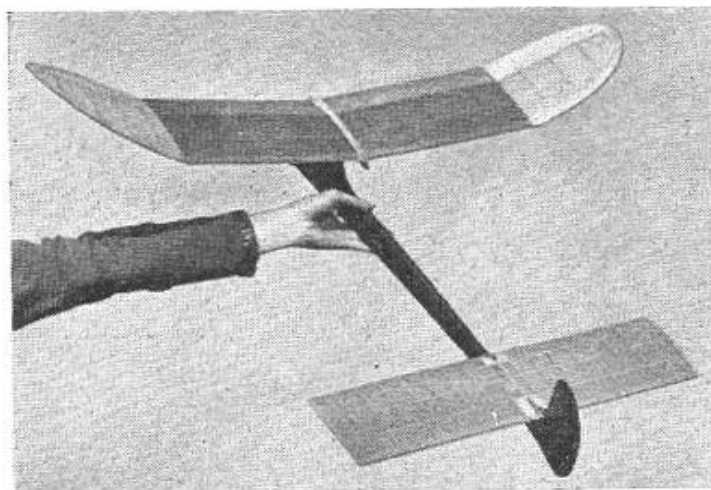
initially.) Thrust line should be straight with no side, up or down thrust.

Test the glide for a medium diameter righthand circle the cement all pack firm. Now try a power flight with 7 or 8 seconds engine run working gradually up to full power. Correct trim is steep righthand spiral and righthand glide.

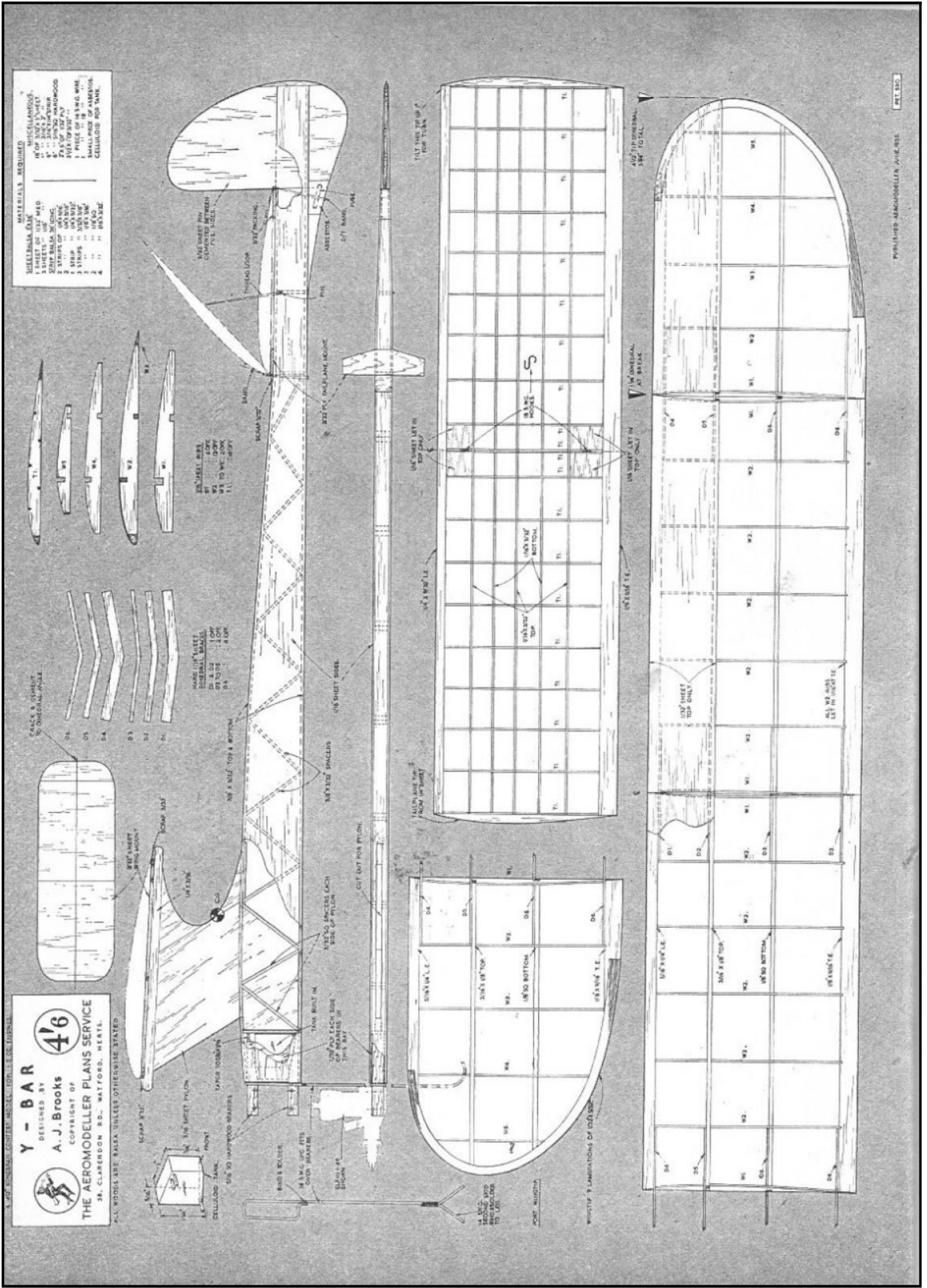
Most suitable method of stopping the engine is to use an Elmic Mini-Diesel timer mounted just behind the bearer assembly, with a small tank between the bearers.

The pop up tail d/t is fuse operated, limit of pop-up being obtained by a loop of thread cemented between tail centre ribs at approximately half chord, this going into a small hole in the fuselage and is retained by a pin.

Remember that for F.A.I. contests, using a 1.5 c.c. engine the total weight must exceed  $10\frac{1}{2}$  ounces and provision be made for a 3 point take-off from rest. For open events, where hand launch is permissible, no undercarriage is necessary and the weight kept down to only 8 ounces as on Tony Brook's prototype. Using an 8 x 4 prop. and engine at full revs., the rate of climb is of course, something to be envied by all power fliers.







## Death of a Cormorant, (and NO it didn't choke on a fish).

From Jim Rae.

The Cormorant, unclothed photos in the last DT, has died. It had four flights and was a beautiful model to look at.

The first couple of flights were fraught, under full power it went bananas, however on the glide it was beautiful. Under power it wanted to pull fiercely to the right and then it would be all over the sky completely uncontrollable, so for flight number three some mixed left rudder was dialed in for full throttle, and, after some contretemps at first she managed to go into a climb. Once again the glide was a joy to behold.

For flight number four on the next weekend I had installed about three degrees of left thrust and removed the mixed left rudder which I thought was a reasonable thing to do. After taking off with full power and then inadvertently throttling back to about half, everything, while not hunky dory, was reasonably under control, however when the throttle was opened to full power she just went ape, all over the sky. When she assumed the vertically downwards position the engine was shut off and she was pulled out into level flight at a height of about 15 metres. Unfortunately, at that time, a 20 metre high tree decided to jump into the flight path and Cormorant managed to get about  $\frac{3}{4}$  of the way through the tree, shedding bits as she went. By the time she came to rest and after being retrieved from the tree with a long pipe pole there wasn't much that was salvageable, so after unloading all the hardware the remains were consigned to the tip.

So, what was the problem? There are a couple of possibilities.

Were the wing or the fuselage flexing. It's possible but I don't think so. Fuse was fully sheeted and had spruce longerons at each corner, wing had carbon reinforced spars and was covered with Thermalspan and under manipulation was fairly stiff.

I think the problem was a design fault. The design came from the Zaic 55/56 yearbook and, while many of the designs shown have flown there is no guarantee that the design was successful. I think that the fin was too small and when the model was under full power the prop wash on the front of the fuselage was sufficient to overpower everything and make the model unstable.

I doubt that I will ever know for sure because I doubt that I will ever build another one.



Quaker Electric Brown.

# "RECORD 20"

*di Cassio Pisani*

**CARATTERISTICHE**

APERTURA ALARE	cm.	160
LUNGHEZZA FT	cm.	97
SUPRFL. ALARE	dmq.	30
PROFILO		"NACA 6409"
SLIP IMP ORIZZ	dmq.	9
PROFILO		"CLARK Y"
MOTORE		"SUPER ELIA" cc 4
PESO TOTALE	gr	540
CARICO ALARE	gr/dmq	18

CONDENSATO mm 15  
USCITA Balsa 3x10  
A 1:5  
TUTTE LE CENTINE SONO IN Balsa DA 2x3 mm 15  
LE INDOLENZE SONO: ALA + 3° - MOTORE - 0° - IMP ORIZZONTALE - 0°  
COPERTURA IN Balsa DA mm. 55  
TUTTE LE ORDINATE SONO IN COND. DA 2x3  
LA BAIONETTA E' IN DURAL DA 1  
IL CARBICULO E' IN ACCIAIO DA 2  
I TRATTELLI DI FUSOLIERA SONO IN TIGLIO DA mm. 3x5  
PART. COSTRUZIONE CON "SHERON" ALARE A 0°

- TABELLA DIMENSIONE ORDINATE -

	1	2	3	4	5	6	7	8	9	10	11	12
X	60	85	85	85	78	73	66	59	51	44	38	32
Y	65	65	65	65	64	62	56	50	41	35	27	22

G. Ianni

**\$21.50**

**READY TO FLY.**

**-NOT A KIT**

**Greatest Gas Model Value Ever Offered**

Specifications: Brown D Motor. 60" wing span. Weight, approx. 2½ lbs. 10 oz. wing loading. Twin rudders—correct C. G., L. A., and thrust insure high rate of climb (700' or more per minute) and flat glide. All balsa fuselage and tail surfaces—very sturdy construction. 3¼" M and M air-wheels. Booster jacks and connections built in. High lift wing silk covered, clear doped. Perfect pitch prop. Fool proof flash light type battery box. This plane is ready to fly, and is a splendid performer. It is thoroughly engineered. Costs you very little more in cash than kit with motor. Fuselage and tail surfaces unpainted. Our guarantee back of every plane. \$21.50 F.O.B. here. Limited number at this price.

**Pineyhurst Aircraft, Mays Landing, New Jersey**

"They don't build model planes like they used to"

The cartoon depicts a scene where a man in a suit and glasses, likely a critic or a person from a different era, is talking to a man who is kneeling and working on a model airplane. A third man is visible in the background. A box labeled "BATTERY" is on the ground. The scene is set outdoors with a simple landscape.

## CONTROL LINE WIRE.

From Barry Heseltine bhe44301@bigpond.net.au  
Just a short note - a while back I asked where to get control line wire from - [www.cablestrand.com](http://www.cablestrand.com) - 1000ft .018 " for about \$33 + freight. Try it yourself just to make sure I have not made a boo boo. Maybe if someone else wants control line wire they could contact me.

Before I buy a big roll from the USA I will try the braided fishing line. It seems to have very little stretch. I can buy that at Bermagui fishing gear shop.

*A check of [www.cablestrand.com](http://www.cablestrand.com) revealed:*

### Fly-By-Wire Control Line

We have recently manufactured and released a bulk spool of stainless steel stranded wire called "Fly-By-Wire Control Line". This seven strand wire is strictly designed for Control Line Flying, and it is stranded according to the AMA Control Line Racing Regulations. This product is 100% American Made, and we have made it much more affordable than the wire that has previously been used for control line flying. We have been receiving numerous orders throughout the world since introducing this product, and we have received very high praise for its strength, durability, and flexibility. The wire is manufactured here at our facility in California, and it is stress relieved prior to shipping. This allows us to make

sure that the wire lays flat and does not kink.

All diameters of bulk wire are available in either 250 feet or 1,000 feet. You can currently purchase the 1,000 foot (304 meter) spool of either .012", .015" or .018" through our EBay distributor for only \$29.95. We also have these spools available in diameters of .008", .010", .021", .024", and .027". If you would like to become a "Fly-By-Wire" distributor, please contact us directly at [cablestrand.corp@verizon.net](mailto:cablestrand.corp@verizon.net). Corp



## Golden West Oldtimer Competition - Parkes

16-17 November, 2013 - Parkes Miniature Aero Club Inc. - Nelungaloo Field

\*\* Program: Saturday 16th - Gordon Burford, '38 Antique, Duration.

Sunday 17th - Tomboy (45 min round), ½A Texaco, Texaco.

\*\* On field catering all day and camping on field (\$10 per adult per night)

*(Campers please note - power, toilets and hot showers now available in new amenities block)*

Please email Condo ([peter\\_condo@yahoo.com.au](mailto:peter_condo@yahoo.com.au)) with your intentions for catering purposes and camping sites by 8th November, 2013.

\*\* Motel - Spanish Lantern (02 6862 3388) Corner Peak Hill Rd and Pioneer Street.

\*\* Must bring current MAAA Licence or written proof of payment of fees.

\*\* Get together on Saturday Night.

For further information email Peter (Condo) Smith  
[peter\\_condo@yahoo.com.au](mailto:peter_condo@yahoo.com.au)





Whilst not strictly Oldtimer a few days of slope soaring at Mt. Borah was arranged by Brown arranged before and after the Gas Champs at Tamworth and was enjoyed by all who attended. Plans for 2014 already being hatched. Photos from Dave Paton.

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## Should music wire be heated before bending?

From : Don Stackhouse @ DJ Aerotech

Regarding the recent discussions on RCSE of the properties of music wire, I can add some hard data.

Music wire is AISI 1060 steel. This means that it is an alloy of iron and carbon, with no additional significant alloying elements. The carbon content is 0.6%, which puts it in the heat-treatable category. Music wire is NOT heat treated in the usual sense; instead, it is "work hardened", a natural side effect of the process of drawing it into wire.

When most metals are "cold worked" (i.e.: formed into a new shape while at a low temperature), changes occur in the metal's crystal structure that mimic the effects of heat treating. The wire is made by pulling it through diamond dies of progressively smaller diameter, with each step in the process squeezing the diameter down just a little smaller. The diameters in the American Wire Gauge (AWG) diameter scale correspond to the diameters that the diamond dies get opened up to during re-sharpening, to make the next larger size in the scale.

Eventually the accumulated cold-working has hardened the steel so much that it can't safely be drawn any smaller (all the ductility has been used up), so the wire is annealed (heated above about 1500 deg. F and slowly cooled) and the process is continued until it needs to be annealed again.

Music wire and piano wire are the same thing, except that piano wire is annealed even fewer times during the process than music wire, so it tends to be slightly harder. Music wire is cold-worked to an extreme extent, so that the resulting hardness is higher than even some heat-treated tool steels, and also significantly harder than what you would normally get from conventionally heat treating 1060 steel. This is why music wire can put such nice round dents in the cutting edges of your diagonal cutters. At diameters above approx. 1/32" the tensile strength is about 320,000 psi, and at diameters less than 1/32" the tensile strength is around 360,000 psi.

The downside of this is that there tends to be a lot of internal stress built up in the material, so the metal tends to be somewhat brittle if severely hardened this way, and it also tends to lose much of this hardening effect at a relatively low temperature, perhaps as low as 300-400 degrees Fahrenheit. This is why you need to be careful about soldering music wire, chances are that it will lose most of its hardness within the "heat affected zone" of your soldering operation. Once softened, you will not be able to get all the hardness back by heat treatment, even if you have the right equipment for that, because it will tend to crack. The reason it can be safely hardened that much by cold-working without cracking problems is because it is under severe compressive stress during the forming process, which keeps the cracks from starting.

The bottom line is bend it cold, don't try to straighten it back out after bending (there is usually just enough ductility left after forming it to allow it to be significantly bent ONCE), and don't solder or braze it near any sections that will see high stresses in service.

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## 1/2A TUNING TIP # 29: Suspected causes of erratic running. By Bob Angel

I used the word suspected, because Cox 1/2A reed valve engines are not subject to ordinary laws of physics and mechanics that apply to other engines. They may work fine for a while, give problems for a while, and then start working OK again. This seems to happen without regard for any corrective actions on your part.

With that said, let's do our best to guess just what might cause problems, and so what might cure them (sometimes). One thing I've observed is that new out of the box factory engines usually start and run quite well for a while. When problems begin to crop up and parts have to be disassembled is when the troubles start. I suspect just two main reasons for most of the problems.

First is dirt. Not just ordinary dirt that you can see and deal with, but near microscopic dirt and tiny fibers. I used to wrap a paper towel around my engine between sessions until I realized (with a hint from my wife Marjorie) that those towels are a source of fine fibers which can sneak through the exhaust slits to land on the side of the piston. That's all it takes to cause erratic running until the fiber washes out or wears away. A lot of problems disappeared when I stopped that practice.

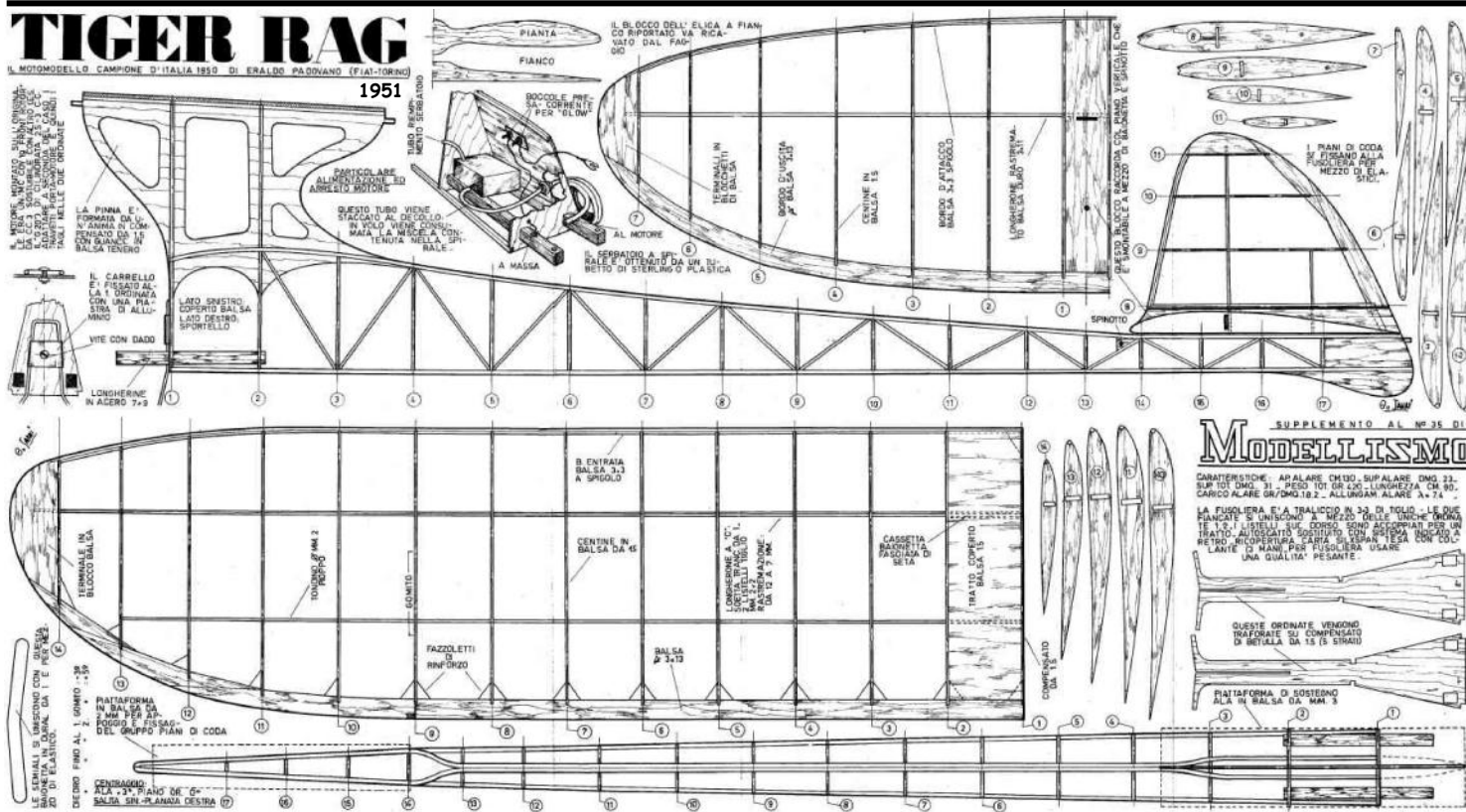
When you've taken an engine apart and start to re-assemble, you have to be scrupulously clean. I wash most parts in soap and water with a brush, followed by a final rinse from a squirt bottle of methanol kept on hand. The methanol is the final rinse, and it absorbs and disperses any remaining water. That's followed by a fuel rinse to lubricate and prevent rust. One of the final assembly steps is to insert those four screws that hold the tank on. Wait a minute did I just pick those screws up off a paper towel? That could transfer a piece of fiber directly into the tank.

I always fill the tank through a filter since there's no real in line filter in the engine. Incidentally that little spring in the fuel pickup line does trap a little lint. Don't discard it. Some guys say they just use clean filtered fuel. But I can almost guarantee that if you run a half empty can of fuel through a coffee filter, you'll find sediment. Incidentally some have reported the coffee filters themselves as a source of fine fiber. That sounds possible, maybe probable, but it could vary by brand of filter. I can't identify with that problem since I also use the filter on the syringe going into the tank.

Once at Taft, I had a breeze upset my ship upon landing and it kicked up a puff of dust. When I went to re-start there was low compression. When the problem had been solved this is apparently what had happened: A small speck of dirt had gone into the exhaust opening and had smeared between piston and cylinder, pushing the piston to one side a tiny amount. I tried flushing it out, with the head off, but the dirt was probably pasted onto the cylinder wall. I had a good score going and there wasn't time to disassemble and wash things out properly. So I took the crude approach and managed to get the engine started. By nursing the

needle while running through a thankful of fuel, the dirt apparently wore itself out and flushed out through the exhaust. I doubt this did the engine any good, but I didn't notice any permanent loss of performance.

The second prevalent cause of erratic running is just something I strongly suspect. That ball and socket assembly at the upper rod sometimes allows the piston to rotate during running. (I've checked this out). I believe the piston can wear out of round due to uneven friction and pressure caused by the cylinder gaps where the ports are located. After running in that position for awhile the piston can rotate to a different position where the running fit and friction varies. I made a holding fixture for the piston to facilitate faster break-in by lapping in the cylinder. I can clean and oil piston and cylinder on some used engines and feel the out of round condition when rotating the piston in the cylinder. If there isn't too much wear, this can sometimes be lapped out successfully with red rouge by just rotating the piston in the cylinder. RLA.



## Frank Ehling International 1/2A Postal Texaco Challenge 2013

The Old Timers, SAM 114 of Western Ohio in the USA, invite all SAM Chapters to compete for the Frank Ehling International 1/2A Postal Texaco Challenge for 2013. This model airplane event has been flown annually since 1985.

Your team can pick any day for flying during the thirty day window, Sept. 21st through Oct. 20th. Once you start flying do not change to another day. If a team member is unable to participate at the team site he may fly at his location on the same day and report results to you.

The results should be recorded as follows: Members name, Model, wing area, weight, and times of Flt 1, Flt 2, Flt 3 and total. Please list the results for all team members. The sum of the times of the three highest scoring fliers will be the team score.

Team managers are asked to comment on the weather and flight conditions, the date and location flown. Please include your SAM Chapter number, address, telephone number and e-mail address. The results are due by Oct. 30th, 2013.

Note: SAM 2006 1/2A Texaco rules apply (15 min. max, best two of three flights). See SAM's Web site for complete rules.

Send results to: George Lamb  
6026 Waterloo Road  
Centerville, OH 45459 USA.  
Tel. (937) 435-6692. E-mail: gtlamb@yahoo.com

The Old Timers, (SAM 114) in Western Ohio, will be practicing this summer to be ready to defend the Trophy. All SAM chapters are encouraged to join the fun and make it a very competitive event. We look forward to receiving your results and a photo of your team. Results will be posted on the W.O.R.K.S. Club web site [www.worksrc.net](http://www.worksrc.net) and forwarded to the SAM Web Master.

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## GORDON BURFORD DAY



### KMFC's GORDON BURFORD DAY 2013

The day celebrating Gordon and all things Burford is on Sunday 15th September 2013 at the KMFC field, St Ives Showground. With the exception of Sabre/Taipan trainers, all models are to be powered by Burford engines.

#### Events:

- Stunt -- vintage pattern
- Team Race -- 2.5 cc vintage A models, 52"3" lines, VTR rules
- Speed -- 2.5 cc, 52"3" lines.
- Concours -- judged by all present

Buy & sell table; engine display; Raffle -- best value; Lunch -- also best value

Things get underway by 9.30. We will try to finish stunt, T/R, speed, and concours before lunch.

While it's a control line day we invite modellers from all disciplines.

## A walk on the dark side at the Muncie SAM Champs.

From Grant Carson wmgcarson@sbcglobal.net

I had only one free flight event today, so I decided to visit the R/C side of the field to see what sort of thing went on there. I had never done that before. Here's what I observed.

I was fortunate enough to witness a three-way fly-off. There were two Bombers and a Kerswap. You'll have to excuse the fellow with the Kerswap. He didn't know that Bombers were superior to all other models. You see, he was from Ecuador.

All three took off at the same time and screamed skyward like FAI ships until they disappeared. The pilots kept staring heavenward and fiddling with their controls as if they could actually see the models. When the models finally came into sight, they started going to and fro, looking for lift. If one model found lift the other two egregiously piggy-backed. This went on for 10-15 minutes, with the models so close in altitude I couldn't tell which one was on top. When the models got low enough to see which one was high, the other two started wild manoeuvres, I suppose hoping some miracle of aerodynamics would occur and put them on top. The three models landed within a few seconds of one another. The Ecuadorian with the Kerswap won.

And there free flight guys, is what happens when you take a walk on the dark side. It is *DIFFERENT!*



"Who's whipping?"

## What's the answer ?

Johnny Ball's club are mostly control-line fans. Starting with the usual small kit models they went on to develop their own designs for stunt and combat. Johnny was all for large models and, although he broke up quite a few models getting there, is undoubtedly the top stunt man with his Frog "500" powered design.

What upset the apple-cart completely was when Johnny Ball decided to enter his stunt job in the speed comp—and won it! Nobody in the club has been able to find the answer as to why a heavy stunt model, with lots of extra drag, should be able to put one over on the speed boys. Even Johnny was surprised at the result. But to prove it was no fluke they have timed Johnny's stunt model "straight and level" several times since as fast as the speed jobs. Makes you wonder if design is all that important. What's the answer?

What would YOU do in a case like this? Think a moment, then twist the page for one solution to the problem which is printed below:

75 m.p.h?—it felt like 175 !



THE ANSWER... It was a matter of "design" which led to this contradiction of results—not overall design, but detail design. Johnny's model had a good, solid engine mount and the engine ran smoothly and consistently. The speed jobs had been built on the light side, particularly as regards the motor mounts. Then, perhaps they were also using slightly unbalanced props, or the engine was operating at an r.p.m.-figure which gave a lot of vibration. As a result although they were using engines just as powerful, or potentially even more powerful, a lot of this power was wasted in vibration. Hence, although the models were smaller and lighter, there was not the available power to drive them any faster than Johnny's "boxcar". This sort of thing was quite common in the early days of control-line flying—unstreamlined stunt jobs proving as fast in timed circuits as "speed" models.

