

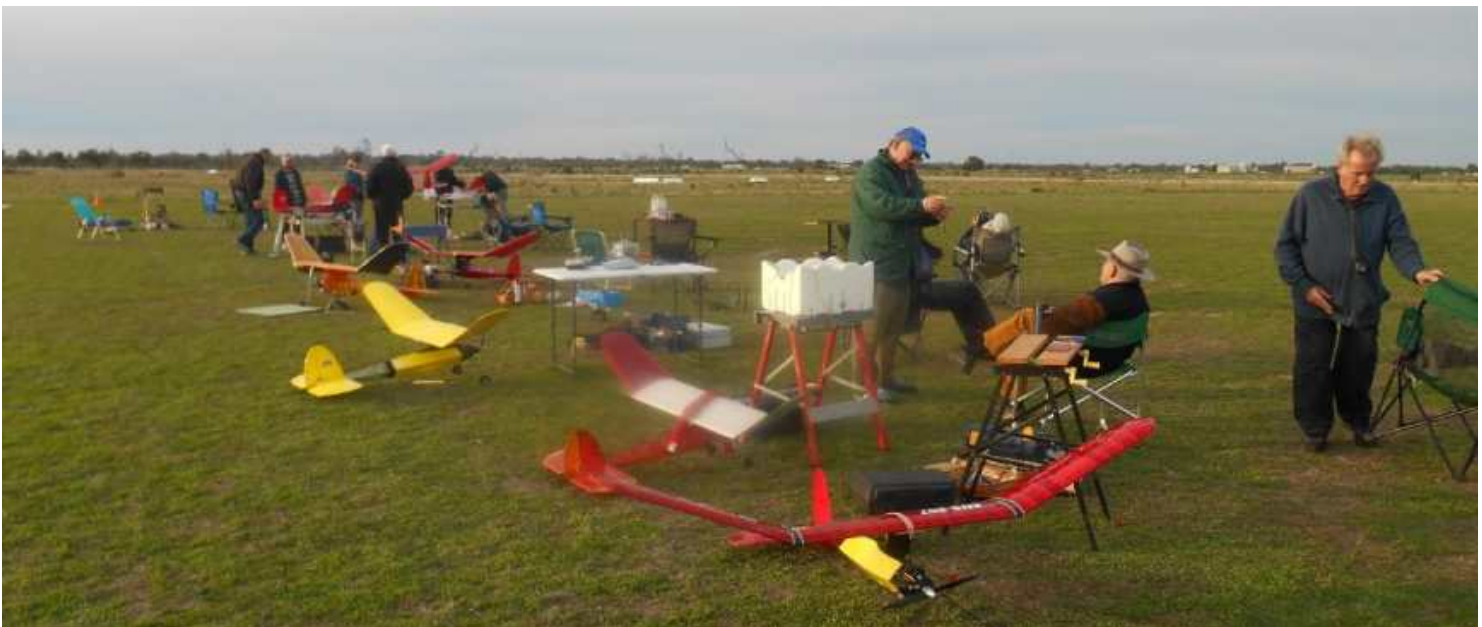
The Thermaleer

SAM 600 of Australia Newsletter, Issue No.138

July - September, 2016.



COHUNA - GOOD NEWS
See President's report inside this newsletter.



NEXT COMPETITONS

- | | | |
|---|-----------------|--|
| Oct 22 nd & 23 rd | Echuca | Saturday - 1/2A Texaco, Burford, Duration.
Sunday - Texaco, 38 Antique, Climb & Glide.
(Also incorporating the Eastern States Gas Champs hosted by SAM 1788) |
| Nov 5 th & 6 th | Cohuna | Saturday - 1/2A Texaco, Burford, Duration.
Sunday - Texaco, 38 Antique, Climb & Glide. |
| Nov 27 th | Ballarat | Sunday - 1/2A Texaco, Texaco, Duration, Climb & Glide. |

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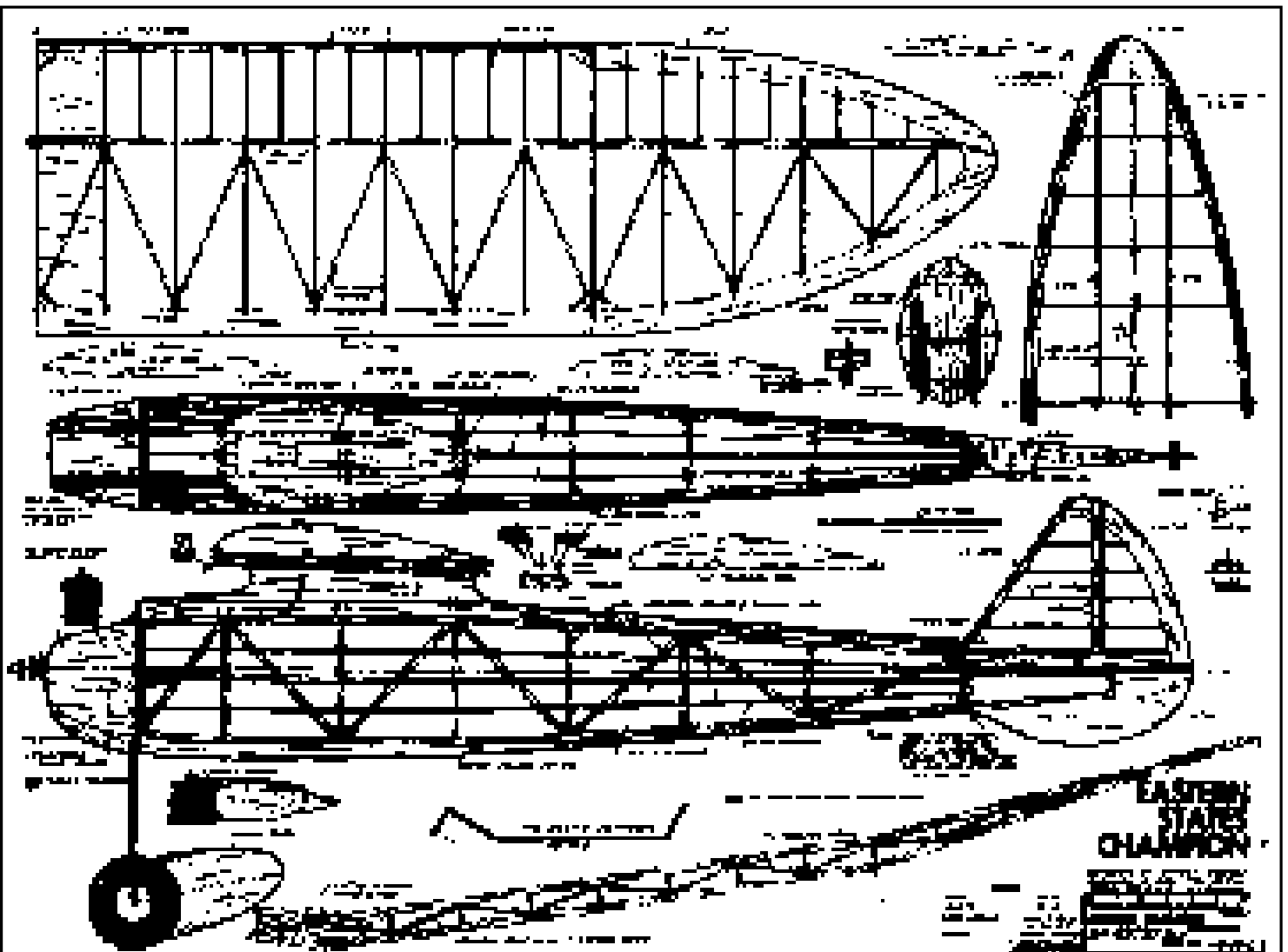


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"The Thermaleer" is the official newsletter of SAM 600 of Australia, Victorian R/C Old Timers Association (SAM600) Inc.





FROM THE PRESIDENT

Kevin Fryer.

Good News! The Cohuna flying field will be available for our Oldtimer contest on 5th & 6th November, 2016.

This was achieved after consultation with the local Cohuna Council. To enable our use of the flying field for our immediate upcoming contests the Council will be closing the aerodrome to full size aircraft on the days of our contests.

On Sunday morning 6th November we will be holding our Annual General Meeting at the Cohuna flying field.

It should be noted that these arrangements with the local Council for using the existing Cohuna flying field will not be on-going and in the meantime the Cohuna club, with VMAA and SAM 600 backing, is in discussion with the local Council and the local Member, with a view of obtaining a new flying site in the Cohuna area for a permanent flying field for the Cohuna Club. After all a model club can be compared to a Men's Shed.

There are already options available to the Club for a new site and it is hoped that VMAA will be able to assist with the acquisition of a new field.

In the meantime we have our next competition scheduled for 22nd & 23rd October, 2016, at Echuca. As already circulated we are combining with SAM 1788 to incorporate the Eastern States Gas Champs with our event. This should be a great weekend of Oldtimer Flying. All the advertised events for the Eastern States Gas Champs, except the Cabin Scramble and the Vintage Glider events, will be run. The Echuca flying field is a great field with a new toilet block. There will also be Electric Oldtimer events for our competitors. Camping is permitted on the field.

With the lack of competitions due to the very poor weather that has been experienced over the past few months I am expecting to see a good roll-up of flyers, both from Victoria and NSW, with lots of new models, flight-tested and ready to go. Looking at the trip it is not much further for most NSW flyers to travel to Echuca or Wangaratta. Echuca is a great town with lots of tourist attractions to see so there is also something for the wives to do while we are flying.

SAM 600 sends its condolences to the family of Trevor Carey who passed away in September. Trevor was the Oldtimer columnist in the Airborne Magazine for a number of years.

As we get older we need to change our lifestyles to look after our health. I plan to start the "Life" program which is run by the Victorian State Government and Diabetes Victoria, and I urge our members to give this program careful consideration with a view of keeping ourselves healthy and flying into the future.

For further information see <http://www.lifeprogram.org.au/> or contact me.

Safe Flying - see you at Echuca and Cohuna. Kevin Fryer



He's definitely improving - he is asking for a copy of the latest issue of "The Thermaleer" to read.

CONTEST CO-ORDINATOR'S REPORT From Brian Laughton.

Another three months has passed and in that time I have had my 80th birthday which means I am now in my 9th decade and I am more that likely to have a turn on the field, so be ready to give me the KISS OF LIFE, although looking at you lot I think I would rather be left to die.

Enough of this frivolity! We have probably been through some of the worst weather for many years so its a good thing we only had one competition scheduled for this time and even that was cancelled because of our loss of flying field at Cohuna.

The Cohuna field has been lost due to complaints to council by a full size aircraft flyer be it for his own financial interests not safety, but the Cohuna club are looking for an alternative field and we will let you know more if they find one.

The rain has inundated NSW and some of the Victorian country areas to the degree that Wangaratta has not been able to use their field for ten weeks and the Eastern State Gas Champs which was to be held there by SAM 1788 on the 1st - 2nd October has been cancelled on this site.

SAM 1788 has been in constant contact with us over this problem and as the Echuca field is not water-logged, it has been decided to share it with them on the 22nd - 23rd October, so we will fly the Eastern States Gas Champs in conjunction with our competition on that weekend.

Seeing that we don't have a field to fly our November 5th - 6th competition, we have been in touch with Bendigo club to see if we can use their field for this event. As yet we don't have a reply but as soon as we know we will notify everybody.

Unfortunately I have nothing more to report so lets hope we get to fly all our competitions between now and Christmas in good weather and have lots to report in our Christmas issue.

Cheers, Brian Laughton.



"The Stebbings Memorial" Champ of Champs - 2016

Event	1 st Place	2 nd Place	3 rd Place	No. in F/O	PROGRESSIVE POINTS I/C		
ROY ROBINSON 24th January, 2016					Kevin Fryer	40	1 st
Texaco	Brian Laughton	Don Grant	Kevin Fryer	6	Brian Laughton	27	2 nd
Duration	Kevin Fryer	Don Grant	Brian Laughton	2	Lyn Clifford	24	3 rd
Electric Texaco	Laurie Baldwin	B Wilson		2	Don Grant	16	4 th
Electric Duration	Bob Wilson	Laurie Baldwin		2	Pat Keely	13	5 th
NATIONALS (SAM 600Members placings)					Steve Jenkinson	12	6 th
Duration	Kevin Fryer	Don Grant	Lyn Clifford	2	Steve Gullock	8	7 th
Electric Duration	Bob Wilson	Max Heap	Steve Gullock	1	Graeme Gulbin	5	8 th
½A Texaco	Steve Jenkinson	B Laughton	Kevin Fryer	2	Robert Taylor	4	9 th
½A Electric Texaco	Bob Wilson	Steve Gullock	Brian Laughton	5	Max Heap	2	10 th
'38 Antique	Lyn Clifford	Kevin Fryer	Robert Taylor	0	Col Collyer	1	11 th
Burford	Don Grant	Lyn Clifford	Steve Jenkinson	4			
ECHUCA 16th - 17th APRIL 2016							
½A Texaco	Brian Laughton	Kevin Fryer	Lyn Clifford	5			
½A Electric Texaco	Max Heap	Brian Laughton	Graeme Gulbin	5			
Burford	Steve Jenkinson	Kevin Fryer	Max Heap	6			
Duration	Pat Keely	Lyn Clifford	Brian Laughton	4	PROGRESSIVE POINTS - ELECTRIC		
Electric Duration	Steve Gullock	Roger Mitchell	Max Heap	0	Bob Wilson	15	1 st
Texaco	Graeme Gulbin	Kevin Fryer	Lyn Clifford	7	Laurie Baldwin	14	2 nd
Electric Texaco	Max Heap	Roger Mitchell	Steve Gullock	4	Steve Gullock	12	3 rd
'38 Antique	Kevin Fryer	Lyn Clifford	Steve Gullock	1	Max Heap	11	4 th
MONARTO VIC / SA State Champs 30th April - 1st May, 2016 - Cancelled					Roger Mitchell	10	5 th
BALLARAT 14th-15th May, 2016 - Cancelled					Brian Laughton	9	6 th
COHUNA 21st-22nd MAY 2016					Graeme Gulbin	2	7 th
Texaco	Brian Laughton	Pat Keely	Kevin Fryer	5			
Electric Texaco	Roger Mitchell	Laurie Baldwin	Steve Gullock	3			
Duration	Pat Keely	Brian Laughton	Robert Taylor	5			
Electric Duration	Laurie Baldwin	Roger Mitchell	Steve Gullock	3			
½A Texaco	Kevin Fryer	Brian Laughton	Lyn Clifford	4			
½A Electric Texaco	Brian Laughton	Laurie Baldwin	Roger Mitchell	4			
Burford	Kevin Fryer	Lyn Clifford	Brian Laughton	5			
'38 Antique	Steve Gullock	Kevin Fryer	Lyn Clifford	0			



AN EXPLANATION OF THE SAM 600 TROPHY SYSTEM

From Brian Laughton

Prior to 2007 we would present a trophy to each of the three place getters in an event and it was mentioned to me on many occasions that the trophies were a nuisance at home when you could win up to five trophies per comp .

In 2007, four SAM600 members went to the SAM Champs in Las Vegas USA and on arriving at the comp we were presented with a commemorative board which had the top half describing the event and the bottom half left blank to attach your badges that were presented to the three place getters.

This started us thinking that we could do something similar over a twelve month period so in 2008 we started our trophy boards which had the SAM600 logo and the year at the heading, then for each 1st, 2nd and 3rd placing you would receive a badge that you would stick to your board.

We would then allocate points at the rate of 3 for 1st, 2 for 2nd and 1 for 3rd and anybody, regardless whether they placed or not, would get 1 point for getting in the flyoff. These points would be tallied up at years end and the person with the most points would be the Champ of Champs for that year and would be presented with their own trophy to keep.

Then in 2009 a very well liked flyer in SAM 600, Fred Stebbing, past away and it was agreed that the Champ of Champs trophy would be renamed "The Fred Stebbing" Champ of Champs trophy. Approximately four years ago we accepted electric old timers in SAM600 and we now have two trophies, one for I/C and one for electric power.

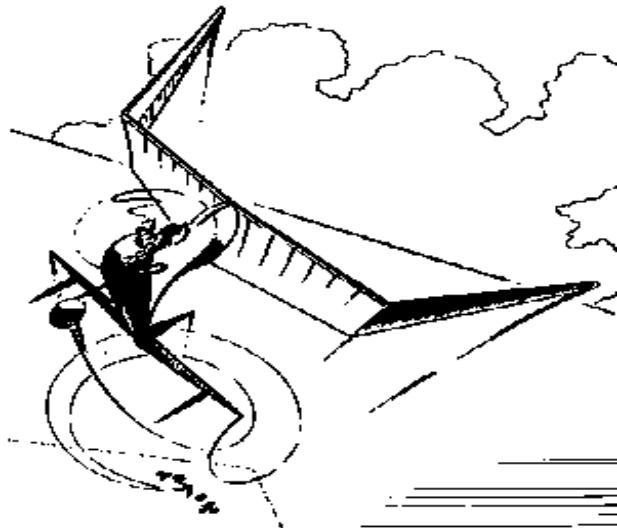
Then in 2014 Brian Stebbing, the son of Fred also an old timer flyer in Adelaide, decided he would donate a Perpetual Trophy for I/C in the memory of his father and he would drive from his home in Adelaide for every comp in Victoria to try and win the trophy, which he did in 2014, drawing with Kevin Fryer.

Unfortunately earlier this year (2016) Brian Stebbing passed away suddenly so we have now renamed the trophy in both their memories, "The Stebbings" Champ of Champs trophy which the winner gets to retain for one year, but he also gets a trophy to keep forever.

When Fred was alive he and Trevor Boundy manufactured a .40 ci diesel each and the one that Fred made is now mounted on the top of the perpetual trophy thanks to Kevin Fryer.

The reason we brought in the twelve months Champ of Champs trophy was to encourage ALL our flyers to participate in ALL of our events and competitions, not just the ones that suited them.

Brian L



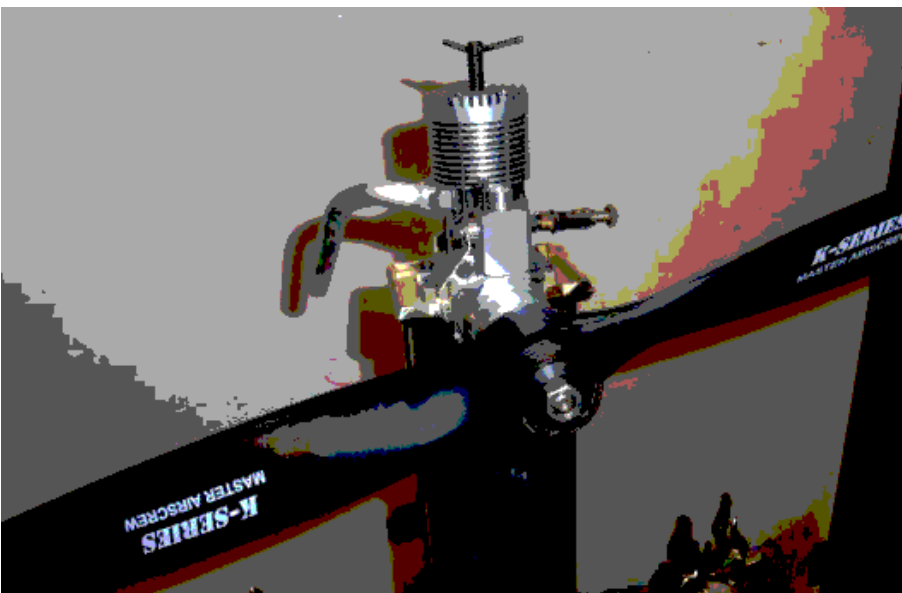
Top: The USA SAM commemorative trophy board.
Middle: The current SAM 600 trophy board.
Bottom: Brian Laughton with the Stebbings Memorial trophy and the winner's trophy





The Stebbings Memorial Champion of Champions Perpetual Trophy with Diesel Engine built by Fred Stebbing and Trevor Boundy mounted on top by Kevin

Right: The trophy presented to each year's winner of the Stebbings Memorial Champion of Champions Perpetual Trophy.



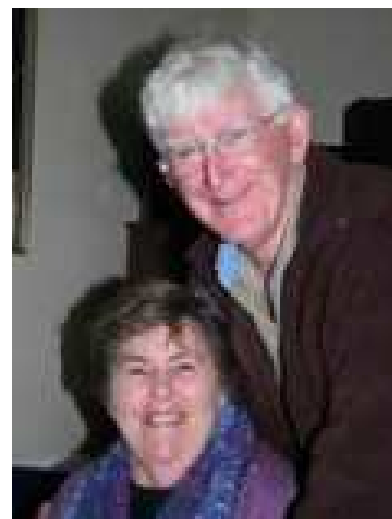
Fred Stebbing - Reflections

Fred Stebbing reflections by Trevor Boundy 10 August 2016.

With Fred's purchase of a Milling machine and Lathe we started meeting once a week doing aeromodelling stuff in his workshop.

I would stay to lunch and come back home late afternoon.

The chrome plating was done at Drouin West. As well we made a propellor profiling machine and various modifications to Cox 049 including chroming liners.



The first project was a conversion of an Irvine 40 diesel with chrome and lapped liner etc, and this was the successful engine he used in his Sherman Rambler (above at SWAMPS) which was inherited by his son Brian.



The second was the scratch building of two 40, long stroke diesels, with crankshafts from Hi-Tensile bolts, steel liners hard chromed and lapped, "O" ring gasketed backplates and home made carby's.



Setting up the port timing with LED light, dial indicator and protractor.





Milling jig for machining the bushed con rods.



Crankcase milling.

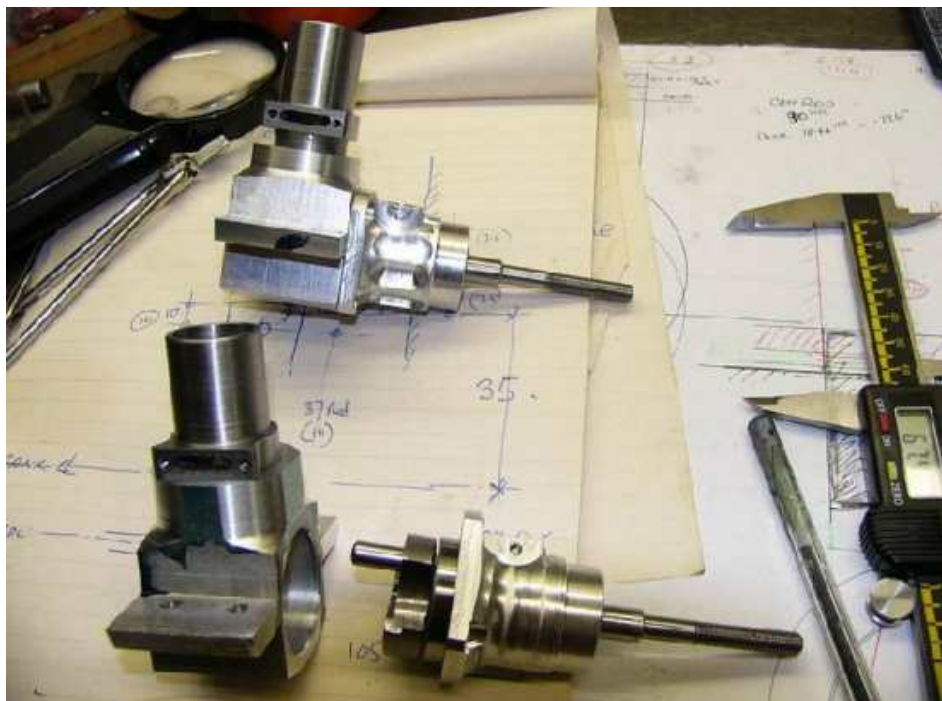
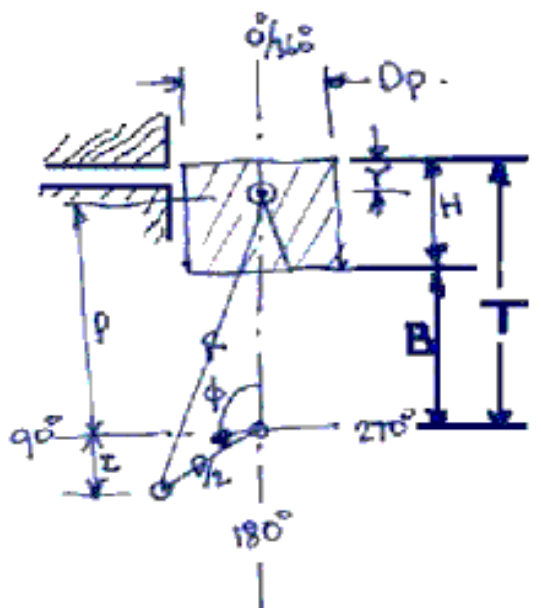


40 diesel start of crankcase on Fred's new mill 2005 March.



Milling front housing

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	For any crank rotation calculate the location of piston, top (T) or bottom (B) from crank c/l													01/March/2005
2	Enter Stroke, Skirt length, RodLength, GudgeonPinToTopofPiston and Angle of Crank Rotation													
3	Space has been left for 12 entries for crank rotation													
4	Enter													
5	21.00	Stroke mm (D)												
6	21.50	Skirt length mm (H)												
7	38.00	Rod length mm (R)												
8	9.68	Gudgeon to top of piston mm												
9	20.00	Piston diameter mm (Dp)												
10														
11	Enter Answers				Ancillary answers									
12	Degs	T mm	B mm	6.597345 displacement cm cube										
13	0	58.180	36.680	0.403 displacement inch cube										
14	45	54.372	32.872											
15	90	46.201	24.701											
16	118	41.602	20.102											
17	120	41.326	19.826											
18	122	41.058	19.558											
19	135	39.523	18.023											
20	180	37.180	15.680											
21	225	39.523	18.023											
22	270	46.201	24.701											
23	315	54.372	32.872											
24	360	58.180	36.680											
25														



For port timing we used a spreadsheet which gave the piston position for any crank angle for any engine dimensions.



Trevor's 40 Diesel, (now sitting atop of the Stebbing Memorial Trophy) showing external machining and the bushed compression screw in the head.





Above: Chrome plating at Trevor's, showing work holder and temperature controlled plating bath made from chip fryer.



Left top: Diamond paste lapping liners at Drouin West.

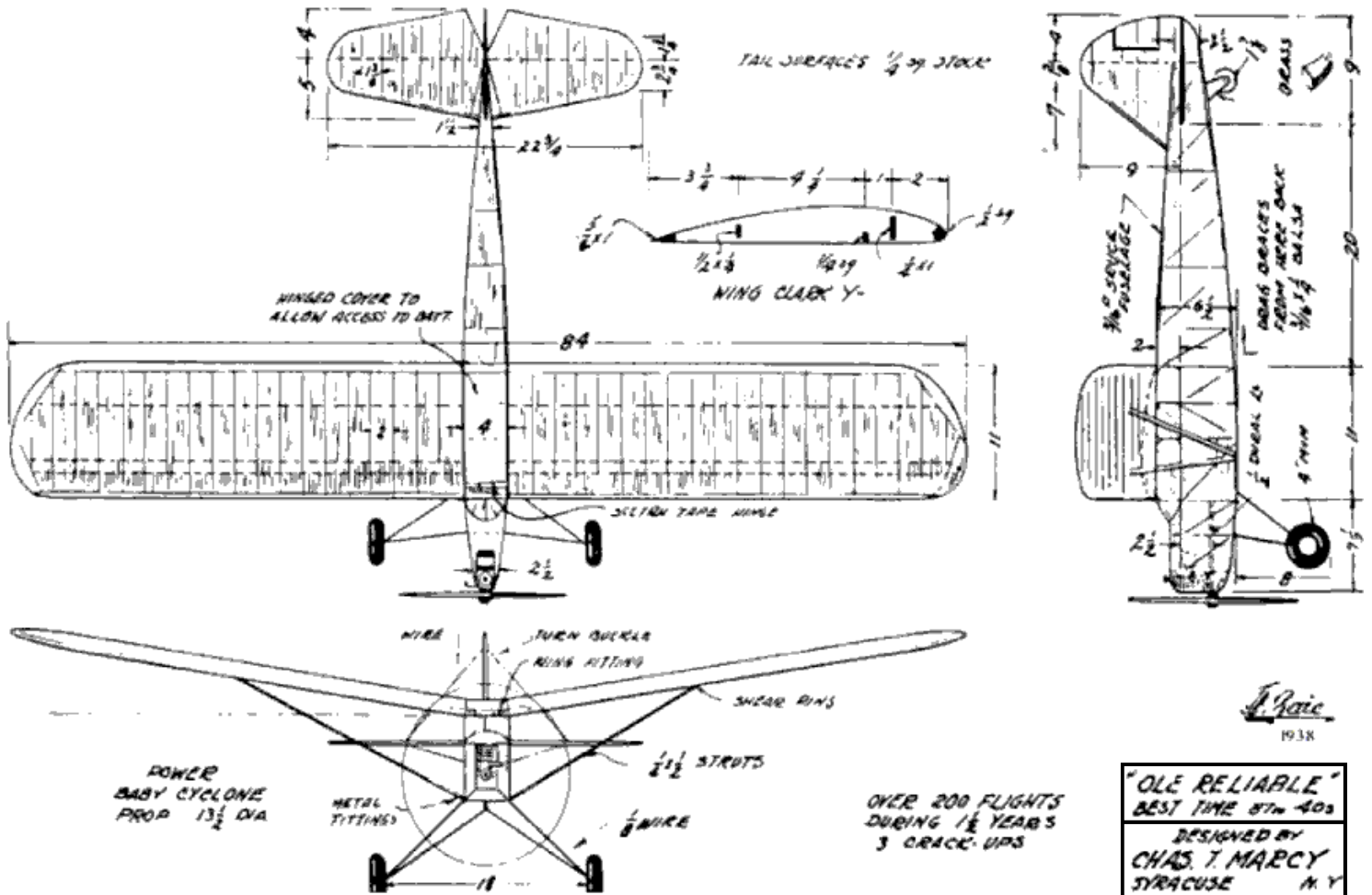
Left: Typical Chrome plating of a piston in a temp controlled bath.

Below: DC power supply using 12 volt DC swimming pool chlorinator and car battery.





Another of our projects was a propeller blank cutter.



**A Visit from Jack Black.
From David Christian.**

Back in the late 1940s was an exciting time to be involved with aeromodelling. In Hobart the core group of enthusiasts were fairly young and consequently transport was difficult, so free flight activity was very restricted. And this is when control line flying became the major activity as there were various sports grounds and open spaces in and close to the city where C/L models could be flown without too much outcry from the local citizenry.

Although the basic principle of C/L had been invented and demonstrated prior to the outbreak of World War II, with many modellers in the armed services and non-availability of most basic modelling requirements, C/L was really "on-hold" until the war was over. I can remember that in Hobart the only modelling materials available were balsa and glue, and in consequence modelling activity was virtually restricted to the building and flying of gliders which were very popular.

Except for a lucky few who had carefully hoarded supplies of Jap tissue from pre-war days, we covered our models with "lunch wrap". This was a semi-transparent lightly waxed paper that shrank nicely when sprayed with water, although it tended to do cruel things to fragile structures, particularly tail surfaces.

What initially got C/L up and running was the importation of small British diesels (ED Mk II and Mills 1.3) which were ideal for C/L trainers and for a while everyone was busy learning to fly. Specific information was scarce, so there was much trial and error involved with control mechanisms and CG position etc. Things like wing-tip weight, longer inboard wings and uni-flow tanks had yet to be invented.

So there was a lot of activity with trainers and most people used small British diesels, while a few had 10cc engines such as the Ohlsson 60 (Spark ignition) and the Australian made Hearn's Tempest also of 10cc.

I never discovered the exact origin of the Tempest. It certainly looked like a McCoy 60, but whether it was made under licence from McCoy or was just a close copy remained a mystery. As it was essentially a racing engine, it was not particularly suited for general C/L flying, but engines were very scarce in those days and import restriction meant that you could not just buy them off the shelf or order from overseas as we can now.

Gradually a few more engines appeared on the scene, including the Elfin 1.8 which was probably the first small British diesel that had a respectable power/weight ratio, while the Frog 500 was also popular. Although the Frog 500 was a very good engine in many respects, it had the nasty habit of cutting out "dead" without warning if it was the slightest bit lean, so many a good model made violent contact with terra firma because of this.

Of course everyone wanted to fly "stunt", but it wasn't quite that simple and I recall that eventually Julian Brown looped a small Mills 1.3 powered model and the word spread quickly amongst the aspiring stunt flyers. So we slowly progressed, with many a prang and much furious activity to repair or build so that flying could continue the next weekend.

At about this time (late 1940s) when we were making some progress with simple manoeuvres, Jack Black paid us a visit and showed us how it was done.

Jack, like many other ex-servicemen, was at a loose end immediately after he was discharged from the RAAF at the end of WWII and decided that he could maybe earn himself a few pounds by manufacturing a model aircraft engine. So the JB60 was born and as the name suggests, it was a 10cc engine that may have started as spark ignition, but if so Jack certainly used glo ignition when he visited us. I don't think many JB60s were made and Jack soon obtained employment as a pilot with one of the commercial airlines.

Jack arrived in Hobart with a stunt model and a group of us went to the West Hobart sports ground to see what he could do. The model was extremely basic and showed signs of hard usage. It was also quite small for a .60 engine and I recall the wingspan as being about 40" (1 metre), with a very large movable elevator which also had lots of movement.

The JB60 was fired up and Jack proceeded to go through "the book" and although we knew the various manoeuvres that made up the schedule, most of us had never seen them actually performed. It would be nice to say that Jack gave a really polished performance, but this was not quite so. As mentioned above, the model was very small for a .60 engine (even in those early days) and the modus operandi seemed to be that the large elevator pointed the model in a certain direction and the large engine dragged it there. As can be imagined, there was an incredible amount of mushing as the model seemed to be dragged through the manoeuvres rather than actually flying through them.

However in spite of the shortcomings, we were very grateful for Jack's demonstration and it inspired us to keep at it until we could fly through the whole schedule as he had done, but hopefully with a little less mushing!



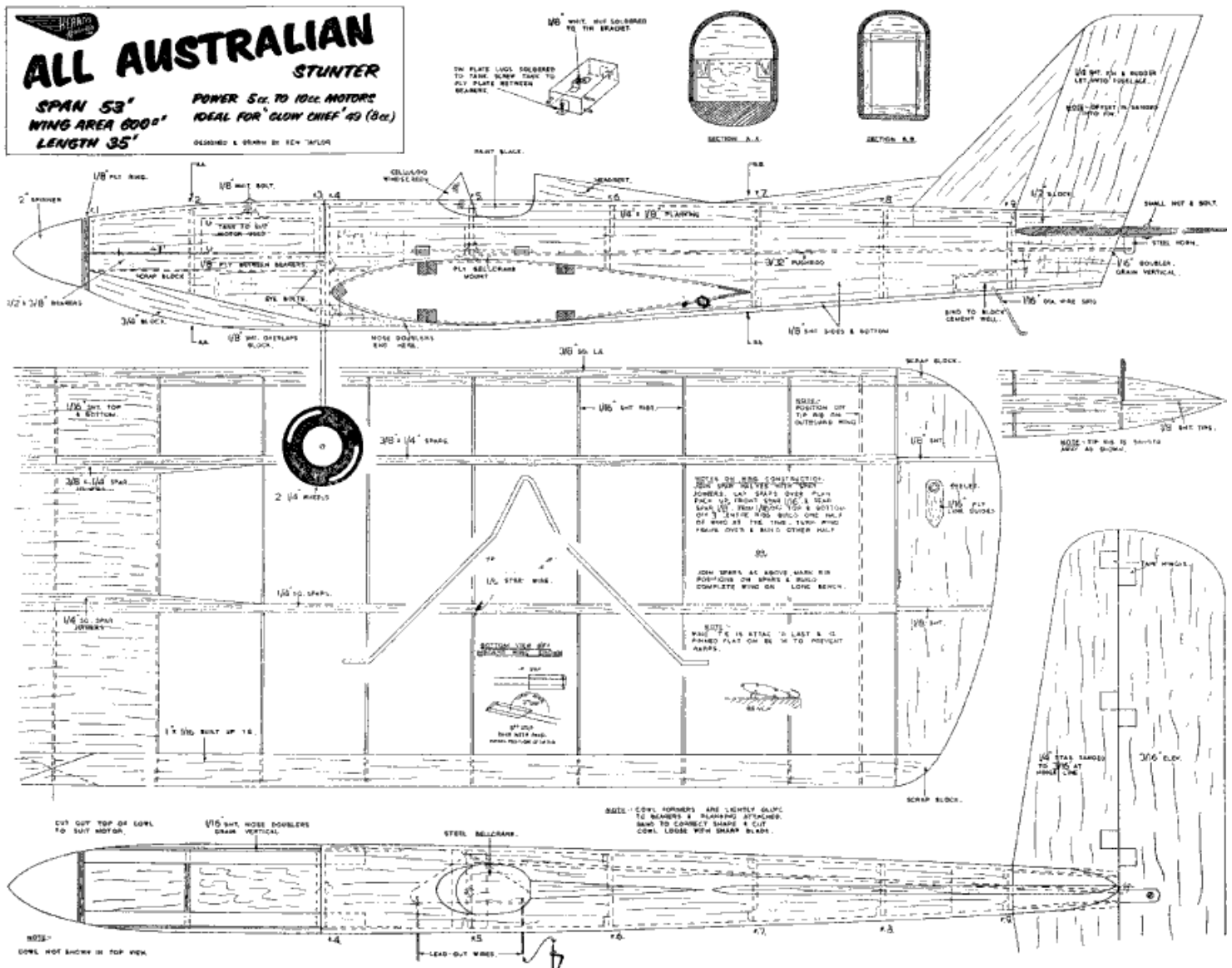
TRIVIA	
The Term "Poindexter" Refers To A Nerdy Bookish Person Who Originated In Which Cartoon?	
Popeye the Sailor Man	Looney Tunes
Rocky and Bullwinkle	Felix the Cat
Answer →	

Answer: Felix the Cat.

When the long-running comic strip Felix the Cat was adapted into a television cartoon in 1959, a host of new characters were brought in to round out the comic's cast and provide consistent friends and foils for the quirky animated cat.



Among those characters was a young boy named Poindexter. Poindexter was extremely brilliant (with an IQ of 222), socially awkward, and a stereotypical nerd through and through - right down to the Coke-bottle glasses. Through his repeated appearances in the show, his name became associated with the nerd-scientist trope he portrayed and Poindexter entered the English language as synonymous with someone who is extremely studious and awkward.



Full-size plan http://www.outerzone.co.uk/download_this_plan.asp?ID=5616

Two IRISHMEN were looking at a Mail order catalogue and admiring the models. One said to the other, 'Have you seen the beautiful girls in this catalogue?'



The second one replies, 'Yes, they are very beautiful. And look at the price!'
 The first one says, with wide eyes, 'Wow, they aren't very expensive. At this price, I'm buying one.'
 The second one smiles and pats him on the back. 'Good idea! Order one and if she's as beautiful as she is in the catalogue, I will get one too.'
 Three weeks later, the youngest IRISHMAN asks his pal, 'Did you ever receive the girl you ordered from the catalogue?'
 The second IRISHMAN replies..... (SEE OVER)



'No, but it shouldn't be long now. All her clothes arrived yesterday!!

A Good Teacher to my Rescue

When I first arrived in Hampton Virginia to work for the NACA Research Lab, I was assigned to the Structural Research Sheet Metal shop. I had been reading in the Model Magazines about all the modellers that had been hired and was anxious to meet some of them. The first day on the job I helped a worker named "Pinkey" Fruchtman, a Brooklyn Skyscraper modeller. Wow! I had just read about the 1941 Nationals and that Pinkey had won 1st place in Class A with a model named "Flounder" and the plans had been published by MAN! After work we ate at the local beanery and as we were leaving we met Sal Taibi, one of the most famous modelers known, who had designed and published the "Pacer".

After a few weeks I met many others flying at the field (very small) and I began to get itchy to get in the air as I had not brought any of my models to Hampton. There was a lot of "Playboys" and a multitude of new designs with the short nose/lifting stab concept similar to what I had already been using in Texas. I was drawn to the design board and using the attic of my rooming house as a shop I began to glue some balsa! Knowing the quality of models I had seen, I really had to hump to furnish a model worth showing.

It was a .23 powered crutch built model, with a medium height pylon made by folding a sheet of celluloid around a vertical former and teardrop wing mount former. The trailing edge of the pylon was cusped, and I had to use clothes pins embedded with carpet tacks to hold the T.E. while the glue dried. It faired -in to the crutch and turtle deck with sheet balsa and stringers. After the motor mount and belly fairing was installed, the wing and tail was completed. When the model was covered with red silk span and my "Trademark Cabin" outline was added, it really began to take shape. Finally, the day of testing arrived and I walked (no cars) to the field trembling with fear that my offering might not be accepted.

Off to myself, I meekly started the 23, reviewed the settings, set the timer, and gently launched her into the breeze. My test flight lucked out as my settings seemed ok. When I returned from the retrieval, Sal Taibi approached and said, "Geez Jesse nice job, but what's all that stuff on the wing and tail?" For my fun and a little pizzazz, I had pinned little three inch ribbons to the tips. He didn't wait for an answer and said, "Get that drag junk off, open-up the engine and let her fly! She's ready now!" Now he didn't quite talk that way, he kinda spoke a version of "Brooklynese" and I wouldn't dare try to repeat how and what he said. He simply walked away as I tore off the "junk" (actually a different word than the one he used!). A little later I re-fuelled and made my next flight. Sure enough it really flew better - one of the few that flew right off of the board!

Sal walked up after a few more flights and said, "Jesse, leave it alone now and don't change a thing! Just fly it and wait for a thermal. That makes us all equal!"

For years Sal always came over to see any new models that I brought out and always had suggestions to help me make a good flying model out of what might have been a mediocre one. One of his instructions lasted me all my competition days. He said, "Jesse, there are six guys entered in your event. Two are too busy with other events to fly your event. Two guys are novices and will have engine or other trouble. That leaves you and one other guy, so make your three flights and you already have first or second place cinched!!" Using that technique, I always made my three official flights and won a few trophies along the way! I never was a trophy hound but his suggestion works!

Written as recalled from the Summer of 1942 by Jesse F. Shepherd Sr. AMA 4257 09-22-05



Snubby

by
Jessie Shepherd Snr.
Ready for the
2015
USA SAM Champs.

The Snubby is a
replica of the models
mentioned in Jessie's
recollections above.

Handbooks

From James Parry, Sticks & Tissue.

I remember when quite young looking at the various aeromodelling plans handbooks and wondering if I would ever make the more exotic models, as they seemed at that time, which in turn amounted to anything F/F powered by something other than a Mills 75, Dart or Merlin and whether another attempt at more than a KK Champ was likely to bear fruit in C/L, R/C was not for mere mortals. Many happy hours were spent reading, re reading and gazing at the available plans and how to columns. In fact even now one particular handbook evokes strong memories and of course the original was chucked out along with those early days of model flying as other interests evolved! So to find a copy of that particular handbook and look at it again was quite something.

On a visit to Wallington, in the course of work, I called in to see Alan Jupp my mentor for all things free flight including just about every plan and publication and fact ever, a walking encyclopaedia on the hobby. I borrowed from him a few old handbooks and to my great delight included the copy I had long ago relinquished. (orange and black checked). So in order to jolt a few memories from others I scanned the covers for all to see and remember, mind you you've got to be getting on to remember them.



One of the handbooks, Model Aircraft, has a picture of P E Norman on the cover holding his Siskin 111A model, which he designed for Aeromodeller. This had pendulum controls for rudder and elevator and powered by an Elfin loaded with a 10x6 propeller. Now Alan has many of the P E Norman models and associated articles e.g. Camel, Gamecock, Mew Gull to mention but a few so in addition to the handbook covers I've included a photo of Alan holding that original Siskin. It still flies on the odd occasion although it was "Overhauled" recently, 1977 to be precise. Interestingly Alan was approached by a chap when flying the model who explained that he used to fly Siskins and the model was extremely accurate in its flight performance.



A happy Alan with P E Norman's Siskin 111A

Come on - a twin boom challenge, what is it and who will make?

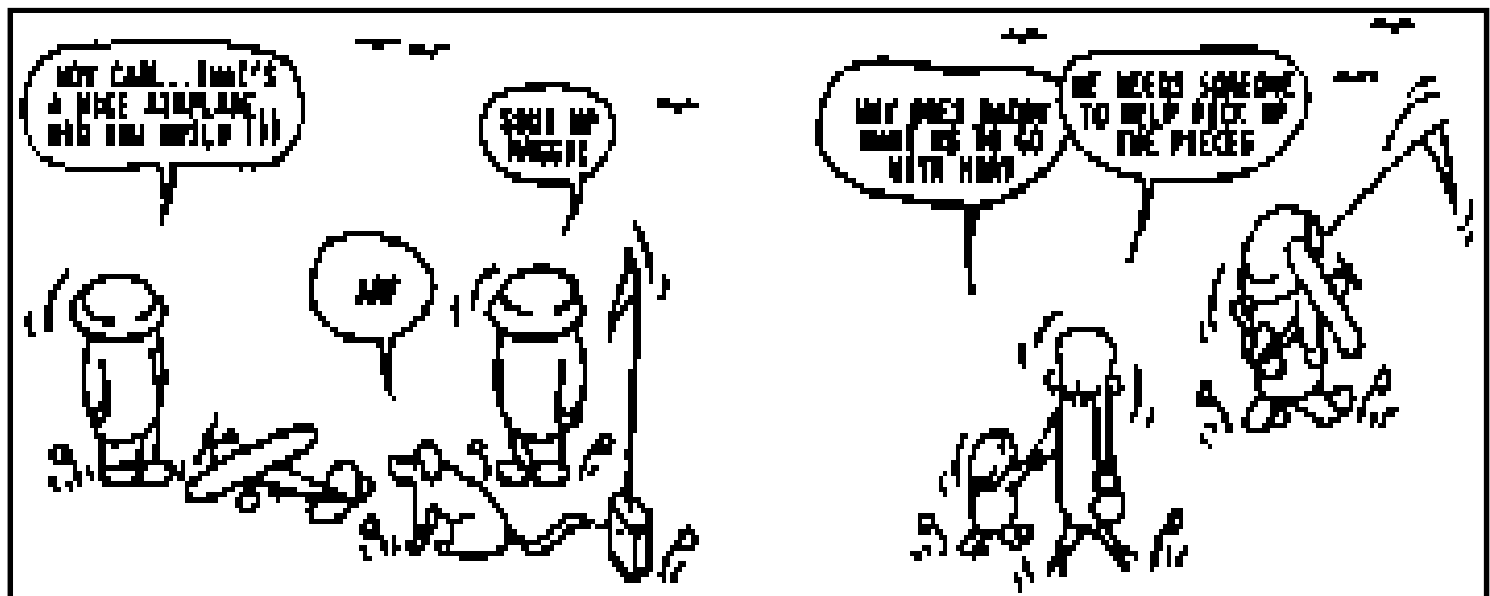
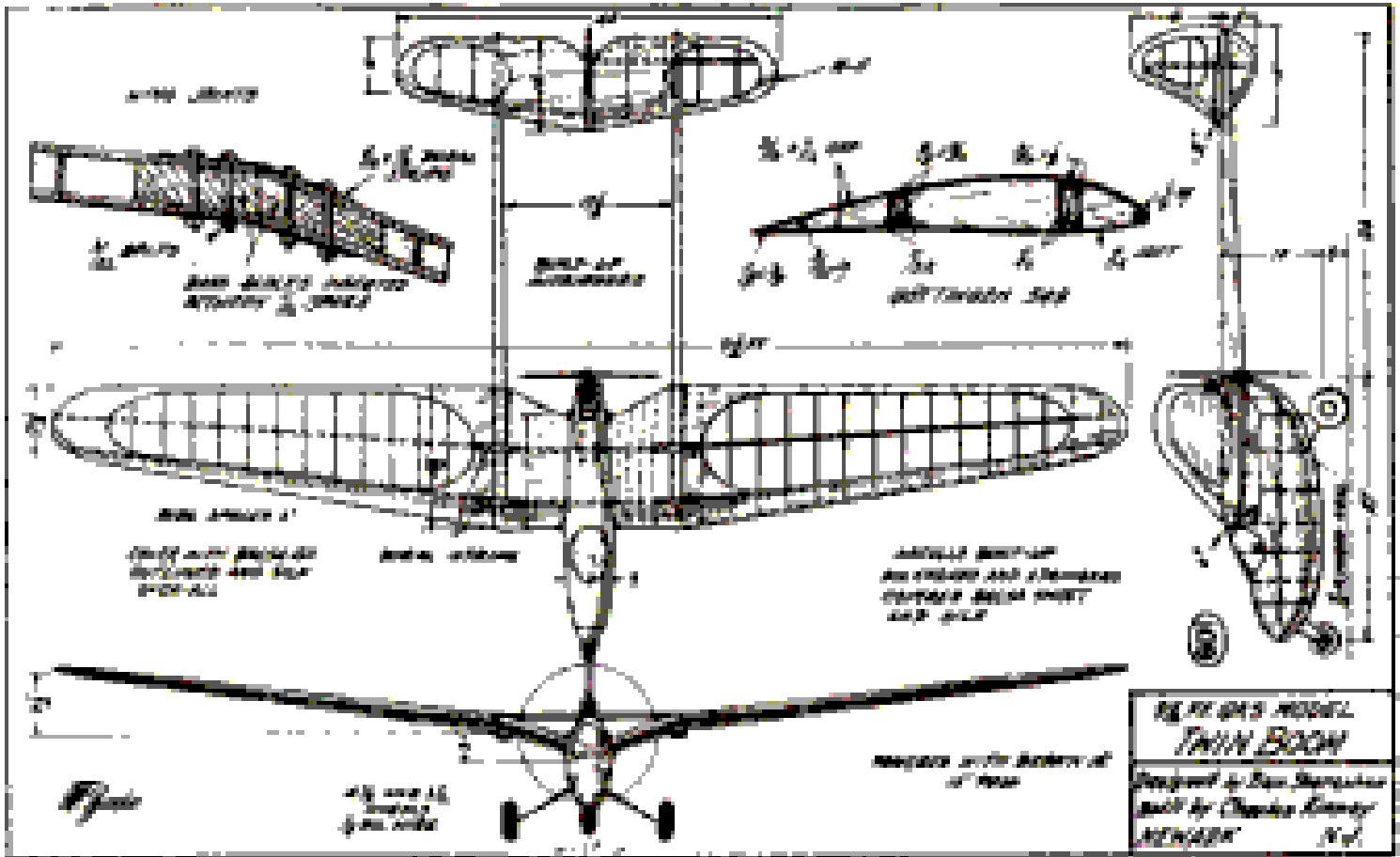
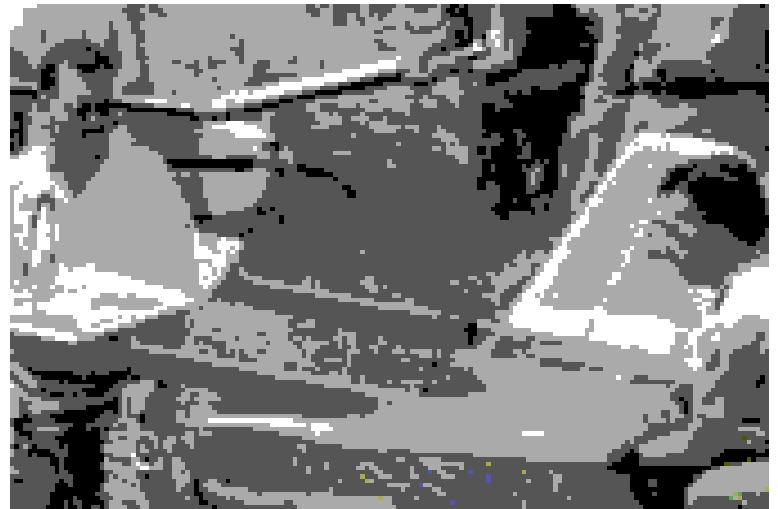
From James Parry - Sticks & Tissue.

Identification of photo from Phil Smith.

I was pleased to receive the following from Phil regarding request in S & T issue 14 for identifications and here is his abbreviated comment: - Photo is a twin boom design by Ben Shereshaw (of Cumulus and Cavalier fame).

This one was built by his pal called Kinney and is featured in Frank Zaic's Year Book 1937 on page 109.

I believe that the chap holding the nose is Ben Shereshaw himself (from other photos that have cropped up from time to time).



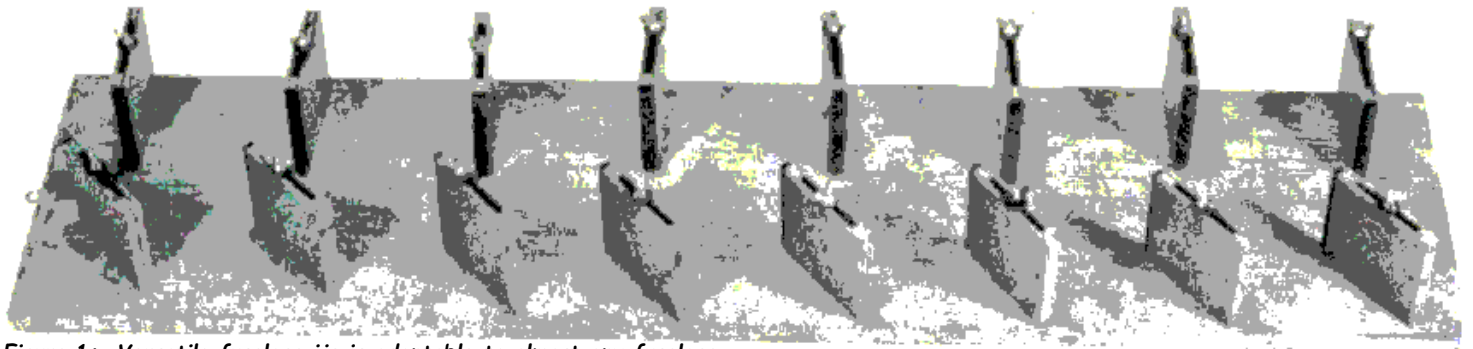


Figure 1: Versatile fuselage jig is adaptable to almost any fuselage.

RCM Fuselage Jig

BY W.A. THIENES

The majority of RC'ers who build their aeroplanes try to devise building and finishing methods that will enable shorter time. Using conventional balsa and plywood fuselage construction methods, and assembling the fuselage sides and formers "in the air" using rubber bands, pins, diagonal braces and appropriate language, it is difficult, if not impossible, to obtain a properly aligned fuselage. This fuselage building jig will provide the means to obtain a straight centreline, no twists, and have all formers at 90 degrees to the centreline of the fuselage.

Figure No. 1 is a photo of the completed jig. The cost is very nominal, as all there is to it is a piece of 3/4" x 12" x 48" warp-free pine or plywood, 16 five inch long 1/4" carriage bolts, washers and wing nuts, and some 1/8" hardboard and 1/4" plywood slotted jig blocks. The 12" x 48" base has a centreline the length of the board. Crosslines on 3" spacing are marked off at right angles to the centreline, this is a sufficient number of guidelines, although some

builders may desire to add more guidelines, or actually glue a graph paper grid to the board. A carriage bolt is located every 6", starting on the first crossline from the end of the base board. The bolts are located 4" out from the centreline for the first five pairs of bolts while the last three pair are located 3" out from the centreline. The bolts are inserted from the underside of the board in 1/4" holes drilled through the board. This spacing should allow sufficient opening and closing of the slotted jig blocks to construct a fuselage for any of the R/C airplanes in the air today. The carriage bolts serve as guide pins for the 3 3/4" x 4" slotted jig blocks. Figure No. 2 is a drawing of the base board showing the alignment grid and the carriage bolt guides.

The slotted jig blocks are made from 1/8" hardboard with a 1/2" wide spacer of 1/4" plywood glued and nailed at each end of the spacer. The plywood spacer permits a nice smooth fit of the jig block

over the carriage bolt guide. The 3 3/4" depth allows sufficient threads of the carriage bolts above the jig block for a washer and wingnut. Figure No. 3 shows a drawing of the slotted jig block. It is highly recommended that you find a friend with a good table saw or radial arm saw to cut the hardboard sides for the jig block to ensure that they have 90 degree corners. After the jig blocks are assembled, automobile weather stripping can be glued to the end of the jig block that contacts the fuselage sides.

The jig is very easy to use in building a fuselage, especially the type that has a straight top or bottom. The fuselage sides are prepared in the usual manner with all doublers, motor mounts, and edge strips glued in place and former locations marked on the inside of the sides. The formers should have a vertical centreline marked on them. Figure No. 4 shows the sides, formers and building jig. The slotted jig blocks are moved out a sufficient distance from the board centreline and the fuse-

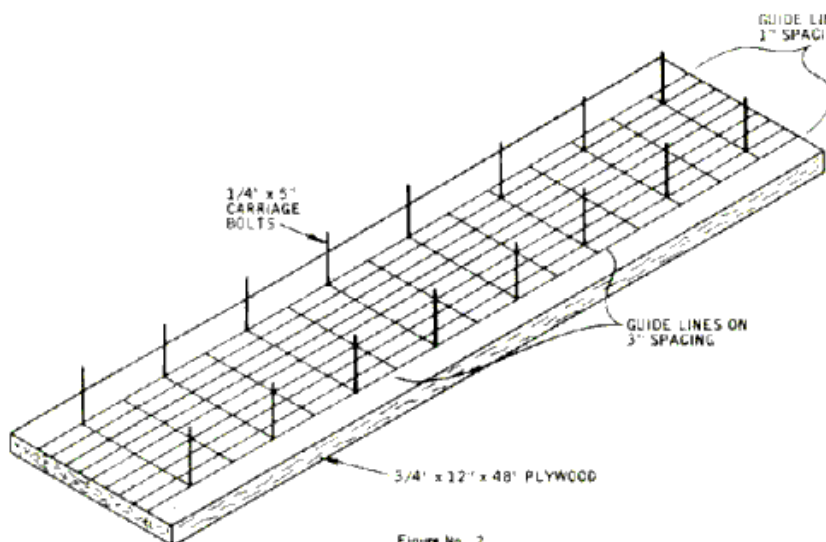


Figure No. 2

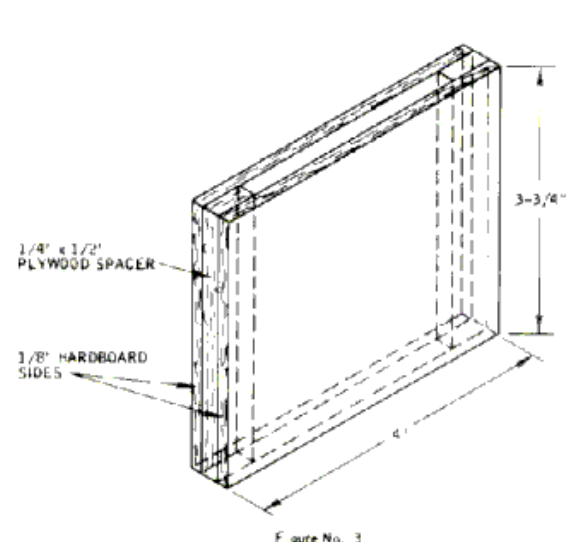


Figure No. 3

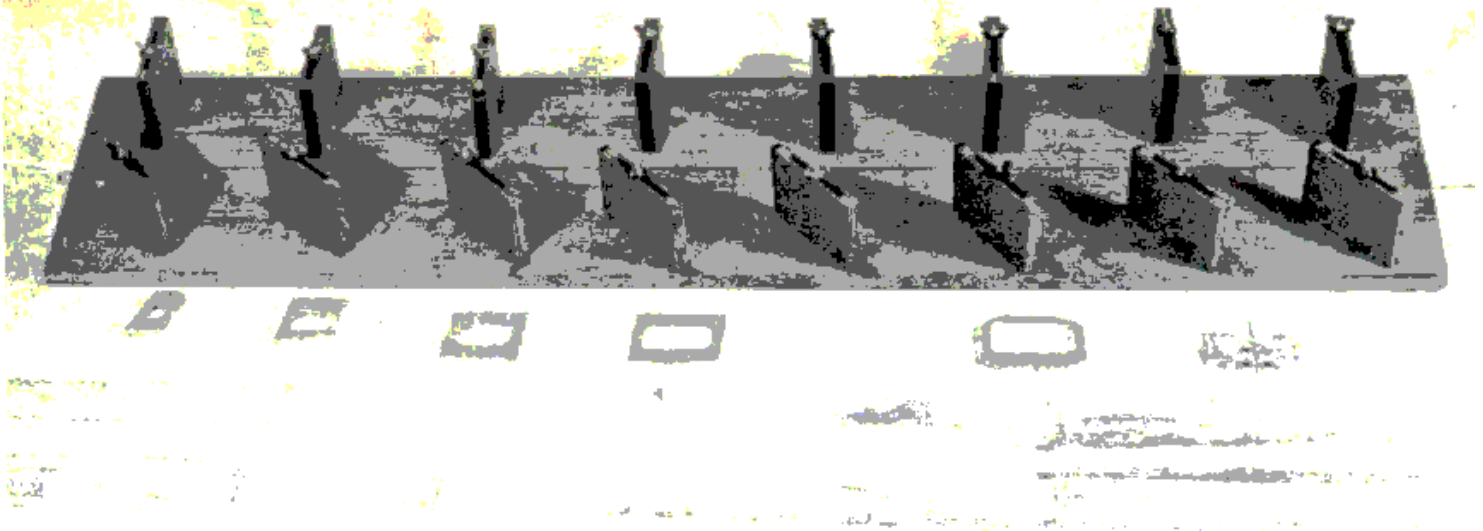


Figure 4: View of fuselage sides, formers, and RCM Building

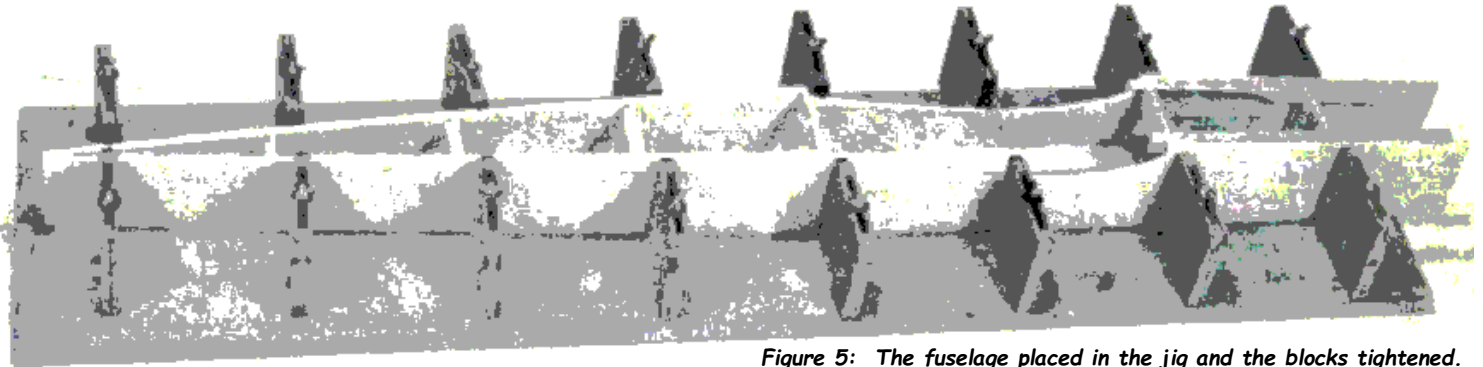


Figure 5: The fuselage placed in the jig and the blocks tightened.

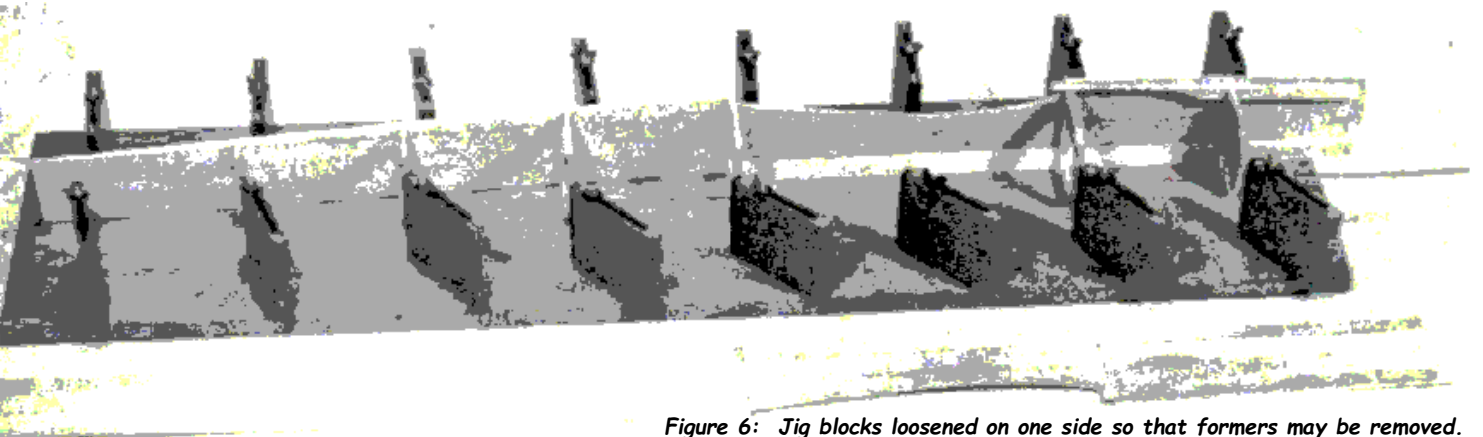


Figure 6: Jig blocks loosened on one side so that formers may be removed.

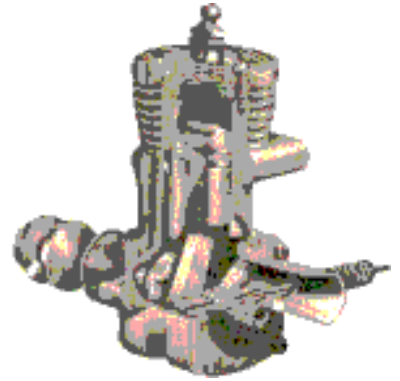
lage sides are placed against the jig blocks on their respective sides of the board centreline. The formers are put in place and the fuselage sides are placed against the former edges by moving the jig blocks in towards the centreline. The jig blocks are so adjusted that the fuselage sides and formers are symmetrical with the board centreline and the formers are parallel with the board crosslines. The fuselage sides and formers are now ready to be glued together. Figure No. 5 shows the fuselage placed in the jig. The jig blocks, on one side only, are loosened and moved away from the fuselage side so that the formers may be removed as shown in Figure No. 6. Your favourite glue is then applied to the former edges and the formers are inserted between the fuselage sides. The previously loosened jig blocks are then repositioned against the fuselage side and the formers aligned with the crosslines. By loosening the jig blocks on only one side, the fuselage will be back in the alignment determined prior to applying glue to the formers. The end result will be a fuselage that is straight with no twist.



The ETA 29 Series III from Model Aircraft May 1954



It is rather more than four years since the original Eta 29 was featured in this series. At that time the Eta was the most powerful 5 c.c. motor made in Britain. This distinction it still enjoys : in fact, its position has been consolidated by the greater performance of the Series II and III models and by the fact that most of the larger capacity, (e.g. 10 c.c.) high performance engines formerly available on the British market, have now been withdrawn. As a result, the Eta 29 is the most powerful and highest revving model aircraft engine to be found



among model dealers' stocks.

Readers of our earlier report on the Series 1 may recall that this engine earned high praise at a time when many production engines were still "rough," both in finish and performance. The Series I Eta was noted, not only for its high power output but also for smoothness of running, easy handling and good finish coupled with pleasing appearance. The Series II model which followed was a development of the Series I, having slightly different port timing and a 25 per cent. greater carburettor choke area. Structurally, this unit can be identified by the use of a carburettor intake integrally cast with the backplate. The Series II designation was comparatively short-lived, however. A new crankcase/cylinder-block casting, having a larger exhaust duct and transfer passage was adopted shortly afterwards, and the 29 became the Series III. The Eta is, of course, a glow-plug ignition motor of the "racing" type and is designed for operation exclusively at speeds in excess of 10,000 r.p.m. It has proved particularly successful (in all its versions) in class B team racing and its high performance and quick re-starting characteristics have established it as the No.1 British class B power unit.

Specification:

Type: Single-cylinder, air-cooled, two-stroke cycle glow-plug ignition. Induction by rear mounted rotary-disc valve. 180 deg. exhaust parting. Baffle type piston. Inclined ignition plug.

Swept volume: 4.87 c.c. (0.297 cu. in.).

Bore: 0.750 in. Stroke : 0.672 in.

Compression Ratio: 8.5 : 1

Stroke/Bore Ratio: 0.896 : 1.

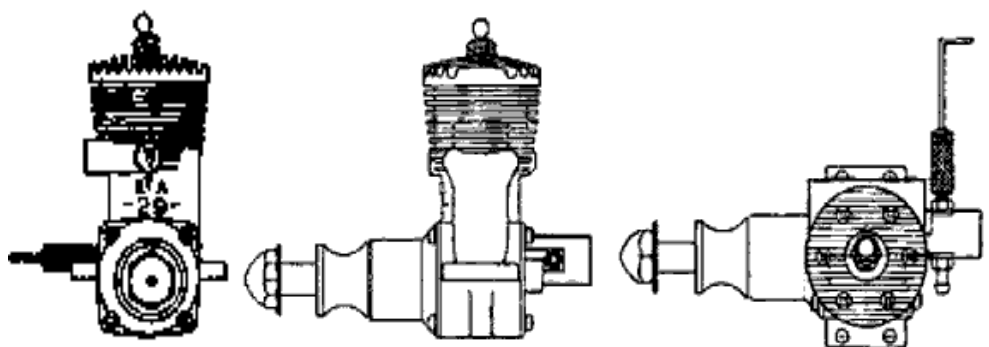
Weight: 7 1/4 oz.

General Structural Data: Pressure die-cast one-piece crankcase and cylinder-barrel with shrunk-in meehanite cylinder liner, ground and honed. Heat-treated alloy steel crankshaft, counterbalanced and ground on all working diameters. Taper collet drive to airscrew. One 3/8 in. and 1/4 in. dia. Ball journal main bearings enclosed in pressure diecast housing. Integral diecast rear cover and carburettor intake carrying bushed valve rotor running on alloy steel pivot pin. Lightweight aluminium piston fitted with two low-pressure piston-rings. Fully-floating gudgeon pin fitted with end-pads. Bronze big-end and small-end bearings. Pressure diecast finned cylinder-head secured to cylinder with six Phillips screws. Lapped head joint. Open type carburettor jet. Beam type mounting lugs.

Test Engine Data Running time prior to test: Approx. 2 hours.

Ignition equipment used:

K.L.G. Miniglow long-reach glowplug.



1 $\frac{3}{4}$ volts to start.

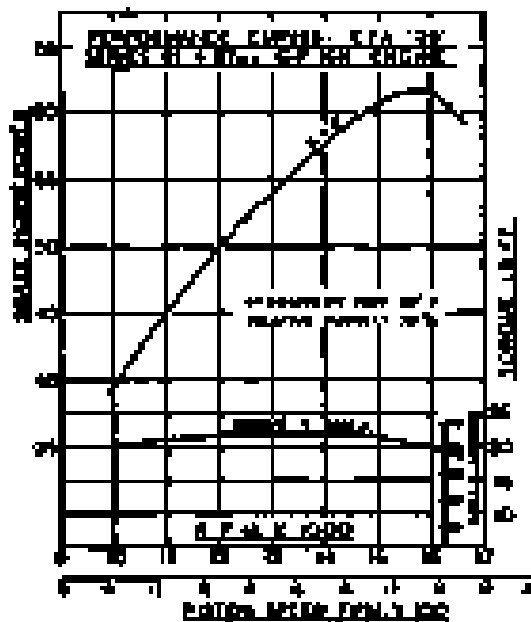
Fuel Used: Basic mixture: 70 per cent. blending methanol and 30 per cent. Castrol "M" 15 per cent. B.D.H. nitromethane added for dynamometer tests.

Performance:

Our earlier remarks, made on the occasion of the Eta 29 Series I test, can also be applied to the Series III. Despite its higher performance, the Series III remains easy to start from cold and can be instantly restarted when hot after refuelling—one of the reasons for its popularity in T R work. Naturally, a little time will be required, with a brand new engine, for the rings to become bedded in and produce the compression-seal conducive to such quick and positive starting, but our findings here were that the Eta had a better ring seal when new than most transatlantic products of this type that we have tested—some of which have required very liberal priming with castor-oil to aid starting during the first hour or so of running.

Messrs. Eta Instruments Ltd. of Watford the makers of the 29, now recommend that running-in be carried out in short runs at speeds in the region of 14,000 - 16,000 r.p.m. This may sound excessively high as against earlier notions of what constituted the correct running-in procedure, but practically all high-speed glowplug engines are the better for being lightly loaded during this critical period, since glowplug ignition does not lend itself to ignition timing adjustment to suit lower speeds. Provided that only short high-speed bursts are permitted and that the recommended basic fuel mixture of 70 per cent. methanol and 30 per cent. castor-oil is used, no damage from overheating is likely to occur. Compared with the earlier model, the Series III shows an increase in output amounting to approximately 15 per cent., the peak r.p.m. being raised by 1,000-1,500, while a slightly better b.m.e.p. is also apparent.

The Eta 29's are not greatly affected by the use of nitro-paraffin content fuels over plain methanol/castor blends but, as in most of our recent tests of high-performance glowplug engines, the former type fuels have been used, our performance checks were made with 15 per cent. nitromethane added. This, added to the basic mixture, has the effect of lowering the lubricant content to just over 26 per cent. - which, of course, is quite adequate with a properly run-in unit. As will be seen from the graph, a b.h.p. of 0.62 at approximately 15,700 r.p.m. was realised. This is



BATTERY PROBLEM: *(Tip from SAM26 Newsletter, Editor Bob Angel)*

One of our fliers has a 2.4 transmitter that uses four alkaline batteries. Right after installing four new cells, he had a ship go down right after launch. The post mortem revealed that one of the new from the package cells was dead, which in a pack of only 4 cells is fairly fatal. We've never until now had to test dry cells before using them, but with nearly all batteries coming from China today, that's a good routine to start.

NO LIKE CHINESE

An Air Canada plane leaves Pearson Airport under the control of a Jewish captain; his co-pilot is Chinese. It's the first time they've flown together and an awkward silence between the two seemed to indicate a mutual dislike.

Once they reach cruising altitude, the Jewish captain activates the auto-pilot, leans back in his seat, and mutters, 'I don't like Chinese.'

'No like Chinese?' asks the co-pilot, 'why not?' 'You people bombed Pearl Harbor, that's why!'

'No, no', the co-pilot protests, 'Chinese not bomb Pearl Harbor! That Japanese, not Chinese.'

'Japanese, Chinese, Vietnamese ...doesn't matter, you're all alike!'

There's a few minutes of silence.

'I no like Jews!' the co-pilot suddenly announces. 'Oh yeah, why not?' asks the captain.

'Jews sink Titanic!' says the co-pilot.

'What? You're insane! Jews didn't sink the Titanic' exclaims the captain, 'It was an iceberg!'

Iceberg, Goldberg, Greenberg, Rosenberg...no mattah ...all the same.

FROM JEAN-MARIE PIEDNOIR, piednoir.jm@gmail.com

The complete collection of the 113 published Bulletins of the French SAM70 chapter 4A (Association des Amateurs d'Aeromodels Anciens) can be accessed and/or downloaded from here :

<https://drive.google.com/drive/folders/OBORaeoYsQXOgX05BdGstT2pJdlk>

This covers all Bulletins since the creation of 4A in 1985.

Their new site is : <https://sites.google.com/site/assdes4a/home>

Enjoy! I can help with translations. Jean-Marie Piednoir, sole surviving founder member of 4A.



FLYERS LAMENT

(My dictionary defines a lament as a passionate expression of grief)

"For every good flight there is an equal and opposite bad flight"

But why do I get the bad ones and the others get the good ones?

Here's what a quick-witted Aussie Flight Attendant had to say....

A businessman in the first class cabin decided to chat up the drop dead, gorgeous flight attendant:

"What is your name?"

Flight Attendant: "Angela Benz, sir"

Businessman: "Lovely name ... any relation to Mercedes Benz?"

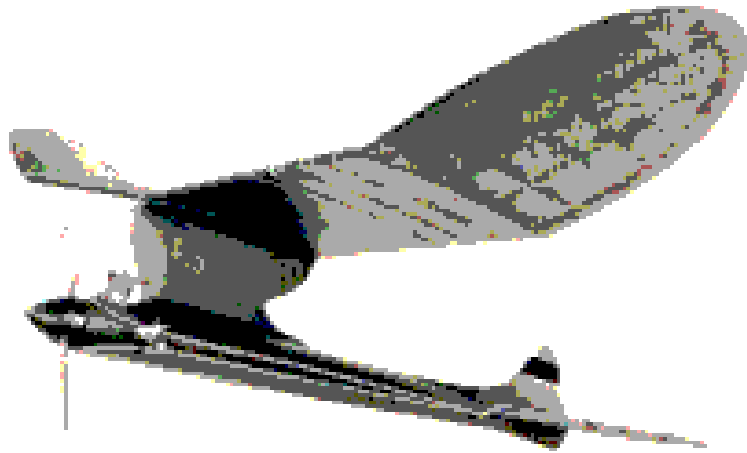
Flight Attendant: "Yes sir, very close"

Businessman: "How close?"

Flight Attendant: "Same price".

The Toreador by Claude McCullough from Model Aviation Planbook 1949/50

The Toreador is a good example of the 'orthodox' American trend in pylon design. Fortunately, there are many good British powerplants suitable for this model - including the ETA 29, Yulon 30, AMCO 3.5, Mills 2.4, E. D. Mk. III and Albon 2.8. If the Amco is chosen, use the short airscrew driver (1/2") and move the engine forward about 2" to maintain the correct C.G. position. - The Editors.



When the new American free flight rules first appeared, many modellers predicted an avalanche of super-light "floaters." This was probably a natural first reaction to the complete abolition of wing loading requirements, but there are definite disadvantages as we shall point out. The floating glide that low wing loading can produce is certainly worth having, but what good does it do you unless you can get a reasonable amount of altitude - which you will never get just by piling on wing area. If the model's structure is to have any strength and you want to carry it around without hiring a moving van - the medium size, lightly loaded design is definitely the answer. The Toreador

falls in this category, having an 8 1/2 ounce per square foot wing loading when a .29 cubic inch (5 c.c.) engine is used. The amount of wing area used does not seriously restrict the climb. Motors like the K&B Torpedo will produce a rolling vertical climb and the resulting glide is calculated to stick in even the weakest thermal. The model is strong, durable and of convenient span - the latter on account of a fairly low aspect ratio. One of the main features of this design is the lack of ignition components - made possible by that little wonder the glow plug. One of the new fuel shut-off valves should be used to limit the motor run. Once all the worries attendant to spark ignition are thrown overboard, free flight is much more fun. To cut down on the lengthy processing at Contests, the A.M.A. eliminated the fuselage cross section rule last year. However, those pencil slim fuselages that some modellers now favour, have none of that end-to-end strength that comes in so handy when a model cartwheels over in a high wind.

Personally, I go for quite a substantial cross section as a glance at the adjoining plan will show. A detachable landing gear is featured, but only used for contest work. This type of two wheel undercarriage is much more reliable than those one wheel pop-up booby traps that some designs call for. In building the model for a 5 c.c. engine use heavy, hard balsa. For smaller motors use lighter grades of wood, since the lighter versions will have a slower flying and landing speed. In any case, pick good quality wood for such highly stressed components as spars and longerons. Enlarge the drawings by four times to bring them up to full scale or send off for the full size plans. Curved parts are best enlarged by the gridding method - in which scale blocks are ruled on the plan (usually 1/2" square). These are duplicated on the full size drawing, the corresponding points marked off and the outline completed by connecting the various points which have been plotted on the grid.

WING.

The wing is the popular and sturdy multi-spar type. Cut the wing ribs from 1/16" sheet balsa using the patterns which appear full size on the pattern sheet. Slide them over the 3/16" spars, which are cut from sheet balsa stock. Add the 1/4 x 1/2" balsa leading edge and the 1/4 x 7/8" trailing edge which is notched to receive the ends of the wing ribs. Cement all joints thoroughly. The wing tip sections are cut from 3/16" sheet balsa and cemented in place. Block up the wing to the indicated amount of dihedral. Note that the centre section spars must be pushed slightly out of line in each direction to make the lap joint. When completely dry, add the 1/16" sheet balsa leading edge planking. The wing centre section is also planked both on top and bottom. With a balsa knife and several grades of

sandpaper, bring the trailing and leading edge to aerofoil section and sand very smooth. A little time spent in careful sanding will pay good dividends in appearance.

FUSELAGE

The fuselage is built around a diamond main frame of 3/16" square balsa. Two sides are built on the main frame drawing (one on top of the other for accuracy) and connected with cross pieces to form the necessary square section. Then the little formers of 1/8" sheet from A to G are added on all four sides of the diamond to form a circular section. Note that all of the formers under the planking are "A" formers.

The pylon is made from three laminations of 1/8" sheet balsa with grain running opposite. Pin and weight down and allow plenty of time for drying. Sand and carve to streamline shape.

Notch the bottom to fit snugly against the top longeron of the diamond mainframe and cement in place.

Plank the front portion of the fuselage with 1/8" sheet which has been well soaked in hot water to make it pliable. It is best to get it formed and warped partially into a curve before applying to the frame. The rest of the fuselage has 1/8" square balsa stringers which are cemented to the formers and brought flush with the diamond frame just in front of the stabilizer.

The wing platform is cemented to the top of the pylon and filleted by 1/16" sheet balsa plugged at both front and rear with small scrap balsa blocks. A similar fillet is applied to the pylon-fuselage juncture. The fuel tank is made from thin brass sheet and permanently fastened within the fuselage directly under the timer (unless you have an engine like the De Long or Forster, with the intake extending behind the engine crankcase - in which case it may be necessary to move it back a section). The fuel outlet of the tank and the filler tube extend through the planking. The tank is filled with a pump can with a piece of neoprene tubing on the spout, which is slipped over the filler tube. This set-up works best with such engines as K&B Torpedo, rotary Ohlsson 23, etc. The tank can then be sealed from the outside with no fuel leakage problem inside the fuselage. Radial mounting also has the advantage of doing away with motor mounts. The fire wall of 3/16" plywood is added last and securely fastened.

THE TAILPLANE

The tailplane is constructed in the same fashion as the wing. Notice however, that the rear spar of 3/16" square wood is cemented in toward the top of the rib as far as it will go. The small gaps remaining at the bottom of the ribs are filled in with small pieces of sheet balsa to complete the bottom line. In this way the spar will not touch the bottom covering, helping prevent the uneven pull which causes the tailplane to warp up. The fin is cut from 3/16" sheet balsa, sanded to streamline shape and cemented to the centre of the tailplane before it is planked. An E-1 rib is placed on each side to serve as a ledge to cement the planking to.

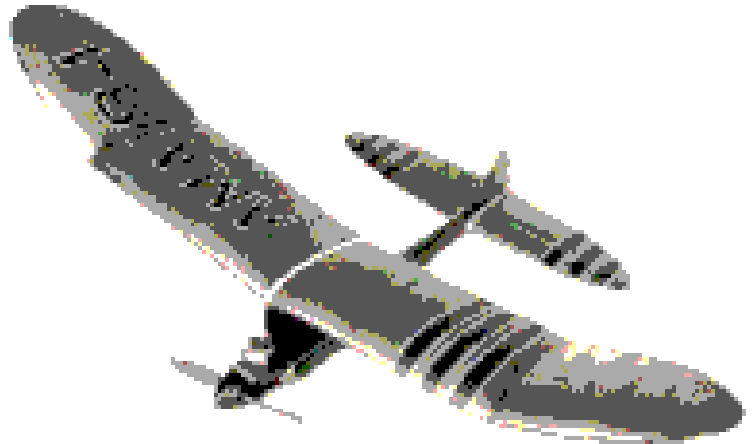
The leading edge and centre section, top and bottom, are planked with 1/16" balsa. A small fillet forms a smooth juncture with the fuselage. The original Toreador was covered with silk which had been dyed red with ordinary household dye. Trim with black coloured dope with aluminium pin striping. Try to make your decoration distinctive and individual. If you are unable to obtain silk, a double covering of tissue is recommended, with the grain of the two layers opposing. Attach the covering with a mixture of 50 per cent dope, 50 per cent cement. Give about three coats of clear dope before applying colour dope decorations.

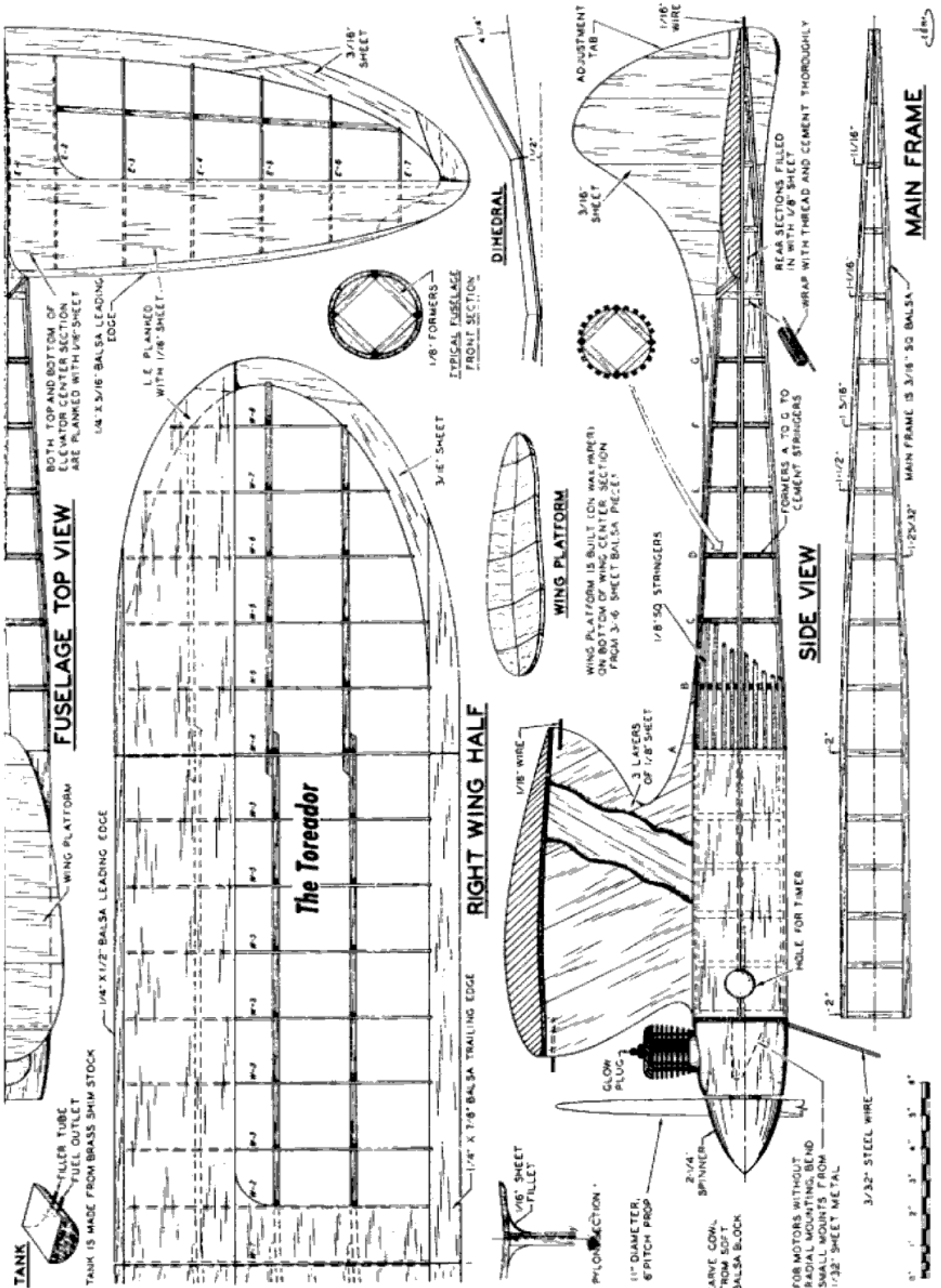
Because most glow plug fuels are very hard on both clear and coloured dope, it is advisable to use one of the new fuel proofers on the entire plane, particularly around the motor.

FLYING

The really important final touch to a potential contest winner is the adjustment. This cannot be just a matter of turn-the-tab until you have the ship flying around and making safe landings. You've got to set your sights on a particular type of flight and test. . . test. . . test until you get it. I've flown various pylon designs out in our big meadow (the advantage of being a farmer-modeller!) by the hour, using every type of adjustment.

To make a general statement (which isn't the best thing to do, since every job is an individual problem), pylons generally perform best with a left circle in the glide and a right circle in the climb. This generally requires some right offset of the thrust line. And for top performance, hopping the slightest ground thermal, the glide must not be just left, but definitely left - a very tight circle. To hold up the nose this adjustment requires having the C.G. well back, about 75% to 80% from the leading edge. But no exact point can be predetermined - you must balance each force against the other until you get that floating, wheeling glide of small diameter. Many builders make innumerable flights with the motor barely turning over, getting no altitude and just buzzing around. Such tests are inconclusive and prove next to nothing. If you keep your motor run to about 5 seconds, it is rare that a ship of pylon design will get into a circumstance that will bring it into the ground before the motor cuts.





TANK



TANK IS MADE FROM BRASS SHIM STOCK

FUSELAGE TOP VIEW

BOTH TOP AND BOTTOM OF ELEVATOR CENTER SECTION ARE PLANKED WITH 1/8" SHEET

1/4" X 1/2" Balsa LEADING EDGE

1/4" X 3/16" Balsa LEADING EDGE

L.E. PLANKED WITH 1/8" SHEET

The Toreador

RIGHT WING HALF

1/4" X 7/8" Balsa TRAILING EDGE

WING PLATFORM

WING PLATFORM IS BUILT (ON WAX PAPER) ON BOTTOM OF WING CENTER SECTION FROM 3-6 SHEET Balsa PIECE



PLYON SECTION

1 1/2" DIAMETER, 6" PITCH PROP

2-1/4" SPINNER
CARVE COWL FROM SOFT Balsa BLOCK

HOLE FOR TIMER
FOR MOTORS WITHOUT RADIAL MOUNTING, BEND SMALL MOUNTS FROM 1/32" SHEET METAL

3/32" STEEL WIRE

SIDE VIEW

FORMERS A TO G TO CEMENT STRINGERS

1-1/2" X 3/8"

1-1/16"

1-1/16"



0" 1" 2" 3" 4" 5"

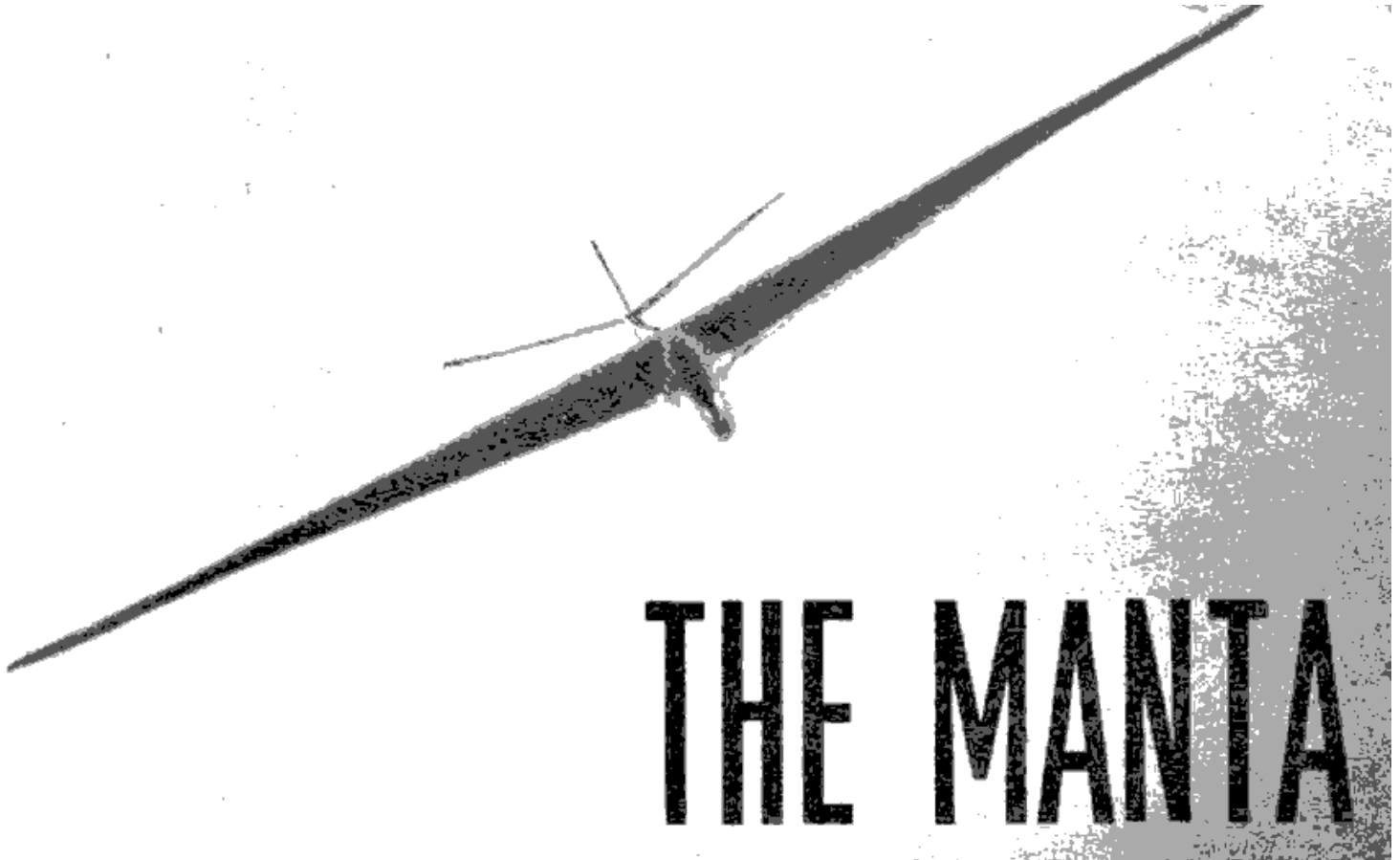
MAIN FRAME

1-1/2" X 3/8" MAIN FRAME IS 3/16" SQ Balsa

1-1/16"

1-1/16"





THE MANTA

Infinite variations on a single theme is provided by this basic wing design
 By Cpl. Paul Plecan
 Model Airplane News August, 1945



For sheer beauty, this design surpasses most of its competitors -- and it performs, too!



Each angle of the Manta shows an entirely different pattern. Note broad wing root, smooth lines

THE Manta is that "different" design you've been looking for. Utilizing a unique wing design, the Manta holds promise of development in several directions. One possibility could be a sleek gas model or control line racer featuring a "submerged" engine installation for low drag. This could be accomplished by mounting the engine on its side, neatly enclosed in the thick centre section of the Manta wing.

A catapult glider would be a novel experiment since the inherent strength of the Manta wing would enable safe, high speed launchings to be made. As it is, the Manta is

a fine soaring glider despite its low aspect ratio as compared to existing types. The author makes no claims of originality in the use of this type platform. It was developed by David R. Davis, who will be remembered as the original backer of Donald Douglas in the formation of the Davis-Douglas company 'way back in 1924.

After the partnership was dissolved, Davis continued his interest in aviation, one important outcome of which was the development of the "Davis wing," the well known section used on the famous Consolidated B-24 Liberator bomber as well as several other Consolidated models.

The Manta planform was created by Davis for a single seat pursuit plane he projected for the Army Air Corps back in the 'thirties. The plane had a "buried" Allison engine and tests on models showed great promise. However, it was not built and the project was abandoned, leaving only the unique planform as the result.

From an aerodynamic point of view, this planform has several advantages. We are all familiar with "wing tip stall" in which airflow about the wing tips causes a stall a short time before this phenomenon occurs over the wing as a whole. When the tips stall, lift is lost over that region, adversely affecting the entire lifting ability of the wing. With the Davis Manta type tips, stalling of the tips results in considerably less loss of lift because the area of the stall region is much smaller than on conventional wing planforms with "straight" leading edges. In addition, tip vortices are cut down due to the smaller areas and a general improvement of aerodynamic efficiency of the wing is brought about. Frankly, we don't know whether the use of these tips on our Manta glider resulted in any aerodynamic improvement or not but there is one thing we are certain of: it sure gives a slick appearance to the model and maybe that's the most important thing after all!

To begin actual construction, draw up a sheet of 1/2" squares about 18" square and copy the full size outlines from the plans. For a more exact duplication of the ribs, 1/4" squares should be used but we suspect you'll photostat plans up to full size. Next, splice up some 1/8" sheets to obtain 45" lengths for wing spars. Save the soft 1/8" sheet for the tail surfaces -- you'll have to butt-join the sheets to obtain the necessary width here. The wing layout should be marked off on a long sheet of wrapping paper and the spars pinned in place. The ribs can be slipped in place now, working from the centre of the wing toward the tips. Be sure to bevel the trailing edges as per cross-section on the plans before cementing it in place, as it will be harder to shape it later. Very soft stock should be employed for the tip sec-

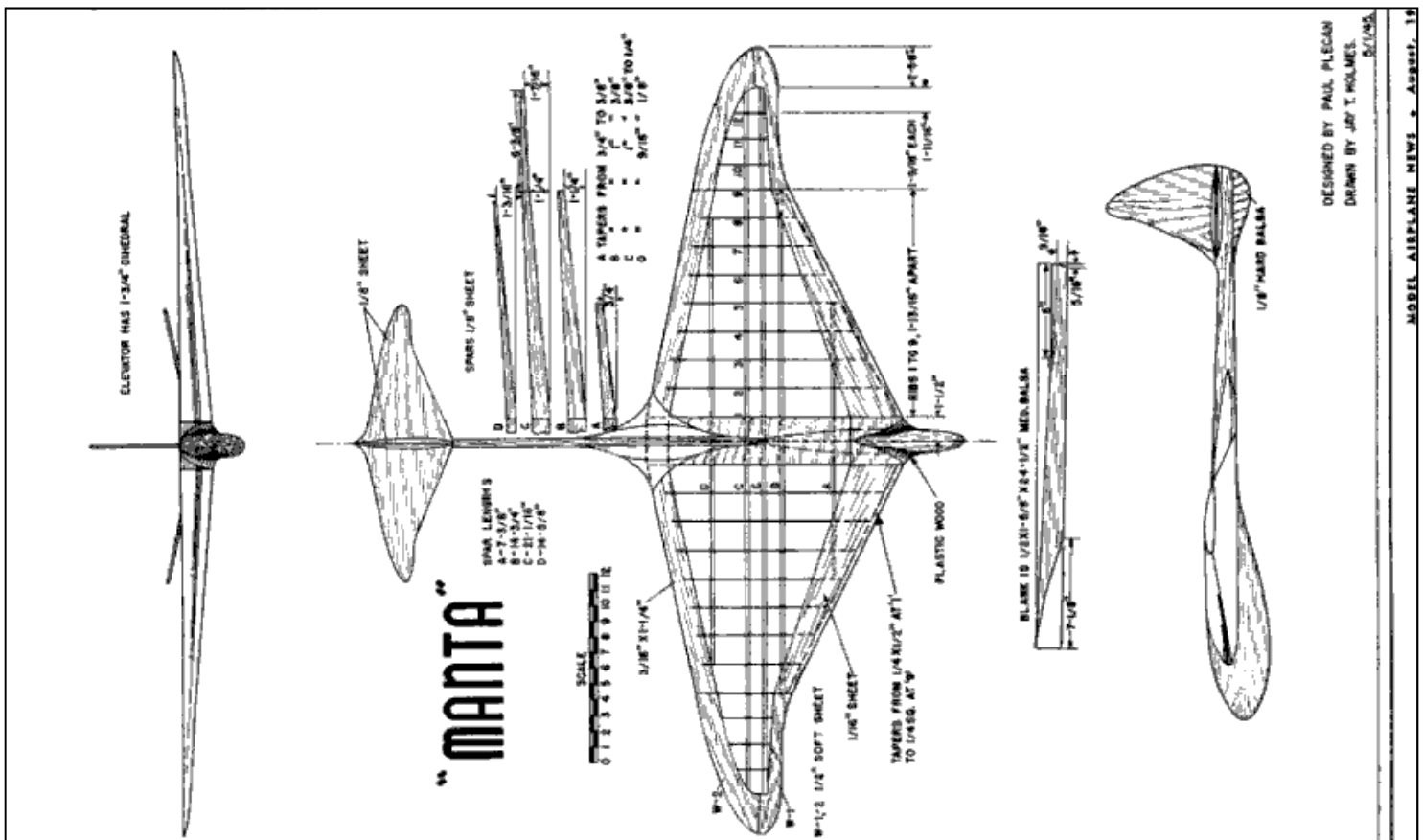
tions to keep their weight down. Once the necessary sheet balsa has been cemented in place, the wing can be sandpapered and covered with silkspan of gas model weight. Lighter paper can be used but will not absorb as much punishment.

The pod and tail-boom are next, the pod being carved from a 1-1/2" x 4" x 14-1/2" medium balsa block. Use the full sized pod outline to obtain the correct shape. The boom construction should be almost self explanatory. Just remember that the relation between wing and tail incidences should be zero-zero and that an extra strong joint is desired where the boom connects with the wing. The bristol board fillets serve a dual purpose, improving streamlining and adding strength (enhances appearance, too!). A plastic wood fillet will also help blend the pod into the wing. Now all that remains is to cut the tail surfaces to outline, cutting and sanding their leading and trailing edges to shape. Some may not desire a dihedralled stabilizer but it helps keep the tips off the ground and avoids breakage to some extent, so it is worthwhile. The tail surfaces should be covered with tissue of silkspan for greater strength and smoothness, as should all other exposed wood portions.

Adjusting is done in the usual manner. Your Manta will most probably be tail heavy to start with, so the addition of clay to the pod and test glides over tall grass are in order. When the glide is fairly satisfactory, start working on a rudder warp so you can obtain a circle to the left in the glide. The original Manta showed good duration when hand launched in a manner similar to the procedure used for gliders (banked to the right in launching and with the usual "S" recovery and subsequent circling to the left).

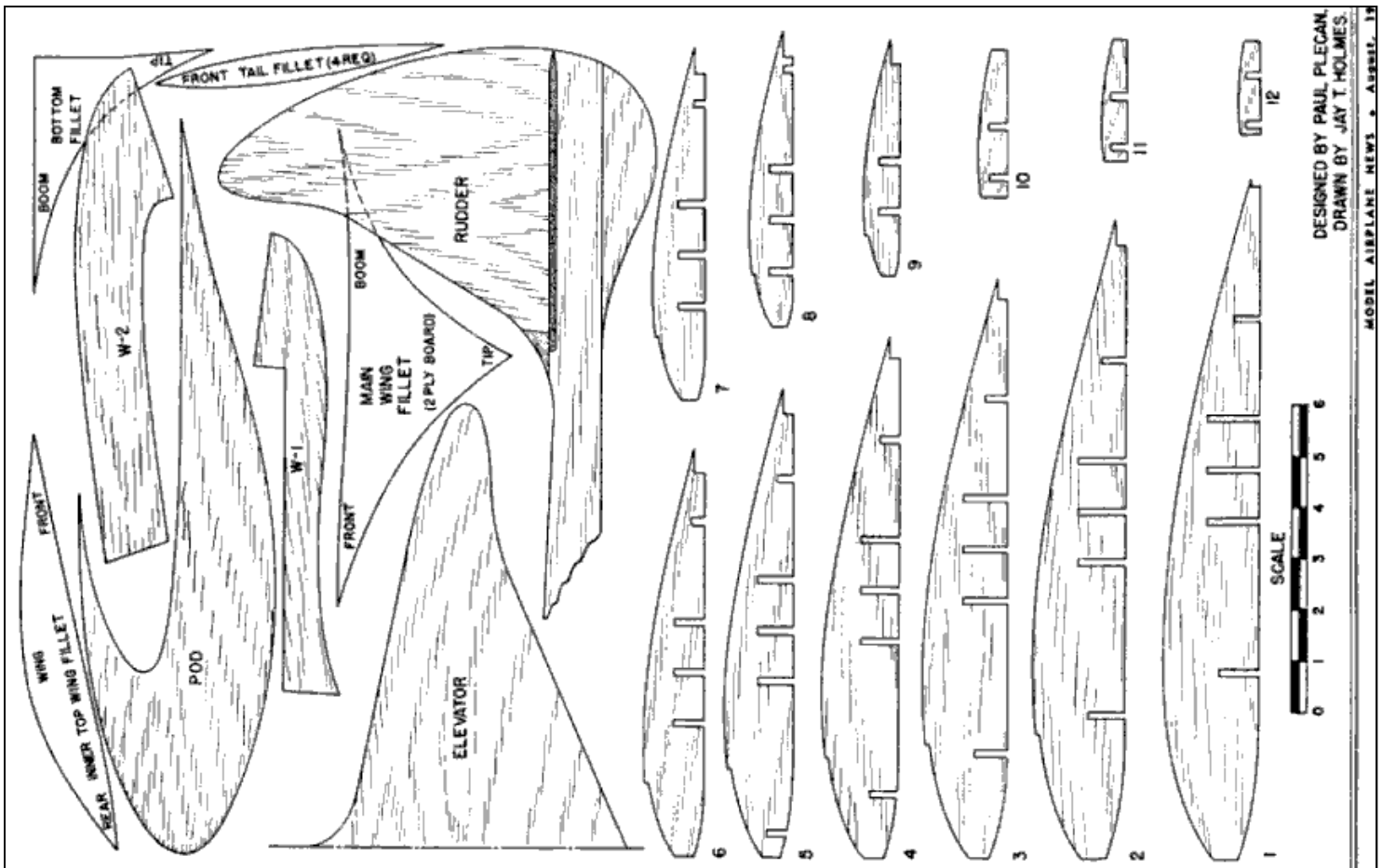
Since the original Manta was built during a furlough, the author would like to hear from others who have more time to devote to flying, adjusting and further modifications of the design, especially gas powered adaptations.

VICTORY



DESIGNED BY PAUL FLECKEN
DRAWN BY JAY T. HOLMES
5/1/45

MODEL AIRPLANE NEWS - AUGUST, 1945



See Better, Fly better

Reprinted from "At The Field Offbeat Stories About R/C Model Airplanes & The People Who Fly Them" via ANSW Newsletter No.388.

by David P. Andersen

Something all aces had in common was exceptional eyesight. Manfred von Richtofen, Chuck Yeager and Erich Hartman attributed success to seeing the enemy before the enemy saw them. The best R/C flyers, such as Top Gun winner Dave Schulman, have excellent eyesight too.

Have you ever been bothered by watering eyes while flying? You see clearly until about five minutes into a flight, and then tears make your monoplane look like a biplane. Here's what's happening.

Normally, your eyes are protected by three fluids: water, a lubricant and an anti-drying agent. When concentrating intently on your airplane, blinking rate drops 75% or more. In the warm summer wind, this dries your eyes. If they get too dry, they go into an emergency mode that squirts only water into your eyes - no lubricant and no anti-drying agent. The excess water distorts vision and ruins your slow roll.

What to do about it? You will find "lubricant eye drops" at the drug store. Refresh Tears is a popular brand. Use it before flying. It also relieves common eyestrain in dry winter air when reading or working in your shop - same cause: staring reduces blinking.

I nearly gave up on a student pilot who didn't seem to be able to learn to fly. Week after week, he would turn the wrong way at altitude. Other flyers said he was hopeless. Then one day he got new glasses. His flying immediately improved. A month later he beat me in a glider contest! He confided later that he hadn't realized how poor his far-field vision had become. It deteriorated so slowly that he was not aware of the change.

Sometimes, eyeglass prescriptions do not completely correct far-field vision. The criterion is the ability to read road signs. But perfect correction at even greater distances is needed for R/C flying. Tell your eye doctor about your hobby and ask for 100% far-field correction. Prescription sunglasses tend to be clearer than clip-ons due to less internal reflection. Polaroid glasses tend to greatly reduce the glare on wings, improving your ability to see the 175 attitude of the plane. Yellow sunglasses are excellent for flying against an overcast sky or late evenings because they maximize contrast under these conditions.

Clear vision is important when the plane is close because it lengthens perception of depth. The farther your perception of depth extends, the better it will be to perceive distance and direction of flight when landing. Perception of depth to several hundred feet is needed. The clearer your vision in both eyes, the better your landings will be.

Bob Hansing put a lot of research into this because he was blind in one eye. He discovered that an R/C pilot must be able to see both glide angle and direction of flight equally well in order to line up on final approach. His experiments found that standing in a position that gave him a 45 degree view of the final approach flight path was optimum. It was good enough for him to win some major contests.

See you at the field.

ATWOOD "GLO-DEVIL" TYPE D.R.

(From SAM35 Speaks)

Mention of this engine in the August issue prompted me to give an account of my experiences with it. As stated, this is the final big Atwood and not to be confused with the "Super Champion". I bought my first version early in 1950. It carried the inscription "JH" and had the short low-level intake and came with a short-arm contact breaker. It cost me £10 which was a hell of a lot of money (two weeks' wages for a skilled fitter).

It is difficult to describe just what a complete revelation this engine represented. We had FROG 500s and Elfins, etc., but the big Atwood was something else, the sheer power was awesome and it went straight into the 60 x 13 in. stunter that became "Old Sarum". The first time I flew it on 100 ft. lines I was hooked. I still am.

The second version, identical to the first, was given to me just before John Perry "discovered" "Old Sarum", and, of course went straight into the replica that I still fly. The third version I acquired from Don Burgess to serve as a spare for the one in use. This one came with the inscription "GD", had the long "smoke stack" intake, and a long-arm contact breaker (car type, I think, and not really suitable for a plain bearing motor, as the inevitable play in the shaft affects the points gap). I can't vouch for this latter version as it could be a "bitsa", although I doubt this, as it was unused when I got it.

I think there is only one basic version as all my bits are interchangeable, port timing, etc., is identical, etc. I suspect that the JH, DR, GD, etc., are just that particular configuration, for example, the "Super Champion" described by Chinn in, I think, "Radio Modeller", was also JH and was similar to mine, with the short intake and aircraft C/B. This engine, in either short intake or smoke-stack form, has one serious drawback for C/L stunt, and that is tank position relative to the bearers. It needs a big tank, 170 ml, and there is nowhere to put it. I suspect that this must have severely limited its popularity.

As for performance, I believe, and so did George Aldrich, that, it is head and shoulders above all the opposition (apart from the McCoys, etc). Most of the good spark ignition 60s, e.g. Super Cyclone, Orwick, Super Champion, Bunch, Contestor, etc., produced about 0.65 bhp. I'm not sure about the Anderson Spitfire and would love to see a test of an original motor. Most replicas are "improved" and wouldn't prove much. I use a 70% methanol, 25% castor, and 5% nitro mix, and there is no difference in performance between spark or glow. It will run quite happily on petrol/castor mix, with a slight loss of power (no nitro!), but I prefer the cooling effect of methanol.

As flown, it is turning a 12 x 7 Airflow wood prop at 9,000 rpm static, which gives me a comfortable 6 seconds lap time on 90 ft. lines. For comparative purposes, it turns a 12 x 6 Master at 10,300 rpm static. As far as the actual design is concerned, I think the top half is excellent, the steel-finned cylinder is light and stays fairly circular, the porting is good and the C.R. is O.K. I'm less happy with the bottom half, it is overly complicated and makes installation difficult. The plain-bearing crank is fine but I am not convinced about the twin intakes. The shaft is fine in terms of strength and wear but not large enough to allow a decent intake tract, hence the additional drum valve.

In my opinion it would have been better to use just the drum but with a slightly larger diameter, with a simple downdraft intake above the drum.

This would: a) avoid spoiling the main bearing with the intake hole;

b) allow a normal tank set-up on top of the bearers;

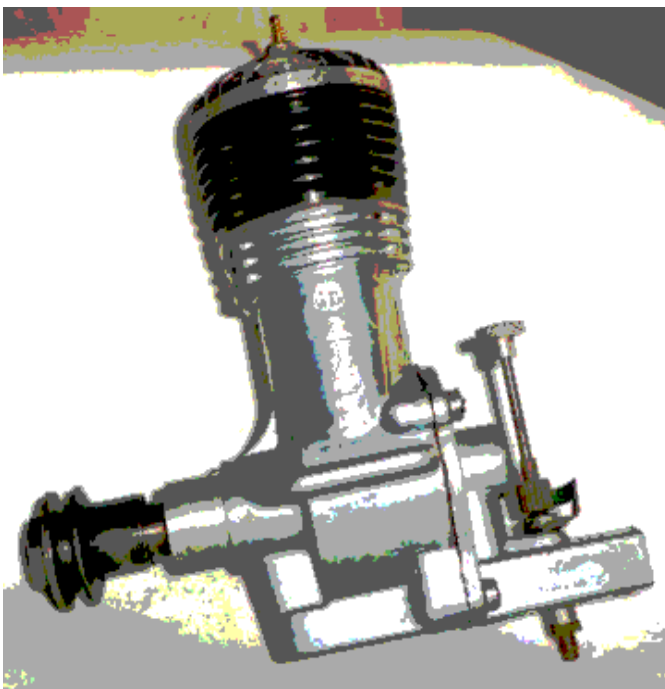
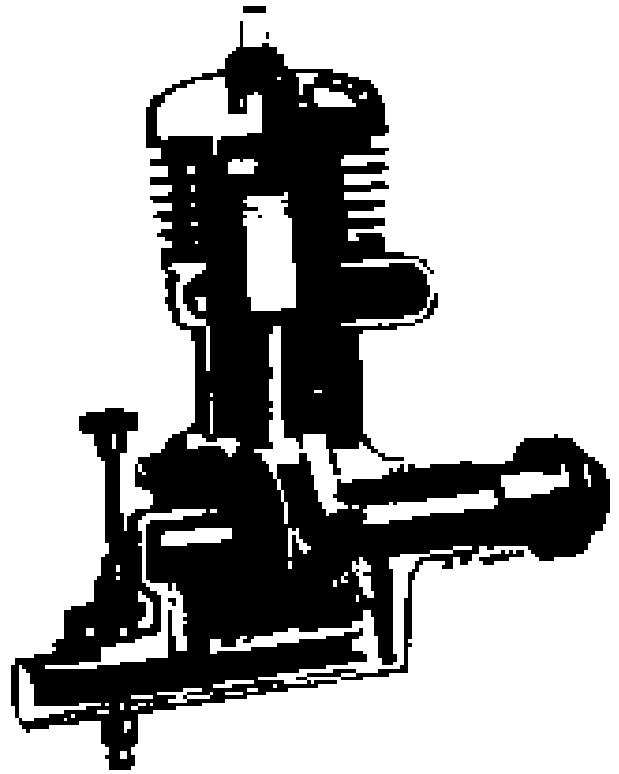
and c) make it possible to prime the engine properly and give much easier starting.

If I ever find the time I would like to make just such a drum conversion to see how it went - maybe someday. The real secret of the twin valve set-up is that it breathes well enough to allow a venture of 7 x 7.4mm which, with a 3.4mm spray bar, gives a very respectable 26½ sq. mm of intake area.

Given the good porting etc., of the cylinder, this is where the power come from, and even with this area there is still plenty of suck.

All in all, it's a cracking good motor. I love it! BOB ARNOLD (Worcester)

P.S. On reading through the above I find my comment about spoiling the main bearings to be a bit rich. I have only been flying mine for about 13 years and it ain't worn out yet!



A RECORD BREAKING Gas Model

Here's a Gas Model That Made a World's Record for Duration and Weight Lifting -- How You Can Build It

By CHESTER LANZO

Scanned From August 1939 Model Airplane News



The finished plane is light and has large wing area



The author, at right, waits to have his record breaking ship "gassed up"

TO PRODUCE a consistent championship gas model, a ship must possess these two main flight characteristics.

Ability to Soar: Any ship will climb with a powerful riser "slamming it skyward," but to have a model take advantage of the slightest trace of a thermal and produce a long soaring glide is to have soaring ability.

Climbing Ability Under Power: Utilize every erg of energy in the motor to make the most of the limited run. Every foot of altitude gained in the climb is minutes added to the total length of the flight. Get the model high enough where the more active air currents will affect the ship.

This model has proven to have both of these characteristics to an amazing extent, plus an extreme in stability. In fact it is so stable that it can be made to circle right or left under power or in the glide without having to warp or twist the wings. As a weight lifting or a radio control job it cannot be beaten. This model won the Scripps-Howard contest for lifting the greatest weight and then remained in the air for the greatest length of time.

During a recent gas duration contest, with a motor run of 21 seconds, the plane remained aloft for 25 minutes. Upon returning to the field the ship was sent up again with a motor run of 25 seconds. This produced a flight of two hours covering a distance of 25 miles, and incidentally established a new world record.

This plane also incorporates the following desirable features: detachable wing, adjustable rudder and elevator, crash-proof wire landing gear, flexible wire wing mount to eliminate wing breakage and to produce greater stability.

All of the excess frills and baggage are entirely eliminated, thus producing a straight-forward and simple but efficient design. Quoting one of the best model builders in the country, "Super-streamlining has a tendency to induce complicated and heavy structures."

Constructing the Plane

Start out with the intentions of spending two or more weeks of hard but enjoyable work on the construction of this model.

Its specifications are: Wing span, 8 feet; wing cord, 14 inches; wing loading, 8 ounces per square foot.

Make an accurate full size drawing of the side view of the fuselage on drawing paper. Place this on a large flat piece of soft wood and hammer one inch brads along the outside edges at close intervals. The longerons are one-quarter inch square very hard balsa. Hold these over the mouth of a steaming tea kettle and bend to the approximate fuselage outlines. Cut the fuselage uprights, making a duplicate of each and place them between the longerons, using plenty of cement.

Pull out all of the brads after the sides have dried. Remove them from the drawing and split the sides apart with a thin double edged razor blade. Obtain a large sandpaper block and sand both sides of the fuselage until very

smooth.

Pin one side of the body to the work bench, cut two of the longest cross pieces in the top view to the correct length and cement them in their proper place. Then lay the other side of the body on top of this making sure that all sides are square. After this has dried glue the tail posts including the tail skid together, wrapping well with silk thread. The rest of the top cross pieces are easily glued in place.

Trace the outlines of the nose on a piece of 3/32" plywood and cut to shape with a coping saw, gluing them between the longerons. The 1/8" plywood firewall is also formed. Before assembling the firewall be sure all of the holes are drilled and the coil and condenser are mounted securely on the back of it. Dope the firewall and fuselage nose with two coats of "black" followed up with two coats of "clear." This is to make it resistant to the destructive action of gas and oil.

Prepare the metal motor mount from half-inch angle duraluminum. Also make the landing gear fittings, tail skid and tail mount fittings out of duraluminum. After assembling these to the fuselage the structure will be ready for covering.

Wing

All of the ribs in the centre section are the same shape and size but the rear of the tip ribs are cut off to fit flush with the trailing edge. The wing is assembled in three sections, and upon completing, the two tips are joined to the centre section, adding the twelve inches of dihedral.

Double Paper Covering

The wing, fuselage, and tail assembly are all double paper covered. Covering in this manner produces a strong and durable coating for the plane which will not split into long tears when punctured.

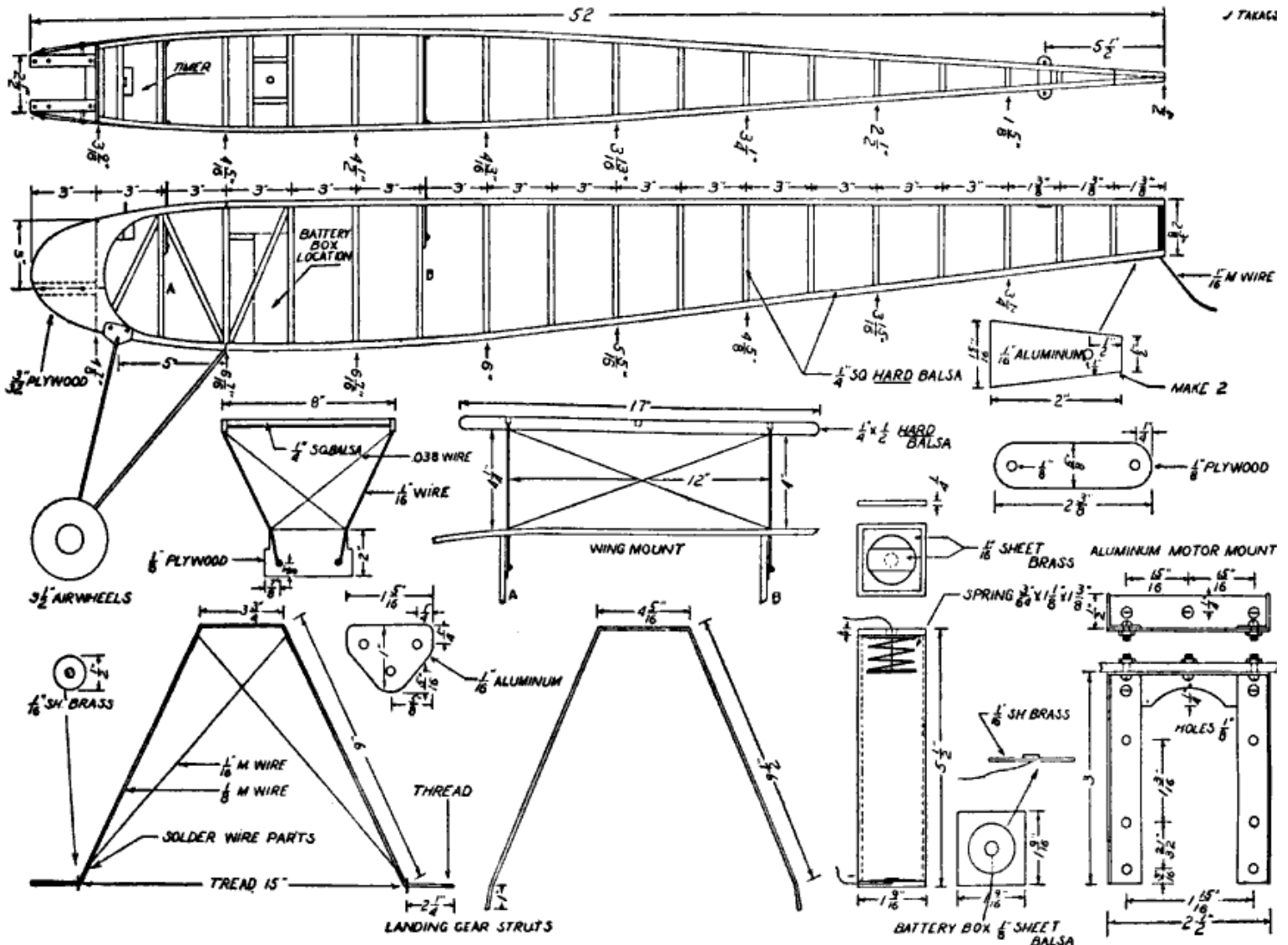
Place the tissue on the parts to be covered with the grain of the tissue running lengthwise. Spray with water and follow with two coats of clear thin dope. Add another layer of tissue with the grain running crosswise to the first covering. Spray the second coat with water and apply two coats of heavy clear dope.

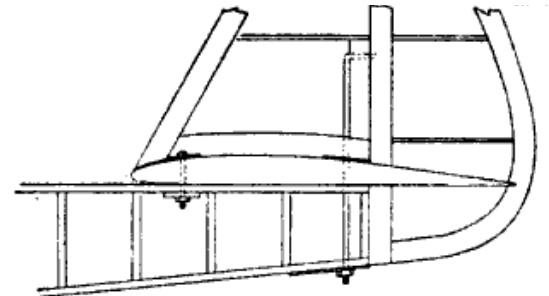
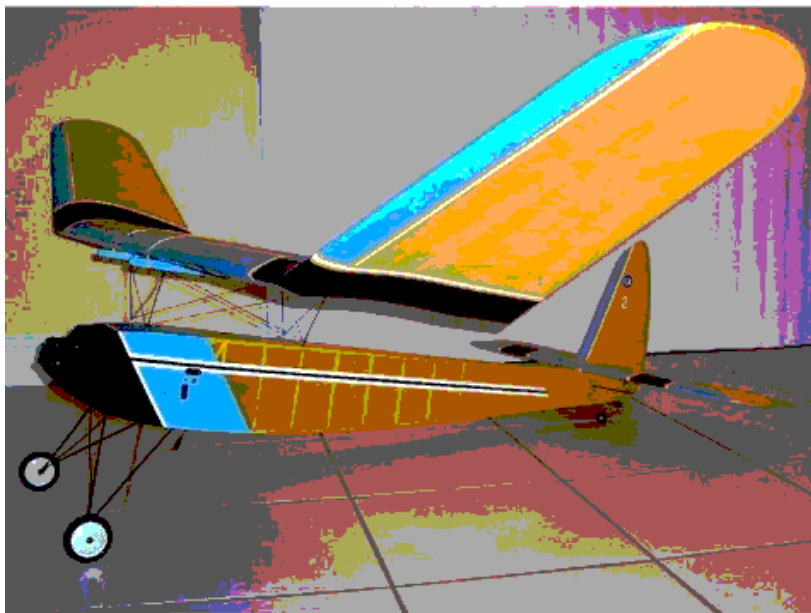
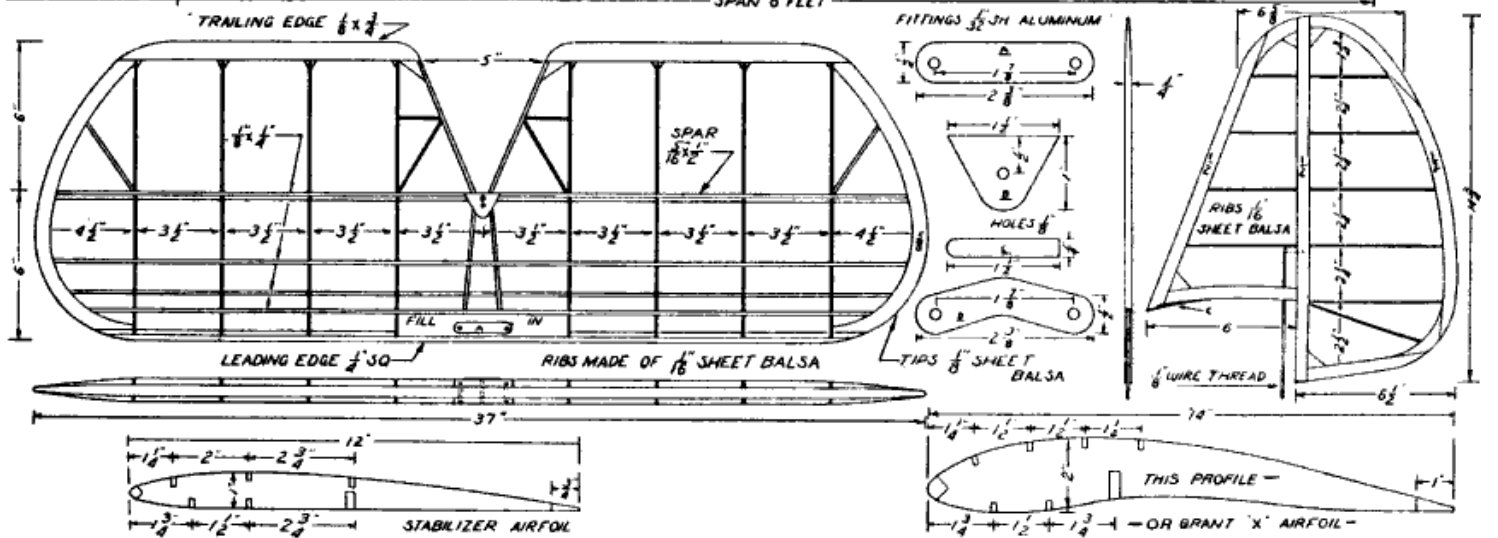
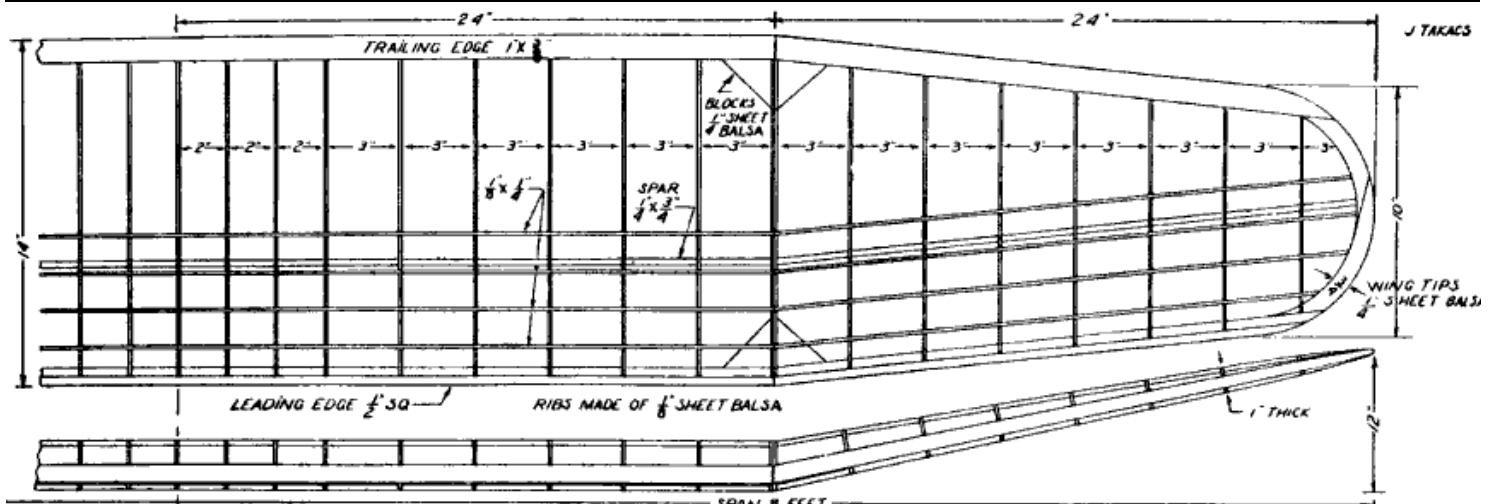
Tail Unit

Try to make the tail units as light as possible, so that the wing may be placed closer to the nose. This will increase the longitudinal and directional stability. Fill in around the metal mounting parts with 1/8" sheet balsa to produce a more rigid assembly.

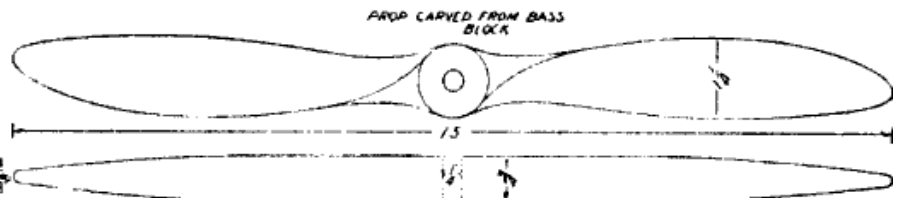
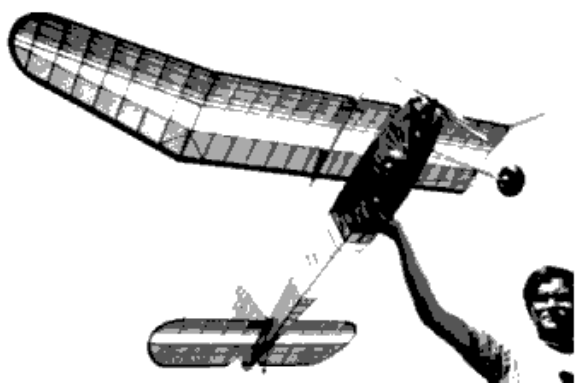
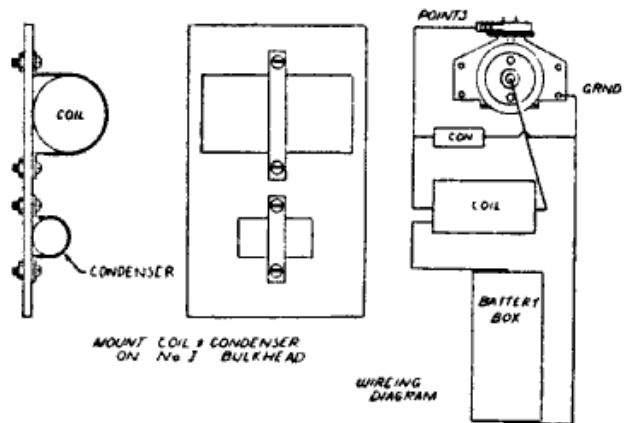
That's all there is. I Hope you have a winner!

Full Size PDF Plan available from: http://www.outerzone.co.uk/plan_details.asp?ID=69





STABILIZER & RUDDER MOUNTING



A Clue or Two about Glue. From SAM 26 Newsletter - Editor Bob Angel.

I use mostly white glue for building, but haven't been very particular about which brand or type, as long as it's white or cream colored. The packaging isn't right for our use, so I fill a Monoject syringe with it for more precise application. The only problem is sealing the syringe tip between uses. I usually just snip the end off of a short round toothpick to plug the hole.

But based on a recent recommendation from Tandy Walker, I'll remember the picture below and re-supply with Elmers next time. Tandy is a careful and meticulous builder so I suspect his observation is a good one. Alfredo Herbon is also a skilled modeller with lots of good ideas.

Here's Tandy's abbreviated note:

"Several years ago Alfredo Herbon in Argentina recommended that I start using "Elmer's Carpenter's Wood Glue" shown below instead of Titebond. I discovered that it is a far superior aliphatic glue to Titebond at a much reduced cost and I have been using it ever since. I buy a 16oz. container at our ACE hardware for something like three or



"Alfredo also sent some interesting information on telling the age of Elmer's glue when you buy it. The first four characters of the code on top of bottle contain the fill date so you can tell how old the glue is at time of purchase. Apparently, the shelf life of any aliphatic glue is something over 2 or more years and it has been my experience that it is actually good for up to five years.


The code on the bottle below shows that the fill date was March 17, 2011. The first character specifies the year, which is the most important part. The second two characters are the day and the last character specifies the month. The key to that first production year character is shown below".....Tandy

Elmer's production date codes:

- L=2006
- M=2007
- N=2008
- O not used to avoid mix-up with zero.
- P=2009
- Q=2010
- R=2011
- S=2012
- T=2013
- U=2014
- P=2015
- Q=2016.



It's OK to talk to yourself,
it's even OK to answer
yourself... But when you
ask yourself to repeat what
you just said - you have
a problem!



The Engineer

The engineer sat at his desk in despair, slide rules and spread sheets were scattered everywhere.

It was enough to drive him to despair.

He knew his trusted spreadsheet he could trust, yet, his model lay in tatters in the dust.

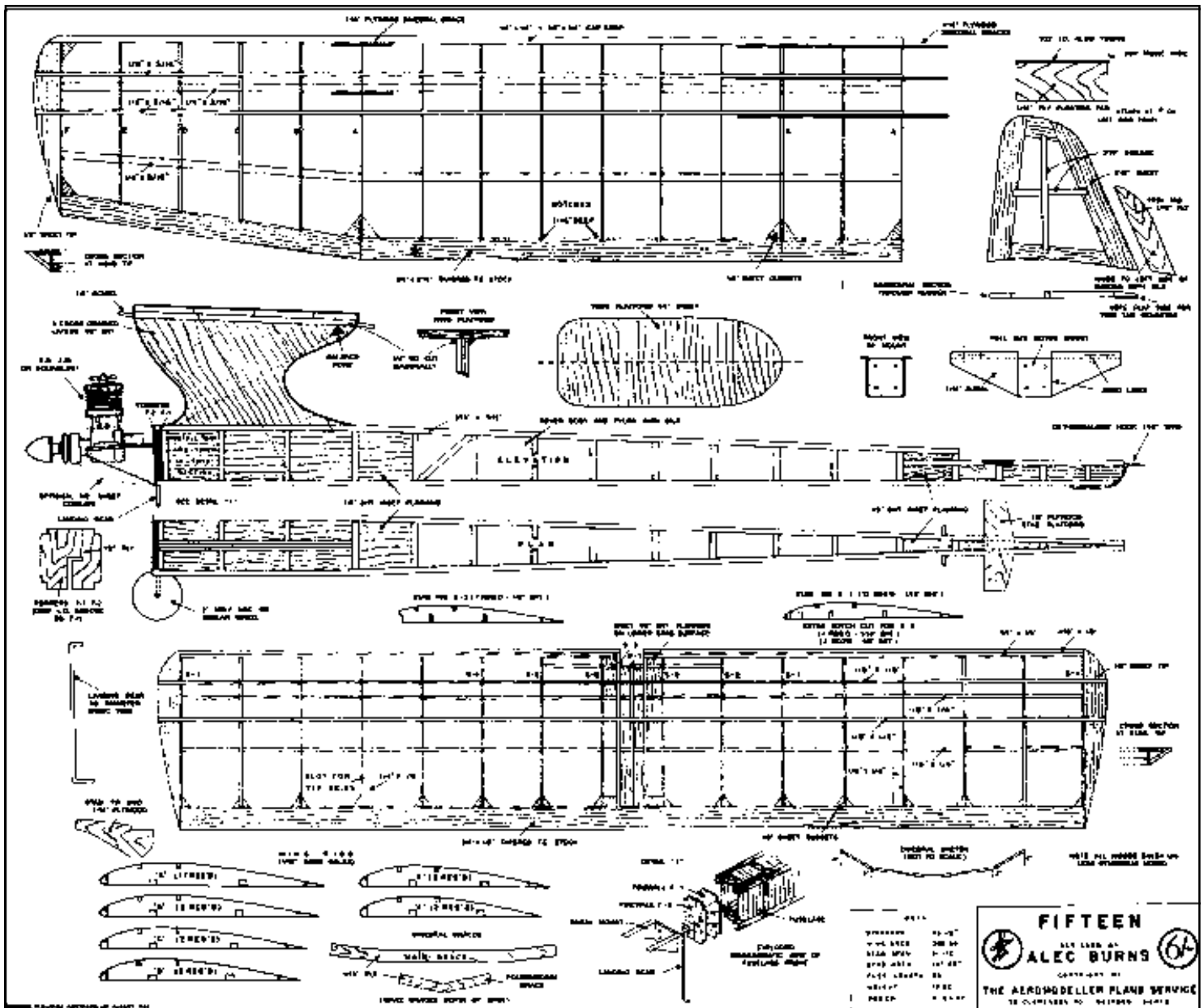
Model aeroplanes were his passion so why had this one ended in such an un-godly fashion!

The weight was light and the C of G was where it should be so why did it fly like a bumble bee?

The decalage was right, along with the trim, just where the spread sheet said it should be.

Murphy sat at his desk in despair!!!!!!!

Condo 21/10/14



PDF Plan available from: http://www.outerzone.co.uk/plan_files_06/6448/Fifteen.pdf

Fifteen by Alec G Burns from August 1953 Aero Modeller

A high performance contest design for the International power class.

Alec a 25 years old Topographical draughtsman by profession, resident of Mimico, Ontario, specially keen on free-flight power . . . other interests are radio control, team racing, photography and the young lady on the left, Miss Gladys Davidson, shortly to be Mrs. Burns.



In my opinion, says Alec Burns, it is the gadget-free model which is the consistent contest winner, and in this viewpoint he has the support of most competition fliers - Fifteen - (the 2.5 c.c. class is .15 cu. ins, in the U.S.A. and Canada, hence the name) certainly reflects this opinion, for a simpler or more straightforward contest job would be hard to find. The Hogan influence is apparent, and the only gadgets employed are the gravity tab, the timer, and the metal engine mount, which offers advantages for simple thrust adjustments. In flight, the model has a vertical climb to the right and left glide circles and has proved particularly safe in windy weather, flicking out at the top of the climb without loss of height. With a motor of up to 2 c.c. it would be a trouble-free introduction to contest-style flying and with a good 2.5cc in experienced hands, a threat at any contest.

Building procedure is normal, the box fuselage being built in the usual way. Side sheeting (except in tank bay) should be fitted in before removal from plan and the pylon added after being constructed separately.

The front former is laminated and the dural motor mount bolted in place, together with the undercarriage, before cementing the former to the fuselage. After installation of tank and timer the front former should be re-inforced with liberally-cemented strips of silk. Wing and tail mounts are self explanatory. The pylon and entire fuselage are silk-covered and given seven or eight coats of thin clear dope.

Construction of the flying surfaces is also perfectly conventional, but the positive rudder tab is worthy of mention.

After attaching the tab to the rudder (left flat at the appropriate place) with a silk hinge, a 10 B.A. bolt is passed through both tab and rudder, packing placed between the two is varied for the right trim, the bolt being tightened to retain the packing. Use Mod-elspan for covering the wing and tail.

After assembly and alignment check, balance the model as indicated, using ballast if necessary. Up to 1/16in. packing may be used under the LE. or T.E. of wing and tailplane to obtain a slightly stalling left-hand glide. Use a 9 1/2-x 6 prop. for windy weather and a 10 x 3 1/2 in flat calm, and make initial power flights with reduced revs. A right-hand climb is required, and side-thrust should not be necessary. If a left turn is evident, fit washers behind the port engine mount. Increase power and aim for a 100 ft. power turn. Slight left rudder may be needed for the glide, but clay added to the gravity tab should remove stalliness.



Origin of the phrase "Roger that" in English by Jakub Marian

Roger that or simply **Roger** (nowadays also often spelled in lower case) is a phrase used in aviation and the military to confirm that a message has been received and understood. It was popularized by radio transmissions of NASA's Apollo missions and by military fiction and is now sometimes used jokingly in everyday contexts. But how did it come into existence?

It all started with the big bang, then the dinosaurs... Fast forward a little bit, in the 1940s, the American military and British RAF used a spelling alphabet different from the current well-known Alfa, Bravo, Charlie. If you don't know what a spelling alphabet is: It is a set of easily distinguishable names for the letters of the alphabet used in conditions where misunderstandings (such as mistaking "M" for "N") could be fatal.

The letter "R" was used as an abbreviation for "received" back in the times when messages were sent via telegraphy (in Morse code), and the practice of confirming that a transmission was received by sending an "R" back was extended to spoken radio communication at the advent of two-way radio during World War II.

The phonetic alphabet used by the British and American military during the World War II was:

Able, Baker, Charlie, Dog, Easy, Fox, George, How, Item, Jig, King, Love, Mike, Nan, Oboe, Peter, Queen, **Roger**, Sugar, Tare, Uncle, Victor, William, X-ray, Yoke, Zebra

When a soldier or a radio operator said "Roger" after receiving a transmission, he was simply saying "R" for "received". The alphabet has changed since then, but the practice of replying to a message by saying "Roger" stuck.

It is just a coincidence that two-way radio became widespread during the relatively short period when the phonetic name of the letter "R" was "Roger". Before 1940, it used to be "Robert", and from 1956, it has been Romeo. Had the technology arrived a little bit earlier or later, we might as well have been saying "Robert that" or "Romeo that".

Stunning Stuff

Amazing designs were considered during World War Two.

Pictured in 617 Squadron livery is the giant Vickers Type C, complete with red spinners.

A giant by Reg Mitchell was bombed when part-built at the Supmarine works.

The arrival of jet power opened the gates to the V force and Roy Chadwick's mighty Vulcan.

Tony Buttler's book covers this fascinating period.

Famed for his Lancaster, Chadwick died on a test flight. It was discovered that the controls had been reversed during service!



Dallaire Sporster under construction, Super Cyclone 60 motor being built, albeit at a leisurely pace to take Super Cyclone sparkie and also Brown Junior and open valve OS60FS. Also with two tail units for radio and free flight so multi engine, multi purpose model when finished, hopefully later this year.



Contest Calendar 2016



SAM 600 Australia
 Victorian Old Timers Association Inc.
 10 Cunningham Drive
 Endeavour Hills
 Vic 3802

Contests commence at 10 am, unless otherwise stated.

The MAAA 2013 Rules apply.

The CD for all SAM600 events will be nominated on the day of the event.

General Meeting Echuca 9am April 17th / AGM Cohuna 9am September 18th

All 1/2A, Duration & Texaco events will have the electric equivalent

Oct 22 nd & 23 rd	Echuca	Saturday - 1/2A Texaco, Burford, Duration Sunday - Texaco, 38 Antique, Climb & Glide
Nov 5 th & 6 th	Cohuna	Saturday - 1/2A Texaco., Burford, Duration Sunday - Texaco, 38 Antique, Climb & Glide
Nov 27 th	Ballarat	Sunday - 1/2A Texaco, Texaco, Duration, Climb & Glide

