The Australian Thermaleer

Information, Competition Results and Articles for Australian SAM Chapters and Groups

Issue No.8 July - September, 2021.

270
WESTERN AUSTRALIA

SAM 1993

SAM 84 Queensland

The first photo of the USS Enterprise model and the men who built it - 1965

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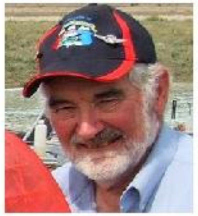

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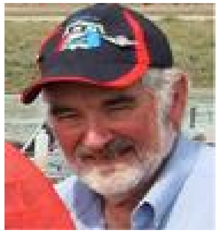
"The Thermaleer" is the official newsletter of SAM 600 of Australia, Victorian R/C Old Timers Association (SAM600) Inc.

SAM 600 SECRETARY/TREASURER REPORT
From Don Grant.



Lockdown again has affected our ability to run competitions so this report is about old timer electric models and their introduction in SAM 600.

This is my interpretation and other SAM 600 members will have different views.

Initially their introduction was very successful as we had two separate groups each running their own events in parallel. But the numbers of electric flyers dropped off with the exception of electric 1/2A which has become our most successful event. Most of the 1/2A flyers we now have come from previous Cox flyers. Lately we have not had enough Cox flyers to make up the required minimum number of four, although we still run the event. At the last comp we only had one Cox flyer.

Another trend has been some members flying in both electric and I.C. events which have led to the situation where we are trying to run five competitions on the one day with one CD trying to organise both electric and I.C. classes. The only way to do this is to cut down the rounds to two out of three attempts which are unfair on the members who only fly I.C. or only fly electric. For me who has to travel the greatest distance, to have my flying time reduced is unacceptable.

At the next Annual meeting (if we are ever able to hold one) I will be moving a motion that members must make a choice between either electric or I.C. in the different classes.

Our President Steve has proposed a new or alternative electric Texaco class to simplify the battery size choice. The maximum size battery is 1300mah x 3s. The models can be any old timer design up to 1942. I was initially not keen on this as I thought large full size Bombers etc. would not be competitive but without putting an engine in one I am now not so sure. There may be a case for including another size battery maybe 1500Mah for the larger models. The advantage of electrics is that you don't have to be an engine guru to be competitive.

I had two models not being used which I have converted to the class, a Playboy of 72" span with which I won our first attempt at this comp powered by a motor and 30amp ESC out of a cheap scrapped foam glider, and a 75% ARF Bomber powered by a Turnigy 3548 motor with a 60 amp ESC which I bought for another model but the holes in the bolt on prop-driver were drilled inaccurately which I complained about so they sent me another one which had the same fault. So I got busy with a small circular file and soon had two usable motors with one over, which went in the Bomber. This may seem a rather large motor for Texaco but there is not a lot of difference in engine runtime between both models.

These are delightful, relaxing models to fly as there are no I.C. engine problems, can easily achieve a 10 minute max with Mah. to spare and are a convenient size. As a result of their easy flying characteristics I will propose at the AGM that the fly off be time limited and that the result be decided on the remaining battery capacity left. Otherwise, if there are thermals about, the fly offs will go on for ever.

All the best for those in lockdown and not able to fly.

Regards,
Don Grant.

Ramblings: SAM Champs 2001, Las Vegas, USA, by Don Howie.

About six months ago Allan Laycock from Canberra advised that he and Bob Raadts were going to fy at the SAM Champs in 2001. Together they built two "Lanzo Bombers" that had two piece wings, detachable tails and fins and fitted into a standard size box that could be taken as standard luggage to the USA.

Allan also had an "Air Trails Sportster" for the Shereshaw event that would also ft into the box with the other two models.

When SAM Speaks asked for photographers at the Champs, I wrote to Bruce Augustus to see if I could be involved and received a reply from Bruce, accepting my offer. The other reason to attend was to meet Ben Shereshaw who is my favourite designer from the thirties. I arranged to share a room and hire vehicle with Allan and Bob whilst in Las Vegas.

The end result was I few into Las Vegas from Japan on an almost empty aircraft on a Saturday morning at the end of September. I made my way to Boulder Station Casino by public transport for US$1.60, rather than pay the US$35 taxi fare to this out of town hotel.

Travelling to the El Eldorado Dry Lake (past Henderson) on Monday morning saw a vast expanse of flat, cracked sand, with mountains in the distance. When I arrived we had two distinct groups of vehicles, the first for R/C and the second for Free Flight. The Free Flight group was larger as it included a large number of rubber flyers, rather than just power flyers.

I will report on the R/C fying only, but those modellers that like old spark engines (like myself) would be in heaven at the F/F field. Several modellers were using Arden .199 engines and several different Bunch engines in F/F models.

In the Ohlsson sideport event, most flyers use the last model .60 motor with stacked aluminium head from 1949/50 as they state it goes harder. Most competitive flyers use modified sparkies. In the Ohlsson 23 event George Tallent gets the sideport model to run as hard as the FRV version from 1948. George modifies the porting raises the compression and running on "Alky" fuel (his words), gets them to go quite hard. Don Blackburn is another modifier of sparkies, getting 7100 revs from a GHQ that would originally turn 2000 revs, if you could get it to run. I am not sure how they allow this, I expect it is an old boys network and the name of the game is fun.

I have included some photos of different, interesting models, rather than "Bombers" that seem to dominate most of the R/C events. The Shereshaw 72 inch "Mercury" was built by a large number of modellers, it is now '38 Antique legal and a Madewell 49 would be a good engine over here in this model.

The modified McCoy 60 series 20 engines on spark ignition go quite hard on FAI fuel (no nitro) turning the narrow APC 12x4 prop at about 14,000 revs. The other ignition engine to use is the Cunningham Blue Streak 64 that goes quite well. DH.

This fine photo by Don Howie taken at the SAM Champs 2001 shows Don Blackburn (Ignition engine expert) with his GHQ (Get High Quick) engine in his 1937 "Buccaneer".

Standard old slag (kit engine) from the thirties would turn 2,000 revs. This Blackburn modified GHQ turns the Air-O prop at 7,100 revs in the R/C Antique event.

"The Stebbings Memorial" Champ of Champs - 2021 - Progress Scores

EVENT	1st PLACE	2nd PLACE	3rd PLACE	No. in F/O
P & DARCS CARDINIA - ROY ROBINSON TROPHY 7th MARCH 2021 - CANCELLED				
BALLARAT - 21st MARCH 2021 - CANCELLED				
COHUNA 17th-18th APRIL 2021				
TEXACO	PAT KEELY	DON GRANT	ROBERT TAYLOR	3
ELECTRIC TEXACO	DON GRANT	STEVE GULLOCK	GREG JENKINSON	4
DURATION	LYN CLIFFORD	PAT KEELY	ROBERT TAYLOR	2
ELEC 1/2A TEXACO	STEVE JENKINSON	PAT KEELY	MAX HEAP	8
BURFORD	STEVE JENKINSON	LYN CLIFFORD	GREG JENKINSON	3
VIC/S.A. STATE CHAMPS 1ST-2nd MAY 2021				
ELEC 1/2A TEXACO	STEVE JENKINSON	MAX HEAP	PAT KEELY	8
BURFORD	STEVE GULLOCK	STEVE JENKINSON	DON GRANT	3
DURATION	LYN CLIFFORD	PAT KEELY	BRENDON TAYLOR	3
TEXACO	DON GRANT	GREG JENKINSON	PAT KEELY	2
1300 ELEC TEXACO	MAX HEAP	STEVE GULLOCK		2
BACCUS MARSH - MOUNT WALLACE 15th-16th MAY 2021 - CANCELLED				
COHUNA CHAMPS - 11th-12th SEPTEMBER 2021 - CANCELLED				
COHUNA TRI-STATE CHAMPS 2nd-3rd OCTOBER 2021 - CANCELLED				
COHUNA 6th-7th NOVEMBER 2021				
BALLARAT 28th NOVEMBER 2021				

PROGRESSIVE POINTS I/C	
PAT KEELY	11
LYN CLIFFORD	10
DON GRANT	9
STEVE JENKINSON	6
GREG JENKINSON	4
STEVE GULLOCK	4
ROBERT TAYLOR	3
BRENDON TAYLOR	2
PROGRESSIVE POINTS ELECTRIC	
MAX HEAP	10
STEVE JENKINSON	8
STEVE GULLOCK	8
DON GRANT	6
PAT KEELY	5
GREG JENKINSON	4
LYN CLIFFORD	2
ROBERT TAYLOR	2
TED ARNUP	1

Those were the days ………… Contestants at the Bendigo Radio Control Aircraft Club Oldtimer Event 18th April, 2010.

K40 Laser Cutter and the 1947 AM40 Powered Glider by Aldo Montanari
Story from Trevor Boundy, SAM 600.

On contacting my friend Tiziano Bortolai Secretary SAM-62 Italia, about a powered glider I saw in their language News Letter, He told me that the plan was available online at Outerzone and was designed by Aldo Montanari in 1947 for a 40 motor and a span was 3.5m, I decided to scale down to 3.0m considering my transport situation.

One of the difficulties of construction was cutting out the 18 different oval body formers from 1.5 ply.

For some time I have been interested in Laser Cutters. And this powered glider project provided me with the excuse to purchase of a Chinese k40 Laser cutter.

The Cutter.

To give some idea of the items involved, including some extra items listed below:-

K40 40W CO2 Engraving Machine.

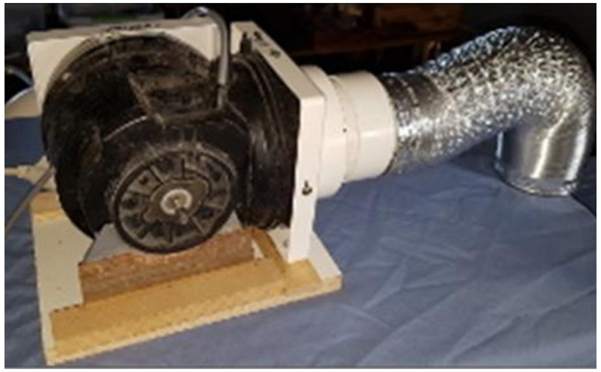
$550.00 AU including delivery.

Added Water Cooling 3 Way Flow Meter and Digital Thermometer.

To give a physical indication of water flow and temperature at a cost of under $20.00 AU

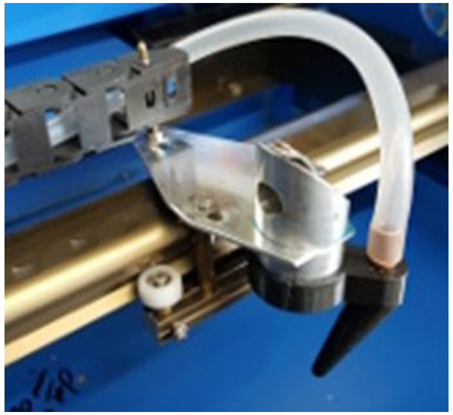
Some Sort of Fume Extraction System.

Because the one provided, was not, in my estimation powerful enough, I used an old Dyson Vacuum cleaner and a viable motor controller, 90mm storm water fittings, together with 90mm flexible domestic ducting and placed close the exit point to outside.



Addition of an Air Assist Nozzle.

(read air blast to reduce the burn marks), which I 3d printed from www.thingiverse.com, and some sort of compressor to supply the air at a very low pressure.



Some other things to consider are :-

- Water Cooler and Additives.
- The instillation of a mA meter (not provided in my buy).
- Checking wiring for good connections and proper earthing.
- Making a height adjustable bed.

General Layout of Equipment.

My cutter is driven by a Laptop using software called "K40 Whisperer" see description here:

I chose to design the shapes in "Inkscape About Here", a professional quality vector graphics software which runs on Linux, Mac OS X and Windows desktop computers, and the output is saved to the computer in the format .SVG file, and processed by K40 Whisperer and fed to the cutter via a USB link.

It was a steep learning curve and took time to learn, and there are plenty of tutes on YouTube to help, I think it's a great piece of software.

Left are the formers I have cut for the AM-40, they are going to be assembled on a mandrel which can be withdrawn later.

On the far left are the corrugated cardboard cut-outs to check the final cuts in plywood.

The Air Extraction Unit.

The unit that came with the cutter was relegated to be used as a cooling fan for the small air compressor, and a new, better fitting air extraction duct was fitted to the rear of the machine.

Air extraction is a very important part of the system as some of the plywood glues give off nasty fumes on burning, that need to be extracted to the outside.

I made the exhaust chamber from chip board and 90mm storm water fittings.

The new chamber was screwed to the back of the machine with a soft gasket.

General Layout Showing:

Left Top: Laptop and

Right Top: Right K40 Cutter.

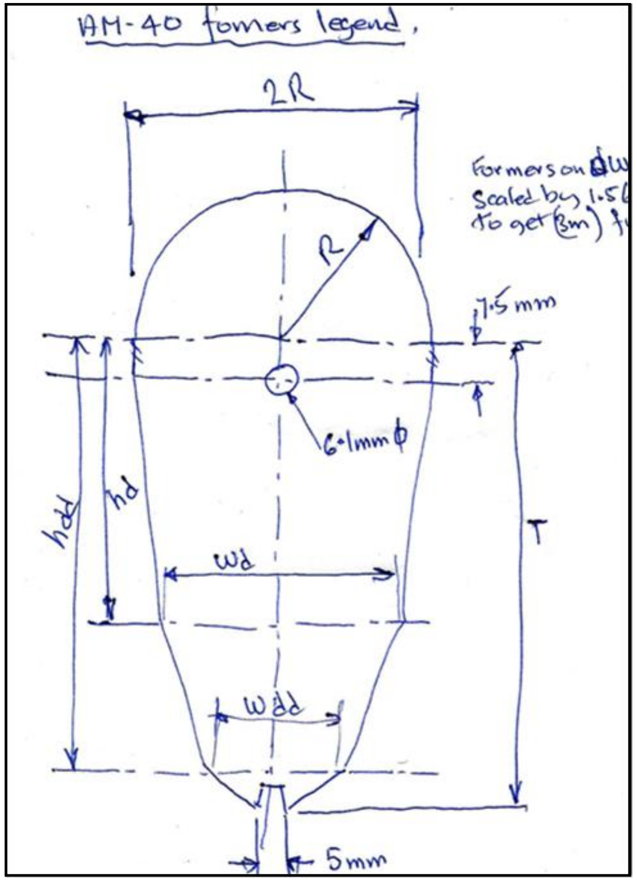
Bottom Left: Small air compressor in ventilated foam box

Bottom Centre: Plastic bin for Cooling Water and Water Pump and

Bottom Right: Air Supply Unit.

Right:

Here is the legend for the digitised data.

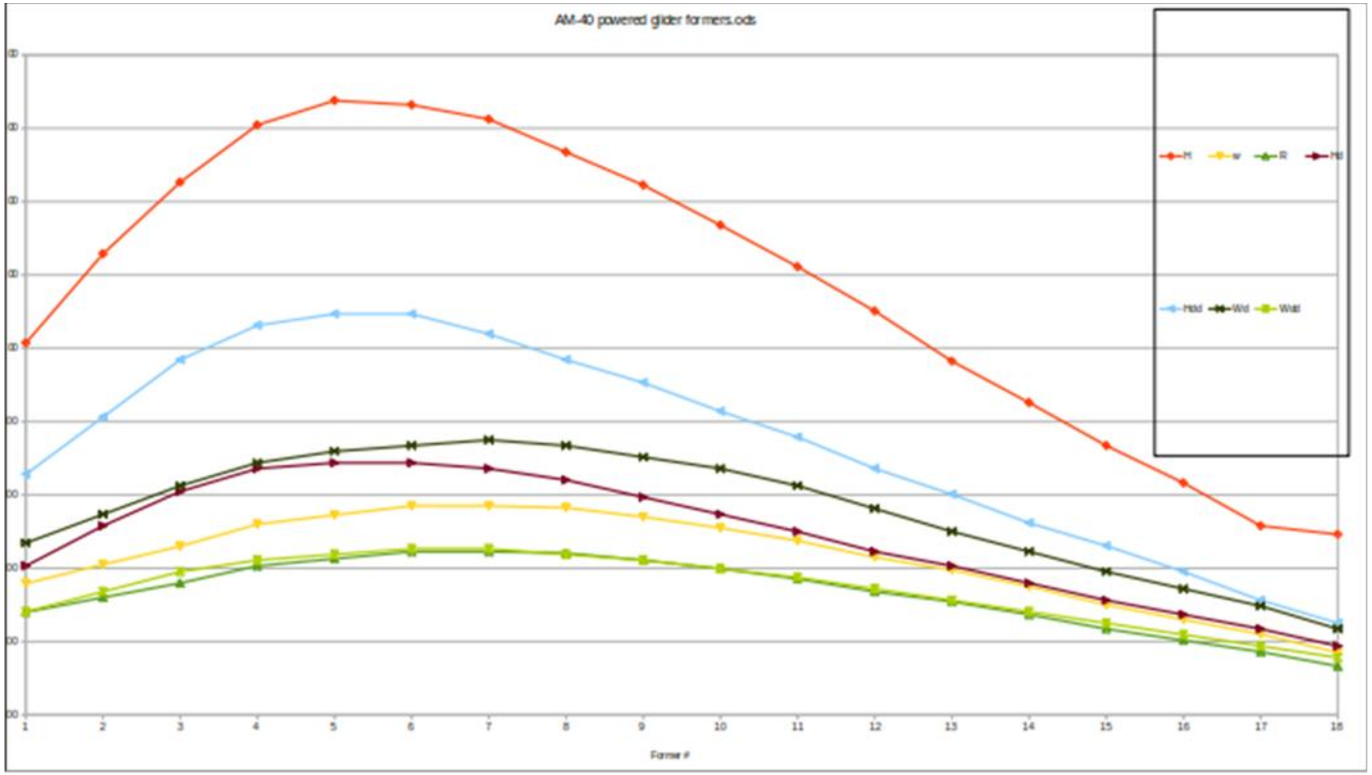


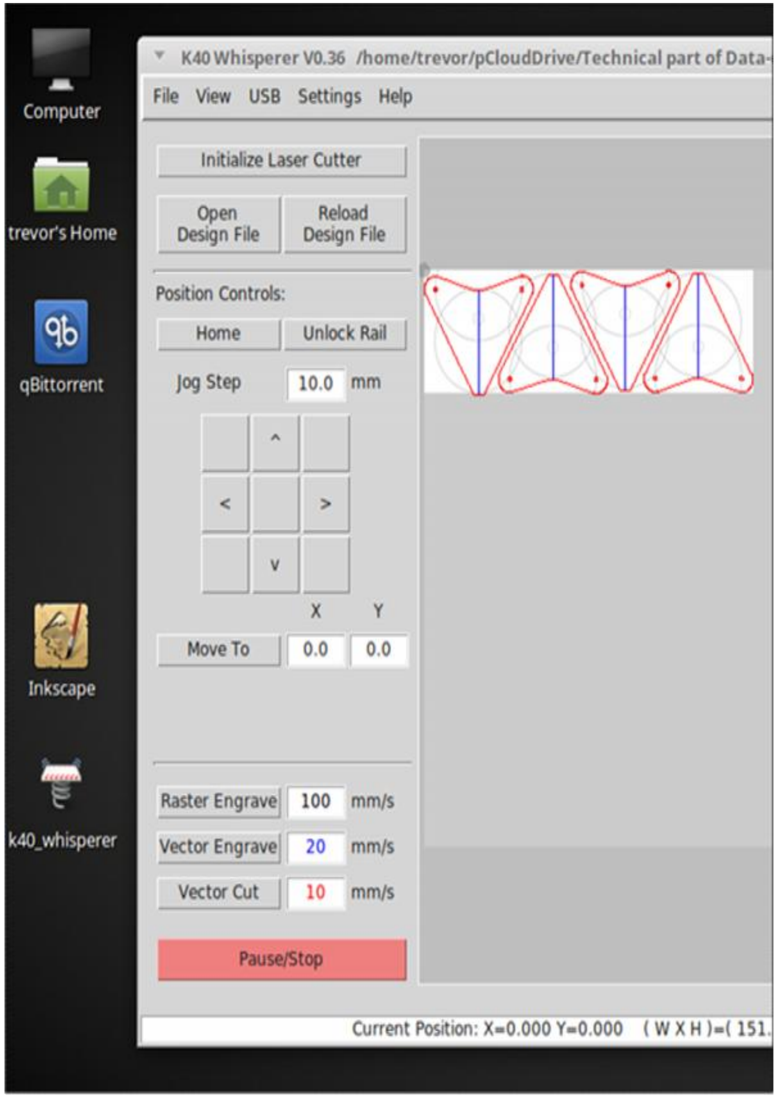
Because I was only working from a small plan, and the expectation that large blow-ups could not be relied on, I digitised the 18 former dimensions and put them into a LibreOffice Calc spread sheet, part of which is shown at the right…and then made a spreadsheet chart of the 6 important points of each former so that interactively I could make small alterations to the data to smooth the curves see above right on the this page.

AM-40 powered glider formers for 3000mm w/s Scale 1.5625

F	#	t	T	h	H	w	W	R	hd	Hd	hdd	Hdd	wd	Wd	wdd	Wdd
1		47.00	73.44	63.00	101.44	35.84	56.00	28.00	26.00	40.63	42.00	65.63	30.00	46.88	18.00	28.13
2		60.00	93.75	78.50	125.78	41.00	64.06	32.03	33.00	51.56	52.00	81.25	35.00	54.69	21.50	33.59
3		70.00	109.38	92.50	145.31	46.00	71.88	35.94	39.00	60.94	62.00	96.88	40.00	62.50	25.00	39.06
4		77.00	120.31	102.00	160.94	52.00	81.25	40.63	43.00	67.19	68.00	106.25	44.00	68.75	27.00	42.19
5*		80.00	125.00	105.00	167.58	54.50	85.16	42.58	44.00	68.75	70.00	109.38	46.00	71.88	28.00	43.75
6*		78.00	121.88	106.00	166.41	57.00	89.06	44.53	44.00	68.75	70.00	109.38	47.00	73.44	29.00	45.31
7*		75.50	117.97	103.00	162.50	57.00	89.06	44.53	43.00	67.19	66.50	103.91	48.00	75.00	29.00	45.31
8*		70.00	109.38	96.50	153.52	56.50	88.28	44.14	41.00	64.06	62.00	96.88	47.00	73.44	28.00	43.75
9*	9	65.50	102.34	90.00	144.53	54.00	84.38	42.19	38.00	59.38	58.00	90.63	45.00	70.31	27.00	42.19

Below: **Finished Calc Chart** showing the smoothed contour lines.





Above:

Here is a screen shot of the K40 Whisperer Software, for the 4 control horns, showing the control options i.e.:-

Jog button in x and y directions to your start position, jog travel is changeable.

Control over the 3 modes in mm/sec

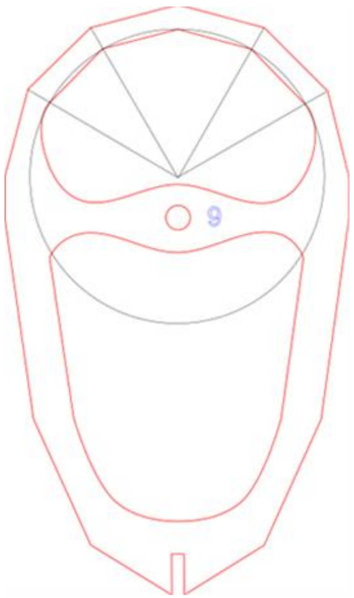
The Laser % Power is made on the actual cutter.

Right:

Here is a copy of the .SVG file for former #9 (Hoop Pine Ply), as generated in Inkscape.

The blue (grey) lines Vector Engrave (VE) and is set at 0.05mm wide, and

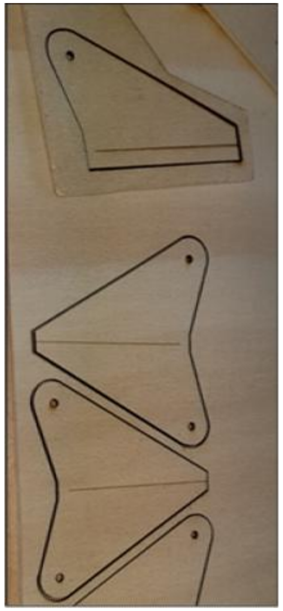
The Red lines are Vector Cut (VC) and are set at 0.20mm



Below shows the layout for multiple cuts in 1.6mm Hoop Pine to minimise wastage.

Regarding the cutting of the 48 x 2.5mm balsa ribs, I was pleasantly surprised by the accuracy and the minimum of burn marks on the edges….. someone suggested to me that the cut cauterised the edges and made it difficult to make super glue adhesion's ??.

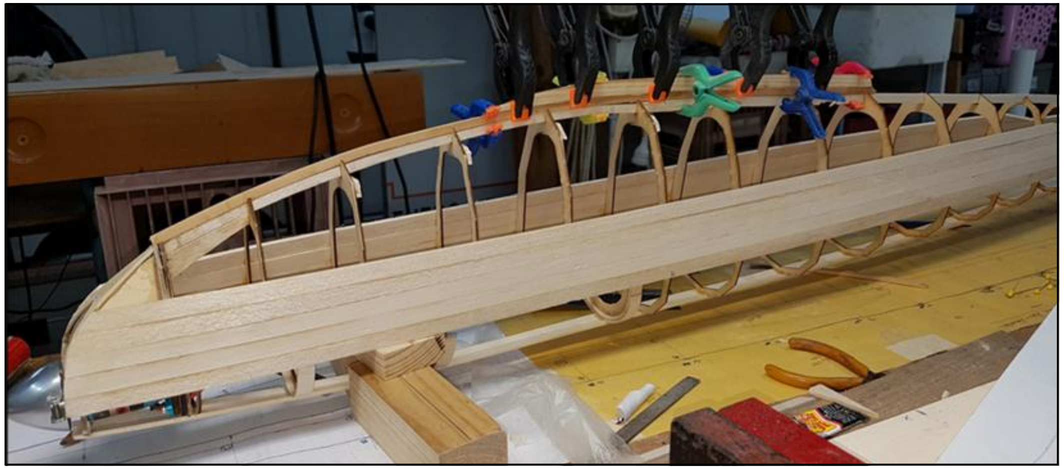
Right: Once again savings on wastage can be made by making a mirror image and putting multiple images to suit the sheet width.



Left: I was able to cut some nice control horns complete with 1.5mm hole for clevis.

Right: The picture on the right shows file wall #1 1.5mmx2 and the motor mounts 1.5mmx3, also shows the complexity of the airways cuts made possible with the laser without distressing the ply too much

Below: The body formers on the mandrill in a more advanced stage.



Here are some of the settings I used for Vector Cutting and Engraving, different materials.

Material	Ve (mm/sec) %power	Vc mm/sec %power
1.6mm Plywood	20 @ 9%	8 @ 40%
1.60mm Hoop Ply	20 @ 9%	8 @ 20%
2.00mm Corrugated Cardboard	40 @ 10%	10 @ 20%
1.80mm Corrugated Cardboard	40 @ 9%	10 @ 20%
0.30mm Card Stock	70 @ 8%	40 @ 9%
2.50mm Balsa	50 @ 9%	40 @ 20%
3.00mm Ply	40 @ 9%	8 @ 25%

The above cardboard cutting entries were for proving test cuts prior to the final cuts in ply.
It was a big task and a steep learning curve, but for me, it worked well.

Regards Trevor Boundy Dec 2020

Reference Links:-

- K40 Whisperer Manual
- Adding-a-Analog-Milliamp-for-Your-Laser-Cutter
- Using alternative software to control the laser cutter (Scorchworks Whisperer)
- PC Water Cooling Cooler 3 Way Flow Meter with Digital Thermometer G1/4 Fitting
- K40 Chinese Laser Cutter - Setup and Usage
- Buyers guide to the Chinese K40 laser cutter

From Darryl Cope,

dags18@aussiebb.com.au

The late Brian Winch helped me out in 2014 with some instructions outlining how to re-assemble and time an OS60 Four-Stroke open rocker engine, which I had to do. The info came in real handy ! Hope it might be of help to someone else.

Darryl

From: "Brian Winch"
Date: Tuesday, 11 November 2014 12:29 PM
To: <dags18@bigpond.com>
Subject: OS TIMING

Yo Darryl,

Lovely engine - I have one with a magneto on the front housing for spark ignition - sounds magnificent.

On the camshaft ring - the internal gear with the three screws - there is a small timing mark - a dot - just below the notch in the rim - this aligns with the centre of the slot in the drive disc…...where the crankpin of the crankshaft drives it. To check the timing when assembled, rotate the crankshaft to bring the piston to TDC (feel it with a toothpick or similar) and one valve should be moving (this is the induction stroke). Rock the crankshaft left and right about 10-15 degrees and both rockers will move a little. This is the valve overlap that indicates correct timing. Your engine is now ready to run but……don't use castor oil in it as it gums them up something fierce and, if something breaks, there are no parts generally available. I find Morgans Coolpower blue oil to be perfect and I recommend 15% maximum for that engine.

A note here - sometimes the dot is hard to see or very faint but the notch also serves as your visual reference.

Let me know how you go with it.

Regards
Brian Winch
HANGAR '33'

From SAM 600 Newsletter "The Thermaleer" #80 June-July 2002

Tri-State Gas Champs, Jerilderie: Champ of Champs Don Southwell, shown above with his beautiful Roger Hammer 1938 Flamingo.

At left he receives his Champ of C trophy from SAM 600 President Kevin Fryer.

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Picking Thermals
by Peter Brocks

Picking thermals has to do with feeling the subtle changes in the environment which to the untrained are not apparent. Therefore there is no simple or sure recipe . In SAM, no thermal sensing devices are allowed, including streamers, thermometers or fluffies. You must use your senses and watch the environment.

Early morning: Air is buoyant neutral, small rise in temperature (fractional degrees), heating is through water evaporation from air.

Mid days: Strong thermals (boomers) develop that exceed the sink rate of models, rise in temperature can be a few degrees with wind calming, wait until cooler breeze (fill) is felt and temperature clearly drops. Do not launch right away especially with fast, higher climbing models, but wait 10 to 20 seconds depending on wind velocity.

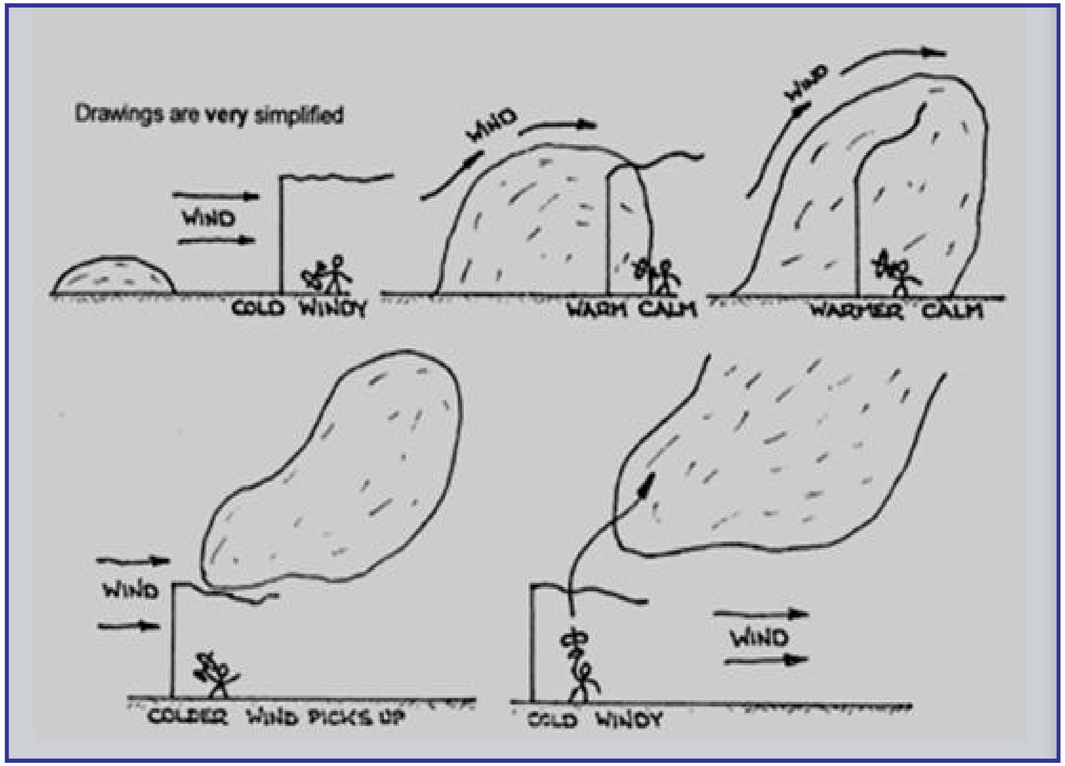
Late afternoon: Thermals stay closer to the ground, tend to be larger in size, smaller rises in temperature (1°+F), be patient, fly over darker surfaces. Wait for a 3 to 4 second lull of lower wind velocity, launch immediately at an angle to the wind.

No wind: Rising air circles counter-clockwise, wait for light air movement of fill, be very patient - air rises very slowly, when launching, place model in centre of rising air.

Cold front: Rising air precedes the rain and the breeze, good air is still present when rain starts.

General rules: Do not launch if there is a chance that the sun might come out of the clouds soon. Do not fly if other models are launched when a conscientious decision to launch had not been made. Rather watch other model's behaviour. Most of the time flying is a little later will give better results. Concentrate and take in your environment.

(This article originally appeared in "Vol Libre" and more recently in "SAM Speaks". It is reproduced here with the consent of both the author and the Editor of SAM Speaks, Bruce Augustus)



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The Geezer

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270 WESTERN AUSTRALIA

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Western Australian Report from Hans Van Leeuwen

There's next to nothing to report on the modelling front at the moment here in W.A. the weather has been against us, particularly on weekends. We've had to cancel at least 3 contests since the last Thermaleer and we've again had to cancel our latest comp on 26-27 September due to very poor weather.

I could send you some stuff about some building I've done lately but there's nothing that's noteworthy in that department as I've probably explained most of the things I've done in my previous building articles.

I've made a couple of mods to my engine thrust testing rig that have improved its efficiency. I hope to put some words and pics together for this in due course. I had an article in the Geezer about the original concept.

Take care and keep safe in these trying times, Regards, Hans.

From "The Geezer" newsletter, February 2012. Editor Troy Latto.

Hold on to your Cox dept..

(This month we conclude a series of articles aimed at unlocking the mysteries of that blighted piece of model aero engineering – the Cox .049. This comes courtesy of our resident engine guru, Richard Sutherland.

Note: The orange highlighted sections are updates to the original text and include notes from Jon Fletcher – another Cox sage. Read on!)

Everything you wanted to know about the 1/2A Texaco motor (OR the science and witchcraft of the reed valve 049) By Richard Sutherland.

Testing

Ok, so now you have assembled the perfect Texaco motor and it is time to start it up – you will probably find your 'pride and joy' will barely run for a minute (my first Texaco motor would only run for 45 seconds, and it wasn't very powerful either) – you have just entered the TWILIGHT COX ZONE where the laws of physics no longer apply.

Your motor may not even run! The ideal Texaco prop may be too large for it. I have found that the 'single small bypass' cylinder can be thirstier than the 'twin small bypass' cylinder? I once compared two identical glow heads on the same motor and the run time consistently differed by 30 seconds.

So it now comes down to a matter of testing and swapping parts (pistons, cylinders, reeds, NVs, glow heads, back plates etc). Try different sizes and brands of prop. If the motor is lugging, try trimming the prop diameter slightly. Experiment with different fuel mixes, various mixes will perform better under different weather conditions.

When swapping cylinders, don't be too precious about matched piston/cylinder pairs (it is easier to swap just the cylinder without disassembling the motor to swap piston and cylinder).

With each change, time the run several times until you get repeatable results. If it runs for longer – keep the new component – if not revert to the original and swap another part etc. After making a few changes try that first cylinder that didn't work so good earlier – all the parts interact!

The aim is to get the optimum combination for your particular model. My current 1/2A Texaco motor has a 'twin small bypass' cylinder with about 9 thou of SPI. I tried several 'single small bypass' cylinders to no avail.

Remember "Cleanliness is next to Coxliness". It is impossible to get repeatable test results when a motor runs erratically.

Note: The NV is the one part of the Cox motor that behaves logically – there is excellent correlation between the NV position and the run time. If you can keep the motor running at a leaner setting – it will run for longer.

Once I was able to get a reliable motor run of 4 to 5 minutes, I stopped experimenting since a longer run could start to become a liability during the rounds (due to the requirement to be back on the ground within 2 minutes of the 6 minute max). So if further experimentation gave a motor that was capable of say an 8 minute run, you could always let it run for a couple of minutes before launching (or half fill the tank) during the rounds.

Enlarging the tank (Cheating)!

I include this section to illustrate the upper limit to fuel capacity gain that could potentially be achieved through machining, and to show that the gains are small, and not because I condone cheating. I imagine a skilled machinist could skim the inside of the tank by up to 0.5mm and taper the intake venturi tube and gain a maximum of 0.4cc. Partly removing the bolt bosses and casting bits in the back plate could possibly gain another 0.1cc, giving a total of 0.5cc (fuel and air leaks would be more of a problem though).

An 8cc tank could possibly be shortened so that it is just a bit longer than the 5cc tank, each extra 1mm would gain 0.5cc. Maybe an extra 1mm would not be readily discernable? Mind you, this would stuff up the venturi diameter. At around a total of 1cc, the gain is 20%. I imagine it would take many hours of skilled machining, so you would need to be pretty desperate to win. And it still wouldn't negate the need to go through the test/swapping phase B although the custom components would complicate the swapping of components significantly!

With all the other variables, I doubt the extra seconds would make that much difference in the end.

A different approach for Australia

In 1965 Gordon Burford introduced the Taipan 1cc diesel (page 82 of Maris Disler's book) which weighs 69 grams. Gordon also produced a tank mount for the Taipan 1.5 glow series 67 (page 78 of Maris Disler's book). Maris notes some difficulty in starting the Taipan 1cc. However I find that my example handles well and produces good power. Rob Rowson's version also performs great in his 44" Tomboy.

Unfortunately the Taipan 1cc was only produced in limited quantities (in his 1983 article in Airborne #60, Ivor F suggests 250, and Maris Disler suggests 400 in his book). Ideally if a talented replica builder (hint to D. Owen or D. Burke) could be convinced to produce a replica Taipan 1cc (along with a tank mount in character with the Burford 1.5cc tank mount but with a bolt pattern that matches the Cox 049), we could introduce a fair dinkum Aussie version of 1/2A Texaco and be rid of Leroy's Revenge forever!

Addendum – Jon Fletcher provided the following information/comment.

The one really weak point with ball joint small end engines is that there is no positive rotational location for the piston in the bore. So not only has the piston and bore to be a very good fit and the right taper, they both have to be absolutely round. I was always curious why particularly the reed engines would slow and even stop and yet if the NV was quickly richened they would pick up and run at speed again for about another 30 secs when they would mysteriously slow again. One day I was test running an old rebuilt engine which had a big rust stain (pitting below the rubbing surface) on the piston skirt. It was large enough to observe the piston whilst it was running. What I then saw was that this stain showed that the piston slowly rotated whilst the engine was running and about one rotation every thirty seconds. So it seemed logical to me that every thirty seconds the tight spot that occurs when the slightly oval piston and slightly oval bore match up. The engine slows due to the friction drag and would also heat up slightly too probably worsening the "nip". Opening the NV introduces excess fuel which cools the piston and bore down and the engine speeds up again. When at speed the NV can be returned to the previous setting.

Piston ball joint reset tool For the TD 049's I used to run in 1/2A Free Flight I designed and made a "360" degree swaging tool. Tool is in two halves held together with small socket head cap screws. This tool over came the problem of the slotted tool generating an "egg" shaped swage, no matter how much you rotated the piston and re-swaged. Also I do the swaging by slowly squeezing the tool in a 4" bench vice with plain jaws whilst rocking a 0.106" dia. drill through the big end eye to sense the nip point.

Varnish build up De-lacquering of the bore I do on Cox's advice specifically using 000 to 0000 grade fine steel wool held between a couple of split lolly sticks. When I can see a brown stain at the top of the bore is when I do the de-lacquering.

Fuel tank "O" ring Be cautious about using substitute "O" rings to seal back plates to the rear of the tank. I have encountered distorted tank backs where a far too big an "O" ring seal has been fitted. The original seal used by Cox was a punched (knife cut) gasket cut from 0.031" thick rubber sheet. I assume that it would have been nitrile rubber (Buna N). I cut my replacement gaskets exactly the same way using a knife cut punch I made. These seal effectively without overloading the tank to back plate joint.

Backplate material Acetal resin was used extensively by Cox and most likely from DuPont so it would have been Delrin.

However the later moulded tank backs and the later 8cc tanks I believe were moulded in nylon 66. Glass filled in some tank backs I have seen some which have a characteristic semi-matt appearance and are stiffer. Acetyl resin is compatible with petroleum fuels and is very widely used by automotive manufacturers and others for components in the fuel systems and has been for decades and is well proven.

NV seal I am always curious about the reputed "air leaking down the needle thread" assertion and it may well be right.

However I have never found any difference when sealing a needle with a piece of silicon tube or cleaning an old needle thoroughly that was gooped up (with castor oil making a good air seal).

Fuel Haven't tried petrol yet but I did do some experiments with water added to the fuel. Can't remember the details now but it definitely extended the engine run for minimal reduction in RPM. I think I tried ~ 3% to 5%.

Facing mating surfaces I do lapping on a piece of 6mm thick glass with diamond paste. Wet and dry paper is compliant and always gives rounded edges to surfaces "linished" flat even if the paper is held down on glass. I have also lapped the head seating surface in the cylinder using an old blown Glo Bee head insert as the lap. However, unheard of for the head seat to warp out of flat. Used copper seating washers I anneal with a cigarette lighter flame, holding the part on a piece of wire.

Run-in The most success I have had with 1/2A Texaco engines is to run them in for at least 1hr. in a series of full tank runs. Always start on a 6 x 3 or 5 1/2 x 3 to let the engine "settle in". When I first did this with a new Texaco engine, I did notice that the engine's consistency and ability to run slowly with big props improved markedly over a full day of test running.

Jon Fletcher's setup I do not have any particular reason for this but after trying various props, fuels and glow heads I settled on an APC 7x5 E prop., 45% nitro fuel with 20% Castrol M and TD 049 (Cox part #1702) glow head. That gave me 4 min to 4 min 30 sec run with the model climbing as least as high as everyone else's. In windy weather I'd switch to an old F1C hand laid up glass fibre 7x3 prop which gave a faster climb to fly upwind of the launch point though had a shorter run time.

Concluding remarks I guess most flyers would have observed a Cox 049 doing the speedup/slowdown cycle as described by Jon Fletcher above.

There is not much that can be done to stop the piston rotating. Perhaps you could remove the rod, mill flats on the "ball" and make a special reset tool to press onto the now non-spherical rod end. However, removing the rod and refitting in this manner would likely weaken the joint too much, I think it is easier to swap pistons/cylinders until you get a good (i.e. perfectly round) combo.

I am a bit surprised that Jon is able to get such a long run with 45% nitro, but these Cox motors can be weird beasts. Finally, perhaps something like this mix could be the ultimate 1/2A Texaco fuel??

[4% castor oil, 4% synthetic oil, 10% nitro-methane, 3% water, 15% petrol, 64% methanol].

The End

The Cox 049, Taipan 1cc and the radial mount with integrated tank.

I think you would all agree that Richards article has lifted our collective Cox knowledge above and beyond the norm. Thanks to Richard and Jon Fletcher for this highly informative and much appreciated series of columns. Look forward to many more in the future.

Editor.

PROPOSED MAAA R/C OLD TIMER RULE CHANGES

Report from Peter van de Waterbeemd.
Chairman R/C Old Timer NSIG

The title says a lot. The proposed rule changes were submitted to the MAAA in time for their Council Meeting in May of this year. No rule changes (ours or any other modelling disciplines) were considered by the Council as they ran out of time.

In following up with the MAAA Secretary and President, I have been advised that the rules would be considered at a meeting but as I write this, I am not aware of any meeting being convened.

When the proposed rule changes will be considered by the MAAA and when they will be published and when they can be used in future competitions is unknown.

I will give a synopsis of the **PROPOSED** rule changes, but I stress they are **NOT YET** approved. Please do not mis-interpret this message and assume these are the new and current rules. They are **NOT** until published by the MAAA. Also, the full set of rule changes cover some six pages of print so this is just a summary.

A total of 34 persons voted for the various proposed rule changes. Some proposed changes were fully supported, some were split between two camps and there were abstentions on some of the proposals. The proposed changes below were passed by a majority of those who voted.

Proposed Rule Changes 1 to 3 and 6; cleaned up errors and updated names of events and committees.

Proposed Rule Change 4; In an event round, after the penultimate flight has been completed, the CD imposes a five minute limit on the last competitor to become airborne. Score zero points if the model does not become airborne.

Proposed Rule Change 5; Defines that the complete model must come to rest entirely within the Landing Area of the defined Flying Area. Remarkably this is not a requirement of the current rules. It also requires that the complete model, not just some part, must be entirely within the Landing Area.

Proposed Rule Change 7; Allows devices to be fitted to models which alert the contestant in real time when a pre-set height has been reached.

Proposed Rule Change 8; Basically allows the CD the discretion to run an event over three rounds, with two to count towards a fly off. This has been used in many events over the years and will now be in the rule book.

Proposed Rule Change 9; This now requires the same testing of flight controls immediately prior to release for an R/C Old Timer Glider, as has been the requirement for IC models.

Proposed Rule Change 10; This proposed change relates to event rounds is applied across many sub sections and specifies the requirement that the complete model must land entirely within the Landing Area of the Defined Flying Area.

Proposed Rule Change 11; This proposed change relates to Fly Offs is applied across many sub sections and specifies the requirement that the complete model must land entirely within the Landing Area of the Defined Flying Area and that the longest flight time determines the winner.

Proposed Rule Change 12; Applies to the Texaco event and specifies that contestants using diesel engines supply their own fuel, those using two or four stroke ignition engines may use any mix of unleaded petrol, methanol and oil. Four stroke engines fuel use the fuel supplied by the event organisers.

Proposed Rule Change 13; Texaco. This increases the fuel allocation for diesel engines to 6.6 ml/kg (3.0 cc/lb) from the previous 4.4 ml/kg (2.0 cc/lb).

Proposed Rule Change 14; Duration. Decreases the engine run time allocation in two engine classes: Side exhaust two stroke glow from 25 sec down to 20 sec and for Antique Spark Ignition and Antique Diesel from 40 seconds to 32 seconds.

Proposed Rule Change 15; 1/2A Texaco. Additionally allows any other .049 Glow engine – non Schnuerle ported – manufactured before 31 December 1979 to be used and adds rules for filling the tanks for this new engine class.

Proposed Rule Change 16; 2cc Old Timer Duration. Replaces the current rule for fuel for glow engines and directs that Texaco fuel be used. The contestant may add more oil to the fuel if desired.

Proposed Rule Change 17; 2cc Old Timer Duration. Restricts the use of Schnuerle or PDP ported engines to be manufactured before 31 December 1970. It also increases the engine run allocation for this class to 25 seconds.

Proposed Rule Change 18; Standard Duration. Requires a mechanical stop on the throttle linkage to be fitted and imposes a zero flight time penalty for failing to fit the stop.

Proposed Rule Change 19; Gordon Burford Event. All engine run times to be 40 seconds.

I will let all know when the rules are accepted by the MAAA and when they will be published. Until then the 2017 rules remain the current rules.

Peter van de Waterbeemd
24 September 2021
Chairman
R/C Old Timer NSIG

DURATION TIMES

Duration Times is the official Bulletin of SAM 1788
SOCIETY of ANTIQUE MODELLERS of AUSTRALIA Inc.
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SAM1788 PRESIDENT'S REPORT.

From Peter Scott.

Are we looking forward to the next comp? Should be Parkes! Any questions on this speak to Condo: 0423 452 879. Pray for good weather and a lack of Covid. We would prefer vaccinated fliers.

The Nationals 28th December to 4th January are on, again vaccinated people. You will find it difficult to get accommodation unless fully vaccinated – this applies to Parkes, as well. The contests will be as previously posted. New Year's Eve at the farm will be a special night with lamb roast etc. Bring your night fliers! There will probably be a large bonfire. Any questions 'phone me: (02) 9624 1262.

My new glider is ready to be collected from Don and will give me something to do. Don has framed it all up for me. A Thunder King. All we need is to be 'let out' so I can collect it.

I have two new Phantoms ready for Canowindra next year. Please consider having a go. If you don't like the idea of whirling around, we will find a pilot for your 'plane. Browny does kits for these.

For the ½ A Texaco, give a thought to the new rules allowing a different engine (glo). Make a fuel tank, the same capacity as Babe Bee small tank and you, hopefully, will not have reason to complain about the reed valve Cox.

Peter Scott.

SAM1788 Competition Calendar

2021

November 13-14 — Golden West Old Timer Weekend - Parkes

Events:
Saturday: '38 Antique, Gordon Burford, Duration
Sunday: Cabin Scramble, 1/2A Texaco, Texaco

Contact Person: **Peter (Condo) Smith - 0423 452 879**

SAM 1788 SECRETARY'S REPORT.

From Peter (Condo) Smith.

Please Note:

Due to an editorial error the original program for the Golden West Oldtimer weekend in November has been corrected.

Gordon Burford Event will be the first competition on Saturday with **best 3 of 4 rounds.**

'38 Antique event will be the second competition on Saturday with **best 2 of 3 rounds.**

Duration, the third event on Saturday remains unchanged, **best 3 of 4 rounds.**

I am now the contact for information - Peter (Condo) Smith - 0423 452 879

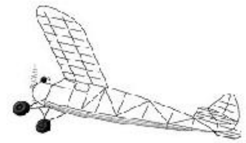
Sunday's events remain unchanged.

I will advise when the on-field camping costs for this year are known etc., once I hear back from the Parkes club.

See corrected advert for the Golden West Oldtimer Competition at Parkes on 13-14 November 2021 below.

Hope to see you there in November, Covid permitting.

Cheers,
Condo.



Golden West Oldtimer Competition - Parkes

Parkes Miniature Aero Club Inc.- Nelungaloo Field

13-14 November, 2021

** On field catering both days and camping on field **

Campers please note: power, toilets and hot showers are now available in the amenities block. Please let John Watson know (0427 522 920) if you intend to camp so he can open up Friday night.

Saturday:	9.30am Start:	Gordon Burford, best 3 of 4 rounds
		'38 Antique, best 2 of 3 rounds
		Duration best 3 of 4 rounds
Sunday:	9:30am Start:	30 minute Cabin Scramble,
		1/2A Texaco best 3 of 4 rounds
		Texaco best 3 of 4 rounds

Get together in Parkes Saturday Night

For further information contact Peter (Condo) Smith - 0423 452 879

Note: Modellers must produce a current MAAA membership card.

SCOTTIE'S LOCK DOWN REPORT

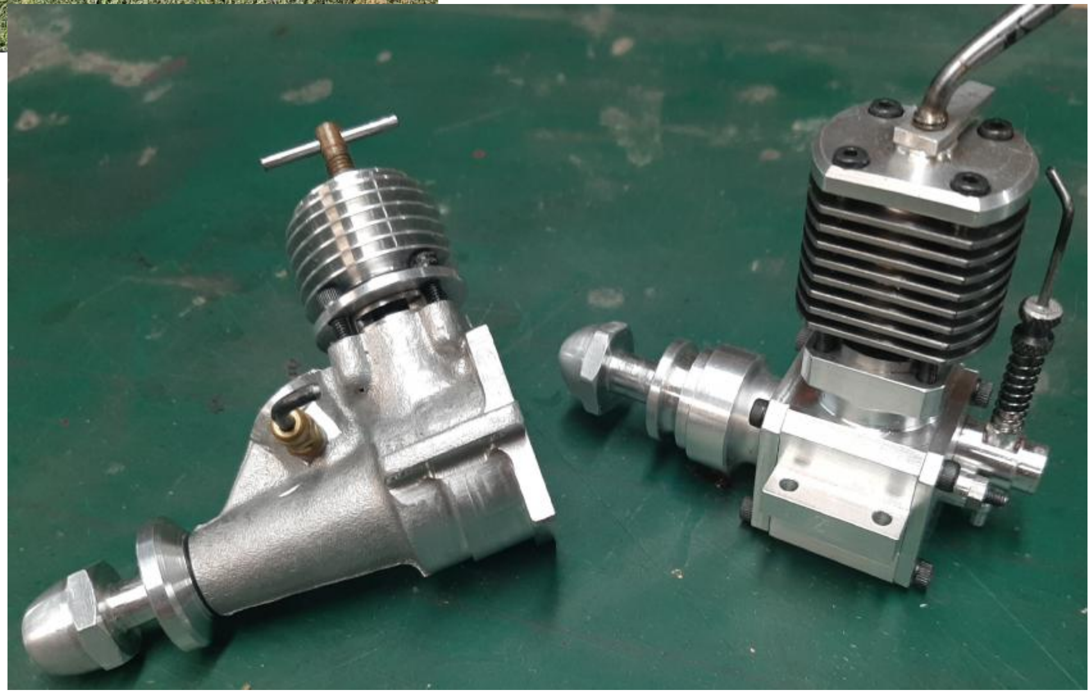
Sopwith Camel has been sitting on the wall for 4 years - now running and ready to fly. So, I will have to come up with a different New Year's resolution. It runs a RCV 58 horizontal engine and I have set this to not exceed ½ throttle. The good part of this 4 stroke, geared engine is that I can use a scale size prop. I will add small details after it has flown successfully - or not!

The Yoicks control liner, always wanted to build one of these – a Coasby design from 1949, for a Fox 59 or Nordec 60 shown on the plan. I have fitted a McCoy 49 on glo, but can run spark. This model was 90% complete at the end of the last lock-down a year ago. I have made the wings detachable to have access to the space above the tank to fit coil etc. I need time and a large dose of enthusiasm to bring this out.

Two KK Phantoms built for our SAM's Championships next year. I now have four so now I can lend some out so that more folk can have a go. One has a repo Elfin 1.49, another a repo Atom sideport.

I started on the Bristol monoplane, but I'm going to make a built-up tail instead of sheet on the plan. Engine is ED fury reed valve. It will have rudder and elevator servos to trim the model for Free Flight scale. I may finish this next lock-down!

All duration Free Flight models ready to go!!



KEIL KRAFT SENATOR CIRCA 1950

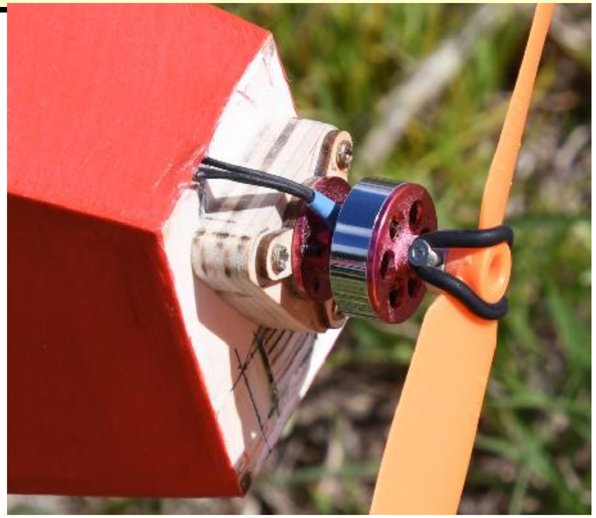
By Peter van de Waterbeemd.

The Senator is a 30" (76cm) rubber powered model kitted by the English company Keil Kraft from around the 1950s. I first built a Senator sometime in the early '60s when I was still at high school. It didn't fly very well as I didn't have a clue about free fright models nor about rubber motors. It has always been a source of annoyance that it didn't fly. Recently I was at John and Kathy French's house here in Eden when I saw a Senator hanging from the ceiling in their study and the memories came back. I decided to build one but still being a sceptic about Free Fright, I determined it would be R/C controlled and electric powered. Oh, how I have succumbed to the dark side!

The plan was downloaded from Outerzone, printed on eight A3 sheets and glued together. In true Waterbeemd fashion I decided that it needed to withstand all my transport and flying foibles and I set about "ruggedising" the model. Not too many changes really. The 1/16" square balsa wing and tailplane spars were upgraded to 1/16" square Queensland Hoop Pine (QHP) and similarly the fuselage longerons from 1/8" square balsa to 1/8" square QHP. The necessary modifications to the fin and tailplane to accommodate a rudder and elevator a la SAMs models and some changes to the front end to house an electric motor.

I initially planned to use a small electric geared motor which could drive a 12" prop as per the original but it came out way too heavy and with far too much thrust, (however, it might suit a 200% Senator). A much smaller motor was found in the box along with a 6A ESC. This was fitted (after some further front end modifications) and has worked very well.

Building small fragile models is a challenge for me and there were a number of ribs cracked along with fuselage spacers etc. My supply of CA did not want to "go off" and as a result the model was built using standard Titebond aliphatic glue. The covering is Solarfilm's Litespan. I've had it for years and I found it difficult to use, plastic film is much easier, but the latter would have collapsed the structure when heat shrunk. For adhering the Litespan the frame was coated in Mod Podge (instead of Stixit or Balsaloc) and it glued very well. In the photos, the undercarriage leg appears to be very long and it is, as it needed to clear the 13" wooden prop on the original.



The structure is pretty much along the lines of the plan other than fitting two micro servos, a Lemon 6 channel RX, a 6A ESC, the motor and a 500 mAH 2S LiPo. Couldn't find the small connectors used between the ESC and motor, so they were cut from the motor end and directly soldered to the ESC. Can't give any details on the motor other than the case OD is 18mm, 7mm long but I have no idea on the KPV. It runs a small plastic GWS EP-5x3 prop. Much to John F's amusement it is held on by a rubber band (read O ring). All up flying weight with battery was 5.65 oz, compared to 3.7 oz for the original rubber powered model.

Well, if flew beautifully! Straight off with no trim changes. Balanced as per the original on the third spar from the LE. Quite a fast climb on full power followed by a steady glide. The day was quite cold with little lift around and a moderate wind, up to the forecast 10kph. At one stage John and I watched as the model faced into the wind and came down 200' vertically as fast as an elevator. There were lots of downers but few uppers! It can be flown in very tight circles (using rudder and a fair bit of elevator) over the runway or, at one stage, in the only thermal that was found on the day, it was quite happy at 1000'. On this breezy day the extra weight may have helped with penetration.

We had two flights of around 12 minutes with a total of six minutes of motor run which brought the 500 mAH LiPo down to around 30%. The motor may be small, but it does use power. I'm looking forward to a calm, warm day when there will be some thermals.

The accompanying photos were taken and edited by John French. He used a large body Nikon with an amazing telephoto lens. Handheld and features image stabilisation so that the more distant shots are very clear. Thank you, John.

A delightful minimal cost project.

Peter van de Waterbeemd.

From: Paolo Rossi info@gruppofalchi.com

Subject: Gruppo Falchi's LIBRARY

Good morning to all friends and supporters.

It is with great pleasure to update you on the progress made in setting up our library thanks to the contribution of the material provided by the members, friends and sympathizers of model aircraft.

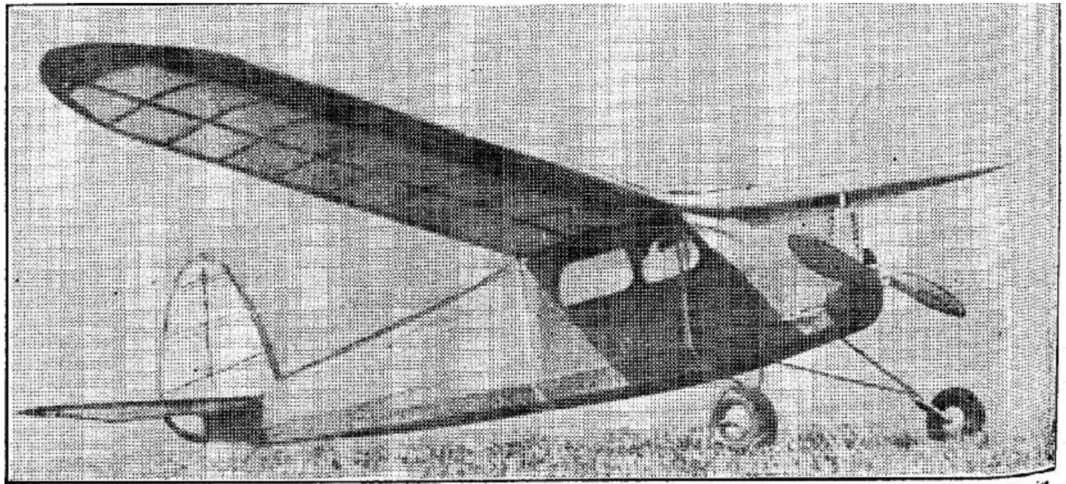
http://www.gruppofalchi.com/la-sede.html

On the page
http://www.gruppofalchi.com/biblioteca.html
you can find links to the drawings archive of gliders, powered airplanes (rubber + glow/diesel engines + jet, etc.), and the magazines mainly scale and photos of the books on the shelves.

We are at the beginning of a gigantic work as we still have to catalog over a thousand drawings of model aircraft as well as books with an aeronautical background and the contents of the Modellistica and Modellismo magazines, but with calm and serenity we plan to do so in the coming months.

We are proud to have received and to receive donations from families of model aircraft no longer among us and we continue to be available to receive this material in the future so that it is not disposed and lost in landfills and/or thrown in the wind.

See you soon and best regards,
Paolo Rossi.
La Segreteria
Gruppo Aeromodellistico Falchi Bergamo
www.gruppofalchi.com



This shot clearly shows that "Debby's" got a double camber wing that'll make her heaps better as a flyer! Not only that, but her graceful lines'll give anyone with an "eye for beauty" plenty of proof that she'll fly like a humming bird with "geared up" wings! Well, that's the story of "Debby," boys. So get to work before those swell thermals die down!

Making up Ignition Systems

From Tandy Walker.
<tandyw@flash.net>

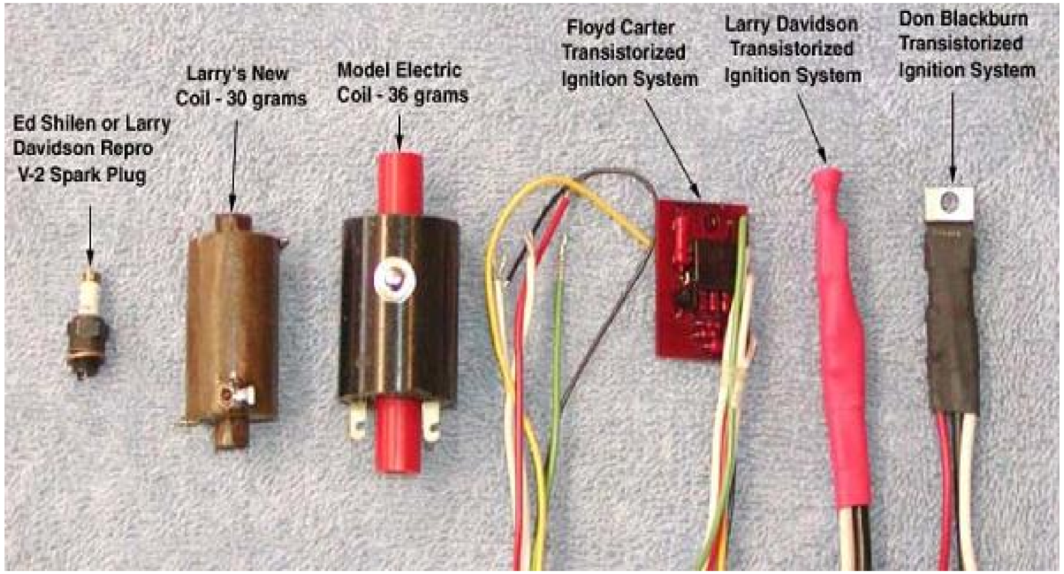
I have been working with a long time modeller up in Oklahoma helping him get started building Old Timer models for this year's SAM Champs. I sent him the picture below to show him what ignition components were available for his use. In particular, I pointed out Larry Davidson's new small lightweight coil and matching transistorized ignition system. Even though Larry's coil is smaller and lighter, his transistorized ignition system was bulky, a little long, and with very big wires.

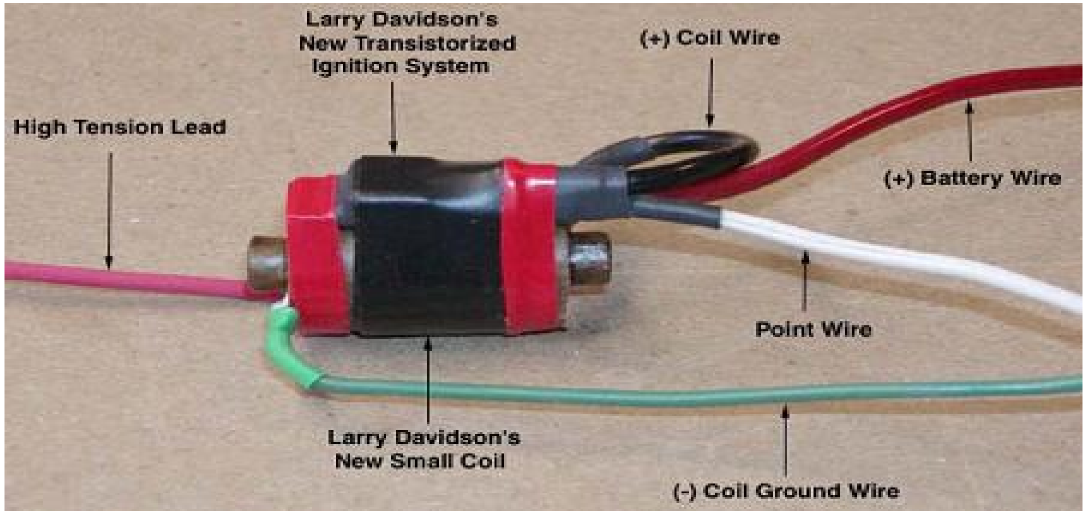
Since I wanted to use Larry's new small coil and transistorized ignition system in my new Playboy Junior, I started working with how to get Larry's components into a smaller package. One of the first things I did was to cut off the large diameter red heat shrink tubing encompassing Larry's transistorized ignition system to reduce its overall length. As it turns out, there is another shorter and smaller diameter piece of black heat shrink tubing underneath the red one.

Next I bound the transistorized ignition system to Larry's small coil with a wide band black plastic electrical tape into a single unit. I cut the large black wire to length, bent it around, and soldered it to the (+) coil terminal (which is clearly marked on the coil) as per Larry's instructions. I soldered a red high tension wire and a green coil ground wire on to the coil's terminal and bound the unit on each end with 1/4" red tape.

As shown in the picture opposite, this makes a nice little compact ignition unit that will fit up against the back face of the Playboy's firewall. I made a foam lined fixture to secure this ignition unit to the firewall.

(From DT185)





From Bob Angel **<samrcflier@verizon.net>**

Do you need a resistor in the High Tension Lead with 2.4 Ghz Radios? I'm using a 1K resistor instead of a 10K in an Anderson powered RC-1. Radio is the Futaba 6EX 2.4 GHz. I tested smaller resistors until I got down to under 400 Ohms, when I began to get some interference. Couldn't quite get to zero, so I settled on 1K as being a safe low amount of resistance for my setup. But that could vary in another installation.

This picture, taken in August 2002 at an Old Timer event at Maddens Plains, NSW, Australia, unveiled the late Harold Stevenson's new Cavalier. Harold not only made a beautiful job of building this model, he also built the Marden 60 spark ignition engine that powered it. It is still being flown but now with electric power.

History of Harold Stevenson's Custom Cavalier
Originally powered by Marden 60 Spark engine built by Harold
(but now powered by an electric motor)

From Phil Stevenson: Yes, that's Dad's Cavalier but I no longer have it. It has been passed around a bit. When Dad was in the nursing home we sold and gave away a lot of his models. He chose who would get them. (I still have his favourite Playboy, his 1/2A Playboy, his Nimbus and a Debbie, plus one of his 3m Sagitta gliders).

Dad's Cavalier first went to Richard Solomon, who rarely flew it. Then he gave it to Peter Pine who set it up for Electric Oldtimer Texaco. He auctioned it fully equipped to John ? from NAAS (now Scale Aviators) in Canberra, who I think still has it, because it has appeared in the background of some of his Scale event photos. All transactions were after my approval.

I am always happy to see references to Dad and his models in old and new modelling postings.

From Peter Pine: Yes - John Armarego bought the Cavalier at auction when I was raising funds for my trip to Slovakia in 2017 to attend the F5J Electric World Championships with the Australian Team.

I know he flew it at least once, but have heard no more and no longer have contact with John as he kicked all my glider-flying friends out of "his" club. We moved our event to Cootamundra as he would not have us back.

Attached is a photo of me, actually taken at the NAAS (Scale Aviators) field, near Canberra, where I used it to fly in Electric Oldtimer Texaco.

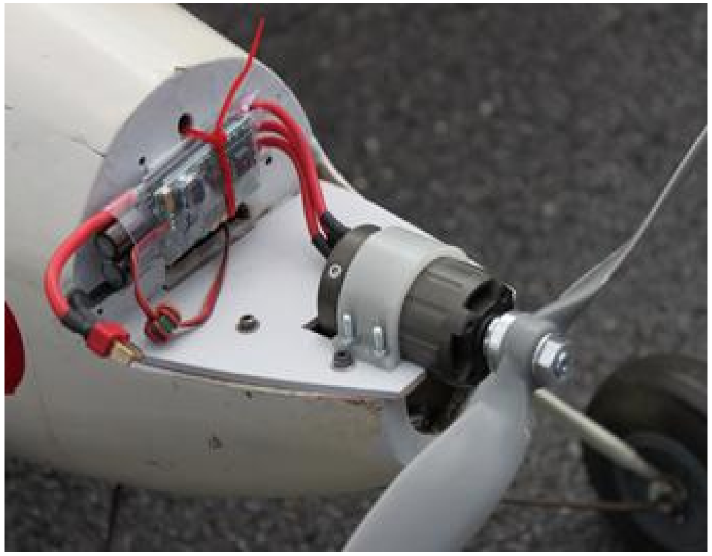
Though I flew the Cavalier in Electric Oldtimer Texaco many times, and always managed to get into the fly-off, I usually did not do well against the light-weight, big machines, that could make good use of thermals.

However, in the year that NSW ran the MAAA National Championships and allowed Special Interest Groups to run their own events at different locations and different times (sorry, can't remember the year), the Australian Electric Flight Association ran Electric Old Timer at Cootamundra and the weather was windy. All the light-weight machines were being blown away and I won the event with Harold's Cavalier!

Some more photos - showing the conversion to electric power with an MVVS outrunner in a case strapped where the glow motor used to be (no external moving parts on the motor).

The motor battery was inserted before the wing went on. I would poke a stick through the gap under the ESC, tape the lead from the battery to the stick, and then pull the lead out through the narrow slot as the battery so that it could be plugged in to the ESC.

The in-flight shots of the Cavalier were taken at the NAAS (Scale Aviators) flying field near Canberra, A.C.T. Australia.



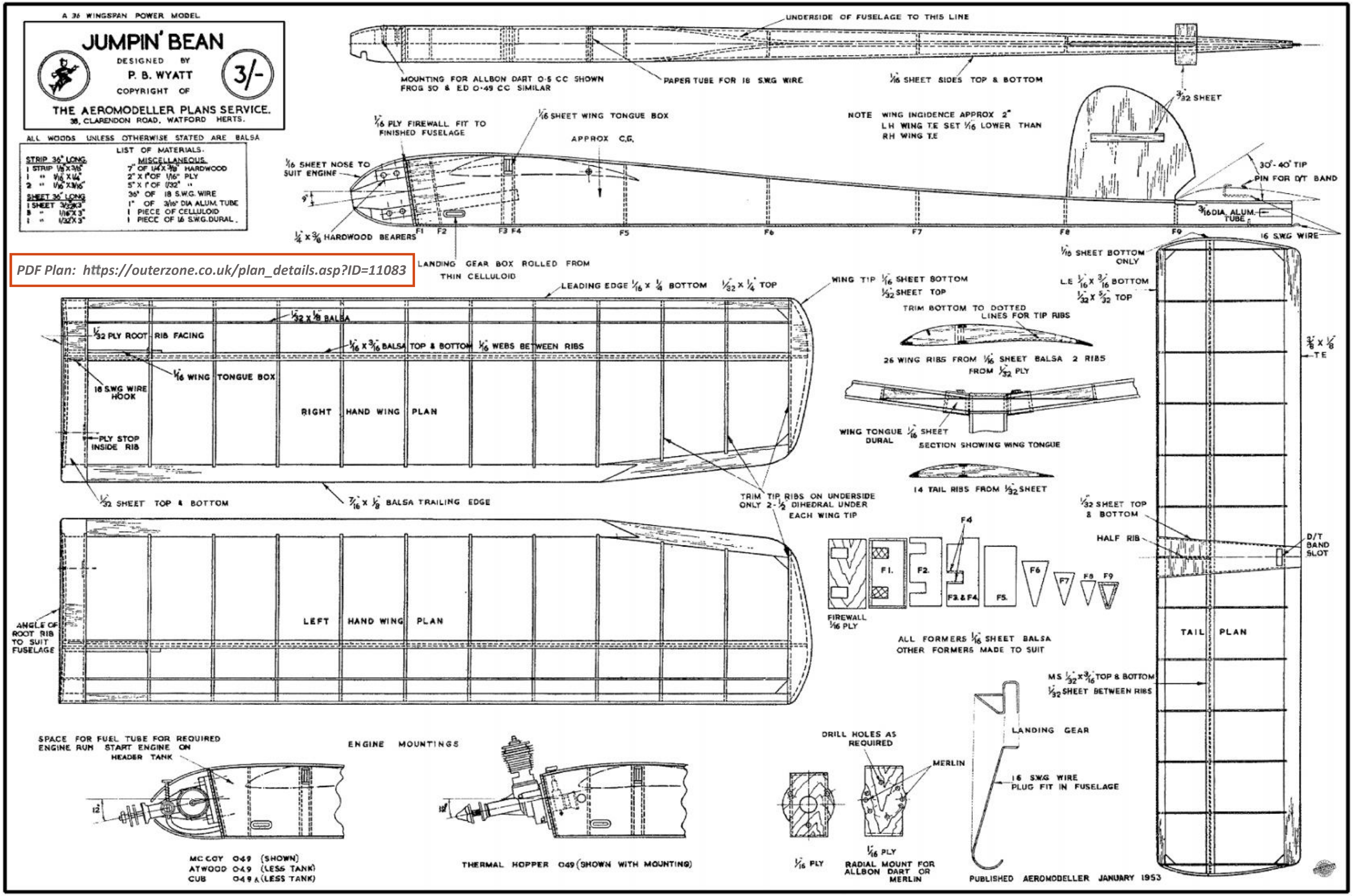
Nearly ten years later another Cavalier………

The **CUSTOM CAVALIER** joint project by Jim Bierbauer and Dick Fischer first took to the air nearly a year ago. But it was semi-grounded for several months while the Forster 99 engine got sorted out. The RJL replica had a tight front bushing which needed more clearance. But one final discovery was that a cold spark plug fouls very quickly in a Forster 99. So, note well, you Forster 99 users: The relatively slow running 99 with its large cooling fin capacity works OK with a standard Champion V-2, but not the VR-2 (a cold racing plug). Or for those 99's that use the larger 3/8" plug that would be V or V-1 good, but VR-1 bad.

Last Saturday, the Cavalier took off with authority, and using less than a full Texaco fuel allotment put up a twenty minute plus flight with three pilots taking turns at the controls. It was a good day for thermals and the flight could have been longer, but even the alternating pilots decided it was time to quit. Despite being more than a pound overweight, the big ship should be competitive in the Texaco event.

From The Coastal Flyer - SAM 26 USA Newsletter - August, 2012.

"Did you or did you not tell me to plug in the receiver?"



STRIP 36" LONG.	MISCELLANEOUS.
1 STRIP 1/8 x 3/16	7" OF 1/4 x 3/8 HARDWOOD
1 " 1/16 x 1/4	2" x 1" OF 1/16" PLY
2 " 1/16 x 3/16	5" x 1" OF 1/32" "
SHEET 36" LONG	36" OF 18 S.W.G. WIRE
1 SHEET 3/32 x 3	1" OF 3/16" DIA ALUM. TUBE
3 " 1/16 x 3"	1 PIECE OF CELLULOID
1 " 1/32 x 3"	1 PIECE OF 16 S.W.G. DURAL.

PDF Plan: https://outerzone.co.uk/plan_details.asp?ID=11083

JUMPIN' BEAN

by Peter B Wyatt

A 36" contest design for .5 to .8 cc power

From Aero Modeller January 1955.

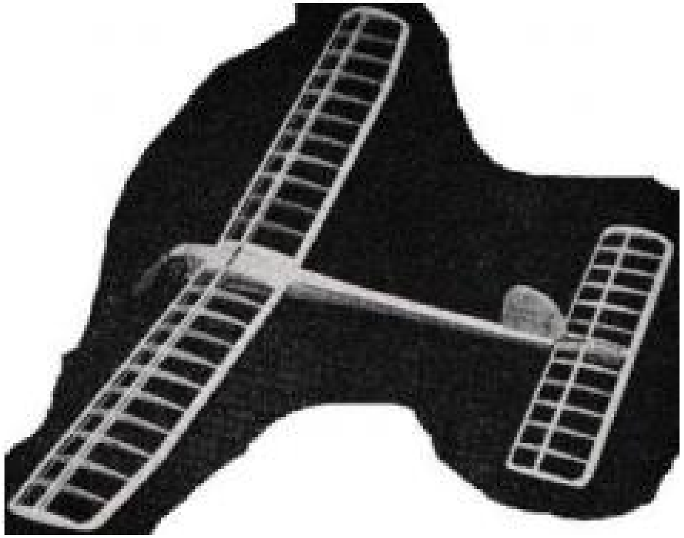
The "Get up and go" characteristics of the Ipswich power model community is well-known, and this example from Peter Wyatt's stable should be just the model many readers have been waiting for. It's a point-fiver with the zip of an open power contest design, capable of giving the bigger boys a run for their money, and yet small enough to pack away in a suitcase. This particular model layout was first developed in 1.5 c.c. form as an alternative to Pete's usual pylon jobs. The 0.5 c.c. version shown has been designed from a second 1.5 c.c. plane which proved very consistent and easy to trim. Main deviations from the first two models have been to substitute a single fin in place of twin fins and dihedral for polyhedral. This allows "Jumpin' Bean" to almost fit your hip pocket when dissembled and to take plenty of punishment in rough weather.

Fuselage. The, construction of "Jumpin' Bean" is quite straightforward and does not depart from normal practice. First join up 1/16in. sheet sides with formers F1 and F9 shown. Cement in engine bearers using "Durofix" and the rest of the formers to suit the sides. Fix wing and undercarriage box in place, after binding them with thread, then the paper tube to take an 18 s.w.g. wing incident peg, and sheet top and bottom of fuselage, except for the top of the tank bay. "Durofix" 1/16 in. ply bulkhead in place and sheet the nose to suit the engine used. Radial mounting bulkheads are given for a variety of suitable American and British engines……

Cover fuselage with lightweight tissue and give 3 coats of dope and one of fuel proofer; not forgetting the inside of the tank compartment, between Fl and F2. Find a length of fuel tubing which gives 15 second engine run, using a header tank for starting, and coil this tube into its compartment. At the rear a 3/16 in. diameter aluminium tube is fitted "Ipswich" fashioned to take the forward, unburned section of the dethermaliser fuse. Add the sheet Fin, taking care to insert the cross-grained anti-warp piece.

Wings. Assemble the ribs on the bottom leading edge and lower part of "I" spar, which is suitably lifted 1/16 in. from the board, and using 1/16 in. sheet spacers to form the spar web. Fit the trailing edge at the appropriate angle of droop. Place the rest of the spars in position and build up the 1/16 in. sheet tongue box at the wing root, add the upper leading edge.

Assemble wings onto fuselage and cement root rib into position to suit dihedral angle. Firmly cement the retaining hooks in place, the ply stop for the 18 gauge peg and sheet cover the wing root panel. Cover wings with lightweight Modelspan and give 3 coats of dope. Note that each wing has slight washout into each tip, arranged by the system of shortening the ribs as detailed on the drawing. The wing tongue is from 1/16in. Dural, and is completely detachable from the fuselage and wings. Fill in the portion of wing boxes as shown.



Tailplane. This is "I" mainspar construction, assembled as for the wings. Cover with lightweight Modelspan and give 3 coats of dope.

Trimming. "Jumpin' Bean" has about as much power as it can handle with a hot 0.5 cc c.c. diesel mounted in front, but there is plenty of tolerance in adjusting.

The model was originally trimmed for left climb and left glide, but this has since been altered to right climb, and right glide for quieter performance.

Commence by obtaining a tight-right glide. This can be achieved by placing the T.E. of the right-hand wing about 1/16in. to 1/8 in. lower than that of the left wing and tilting the tailplane until it is almost in line with the right-hand wing. If the nose shows a tendency to drop suddenly on the glide, increase the right-hand wing incidence slightly.

Above is a Jumpin' Jack for 2cc Duration by Jim Rae with some success. See next page for Jim's comments about his model and suggestions for anyone thinking of building one. Also two more photos.

MY JUMPIN' BEAN
From Jim Rae.

My Jumpin' Bean, which I built in 2009 for 2cc Duration, is at 130% of the original which means it is just under 1200 span. It was powered with a Taipan Series 66 1.5cc diesel which, incidentally, is a very good one.

At 130 % the fuselage is not very big and required a shoehorn to get all the gear in. I had to write away to get a very small receiver. This was in the days of 36 meg and the standard receiver just would not fit. If I did another one for 2cc I would probably go for 140% because there isn't very much model there.

The engine run for it in 2cc is 30 seconds and at the end of the run it gets pretty hard to see. There is no way I would fly it as a Burford model because at 40 seconds it would be un-seeable and un-controllable.

Apart from the problem of fitting all the radio gear in the only problem during the build was building a straight fuselage. It transitions from a rectangular section to a triangle section and it was very difficult to get it straight. I seem to remember cutting along the point of the triangular section an re-gluing it to pull out the banana.

I used exactly the same engine down-thrust as per plan. Looks a lot but it worked for me.

One thing I would change if I built another one is the wing joiner. I built it as per the original, two wings meeting the fuselage sides with a joiner/dihedral brace going through the fuselage.

The joiner was flat on top, flat on the bottom through the fuselage and then tapering to a point at the ends which gave the dihedral. This meant that the boxes in the wings had to be tapered to accept the joiner which is fine except that they also have to be a snug fit because if they aren't and the wings have a bit of slop the model can become very twitchy on the climb. Ask me how I know, so I fixed it. If I did another one I would use wire in a tube.

Completed and ready to go the model weighed 14 3/4 oz. On the whole a nice model but as I said if I did one again I would go a bit bigger.

Jim Rae

THE OWEN MATE
Designed by David Owen.
(*Author possibly Ed Holly*)

In 1989 David produced a kit of parts for the amateur model machinist to build this engine. It used an extrusion for the crankcase which incorporated the bearer mounts and a "fattening" of the upper crankcase area where the cylinder hold down bolts went through.

The difference I believe between this engine and most other amateur build ones is the fact that the Owen Mate at 2cc develops the equivalent power to the proprietary engines of the 60s and 70s. David achieved this by designing a process of machining the cylinder that gives it a transfer port reminiscent of the legendary Oliver Tiger.

It was this design that led to the production of the 6 engines displayed at the Oily Hand weekend 2016. (The 6th is in the 160% Tomboy.) The lack of availability of the extrusion these days is no reason why the budding machinist shouldn't tackle making one of these engines.

All these engines use David's wonderful design for the crankcase to cylinder transfer port.

Engine No.1 The 1st engine's crankcase in the line-up was made from a solid billet of aluminium. This was the 2nd engine I made, the first was a very simple Boll Aero 18, an ideal first engine that teaches you some of the skills required in this absorbing pastime. To produce the crankcase took about 30 hours and total build was about 80 hours. Finished, it ran beautifully and in the process I got to know David and my admiration and respect for him, as indeed everyone who knew him, grew from there. He showed me how to lap a piston and bore, which for these engines is obviously a critical factor.

Engine No.2 The next engine was a modification of the Owen Mate to bring it up to a 2.5cc engine and suspend the crankshaft on twin ball bearings. To reduce the machining time for the crankcase, I made a pattern and had it cast by Camcast at Kirrawee, they also heat treated the casting and it machined very nicely as a result. The machining time for the case reduced from 30 hours to 12. The bore and stroke were increased by 1mm each to give 2.46cc. The engine runs beautifully, but surprisingly doesn't seem to give 20% more power than the original!

Engine No.3 The next engine is another attempt to reduce build time but back to using a billet. This time the nose was made bolt on. The target was build the engine in under a week and under 40 hours. This took 15 minutes short of the week and 32 hours – mission accomplished!

Engine No.4 I have always wanted to build a twin and I looked around and there was nothing too simple, so I designed a 60 degree Vee twin. On paper you get about a 25% loss of efficiency with this as a 2 stroke common crankcase, but as it turns out it is probably less than that as the down-coming piston supercharges the crankcase pressure and No1 cylinder receives much more filling than normal, but to the detriment of No.2 which gets only a small filling. However the engine has proven by far the most powerful of all the engines I have built.

Engine No. 5 As a kid I always looked in Hobbyco's window at that green headed Taplin Twin, which was about 15 pounds. On 2 bob a week pocket money it was going to be a lifetime of saving to afford one which I never could, so it was inevitable that I would make something like one now that I had a few others done. I wanted to support the primary crankshaft on ball bearings, but make the engine easy to disassemble in case something untoward happened. So I designed the rear crankpin's disc to be a bolt-on affair, using 4 x 2mm bolts. I can tell you tapping those holes was just a little stressful – if the tap broke and 2mm is tiny, then throw it away and start again. In the end it all worked, and I have to say David did seem impressed that this was achieved. Unlike the other engines, this one is a sideport, or as David preferred to call them a piston port engine.

Engine No.6 This engine is in the large blue Tomboy, and was built specifically to power a model such as this. I had tried a throttle on one of the other Owen Mates and realised that the venturi size is super critical for diesels, better to be too small than too big where they simply stop running on wide open settings. I actually bought the throttle off David and we discussed this aspect at the time.

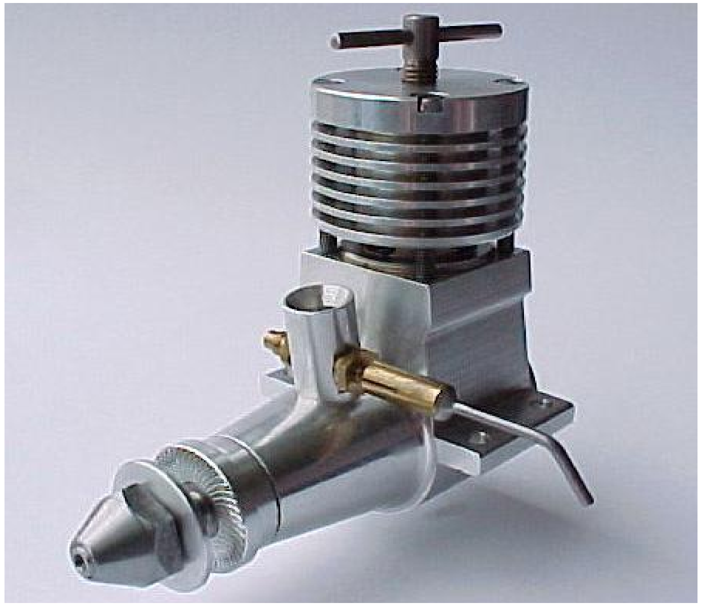
The engine was yet again simplified in the crankcase department, doing away with the side bearers for a radial rear mount, which I find quite a good way of mounting engines anyway. Other than that and again a bolt on nose, it is pure Owen Mate and build time was about 30 hours.

It will be very interesting to see how robust and long-lived this engine is. David put an estimate of 50 hours on the original Mate, but in discussing this with him he agreed that was being very conservative, we agreed there is no reason it shouldn't last as long as any contemporary engine in the hundred plus hours range.

So there you have it a few engines based on a wonderful person's simple but incredibly effective design.

David, thank you so much.

Name	Mate	**Designer**	David Owen
Bore	13.3mm	**Stroke**	14.3mm
Type	Compression Ignition	**Capacity**	1.99cc (0.121 cuin)
Production run	sold out	**Country of Origin**	Australia
Photo by	Ron C	**Year of introduction**	1989



SAM 1993
SOUTH AUSTRALIA
(Formed 1993)

COMMITTEE

President: Rex Brown 0468 448 375
Secretary: Peter Leaney 8337 2936 pleaney@bigpond.net.au
Treasurer: Bill Britcher 0434 775 173 bullydog@iinet.net.au
Meetings held at the home of Rex Brown from time to time

OLDTIMER REPORT - SAM 1993.

From Max Newcombe mnewc@bigpond.com

In South Australia we have been in and out of some lockdowns but with little effect on us here in the Barossa Valley which is about an hour from Adelaide and apart from having to wear masks whenever we go shopping or other places in the town all seems to be going along OK.

We just don't want to have what is happening in with the Delta virus in the Eastern States and although now that we have had our full dose of vaccine we are still being very careful to keep to the health advice and rules.

Nothing is happening here with SAM 1933 except that the Willunga MFC (South of Adelaide and comprises all the Old Time flyers and a couple of others) have lost their field and also a few have decided not to continue flying, mainly for health reasons, so those left, Rex Brown, the Britchers and myself are the only ones doing anything, but just not at the moment.

Condo has been sending notes out about the slight change of programme to an event at Parkes, NSW, in November I think, but that is all I have seen of late.

However, I want to build a new glider – a very nice looking French design that will be competitive.

Browny was telling me he had requests for three Thunderkings kits after the Canowindra Champs, so I might have to defend my last win there with the same model – just for fun?

To contact me the land line is 08 85621471 which will go for a while to keep NBN and my desk top PC going. My mobile is 0490 081 613.

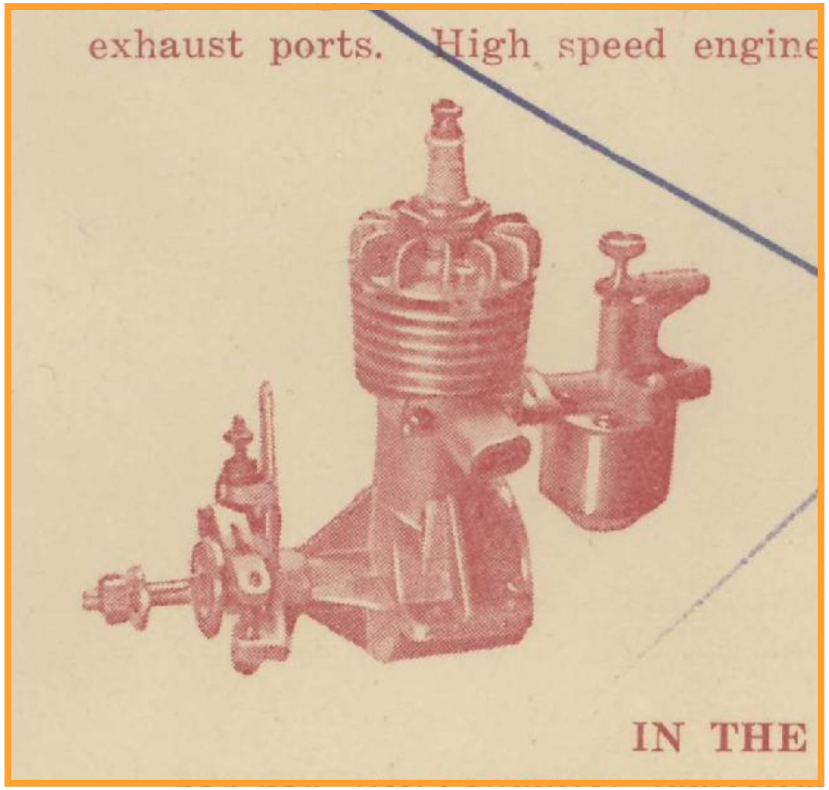
Regards, Max Newcombe.

FROM MARIS DISLERS.

jamd@adam.com.au

Chipping away at the non-Burford Aussie engine research.

The latest "finds" coming from the late Rees Jones estate stuff in NZ. Such as an original Model Dockyard 1950 price list. Only seen it in poor quality scanned form, but the photos of engines on offer are quite clear.



Of particular interest is the photo of the "CUB" Petrol Motor. Similar, but not the well known twin exhaust engine by that name.

This one differs by having side exhaust on LHS with bolt-on extension and cross-flow porting, while Cubs have twin exhaust DYNO/Mills style porting layout.

Otherwise looks the same.

I believe it is known as the "Gnome" and sold by Central Aircraft, a rival business in Melbourne.

Any information from TAT readers in that direction would be terrific, along with any other Australian model engines.

In other news, we have test run a Cub engine in good shape with good results. Very easy and consistent to operate, usable power output. Also a blueprint of early Model Dockyard Vanguard Pup engine showing a blind cylinder bore - not the usual type with screw-in finned head.

Cheers, Maris.

P.S. Did I mention I'm collecting Serial numbers for all Model Dockyard engines as a way to estimate likely production volumes.

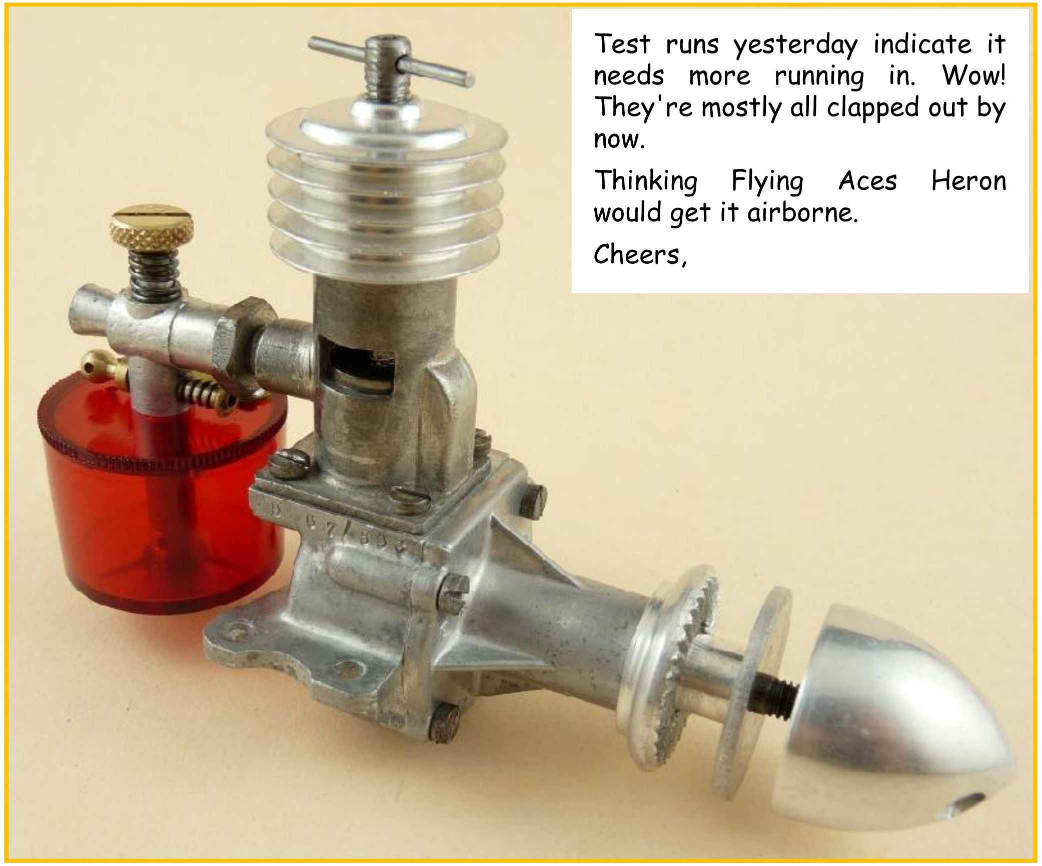
This is not straight forward as there were several builders involved with their own numbering systems.

Cheers, Maris.

MORE FROM MARIS DISLERS

jamd@adam.com.au

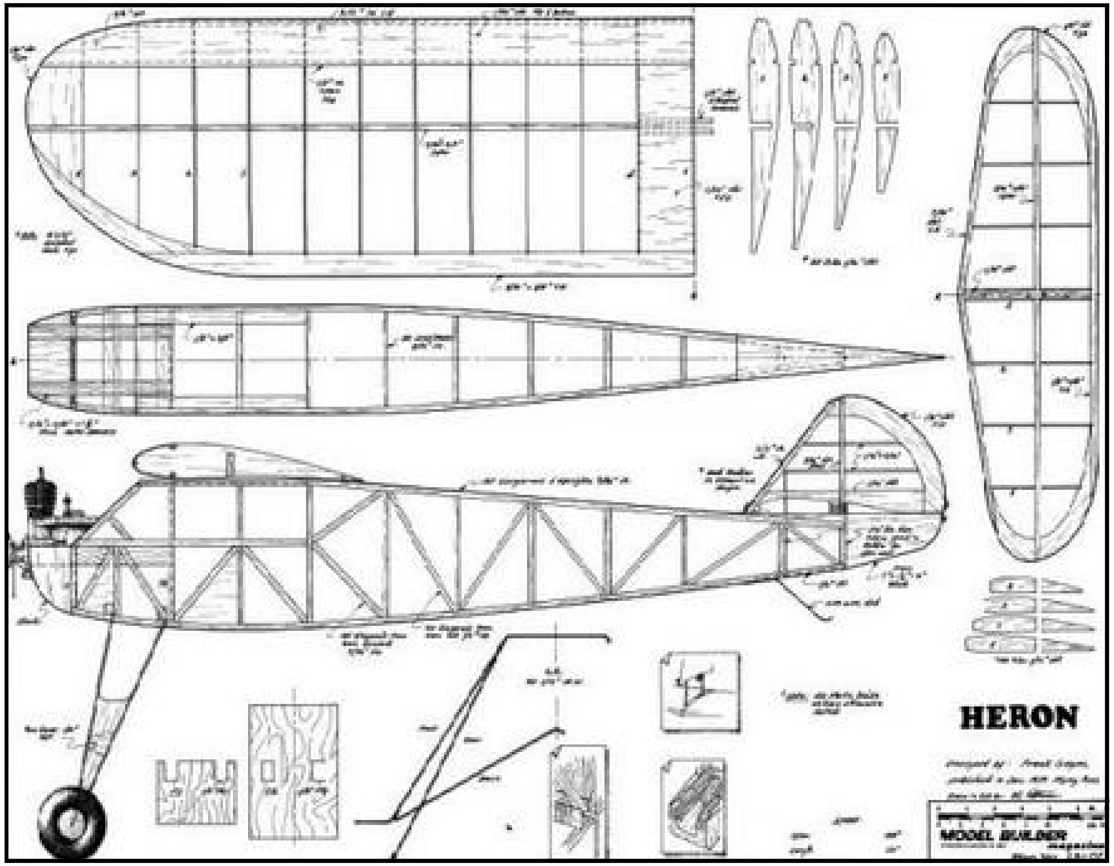
Here's a photo from my brag book. A hand-me-down ED Competition Special via John Peric. All cleaned and made whole again.



Test runs yesterday indicate it needs more running in. Wow! They're mostly all clapped out by now.

Thinking Flying Aces Heron would get it airborne.

Cheers,



Sarina Aero Modellers Inc.
21st Old Timer Competition
at
Edwards Flying Field,
Sarina QLD Australia 4737
10th - 11th of July 2021

Well the Weather was kind to us this year, as was Covid to a point, enabling us to run our 21st Old Timer Championship this year.

Last Year on the suggestion of our CD Mike Rankin we ran a Postal event to keep the event alive, with the invitation being restricted to those who had attended our event during the three-year period prior to 2020, numbers where restricted to keep it manageable for our small club. The young man from Orange in NSW, Vince Hagarty, ended up the winner of the postal event in 2020.

The winners of this year's event are further along in this article.

For this year we invited the Edwards Family who own the land we fly on to help us celebrate 21 years of flying Old Timer models in Sarina. Dale and Carol Edwards gave us permission to start flying at the field we now enjoy back in July 1998. We have been there since under their blessing, with our next big event being 25 years of operation at what we have named "Edwards Airfield". Carol Edwards cut a special cake for us on Sat 10th with help from her Granddaughter Charlotte, daughter Jane and son in-law Dan.

As this year was a milestone for our Comp and our Club, we also invited our local State Member of Parliament, Mr. Steven Andrews, to say a few words and open our Texaco Competition on the Saturday morning, with a blast from the air horn. Steve was very supportive of our Club and the event and has held an interest in Aviation since his youth.

All up we had 25 Competitors in Texaco, 17 in Duration, 20 in Burford, 7 in Senior Catapult Glider & 3 in Junior Catapult Glider. All Juniors received a small prize and plenty of encouragement. Unfortunately, we had one Burford fly away, a shame to lose a Taipan Diesel which are becoming harder to acquire. One chopped up finger "since recovered", and two other broken models from memory. No doubt if I have any of the above incorrect someone will inform me.

As a part of the general weekend activities, we conduct an Electric Radian Glider event on the Saturday afternoon after Duration. The Gliders have to use the standard factory motor and speed controller, batteries can vary. Gliders of a similar type may also be used, but no high-performance type gliders. There are no trophies for this comp, it is well supported and hotly contested.

Some of the attending Modellers and Locals from Sarina have built Half/A models and an impromptu fly-off was held on the Friday afternoon late, prior to the Competition which began on the Saturday. The little Cox engines have been trying some modellers out "as in patience" but with persistence some respectable flight times have been achieved.

The Catering for our event is from the Friday evening meal to Sunday Lunch inclusive. We chose July for our Competition as it's about as cold as it gets up here in central and coastal Queensland and we love sitting around the fire talking rubbish with the best of them. Many good ideas have their foundation from sitting around the camp fire with a beverage of choice.

Sarina Aero Modellers Inc. would like to again thank those who have supported our Competition from Ballarat Victoria to Innisfail north Queensland, and all in-between, over the past 21 years, and look forward to the years ahead supporting each other in this wonderful hobby/sport however one sees it..

Regards,
Nev Parchert.

Group photo of all competitors with Local Member Mr. Steve Andrews

Clockwise from top left:

1. Aerial view of Texaco pits.

2. Pilot Briefing Saturday morning.

3. Texaco pits.

4. Cutting 21 years of Old Timer Competition Cake. Carol Edwards and Granddaughter Charlotte, back row Craig Rankin, SAM President Nev Parchert, SAM Safety Officer Andrew Ryder, Vice President SAM, CD Mike Rankin.

5. Texaco winner John Urry from Townsville.

6. Local MLA Mr. Steve Andrews about to blow the Airhorn to start Competition.

Results - Sarina Aero Modellers 21st Old Timer Competition - 10th - 11th of July 2021

TEXACO
1 John Urry - Townsville
2 Mike Rankin - Sarina
3 Andrew Ryder - Sarina

DURATION
1 Warren Hathaway - Brisbane
2 Brad Turner - Brisbane
3 Craig Rankin - Sarina

BURFORD
1 Don McKenzie - Rockhampton
2 Gary de Chastel - Rockhampton
3 Geoff Black - Rockhampton

SENIOR CATAPULT GLIDER
1 Craig Rankin - Sarina
2 John Urry - Townsville
3 Vic Whitmore - Townsville

JUNIOR CATAPULT GLIDER
1 Connor Rankin - Sarina
2 Mackenzie Rankin - Sarina
3 Anthony Leonard – Sarina

Clockwise from top left:

1. *Duration Playboy on its way skyward.*
2. *From Innisfail, Les Morris launching and Chris Morris flying a Dixielander in the Burford Event.*
3. *Burford model, owner unknown.*
4. *Nev Parchert with his Dixielander in the Burford Event.*

Top left: Mackenzie Rankin.

Top Middle: Anthony Leonard and Mackenzie Rankin preparing their catapult gliders.

Above: Juniors Mackenzie Rankin, Anthony Leonard and Connor Rankin launching in the Junior Catapult Glider.

Top: Anthony Leonard receiving his prize for Catapult Glider.

Above: Mackenzie Rankin receiving her prize for Catapult Glider.

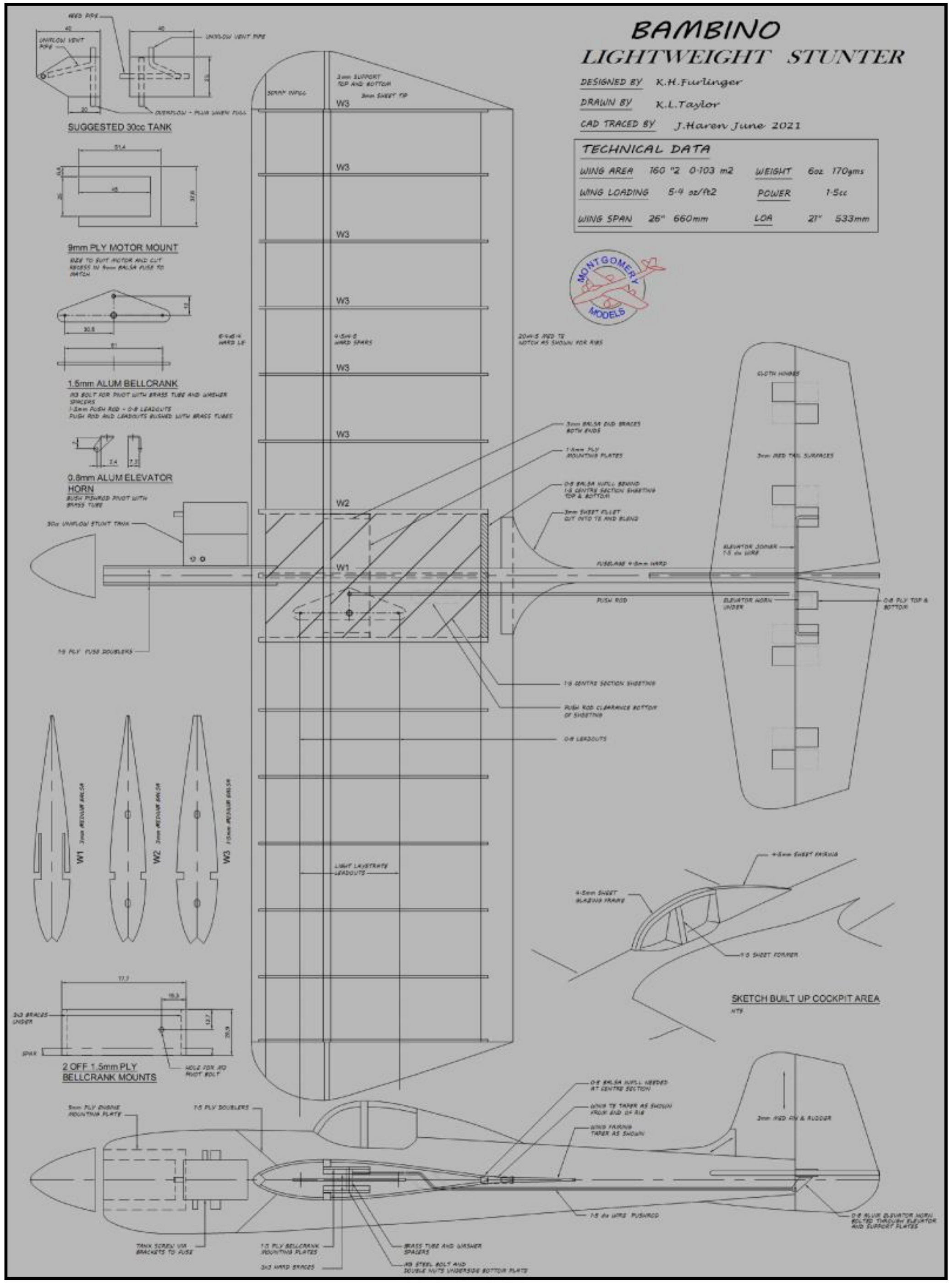




Top LtoR: 1. Shane from Townsville launching catapult glider. 2. CD Mike Rankin launching catapult glider. 3. Sarina Aeromodellers very busy Secretary/Treasurer and Modeller Marianne Rankin.

Above Left: Trophy and Prize Presentations.

Above Right: Contest Winners Rear Row LtoR: Les Pelley, Craig Rankin, Brad Turner, Warren Hathaway, Vince Whitmore, Geoff.
Centre Row: Andrew Ryder, John Urry, Mike Rankin, Don, Gary de Chastel.
Front Row: Anthony Leonard, Connor Rankin, Machenzie Rankin.



PDF Plan available: https://outerzone.co.uk/plan_details.asp?ID=13139

BAMBINO by KH Furlinger from Montgomery Models 1950 26in span

From John Haren: I did a CAD trace and correction for this 1950'ish vintage Australian Lightweight Stunt Control Line model for 1.5cc engines for a fellow who had a poor jpg image of the plan and wanted to build one. I believe Montgomery Models was a Melbourne based company but do not know how long they lasted or how many models were designed. Bambino is a relatively simple model and although I have made a few alterations, it is very close to the original design.

The Infamous GHQ Engine

From Roy Bourke, Canada.

It is ironic that, of the thousands of designs of model aircraft engines that have been produced worldwide, one of the most famous is the GHQ Aero .52 cid. This was a spark ignition engine that outsold the pioneer of all model engines, the Brown Junior. Over 100,000 of these heavy cast-iron GHQ's were produced. It was the only American engine that was continuously manufactured and available throughout World War II. And today, any engine collector that wants one should have little problem in finding one in mint condition. GHQ's have a reputation of never wearing out because so few were ever made to run, much less to successfully fly a model airplane.

The GHQ was born the Loutrel in the early 1930's, quite a decent engine for the time but not really in mass production. In 1934 its designer, Pete Loutrel, sold the design to the GHQ Model Company, a subsidiary of Americas Hobby Center, one of the oldest and largest mail order hobby houses in the United States. GHQ manufactured quite a decent and extensive line of flying scale rubber kits in successful competition with Comet, Cleveland and other famous kit manufacturers. But the company's reputation started its downward plunge when the GHQ engine was introduced in 1936.

The GHQ simply wouldn't run, or at least was very difficult to get running. Some say the engine was ported to run clockwise (in fact some claim it wasn't ported at all, as a fuel saving measure!).

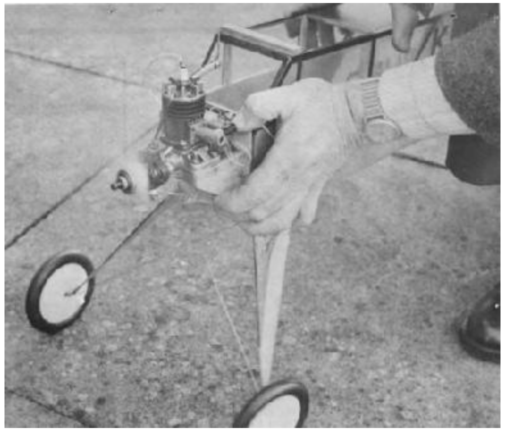
Others claim the problem was the timer, which offered too much resistance when run counter-clockwise.

Whatever the reason, one can just imagine 100,000 modellers each flipping a prop endlessly in the vain hope of converting the occasional hard-earned "pop" coaxed from the engine into a continuous burst of energy that lasted long enough to propel his model skyward. But it was amazing what low price and wartime availability did for sales of this cantankerous engine. If you had lived in the 1930's, when $20.00 represented two weeks' wages, which engine would you have bought? A Brown Junior at $21.95 or a GHQ at $12.50? And if you were really frugal, you could get a kit to make the GHQ engine for $8.50! Then as word started to get around about the GHQ's reluctance to run, the price was dropped to $5.00 for the kit, and thousands of gullible buyers believed GHQ's advertised performance claims (truth in advertising didn't exist in the 1930's!!).

American involvement in WWII came along in 1942, and with it severe shortages and restrictions on the supply of metals (even pot metals) that were needed for arms production. Virtually every US model engine manufacturer ceased production, every one that is except GHQ! So it was pretty easy for the engine-buying public to conveniently forget the GHQ's growing reputation, GHQ Guts and succumb to the hopes of getting a gas model flying with an available engine (whose price had now climbed back up to $20.00!). And the GHQ remained in continuous production throughout, except for a brief period when the entire staff of the GHQ production shop (a garage in the Bronx) was fired. (GHQ's were assembled by members of a motorcycle gang hired for the purpose, who were caught spiriting engines out the side door in their lunch buckets and were immediately fired en masse!)

With the end of the war came a huge resurgence in manufacture of model engines by reputable companies that were quick to respond to the needs of the multitude of engine-hungry modellers at home or returning from wartime duty overseas. These were good engines, engines that actually ran, and their success and popularity soon sounded the death knoll to sales of the now-infamous GHQ.

If you ever see a modeller wearing a hat with the lettering "GHQ Racing Team", don't laugh too hard! There are modern modellers who have taken on the challenge not only of getting GHQ's to run, but to actually use them in a special class of R/C pylon racing! And if you really want to get some performance out of a GHQ, and have access to machining facilities, I understand that replacing its piston and cylinder with the piston and sleeve of a Veco .61 will make an engine that really smokes! Wouldn't that be something! A Lanzo Bomber screaming skyward, powered by a customized GHQ !!!!!



GHQ's really do run - here's living proof.

"Eut's Toot" From SAM 30's Newsletter by Eut Tileston

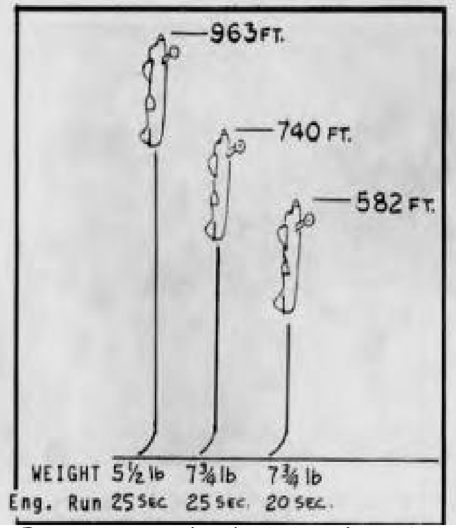
As President of SAM 30 I will be writing a column for the newsletter. Ideas for topics of interest to our members will be appreciated.

This month I'll explain why my Lancer was able to out climb Kincy's more powerful Anderson Pylon at our Fall Annual. The chart shows the effect of weight and engine run on the altitude reached in the L.E.R. events. This chart was prepared using actual flight measurements obtained with a calibrated Police Radar Unit. It should be noted that the Lancer weights 5 1/2 lbs. gets a 25 second engine run while the Anderson weights about 7 3/4 lbs, and got a 20 second engine run. The climb figures apply to any model that has the same power and drag as the Lancer. In order for the Anderson to have reached the same altitude as the Lancer it would have had 73% more thrust horse power. The measured thrust horse power of the Lancer is 0.44 hp. The Anderson would need 0.76 hp. Thrust horse power is the actual power that the propeller imparts to the model.

It is interesting to note the following quote by RCN's Don Lowe in comparing actual flight performance of "Turn around" pattern models powered with 1.20 4 cycle engines and with .61 2 cycle engines.

"In comparing the flight performance of the two engine types one must conclude that the 2 cycle engines properly set up, provide more horsepower."
RCM January '85 Pg. 82

It should be noted that these "Turn around" models weigh about the same as the Anderson Pylon (7-8 lbs.) and that vertical performance is of great importance.



From SAM Speaks # 64 Nov-Dec 1984

Fillon Champion. Free flight towline glider model.

ABOUT THIS PLAN

Quote: CHAMPION. The Superb Sailplane, 1946 European Champion.

By Emanuel Fillon.

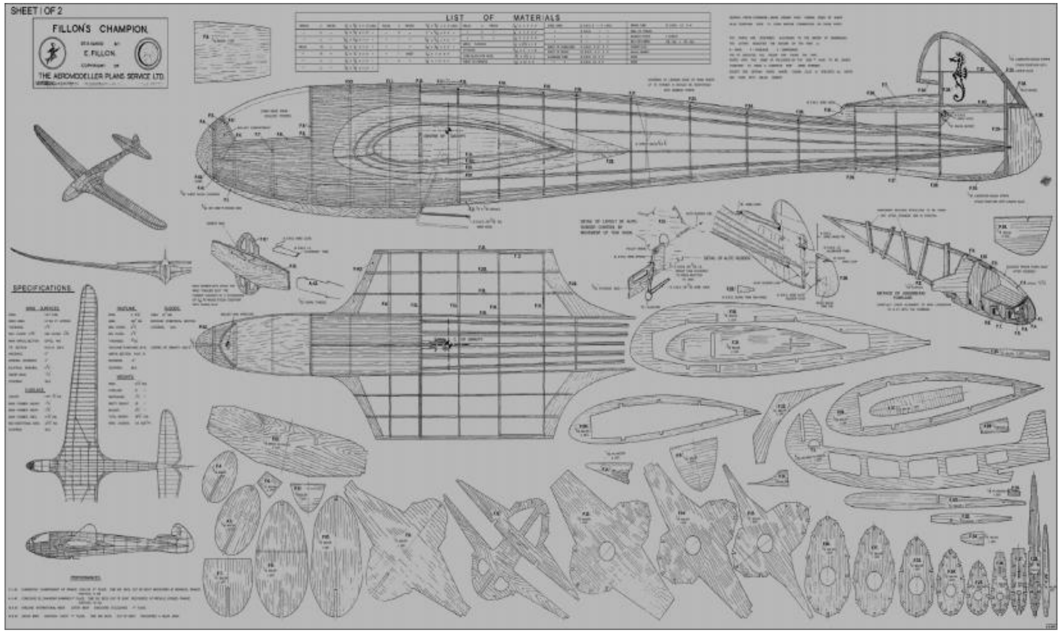
THE model which had swept the board in France and most countries on the Continent met with undiminished success in England, when Emmanuel Fillon, Wakefield winner of 1938, brought his chubby friendliness and immaculate workmanship to International Week at Eaton Bray Model Sportsdrome in August, 1946. Conspicuous amongst the large collection of French models was his mighty sailplane 'Champion' which won the Concours d'Elagance by reason of its faultless construction and finish, and then flew away to win the Sailplane event by a comfortable margin. The delightful flying performance of this model and the letters and comments of the many who watched have led us to offer this superb design to those readers who feel the urge to build a really super model for the coming season.

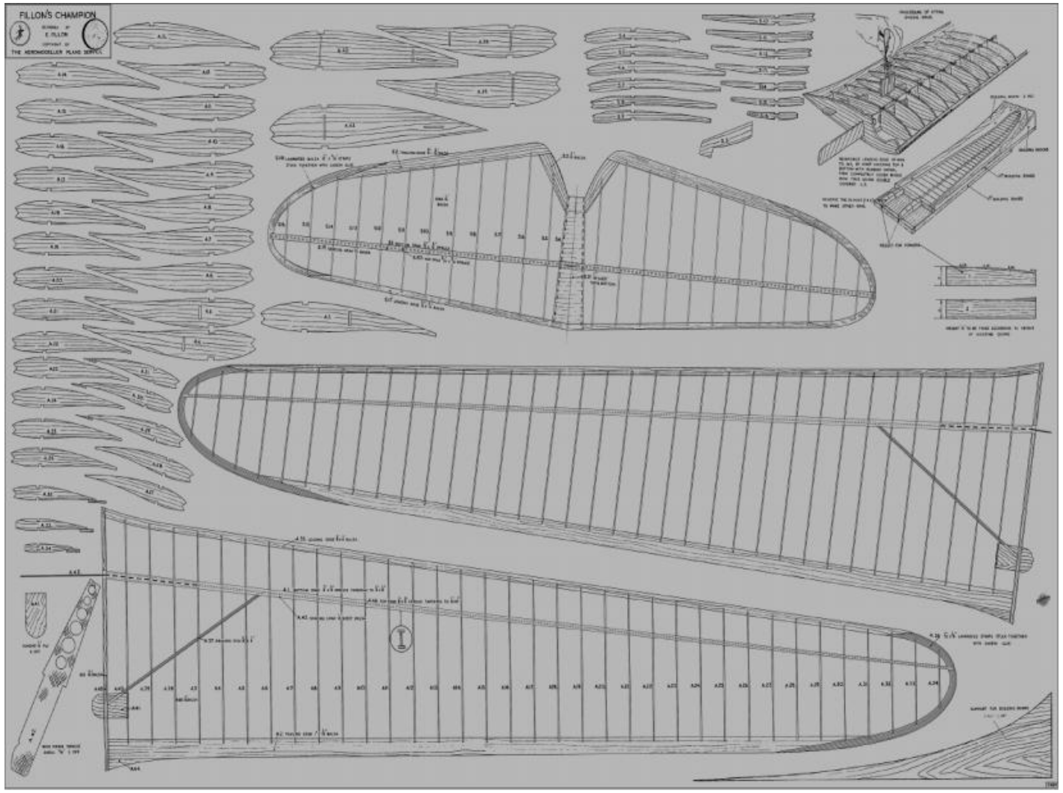
The epitome of Continental design, the Champion has a span of 9 ft 3 in, yet careful stressing and structural design has given an all-up weight (including ballast) of only 38½ oz. The noticeable attention of aerodynamic design, which has provided such features as elliptical dihedral and a tailplane mounted well forward to prevent blanketing of the fin, has resulted in a model which, while responsive to the most delicate of control adjustments, is yet easy to trim and possesses amazing inherent stability. This is especially noticeable when the model is on the towline, for its behaviour is everything an aeromodeller dreams about. With the single towline and single hook position used no trouble whatsoever is experienced in launching, and the model soars upwards in a phenomenal climb to float off the line at the top with only the gentlest of attentions from the launcher.

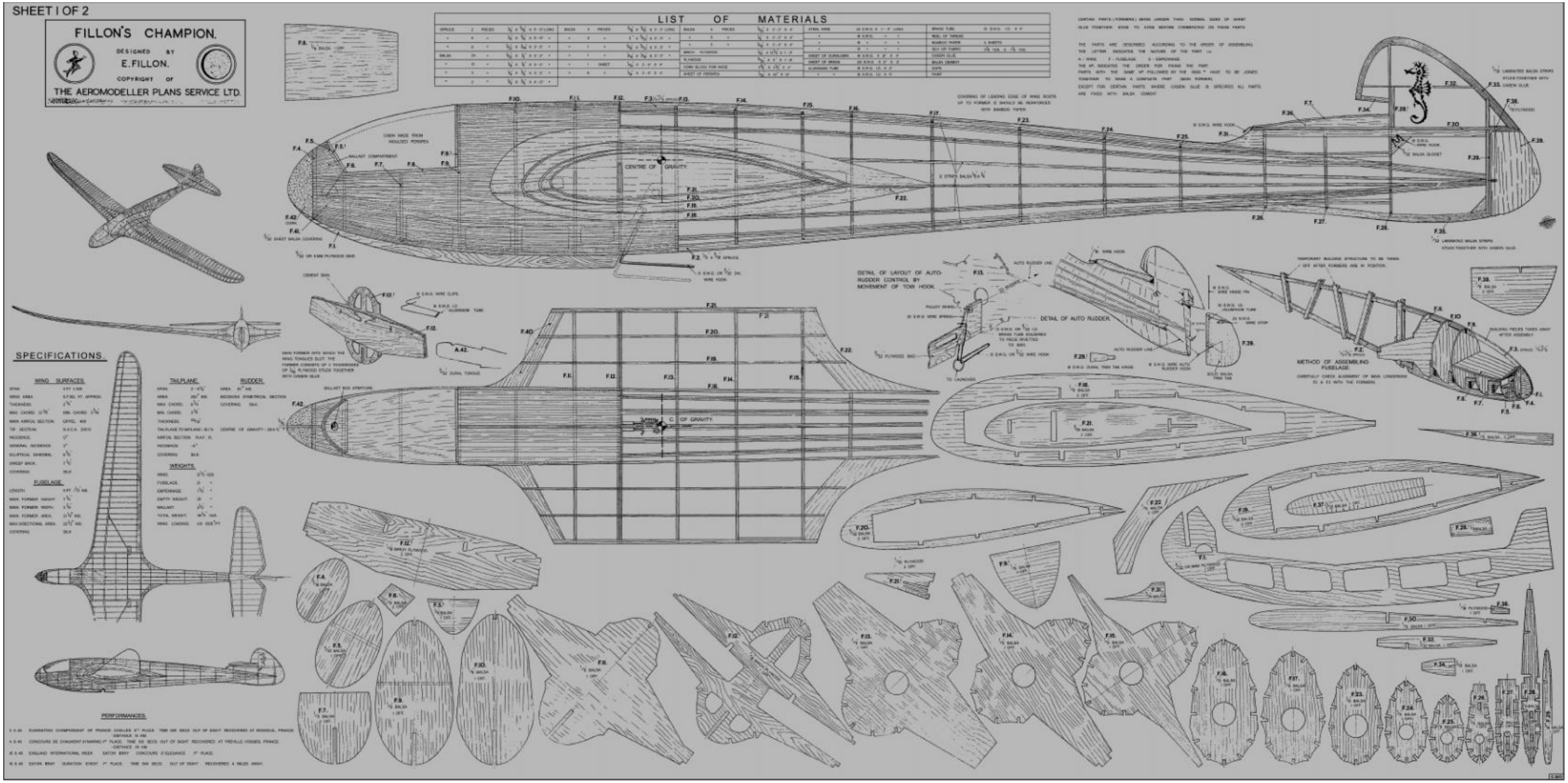
Here is a model that is not for the impatient or for the type, but which will delight the connoisseur of flight as few other models have ever done. Even if the model has never been seen in action its imposing list of achievements is convincing proof of its prowess. At Eaton Bray in International Week it won for Fillon the huge silver cup - and title of European Champion, being recovered four miles away after a nine minutes OOS flight, while on the Continent its numerous victorious performances include flights of 36 miles at the Concours de Chaumont and nine miles in the Eliminating Championships of France at Chelles.

The two large sheets of plans (see reproduction on next page) which comprise the complete set for the construction of the Champion giving all necessary building details, and are obtainable as usual from Aeromodeller Plans Service, Allen House, Newarke St Leicester, for 15/6 post free.

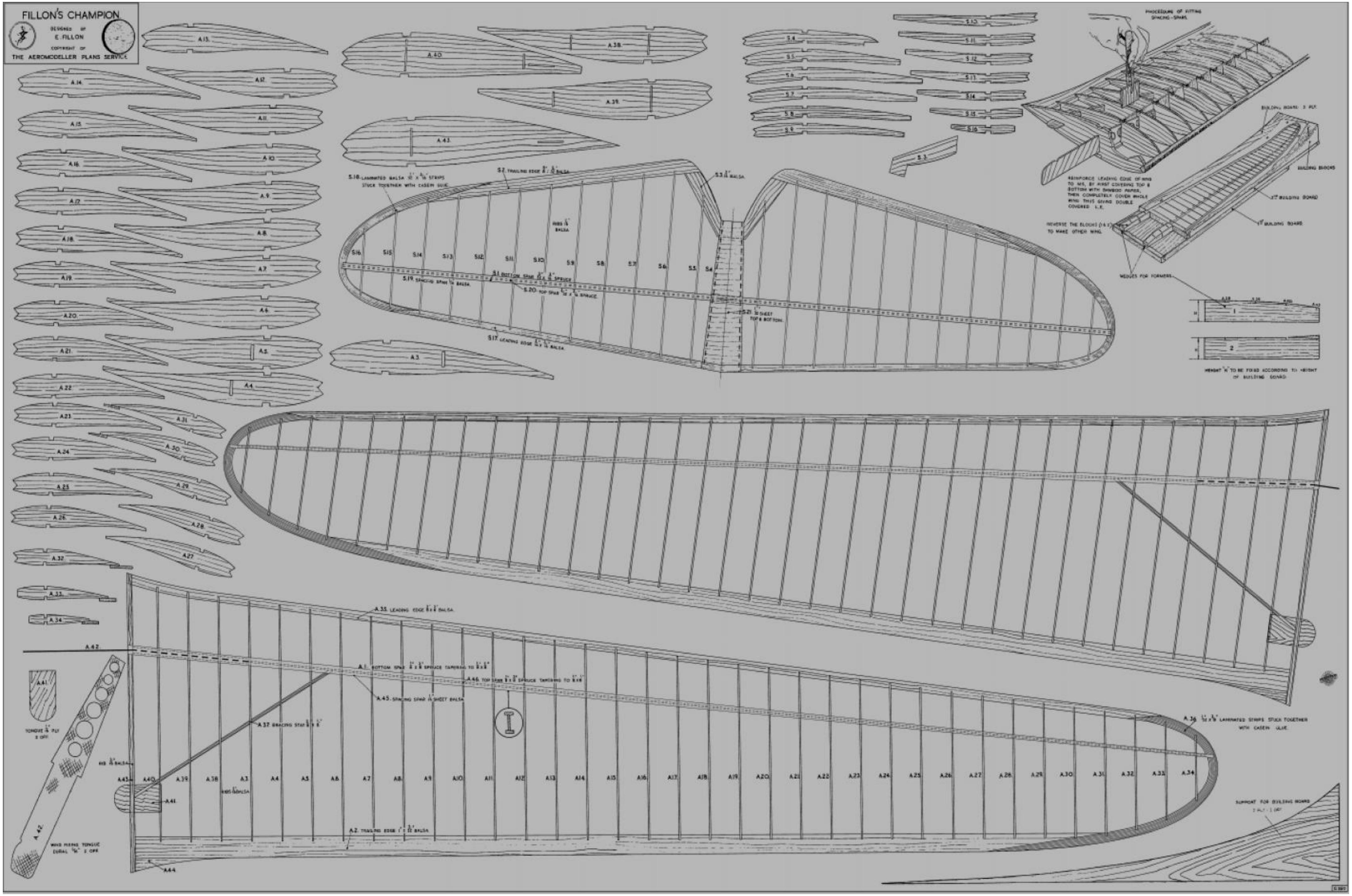
No instruction sheet is included as experienced modellers building this model will find the directions on the plan quite sufficient, and as the model is not intended for the less experienced, such a sheet as is usually supplied would only be superfluous. A detailed sectional drawing by Bagley, however, will be found on the following pages, and will prove of considerable assistance."







Fillon's Champion by Brian Laughton, SAM 600.


FILLON'S CHAMPION
E. FILLON
THE AEROMODELLER PLANS SERVICE

• NEVER IN MY WILDEST DREAMS DID I IMAGINED MYSELF ENTERING A BANK, WEARING A MASK, AND ASKING FOR MONEY.

• NEVER THOUGHT MY HANDS WOULD ONE DAY CONSUME MORE ALCOHOL THAN MY LIVER... EVER!

• LOCK DOWN SEEMS LIKE A NETFLIX SERIES: JUST WHEN YOU THINK IT'S OVER, THEY RELEASE THE NEXT SEASON.

• I'M STARTING TO LIKE THIS MASK THING. I WENT TO THE SUPERMARKET YESTERDAY AND TWO PEOPLE THAT I DON'T LIKE DIDN'T RECOGNISE ME.

• THOSE COMPLAINING THAT WE DIDN'T HAVE ENOUGH HOLIDAYS. WHAT NOW?

• I NEED TO SOCIAL DISTANCE MYSELF FROM MY FRIDGE: I TESTED POSITIVE FOR EXCESS WEIGHT!

• I'M NOT PLANNING ON ADDING 2020 TO MY AGE. I DIDN'T EVEN USE IT! I DON'T KNOW ABOUT 2021. DOES IT EXIST?

• WE WANT TO PUBLICLY APOLOGISE TO THE YEAR 2019 FOR ALL THE BAD THINGS WE SAID ABOUT IT.

• TO ALL THE LADIES WHO WERE PRAYING FOR THEIR HUSBANDS TO SPEND MORE TIME WITH THEM — HOW ARE YOU DOING?

• MY WASHING MACHINE ONLY ACCEPTS PYJAMAS THESE DAYS. I PUT IN A PAIR OF JEANS AND A MESSAGE POPPED UP : "STAY HOME"

2019: AVOID NEGATIVE PEOPLE
2020: AVOID POSITIVE PEOPLE
2021: AVOID PEOPLE BECAUSE YOU DON'T KNOW IF THEY ARE POSITIVE OR NEGATIVE

Glow Plugs – Why Do They Fail?

by Clay Ramskill, Casper AirModellers - FlightLine

The "ignition system" in our engines is in the main, the glow plug. The other vital ingredient, compression, actually determines the ignition timing, so it can't be totally ignored. But usually its the plug that gives us the problems.

Why **DO** glow plugs fail? There are four likely probabilities, five if you count old age. Yes, old age! The plugs operate by using a catalytic (chemical) reaction with the alcohol in our fuel to maintain their heat; as the plug gets "old", it gets more and more covered up with combustion by-products (carbon, etc.) which hinders the whole process.

Of the other four, **LEAN RUNS** is probably the most prevalent - not so much that the engine was running lean, as it was **HOT**. Too much heat, and the element fries and shatters, or even melts.

TOO MUCH BATTERY power is another failure mode - very related to the above paragraph. Your battery should heat the plug to a nice bright orange or red orange colour; if the plug glows white hot, it just isn't going to last. It's bad enough that we subject a tiny little element glowing hot, to the pressures of combustion. But if we add more……

VIBRATION to the situation, we get trouble. Unbalanced props, loose engine mounts, etc. may all add up to plug failure, especially in combination with too much heat.

Another plug failure mode is from **FOULING**. The element is very small, and located down in a well. It doesn't take much trash flying around in your combustion chamber to foul (and ruin) the plug! Aside from the obvious dirt coming through the intake or with the fuel, the fouling can come from metallic sources, usually a result of bearings coming unglued, or from excess carbon deposits in the engine. If the combustion chamber is full of caked-on carbon, pieces of that can, and do, come adrift and end up fouling the plug.

A quality plug run in a sport engine should last for dozens of flights. If they don't, it's probably not the fault of the plugs - it's time to look elsewhere for the source of the **REAL** problem.

THE DOWNWIND TURN
(and other Myths)
From HSL Newsletter #32 August-September 2002

The downwind turn myth stubbornly refuses to die. This is yet another attempt to drive a wooden stake through its heart.

The myth goes like this. When you turn an aircraft downwind it must accelerate, relative to the ground, in order to maintain its airspeed. To achieve this you must apply a little down elevator during the turn. If you don't, airspeed will be lost and the aircraft may even stall.

It is rumoured that a large black cat, possibly a panther, roams the rugged country of the Blue Mountains west of Sydney. Many sightings have been reported over several decades. The difference between this story, and the downwind turn myth, is that there is a slim chance that the black panther story is true. The downwind turn myth, on the other hand, is definitely fiction.

THERE ARE NO NATURAL FORCES ACTING TO REDUCE THE AIRSPEED OF AN AEROPLANE OR GLIDER WHEN IT TURNS DOWNWIND.

Aircraft fly in the air, and they have no idea how the ground is moving relative to the air they are flying in. For them there is no wind. The reason we can have trouble flying on windy days is the turbulence that often accompanies the wind, not the wind itself. If you maintain a constant nose attitude, and a constant angle of bank, during a downwind turn, the airspeed of your machine will not vary one jot.

According to the ancient Greek myth, Helen, wife of Menelaos, the king of Sparta, eloped with Paris, and went with him to Troy. The kings of the various Greek states were outraged at this and, despite the fact that they usually spent their time fighting each other, they united with the aim of teaching the Trojans a lesson, and bringing Helen home. A great army was dispatched to Troy under the leadership of Agamemnon, king of Mycenae and brother of Menelaos. After a siege of several years' duration, during which both sides suffered great hardship, the Greeks were victorious, and Troy was destroyed.

What has the myth of Helen and the Siege of Troy in common with the downwind turn myth?

In the nineteenth century excavations undertaken by German archaeologist Heinrich Schliemann established that both Troy and Mycenae actually existed, and that the siege of Troy was a real historical event that took place more than 3000 years ago. There is a factual basis for the ancient myth, but its details are pure fantasy.

We do see RC pilots stalling there models during downwind turns, so the phenomenon is real. It is the explanation often given for it that is pure fantasy.

You never see a free flight model, or a full-size aircraft, stall in a downwind turn, and it is rare to see this happen to an RC model when it is high. The explanation is that the RC pilot, standing on the ground, can misinterpret the increase in ground speed, as his model turns downwind, as an increase in airspeed. Subconsciously he pulls back on the elevator stick, and actually reduces the airspeed.

I recently read a construction article on an electric scale model, in one of the glossy magazines. The designer stated that his model had good stall characteristics when stalling into wind, but would tip stall if stalled cross wind. Now that we understand that, from the aircraft's point of view, there is no wind, we must reject this statement. Yet there can be little doubt that the designer has accurately reported what occurred. Without witnessing the event it is difficult to say what really happened, but I suspect that the pilot was holding on a little rudder, and/or aileron, deflection in a subconscious effort to compensate for the apparent sideways drift of his model as it flew crosswind. Naturally one wing dropped when the model stalled, as it would have if he had stalled it during a turn.

In my free-flight days, many years ago, I recall that there was much discussion of "weathercock stability". It was thought, by some, that a free-flight model could be made to fly directly upwind if it had a very large fin, or a deep rear fuselage. This would be a useful characteristic in a slope soaring glider and, if you could get a sport power model to fly upwind under power, and then circle while gliding, you would have a shorter chase to retrieve it.

A weathercock has its pivot firmly attached to the ground. If it has enough side area downstream of the pivot it will face into wind. For an aeroplane in flight, however, there is no wind and, therefore, no weathercock effect.

If you watch a "taildragger" taxiing on a windy day, you will see that its pilot can experience difficulty steering it because it wants to turn into wind all the time. The main undercarriage wheels form an effective pivot, attached to the ground. However, once it is in the air this effect ceases completely.

Just remember that, for an aircraft in flight, there is no wind, and you will be better placed to understand, and deal with, the flight behaviour of your models.

Ian Roach.

DID YOU KNOW?

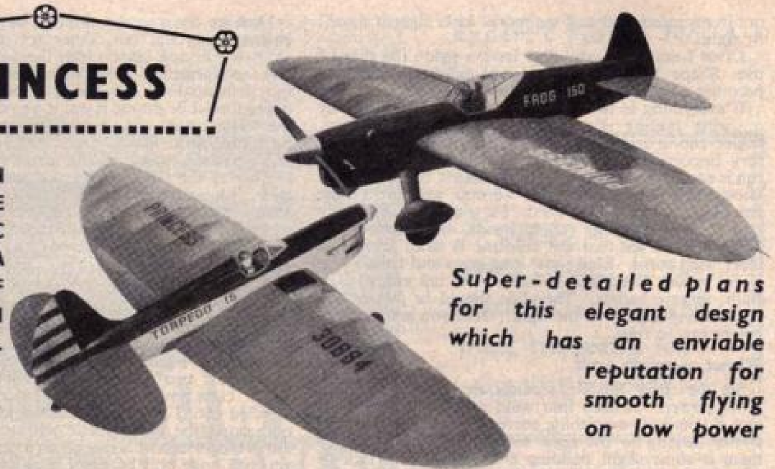
Everything that makes you unique could be included in an email attachment.

When represented digitally, the human genome is about 800 MB of data

But what distinguishes one human being from another can be extracted and compressed down to an easily emailed 4 MB file.

PRINCESS

A 36 in. SPAN CONTROL-LINE AEROBATIC MODEL FOR A WIDE RANGE OF ENGINES FROM 1 c.c. to 2·5 c.c. BY GORDON CORNELL

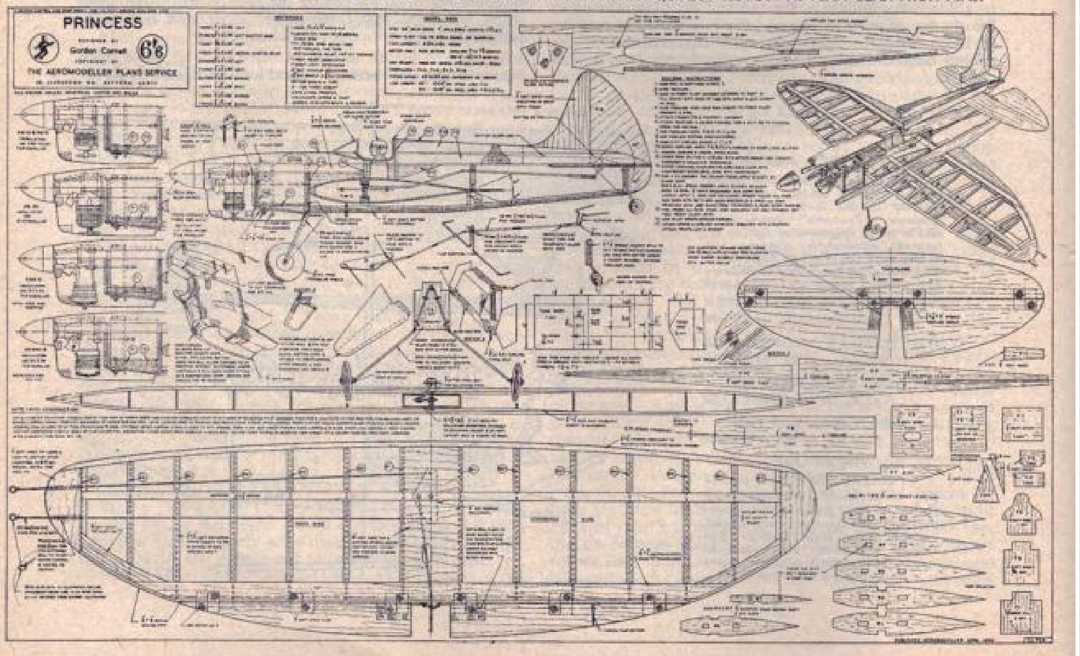


Super-detailed plans for this elegant design which has an enviable reputation for smooth flying on low power

"PRINCESS" is one of the most advanced small stunt designs to date, and has been developed through a series of designs capable of completing the S.M.A.E. Stunt Schedule. The plans show the very latest version as flown in the World Championships at Brussels, 1958, where it earned plaudits for very smooth performance with such a comparatively small engine as the Frog 150. Whilst its appearance might suggest a difficult model to build, its construction is relatively simple making it eminently suitable for the intermediate modeller and since the plans are very comprehensive, let's get down to the facts that will make your model a success.

Almost any 1 to 2·5 c.c. engine is suitable, the originals have been powered by the new Frog 150R and a K & B15. If you choose to use 1 c.c. keep the weight down to approximately 13 oz. The tank may appear unconventional but it is theoretically correct; when a few more modellers use this type we will see far less overruns due to the engine leaning out—it gives most consistent feed in flight. Make the cowling exactly as shown on the

FULL SIZE COPIES OF THIS 1/7TH SCALE REPRODUCTION ARE AVAILABLE PRICE 6/6 PLUS 6d. POST AS PLAN CL724 FROM A.P.S.



plan giving plenty of airspace around crankshaft and cylinder, otherwise you will have the overheating troubles I experienced at Brussels.

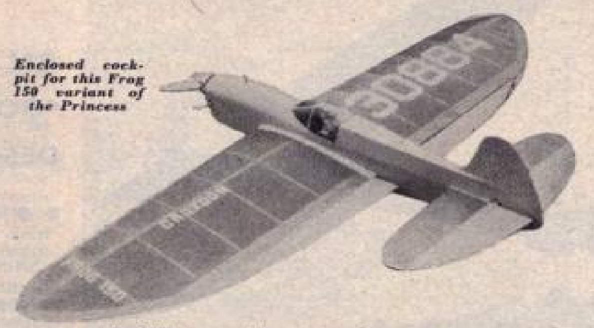
A brief word on materials, select each piece carefully for the job it is to do, making sure it is the correct cut and texture as stated. Since balsa varies in weight from 6 lb.-16 lb. per cubic ft. here is the difference in weight between being light or heavy. There is a lot of balsa in this model, be careful. Use plenty of cement, it does not weigh enough to cause concern, at least not measurable.

When finishing, do not spare dope and *fuel proofer* since this little extra weight soon pays off. An under-doped or unproofed model soon suffers from ingress of fuel and up goes the weight above the well-finished model, at the same time becoming completely unreliable. Spare no expense, it is cheaper in the long run.

Flying the Princess is easy, but do not take any chances. The undercarriage shown on the plan is for *grass*, if the model is to be flown over tarmac fit a longer tailwheel assembly to make model sit almost level on ground (this tailwheel assembly will not allow the model to take off on grass so choose warily). Line length required will vary according to weight and speed should be between 45 ft.-50 ft. (It was flown in the Gold Trophy on 55-ft. lines.) Use only steel lines ·008 in. to ·010 in. diameter.

Use a good commercial grade of fuel and retain the same engine settings for starting and running for every outing, by so doing you will soon find reliability.

Enclosed cockpit for this Frog 150 variant of the Princess



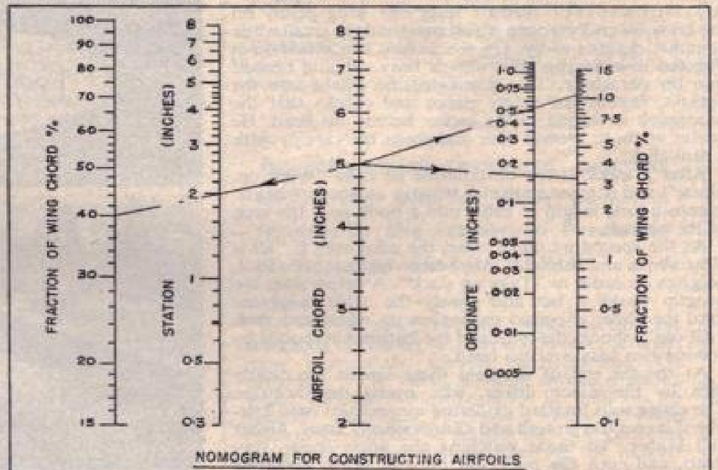
The flight record in contests last year were:

Fifth: Gold Trophy.
Second: Enfield Controline Rally (lost by ½ point).
Fourth: British Team Trials.
Second: Wanstead Controline Rally.
Thirty-second: World Championships (Brussels).
Third: Southern Area Rally.

The plan has been specially drawn to cope with a wide variety of engine sizes and has full instructions to enable the modeller with at least one controline type under his belt to follow the building stages without cause for query. We *know* the "Princess" is going to be a number one favourite among plan builders with the popular A.M.15, Frog 150 and newly introduced (to British shops) Enya, Fox and OS15's. For smoothness, the "Princess" is a beauty deserving of its regal name as you'll soon find out in that first exciting lap.

An easy way to obtain airfoil sections

described by R. W. NEW



NOMOGRAM FOR CONSTRUCTING AIRFOILS

THIS NOMOGRAM is designed to assist in drawing out airfoil sections. In the case of wings where the airfoil chord is not constant, numerous calculations may be involved, and this reduces the number of computations.

To illustrate its use consider the Benedek section B-8556-b, published last month. Assuming a wing chord of 5 inches, find the dimensions involved at the following positions.

Station	... ...	40 per cent. chord
Upper	... ...	10·5
Lower	... ...	3·2

Draw a straight line from the point 5 inches on the centre scale, to the extreme left hand scale at the position marked 40 per cent. Read off the value in inches at the intersection with the station scale, namely 2 inches.

Similarly, draw a straight line from the centre scale to the extreme right hand scale at position 10·5 per cent., and a further line to position 3·2 per cent. Read off the values at the intersections with the ordinate scale, namely 0·53 inches and 0·16 inches respectively.

Normally, accuracy to two decimal places is sufficient.

THE TRIALS AND TRIBULATIONS OF A NOVICE ELECTRIC MODELLER.

From HSL Newsletter #32 August-September 2002

Do not panic, dear reader. The HSL Newsletter is not about to follow in the footsteps of QEFI and S&E Modeller. We will not be filling the pages of this publication with articles on electric slow fly, ducted fans, or four engine scale bombers. Not that there is anything wrong with those types of model. It's just that this newsletter is about soaring.

And, by the way, electric power is a legitimate way to launch a sailplane. You put the motor and battery in the sailplane, instead of in the winch. I got into electric flying by accident. I won a kit, for an electric Powerhouse old timer, in a raffle at the Shoalhaven Shield two metre glider competition, years ago.

Because electric flight was my lowest priority it took several years for me to make significant progress with its construction. Eventually I got to a stage where I could make no more progress without having the hardware. So I purchased a Robbe 8.4 volt Speed 600 style motor, and an electronic on/off switch, with BEC.

For those not familiar with electric flight, I should explain that BEC stands for Battery Eliminator Circuit. The receiver is powered by the propulsion battery, and the motor is automatically shut down before the battery is exhausted, ensuring that there is enough power left to operate the radio.

With gliders my priority, a couple more years passed before the Powerhouse was nearing completion. Having no previous electric experience I decided to bench test my equipment. The motor, switch, battery, receiver, and a couple of spare standard size servos were taped to a piece of 50 x 25 timber, and wired up in accordance with the instructions. It worked perfectly first time, so I proceeded confidently to complete the Powerhouse, and install the gear in it.

When I tested it, everything seemed, at first, to be OK, but as soon as I moved the rudder or elevator servo, the motor stopped.

After a good deal of thought, and some expert advice, I discovered the cause. I had installed two JR331 micro-servos. These are an excellent product, and I have used them in several models with great success. But, to achieve the high power output required, in such a small machine, modern micro-servos draw a much higher current than standard size servos. This higher current, combined with the internal resistance of the battery pack, has the effect of lowering the voltage across the battery terminals, the BEC interprets this as meaning the battery is nearly exhausted, and shuts down the motor.

I needed to change to standard servos, or buy a more modern speed controller. I chose the latter, and purchased a Shulze Slim-24be. Again, this is a great product, and it was almost what I needed.

The Powerhouse now performed beautifully, with flights of typically 14 minutes without thermal assistance. But, after a few months, the performance progressively deteriorated. I had not provided adequate cooling air flow to the motor, and it slowly cooked itself. It went into the bin, and was replaced by a Graupner Speed 600. Fortunately they are quite cheap. I chose the 7.2 volt version, knowing that they were commonly used with seven cell, 8.4 volt battery packs. However, although I used a smaller propeller, this motor drew a much higher current, and it burned out after only a few flights, despite the newly installed air cooling air scoops.

At this stage I felt a need for some help with the selection of motor/prop/battery combinations. I obtained a copy of the "MotoCalc" computer program. It accurately predicted the performance of the 8.4 volt motor, and told me that the 7.2 volt motor would overheat, and have a very short life, with the battery and prop I was using.

In the meantime I had purchased, and installed, a Kyosho Magnetic Mayhem car motor. It was an impressive performer, but drew an even higher current than the 7.2 volt Speed 600, and was clearly unsuitable for this application. A smaller prop would cure the current problem, but would be very inefficient on the bulky, slow flying, old timer. Not only that but, when I gave it two bench runs in quick succession, the speed controller reached its temperature limit, and automatically shut everything down.

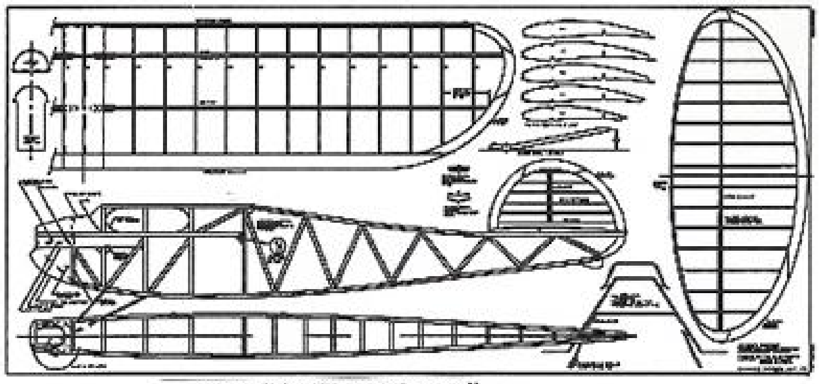
So the Kyosho motor, and the Shulze speed controller, went into the spares box. I have no doubt they will be very successful in some other application, but not this one.

Now I did what I should have done some time ago. I bought an 8.4 volt Speed 600 motor, and a controller rated at 30 A continuous. The Powerhouse is again flying beautifully and, hopefully, will continue to do so for some time yet.

I have a box full of spare motors and controllers that I will find a use for in due course. Fortunately, the cost of these errors has not been high.

I have learned a lot about electric flight in the past year. It is not too difficult once you grasp the basic principles. But I daresay there are more traps out there for me to fall into yet.

Ian Roach.



Sal Taibi's "Powerhouse"

From
The Coastal Flyer Newsletter
SAM 26 USA.
Bob Angel Editor.

DAVE HARDING adds some follow-up to the item from our previous issue about the joys and perils of pull-pull control setups. The servo is on the left in the sketches and the rudder or elevator on the right. Although Dave's sketches are self-explanatory, I couldn't resist adding some words about them. *(Bob Angel, Editor)*

The top pair of sketches shows a correct installation.

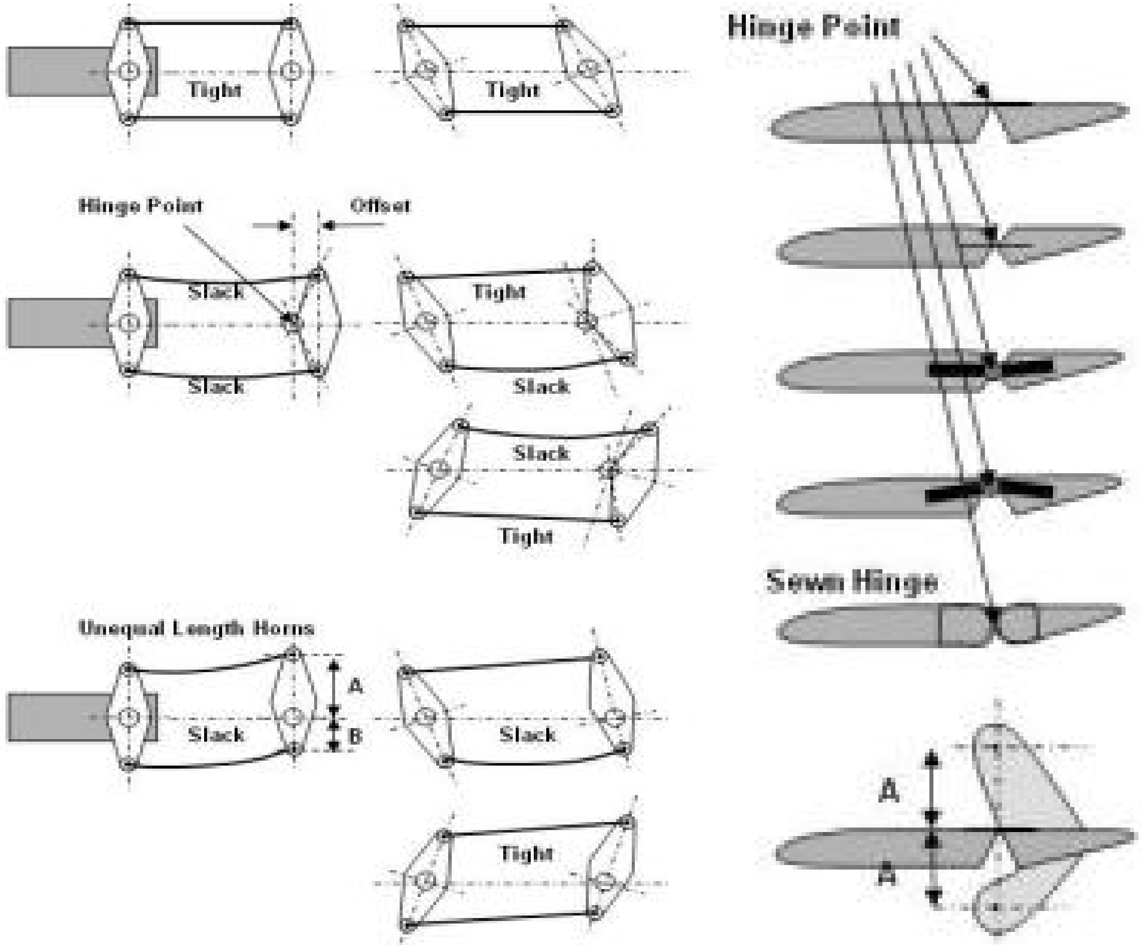
The next pair + 1 down shows the results of having the hinge point not centered between the control cable attachment points.

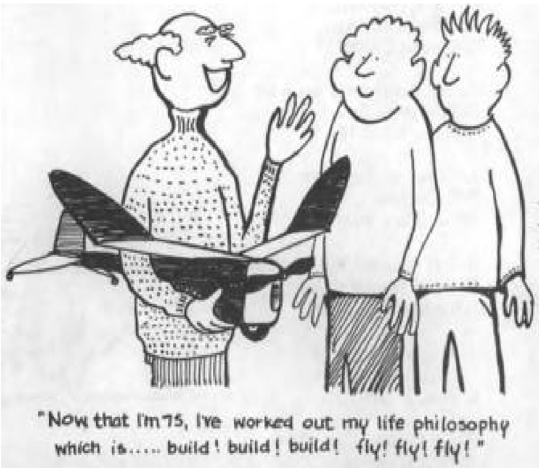
The bottom three sketches illustrate why you want the cable attach points equidistant from the hinge point.

Obviously you'd never commit those crimes on purpose, but this calls attention to the fact that it's important to get it right.

But there is one deviation not shown which you can get away with. It's not necessary that the distance between two control cable holes at the servo end and the ones at the horn end be the same. You can vary them as needed to get the total amount of travel desired.

In some installations guys run a push pull rod from servo back to an added bellcrank, which becomes the front pivot for the pull-pull cables. The purpose is to let the bellcrank take the cable pull and strain rather than the servo bearings.





SUNGLASSES and F-STOPS

From The Coastal Flyer - SAM 26 USA Newsletter.
Bob Angel Editor.

This has been mentioned before, but it arose again on SAM Talk.

Cameras take sharper pictures in strong light when their lens apertures are reduced to smaller (numerically larger) f-stops. Our eyes operate the same way. In bright light the lens opening closes down and we see more clearly. This can be used to advantage in flying if you're having trouble seeing your plane and it's about to get away from you.

I usually wear flip-up sunglasses over prescription lenses so I can raise them for better visibility. The bright light is uncomfortable and not recommended for long periods, but the ships can be seen more clearly. Sunglasses which fully cover other glasses and reduce side glare are better in the long run, but are a little more awkward to remove while flying.

At the left is a typical table at a "Collecto" or CollecTogether as MECA terms it. This was taken at the SAM Champs. See how many engines you can identify.

Murphy goes to Paris

Murphy, a furniture dealer from Dublin, decided to expand the line of furniture in his store, so he decided to go to Paris to see what he could find. After arriving in Paris, he visited with some manufacturers and selected a line that he thought would sell well back home. To celebrate the new acquisition, he decided to visit a small bistro and have a glass of wine.

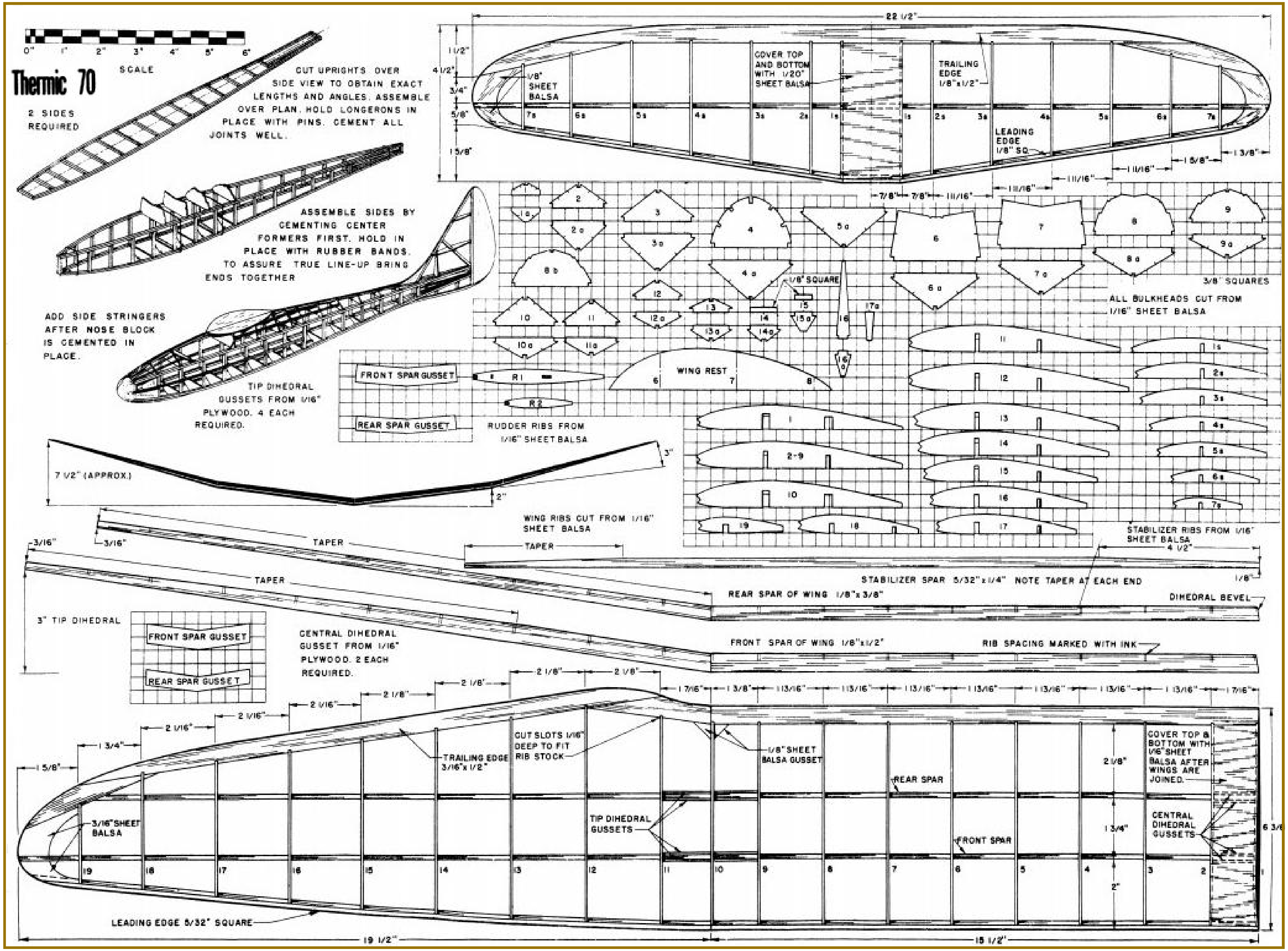
As he sat enjoying his wine, he noticed that the small place was quite crowded, and that the other chair at his table was the only vacant seat in the house. Before long, a very beautiful young Parisian girl came to his table, asked him something in French (which Murphy could not understand), so he motioned to the vacant chair and invited her to sit down.

He tried to speak to her in English, but she did not speak his language. After a couple of minutes of trying to communicate with her, he took a napkin & drew a picture of a wine glass & showed it to her. She nodded, so he ordered a glass of wine for her. After sitting together at the table for a while, he took another napkin, and drew a picture of a plate with food on it, and she nodded. They left the bistro and found a quiet cafe that featured a small group playing romantic music.

They ordered dinner, after which he took another napkin & drew a picture of a couple dancing. She nodded, and they got up to dance. They danced until the cafe closed and the band was packing up.

Back at their table, the young lady took a napkin & drew a picture of a four poster bed. To this day, Murphy has no idea how she figured out he was in the furniture business.

FRANK ZAIC - JASCO THERMIC 70 1946 AIR TRAILS ANNUAL



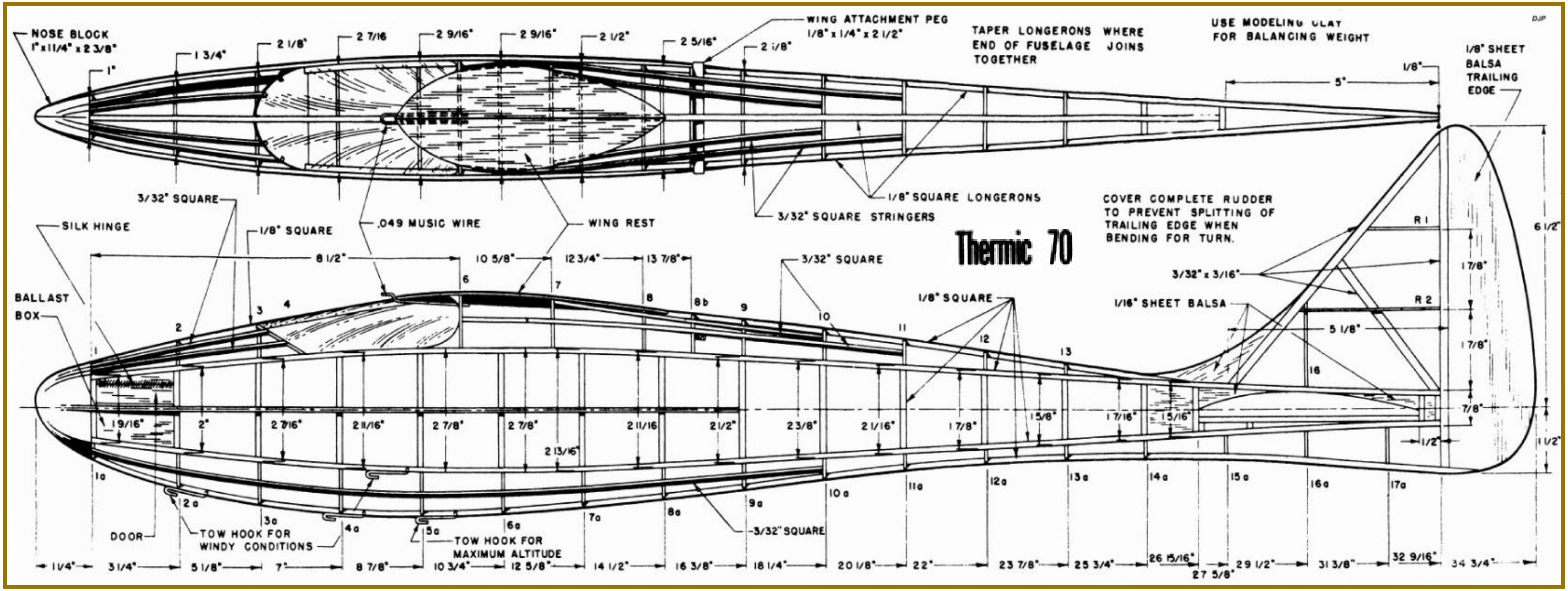
Thermic 70

The Thermic 70 is almost a direct scaled-up version of the war-time Thermic 50. The essential differences are the shorter fuselage and the smaller stabiliser area.

Good design practices required these changes on the larger version.

The present series of famous Thermics were designed in early 1943 to take the place of the pod-and-boom design. This design change was necessary to bring simplicity of construction in the towline field. The fuselage in the standard square framework type, using stringers to give the final shape. The fuselage outline conforms to the good secondary type of full-size glider.

The built-in rudder was incorporated to eliminate the prevalent evil in the rubber field: "the shifting rudder af-



fixed to the removable stabilizer." Another feature incorporated is the removable wing with the platform mounting. Any impact, no matter how slight, will cause the wing to fly off.

The wing follows the familiar Thermic pattern, except that polyhederal is used. The wing outline was influenced by two outstanding pre-war German gliders, the "Minimoa" and the "Wolf". It has not been determined whether this shape has any beneficial effects in the small model type. As a matter of fact, the Thermic owes its performance to strong construction which keeps the basic aerodynamical layout under all circumstances. It is a good design rule airfoil sections that permit strong construction rather than the super-dupers which may warp all out of shape, as soon as they meet the sun or heat.

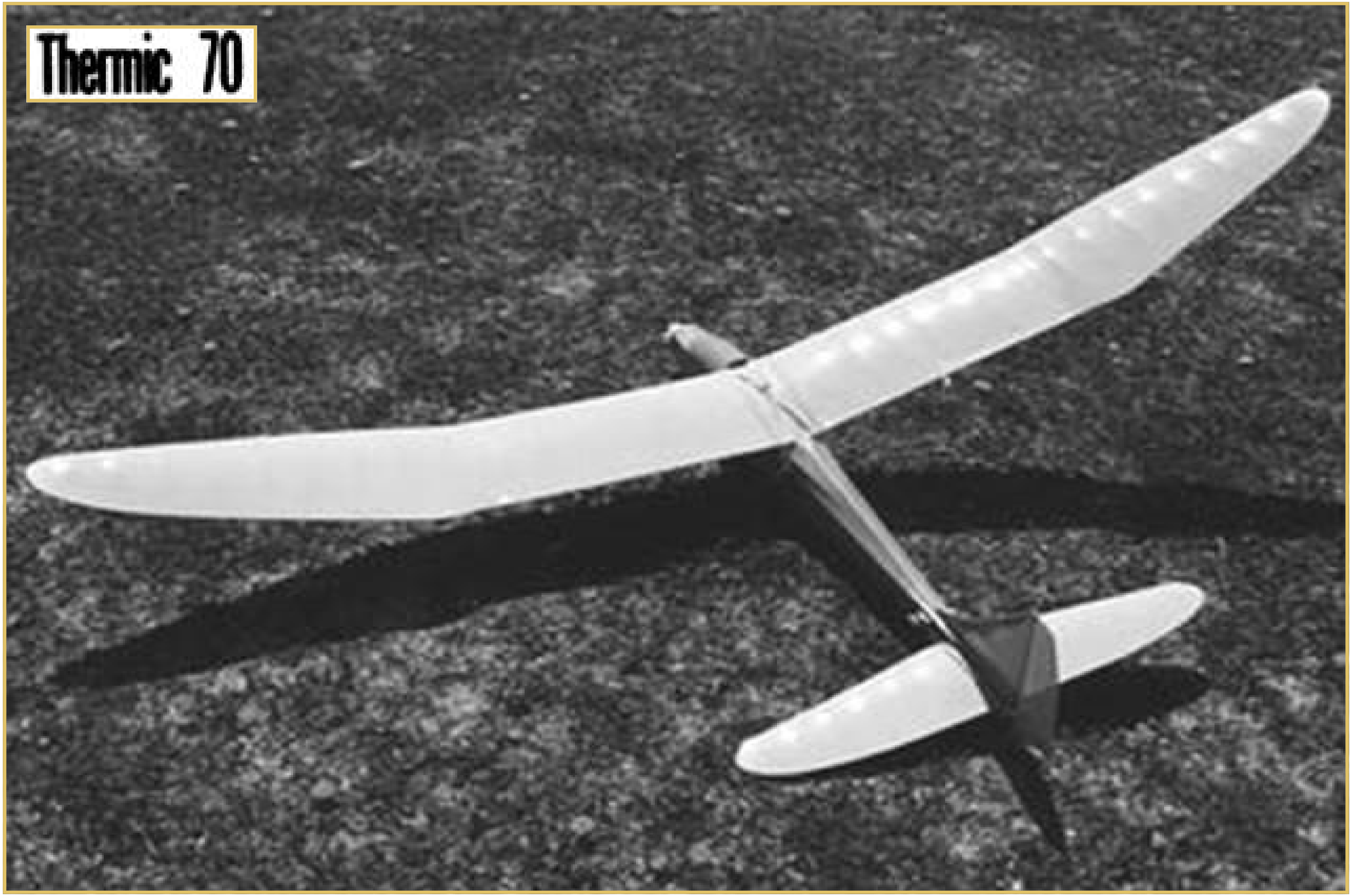
By using fairly large fuselage frontal area the rudder area was not the delicate determining factor for spiral stability in the turns.

Using 3° difference between the wing and the stab provided good recovery during the testing period. The success of these tests was such that the 3° trim was continued. The original of this model flew well from the start. The main check was for spiral stability and it was found that the Thermic could take the tightest possible turns without spinning. It was also found that it was possible to tow the glider straight over the head and that a mere walk is all that is needed for towing. Simply use a side hook for counter-rudder control and have it along a 45° angle from the centre of gravity.

A great many 70's have been built, and reports from the field bear out the original tests. This design has held most of the class "E" national records for the last few years. The only change has been the name of the record holder. At the moment, all three divisions, Junior, Senior, and Open class "E" records are held by members of the Queens Thermal Thumbers and their Thermic 70's.

1946 Air Trails Annual - courtesy RCMW - Roland Friiestad.

PDF File: https://outerzone.co.uk/plan_details.asp?ID=1678


Thermic 70

A politician was visiting a remote little rural town in Australia and asked the locals what the government could do for them.

"*We have two big needs,*" said the towns people. "*First, we have a hospital but no doctor.*"

The politician whipped out his mobile phone, spoke for a while and then said, "*I have sorted that out. A doctor will arrive here tomorrow. What is your other need?*"

The towns people replied, "*We have no mobile phone reception in our town…...*"

POP Eye the Sailor Man really existed.....

His real name was Frank "Rocky" Fiegel. He was born in 1868 in Poland and, as a child, immigrated to the United States with his parents, who settled down in a small town in Illinois. As a young man, Rocky went to sea. After a 20 year career as a sailor in the Merchant Marines, Fiegel retired. He was later hired by Wiebusch's Tavern in the city of Chester, Illinois as a 'Bouncer' to maintain order in the rowdy bar.

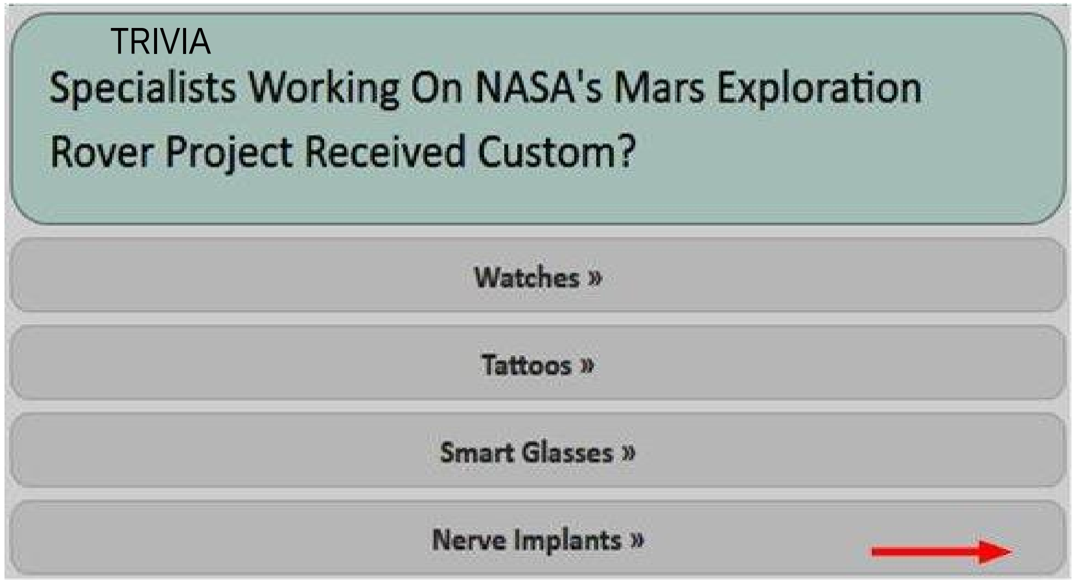
Rocky quickly developed a reputation for always being involved in fighting (and usually winning). As a result, he had a deformed eye ("Pop-eye"). He also 'always' smoked his pipe, so he always spoke out of one side of his mouth. In his spare time as a Bouncer, Rocky would entertain the customers by regaling them with exciting stories of adventures he claimed to have had over his career as a sailor crossing the 'Seven Seas.'

The creator of Popeye, Elzie Crisler Segar, grew up in Chester and, as a young man, met Rocky at the tavern and would sit for hours listening to the old sailor's amazing 'sea' stories.' Years later, Segar became a cartoonist and developed a comic strip called 'Thimble Theatre.' He honoured Fiegel by asking if he could model his new comic strip character, 'Popeye the Sailor Man,' after him. Naturally Fiegel was flattered and agreed.

Segar claimed that 'Olive Oyl,' along with other characters, was also loosely based on an actual person. She was Dora Paskel, owner of a small grocery store in Chester. She apparently actually looked much like the Olive Oyl character in his comics. He claimed she even dressed much the same way.

Through the years, Segar kept in touch with Rocky and always helped him with money; giving him a small percentage of what he earned from his 'Popeye' illustrations.

My wife and I were watching Who Wants To Be A Millionaire while we were in bed.
I turned to her and said, "Do you want to have sex?" "No," she answered.
I then said, "Is that your final answer?'
She didn't even look at me this time, simply saying, "Yes.."
So I said, "Then I'd like to phone a friend."
And that's when the fight started...



Answer: Watches


Master Watchmaker Garo Anserlian

Mars has a lot of similarities to Earth when it comes to the passage of time: the red planet has a similar axial tilt, a similar rotation period, and it experiences seasonal changes like Earth (albeit minus spring flowers and Christmas carolling, of course).

Despite the similarity between an Earth day and a Martian day, however, it posed a significant challenge to the NASA scientists who worked with the rovers, Spirit and Opportunity, day in and day out. Because of the temperature swings on Mars and, more importantly, the rovers' dependence on solar power, the mission was beholden to the rhythm of the Martian day. The Martian day is 39 minutes *longer* than an Earth day, which means the work day for the NASA scientists directly responsible for the day to day operations of the rovers drifted out of sync with Earth time by 39 minutes every day.

To help the rover drivers and other support staff cope with the time differences and keep the rovers on schedule, NASA commissioned special watches for the team. At first, they looked into getting a custom quartz-crystal driven watch made, but they found it would take a minimum order of 10,000 watches - and they definitely didn't have 10,000 people who needed the watch. When they looked into mechanical watches, watchmaker after watchmaker told them that they didn't want to take on the project. Finally, they came across Garo Anserlian, a master watchmaker who was willing to invest the effort into the project.

Through trial, error, and determination, Anserlian came up with a work flow for adjusting and modifying mechanical watches to precisely lose 39 minutes a day in order to drift out of the familiar pattern of Earth days and into Martian days. The watches were a success and worn by many of the scientists working on the Mars Exploration Rover project. Anserlian described seeing his watches during broadcasts of the mission as such: "I felt proud; I got goosebumps. I saw that some of them had two watches on and I thought, one of them was mine! I was proud as an American that it landed and secondly that my watches will be used."

And proud he should be, as his willingness to take on a challenge in pursuit of the greater good is a fundamental underpinning of space exploration and humankind's quest to reach out into the far reaches of our solar system and beyond.

(*Garo Anserlian might be a useful guy to see about our stopwatches !!! - Editor*)

DALBY 2008

By

Peter (Condo) Smith

<peter_condo@yahoo.com.au>

**There was movement in Queensland, as word passed along the chain,
Condo was coming back to take home their trophies again.**

**There was Carey & Paton & Slattery too, Hardy & Walsh, to name but a few.
"He's trying to steal our trophies, it really isn't fair!" these people in Queensland were crying in deep despair.**

The trip was long and boring, the flights were short and sweet, Condo had his Nelson tuned absolutely to its peak.

**It was Farthing, a man of MANY words, who tried to give the Queenslanders hope,
"Condo's only human, if not, the weather may prevail."**

**The day dawned, bright and red, and Condo fairly jumped right out of bed.
The briefing was given, and prayers were said, but Condo only had winning in his head.**

**Burford was first, the rounds went great, Condo was chafing at the gate.
The fly off came and Condo was first away, but too soon it became clear, he wasn't up there to stay.**

Duration came and the rounds they progressed, and Condo's Nelson was doing its very, very best.

Sunday came and so did the wind, so we all stood around wagging our chiny, chiny, chins.

Monday came, windy still, but hey we decided it's time to play.

**Texaco first, Mitchell's away, and he got the very first max of the day.
With the rounds all done, a few faced the gun, although both Condo and Farthing were still having fun.**

The Climb and Glide, the premier event, the wind was still blowing as we took to the sky, and a Queenslander left us high and dry.

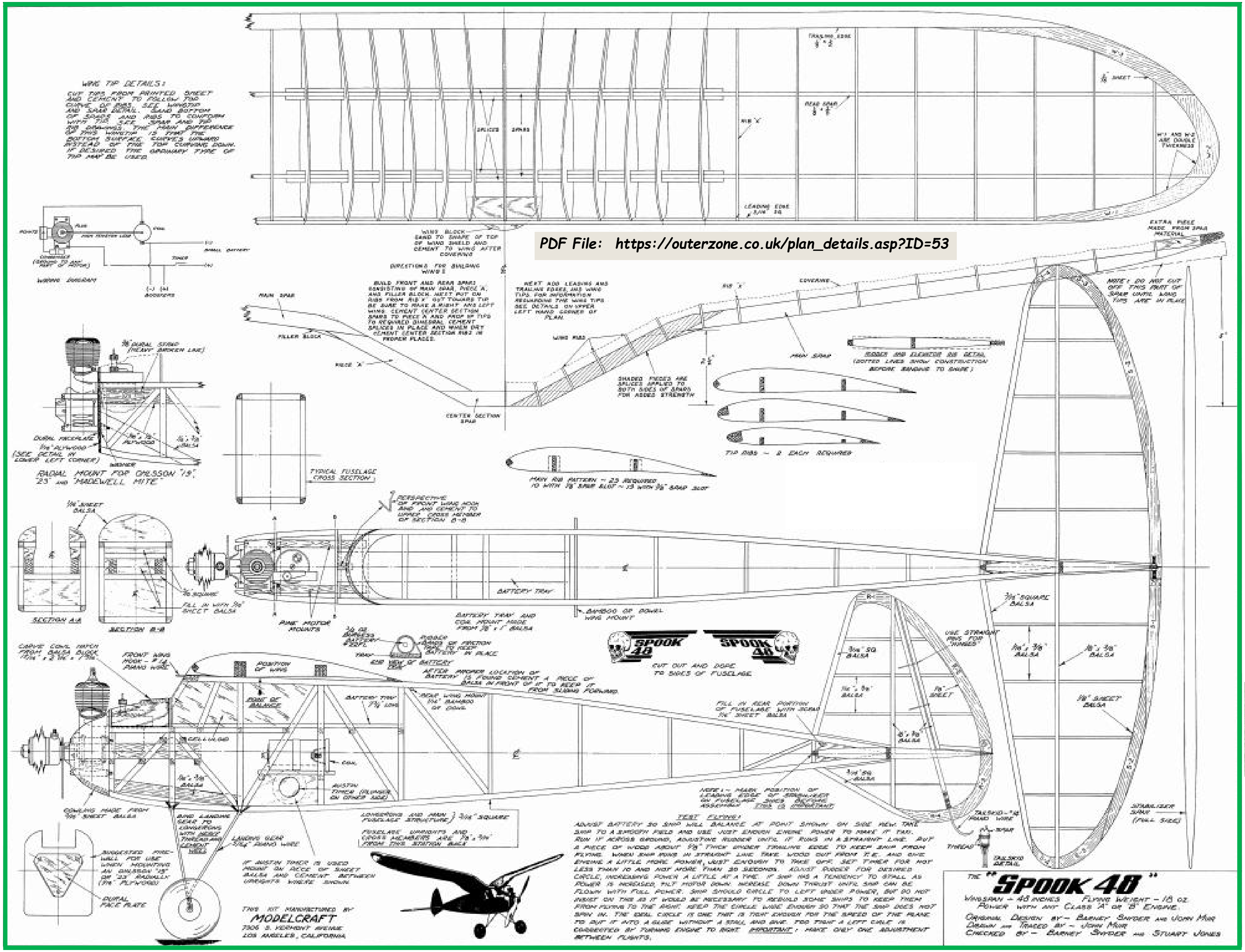
**Then '38 Antique arrived late in the day, and Condo's Cumulus was making much hay.
The fly off arrived and we faced the run, and young gun Walsh came home with a very late run, a young Queenslander, you son of a gun!**

**The field was great, the absolute best I have seen. Old friendships renewed, old enemies seen.
Trevor was there, talking away, and please God, help us, when he gets it all together one day.**

Well, Dalby's done and dusted for 2008, but Condo had bolted well before they could shut the gate.

**Condo and Farthing, after a weekend so grand, hatched a plan as they drove homeward across our wide brown land.
If we stop and lock the border gate, we will keep the Queenslander Trophy hunter's out of our State.**

Condo '08.



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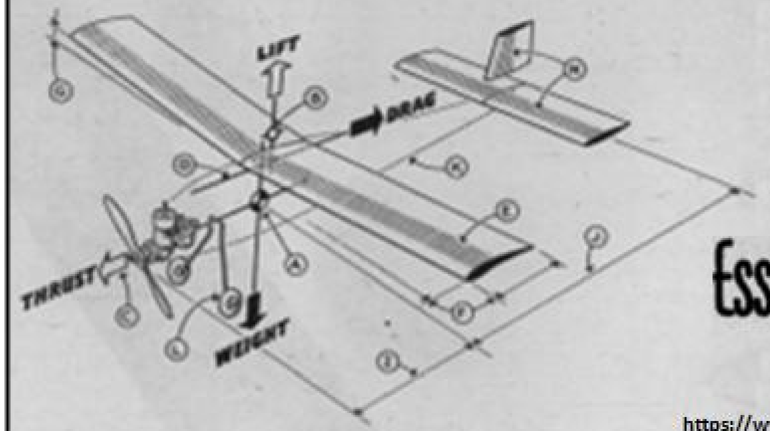
About this Plan

Spook 48. Gull-wing gas free flight model. The original design was flying in competition in 1938, then later appeared as a Modelcraft kit in 1940. Weight 18oz with any class A or B engine.



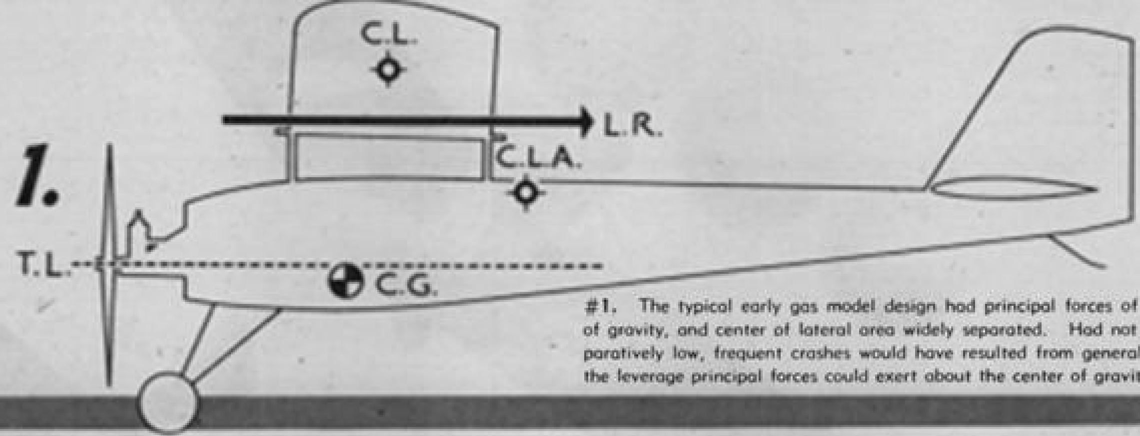
Trends

Essentials Of Gas Model Design

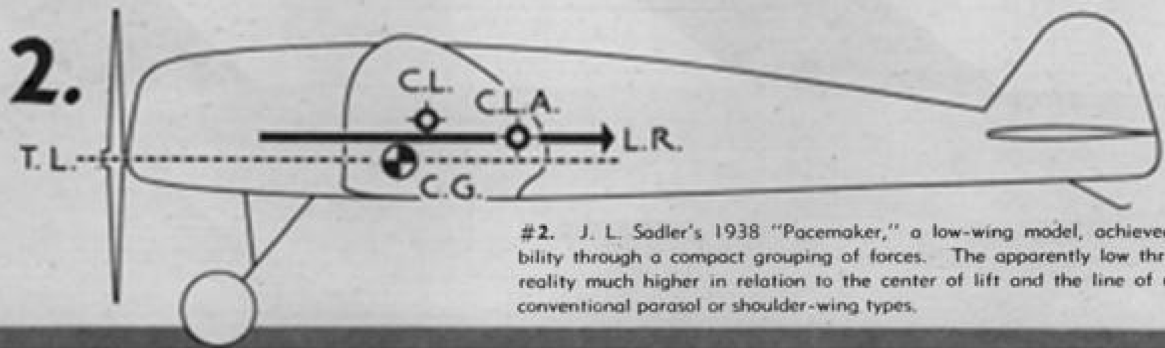
From 1946 Air Trails Annual

RCMW - Roland Freistad

https://www.mediafire.com/file/2xsz3g8u2z68c32/RCMW-2021-03-MAR.pdf/file



#1. The typical early gas model design had principal forces of lift, thrust center of gravity, and center of lateral area widely separated. Had not speeds been comparatively low, frequent crashes would have resulted from general instability due to the leverage principal forces could exert about the center of gravity.



#2. J. L. Sadler's 1938 "Pacemaker," a low-wing model, achieved unusual stability through a compact grouping of forces. The apparently low thrust line was in reality much higher in relation to the center of lift and the line of resistance than conventional parasol or shoulder-wing types.

There are a dozen or more closely related factors which determine the force arrangement and, consequently, the performance of a gas model. Modification of one affects several other (and sometimes all other) factors.

Academy of Model Aeronautics regulations specify the minimum wing loading (7oz. Per 100 sq. in.), the minimum power loading (80 oz. per cu.in. displ.), and the minimum fuselage cross section $\left(\frac{L^2}{100}\right)$

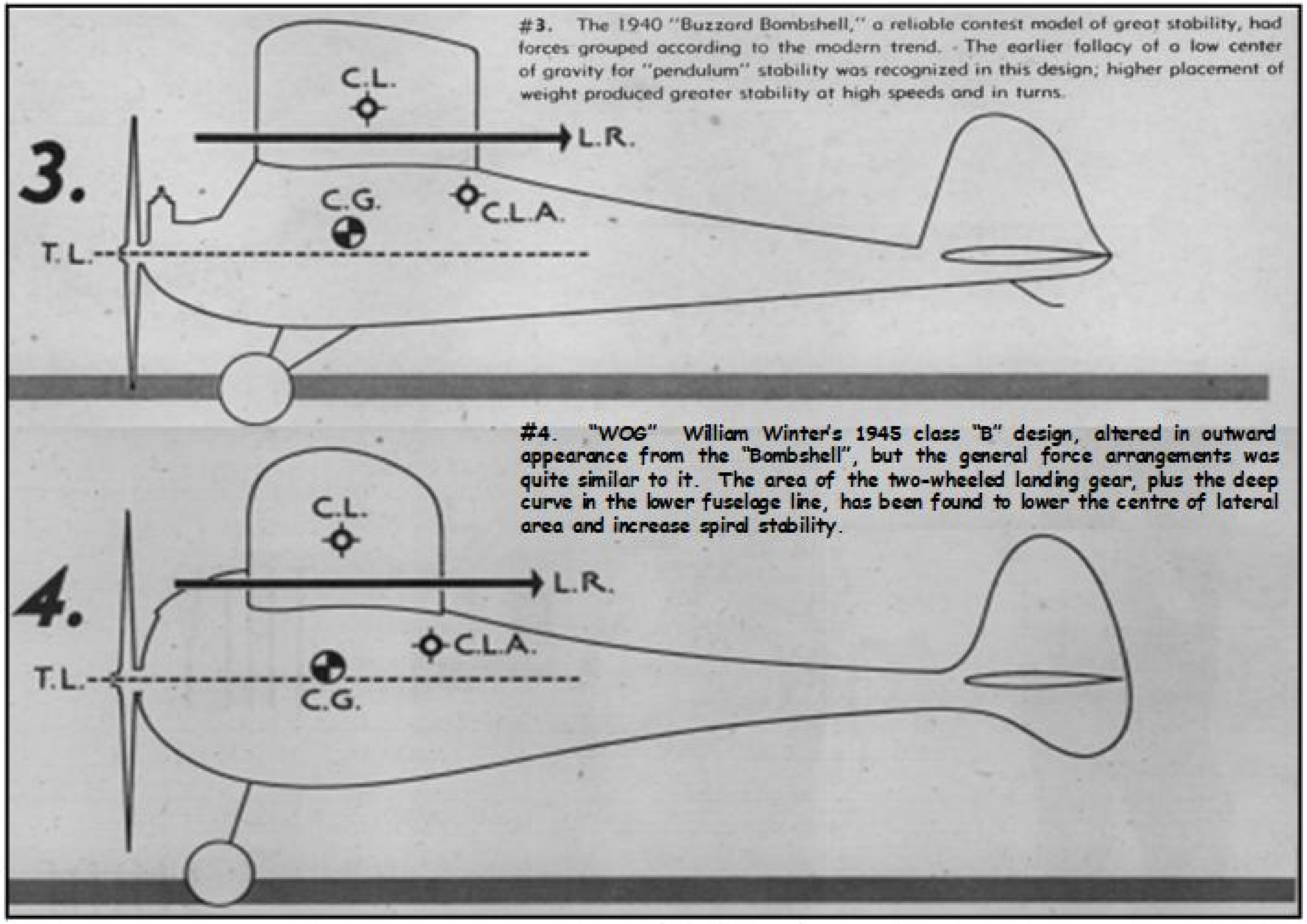
Championship models generally utilise all wing area permitted for the engines used and weigh no more than minimum requirements

In the diagram, the Centre of Gravity (A) was formerly placed low for "pendulum stability", but the modern trend is to place it on or near the thrust line. Centre of Lift (B) is above and slightly behind the C.G., and is determined by the fore-and-aft location of the wing. Thrust line © in late designs is being raised from its early position low in the fuselage. The Line of Resistance (D) is largely dependent on the vertical placement of the wing; should always be above the C.G.

Wing Area and Section (E) determines speed and many flight characteristics of the model, of the model, while Aspect Ratio (F), or span-to-chord ratio, has a lot to do with wing efficiency. Dihedral (G) affects lateral stability as well as the centre of lateral area.

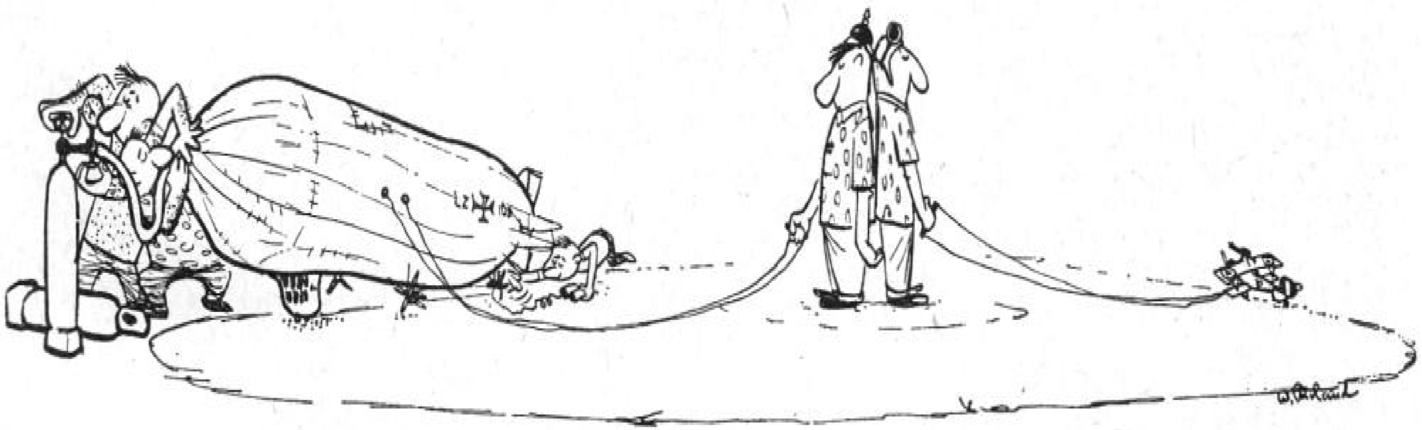
Tail Group Areas and Sections (H) have virtually the same importance as (E). The length of the nose, of Nose Moment (I), is important in determining the effect of engine torque; the longer the nose, the greater the torque reaction.

The Tail Moment (J) has to do with general stability particularly with respect to stall characteristics; the greater the leverage the tail has in stabilising the model. Fuselage Lines (K), along with (H), (E), (G) and (L), fix the centre of lateral area, which should fall above and behind the G.G. Of somewhat lesser importance is the Landing Gear (L); its location governs take-off and landing characteristics, and the area of the wheels also affects the location of the centre of lateral area.



#3. The 1940 "Buzzard Bombshell," a reliable contest model of great stability, had forces grouped according to the modern trend. - The earlier fallacy of a low center of gravity for "pendulum" stability was recognized in this design; higher placement of weight produced greater stability at high speeds and in turns.

#4. "WOG" William Winter's 1945 class "B" design, altered in outward appearance from the "Bombshell", but the general force arrangements was quite similar to it. The area of the two-wheeled landing gear, plus the deep curve in the lower fuselage line, has been found to lower the centre of lateral area and increase spiral stability.



An article published in the September 2004 Scale Staffel Newsletter of San Diego, Gerald Sullivan, Editor

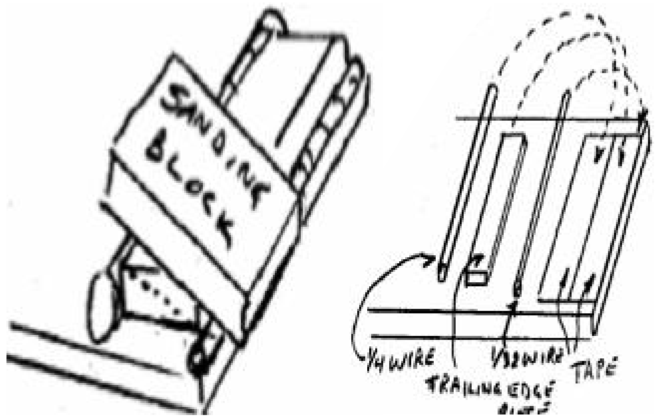
You might have seen this idea before for sanding tapered trailing edges. I picked it up from Don Ross Rubber Powered Model Airplanes. Funny from where you get additional ideas.

The August 2004 issue of Flying Models (FM Clinic) described a double sticky tape usage to hold small parts to a board for sanding. Michael Ramsey uses a double-sided tape from Anchor Adhesives. I have found that common variety double tape from Longs (or 3M brand) works really well in sanding leading and trailing edges to shape.

Combining the two ideas, put a couple of tapes side by side along the edge of a straight board. I use some Melamine covered MDF from Home Depot. Place a 1/32 inch wire near the edge, then your leading/trailing edge stock, then a wire whose diameter is the thickness of your work piece.

If you are not too brutal about it the wires will stay in place. Sand away until you hear a screeching sound all along the wires.

This is a one shot, so replace the tape for more edges... Tips and Techniques by Gerald Sullivan



The Back Page

South African anthill filled with ten tons of concrete then excavated.