The Thermaleer

"Happiness is staying up until you want to come down"

VOTA: Victorian Old Timer R/C Association

The Story of Charles Hampson Grant - Part One

The Maestro shows how! Charles Grant launching one of the all-balsa stability test models used in his writing to demonstrate correct aerodynamic proportions. Photo taken at Manchester, Vermont USA in May 1980, by John Worth.

SAM 600 Website <http:www.sympac.com.au/jtboundy>

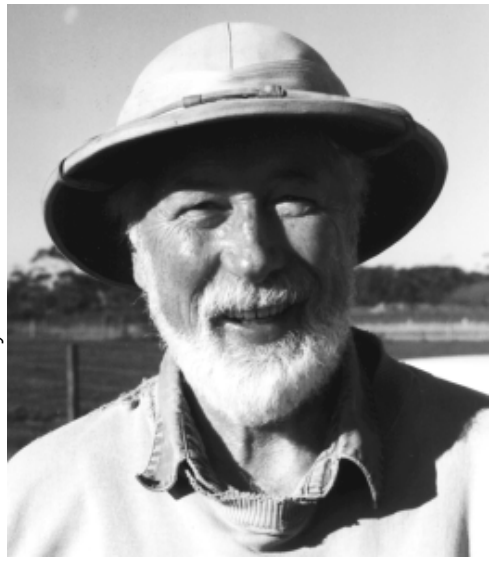


Photo: Trevor Boundy

Introducing the new Editor:

I must go on the record on behalf of all Club Members and express our appreciation for the absolutely fine job Trevor Boundy did over time as Editor of the Newsletter. Well done Trevor.

You will note from the cover of this newsletter that this publication now has a name, "The Thermaleer". I hope you like the name and appreciate the content. In the next issue we will have a "Letters to the Editor" page, that is, if I receive any letters. Also a few other innovations will start to appear and I hope you like them too. Peter Bennett.

NEXT MEETING

Meeting #56, the Annual General Meeting (AGM) will be held on Thursday, July 30th 1998, 7:30pm sharp at Saturn Hobbies, located at 17 Ardena Court, Bentleigh East (Melway 68 J-12) of East Boundary Road (which is opposite the Moorabbin Memorial Swimming Pool) Saturn Hobbies will be open prior to 7:30pm.

On most Sunday afternoons and Thursdays, Thursday Old Farts Fun Fly (TOFFF's day) there is casual flying at the SWAMPS club on a private property at Lang Lang, (conditions permitting) by courtesy of Fred Chigwidden's son David. Members are welcome, especially those new to flying are welcomed to the SWAMPS field. Model and pilot training sessions are conducted by Peter Donovan and others. Location and local field rules can be obtained from Fred Chigwidden, you can reach him at 03 5997 5675.

SAM 600 of Australia Contest Rule Change Procedure (Draft)

The following proposals for contest rule change procedure will be discussed and voted on at the next meeting, being the Annual General Meeting (AGM) of SAM 600 of Australia. These proposals follow the lengthy discussion and decision at the last club meeting to retain the current SAM 600 of Australia 1995 Contest Rules. The proposals have been prepared by Trevor Boundy and Peter Bennett in good faith, based primarily on the SAM Rules Change Procedure in the US.

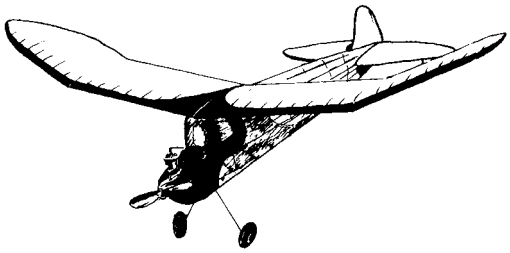
1) Initiation of Proposed changes .
Proposed changes may be initiated by a written proposal from an active financial SAM 600 of Australia Inc., member and signed by at least eight (8) active financial members. (An active member is defined as a member who has flown in at least three contests during the past year).

2) Publication of the proposed changes.
Publication of the proposed changes will be in the SAM 600 of Australia Inc., newsletter with a request for comments both for and/or against. Those comments will be published in the following newsletter, along with a ballot paper. Voting shall be by mail-in and shall be decided by a majority of those submitting ballots.

3) The time between rule changes.
The time between rule changes will be five (5) years.

4) The ballot procedure and timing.
The Publication and Balloting Procedure will commence January 1, 2003. Proposals will be accepted by the Committee between January 1st and February 28th. These proposals will then be published in the March Newsletter together with a request for comments, for/against, from all financial members. Comments must be received by the Committee by April 30th. Proposals and comments will then be published in the May Newsletter together with a Ballot Paper asking for a yes/no vote from all financial members on each proposed change, to be received by June 30th.
Results of the Ballot for Rule Changes shall be announced at the Annual General Meeting (AGM) in July and formally adopted for the next five (5) year cycle commencing immediately, July 2003.
The rules, if amended, will then be published in the SAM 600 of Australia August Newsletter and included on our Home Page on the Word Wide Web. On January 1st, 2008 the procedure starts over again.

5) Disputation procedure.
In the event of disputation occurring during the five (5) year term (such as a hitherto unknown engine requiring classification) the Committee of SAM 600 of Australia Inc., will have full powers to make a binding determination which will remain in place until the commencement of the next cycle.



BROOKLYN DODGER

Web News: Internet stuff from Trevor Boundy

Peter Bennett and I have discussed of late the need to update the "SAM 600 of Australia" web page, the change of rolls between Peter and myself seemed as good a time as any to make these changes.

As well as a change in format for the page, our general flying rules (MAAA 1995 rules) have been added as per the decision taken at our last meeting. Also as promised at the last meeting, I have obtained information from Bill Booth President of SAM USA setting out the procedure for their rule changes which the we will adapt to suit our smaller membership. This will be included in the rules part of our web page as a first step. Also had an email from Harry Barr in London Ontario, Canada SAM 89 re exchanging newsletters. Peter has arranged.

Links added:-
<http://www.modelengines.com.au>
Model Engines Oakleigh, Victoria, Australia

<http://www.ozemail.com.au/~kelletts>
Kellett's Hobbies Liverpool, NSW, Australia

<http://www.airbornemagazine.com.au>
Airborne Magazine Tullamarine, Victoria, Australia

<http://www.bolly.com.au>
Bolly Products Elizabeth West, SA, Australia

What do Thermals Look Like ?

By Wayne Angevine. (As downloaded from the internet).

This is an article that I posted to this list and <rec.models.rc> last June. It seems appropriate to post it again, since there are a lot of new people on the list and the topic seems to have come up again. Some people have characterized the exchange that included this article as a flamewar (Ed. note: a flamewar is an inflammatory and aggressive exchange of views over the internet), but the closest thing to a flame was a question about my scientific credentials, and those are easily verified. I also highly recommend the article by Roland Stull in the last proceedings of the Madison Soaring Symposia. See the classified ad in RCSD for how to order that volume.

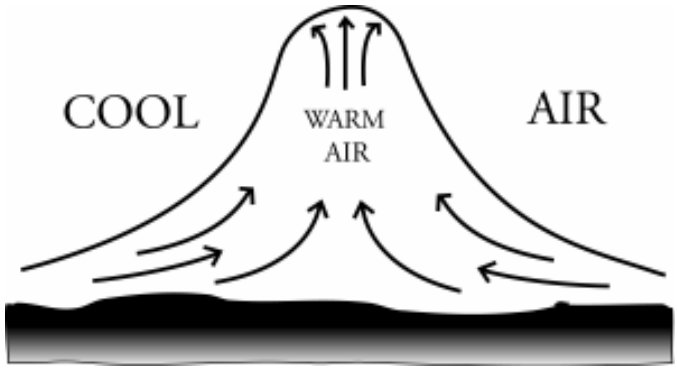
Introduction

Model sailplane and free flight fliers are interested in the structure of thermals, which provide the energy for their flying. Here is my attempt to describe thermals. I'm an atmospheric physicist working in the boundary layer. This is not a scientific article, but my views based on extensive reading and observations.

The Boundary Layer

The short answer to the question is that thermals are columns of rising air. A longer answer requires what may seem like a digression into boundary layer physics. The boundary layer is the layer of air near the earth's surface that is affected by the surface on scales of an hour or so. The sort of boundary layers we're interested in are convective boundary layers, which occur in the daytime over land in weak to moderate wind conditions. There are other sorts, but they don't produce thermals as such. I'll also assume relatively flat and uniform terrain, and at most fair-weather cumulus clouds. Boundary layer physics is a subfield of atmospheric physics or meteorology, but the scales (and therefore the forces) of interest are different. It is easy to become confused if one tries to apply basic large-scale or storm-scale meteorological concepts to the boundary layer.

A convective boundary layer is a few hundred meters to 3 km thick, depending on the amount of incoming solar energy, the amount of moisture in the ground, the larger-scale weather (high or low pressure), the wind speed, and other factors. Call the boundary layer height zi. The bottom of the boundary layer is a *surface layer* about 0.1*zi thick, say 100-200 m. The surface layer is heated by contact with the surface. The top of the boundary layer is a temperature inversion (hence zi, inversion height).



... just a nervous little bubble of warm air....

So to first order, thermals are columns of warm and therefore buoyant air that rise from the surface layer to the inversion. The spacing between thermals is about 1.5*zi, say 1-2 km. The thermals themselves are somewhat less than half that, say 500-1000 m in diameter. Most thermals span the boundary layer vertically. There is, of course, a distribution of sizes. Between thermals are broad areas of sink. The sink is weaker than the lift because it covers a larger area. The opposite is true at the top of the boundary layer, but we rarely fly that high.

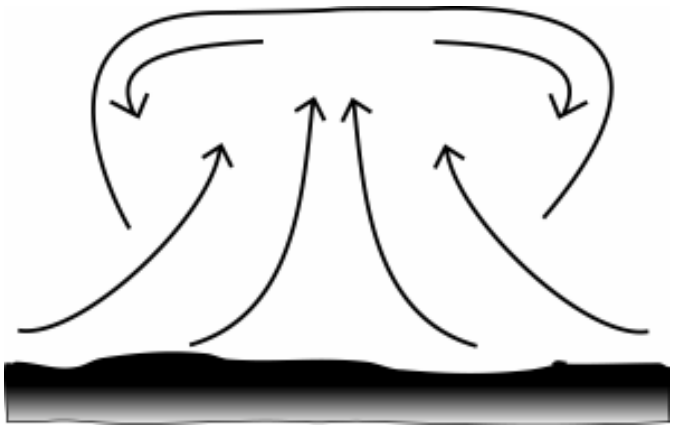
There are, as always, complications. Sometimes we fly in the surface layer and sometimes in the lower part of the boundary layer. Rising air in the surface layer (the lowest 100-200 m) is in the form of small plumes, themselves a few tens of meters in diameter. These plumes converge near the top of the surface layer to form thermals. The surface layer to boundary layer transition is not sharp, so we often find ourselves flying in either well-organized thermals or disorganized plumes, or some of both.

Dynamics

Thermals evolve over time, are influenced by terrain, and are shaped by and move with the wind. Boundary layer thermals form and dissipate with time scales of 10-30 minutes, surface layer plumes faster. This can lead to the apparent phenomenon of "bubbles"; or detached thermals or plumes. Plumes and thermals respond to irregularities in the surface (different amounts of vegetation, houses, and so on) by forming more often in some places than others. Dark ground

(if it's not wet!) and sheet-metal roofs are well- known thermal concentrators. If the wind is light, thermals may stay attached to the hot spot. If not, thermals may form repeatedly over the hot spot and drift downwind. Thermals drift with the average wind over their height, so they may travel at a higher speed and in a somewhat different direction than the surface wind. Thermals also tilt if the wind is stronger at higher altitude, the usual case.

Thermals are not uniform, nor do they have sharp edges. The edges interact with the surrounding air, so thermals have a warm, usually fairly smooth core surrounded by turbulent edges. The air around the edges may be in the form of blobs and may be either rising or sinking. This leads to the common idea that thermals are toroidal (donut-shaped). It's probably more accurate to think of thermals as vertical cylinders. Roland Stull (see reference at end) writes, "...the best model might be the 'wurst' model"... that is, that thermals look like vertical sausages. Air detrained from the thermal edges is cooled, and cannot be recirculated into the thermal except at the ground. Vortex rings of the size of thermals are not observed. Stull also writes, "Real thermals are not perfect columns of rising air, but twist and meander horizontally and bifurcate and merge as they rise".



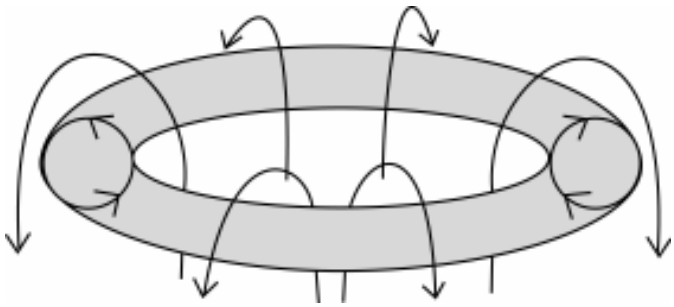
... that soon begins to resemble a weeping willow tree ....

The strength of thermals is controlled by the amount of sunlight and the surface conditions. If the surface is wet or moisture is being emitted by healthy plants, a larger fraction of the incoming heat from the sun will be used to evaporate water than to heat the air. Water vapor does contribute to buoyancy, but less than heat does. These factors probably account for most of the difference between soaring conditions in the western and eastern U.S.

Diagrams based on drawings contained in Dave Thornburg's book "Old Buzzard's Soaring Book" published by Pony X Press, Albuquerque New Mexico.

Variations on the theme

So far I've described the situation in the middle of a day with light wind and high pressure. I wish all contest days were like that! If the wind is stronger, turbulence driven by wind shear (the difference between the winds at one height and another) may interfere with the formation of thermals and the lift will be light and spotty. If the barometric pressure is low, there will likely not be an inversion to define the boundary layer top. This will tend to produce larger thermals that are farther apart, at least until the rain starts! Do thermals rotate? They do, but not predictably. Even dust devils don't have a preferred direction of rotation (see Stull, p.449). Thermals are too small and short-lived to be affected by the earth's rotation (Coriolis force) or by the equator/pole thermal gradient. Their rotation is determined by local terrain. Rotational velocity in the core of a typical thermal is small compared to the vertical velocity.



... and finally evolves into the "doughnut" or torus stage ... for its ascent into the clouds.

Bibliography

Those who are interested in following up the topic further can consult the following references.

An **Introduction to Boundary Layer Meteorology** by Roland Stull (Kluwer) should be in any good University library. The chapter on convective boundary layers is quite readable.

A recent paper on imaging of the boundary layer is **Calculations of Area-Averaged Vertical Profiles of the Horizontal Wind Velocity** from Volume-Imaging Lidar Data, in the Journal of Geophysical Research, vol. 97 pp.18,395-18,407, 1992. Schols and Eloranta

Photograph of Leon Shulman with his contest winning Banshee.

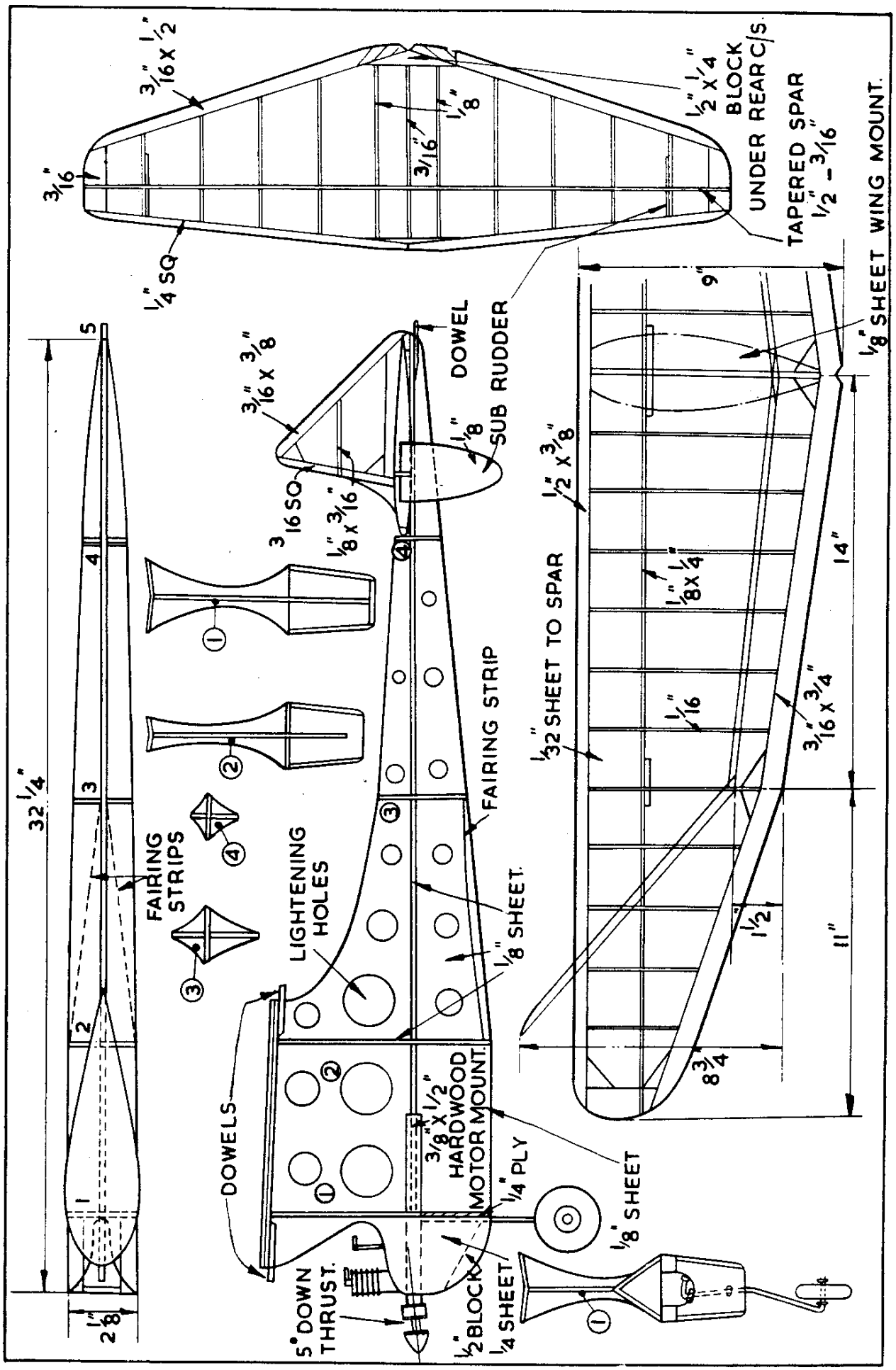
Banshee.

American Pylon Power Winner designed by Leon Shulman. (Reproduced from the Aeromodeller Annual, 1948).

DESCRIPTION.-This model is the second of a series of three: Zombie, Banshee, Zoomer-developed by the designer to give fast spiral climb, low drag and consequently flat glide. Banshee as the middle model of the trio is perhaps the most suitable for the average enthusiast, sporting some of the improvements developed from the Zombie without the trickier trim and streamlining refinements of Zoomer. Constructional methods employed on fuselage of Banshee are particularly interesting. A sheet crutch to plan form is laid down on which sheet pylon and sheet side elevation outlines are erected on the centreline, suitably braced with gussetlike formers, thus producing an x -shaped structure, which, when covered gives a diamond-shaped fuselage of considerable strength for low weight and speedy construction. Wings feature a thinned **NACA6409** aerofoil section and embody polyhedral. Braces are stronger than usual owing to overlap of mainspars in addition to usual ply keepers. Symmetrical tailplane has anti-spin sub-rudders depending from its underside, which certainly perform their designed function. Shulman designed Banshee as far back as 1941, but its American popularity was not achieved until after the war. Incidentally, Astrals have just put up Banshee in kit form so that we can look forward to seeing them well to the fore at next season's contests.

PERFORMANCE -Gussie and Airs. Gunter's competition successes in 1947 may be said to mark the beginning of the cult of the Banshee in this country. During 1948 they were prominent at the Nationals, while Ron Warring appropriately enough won the Astral trophy with one.

DIMENSIONS -Span 50 ins. Length 321 ins. Root chord 9 ins. Tailplane span 22 ins. Root chord 7 ins. Fixed monowheel undercarriage. Polyhedral 1.1/2 in. at break, total 8 3/4 ins. each wing.



Banshee. *American Pylon Power Winner designed in 1941 by Leon Shulman.*

(From Aeromodeller Annual 1948).

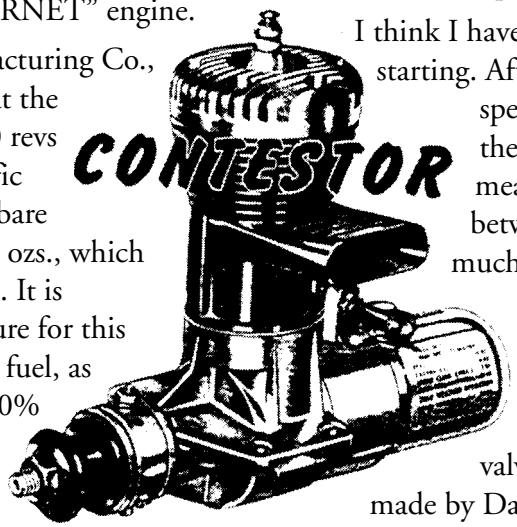
Recent Developments in '38 Antique

by Don Howie

This may seem a strange title, as the models are 1938 and earlier and the engines 1950 and earlier. However, unlike many of the older U.S. Modellers; most Australian flyers know more about diesels than the U.S flyers, but the Americans have a vast experience of old spark ignition engines.

I received some feedback when I suggested that alcohol fuels are needed in some ignition motors. The following is from Model Aircraft News June 1946, by Edward G Ingram about the "HORNET" engine.

" Ray Snow of the Hornet Manufacturing Co., states dynamometer tests show that the engine develops .82 h.p. at 13,800 revs per minute . This makes the specific output 1.358 h.p. per cu.in. The bare weight of the engine is given as 14 ozs., which makes the weight per h.p. 1.45 lbs. It is believed the maximum output figure for this engine was obtained using alcohol fuel, as a mixture of 70% methanol and 30% castor oil is recommended for best performance".



The engine boys in Adelaide are currently working on a replica of Ray Snow's Hornet. Leo O'Reilly lent them an engine and David Burke is getting the dies made at present. I have my name down for an engine, but expect it will be a long time before we see it completed.

It is interesting that the Hornet Manufacturing Co., introduced a conversion kit in 1949, so that power could be increased to 1.22 h.p. at 18,000 rpm. This was to counter the other very powerful motors then on the market.. Bill Britcher bought an ORR 65 replica racing engine from Larry Jenno last year. Bill went to Larry's home in Los Vegas and saw the engine running in his backyard. The original engine, when released in 1947, had a stated rating of .85 h.p. at 13,500 rpm. The weight was 13 1/2 ozs., and a compression rating of 12.5 to 1. Certainly not a motor to run on petrol, although it could run on high octane aviation gasoline if obtainable.

I must admit to having a few starting problems with my Forster 29 BB motor at present. My engine is one of the last ignition motors made in 1949 (same as 1947) with the high compression head. The engine came with a metal tank and I expect most people run them as glo plugs. Bob Forster released new horsepower figures and these were published in M.A.N. June 1949. The power of the Forster 29, run as a glo motor on methanol and nitro is given as .40 h.p. at 13,400 rpm. Running on spark ignition with alcohol/castor mixture .36 h.p. at 12,200 rpm. If the engine is run on gasoline/mineral oil fuel, the output is .32 hp at 11,600 rpm. It is interesting reading the instructions for the motor, as after 50 tanks of fuel, use a 9 x 6 prop for maximum performance and it may require 75 to 100 tanks of fuel before the engine will reach its peak in speed and power.

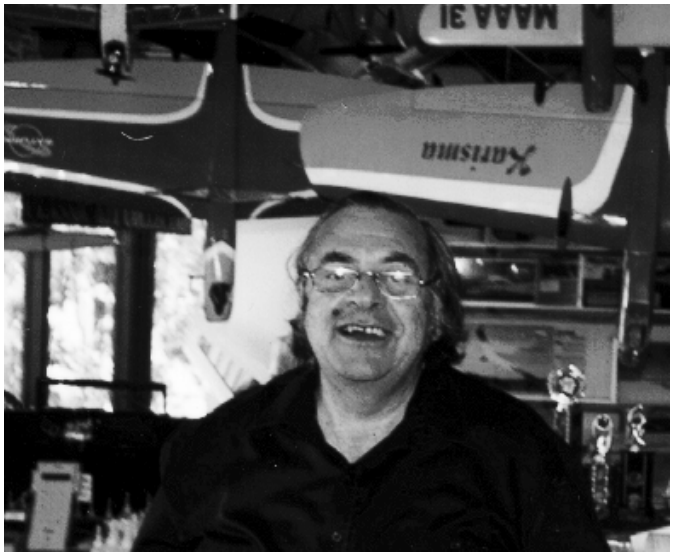
I think I have traced the problem of difficult starting. After several minutes running at high speed I seem to get a build up between the ignition points. The enclosed points mean I have to take off the prop and clean between them. This is rather a hassle, and much easier on a non-enclosed point system.

Bill Britcher is currently running his RC1 with a Contestor D60R of 1947. This is a drum type rotary valve, rear intake. One of the last motors made by Dan Bunch. The motor refused to run when hot, until Stan Gurr made a new set of rings for the motor. Bill has been flying it in the air on a 14x6 prop (Topflite wood) at about 6,000 rpm. I suggested he use a smaller prop; he changed to a 12x6, running slightly rich it is now gaining more compression, and going quite well.

Bill's latest '38 Antique model is a Trenton Terror with original Super Cyclone GR60. The original Cyclone, model GR weighs only 9 1/2 ozs., and in a 3 1/2 lb Trenton Terror, should be very competitive. Another engine that has potential is the Fleetwind 60. It must have been fairly expensive to produce, but the twin exhausts and twin transfer ports give it quite good performance. The motor is quite compact and expect to see it flying in one of Bill's models soon.

Many people have been amazed with the performance of the OK Super 60 in Bob Watson's Shereshaw Cadet (see last issue). The engine came with a fly wheel, it was originally a car engine. Bill Britcher fitted another piston and tubular steel gudgeon pin with aluminium end pads. The spinner nut adds weight and the glass nylon prop (heavier one side) worked like the flywheel.

....continued on page 11 .....



Photograph by Dr Chris Hill

Confessions of an Aeromodeller: The Tony Cincotta Story - Part One.

Well, Hi out there, when Peter asked me to write for our Mag, I thought how the heck will I keep you entertained when there is so much fantastic input from all out there, I hope you all approve because what you read is what you get.

Let's start at the beginning. I was about four years of age when my Uncle, Joe Russo, came to stay with his Sister, my Mother, and our family in Glenhuntly Junction. He was big news overseas and built the most pedantic type construction A2 free flight models wing and tail egg crate construction. As a child this led to many hours of enjoyment just watching him build. I can still see him in my minds eye even today. He used to ride racing bikes at the Velodrome and be a top waiter at the Hotel Menzies before they sent him to the Korean War. After coming home he was never the same. He came home shell shocked, that will follow later in my article.

Anyway, Uncle Joe was out riding in a comp one weekend and I was left home with my eldest Sister, Mary, to look after me while the folks went to church. I thought "I gotta fly his A2 while he's away, I can do, like no problem, I've watched him many times, it's easy".

So here I am with this huge A2 out in Glenhuntly Road, test gliding across the tram lines in those days (there was not much traffic at weekends). I had a couple of glides myself and have been hooked ever since. My sister came out the front of the shop raving and shouting "I'm going to tell Uncle you've been playing with his toy plane". I think I said to her "It's so easy to do I will show you". So I conned her into holding the model while I got some string. I think I had about 10 feet, I said to her "You hold it and let go when I run". She did as I said alright. I started running, the model rose up and tangled itself through the overhead tram lines. It was the first time in my young years I had seen a re-kitted model, the bits seemed to come down for hours. So, being worried, I took all the broken bits inside. Said "I've seen him make them, I can fix it". I was pretty proud of the job I had done. When Mum and Dad came in with Uncle, did I cop it from all of them, all I said was "I was getting it ready for him to fly". I can still hear the voices now. "If you want to make models I will show you, and because I am a good Uncle to you, you will buy the balsa out of your pocket money". When he gave me the list of wood he wanted, I took it down to the local newsagents, I think it was Lords, his son Robert is one of my clients after all these years. Anyway, Mr Lord costed my list for me, it came to about 10 bob, at sixpence a week wages I don't think I ever repaid the debt.

He took me under his wing and started to show me how you cut out ribs and bits and pieces. It must have taken ages to get the hang of it, because he was such a pedantic builder. If it wasn't right he would break it and tell me to do it again. He would say "You listen to me, Boy, if you want to make model planes you have to use your common sense", something that I still bomb out with from time to time.

After about a year of getting nowhere I finally made a model that flew. It was a Central Aircraft "Rocket", or something like it, a rubber model that I got for my birthday. He took me down to Dendy Park and started teaching me how to trim it. All was going well that morning, after about four flights he let me wind the rubber right up and told me to launch it straight into the breeze when he told me to. I must have hung onto the Rocket for what seemed like forever to me, then it was launched and it climbed like crazy. The rubber ran out and it was still going up until it was a dot in the sky and we could no longer see it. I cracked a real darky and cried all day, this must have really got to him as he said "Models sometime go to God". I have never forgotten those words, I would still like to know where God is storing all my models for me. After about 1 1/2 years of building he let me build a powered F/F model and we designed it ourselves, come to think of it, not unlike the Filler

....continued on page 13.....

Results of Cohuna Fly-In 1998

Date	Event	Name	Model	Motor	Channel	Score	Place
23 May 98	Half A	Graeme Sinclair	Dallaire	Cox 049	625	1118	1
23 May 98	Half A	Danny Missen	Anderson Pylon	Cox 049	12	810	2
23 May 98	Half A	Jock McKenzie	Record Breaker	Cox 049	30	720	3
23 May 98	Half A	Don Cameron	Flamingo	Cox 049	34	601	4
23 May 98	Half A	Chris Lawson	RC 1	Cox 049	16	541	5
23 May 98	Half A	Steve Gullock	Power House	Cox 049	28	305	6
23 May 98	Half A	Peter Hosking	Record Breaker	Cox 049	20	279	7
23 May 98	Half A	Peter White	Lanzo Bomber	Cox 049	623	157	8

After a twelve (12) year absence the Old Timers returned to Cohuna, with memories of grass fires still alive. (Editors note: Fires allegedly caused by the former Editor, Trevor Boundy. Contrary to popular myth, Trevor was not, repeat not, running his Edco Skydevil on gasoline but on methanol-based glo fuel. What happened ? Well, Trevor inadvertently pulled off the fuel line at the same time that he had a spark-induced flame up.
Result- the start of a modest grass fire).

Several hardy souls braved high, gusty winds in Half A Texaco, with local hero "Jock" McKenzie looking better and better as the competition progressed.

The only flyer to notch up two straight max's with his just-finished Record Breaker, his high flying performances had even seasoned campaigners wistful; however with "Sinkers" Sinclair, "Youngblood" Missen", and Jock in the fly-off it looked like a McKenzie walkover- *but*, after Missen failed early and Sinkers sank to earth with Jock still miles high, he was getting premature congratulations before his out-of -bounds landing put a sad, sudden end to his Half A hopes.

Unfortunately the weather intervened and caused the cancellation of the rest of the weekend's programme. Such is life. It should be noted there was a strong field of fourteen (14) entries entered in Texaco, all fuelled up and raring to go. (As reported by BB)

Editor requires OS 60 FS Open Rocker for Texaco use. Must be good runner. Either original or Texaco carburettor. 03 9645 7272

Results: Queensland SAM Champs

(Report from Trevor Carey via email).

Well guys here are the results of the Queensland SAM Champs with some excerpts of Col Somers comments.

Saturday afternoon

1/2A Texaco

Buoyant air and as you will see fuel does not inhibit them

1/ Mike Moore Atomiser Flyoff 13min 35 secs
2/ John French Alert Flyoff 11min 15secs
3/ Tony Hart Commando Flyoff 7min 15secs
4/ Des Slattery Kerswap Flyoff 6min 54secs
5/ Jim Hardy Lil Diamond Flyoff 5min 8secs
6/ PJ "Condo" Smith Lil Diamond Flyoff 1min 56secs
7/ Peter Doolan Commando 698 secs
8/ Col Somers Coronet 528 secs
9/ Norm Cash RC1 385 secs.

Nostalgia

On same day but air not as good with some overcast

1/ PJ "Condo" Smith Swayback ST 40 1120 secs
2/ Tony Hart Hyphen K&B 40 975 secs
3/ John French Skyrocket Merco 35 902 secs
4/ Des Slattery G/bergs Cumulus ETA 29 822 secs
5/ Col Somers Crowbar 56 OS 25 736secs
6/ Peter Doolan Crowbar 56 OS 25 640 secs
7/ Jim Hardy Black Magic OS 25 522 secs

Duration

Sunday, a mixture of 4 strokes with the result settled by the flyoff and a degree of luck. Due to frequency clashes there were 2 rounds with those first to qualify going in the first round.

1/ Toby Low P/boy OS 61 F/S F/off 14 min 52 secs
2/ Des Slattery P/boy OS 61 F/S F/off 12 min 46secs
3/ Mike Moore P/boy YS 53 F/S F/off 12min 25secs
4/ Dave Perkins P/boy OS 61 F/S F/off 10min 2 secs
5/ Tony Hart P/boy OS 48 F/S F/off 6min 41secs
6/ Jim Hardy Bomber YS 53 F/S F/off 6min 23secs
7/ Dave Paton P/boy OS 61 F/S F/off 5min 46secs
8/ Peter Smith P/boy YS 53 F/S F/off 3min 46secs
9/ Anthony French Lancer YS 53 F/S 1491 secs
10/ John French Hayseed OS 32 SXH 969 secs
11/ Phil Argent P/boy Rossi 40 966secs
12/ Trevor Carey Lancer YS53 F/S 953secs

Texaco was held in the a/noon (1430hrs), black clouds over the sun, contest run to new fuel allocations, the winner used his own "funny" smelling fuel with an allocation of 2cc's per pound. Norm Cash had the only fly away and still came 3rd anyway.

Texaco

1/ PJ"Condo"Smith Bomber OS 61 F/S F/off 18min 23 secs
2/ Tony Hart Bomber Irvine 40D F/off 13 min 56 secs
3/ Norm Cash Dallaire ASP 32D F/off 13 min19 secs
4/ Mike Moore Bomber ASP 46D 1973 secs
5/ Anthony French Bomber OS 40 F/S 1883 secs
6/ Phil Argent Bomber OS 60 F/S 1730 secs
7/ Peter Doolan Powerhouse OS 61 F/S 1557secs
8/ Dave Paton Bomber Irvine 40D 1504 secs
9/ Jim Hardy Bomber OS 46D 1439 secs
10/ Des Slattery Bunch Scorpion OS 40FPD 927 secs.

Twocc Ier

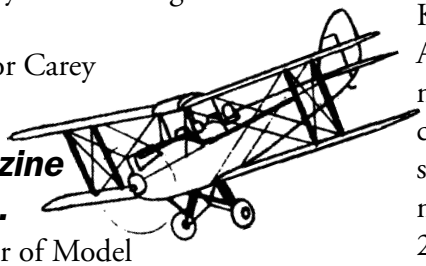
Breezy and getting cooler start time 1615hrs only 2 flights flown so the day could be wound up. Flown to the new rules.

1/ Tony Hart Commando Cox TD09 (m) F/off 5min 30secs
2/ Dave Perkins Kerswap Enya 09 (m) F/off 4min 36secs
3/ Mike Moore Playboy OS CZ 11 (m) 545 secs
4/ Des Slattery Kerswap Elfin 1.8D 492 secs
5/ Richard Hart Commodore MK17D 470 secs
6/ Peter Doolan Kerswap Taipan Tyro D 311 secs
7/ Toby Low Kerswap Cox TD09 (m) 289 secs.

Note (m) means muffled engines.

We are all looking forward to seeing you all at the 52nd Nats at Toowoomba.
Col Somers

So there you have it guys such as it is, the YS's are still running especially mine, it was the first time that I flew that combo on the day and each flight improved over the last one.
Catch you later guys. Trevor Carey



Model Builder Magazine Plans Now Available.

Bill Northrop, former editor of Model Builder Magazine has acquired the Model Builder Plans Service. He has prepared a catalog of full size plans from Model Builder Magazine from 1971 to December 1997. Another catalog, called the Scratch Builder's Almanac comprises designs not published in Model Builder, and includes boats, control line, electric, gliders, rubber, quarter scale, R/C and free flight, with illustrations. Each catalog is US$5 pp. For another US$9 Bill will provide the last 50 page, illustrated plans catalog offered by Model Builder.
You can contact Bill on-
Bill Northrop's Plans Service
2019 Doral Court, Henderson NV 89014 USA
Ph: 61-1-(702) 896-2161 Fax: 61-1-(702) 897-7775

"Model Engine" Bendigo Contest: Queen's Birthday Weekend June 6, 7, 8

Unfortunately this weekend, which was anticipated with such enthusiasm, was almost a complete washout due to the weather pattern which covered the whole state. High winds and heavy rain, whilst great for the farming community, was not conducive to an Old Timer Contest. However we did manage Half A about 3 pm on the Saturday and due congratulations go to Barry Barton. Results follow-

Date	Event	Name	Model	Motor	Channel	Score	Place
06 Jun 98	Half A	Barry Barton	Anderson Pylon	Cox 049	16	1305	1
06 Jun 98	Half A	Trevor Boundy	Albatross	Cox 049	32	1255	2
06 Jun 98	Half A	Graeme Sinclair	Dallaire	Cox 049	625	1088	3
06 Jun 98	Half A	Chris Lawson	RC 1	Cox 049	16	943	4
06 Jun 98	Half A	Ken Lawson	PB 2	Cox 049	36	649	5
06 Jun 98	Half A	Danny Missen	Anderson Pylon	Cox 049	12	599	6
06 Jun 98	Half A	Peter Hosking	Record Breaker	Cox 049	20	595	7
06 Jun 98	Half A	Stevan Gullock	Power House	Cox 049	36	574	8
06 Jun 98	Half A	Norm Campbell	Playboy	Cox 049	641	214	9

SAM 56 Postal Competition (1/2 A Texaco)

You are hereby invited to participate in this year's 1/2A Texaco Postal, hosted by SAM 56, Wichita, Kansas. The event will be flown the weekend of August 8 or 9, 1998. You may fly either day, but all members of your team must fly on the same day. All current SAM RULES apply for 1/2A Texaco; i.e; small tank; 8" maximum prop diameter; 15 min max; 3 attempts to make two official flights; total of 2 flights for contestant score. Hand launch in lieu of R.O.G. permissible at team discretion.
Send results of top 5 flyers to:
Dan Benner
6966 South Broadway
Haysville, Kansas 67060 U.S.A.

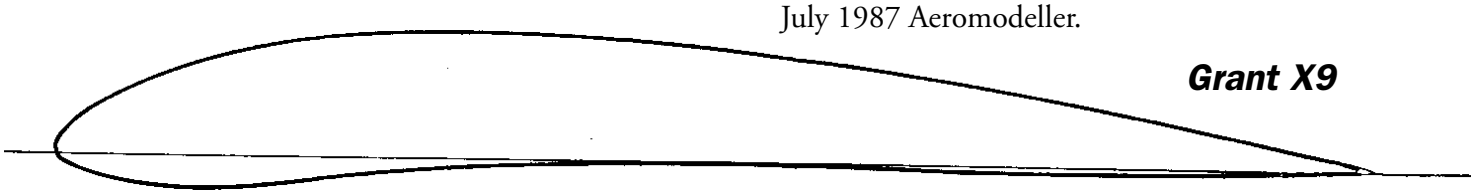
Entries must be received no later than September 7, 1998 to qualify !

....continued from page 8 .....

The instructions on the OK Super 60 (actually provided by the writer) mention that too light a prop can cause vibration. The combination of all the tips published in the previous SAM 600 Newsletters had produced a very competitive engine, running on petrol and oil mix. DH

Classic Airfoils and the story of Charles Hampson Grant: Part One in a series.

The Grant series of airfoil sections were designed by Charles Hampson Grant, who was Editor of Model Airplane News from 1932 and continued for over 11 years into the '40's. He wrote extensively, and published his many theories in the magazine as well as a number of books including "Model Airplane Design". As the Aeromodeller said in 1948 - "The Grant X-9 series of "X" sections vary in thickness to suit practically any size of model. The X-9 has proved very successful for power-duration, and both this and the thinner designs are suitable for rubber models. The complete range can be found in Grant's 'Model Airplane Design' ". The following first instalment of the CH Grant story is taken from the July 1987 Aeromodeller.



Station..	0	2.5	5.0	10	20	30	40	50	60	70	80	90	100
Upper...	0	3.37	4.78	6.97	8.84	9.47	9.30	8.57	7.44	5.97	4.24	2.20	0.05
Lower...	0	-1.50	-2.10	-2.48	-1.73	-0.80	-0.47	-0.54	-0.74	-0.83	-0.63	-0.37	-0.05

An Appreciation of CH Grant

by Alex Imrie (Aeromodeller July 1987)

With the passing of this pioneer on 15th January last at the age of 93 years, following injuries received in a motoring accident, we recognise his inventive genius that has left an indelible mark in many areas of Aero-Science. To associate ourselves with any form of aviation is to be reminded continually of Charles Grant: when wheels are retracted for flight and extended for landing. . . when we see the operation of drooping leading edges and slotted trailing edge flaps that change the shape of our airliner's wing suiting it for slow or high speed... when our models fly with that certain stability that we have learned to expect of good designs... when reading the informative model journals that we enjoy today. . . remember that these things evolved over a period of time and C H Grant was an integral part of their evolution.

Early Bird

Charles Hampson Grant was born in Elizabeth, New Jersey in 1894, his family moving to Peru in the State of Vermont a few years later. Grant became fascinated with the study of flight and read everything that he could lay his hands on, following the experiments of the early aviation workers like Octave Chanute, Professor Langley and the Wright Brothers. During a visit in 1908 to an aeronautical exhibition in New York he purchased a flying model, and it was the inability of this model to fly that caused him to undertake the design and construction of his own model flying machine. The craft that emerged was a gull-winged stick tractor, mostly made from split bamboo, fitted with a wheeled undercarriage and measuring some twenty-eight inches wingspan. Its best flight was a measured 128 feet ROG, achieved in May 1909.

Other model experiments followed, but the desire to fly himself meant that more time was now being spent in making fullsize gliders, a pursuit in which he was encouraged by his mother who assisted with the fabric work. He first flew on 15 August 1910 when he leapt off a roof with a wire-braced 'lifting surface'. The resultant glide of sixty-five feet was accepted later for his entry into that hallowed organisation of pioneer American airmen, The Early Birds.

By July 1911 he had made a 25ft span biplane hang glider based on the Octave Chanute concept. Built from spruce, covered in muslin and braced with piano wire, it weighed ninety pounds and was controlled by body movement. Fitted eventually with a high lift aerofoil, ash landing skids and cable operated Curtiss-type ailerons, Grant made many flights in this machine, some of them covering distances of up to 400 feet at altitudes of twenty-five feet, before the glider was destroyed by strong winds during the winter of 1916 '17.

To be continued next issue:

....continued from page 9.....
Stomper but well before then. By this time I had met Les Organ, and used to tag along with him whenever I could. I have always loved free flight and still do, but I don't have a fetchamite to return for me. I think if it wasn't for my Uncle, and people like Les Organ, Wally Norton, Col Stone and others, I might have stopped long ago. Well, that's all for now, until next time. Tony Cincotta.

Hooked on Dope

I have been trying colouring clear dope for spray use, and so far the best colouring agent is :-

Wattle Industrial Pigment, (4 litres cost a heap) and it usually is pump dispensed for colour mixing purposes. This pigment is very dense, some colours are lead based and I have been told by my seller that it is an industrial pigment used for pigmenting two pack epoxy's.

This pigment mixes with dope thinners and sprays easily even with a little dope in the mix, but brushing on dope after spraying produces streaks of colour.

The dispensing system is set up for colour mixing so getting the you want is not a problem. JTB

SAM Chapter 89, Ontario, Canada.

Peter And Trevor. Thanks for your response regarding exchange of newsletters and our web page.
The web page is coming along nicely with the art work all done. Now we are in the process of doing the dull stuff like links, minutes pages, up-coming events, etc. Will keep you posted.

Our first club competition is next Friday & Saturday. I'm flying a Trenton Terror which performs well and has garnered me some "gongs" in the last two years. A Lanzo Bomber 80" with an O &R .60 is close to completion and should be flying within the next 3 weeks. Weather has been lousy with high winds and below average temperatures. Viva L' El nino !
My mailing address is:

Harry H. Barr 1205 Huron Street Apt. 105
London Ontario, Canada N5Y 4L1

I've asked our Secy./Treas. to mail you a few back copies of our NL so that you might catch up with the past few months of our activities. We publish quarterly unless there is a reason for a Special Issue. The next issue will be early in July, so you should receive this as your first issue. We look forward to receiving yours, thanks again. Lots of luck, Harry

Cox Texaco Jr. Engines Update - and Other Matters

by Ol Charlie, from SamSpeaks # 141

Cox/ Estes Customer Service Manager Don Hammond has advised that the Cox Texaco engine will remain in production; however the Texaco Jr. version with the 1/2 ounce (small) fuel tank is discontinued.

Cox will continue to supply the Texaco Jr. tank conversion kit #7858 for a price of $6.00. This special item will only be available via direct order from their customer service department.

Additional Texaco engine items available: The Snap Start starter spring, which is a non prop interference spring, that makes the starting process a breeze. This item is currently available as #20339 for $2.90. Also, still available are the Cox special Texaco 8 x 4 props under special factory direct order #248 for $1.99 each. You may also order any of your regular Cox replacement engine parts direct. There may be a minimum dollar amount order. Visa and Master Card are accepted. Cox/ Estes toll free customer order desk direct phone line is (800) 451-0339.

The following letter from Brian Eberwein might shed some additional light on the subject: "Charlie, Good to hear that you talked to Don Hatcher, he is a good man and has been with Cox since the second building was built (no kidding). Before 1 was transferred out of the Cox technical support area (last October), we had a meeting about this item.

What had happened is that Dave Draper, the marketing manager for Cox had sent a few letters to SAM, about which engine they were using at the time (Not asking us or the R&D guys). He never received a letter back so he decided to keep the large tank.

He then decided after the meeting, to continue small production runs of the smaller tanks for SAM, since they are required. If you ever have a question about engine parts availability and don't like the order girl's answer, then ask to talk to Paul Horwat, or another technical support gentleman, just in case she is wrong. Sorry for not getting back to you sooner as I am in R&D now, and am kept very, very busy.
If you have any questions in the future about a Cox product, or even Sterling and Estes, then do not hesitate to contact me.

Brian Eberwein, <eberwein@amigo.net>

Complementary Copies of SAM 600 of Australia Newsletter.

Complementary copies of our newsletter "The Thermaleer" are currently sent to the following persons, to promote the gathering of material for SAM 600 of Australia, for the ultimate benefit of its members.

First Name	Surname	Organisation
Bruce	AUGUSTUS	SAM USA Editor, reciprocal newsletter
Ian	AVERY	SAM 1788 Editor, reciprocal newsletter
Harry H	BARR	SAM 89 Editor, reciprocal newsletter
Paul	BAARTZ	W.A. representative
Don	BEKINS	SAM 27 reciprocal newsletter
Bill	BOOTH SR.	SAM USA President, reciprocal newsletter
Simon	BOUNDY	Trevor's son
David	CHIGWIDDEN	Owner, SWAMPS Field (TOFFF's)
Ivan	CHISLETT	VMAA Secretary
John	FRENCH	SAM 84 reciprocal newsletter
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