

THE SOCIETY OF ANTIQUE MODELERS  
**The SAM 600 Thermaleer**

*"We don't stop playing because we grow old.  
We grow old because we stop playing."*

VOTA: Victorian R/C Old Timers Association (SAM 600) Inc.



Photo courtesy Rex Patkin

***Hail Trevor !***  
***Champion of Champions***  
***Eastern States Gas Champs 1998***

***Trevor Boundy with his Lanzo Bomber  
(the only model he did not get a place with at  
the Eastern States Gas Champs).***

***Next Meeting  
Auction Nite !***

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

Download this newsletter <<http://www.ozonline.com.au/~sam600nl>>

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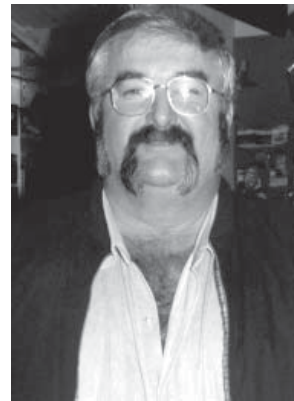


Photo: Trevor Boundy

### **President's Report**

Hi Folks. Once again the Eastern States Gas Champs was held at Wangaratta in excellent weather, Trevor Boundy won the Champ of Champs with a first in '38 Antique and a third in Duration. Mark Collins placed second in Duration and your Editor Peter Bennett managed two thirds in '38 Antique and Texaco. All SAM 600 members put up a strong field against SAM 1788 members. Results and a report from Contest Director Dave Brown are on page 6.

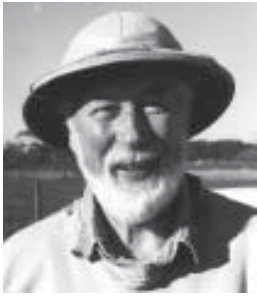
Don't forget, the November meeting is also AUCTION NITE. Bring along your bits and pieces, old and new to swap or sell. At the same meeting I would like to discuss several events and what we will be flying at these events. Happy landings, Chris Lawson.

### **NEXT MEETING**

#### **••••• AUCTION NITE •••••**

Meeting #58 will be held on Thursday, November 26th 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.



### **Time for OZSAM/OTAA**

Well, now that another flying season is under way and your Editor has a couple of issues of "The Thermaleer" under his belt, it's time to have an opinion. That's what Editors are supposed to do, isn't it ?

After listening to SAM members from various Chapters around the country it has become clear that a large number are not in favour of the new rule changes. What's more, VOTA members are concerned about what is perceived as a lack of a direct individual voice. SAM 600 members have voted to stay with the 1995 rules for all VOTA contests, and have voted in a "Rules Change Procedure" (see newsletter #56 or visit our web page). We will fly by the 1995 rules for the next five (5) years. The procedure ensures that every member has a vote on whether or not to accept any change. Strangely enough, this is called democracy. And we need a strong dose of it to ensure a healthy, active and growing Old Timer movement into the future.

It would appear that other SAM Chapters have been similarly concerned. (I note that Western Australia is close to SAM Chapter status, look for SAMWA). Now is the time for Old Timers of Australia to get their act together, to organise the process whereby any suggested future changes are placed, with the pros and cons, before members for discussion. Then it should be decided by the direct vote of all members. One man, one vote.

A practical solution could be to have each SAM Chapter nominate a member to join a coordinating committee. Their job would be to run the process. Nothing more, nothing less. By this means the geographically diverse membership throughout Australia could be recognised as one Special Interest Group (SIG). The Special Interest Group could be known as Australian SAM (OZSAM) or Old Timer Association of Australia (OTAA). We are not big enough for each SAM Chapter to go it alone. Yet each and every member should be involved in the process. The formation of such a SIG would still allow any SAM Chapter to manage its own affairs and events as they do now. The benefits of this will enable us to better control our own destiny and to deal directly with the MAAA..

PCB



### **SAM 600 Web News: Internet report from Trevor Boundy**

The Nostalgia plan list continues to grow, with 19 more models found, A4 plans were added, and the list updated on our home page, (thank you to Max Hayes and others) making a total of 422 A4 plans held, out of a total of 921 models named in the list, still a long way to go.

There are 405 "Antique" and "Old Timer" SAM plans held, out of a total of 726 known named models in the list. The file sizes of the plan lists on the WebPage has been reduced dramatically to make them quicker to look at. During the months of August to September inclusive, we had approximately 430 people looking at our home page.

The following Aero related subjects were added to our link page:- AirXstreams RC Gliders, EPP foam, Maleny, Qld, Australia

Mail link to: Graham Scott, Aust. Pattern Association Big Ed's Hobbies, laser cut ribs & formers, Bathurst, NSW, Australia Crusader Books, Military Books & Videos, Weston, ACT, Australia Flying Legends, Fully detailed fibre glass kits, Toowoomba, Qld, Australia The Hobby Headquarters, (Flair Kits), Kirrawee, NSW, Australia Jordal Hobbies, Blacktown, NSW, Australia Niddrie Model Aircraft Supplies, Niddrie, Victoria, Australia Silvertone Electronics, Riverwood, NSW, Australia Wings and Things Kingsford, Dee Why, Gladesville, NSW, Australia

Our Vice President/Contest Calendar director, Ted Hall has a home internet address which is:- [tedi@corplink.com.au](mailto:tedi@corplink.com.au)

The move to adopt a democratic mechanism to accommodate changes to our rules was accepted at meeting #57, and the detail can be seen at our WebPage.

The full results of the 4th Eastern States Gas Champs should be on the Web by the time you read this newsletter.

At the Eastern States Gas Champs serious debate was held on the subject of how all the OZ SAM chapters could be seen by the MAAA (and the various State organisations) to be one united voice and have the rules representatives of each SAM chapters drawn from those SAM chapters.



### **Western Australia Report from Paul Baartz, September 1998**

A general overview of OT activities in the Western part of the country reveals an enthusiastic but small group of participants who are mostly resident in the metro area with a few located in nearby centres such as Northam and Bunbury.

Our club (WAMAC) located in the metro area and flying at Mundijong, has 30 members of which about eight are actively involved in flying OT models, with activity on most Sunday mornings at our club field where repartee and wit(?) add to the enjoyment of social flying of the aircraft. State Championship events attract around 12 entrants on average as not all flyers are keen competitors, in fact less than half of the known OT flyers in WA enter any competition.

Of late there has been some bewilderment in the ranks regarding the recent MAAA rule changes and it is felt that this may lead to diminished numbers at the forthcoming OT Duration State Champs. Perhaps our isolation has separated us from the politics and background scenarios relating to some of these changes, but most do appear to have been unnecessary whilst others, such as the engine runs in Duration, appear particularly drastic.

Despite the fact that the WA member of the MAAA rules committee adopted a very conservative approach to rule changes, usually opting to retain the status quo, they have nevertheless been approved by a majority of states and have been adopted by the MAAA..

In an effort to encourage, more active participation in organised OT events our club has for several years been holding 'Handicap OT' events where any OT model can be entered although most are Texaco types and each is allocated an engine run time based on the expected performance of the model, ranging from 25 seconds to 75 seconds. These events have proven very popular due to the relaxed nature of them, with the handicapper prone to remember past performances and alter run times accordingly ensuring that the honours are spread a little wider than is the norm In OT events in the west We are currently promoting a sport type duration event which is based on OT Standard

Duration, however a little less restrictive with no area or weight limits, any sport type 2 stroke engine of up to .40ci providing that Schneurle and PDP types must be plain bushed ie. no roller or ball bearings. The format of 3 rounds with the first 2 rounds having 6 minute maxes and the last round of unlimited time has been proposed and we are looking forward to seeing if this works well in practise. Several models have been built but our 2 attempts so far to hold the event have been thwarted by foul weather. Another is planned for the middle of October and hopefully will have some positive news to report then.

Some discussion regarding the current MAAA and SAM rules has taken place of late and the consensus is that the previous MAAA and current SAM Texaco format of all ten minute maxes was preferable to the 2 of 10 minutes and 2 of 15 minutes as exists now and that Antique engines fuel allocation should be increased to 5 ml per lb as per SAM rules. (Four or five of WA OT flyers are members of Australian SAM chapters).

Also that all 2 strokes should have a 20 second engine run in Duration as the 17 seconds run is a bit tough on the schneurle ported engines. On this note, one of our members wrote to a well known modelling columnist regarding Schneurle ported engines and how to identify them. The answer was three pages long and after detailed reading and examination of it the reader was left very little wiser and certainly no better equipped to distinguish Schneurle ported engines from any other type so why does the MAAA OT Duration rules have separation of Scheurle ported engines when not even the experts can suggest a way of identifying them? It would be nice if the less spectacular performing 2 strokes could be encouraged with a longer engine run but it is hard to imagine how this could be achieved when there is such difficulty in defining the differences between the categories and types of two stroke engines.

Perhaps someone can suggest answers to these quandaries and thereby lead to a more equitable range of engine run times. One angle which was considered when drawing up our Sport Duration rules was whether or not the engine was equipped with ball/roller bearings, whilst this does nothing to clarify the schneurle port problem it may place the better performing engines in one class whilst those of lesser performance can be distinguished easily and treated accordingly in the rules. *Continued on page 14 ....*

## **Developments during 1946 and 1947 by Don Howie**



These two years are fairly relevant to modellers who fly '38 Antique models with spark ignition engines. Reading all of M.A.N. for the 2 years showed almost out of control advertising, with very little content other than a few new designs published. In early 1946 the popular engines were Ohlsson 23 and 60, De Long 30 and OK Super 60. Atwood promoted his Phantom P30 and his Champion model. The Super Champion 63 model JH was advertised mid 1946 and this continued unchanged 'till mid 1948. In the smaller sizes the Bantam .19 and Arden .099 were available in the second half of '46, followed by the Arden .199 at the end of the year. Major CC Moseley did not get the Super Cyclone back into production 'till the end of 1946; at first he only offered spare parts for the Cyclones. Looking at the adverts for the GR Super Cyclone; the engines fitted with a flywheel for cars had sub piston induction (holes drilled front and back) but the aircraft models did not have the induction holes. I am certain that all engines from 11,000 and after have sub piston induction.

The Fleetwind 60 was quite well advertised and the Torpedo Special twin exhaust 29 size engine was advertised well before the K & B Torpedo 29. Most expensive single cylinder engine was the Hornet 60 at US\$35.00. The McCoy 60 came on the market later in 1946 and was also the same price. Next year 1947 was perhaps more interesting. K & B started advertising the Torpedo 29, followed by the 24 size Torpedo. Miniature Motors had a new Torpedo Special 29 that looked different; they also had the bullet 27 motor and Forster had the new 29 ballrace model. The smaller engines and in particular the Arden motors were now highly advertised. Ardens now had needle valves and ball race versions of the .009 and .199 engines. A couple of engines advertised in 1947 must have had a profound effect on Ray Arden. The first was the H & H hot coil engine and the other was the Drone Diesel. These engines did not have the ignition bits and made operation easier. In mid 1947 Arden introduced metal cast fuel tanks and fuel that allowed the motor to keep running when the ignition was disconnected.

At this time the Ohlsson sideport engines were looking a bit dated. The 1947 models had only radial mounting and I expect were not too popular. The prices were cut, making the O & R 60 under US\$12 and the 23 under US\$10. Next month OK introduced the Mohawk Chief 29 at under US\$9, I expect to undercut Ohlsson.

Arden seemed to have something new each month and for September '47 he had a diesel head with adjustable compression for the .199 Arden. Next month, October '47 saw a picture of his new glo plug, without much information on the operation. The following month Arden had the glo plug highly advertised and this was the start of the end for spark ignition motors. I expect the most popular spark ignition engines used in our '38 Antique event were built or designed during the period of 1946 and 1947

### **The Glo Plug - by Don Howie**

The years 1946 and 1947 were quite famous for the spark ignition engines, most designed before the USA entered the second World War. Ray Arden's glo plug was a development of the H & H hot coil ignition engines that had the plug fixed in the head and Art Hasslebach's converted spark plug, both of 1947.

The attached diagram from M.A.N. April '48 shows Art's method of converting the spark plug. Ray Arden's glo plug had replaceable elements, and by mid 1948 they were offered in different heat ranges; for two elements the cost was 85 cents. The Arden plug was short reach, as Arden motors used the small Champion V3 plug for spark ignition. He also produced a long reach plug for other engines and a 3/8" adaptor for engines that used the V plug.

Irwin Ohlsson is remembered as an ignition engine manufacturer but his largest selling engine was a glo plug engine. The O & R 23 FRV from mid 1948 was sold mainly as a glo plug for US\$9.95 or US\$8.95 in kit form. Production of this engine exceeded half a million units. The writers engine is No. 402755 and was produced before they made the deluxe version with roller bearings. All O & R engines (except the .049 produced by Harry Rice) have a flat on the crankshaft and are easily converted to spark ignition. Irwin began making glo plugs in 1948 and was still making them when he died. The same is the case with Dick McCoy, who is over 90 years of age and still (with sons) producing glo plugs.



## Eastern States Gas Champs, 1998

Wangaratta - 3rd and 4th

October. Hosted by SAM 1788.

I travelled to Wangaratta on Friday, with Paul Farthing, encountering heavy rain in patches between Albury and

Wangaratta. It rained heavily overnight, and cleared for a breezy morning, for Antique. The field was mowed but needed raking, there were no circles marked to the relief of some. The weather man looked after us this year and Antique had good numbers, the breeze was sufficient to trap the unwary. Bruce KNIGHT, a vocal man on the uselessness of landing circles, created a new event for the enjoyment of the others nearby, he has perfected the art of making maxes, and not landing in the defined area. This manoeuvre was repeated by a number of people, after that including, David FOSTER, more than once, and then Don SOUTHWELL.

Lunch is conducted in the Airworld Terminal, and a right and proper feast as provided by Toni and David Axon, in the usual no fuss manner they are so capable of. Duration was held in similar conditions, not enough to overturn models on landings, but just a little more breeze than would be considered perfect. Four of the twenty fliers making it to the Fly-Off, and that took over 20 minutes to decide a winner.

We adjourned for dinner at Airworld, and were happy that the day was completed in such friendly spirit. Sunday morning was displaying a similar weather pattern as Saturday, and Texaco was started with 25 entrants, the numbers boosted overnight by a contingent from Cohuna, four fellows arriving with some more good spirit on board. Texaco was commenced and early birds were subjected to the worst sink of the weekend, and not many maxes were posted in Round one. However without the "dreaded circle", most managed to make it to the flyoff. There were 15 in the Fly-Off, with just two clashes of the frequencies, not bad, - there could not be any criticism of the weather conditions being unfavourable to either wave of contestants, demonstrated by the 1 point winner, Bruce KNIGHT, who was in the first group and Chris CHALKER was in the second group. A very good finish to a good weekend of Old Timer flying.

Dave BROWN - Contest Director

## '38 Antique - Results

Name	Model	Engine	Score	Fly Off
Trevor BOUNDY	1938 Westerner	Cyclone 60 spark	1674	0
Peter SMITH	Standby	Ohlsson teardrop	1663	0
Peter BENNETT	1938 Flamingo	Atwood super C	1549	0
STEVENSON/BROWN	1938 Cloud C.	Marden 60 spark	1532	0
Basil HEALY	California Chief	ED 3.46 diesel	1313	0
David FOSTER	1936 RC1	O & R 60 spark	1239	0
Paul FARTHING	1936 Red Zephyr	Atwood 60	1102	0
Don SOUTHWELL	1938 Hop-a-long	ED Hunter diesel	1049	0
Barry BARTON	Miss Arpiem	Amco 3.5 diesel	1013	0
Graham McDONALD	1935 Miss America	Super Cyc. spark	458	0
Keith MURRAY	1938 Blitzkrieg	Amco 3.5 diesel	377	0
Bruce KNIGHT	1937 Folly	Ed 3.49 diesel	369	0
Norm CAMPBELL	1938 Flamingo	Forster 99	342	0
Peter WHITE	1938 Cloud C.	OK Super 60	298	0

## Duration - Results

Name	Model	Engine	Score	Fly Off
Peter SMITH	1941 Playboy	YS 53 4/	1680	1383
Mark COLLINS	1936 Cumulus	McCoy 60 glow	1680	1357
Trevor BOUNDY	1941 Albatross	Saito 65 4/	1680	1034
Chris LAWSON	1935 RC-1	McCoy 60 glow	1680	732
Peter BENNETT	1941 Playboy	Nelson 40 2/	1661	0
Basil HEALY	1941 Albatross	Saito 65 4/	1652	0
Ray WOODHOUSE	1938 Anderson	.40 2/	1617	0
Kevin FRYER	1936 Cumulus 92%	McCoy 60 glow	1615	0
STEVENSON/ BROWN	1942 Sailplane	Rossi 40 2/	1591	0
Don SOUTHWELL	1938 Bomber 85%	Dub Jett 40 2/	1562	0
Bruce KNIGHT	1941 Playboy	McCoy 60 glow	1547	0
Peter WHITE	1941 Playboy	OS 60 4/	1540	0
Geoff POTTER	1940 Sunduster	Dub Jett 40 2/	1460	0
Barry BARTON	1941 Playboy	Irvine 36 glow	1442	0
Peter BUCKLEY	1938 Bomber	OS 60 4/	1182	0
David FOSTER	1941 Playboy	YS 53 4/	1136	0
Paul FARTHING	1941 Hurricane	Saito 40 4/	657	0
Norm CAMPBELL	1941 Playboy	McCoy 60 glow	420	0
Darren MARSHALL	1938 Bomber	Enya 41 4/	420	0
Chris CHALKER	1938 Bomber	Enya 41 4/	207	0

## Texaco - Results

Name	Model	Engine	Score	Fly Off
Bruce KNIGHT	1938 Bomber	Enya 60 4/	2400	1127
Chris CHALKER	1938 Bomber	Enya 53 4/	2400	1126
Peter BENNETT	1938 Bomber	Irvine 40 diesel	2400	1035
Trevor BOUNDY	1938 Bomber	OS 60 4/	2400	1020
David FOSTER	1938 Bomber	OS 60 4/	2400	1001
Peter SMITH	1938 Bomber	Smith 60 4/	2400	998
Chris LAWSON	1937 Record	OS 60 4/	2400	979
STEVENSON/BROWN	1937 Nimbus	OS 60 4/	2400	924
Paul FARTHING	1938 Bomber	OS 60 4/	2400	900
Kevin FRYER	1936 Cumulus 92%	Irvine 40 diesel	2400	818
Ray WOODHOUSE	1936 Cumulus	OS 60 4/	2400	613
Peter WHITE	1938 Flamingo	OS 60 4/	2400	527
Basil HEALY	1938 Bomber	Enya 41 4/	2400	493
Darren MARSHALL	1937 Record	Enya 41 4/	2400	429
Don SOUTHWELL	1938 Bomber 85%	OS 52 4/	2400	347
Mark COLLINS	1983 Bomber	OS 60 4/	2341	0
Barry BARTON	1937 Record Breaker	OS 40 4/	2311	0
John JAKAB	1937 Record	Enya 60 4/	2081	0
Jock Mackenzie	1938 Flamingo	OS 60 4/	2056	0
Keith MURRAY	1938 Bomber 87.5%	OS 40 4/	1973	0
Peter BUCKLEY	1938 Bomber	OS 60 4/	1920	0
Lyle BAKER	1938 Cloud King	Saito 4/	1665	0
Trevor TAYLOR	1936 Miss America	Saito 50 4/	1544	0
Geoff POTTER	1938 Bomber	OS 61 4/	590	0
Dave BROWN	1938 Ehling	OS 60 4/	427	0

## Is Epoxy Sexy?

by Graham Woods, editor of The Beacon (From the Internet)

If you've seen the latest Ellipse 2 from Slovakia you would probably answer yes. If you watched a Horizon programme last year the answer could be no!

The Horizon series of programmes on BBC2 are always enlightening but you may have regarded this particular one as just another environmental scare story. It was sexy viewing for the subject was male fertility, or rather the lack of it. So why are you reading this in R/C Soaring? Bear with me for a moment while I give you the gist of the documentary if you missed it.

## Oestrogens

The programme revolved around new research and the supposition that we have polluted our environment with chemicals. Nothing new here except that men and embryos are the ones who suffer - a staggering fourfold increase (in some cases) in the number of cases of testicular and prostate cancer and male infertility (low sperm count) over the last few decades.

This appears to be related to infinitesimal quantities of oestrogenic (see note 1) compounds entering our environment. Add to this the embryonic female-to-male switch that can be disrupted in the early stages of pregnancy to produce genital abnormalities in infants, and the problem gets worse.

The argument followed the familiar path of trying to find the source of the environmental contamination in nature; pesticides and/or their residues, PCB'S (2) and Nonylphenol (3) and hormones from the birth control pill finding their way into our water supply being chief suspects.

The list could cover a myriad of modern day chemicals but there was a chemical included in the list of nasties which just caught my attention as it flashed past on the screen, it was called Bisphenol-A. It rang a bell because I had seen this chemical name somewhere before... This is where modellers enter the picture for anyone who uses epoxy resins is probably exposing themselves to Bisphenol-A.

In my view, it may be present in small quantities in many 'Bisphenol-A epoxy' resins we modellers use, such as the SP range. Given that we are talking about quantities too small to measure, and, over a long

period of time, you could spare a thought for your unborn offspring and yourself next time you are up to your armpits in epoxy resin.

I suppose I've had my fair share of Bisphenol-A epoxy resin over the last 18 years of aeromodelling without really realising all the dangers my hobby has held for me. I dare say the workshop is liberally coated with traces of it and it has probably found its way into the house (and me) as well. Time then for a reminder, in any case, of the dangers of such resin systems.

## It pays to be aware ...

I may be scaremongering since no one said anything about epoxy resin in the TV programme but it pays to be aware of these connections bearing in mind that Health and Safety regulations are not mandatory, nor followed, in the home workshop. (UK - ed.)

It goes without saying that you shouldn't get any chemicals in your mouth or eyes and that you should at least use rubber gloves and/or barrier cream to provide some little, not complete, protection. Hand washing is in order too.

Even when the resin has hardened there are warnings given about inhaling the dust from fibre and resin mouldings. I must admit to being lazy in this department in the past myself and shall be more careful in future.

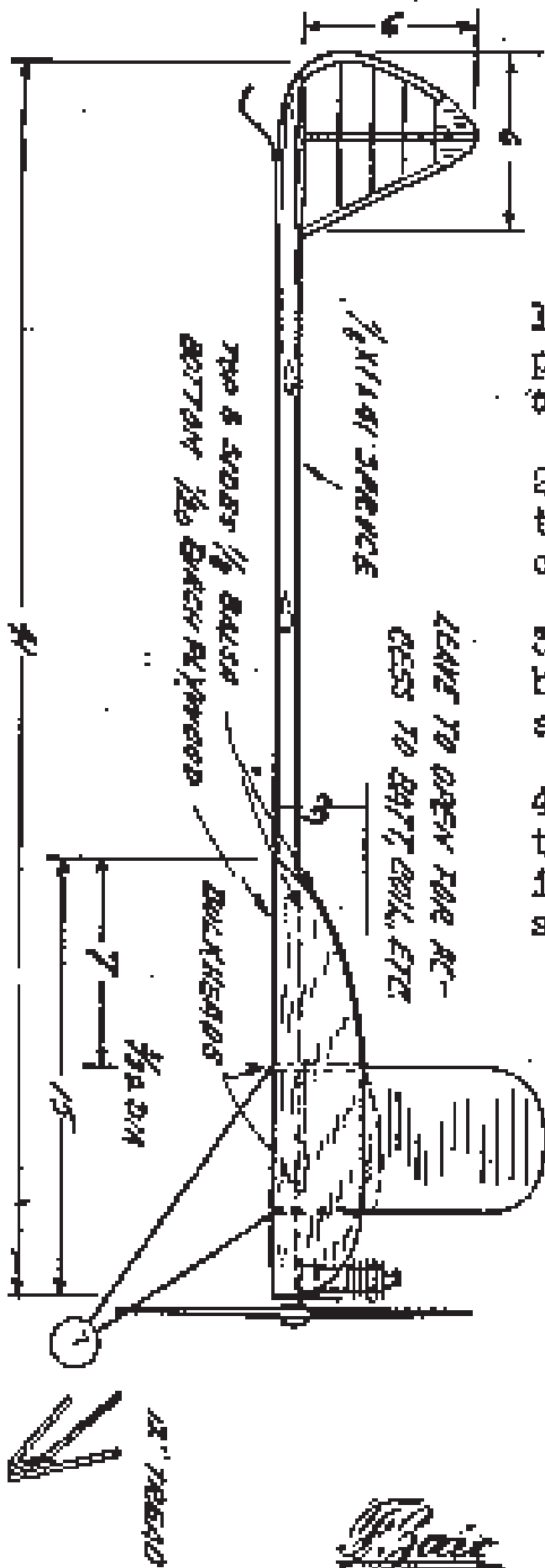
## Glossary

1. Compounds that appear chemically similar to the female hormone oestrogen. 2. PCB's - Poly-Chlorinated-Biphenyls 3. Used as an additive in a wide range of products including plastics and detergents.

### Summary of possible hazards

\* Skin sensitisation for people with allergies and sensitive skin \* Eczema, asthma, psoriasis and hay fever sufferers beware, you are probably more susceptible. \* Contact dermatitis - a more serious medical condition \* Liver damage - 4,4' diaminodiphenylmethane found in some hardeners (e.g.. Araldite 1927) can cause liver problems if absorbed by the body. \* Fertility, prostate cancer, testicular cancer - Bisphenol-A, a precursor of some epoxies, may be a danger for the reasons explained in the text.

(Last Updated 12 March 1997)

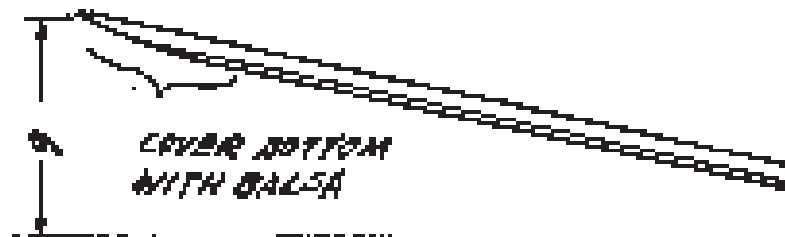


1:- Place wheels before prop to prop, motor and etc. when model has obstructions or when it dives.

2:- To keep model in sight have transparent with clear dope and color dope for outline and scale.

3:- Place the battery track on bottom of the fuselage for low and easy balancing.

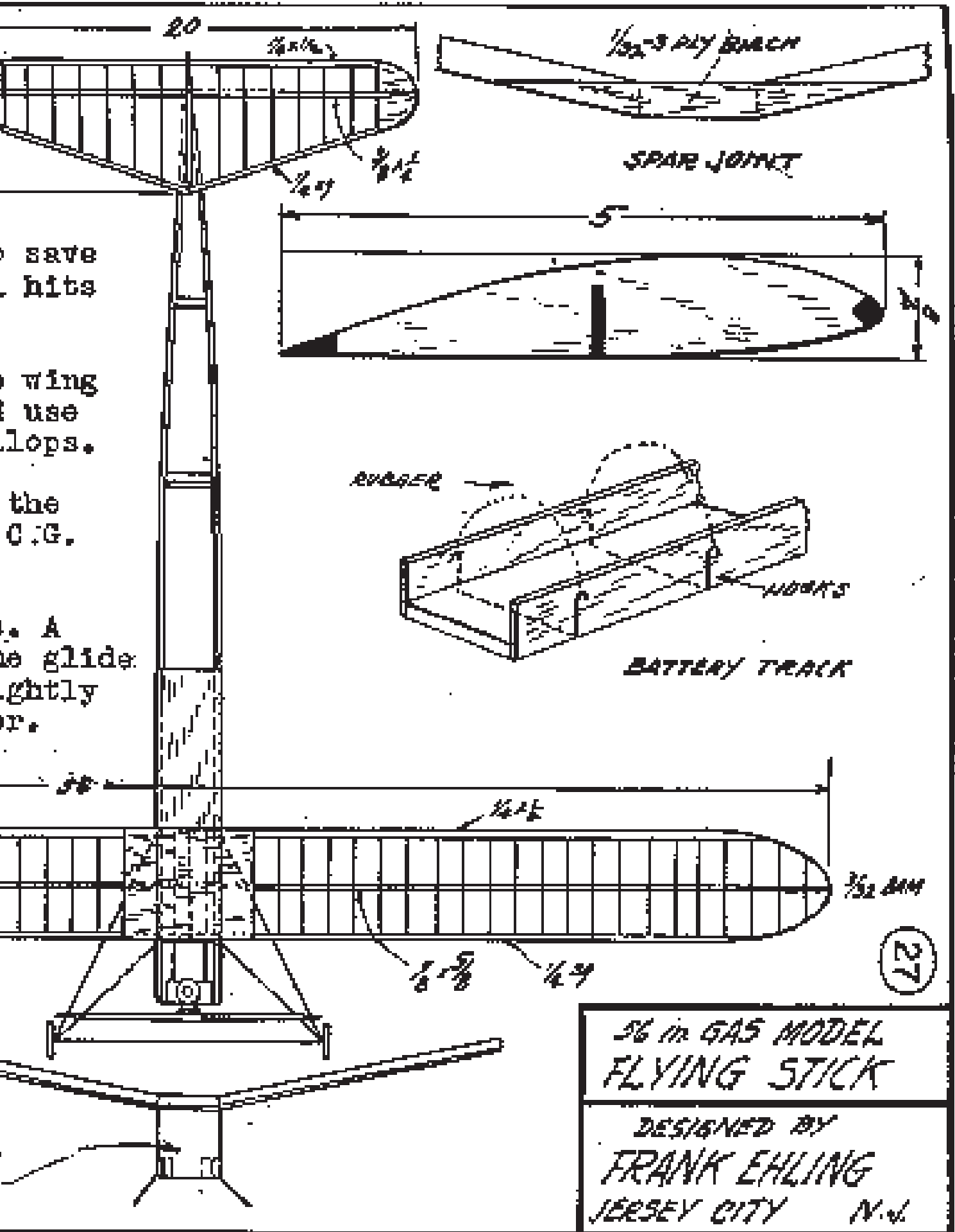
4:- Use moderate thick sections thin section climbs well but the is poor. A thick section is slow but it glides much better.



SPACE TO FIT ENGINEURO

*John*





to save  
hits

wing  
use  
loops.

the  
C.G.

A  
glide  
lightly  
or.

36 in GAS MODEL  
FLYING STICK

DESIGNED BY  
FRANK EHLING  
JERSEY CITY N.J.

## TYPES OF LIQUID FUELS

(Continued from Newsletter #57)

### (4) DOPES.

This is a case of "a little of what you fancy does you good" but a little bit more can play hell. Dopes should be used solely for the purpose described above and should under no circumstances be used in excess to assist starting. They do indeed, lower SIT somewhat, but their effect in this direction is most marked with the first few percent and then falls off very rapidly. It should be remembered that nitrate dopes are, in effect high explosives and that when they burn they generate nitrous fumes.

An over doped fuel requires the compression setting of the engine to be drastically reduced as the engine warms up, it sets up unnecessary strains in the engine, and it is corrosive. A proprietary brand of fuel will be a carefully balanced blend of ingredients with the correct amount of dope no attempts should be made to "improve" it by further dope additions.

Following the basic principles discussed above, and bearing in mind that each component of the mixture has its own specialised part to play in the performance of the final fuel, it is now possible to set about designing a good diesel fuel for a particular engine or for a specific purpose. A good Running In fuel for new engines and for general purpose flying would look something like this:-

Paraffinic Base Fuel	45-60%
Lubricant	20-30%
Dope	1-2.5%
Ether	20-25%

whilst a Racing or Competition fuel might well be:-

Paraffinic Base Fuel	55-65%
Lubricant	12.5-20%
Dope	1-3%
Ether	20%

If the fuel is of the ready mixed variety all the ingredients are mixed together, and the lubricant may be castor oil. But if the fuel is to have its ether added immediately before use, only the first three components are mixed in each case, in which event a mineral lubricant must be employed.

Starting, with either of the above basic formulations a guide, the ideal fuel for a particular

purpose and individual engine can readily be worked out on the test bench by modifying the components of the appropriate formulae a very few per cent at a time until optimum performance is obtained. It should be borne in mind that the perfect fuel for one engine may not be ideal for another with totally different design characteristics and the really scientific flying enthusiast will study the individual fuel requirements of all the more important engines in his "armoury". It should also of course be appreciated that different fuels may require different starting and running settings and the careful experimenter has to develop a considerable amount of patience.

### Running in Engine Temperature

It follows from the increased proportion of base-fuel and the reduced proportion of ether that a "racing" fuel will run hotter than a running in or a general purpose fuel, because of its higher Calorific Value. This relatively high temperature has been known to worry some modellers who sometimes attribute it to frictional heat arising from under lubrication. Any well formulated racing fuel is, its very nature, bound to run hot and it is advantageous that it should do. The efficiency of operation of the internal combustion engine increases within reasonable limits, with increase in temperature of running hence the modern practice of cooling full scale aero engines with ethylene glycol (bp 198° C)

It is clearly not the wish of the reputable fuel manufacturer to ruin his customers' engines, and his branded fuels will have undergone extensive tests on a range of engines before being launched on the market. There should therefore be no cause for uneasiness in using well known propriety brand fuel. But if the modeller is still anxious, it is suggested that he feel not the cylinder head where combustion of power full fuel is taking place, but the crankshaft main bearing. If this remains moderately cool he need have no fear of a seizure.

### Warning !

*In fairness to the manufacturer, as well as in his own interests, the modeller should of course be careful only to use a fuel for the purpose for which it was intended. A "Competition" or "Racing" mixture as its name implies, intended for high-speed work, and the manufacturer assumes his customer will not be expecting to develop maximum power and revs with a new engine straight out of its box. A "Standard" or "Running-In" fuel should always be used with new engines, which should first be run on the bench for some time with an oversize propeller. After the engine has loosened up it should be run for another half an hour or more with a standard propeller, still on the same type of fuel. Only after proper running in, and after a fair amount of work, should peak output with racing fuels be attempted.*



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

Last issue we talked about meeting Les Organ.

Interestingly, Les used to keep me in tow with my uncle as much as they could. He would come down Glenhuntly Road where I would have a fly in

the Street with my home made chuck gliders. I became quite good at throwing them at the shops on the other side of the road, get a couple of circles and land on the footpath. Yes, there was not much traffic in those days.

I remember Les asking Mum and Dad if I could go flying with him and learn a bit more about what not to do. I think this was about 1948. He would come down loaded with a few models and off to the local parks we would go. Me with my small chuckies and 18" rubber models and him with his huge models. Well, they seemed giant size to me back then. I would get about 20 seconds flight with my chuck gliders and think I was Christmas. Then Les took hold, showed me how to trim them and my 18" rubber models to boot, for good measure.

Les would keep me entertained for hours on end about his adventures with models and modelling. He was always bring down his new design of free flight, also control line models and really finished models to show us. Some would fly well and others would crash just like my own. He always seemed to finish his models with coloured tissue and trimmed artwork with coloured tissue also. I think the trimming tissue was florist coloured wrapping type and he still does the same today. I never came to grips with that tissue and still can't. When he didn't have any Modelspan he would use florist paper. That stuff seemed to break real easy and the models used to look well used after 2 flying days.

He built this large F/F model about 8 ft wing span and I remembered it had a spark motor, I think it was an Anderson Spitfire and I'm sure it was at Dendy Park in Brighton. I can still hear the fantastic roar of that motor when he got it started. It seemed to take hours to start but I'm sure I was impatient and still am, it as about 10 minutes. My uncle used to say "that's not free flight, son, as don't you think

birds would look and sound stupid with a motor and prop in them. If you didn't tow it on a line it was not free flight to him. But he did break down and get involved later on.

Anyhow, back to Les. He launched this model with about a 5 second engine run. Boy, it climbed like a rocket and did a few circles and landed at the other end of the park. I was so amazed I ran down the park as fast as my little fat legs would carry me to pick up the model for Les when he met me half way back an the way with his model ready for another flight. I don't think he wanted me to touch it as I was like a bull in a china shop and used to puncture his tissue just trying to hold them. I can remember saying to him "I think that tissue you use might look good but it's rubbish". Les would take me to one side, as he should have, and say "Listen brat, to each his own and as soon as you get older you might understand".

It took a while to sink in as Uncle and I used to make our own balsa glue and thin it out for dope. The local photo shop used to keep all the no good negatives for me. When I got home we would put them in a big glass jar filled with thinners to make cement. Boy, was it smelly and black in colour.

Les had finally got that motor started, set the plunger timer (an Austin from the USA if I'm correct) launched the model and the motor kept running and it got higher. He adjusted the camera around his neck, lit another smoke and said "that timer stuck, you twit, it wasn't supposed to do that". It was a calm day and that model glided like a bird and landed on what is now known as the Nepean Highway. As Les went across the road to pick up the model there was a motor bike and sidecar heading for them both. I think Les would have been happy for the bike to run him down and not damage the model. When I saw that I found out what "to each his own" meant. He would have rather broken a limb than break the model. *(To be continued in the next issue).*

Photograph by Dr Chris Hill

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## **An Appreciation of CH Grant - Final**

by Alex Imrie (Aeromodeller July 1987)

The AMA, operating under the aegis of the parent NAA organisation, set rules, standards and specifications, and is not only the voice of American modellers today but the American aeromodelling representative to the FAI. Grant continued as editor of MAN for over eleven years, firmly establishing that journal as a leader in its field; moreover, he continued to subscribe articles for many more years thereafter and produced a number of books, some of which are still available.



*The success of the KG in the 1930' caused it to be copied in all sizes.*

### **The KG Gas model**

After C H Grant witnessed Maxwell Bassett's flights at the 1932 Nationals he set about designing a power model that would incorporate the stability characteristics that he considered to be lacking on Bassett's model. The design that resulted was given to one of his ex summer camp students, Joseph Kovel for building; and Joe completed the model with just one day to spare before the 1933 Nationals. Unable to obtain one of Bill Brown's engines, an unnamed, untried motor reputedly of 2/5HP (twice the power of the Brown engine) was installed but on the day of the competitions the engine could not be coaxed into life, so Bassett won again without challenge. A Brown engine was later fitted; Kovel and Grant both had doubts that the lesser power of the engine would lift the seven-pound weight of the KG, but they need not have worried for that engine's excellence and power output was never a problem. This original KG was made like a 'fuselage' rubber model, the wing and the tailplane resting directly on top of the straight topped fuselage. Tests soon showed that this set-up was spirally unstable. In circling power flight the nose went down as soon as the model banked giving a spiral into the ground! Straight power flights were

possible, these being successful when engine torque was corrected by rudder offset. Obviously there was a fundamental difference between models powered by rubber and those powered by miniature engines where the inertia of heavy components was a factor of note. It took three days of testing to determine the importance of the position of side area relative to the centre of gravity. Charles Grant later recalled '... Apparently the weight swung outwards on turns, while skidding caused by this outward swing produced a side pressure above the centre of weight. This caused the plane to bank sharply and spiral.

For the second series of tests, the wing was raised to a parasol position which raised the centre of weight on a line approximately with the centre of the side area of the airplane. This latter point was given the name Centre of Lateral Area... The first test flight proved the accuracy of our reasoning. The plane climbed steadily and evenly to an altitude of 1200 feet and did not return to earth until more than 14 minutes had elapsed.' The original KG was designed along fullsize lines, aerodynamically and structurally, with the arrangement of weight and area in accord with Grant's research findings. Modified to the parasol layout, the success of the KG resulted in its basic layout being widely adopted, especially after the appearance of working drawings and detailed building descriptions by Joe Kovel in the April and May 1935 issues of Model Airplane News.

### **Opposition**

Throughout his life Charles Grant experienced plenty of the above commodity. Despite the impact made by the KG gas model his CLA theory was not universally accepted by all gas model builders and at times fierce controversy raged. He was, however, the first to admit that there were other ways of providing spiral stability and he recognised the results of other early power modellers working along different lines to his own, but he was careful to point out that in some cases skilled trimming techniques were being substituted for inherent stability. The change in the rules for gas models early in 1938 whereby the engine run was limited to thirty seconds caused the emphasis to be placed on small, highpowered fast flying models, the aim being to get as high as possible in the short time allowed for the engine run. On these models the difficulty was handling the excessive torque, a factor that had been less critical on earlier power models of very large size operating at much

lower power loadings. Carl Goldberg found one answer to the problem by raising the wing some six inches above the fuselage on a pylon and employing a large amount of polyhedral, thus raising the CLA well above the position usually held as ideal and perpetuated in the Grant CLA theory. Goldberg considered that his fast-flying models actually slipped inwards when banked, the CLA being situated well above the Centre of Gravity providing side area which tended to right the side-slip. The fact of the matter is that Grant and Goldberg were both right! There were various other ways to solve spiral instability on the high powered 'skyrocket' type of power model that had appeared. Leon Shulman, for example, managed it with a low CLA on his 'Wedgy' family of models. However, it is considered that the Grant CLA theory provided more inherent stability under all conditions of flight than did the pylon set-up which required the line of thrust to be continually tilted upwards above the horizontal during powered flight.

The KG-1 was 8ft span, the KG-2 being a refined version with a wingspan of ten feet and weight of only six-and-a-half pounds' The version described in MAN was in fact a further refinement known as the KG-3. Although the plans were given for an 8ft wing, a wing of 6ft. span could be used, this being done in many cases to save cost and improve transportability.

### **Full-size design**

Some of C H Grant's involvement with full-size aircraft has already been mentioned. This did not end with the variable-camber wing of the RB-1, but continued throughout the span of his long life. His industry in this area was not crowned with practical success mainly because of the lack of funds with which to pursue specific inventions, and in most cases there was a lack of support from manufacturers because his concepts were generally too far ahead of current knowledge. Nor were some of these appreciated at the time by that august body of technical representatives of the National Advisory Committee for Aeronautics. Grant's research into high-lift devices conducted over a 12-year period using model aerofoils resulted in his patenting a 'Changeable Camber Wing', a variation of which, the multi-segmented trailing edge flap, was also patented. He submitted the idea to NACA in 1934: by April

1936 the suggestion was that instead of closed gaps between segments these could be left open and advantage taken of the resultant slot effect of the Grant Streamlined Flap (as it was by then termed). NACA completely missed the point of Grant's presentation which was a device that would decrease the speed of the aircraft, increase the wing's lift, and enhance flight safety by greatly lowering the stalling speed and reducing flap drag.

When NACA dismissed the idea, Grant had the device wind-tunnel tested at New York University and the findings of this evaluation were published in the Journal of the Aeronautical Sciences in October 1939. This could not very well be ignored by NACA who then produced their own report which concluded that Grant's idea produced the best combination to develop high lift for take-off and landing. A variation of the Grant wing flap fitted with a slot controller was accepted by the Martin Company and first fitted to their model 2-o-2 and 4-o-4 transport aircraft. Grant filed a patent for this device in April 1945, and the fact that the Martin Company also filed patents two years later resulted in some extended litigation in and out of court. Eventually both parties were awarded patents but the Patent Office decreed that Grant was the first inventor. In the end he received very little for his idea and many of the large aircraft that were manufactured during the immediate post war years used some form of flap similar to his invention; but it was impossible to keep track of patent infringements.

A similar story could be told of his patented delta-wing designs, one of which was a radio controlled torpedo-carrying glider that would be released some distance from the target by a 'mother plane' and then guided to a close range launch point. The war ended before this could be built but Grant had high hopes for the low-keel full-span slotted design which had natural inherent stability. His experiences in this regard were really no different to those of many other inventors.

### **Retirement**

Although C H Grant retired in the early 1960s this did not greatly change his energetic life style. Ideas still came to him; and these had to be patented. New thoughts for flaps, slots, controlled airflow and the Grant Vertaplane, a proposed V/STOL light aircraft occupied his time. Let us see to it that our young enthusiasts honour the C H Grant legacy.



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### Revised Competition Calendar 1998 - 1999 (All contests run to 1995 MAAA rules)

When	What	Where	Contact
21 & 22 Nov 1998	Haddon Fly Days - Sat: '38 Antique - Duration Sun: 1/2A Texaco - Texaco	Carnham Road, Haddon (BAI)	Chris Foley 5342 4285
26 Nov 1998	Meeting #58 (•••Big Auction Nite•••)7:30pm	Saturn Hobbies	Ian Triffitt 9776 7450
31 Dec 1998 to 7 Jan 1999	52nd Nationals, Queensland 1998 MAAA rules	Toowoomba	Pawel deChastel P & F 07 5493 3908
23 & 24 Jan 1999	14th Annual Roy Robertson Memorial Trophy Sat 23: '38 Antique - Duration Sun 24: 1/2A Texaco - Texaco	P&DARCS	Ted Hall 9762 5627
6 & 7 Feb 1999	O/T Fly-In Geelong, Dog Rocks Poad, Fyansford Sat 6: Nostalgia - Duration Sun 7: 1/2A Texaco - Texaco	GMAA	Chris Lawson 5215 8482
13 & 14 Mar 1999	1999 Victorian State Championships, Haddon	BAI	TBA
2 to 4 Apr 1999	7th Annual SAM 600 Easter Fly-In, Swan Hill	SMAC	TBA

.... continued from page 4

Electric OT has been slow to take off in WA with only two models seen at our field, and as different as chalk and cheese. One is an '05' size Bomber with a 6 sub cells battery and the other a 60% Playboy with a speed 400 and a 6 '500AR' battery, both perform fairly but have failed to inspire any others to switch to electric motive power. Well that's all for now from the sunny (hopefully soon) West. Paul Baartz.

For all information about the 52nd Nationals contact Nationals Registrar, Pawel Sagidak on 07-5464 1729 or <<http://www.ozemail.com.au/~maaa/52nats.html>>

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