DURATION TIMES

THE SOCIETY OF ANTIQUE MODELLERS SAM 1788

Points of Interest:

BULLETIN No. 155

November - December 2008

Worth Noting

Wyong River M.A.C.
Inaugural Old Timer Week End
10-11th January 2009.
Program

Saturday 10th	9am	Tomboy
	10am	2cc Old Timer
	12noon	Barbecue Lunch
	1pm	Gordon Burford
	Evening	Social Get-to-gether
Sunday 11th	9am	Tomboy
	10am	1/2A Texaco
	12noon	Barbecue Lunch
	1pm	Texaco

For further information
Contact
Basil Healy
02 4341-7292

Note-
Due to the close proximity of a residential area, vintage spark Ignition engines used in Texaco must be fitted with a muffler.

Seasons Greetings to All

ORANGE MODEL AIRCRAFT CLUB Inc.

INVITES YOU TO ATTEND AND COMPETE FOR THE

ALAN BROWN

Perpetual Memorial Texaco Shield

On the Weekend
7th and 8th FEBRUARY, 2009.

Saturday 7th commencing at 10am - ½A Texaco & Gordon Burford.
Commencing at 1-30pm - Oldtimer Duration.
Sunday 8th commencing at 9-30am - Oldtimer Texaco.
(ALL EVENTS WILL BE FLOWN TO MAAA RULES)

PLEASE NOTE VENUE FOR THIS EVENT WILL BE AT THE ORANGE MODEL AIRCRAFT CLUB's FLYING FIELD AT BORENORE

INFORMATION FOR FIELD LOCATION & ACCOMMODATION CONTACT
Andrew MacKinney Phone 02 6365-0685
OMAC Inc. Web Site - http://users.netconnect.com.au/~omac/

Duration Times is the official Newsletter of SAM 1788

SOCIETY OF ANTIQUE MODELLERS OF AUSTRALIA 1788 Inc.

President:	Paul Farthing	"Bogwood" Lockwood Road, Canowindra. NSW. 2804.	02 6364-0264.
Vice President:	Basil Healy	4 Casuarina Close, Umina. NSW. 2257.	02 4341-7292.
Secretary:	Dave Brown	19 Tweed Rd, Lithgow. NSW. 2790.	02 6353-1529.
Treasurer:	Gail Scott	44 Ravel Street, Seven Hills. NSW. 2147.	02 9624-1262.
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Email for Duration Times - iwa@internode.on.net

UPCOMING OLDTIMER EVENTS FOR 2009

January	10-11	Wyong River Oldtimer Weekend	Wyong River MAC	Basil Healy	02 4341-7292.
January	25	Roy Robinson Trophy Oldtimer	P& DARCS	Brian Laughton	03 5989-7443.
February	7-8	Alan Brown Memorial Oldtimer	Orange MAC	Peter Johnsen	02 6362-9410.
February	15	Oldtimer at Caldermeade	SWAMPS	Brian Laughton	03 5989-7443.
February	22	Geoff Shaw Texaco Memorial	Goulburn	Paul Marshall	02 4821-5869.
Feb 28 - March 1		Hunter Valley Champs	Muswellbrook	Simon Bishop	02 6543-5170.
March	21-22	Oldtimer at Haddon, Ballarat.	SAM 600	Brian Laughton	03 5989-7443.
April	9-13	SAM 1788 Championships	Canowindra	Paul Farthing	02 6364-0264.
April	14-16	MAAA Australian Oldtimer Nats	Cootamundra	Joe McGuffin	02 9825-4695.
May	2-3	Vetrans Gathering	Muswellbrook	Simon Bishop	02 6543-5170.
May	2-3	VIC & S.A. Oldtimer State Champs	Cohuna	Brian Laughton	03 5989-7443.
June	13-14	New England Gas Champs	Tamworth	Paul Farthing	02 6364-0264.
August	22-23	FARCON Competition	Cowra MAC	Paul Farthing	02 6364-0264.
August	29-30	Oiley Hand Diesel Days	Cowra MAC	Ian Cole	02 6342-4162.

From the President: It's that time again!!! May I take this opportunity on behalf of myself, Kim and all the SAM1788 Committee to wish you the compliments of the season.

It has been a busy but successful year for SAM 1788 with the highlight being the SAM Champs at Canowindra. It was great to have the mix of competitors from five States and I know we are all looking forward to an even better Champs in 2009. See you there!

SAM 1788's 2009 year begins with a new competition hosted by the Wyong River MAC at Wyong on 10-11 January, 2009. Due to flying field restrictions this weekend will be given over to the smaller models but capped of with Texaco. An interesting and relaxing mix of comps which should be very successful. I for one am looking forward to this comp. CD is Basil Healy and information has already been widely circulated. Orange Oldtimer is on again in 2009 on the first weekend in February.

Preparations have started for our SAM Champs at Canowindra including field preparation and also improved canteen facilities with a new team of caterers. This will allow members to concentrate on the competitions and just having a good time. The competition program will be much the same as 2008 but I expect that there will be more Tomboy activity in 2009. Tomboy is a great, fun event. The model is easily built and is a hoot to fly. C/L Phantom is a new event in place of the Midge Speed and should be fun as well. Intelligence sources reveal that quite a few Phantom kits have been dispatched and it is hoped that the majority of these will be on the field next Easter.

Proposed rule changes can be seen on the SAM 600 web site http://www.sam600.com/ for those interested. Any comments re these proposals should be forwarded asap to our MAAA Sub Committee representative Basil Healy.

As reported elsewhere in this DT Derry Brown passed away suddenly on 6th November, 2008. Derry was a past member of SAM 1788 and our sincere condolences are extended to Derry's family.

Condo would like to advise that the Bomber wing pictured in DT154 is illegal as not all the spars, as shown on the plan, are present in the structure.

Looking forward to flying with you and having fun in 2009,
Paul Farthing.

Oily Hand Diesel Days
Cowra MAC
29-30 August, 2009.
at
Milroy Field

(Bangaroo Quarry Road off Canowindra Road)
http://www.cowramac.asn.au/main.html

COWRA MODEL AIRCRAFT CLUB

Information:
Ian Cole
02 6342-4162
or 0427 015 792

Lithgow Oldtimer Weekend 25-26 October, 2008.

From Dave Brown.

Challenging air currents, and lots of sink, but if you could break through the lower levels, it was then a lot better, a few damaged, and only one in the trees, good sportsmanship, and excellent weather. It's on next year - all things equal, but we will be changing the Motel, due to the subsiding conditions over the last couple of years.

Results:

'38 Antique

Peter J.	SMITH	1938 Cumulus	OK Super 60	1200	976
Basil	HEALY	1936 RC1	Sparey 5cc d	1200	408
Jim	RAE	1938 Rambler	ED Hunter 3.46	1200	384
Peter	SCOTT	Folly II	GB 5cc d	1046	
Alan	BRADY	1936 RC1	Anderson Spitfire	982	
Grant	MANWARING	Yankee Clipper	Burford 5cc d	982	
Geoff	POTTER	1937 Quaker Flash	Sparey Diesel	780	
David	BEAKE	RC1	OK Super 60	477	
Don	SOUTHWELL	1937 Hop-A-Long	ED 3.46 diesel	376	

Gordon Burford Event

Robert	RUTLEDGE	1952 Eliminator	Taipan plain	900	746
Peter J.	SMITH	Faison	Taipan plain	900	736
Peter	SCOTT	1953 Jaided Maid	Taipan plain	900	639
Jim	RAE	Amazoom	Taipan plain	892	
David	BEAKE	Eliminator	Taipan plain	791	
Ian	CONNELL	Zoot Suit	Taipan plain	768	
John	DIDUSZKO	Cresendo	Taipan plain	742	
Basil	HEALY	Dixielander	Taipan plain	731	
Grant	MANWARING	Eliminator	Taipan plain	695	
Mike	MASTERS	Spacer	Taipan BB	576	
Geoff	POTTER	Eliminator	Taipan plain	352	
Don	SOUTHWELL	Stardust Special	Taipan plain	286	
Bob	MARSHALL	1941 Lil Diamond	Taipan plain	155	

Duration

Peter J.	SMITH	1941 Playboy	McCoy 60	1260	446
Ian	CONNELL	1941 Playboy	Saito 62 4/	1260	308
Dave	BROWN	1938 Bomber 85%	Saito 56 4/	1249	
Ian	AVERY	1941 E S Gas Champ	O.S.32 2/	1147	
David	BEAKE	1938 Bomber 85%	Dubb Jett 40 2/	1137	
Grant	MANWARING	85% Bomber	Saito 56 4/	1010	
Basil	HEALY	Megow Chief	YS 53 4/	907	
Peter	SCOTT	170% Stardust Spl	Saito 62 4/	669	
Don	SOUTHWELL	1938 Bomber 75%	Enya 53 4/	662	
Jim	RAE	1941 Lil Diamond	Saito 56 4/	590	
Cec	WALES	1938 Ehling Contest	Enya 46 4/	506	
John	DIDUSZKO	1942 Buzz Bombshell	Magnum 61 4/	475	
Robert	RUTLEDGE	1941 Playboy	Saito 62 4/	420	
Geoff	POTTER	1941 Playboy	Enya 53 4/	267	
Alan	BRADY	1936 RC1	Anderson Spit	262	

Texaco

David	BEAKE	1938 Bomber	OS 60 4/	1800	720
Peter J.	SMITH	1938 Bomber	OS 60 4/	1800	716
Grant	MANWARING	1938 Bomber	OS 60 4/	1800	575
Dave	BROWN	1937 Lanzo Stick	OS 61 4/	1731	
Alan	BRADY	1938 Bomber	OS 60 4/	1670	
Basil	HEALY	1937 Lanzo Stick	Enya 60 4/	1561	
John	DIDUSZKO	1938 Bomber	TT 54 4/	1537	
Mike	MASTERS	1938 Lanzo Bomber	Enya 53 4/	1417	
Peter	SCOTT	Polly II	Burford 5cc d	1280	
John	BRADBURN	75% Dallaire	OS 40 4/	913	
Ian	CONNELL	1938 Bomber	OS 60 4/	565	
Mark	NELSON	1939 Powerhouse	OS 60 4/	536	
Robert	RUTLEDGE	1938 Lanzo Bomber	Enya 60 4/	522	
Cec	WALES	1938 Record Breaker	OS 52 4/	361	
Jim	RAE	75% Dallaire	ASP 30 4/	279	

1/2a Texaco

Peter	SCOTT	1941 Lil Diamond	1080	424
Basil	HEALY	Atomiser	1080	274
Jim	RAE	Skyrocket	1080	267
Peter J.	SMITH	1941 Lil Diamond	1080	255
Bob	MARSHALL	1941 Little Diamond	1080	234
Ian	AVERY	1940 Playboy Cabin	1080	178
Don	SOUTHWELL	1942 Stardust Special	1080	126
Robert	RUTLEDGE	1942 Kerswap	1080	
John	DIDUSZKO	1936 MG2	1080	
Mark	NELSON	1938 Rambler	1038	
Ian	CONNELL	1941 Lil Diamond	955	
Grant	MANWARING	1941 Lil Diamond	910	
Geoff	POTTER	1942 Stardust Special	832	
Dave	BROWN	1942 Stardust Special	812	
David	BEAKE	1942 Stardust Spl	420	

Above: Texaco flyoff - Condo only just missed out. Weather conditions had deteriorated through the day and by the fly-off it was overcast, windy and threatening rain.

Below: Jim Rae and his new Burford model Amazoom starting a heat. Even though it was fine and sunny lift was elusive and the surrounding hills made for interesting and challenging conditions.

BEWARE of POWER HUNGRY SMALL SERVOS in combination with SMALL BATTERY PACKS

From Basil Healy

Peter Scott's reference to a small L.E.D type battery checker in the last but one issue of Duration Times prompted me to tell of the incident that happened to me in the 2cc Oldtimer event at Cowra.

My model, a Sunstreak, is quite small at 40" projected span but the fuselage is almost the same length as the span. This configuration is prone to being tail heavy so all effort was made to get the radio gear as far forward as possible. A pylon structure that extended right through and out the bottom of the fuselage did not help out in this matter either. To make matters worse, the fulelage was too slim to fit a standard 270 or 350 mah flat battery pack inside. Because I had been using a 110mah battery pack successfully in my ½A Texaco models, I fitted one to the Sunstreak only to have the battery go flat about a minute into the third flight.

These batteries had previously been able to complete three ½A Texaco flights plus the fly-off without re-charging. Why did it fail on the third flight?

Cycling and checking the capacity of the battery pack revealed a capacity of 90mah at the standard 270mah discharge rage. This I considered to be O.K. because the 110mah capacity is at the 10 hour rate, not the 20 minute rate that I was using!

Next I looked at the two ½A Texaco models that I have been using and noted that they used different battery and servo combinations. One was fitted with JR371 servos and a 270mah battery because it had initially been tail heavy and the bigger battery cured the problem. The other was fitted with "ESky" servos and a 110mha battery. My Tomboy is also fitted with this combination.

But the Sunstreak was fitted with JR375 servos and a 110mah battery pack, a combination that I had not used in my ½A Texaco models.

So I decided to check the current drawn by the different servos. This is where the answer to my problem had to be, and it certainly was. The results were as follows:-

ESky Servos (0.8 Kg/cm torque)

Current drawn - Stationary - 15 mA
- Moving (no load) - 100 mA
- Stalled - 250 mA

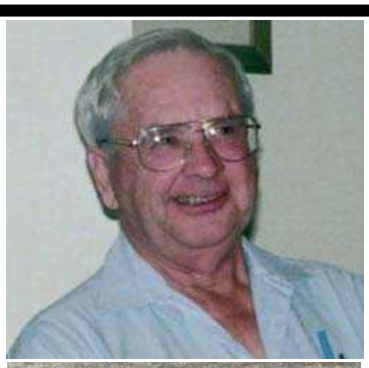
JR375 Servos (1.2 Kg/cm torque)

Current drawn - Stationary - 15 mA
- Moving (no load) - 250 mA
- Stalled - 500 mA +

My meter only goes to 500 mA and the needle was hard up against the peg at the end of the scale. Even the servo operating the fuel cut-off was drawing 150 mA to keep the cut-off operated.

Although both of these servos are roughly the same size you pay a hefty price in current drawn for the additional torque with the JR375's.

I am currently looking at an alternative battery for the Sunstreak, possibly a 2S Lipo with a 5 volt regulator chip. The limited space in the fuselage will determine my choice of battery pack.



Geoffry (Derry) Brown passed away.

This well known local identity passed away suddenly on the 6th November, 2008.

Known in the 50's as a control line stunt flyer and contempory of Monty Tyrrell, Don McLaren and Adrian Bryant, who all were to represent Australia in 1953 at the (aborted due to floods) Belgium World Championships.

In England they soon found regional contests to enter, competing with considerable success. They entertained English crowds at Battersea Gardens giving half-hour demonstrations, stunt exhibitions, rehearsed and choreographed to perfection.

In more modern times he flew RC and was a member of (VOTA) Victorian Old Timers Association, the (NOTAM) Nagambie Old Timers Aero Modellers and SAM600 including stints as President and Rules Committee person.

Posted by Trevor Boundy, fellow flyer.

Monty Tyrrell's Flying Circus, Battersea Park, London, 1953
L to R Don McLaren, Derry Brown, Alf Shields (Rowley Park Speadway Promoter SA), Monty Tyrrell and Adrian Briant

Western Australia Report.

from Paul Baartz.

WA State Championship 2008

Old Timer Burford.

Held at Mundijong on 26th October in absolutely perfect conditions with about 50% cloud cover and light variable, mostly southwesterly, breezes.

Only six entered the event and all managed to score at least one maximum flight of five minutes with four flyers achieving three maxes and qualifying for the fly-off.

This event was formulated to recognize the contribution to Australian Aeromodelling of Gordon Burford who for many years was the only local manufacturer of model aircraft engines of which the most popular was the 2.5cc (0.15ci) diesel, which he produced in great numbers and many variations. Models must be of a design published before 1956 and this includes a lot of early, well known and widely used, free flight power designs

Little seemed to separate the four in the fly-off as all had achieved maxes in the rounds with little difficulty however Fred Adler's engine was performing extremely well, due he said to his secret home-made fuel additive, and his model achieved the best height and subsequently out-glided the other three for an easy victory. Richard Sutherlands model performed badly under power in the fly-off appearing to be intent on aerobatic maneuvers rather than gaining height and this cost him any chance of victory.

All six models were fitted with plain bearing engines and thereby had a forty second engine run which usually was more than needed and some flyers cut the engine off before the full run time.

Gordon Burford Event Results:

1. Fred Adler	Spacer	900 + 431
2. Rod McDonald	Fu-Bar	900 + 295
3. Kevin Hooper	50%Bomber	900 + 278
4. Richard Sutherland	Ambition	900 + 247
5. Ian Dixon	Swiss Miss	869
6. Rick Rumball	Sportster	568

Burford LtoR: K. Hooper, R. Sutherland, I. Dixon, R. Rumball, R. McDonald & F. Adler.

WA State Championships 2008

Old Timer Duration

This event was held on Sunday 23rd November at Mundijong in unseasonable winter like weather. It was overcast with one or two rain showers throughout the morning and cool with a light to moderate mostly south-westerly breeze. Despite these conditions there were quite a few lift areas and most flyers achieved at least one maximum flight of seven minutes.

By far the most popular power source was the Magnum (or ASP) .61 four stroke as this is a very versatile engine and can easily be competitive in the Texaco event as well by merely changing propellers. Graeme and Troy persevered manfully with models not suited to this event but both enjoyed themselves without being a serious threat to the place-getters.

The fly-off was conducted between five flyers and proved to be a bit different with two hopefuls managing to land outside the designated area, both due to radio problems and thus leaving the other three to fight out the result. The fly-off was started just as a small cold squall descended upon the flying field and thus not even the winner could score a maximum flight time, but Ian still deserved the win as his model was performing consistently well all event.

Oldtimer Duration Results:

1. Ian Dixon	165%Kerswap/Magnum.61fs	1260 + 300	6. Rick Rumball	85%Bomber/Magnum.61fs	1209
2. Les Isitt	85%Bomber/Magnum.61fs	1260 + 274	7. Alan Trott	Scram/ASP.61fs	1205
3. Ray Sherburn	Playboy/Magnum.61fs	1260 + 273	8. Kevin Hooper	Playboy/ASP.61fs	919
4. Paul Baartz	85%Bomber/Saito.62fs	1260	9. Troy Latto	Bomber/OS.60fs	385
4. Rod McDonald	170%Kerswap/Magnum.61fs	1260	10. Graeme Cooke	Playboy/Cox.09	173

Electric Old Timer

ARF Lanzo Bomber – a World First?

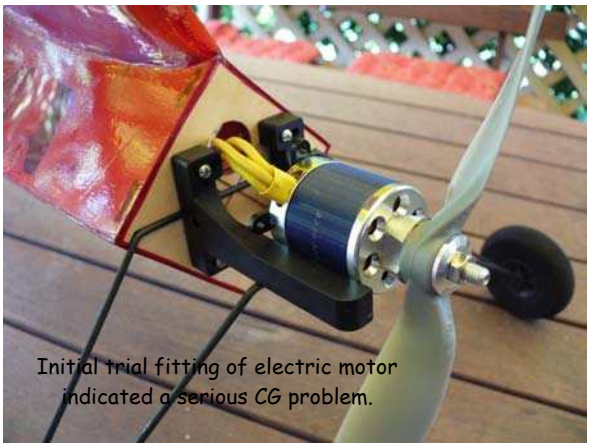
From Lou Amadio.


85% Lanzo Bomber ready for the first flight. This is a really nice kit.

Today (late Nov) I test flew the Mick Walsh ARF Lanzo Bomber as an electric Duration model. Mick was inspired to kit the Bomber as an ARF for those who do not have the time or perhaps the skill or facilities to build one from a plan. I believe he has succeeded and understand it is a world first for this size OT model.

The Kit

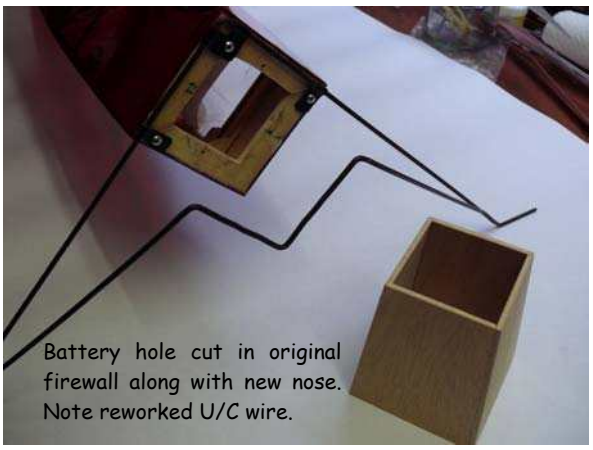
The 'Direct Model' Lanzo kit comes in a very large box. When I inspected the contents I was pleasantly surprised at the quality of the design, build and covering. There was one minor hiccup where the pylon had a small alignment error. It can be had in two transparent colour schemes – red or blue – both with a yellow wing centre. If you want more colours contact Mick or buy two kits and swap the parts around.


Initial trial fitting of electric motor indicated a serious CG problem.

Let me mention that the kit is designed first of all for IC (gas) power and comes complete with all hardware. To finish the model requires gluing the wing tips, mounting the tail and arranging the control wires. To fly it as an electric model I had to make some modifications.

CG Problems

Initial trial fitting of a motor to the supplied engine mount, with Li battery located behind the firewall, showed there was a serious CG problem (motor+battery =390g) needing around 260g (12 Oz) lead in the nose!


Battery hole cut in original firewall along with new nose. Note reworked U/C wire.

In fact the assembled model needed around 650g (23 Oz) of hardware at the firewall to counter balance that huge tail-plane. This would normally be a 40-60 size engine and fuel. For my purpose I wanted to fit an outrunner brushless with matching Li battery pack but the reality was that it would not be any lighter as an electric model.

Modifications

As with most OT designs converted to electric, the front of this model needed to be lengthened to facilitate balancing. A nose extension not only brought the motor forward but allowed room for the battery to fit in front of the original firewall. A hole was cut in the firewall and the U/C wire was reformed as shown below.

All up weight of the finished model, ready to fly, was 64 Oz (1800g). Wing area measured by SAM standards was 960 in^2. Loading was therefore a respectable 9.6 Oz/Sq Ft. This appears to be a very robust design.


Finished front end showing 100mm motor/battery extension and reworked U/C mount. See text.

The pylon alignment problem mentioned above meant that the wing was slightly askew horizontally as received. I re-trimmed the wing seat and added 2.5mm sheeting to improve robustness and square the wing to the fuz. The alignment problem has been reported to Mick who will hopefully ensure future kits are OK.

Duration setup

Power system for the electric Bomber was to conform to the new Duration rule where the battery is less than 1600mAHr.Cell/Sq Ft wing area. All models now have 35 sec free motor run (see separate article). For this kit I chose a Hyperion Z4020-16 outrunner and 5S 2000mAHr battery. Total weight of the new electric hardware

A very happy pilot after test flying the ARF Bomber. Wingspan is slightly over 2m.

was now 600g so no lead was required to balance the Bomber at 50% CG.

Test Flight

It was a gusty morning when I took the Bomber out for its first flight, but I could not wait for better conditions. The model few very well requiring only minor trim adjustments. Using a 13x6.5 APCE prop the motor drew 55A current and produced around 900 watts of power (1.2 HP) resulting in very good climb performance. I managed a 9 min flight with 35 sec motor run in mixed, mainly windy, conditions at the IMAC field, Berkeley.

See website **direct-model.com.au** for more information on pricing and availability.

Electric Old Timer – Duration Battery Rule Change for 2009.

With the acceptance of Li batteries in EOT competitions, the legacy rule where the free motor run (FMR) time was related to the number of cells in the battery pack is now unworkable. This is because the power available from a given Li battery mass is not cell count dependant but rather capacity/C rating dependant.

New Duration battery rule (from 2009): **1600mAHr.Cell per square foot of wing area**.

The formula to be used to determine the wing area is: WING AREA = CHORD x WINGSPAN.

The Wingspan is defined as a straight line dimension from wing tip to wing tip, with no allowance being made for tapered or rounded tips, and the Chord is measured half way between the wing tip and the centre-line of the fuselage.

An example:

70% Lanzo Bomber with a wing area of 650 in^2 has a maximum energy allowance of:

1600x650/144=7222 mAHr.Cell

The maximum capacity Li packs for this model therefore are:

2S 3600 mAHr or
3S 2400 mAHr or
4S 1800 mAHr, etc

The new rule applies to EOT Duration contests and **all models will have the same FMR time of 35 seconds**.

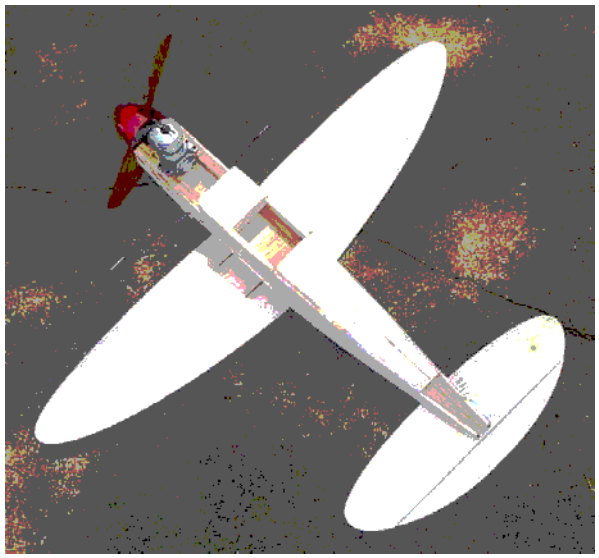
Please see complete rules at:

http://www.maaa.asn.au/maaa/electric/rules/nefr_rg.htm

Seasons' Greetings,
Lou Amadio.

CONTROL-LINE NOTES

From David Owen

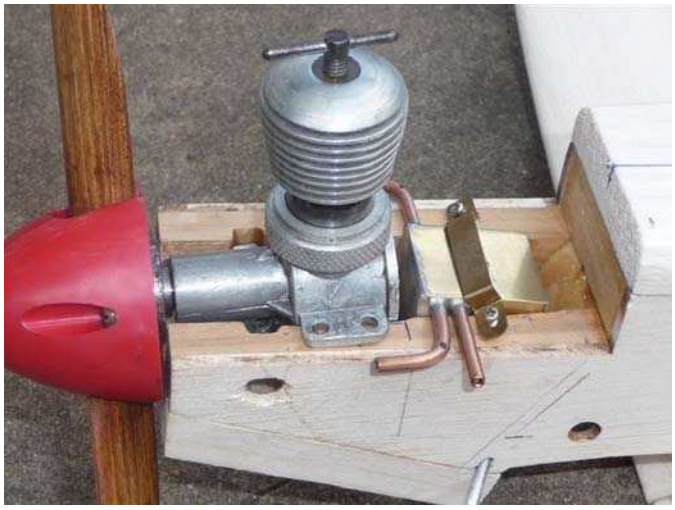


The Keil Kraft Phantom

The Canowindra SAM 1788 Champs for 2009 are not too far away now, as Easter is early next year. There is a lot of interest now in the Phantom event, which will replace Midge next year.

The bulk of the work on my Phantom has now been done, with shaping of the block balsa parts and final assembly and painting remaining. Models like this are easy to build, but seem to generate an amazing amount of balsa dust and shavings. Browny's partial kit has gone together with no problems at all and the model does build fairly quickly.

If you refer to DT #151, you will see that we have three classes of engine for the Phantom event. Basically, this is a diesel only event with a maximum capacity of 2cc. My Phantom will be powered by an old favorite of mine, the 'K' Kestrel 1.9cc diesel from 1949. The Kestrel was quite popular in the early '50s, particularly in the Adelaide area, where the Australian distributor, Bill Evans, was based. Bill went on to make the Delta 490 a few years later. Anyway, it's not exactly a powerhouse, but should be well-suited to a sport model such a the Phantom. There's still ample time to build a Phantom for Canowindra, so get cracking and support this new event.



The 50th Anniversary of the Kuringai MFC.

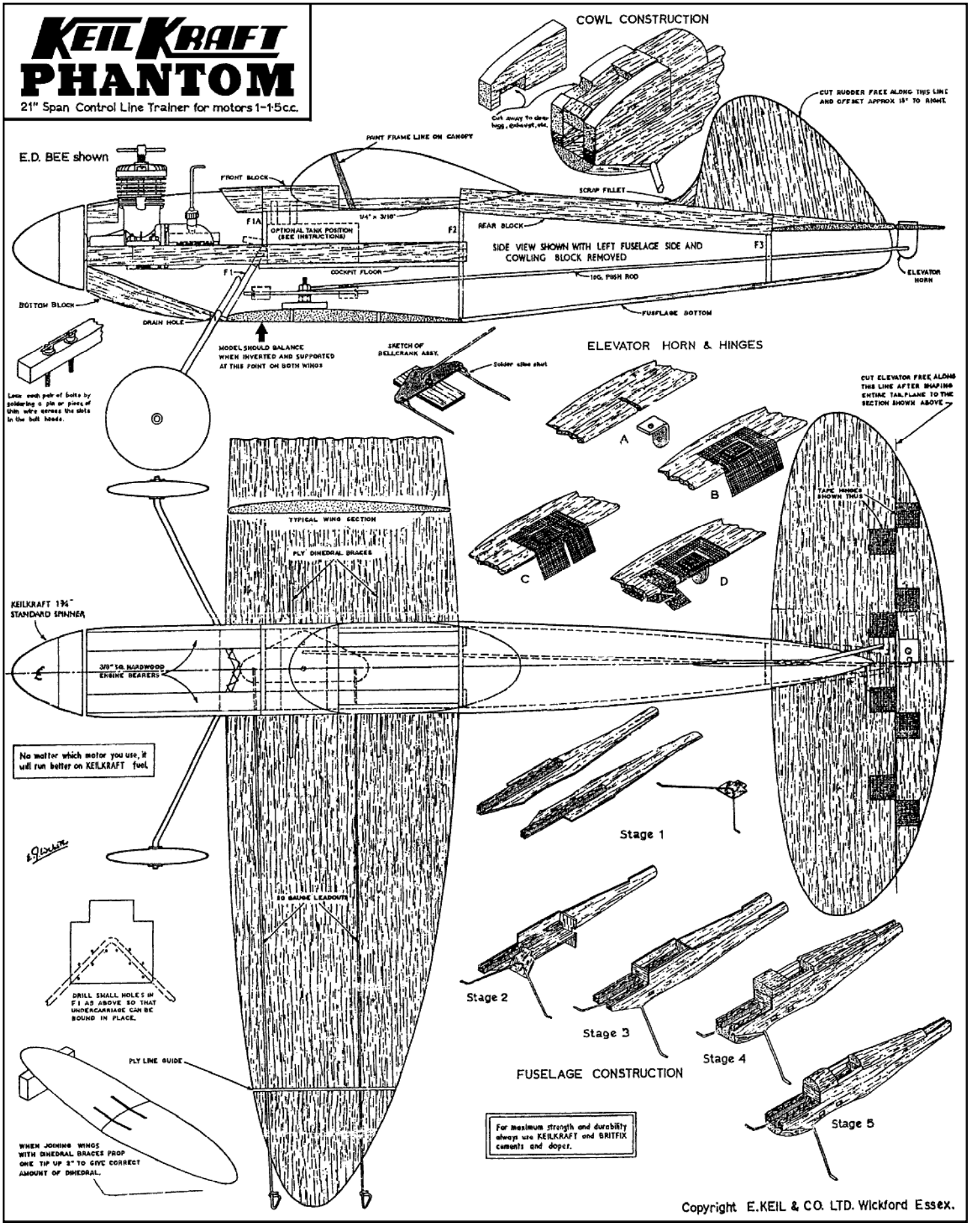
This popular club was established 50 years ago this year and celebrated this mark with a special flying day on the 14th of December last. Well over 50 past and current members, many with their wives, showed up to display models, to talk about their shared past and to partake of the excellent lunch organized by some of the ladies. The State Liberal leader, Barry O'Farrell, was one of the guests at the opening ceremony. This was ably handled by the President, the redoubtable Ian Smith. Congratulations to Kuringai MFC. It was a very windy day, but many models were flown.

One of these was Dave Murrell's Fierce Arrow delta, a famous American design published in the '50s by MAN. Whereas the original model was powered by a K&B 35, Dave's model had an OS 48 Surpass. Throttle control was achieved by using an R/C servo and receiver in the model, the signal from the throttle lever on the C/L handle being transmitted through insulated lines. The system worked flawlessly and over 25 flyers took the handle for a few minutes at a time during the afternoon.

Up in the roof

Having been invited to Kuringai, I took a couple of my 50+ year old models down from the roof in the workshop for display. One was an A Class team racer I designed for the new Enya 15D, which had just been released in 1956. This was then third in a series of high aspect racers I designed and built and which were quite successful in the Illawarra area. This model ended its flying career as a successful rat racer.

The second model was an all sheet balsa flying boat I designed for two Frog 150 diesels. I had one engine myself, and was able to borrow another when I wanted to fly. I put two genuine Frog 8x5 props on the engines for the photograph, though the original props used were 12x4 Strato woods, cut down to 7x4 to clear. One is shown on the ground near the model. This flying boat was flown regularly down on Fairy Creek near Wollongong. All metal parts are now badly rusted through, otherwise I'd give it a flight today. David Owen 20/12/08



FIXING A "BENT" CARIBOU

From Basil Healy.

The scene is the late 1960's and I was still an inspector "without portfolio" in the Airframe Overhaul Department at Hawker de Havilland. I had been involved with the overhaul of the Caribou's since the early 1960's and was currently spending most of my time on a radio upgrade on the ageing C-47 Dakota aircraft which involved the deletion of the radio operator's position so that all communications was handled from the cockpit.

One day an RAAF truck arrived with a pair of Caribou outer wing panels, the empennage assembly and the rear fuselage from the cargo door back. No information was received at this time as to what had happened to the aircraft, but a large dent in the leading edge of the starboard wing looked suspiciously like it had been caused by a tree.

Two days later we were alerted that the remainder of the aircraft would be on a barge at Milperra Bridge at 4am the following morning and could we organise a crane to unload it. I was not present at the unloading but was told that it was quite a spectacle because after the unloading it was found that the aircraft was too wide to fit through the gate in the airport fence so, with police escort, it was towed up Milperra Road and through the front gates at Hawker de Havilland which were wide enough to take it.

I arrived at work to find the aircraft sitting out on the tarmac in front of our hangar. Later in the day my boss called me into the office to advise me that the log books had arrived and that I was to look after the inspection side of the repair and re-assembly of it. As a parting comment, as I left to study the log books, he said, "Make sure it goes back together straight!".

The log books told the story of what had happened. The aircraft was in Vietnam carrying out a re-supply mission for an Army patrol and was landing at a forward supply strip currently being guarded by the patrol. The aircraft touched down and after a short landing roll the pilot applied reverse pitch to the propellors and opened the throttles. Unfortunately, the starboard propellor had not reversed and the aircraft ground looped, struck a tree with the right wing and the nose undercarriage collapsed.

Subsequent investigation carried out after the accident revealed that of two micro-switches in the throttle console which controlled the propellor reversing, one had failed and the other was out of adjustment. (N.B. – The two switches are in parallel and are wired that way so that if one fails the other will still reverse the propellor – a double redundancy).

Getting the Caribou out of the forward supply strip posed another problem because even with the outer wings and empennage removed, the upswept rear fuselage got in the way when suspended in a lifting sling below a Chinook helicopter. So they simply drilled out all the rivets around the fuselage and removed the upswept portion. This enabled them to transport it piece by piece to the aircraft carrier HMAS Sydney moored in Camranh Bay. From there it was returned to Australia.

At this stage I decided to have a look at what had caused the nose undercarriage to collapse and was horrified to find that the retract jack had been replaced with a piece of 4"x4" hardwood. The reason for this was soon obvious because the upper attachment for the jack together with a sizeable piece of the surrounding structure was missing – torn out.

After positioning the aircraft in the rear corner of the hangar, jacking it up level and removing all the access panels it was ready for me to commence my survey and list all of the repairs and servicing to be done. Whilst I was in-

specting the starboard main wheel well with a lead light I noticed some suspicious shadows on the web of the main spar which forms the front of the wheel well. These turned out to be diagonal ripples in the spar web and a few rivets in the same area had lost their heads. Access to this area was impossible from the wheel well so I requested the removal of a large section of the wing leading edge.

While this was going on I got out the rigging board and an inclinometer and checked the incidence of both sides of the wing centre section just inboard of the engine nacelles. There was 1½ degrees difference. With the leading edge removed the full extent of the damage was revealed with a section of the spar web about 60inches long showing diagonal ripples and numerous rivets with their heads missing. Work started immediately on removing the damaged web and it was as this operation was coming to a conclusion that I was standing nearby when I heard a loud "bonk" and the rigging board which had been left on top of the wing rattled. This was followed by a stream of profanity from the operator because his drill bit was jammed in a hole and he could not get it out. I grabbed hold of the trailing edge and was surprised to find that it would move up and down about 1½inches. Anyhow with me moving the trailing edge the drill bit was eventually freed and the four remaining rivets were removed allowing the spar web to come free. That prompted a number of questions:

What thickness was it? Measure it of course!
What specification of aluminium alloy was it?
Had it be heat treated?
Why did it appear to be two thicknesses of metal bonded together?

At this point I rang the Engineering Department and asked what technical data did they have on Caribou main spars? The reply was that they held a full set of the manufacturer's drawings on microfilm that I could view at any time. So off I went to spend the first of many hours searching through rolls of microfilm through a viewer. Eventually I found what I wanted, the gauge of the materials, its specifications, heat treatment level and the type of epoxy used to bond the two layers together.

Armed with this information I just added it to my survey sheets and left it to the Planning Office to order up all the materials. Work on the spar repair ceased until the two bonded sheets of metal were made up by the Fibreglass Shop.

The repair of the damage in the nose wheel well was covered by a drawing issued for a similar incident previously so work then commenced in that area.

At about this stage my boss asked how I was going to check the rear portion of the fuselage when they re-fitted it. I had already given it some thought and proposed to drop a plumb-bob from the aircraft centre line to the floor at the front of the fuselage and at the front of the cargo door, then extend this line back to a point below the rudder hinge brackets. As the rudder hinge line was vertical I then proposed to drop a plumb bob down through the hinge brackets to the centre line on the floor. "Sounds OK to me", said the boss, "Go ahead and do it".

Once more it was back to the microfilms to find components with the aircraft centre line dimensioned either from an edge or from tooling holes. The rear end proved quite easy to find with a couple of tooling holes equi-distant from the centre line. The front of the fuselage took a lot more research until I finally found reference to the centre line on the structure of a servicing hatch just aft of the nose wheel well. Back at the aircraft I duly marked the centre line in both spots and with a plumb bob transferred them to the floor. Because this line would have to remain on the floor for a number of weeks a long strip of paper was taped to the floor and the centre line drawn on it.

Then it was time to refit the rear fuselage. But first it

was necessary to fit the upper fin because this contained two of the rudder hinge brackets. Then they had to make up lifting slings and adjust them so that the front was vertical when suspended from the monorail crane in the centre of the hangar. Next with the aid of a mobile crane the rear fuselage was carefully swung into position, the rivet holes were aligned and a large number of skin pins were fitted into the rivet holes. I was called to drop the plumb bob through the rudder hinges and it was found to be leaning one way. The skin pins were removed and a few hefty thumps on the side of the fin to it vertical but the rivet holes were not aligned. These were quickly drilled out 1/32inch oversize in several places and more skin pins fitted. The slings were removed and it stayed vertical so the sheet metal worker went flat out drilling out the holes and putting in every fourth rivet.

There was no way that they were going to complete the task that day but at least the fuselage was back together and straight. Several days later, when all of the rivets had been fitted, I rechecked with the plumb bob and the rudder hinge line was still vertical.

By now the rather expensive bonded metal for the spar web repair had arrived so it was back to the spar repair. By putting a screw jack under the trailing edge it was possible to adjust the starboard wing incidence to match the port wing and so it was in this manner that the new spar web was drilled off from the existing rivet holes and then riveted in position. On removing the screw jack the incidence remained unchanged. While the leading edge was being refitted a couple of the sheet metal workers were repairing the damaged leading edge of the starboard outer wing. It was a relatively simple task of removing all the damaged parts and replacing them with the new parts supplied. No new parts had to be manufactured.

The aircraft was reaching the stage where it had to go back together and I was starting to wonder how this bunch of sheet-metal workers were going to handle the task. Fortunately, it was agreed that the normal "E" servicing crew would work on the aircraft during overtime and would be available to help out for short periods at other times. This arrangement worked quite well and the assembly went more quickly than I expected because it occurred while an "E" servicing aircraft was in the engine run and flight stages and at no stage were we short of experienced workers. They certainly kept me busy with inspection tasks.

Finally it was time to do the control rigging and movement checks. Part of this inspection involved taking measurements from the nose to both wing tips and from the wing tips to the trailing edge of the rudder. While engaged in this task I remembered seeing the same dimensions in the front of the log book recorded immediately after manufacture. A comparison of these figures with what we recorded revealed that the aircraft was straighter than when it came out of the factory! I took great delight in informing my Boss of this fact.

Then it was time for the airworthiness inspection, engine runs, compass calibration and preparation for test flights. The great day came and I carried out a pre-flight inspection and took the certificate of safety for flight to the Test Pilots Office and handed it to Ted Shaw, our Chief Test Pilot. He remarked, "You have been on that ship since day one, haven't you?" I said, "Yes", and he said, "Want to come on the first flight?" Naturally I accepted expecting to ride in the cabin. But no, Ted wanted me in the right hand seat up front in the cockpit. He was no doubt aware that I had racked up a number of hours in full-size gliders.

At this point I should explain why Caribou aircraft are usually flown with two pilots. Quite frankly one pilot does not have enough hands. During take-off the 1st pilot has his fee on the rudder pedals, his right had on the throttles and his left hand on the nose wheel steering wheel. The second pilot holds the control column. Now, a Caribou does not rotate nose-up to lift off the runway, but becomes airborne with the nose level so you never know exactly when it becomes airborne. Should it drop a wing immediately after take-off, it is the second pilot's job to correct it. Only when he can see significant distance between the aircraft and the ground does the 1st pilot release the nose wheel steering, select undercart up and finally take hold of the control column.

It was my job to keep the wings level and to stop any tendency of the nose to rise. Fortunately, none of this happened and the Caribou settled into a "hands-off" climb.

There were a few minor defects arising from that test flight but nothing that could not be fixed in a few minutes. A further test flight to adjust the lift computers that controlled the "stick shakers" and to check the stall speed in various flap configurations should have seen it ready for delivery.

But no! The Engineering Department wanted to put wool tufts all over the wing centre and mount a video camera on the fin to observe the air flow over the wing just prior to an actual stall. This took a day of two to set up then once more I went along for the ride, but in the cabin this time.
When carrying out stall tests on a Caribou it is necessary to move the centre of gravity aft to the rear of the operational limit. This is usually accomplished by taking a couple of passengers in the cabin, seating them up forward for take-off and at the rear during stalls. During stalls the tailplane stalls first creating quite a bit of shaking in the rear fuselage which makes gaps appear around the cargo door. I had seen it all before but my fellow passenger (read moveable ballast) was not at all impressed. The eerie thing is that although the aircraft is stalled, it is nose level and descending at about 1500 feet per minute. Also the ailerons continue to be effective. Each stall was followed by a full power climb back up to the starting height which gets a bit noisy in the cabin. The noise level on cruise is much more subdued.

Anyhow, after about eight stalls it was back to Bankstown to remove the video camera and the wool tufts and prepare the aircraft for delivery.

I am not certain of the registration number of that Caribou but think it may have been A4-220 or A4-224. Some years later, when I was in the Planning Office, I became involved in a V.I.P. fit-out for a Caribou, so that could be the second number that springs to mind.

Muswellbrook Oldtimer was a good weekend.

From Simon Bishop, CD.
Muswellbrook Old Timer.

Hi everyone, just a note to tell you how the weekend went. Well, it started off pretty slow with weather and a few scuds drifting through then it was time for our first event. Nostalgia and some good flights were had then came lunch and with full bellies onto GB where we had our first fly-off.

By this stage the day had turned quite hot with quite a few drinks consumed. Duration was next on the cards with another fly-off between Basil and me. You can guess who showed the young blokes how it was done.

Geoff Potter and Playboy, Son Grant doing the honours.

Night came and there was a gathering at the Workers Club which I was told was a great night. Full results were:

TEXACO

1. Basil Healy	Lanzo Stick	600
2. George Carr	Standby 138%	304

Only two fliers.

NOSTALGIA

1. Robert Rutledge	Spacer	1462
2. Basil Healy	Sunstreak	1330
3. Ian Connell	Spacer	1058
4. Peter Scott	Spacer	928
5. Bob Marshall	Hyphen	378

DURATION

1. Basil Healy	Megow Chief	1758
2. Simon Bishop	Playboy	1679
3. Geoff Potter	Playboy	1221
4. Ian Connell	Playboy	1210
5. Peter Scott	Stardust Spec.	1209
6. Robert Rutledge	Playboy	1188
7. Bob Marshall	Bomber	956

GORDON BURFORD

1. Robert Rutledge	Spacer	1199
2. Ian Connell	Zoot Suit	1167
3. Peter Scott	Jaded Maid	1112
4. Basil Healy	Dixie Lander	815
5. Bob Marshall	Lil'Diamond	205

1/2A TEXACO

1. Robert Rutledge	Kerswap	1080
2. Ian Connell	Lil'Diamond	1075
3. Anthony Tjanavaras	Baby Burd	1010
4. Basil Healy	Atomiser	975
5. George Car	??	502
6. Bob Marshall	Lil'Diamond	360
7. Peter Scott	Lil'Diamond	342

TOMBOY

1. Peter Scott	6m 35s
2. Ian Connell	6m 5s
3. George Car	5m 27s
4. Basil Healy	4m 34s
5. Bob Marshall	2m 52s

Cheers, Simon Bishop.

As I saw it - Muswellbrook Report from Peter Scott

Saturday was a really good flying day - no rain to speak of, not much wind - picking lift and not sink? Ah! that was a problem.

My untried motor in Nostalgia reminded me that I should have brought a spare model - or at least motor!

Burford was up next and all went well except for George Car's model - a Dixielander with built in batteries - guess what went wrong - why the batteries of course! I scratched a third spot using the BB powered maid.

Peter Scott prepares the Stardust Special for Duration. George Car consulting.

Duration next. My Stardust special with Saito 62 in it simply didn't get high enough - but it was hard to tell if it was trying to climb in sink air, there was a bit of it about. Basil and Simon fought it out with Basil's Megow Chief coming out on top.

The evening meal at the club was good value. Food was excellent and the company good. Simon missed it due to sick children.

Sunday started with the Tomboy event - every-one had one. Longest flight in the hour window to

count. One of my early flights picked up some good air. That good score won the contest - I never made anywhere as good a time after that. It was a case of early bird catching the lift.

1/2A was next. Weather still good. First flight saw my Lil Diamond way up but I was having a problem controlling the model - the control stick was stiff making the movements jerky. Half way down but still way up, the control stick came off in my hand! In a bit of a panic I poked my finger into the gimble assembly - which was broken and rattling around inside the transmitter and managed to spiral the model down. It stalled when close to the ground and damaged the front bulkhead and motor mount. Days later Condo asked " why didn't you fly it on the trim ?" - Well, why didn't I think of that!! I could probably have flown out the contest!

Peter Scott's Stardust Special is on its way. Assisted by George Car.

Then, while everyone was having fun, I decided to prepare my Texaco model. I hadn't painted the tips of the propeller blades white like I normally do and caught my left index and middle fingers in a 14 X 4 prop driven by my GB 5cc Stuntamotor. I won't bore you with the details of the hospital and number of stitches but I'll be more careful in future!

The wind got up about this time. Basil gave it a throw but was thankful that the other rounds were called of as I'm told that models became a bit of a handful.

Anthony Tjanavaras and his Baby Burd.

It was a good weekend - if not the best for me. Why this event only got seven entries is beyond me. Weather was okay, not a great distance from civilisation, great field, good canteen with plenty of food all weekend, good trophies and gifts from Simon's model shop. Where were the locals?

It is disappointing, especially for the organisers. They broke even financially, so that was good at least. If the event is run next year we will be there.

Thanks to Simon and the Muswellbrook Club for their efforts. Peter Scott.

Bob Marshall with his Bomber assisted by Robert Rutledge.

Robert Rutledge gets airborne in ½A Texaco.

~~ THE BACK PAGE ~~

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Fred Stebbing is on the move with a new model for the Burford event. It is a Swiss designed HP.7 which is a layout that was very popular in the Nordic countries in the early to mid 1950's. It was designed to be flown in the FAI powered free flight event which was the international competition for power models and required a motor no larger than 2.5cc or .15 c.inch.

This model is very much a powered glider with its mid wing design and twin fins which were popular around this time. Fred has put a lot of thought into the back end of this model, designing a fully rotating stabilizer which means the whole stabilizer rotates around a center pin. This turns the tip fins which are fixed to the stabilizer, not requiring a rudder to steer it. The glide should be very good because of its very high aspect ratio wing and a glider like wing section.

Fred almost has it finished as I believe he is up to the covering stage. All of us TOFFS from the SWAMPS club are waiting with baited breath to witness it's maiden flight.

Now that Fred has his new eyes with the cataracts removed, he now has 20-20 vision again, and he has a model which has so much potential we are all going to have to watch ourselves in future Burford events because we believe he will

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Doctor/Mechanic

So this mechanic is working on an old bike when a cardiologist walks into his workshop. The mechanic seeing him, straightens up, wipes his greasy hands down his overalls and beckons the cardiologist over.

Hey doc, he says, we're doing much the same sort of stuff. Opening up old hearts, replacing valves and such like, making them as good as new again. I make little pittance whilst you make a fortune. What's the deal?

The Doc leans over and whispers in the mechanics ear - Try doing that with the motor running!