

Free Flight Down Under

Newsletter of the Australian Free Flight Society inc.



Volume 40, Number 4

Summer 2009

Inside

Presidents Prattle	2	63rd Nationals	16
Editor's	2	Southern Skies contests	18
A New Field (and NSW St Chs)	3	AFFS	
Maris' Book	3	Southern Cross Cup	
Dixielander		Kotuku Cup	
Roy's	4	Omarama Cup - Trans Tasman	
George's	5	Team Trials	26
Vin's	6	Thermal Structure and Behavior	27
Don's	7	New Stuff	31
Letters	8	FFDU visits Den Sparker	32
The Prodigal Plane	10	Printing full size plans	34
From the Modelling Press	12	This edition's plan Mercury Mallard by Mike Glaister	35
New Vintage	14	Breaking a 30 Year Old Record	36



Dixielanders at Springhurst

Calendar. Major and trials events 2010.

Date	Event	Location	Contact
Dec 29, 2009 - Jan 5, 2010	63rd Nationals (TT for 2011 W/Ch)	Springhurst Vic	Colin Collyer
March 14, 2010	QLD F1C StCh	Dalby	
March 29 - 31, 2010	Southern Cross Cup	Narrandera NSW	Tahn Stowe
March 31- April 4, 2010	AFFS Championships	Narrandera NSW	Phil Mitchell/Ted Burfein
April 11 - 14, 2010	Kotuku Cup	Omarama NZ	Rob Wallace
April 15 - 18, 2010	Omarama Cup/Trans Tasman	Omarama NZ	Chris Murphy
May 7 - 9, 2010	Vic St Ch	Springhurst	Peter Greenhill
May 16, 2010	WA StCh. F1A	Meckering WA	Chris Behr
May 29, 2010	QLD St Ch. F1A	Dalby QLD	
May 30, 2010	QLD StCh. F1B	Dalby QLD	
June 5 - 6, 2010	WA special Trial F1A, F1B, F1C	Meckering	Chris Behr
June 12-13, 2010	NSW St Chs. F1A, B, C	Lake George	Roy Summersby
July 24 - 25, 2010	WA St Ch F1b, F1C	Meckering	Chris Behr
Dec. 29, 2010 - Jan. 7, 2011	64th Nationals	Dalby QLD	Dale Jones

This edition of Free Flight Down Under is edited by Vin Morgan, Paul Rossiter and George Car.

644 Canning Street, Carlton North 3054 Australia.

vin.morgan@utas.edu.au.

Free Flight Down Under is the newsletter of the Australian Free Flight Society, A Special Interest Group of the Model Aircraft Association of Australia.

FFDU welcomes contributions in the form of articles, letters, pictures etc. on any aspect of Free Flight or related topics. Contributions can be sent to the address above or e-mailed to the editor. Electronically prepared material is preferred.

© 1999 Australian Free Flight Society. Material may be reprinted without permission provided acknowledgment is made of Free Flight Down Under as the source and no other specific copyrights are indicated in the material.

President's Prattle

Greetings to all in the Freeflight and aeromodelling worlds. Welcome to the last edition of FFDU for 2009. We are down to two weeks till Xmas, and the year has truly run away (again). Maybe time to reflect on the year been, and look forward to the next twelve month's FF activities.

This year has been again busy, with a full schedule of flying competitions including the World Champs. Locally (ie Oz) numbers attending competitions appear to have reduced a little. The issue of the distances we have to travel to comps, and the tougher economic climate may have had an impact, plus the ever increasing age of Freeflyters might be expected to see numbers reduce, however I think that is not a fair assumption since we seem to see senior members still campaigning on well after those of lesser vintage.

Overseas the situation seems to be somewhat different with both big entries for many of the World Cup events, and the largest ever attendance at a World Championships in Croatia. Besides a broader age demographic (Is that a PC term these days Ed?) competing in Croatia, a large number of younger (ie less than 30 years old) modellers participated as time keepers, assistance etc, which bodes well for the future of FF in Croatia at least! If only we had that level of younger participation here!

Next year is looking like being a bumper year for flying with all the regular Australian events, (NATS, state champs, AFFS Champs and Southern Cross Cup events at Narranderra), plus the New Zealand World Cup events, plus the Trans Tasman

and Skyman competitions, many of these counting towards the team selection for the World Champs in Argentina in April 2011. As well as all these events there are a myriad of club events both indoor and outdoor, to show case Free Flight to the greater populous.

As an aside I would like to put a quick plug in for the NSW's state champs held recently at Lake George just outside Canberra. Sonya and I had hoped to get a bit of practice in for the Nats but the wind soon put paid to that on both days. The wind turbines on the far hillsides should have been an absolute giveaway, however if ever the wind does die down, Lake George would surely rate as potentially a world class site, as big as the Croatian WC's field, just flatter and with shorter grass, bugger! Phil Mitchell's comment, "Just like Livno, just without the landmines"!

So to close this prattle and the year as well, I would like to thank all those involved with the production of FFDU, all those who have participated in AFFS events for the year, and all those who prefer to look up and see the real sky with real models rather than a computer generated image, keep on flying! So to all a Merry Christmas and a Happy New Year, and may we see as many of you as possible at Springhurst or Albury. Safe travels and happy thermals.

Regards,

Ted Burfein

Editors.....Merry Christmas and Happy New Year to everyone from the AFFS/FFDU. We hope you all have an excellent Christmas and the festivities (and the recovery) does not interfere too much with building and Nationals preparation. Some of you we will see before the New Year at Rutherglen/Springhurst. Hopefully any New Years eve revelry will be sufficiently subdued so as to not interfere with the competition sleep needed by entrants in P-30, HLG/CLG and F1J (all scheduled for early on New Years Day).

This edition of FFDU was to have been produced by Paul Rossiter but he managed to get out of it by producing a doctors note (he's ok). George Car, prolific as usual, has made multiple contributions. The principle person to blame however is again Vin.

Although the picture on the right might appear simply as an aeromodellers Christmas concoction it is actually a free flighters equivalent to the glass half full/glass half empty question. You show it to your flyer mates. If they answer "Yay, got an aeroplane for Christmas" they are optimists. If they say "Oh, no, not another model stuck at the top of a bloody tree", they are pessimists.



After several cancellations due to people being away at W/Chs, the weather, etc, the 2009 NSW State Champs were finally flown on Lake George over the November 28-29 weekend. For a long time - well since we first drove past it on the way to the TSR field at Goulburn back in the 80s - Lake George has been lurking in memory as possibly a great free flight site. It certainly looks attractive – a huge open space, no trees, short grass, no fences, but the name and the wind farm on the surrounding hills are somewhat ominous. Accommodation options are good. The nearest town, Bungendore has a hotel/motel and there is also a boutique hotel for the boutique flyers. Even Canberra isn't too far. For the November weekend we stayed at Eaglehawk tourist park in Sutton which has up-market cabins and BBQ facilities and is about 20 minutes from the field

Sunday was pretty windy even at 07:00 and it got stronger. I measured 9 m/sec plus for about half a minute just before we left at about 10. The competition had been rearranged for Sunday to be 5 flights, not in rounds, but only Terry in F1B and Phil in F1A got in the 5. I didn't use the bike to retrieve my third flight because riding back into the wind was much harder work than walking and no faster. Walking, the round trip, downwind and back took just on an hour. At the end we hurried to get off the field because it looked like rain and the rumour was that the field turned to mud.

F1A
Phil M
Tahn
Vin M

For 2010 the NSW FFS have programmed the State Champs for Lake George but at a much better time of year - June 12 - 13. Should be good.

PS It was windy for the 2009 NSW St Chs but it was November and it was windy everywhere. Long term wind records show Canberra (the nearest meteorology station) has quite moderate wind.



A great flying field



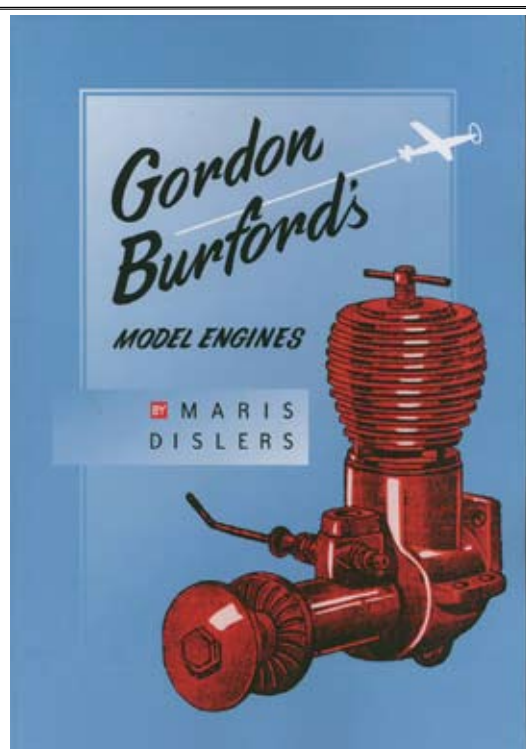
Not a very good flying field

F1A									Total
Phil Mitchell	180	180	180	180	180	140	180	1220	
Tahn Stowe	175	71	108	94				448	
Vin Morgan	180	100						280	
Ted Burfein	56							56	
F1B									
Terry Bond	180	180	180	180	114	180	180	1194	
Vin Morgan	180	134	113	180	180			787	
Ted Burfein	180	180	78	139	173			750	
Leigh Morgan	126	180	147					453	
F1C									
Bill East	110	169	180	114				573	
Roy Summersby	67							67	
Terry Bond								0	

200 pages - all in colour, A4 format.

In these pages you'll find photographs of the finest examples of each model and variant that could be found in Australia. Engines are described in detail. There's even an Appendix listing the screws, prop washers and needle valves for each model.

A book for anyone with an interest in model engines and their manufacture.



The Dixielander Weekend

Springhurst Vic

From the organizer Roy Summersby

Saturday, October 3

At 8.00am the sky was overcast and rain was threatening but the wind was kind with just a light southerly. Flying was to be 5 flights between 08:00 and 12:00 so getting them in early should have been the plan. Sixteen flyers made a start and soon Dixies were heading of towards the clouds. The breeze dropped around 09:00 but there was to be no sunshine, only light rain making conditions difficult. Dave Bailey was the smart one on the field as he had thrown his gumboots in the car. The rest of us were wet and soggy up to our knees. The rain became more consistent and at about 11:30 flying stopped for the day. At noon prizes were given out for the most original Dixie (closest to the kit) and the nicest looking Dixie. These were won by, Dave Bailey and Peter Lloyd respectively. Signed George Fuller Tee shirts were then handed out and group photos taken. On Saturday afternoon there was much chewing of the fat at the motel where a number of us were staying. Three late starters, who hadn't finished models, used this time to make them ready for Sunday.

Sunday, October 4

Nineteen Dixielanders on the field!!! And all of them flew! This might not be a world record but it sure would be for Australia. There was light drift from the north and a three-minute flight was less than half a paddock. Conditions were perfect. Flyers could make up their Saturday flights if they wished to and soon Dixies were punching holes in the sky everywhere. Often one could see five models in the air together. We had planned on a mass launch at noon but a rainsquall put a stop to that as most had put models and gear away out of the rain. It was once again prize giving time and sly dog Vin Morgan with sheer tenacity clawed his way to top the leader board, followed by Dave Bailey and Jon Fletcher (but see below). George Carr could not decide if he preferred a prize for the longest engine run or best crash however he finally chose a 35 sec run for his claim his fame leaving the best crash to Terry Griffiths. There were no spectacular crashes on the weekend but Terry tried hard from his very first flight on Saturday and beat George by one broken fuselage. The best cheaters could not be separated so two prizes had to be given. One to Dennis Parker—He just said he had already filled up his card with a full house. The other went to Fred Roberts as Lillian put the scores down in minutes hoping the CD wouldn't notice. After we arrived home it was pointed out that we had made a monumental stuff up, Col Collyer had actually come third with Jon fourth. This matter has now been settled out of court. Col was happy to accept the \$1000 compensation cheque. Also, when Vin looked at his photo of the score board



Roy and Di cooking the books

Place	Name	1	2	3	4	5	6	7	8	9	10	Total
0	Roy Summersby	180	180	180	155	180	180	165	180	180	145	1725
1	Vin Morgan	155	180	180	176	135	180	180	180	180	149	1695
2	Dave Bailey	155	-	180	180	180	180	180	180	180	180	1595
3	Colin Collyer	157	119	180	139	161	137	144	180	131	124	1472
4	Jon Fletcher	180	180	180	180	180	180	180				1260
5	Harry Sokol	15	15	15	50	180	180	180	180	171	180	1166
6	Fred Roberts	170	72	156	89	74	148	180	83	67	78	1117
7	Chris Behr	121	180	180	113	122	115	57	91	123		1102
8	Peter Lloyd	45	110	160	85	180	180	180				940
9	John Corby	180	180	180	180	180						900
10	Dennis Parker					180	87	119	85	137	180	788
11	George Car	85	180	86	157	20	77					605
12	Gary Odgers	60	127	37	173	130						527
13	Terry bond	50	127	90	123	98						488
14	Terry Griffiths	48										48
15	Graham Maynard	6	33									39

No comp scores

Brian Hammond

Peter Greenhill

Martin Williams

he thought he had not won because Roy had the highest score but it was explained to him that this was strictly an amateur fun event and as Roy is a professional power flyer, he was just flying to show how it should be done.

As the reader can no doubt see we all had a great time, the rules were minimal and adjusted on Sunday to allow flyers to improve their rain hindered results from Saturday on Sunday. Small over-runs were not counted. Missed was a prize for the most travelled flyer; this would of gone to Chris Behr from WA. It was Chris' second Dixie celebration event, the last one being in WA. It was also interesting to see Leigh Morgan practicing engine time keeping. She now thinks she will be able to time Vin's FIC models.

Motors on the weekend

included everything from the OS15 FP to an Uktam 1.5 on pipe; others were Cox 15, R150 Oliver Cubs, PAW 1.5, and Fox 15. Most of the models were new but the exception would have been Jon Fletcher's, which must be 20 years old.

We are starting to plan for next year and intend it to be a George Fuller weekend. This means we will include his Stomper and Zoot Suit models.

And from George Car.....



Gary Odgers who, together with Col Collyer was at Springhurst trimming on Friday. The rain caught them both out with motor problems on the weekend.

Dixielander fliers were treated to fine, English summer weather the whole weekend—it was cold, overcast and drizzled much of the time, and the mass launch, scheduled for right after prize-giving had to be cancelled due to a downpour..... After 8 years of drought, perhaps we should hold more of these events around the Riverina?



Sly old fox Vin trying to work out how these IC motors actually work—or so it seemed. But the deliberate, methodical engineering type approach won the day.....

The second 50th Anniversary Dixielander Meeting in Australia was held at Springhurst, Victoria, early in October (the first, in West Australia, on the same weekend as in the UK attracted 11 entrants, 8 flew, in brilliant conditions). The overcast, drizzle in squalls and cold weather (thankfully though, little drift) meant a change of rules (could fly all 10 flights on one day if desired, 10s motor run, 3 min max) and was a surprise to locals after 8 years of drought, though ex-brits on the field assured us this was fine English summer flying weather.....

Organised by Roy Summersby, the event attracted 19 entries, 16 flew and at times there were up to 5 Dixies in the air at the same time (smart beginners watched the old hands, and launched soon after – if they could get the motors going.....well, that was the plan, but I generally couldn't get the motor going soon enough....). Winner was decided on total score from 10 flights. Roy (7 maxes) got the highest score, but was excluded on the grounds he was too good anyway. Winner was the sly old fox, Vin Morgan, now branching out into rubber and power since retiring, with 6 maxes, second Dave Bailey (8 maxes), third Col Collyer, many times open power winner, with 2 maxes, though the rest were close to maxes.

Mention must be made of Jon Fletcher, flying his 20 plus year old Dixielander – with which he has many times challenged the VIT equipped open power models over the years. During the previous week he tweaked the Cox 15 Special mk1, that he had got for his 14th birthday, by fitting a Mk 2 liner, lightening the piston from 6.6 to 4.8g, and turning the head to take a Nelson plug. It does 17400 on an APC 8x4 prop...(I've checked the 1960's engine test report by Peter chin—Jon's motor gets a clear 1000 rpm more than the test motor). Clearly the highest climb, by maybe 25%, Jon put up 7 straight maxes, then stopped flying. Perhaps retrieving in

high-high wet barley crop put him off, recalling just why he emigrated to Australia in the first place....(incidentally, he thinks lightening the piston was the best single mod to do—when he turned the skirt to 18 thou, he had his doubts it would hold together—but so far, so good).

The Prizes Roy organized were generous—apart from the placings (ranked choice from an array



Jon Fletcher has been flying this Dixie for about 25 years now, and thinks he now has it going reasonably well....7 straight maxes, but then stopped flying, was only good enough for 4th place.



Peter Greenhill generously built a Dixie for Den Sparker (who otherwise wouldn't have attended, putting up several maxes), though Peter himself had trimming problems with his own model.



Glider, rubber and also sports model fliers turned up with Dixies for this event—Martin Williams is more usually seen flying F1A...



Terry bond getting the piped UCTCAM 1.5 motor really screaming...but had teething problems which hopefully will all be sorted by the time the Nats come around, when Dixies will once again fill the skies.

of prizes!), knowing there would be a few duffers attending, there were prizes for most spectacular crash, longest overrun and dodgiest scoresheet. Your correspondent was (ahem) in the running for the first two, until a more spectacular crash displaced him from one, but still getting the second – and he was still awarded his sole max... off the 35s motor run. Dodgiest scoresheet was Den Sparker's—when his model was late arriving on the field, he was heard to mutter that he would fill in the scoresheet before putting up his flights, anyway.

So much fun was had by all that a special category for Dixielanders will be awarded at the next nats, to be held on the same field in 3 months time.



Dave Bailey with his immaculately built and covered Dixie flew consistently all weekend, and into second place. Building standards were generally high—must reflect the care given to this well-loved design.

Dixie Details

By Vin Morgan

It was pretty good fun building something out of big pieces of wood without too much worry about accuracy. All that sanding to make it smooth and look well fitted – good therapy. After I'd completed the wing frames, even though they were short and fat they didn't feel very rigid, so in an effort to stiffen up the structure I added 0.8 mm webs between the front and rear spars as well as the vertical webs to make a sort of box. Boxing in the spars didn't add much weight and now with the well doped polyspan covering it holds the warps quite well. The fuselage and fin have 25gm/sq m glasscloth doped on which adds little weight, strengthens the fus and stiffens the fin so the horizontal grain insert is not needed. The fus has a lot of cutouts - timer hatch, tracker hole, RDT, hole. There are 0.8 mm ply doublers around all the cut-outs.

You get a lot of choice of motor with a Dixie. Talking to Roy I ran through what I had; an old Rossi – “too much power, difficult to handle”; a gold head Taipan – “still too much power”; one of those Mk3 Oliver Tigers that Martin got John Oliver to make – “too valuable, too heavy, why not

sell it to me”; a PAW 1.5 – “OK, then you could use it in Oz Diesel but not really enough power”. “Missed out on the Cox Medallion that went on E-Bay for \$205, why not buy a new, reliable, powerful motor such as an OS15 FP. I just happen to know that Andrew Lindwood has a few of these at a good price”. Well the FP is an excellent motor, reasonable weight (ABC is lighter than steel) super easy starting and enough power. I thought that because Andrew bought them for CL they would have a plain venturi but it turned up with an RC throttle. I bought a venturi for it but ended up using the throttle anyway.

The Dixielander plan shows a fuse for DT and an Autoknips timer for the motor. We aren't allowed to use fuses because of fire risk (although at Springhurst in October it wouldn't have been much of a problem!) so I thought I would bypass the mechanical age and jump straight to a microprocessor timer. Initially I planned to use Harry's DTox but Harry kept asking for it back for updates so I decided it would be a good opportunity to test some things with one of Roger Morell's Black

Magic timers. The BM has connections for three servos and RDT. It also has separate programmable servo positions at switch-on, when the start button is pressed, when the button is released and for the timed functions. So my Dixie has two servos and an RDT receiver. The first servo (DT) simply releases and arm that releases the DT line. The second servo is directly connected to the motor throttle (just like in an RC job - sorry). When the timer is switched on it sets servo 2 to just open the throttle. This is good for starting because the motor thinks it has a really small venturi. You fire up the motor at idle speed and stroll out to the flight line. When you press the start button the timer moves the throttle to the full power position. The motor rev up confirms that the timer is working correctly. As the model is launched the button is released starting the timed functions. After 9 seconds the timer completely closes the throttle (the idle stop screw is removed) which stops the motor pretty quickly. (There is also a "diesel" program in which the timer closes the throttle and then blips it open a couple of times to simulate a diesel squeeze off stop - haven't tried that yet).

Dixies are really a good classic design. Mine had only a dozen hand glides in the local park and I had never run the motor in the model before the weekend. But I reduced the tail tilt as a result of the hand glide testing and otherwise it flew off the board. On Saturday I did 3 or 4 flights with increasing motor runs and on the Sunday I put in the 10 flights between 0730 and 1130 (very short retrieves for the first ones). It helped that the motor was super easy to start and reliable.

Thanks to Roy for organizing such a fun weekend.



Dixie timer side. DT servo with release arm behind the timer hatch. The large cutout is a bit unplanned but it does make it easier to hold the servos in place while the screws are fitted. The blue foam rubber holds the 130mAh Lipo battery in place.



Dixie, motor side showing throttle servo arm, start button (between finger grips - skateboard grip tape is useful)

50TH ANNIVERSARY DIXIELANDER EVENT IN THE UK

By Don Howie

I had been attending Middle Wallop free flight S.A.M. 1066 Euro Champs over a number of years with David Baker, who ran the vintage F/F movement in the UK.

Last year (2008) I again visited these Champs with Bill Britcher and his family, Bill being very impressed with the flying and great venue with acres of mown green grass on the Army airfield. He met George Fuller and other very interesting modellers and in 2009 he decided to build a F/F Dixielander to fly in the event at Middle Wallop.

His model is a work of art, having a two piece fuselage and two piece set of wings. The fuselage slots together, held by a small dowel and the tongue has carbon fibre reinforcement. The wings use two plywood dihedral braces that will break if the model is blown over on landing, or is involved in a crash. These can easily be replaced and he made a number of spares from quality 6 ply plywood. The model packs easily into a normal size suitcase with bubble wrap around the components.

The model was tested several times at the Willinga Vintage R/C field on short D/T and under calm conditions. It had one crash when it went into a number of loops, with very little damage to the model. The wings have fine polyester covering, plus tissue and coloured yellow dope finish, the fuselage has tissue plus dope and black paint finish.

On the Sunday morning at Middle Wallop it was cloudy with



Sam 1066 Champs, Middle Wallop, Sunday August 30, 2009. 27 Dixielanders entered. George Fuller sitting in front.

some wind. The flight time was reduced to two minutes 30 seconds, engine run 12 seconds, so that the models would stay in the confines of the Middle Wallop airfield.

Bills' Dixielander weighs 16 ounces and he used a Cipolla 1.5cc engine made by Italian Fratelli Cipolla Company in the 1970's. F.A.I. fuel (no nitro), but only glow fuel obtainable from Flight Hook was 15% nitro-

fuel supplied. The engine was found hard to start on this fuel as it would pre-ignite and we only got it going after fitting another washer under the glow plug.

First flight was a rather poor engine run and Bill got less than a two minute flight. We made the mistake of not calling an attempt, like the top flyers would do. Next two flights were better and we nearly maxed on these. I had the job of chasing the model and it was very pleasant walking on the short green grass.

The event had 27 entries, less than expected as the weather forecast was not very good. Bill has a great time placing 7th in the event. The free Hog Roast was great and George Fuller signed the wing of Bill's Dixielander. The British weather is not always great but the conditions of the military airfields with short green grass, make F/F flying very pleasant.

Bill Britcher launches



Letters

Dear Sir

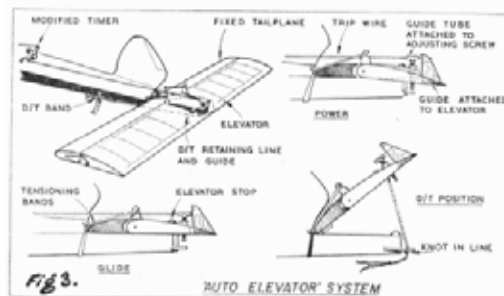
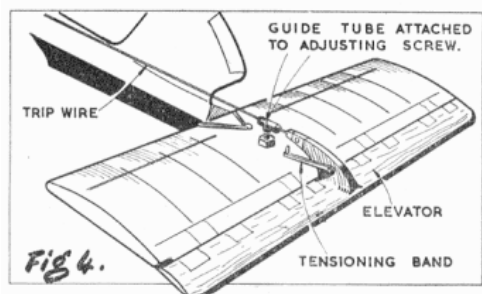
I do feel that the AFFS needs to consider the new vintage rules and clarify at least the point below.

It is well known that Bond Baker's 2nd placed model at the 58 WC had a fascinating form of VIT (a timer-operated cam that raised the stabilizer LE to give less incidence and tail tilt). In discussion with Jim Fullarton earlier this year, Jim revealed that he used a form of VIT (hinged elevator added to the stabilizer, operated by the timer to give down during the motor run and neutral on glide). It was during a contest that Bond noticed this and discussed the idea with Jim, presumably leading to Bond's arrangement a year or more later.

I began looking for any published material from around that time, and found an article by Jim Waldron in April, 1956 Aeromodeller, which gives clear diagrams on several arrangements for VIT (see excerpted diagrams attached). As this is in the period (pre '57) for our vintage rules, I wouldn't be surprised if entrants appeared with such VIT arrangements on their models. I would hate to see entrants disqualified and/or nonplussed CDs, and can imagine a few heated discussion amongst bush-lawyers... perhaps we need a ruling soon.

For the record, I would be in favour of entrants in vintage power being able to use these published mechanisms. The article does refer to a few designs themselves, however I think it would be better to allow any design to be so equipped. This use would be very much in the spirit of those times.

George Car



Dear George,

You are correct in that fitting gadgetry such as VIT would be in the spirit of the times - there was a lot of development going on at the time - however allowing such modifications would open an enormous can of worms and render our system of defining a vintage model unworkable. If one was allowed to make a highly significant modification such as adding VIT to a design that originally did not have it one also add things like turbulators (they were used pre 1956) and change the aerofoil (no different to adding an elevator for VIT as in the drawing). The models would certainly fly a lot better but they would not be vintage models. The aim of Vintage, as I understand it is to fly competitions as they would have been in the vintage era. This is why the vintage rules are quite strict "Vintage models must be as the original with no modifications which would improve the flying

characteristics of the model. Modifications to improve durability and safety of the model and minor alterations to detail construction will be permitted.....No change or modification shall be permitted if, in the opinion of the Contest Director, such changes would improve the flying quality of the model". The Vintage rules also state clearly that the model must be built as per plan "Proof of construction must also be provided by the contestant, that is published plan, three view or kit plan showing construction details". If a plan is found which shows gadgetry such as VIT then it is legal, however you are not allowed to add VIT to a design which did not have it originally (even if you might have done so back in 1956). It is one of the unfortunate and frustrating things about Vintage - you are stuck with the plan.

VM

Dear Sirs

While collecting material on the various national champs by reading past issues of model magazines, I have come across some curious items such as this scan from AeroModeller, Feb 1964. Does any reader know the circumstances of the photo and whose model was being proxy flown at that world champs in Austria? I would be grateful for any information.

Regards,

George Car



"Got to shelter you from this Austrian rain Hermann — you have to be dry to handle this Australian model!" — proxy fliers at the World Champs.

Question

Who is this Australian model flyer, and what was the occasion? Scanned from a mid-50s magazine. Clue: the hard working launcher has recently had a couple of operations.....(and we all wish him a speedy recovery).

(Answer elsewhere in this FFDU)



Update. Left. Roy's FW152H. Framework seen in the last FFDU. Now covered and painted. Expect to see it flying at the Nats.

From FFDU, 1982—many will recall Dennis' encounters with props....

THE DENNIS PARKER SAGA - THE VERY LAST TIME

'82 Nats

The Time - Vintage/Old Timer Day at the Nats.

The Place - The C.D's car. Where your scribe was doing his thing, trying to run a contest.

Having got the event underway, your scribe proceeded to settle back in the car & read a few confiscated early issue Aeromodellers when, resplendant in white coat & toting a black bag, Dr. E. Brownstein, Horshams leading specialist surgeon, announced "I am Mr. Dennis Parkers Personal Physician, has he arrived on the Field yet?". Having been taken aback by this apparition, I mumbled out "Yes" & pointed to the Flight Line, then the penny dropped, Dennis's Brother-in-Law is a surgeon & this must be him, so I called out to Dennis that his Physician had arrived & it would be safe for him to Fly.

Having engineered a coup of this order there is little else that "DP" can do suffice to say that he had an injury free Nats.

The Prodigal Plane

A saga by Gary Pope

Sunday 18 October 2009 started well. The weather was warm but not hot, the drift was predictable towards north, but relatively mild. My time at the flying field was limited as I had committed to leave the flying field by 9.30am to pick up my wife Wendy from Kingsford Smith airport at 11 am. I put up three quick flights using the 'Parra Plane', a Calypso Major made by my Father some 15 or 20 years ago. It is now powered by a very reliable Silver Swallow 2.47 cc diesel and is decorated in the Blue & Gold colours of the Parramatta Eels. As expected, the first two flights were safe & predictable and the model achieved 2 and a half minutes off a 9 second engine run on both flights.

The third flight defied expectations. The model climbed in its normal steep & tight right hand spiral but the engine did not stop at 9 seconds! It kept going, going & going all the while the model getting smaller and smaller and the engine note getting fainter and fainter. It kept this up for over two minutes, by which time it had silently disappeared directly overhead. Some quick thinking during this two minutes saw the tracking receiver switched on & Roy Summersby's Yagi plugged in.

Terry Bond, Roy & myself continued to track the now invisible model. It followed the drift in a northerly direction. After about 22 minutes we lost the signal low on the horizon. This suggested the model was low but still flying, losing height as it headed north.

I was running tight on time but resolved to try to chase the model by car to see if I could pick up a signal. Roy lent me his Yagi & I was on my way. I travelled west to North Richmond & then on to the Terrace road & arrived at the bluff immediately North of the flying field. No signal! I then travelled north & searched for a signal at the intersection of Terrace road and Kurmond road I got a faint ticking sound on the receiver. At least I had something to chase later on.

In the interests of domestic equilibrium I broke off the search & drove to Mascot & picked up Wendy & brought her home. Later that afternoon I returned to Freemans Reach in the hope of following up on the promising signal established that morning. I arrived at the intersection of Terrace road and Kurmond road and re-established the signal. I then searched for the signal at about 5 locations whilst driving in a box defined by Kurmond road, Glossodia, Freemans Reach & back to Kurmond road. No signal except for the faint ticking sound (more on that later) near the intersection of Kurmond road and Terrace road. Alarming, whilst stationary & looking for a signal I was befriended by an unkempt adult male human clutching a Teddy Bear and wearing a silly grin! Come to think of it, both the adult male human & the Teddy Bear were wearing a silly grin. Thankfully an unexpected call from Terry Bond gave a welcome excuse to break-off the contact. I promptly got in the car, wound up the windows and began muttering into the phone to Terry as I drove off. Phew! I decided to call it a day.

Things were not looking good & my father's model that had survived a great deal over 15 or 20 years was in danger of becoming another memory. However, discussions with both Terry & Roy filled me with new hope. Roy's generous offer to

come down to the field & help me search for the model was very welcome.

The search was rejoined at about 7.45am on Tuesday 20 October. Roy & I travelled to the flight line at Richmond & Roy established our location (our reference point for subsequent measures) on the GPS. The theoretical line of flight of the model was also reckoned. Roy suggested a distance window based on the model's flight time and the speed of the drift. Off we went, Northward Ho !

The first stop was the intersection of Terrace Road and Kurmond road. No signal! My heart sank a bit, but Roy was unconcerned. He took us North about another 4 or 5 klms & we took a reading from a hilltop at the side of the Boundary road, Glossodia. Thankfully there was no sign of any unkempt human males or grinning teddy bears! We got a ticking noise very similar to that which I had heard on Sunday. However we were a bit off our desired heading. Noting that a person was moving about at a farmhouse that was closer to our desired line and was away from the road & possible interference, we drove down the entrance road & made ourselves known to the farmer. We asked permission to search & this was duly granted. Roy set up the Yagi and almost immediately got both the ticking noise and a faint beep signal from the west. There was no doubt that the model was out there somewhere. Yippee !

According to Roy's GPS our location was 5.3 k from the flight line at 185 degrees. At about 9 am we both had a big drink of water, established what kit to take and then set off on foot in a westerly direction in search of the Parra plane. The initial walk was relatively easy and we traversed about four rolling grassy paddocks, getting through fences with little effort. One thing we did note was that there were a few large dams in the paddocks that gave the impression that they would hold water for a long time in a dry spell. The bovine inhabitants of the paddocks looked very fit. The signal did not waver when taken from hilltops but did get very faint in the small depressions. Roy was steadfast & found the direction of the signal confirmed at every reading that he took.

Along the way we passed through some electrified fencing & Roy gave discourse on how an electric fence worked i.e., a 12 volt car battery was wired to a coil which accumulated the charge & built it up to a much greater voltage but at low amperage to a point where a brief burst of high voltage/low amps electricity was discharged into the fence wire. The penny immediately dropped...an electric fence was the source of the ticking signal that I heard on my first attempt at a search on Sunday !

But I digress. Whilst I had hopes of us finding the model in one of these paddocks, that hope was dashed when the relatively treeless fields gave way the thick bush. At the same time we came across the outer reaches of local suburbia. We ignored the barking of dogs in the near distance and got through the most difficult fence to date. We began descending a steep & thickly bushed gully. We passed by one house & the bush remained thick but started to flatten out a bit. We found ourselves in a generous grassy clearing that eventually gave way to a creek which very conveniently had a fallen tree which we used as a crossing. As one might expect, the smaller branches that we used as handholds snapped as I crossed, bringing me down on all fours half way across. Using the 'training' I gained as a young boy playing in the creek behind

my childhood home, I steadied myself, established another handhold and gingerly completed my crossing. Phew!

At this stage I realised we had come a fair way & we seemed no closer to the model. At the same time we now had no signal. Roy was unfussed & we resolved to continue west & climb up what was the other side of the gully & see if we could get a signal. It sounds a lot easier than it was! The gully was very steep on this side and was thick with bush. At a slow pace we climbed & climbed until the gradient eased off and the bush got a tad thinner. Roy also re-established the signal from the tracker bug. At this stage I reflected on how far we had come and marvelled at the ability of the tracker bug to put out a signal after 2 full days and through such dense bush. I saw a Wallaby silently glide by and disappear. I was surprised we hadn't disturbed any snakes.

The climbing continued until we arrived at the perimeter of properties on the next ridge. We didn't know it at the time but we were now close to East Kurrajong road. At this stage reading the signal got interesting. We had come a fair distance on foot, maybe 3 or 4 kilometres and the signal didn't seem to have changed much. However, then I realised that Roy had occasionally reduced the gain on our trek. This meant that while I was hearing a fairly constant beep from the receiver the signal had in fact been getting stronger. At this point we took a moment to have a good scan over 360 degrees and had a good think about where to go to next. We resolved to head out on a more southerly heading & started walking towards another gully. We plunged down, down, across & up, up the other side. The signal was getting stronger. We were approaching a clearing which turned out to be the perimeter of a property.

As we approached the clearing above the gully Roy asked 'what colour is your model?' Thinking of the fuselage I expectantly said 'yellow'. Roy replied 'well this blue model mustn't be it'. I hastily replied 'the wings are blue!'

Roy replied 'well this must be it!'

Eureka! There it was. Neatly parked on the ground at the edge of a clearing amidst all this thick bush. The wings had come off & there was a small tissue tear on one wing. Apart from that there was no damage to the model. I had visions of the poor thing impaled upon the upper branches of a large tree, but no. It was on the ground & relatively unscathed. Our position relative to the flight line was 6.7 kilometres at 173 degrees according to Roy's GPS. As to the source of the flyway, it was clear that the timer had not started. It seems the

nut holding the propeller wasn't working properly.

I have to say at this stage that the primary reason the model was found was Roy's unwavering confidence and ability to track a model, plus his generosity in lending his time & energy to this cause. I must admit that had I pursued the model alone then I doubt I would have got within 5 kilometres of it, let alone found it. On the positive side, I did learn a trick or two about tracking models fitted with a tracker bug.

The journey back to our starting point was a much simpler task. By dead reckoning we struck out in an east/southeast heading. This took us back to our creek which we crossed at a much more southerly point. The crossing was much easier this time as we crossed on a freshly built concrete bridge. We were amazed to find this bridge (or more correctly a weir) at the rear of a property which led to nowhere but virgin bush. Evidence of its freshness was the vivid whiteness of the concrete structure and the test 'cores' in about 20 plastic buckets however the most compelling evidence was the insignia & date scrawled into the concrete structure 'The Bridge - 26/9/09'. It was effective, if not eloquent.

After a brief chat with the owner of the property (and I guess the owner of the bridge) we struck out south onto Boomerang Drive, Glossodia. We came to Ian street & turned left (east) & happened onto a ¼ acre block that accommodated a single horse. Roy & I were of the belief that our starting point might not be far away. We walked through the block & crossed the fence into.....one of the paddocks at our starting point! About 15 minutes later we saw the farmer who gave us permission to enter his paddocks & look for the model and gave him a very brief version of our tale. Whilst he was impressed with our ability to find the model, he had other things to do.

At 11.30 am Roy & I refreshed ourselves, packed up the gear and the model & started the drive homeward. We made one stop for a delicious chicken kebab at food joint past Windsor Macca's on the way home. It was light, delicious & most welcome.

So ends the saga of the Prodigal Plane. It has now been retired, at least until a more reliable timer, or a more reliable handler, can be found.

Roy, many thanks to you!

Gary Pope 3 November 2009.

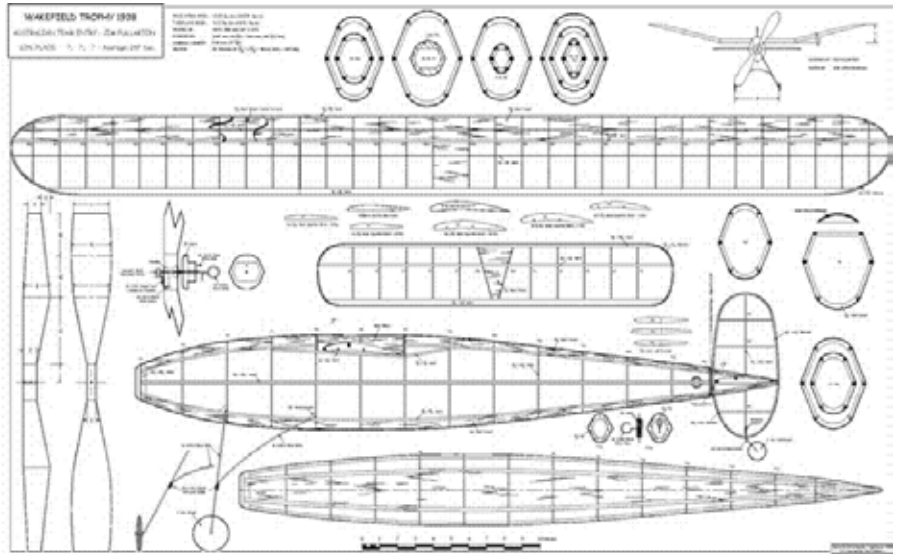


How it started. On another perfect day at Richmond.....

From the Modelling Press

George Car snips out a few items maybe of interest to FFDU readers.....

Flypaper (newsletter of VFFS, contact Paul Butler (pgbrol6b@tpg.com.au) for subs) is edited by Mike Glaister. For some issues now, apart from news, it has carried wonderfully detailed redrawn plans of various vintage Wakefields in each issue. Current (October) issue has two designs from the '38 Wakefield, Jim Cahill's Clodhopper and Jim Fullarton's Hereward. It has some of Jim's recollection of the event, too, (the story of Cahill's win is well known, it has been retold in *Aeromodeller* and also on the web at various sites). The plans are in scaleable pdf—this means you can blow them up on screen say 4 fold, and see all the detail. When I enquired who had redrawn the plans—it was none other than editor Mike Glaister! He has been redrawing vintage



wake plans in a CAD program, taking pains to get the details authentic. Mike has generously offered to supply full size plans from his drawings, at cost (he has them printed locally, you pay print and postage costs). See below for list. Mike will continue to re-draw plans and they will appear in *Flypaper*. He has also generously offered to let me post pdfs of his plans on the Aus FF plans web site (www.georgecar.com/affp). (With luck, folks, Mike might re-draw each of our favourite plans from the collection, in time! In the meantime, if you want to print a full sized plan from Adrian's collection, see elsewhere how I do it).

Duration Times (SAM1788 newsletter) for Sept-Oct had the following interesting info: For vintage sparkies—Charlie Reich recalls George Aldrich used to repair spark plugs when the central electrode became loose (a problem with Champion plugs). The electrode can be adhered again using Locktite 620. Coat the electrode with locktite, slide it in position, rotate, withdraw and re-coat, then reposition it again in the porcelain and let it set overnight. The plug will be perfectly useable. (note: these engineering adhesives are amazingly strong when used properly. I know of a stationary engine restorer who faced cutting a crankshaft, the original was beyond repair. He made the shaft up from parts, and adhered them together. For the amount of running that engine gets (only a hour or so a year at shows), it's been perfectly good—I wouldn't believe it either, but the engine runs.....).

David Owen had a few good ideas for chrissy pressies

1. a PB33 diesel from Peter Burford, which is a gem of a small diesel, but you may need several members of the family to club together to get you this one....(note: you can see some footage of Peter doing his machining magic on the web, if you search his site).
2. a new MP Jet Classic diesel, or Schlosser diesel from Germany, or perhaps a new PAW (for each of which David is the Australian agent, contact him on owende@tpg.com.au).
3. a copy of Maris Disler's new book "Gordon Burford's Model Engines", which is now available. Enquire from Maris at jamd@adam.com.au. (Note: good to see Maris' book is ready—it's been on the go for years. Price will be \$75 plus \$10 postage anywhere in Australia. Foreign postage depends on destination, but would be calculated on the 1 kg rates. It came in at 200 pages - all in colour, A4 format, hence the price. I think, for a limited printing of a book in colour, it is not an unexpected price.

I had a series 7 (1961) Taipan 2.5 in my collection with a good provenance: it had been bought in Wagga and owned by the same chap, flown only a few times in a KK mini-Super 60 over all these years before I got it—with original box. Maris didn't have test results for the motor, and asked if he could use mine for the tests. It blew up running on a small prop at top rpm.....I offered to let Maris repeat the tests on the same motor after it had been restored by Robin Hiern, but Maris refused—it was, after all, not original.....)

Lastly, DT carried a note from Aleksandr Kalmykov (cyclone@mail.nsk.ru) advising that he offers all spares for all models of Cyclon engines.

Plans already redrawn by Mike Glaister. If you want to contact Mike regarding a full size copy, his email is michael.glaister@gmail.com (note: I have listed only those from 1930 to 1938—there are many more, and more to come!)

Joe Erhardt's '30 Wakefield

Joe Erhardt's '31 Wakefield

Feinberg's '31 Wakefield

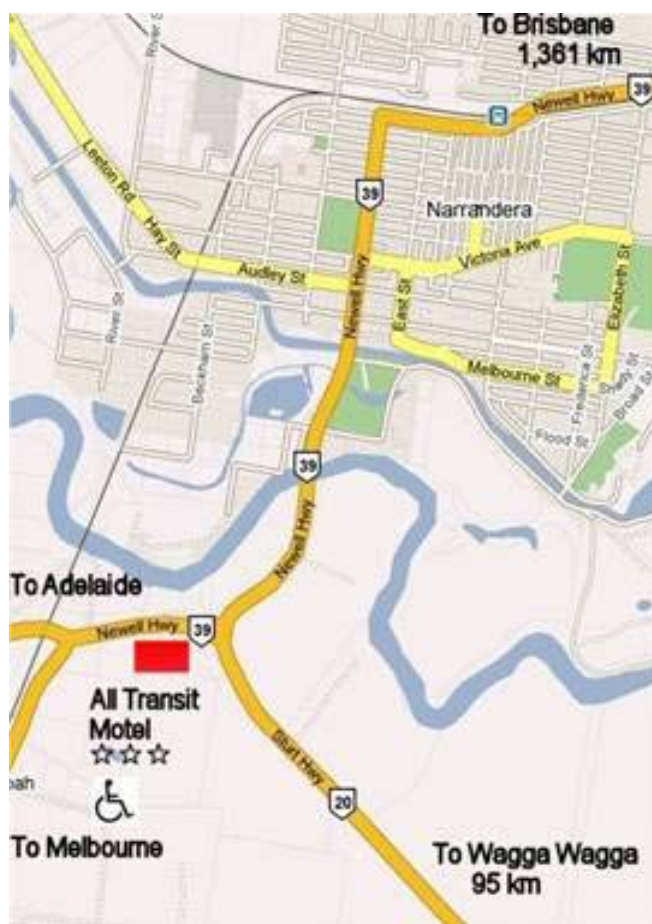
Gordon Light's '32 Wakefield

J. W. Kenworthy's "Conqueror"

J. B. Allman's "Grasshopper"

Frank Zaic's '34 Wakefield
 Jim Fullarton's "Black Diamond"
 Gordon Light's '35 Wakefield
 Vernon Boehle's '35 Wakefield
 Milton Boss's "Milton Special"
 Jim Fullarton's '35 Wakefield
 W.E. Mc Kay's '35 Wakefield
 William Ying's '35 Wakefield
 C. S. Rushbrooke's "Mayfly"
 Donald Merten's "Tubby"
 Albert Judge's '36 Wakefield
 Bob Copland's '36 Wakefield
 H.E. Hervey's "Falcon" Wakefield
 Chester Lanzo's "Duplex" Wakefield
 Emmanuel Fillon's '37 Wakefield
 R. Chabot's '37 Wakefield
 R. Clasen's "Colibri H" Wakefield

M. Mc Kinney's "Midnight II"
 Alvie Dague's "Tulsa Rocket"
 E. Ducrot's '37 Wakefield
 H. Fish's "Eliminator Winner"
 G. Robert's 1937 Wakefield
 Adam's '37 Wakefield
 Blanchet's '37 Wakefield
 Chasteneuf's '37 Streamliner
 J. Desnoes's '37 Wakefield
 H. Kerkoff's "'Kievit" Wakefield
 H. N. Simmon's '37 Streamliner
 Jim Cahill's "Clodhopper II"
 Alfred Van Wymersch's '38
 Jim Fullarton's '38 Wakefield
 Frank Zaic's "New Yorker IV"
 Charles H. Grant's "Tsetse Fly" Wakefield
 Eugene Lynn's "Kansas" Wakefield



All Transit Motel

Junction Newell & Sturt Highways
NARRANDERA

Owner operated 3 star motel situated at the Southern entrance to Narrandera. 14 units, single, double, twin and family. Prices from \$72-\$129 per night

Bookings: John & Kathy Guthrie

Phone: (02) 6959 1155

Fax: (02) 6959 4964

www.alltransitmotel.com.au

New Vintage

Vintage can be great fun - if the weather is too bad to go flying you can take out your competitive urges by arguing with your fellow flyers about the rules. But now, some 20 odd years since the MAAA rules were formulated things have got a bit stale. The 1954 cutoff date was set (in the nineteen eighties) because after 1955, free flight model design began to advance rather rapidly. Better construction methods evolved, performance enhancers such as VIT were adopted (see George's letter on page 14) and a whole lot of new, high performance, ballrace motors came out. For the 2009 rules update it was decided to advance the Vintage cutoff date to the end of 1956 thus giving two years worth of new designs to investigate. Your editors George and Vin and correspondent Peter Lloyd have been rummaging through the magazines.

Peter Lloyd's - Vintage Views

Unless you have been living on another planet you would have heard by now that the Australian Vintage Free Flight rules have been modified to increase the cut off date by two (2) years to **December 31st 1956**. The immediate effect of this is to introduce new designs with the aim to freshening up the event and getting away from the small selection that has found favour over the past 20 years.

It is necessary to point out that there is currently a perception that the Australian Vintage free flight rules are the same as those used by SAMS Aust; they are not! Yes, we have the same cut off date but rather than go through the elaborate committee driven process of proving the eligibility of a model (which can be open to abuse or models being approved that did not exist). The originators of the Australian rules chose a simpler method which has remained unchanged since its inception. Reproduced below is the current wording found in the rules book.

Proof of Age. Proof of age must be provided by the contestant, for example, date on a published plan, construction article, three view or advertisement in the case of a model kit.

Proof of construction must also be provided by the contestant, that is published plan, three view or kit plan showing construction details.

The operative words are "DATE ON" this means that models that were known to have been flown prior to Dec1956 **BUT** were not published until 1957 or later, do not qualify and that includes the Dixielander (1959), Dream Weaver (1957), Adrian Bryant's Mish Mash, Contest Kits Calypso Senior

(1957), Russ Hammond's Lift Snifter, B. Amor's Lucifer A/2 (1957), Geoff Pentland's Skyrocket 5 (1957).

Power models that now qualify are of course the Y-Bar, Crescendo (AM 10/56), Creep Mk17 (AM 11/55), Contest Kits Calypso (9/56 AM), Mike Gaster's Gastove MkXVI (M.A.N 56), John Tatone's Frisco Kid (FM 4/55), Ron St Jean's Ramrod 600 (M.A.N 6/56)

On the engine front the OS 15 MAX1 now qualifies as does the AM 10, 25 and 35 diesels; Yugoslavian AERO 250 diesel, Italian Barbini B40TN glow, Super Tigre G31 1.5cc diesel, Taifun Hurricane (1.5cc) and Tornado (2.5cc) diesels, FROG 249 BB diesel, FROG 149 Vibra-matic (clack valve version), German Jaguar 2.5cc diesel, Dutch Typhoon 2.5 BB diesel and lastly, the K&B 35 Greenhead.

For the glider fliers, The Contest Kits Inch Worm A/2 (4/55 AM) and Empress A/2 (12/56 AM), The Altair A/2 (9/55 AM) and the Aiglet A/1 (12/56 AM) now all qualify.

AM refers to Aeromodeller magazine, FM Flying Models and M.A.N Model Airplane News

While I have trawled through the Aeromodeller mags other designs will be found in Model Aircraft and the Zaic Year books of the period and there will of course be designs in non English speaking magazines that will qualify so there is plenty of scope and while researching for eligible models and engines I found that the 50 gram Wakefield rule came into being in 1956 so we have now got the rules right.

Happy building.

George - Vintage Plans to Consider

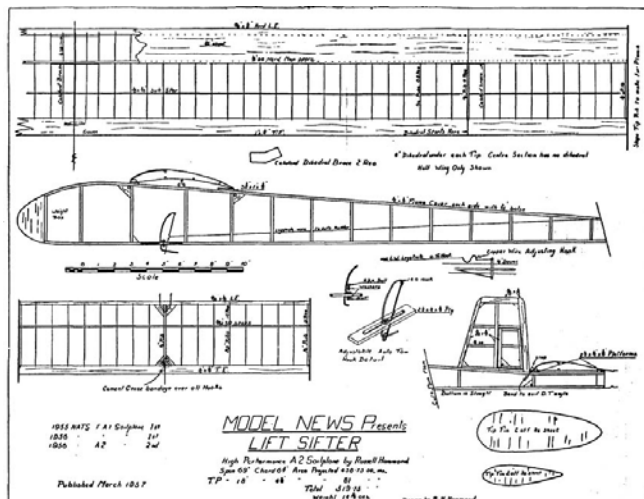
With the recent change to the Vintage rules, there are more plans worth considering. George Car looks at a few.....

Those of us interested in vintage model flying will probably have spent many pleasurable hours pouring over our old mags looking for that elusive thing—the model we will build next! Now that the rules have changed, there are of course those designs published after '54 that we could now consider. Looking though Adrian's FF plans collection, we have:

1955

Plan 059 the Wanderer 34 1/2" span glider (plan introduced by Jim Fullarton, no designer credited on the page, but may have been Jim's—more suited to a beginner, not a very competitive model).

Plan 064 Bond Baker's 1955 Wakefield. This model won the event at the previous nats, and was to be flown at the Wiesbaden world champs later in the year. The plan is presented



by Jim Fullarton in Aircraft. There may be enough detail to build from.

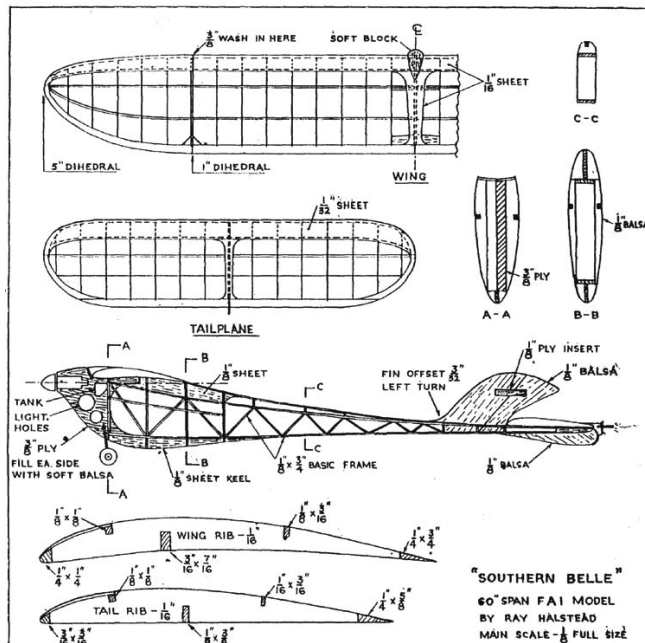
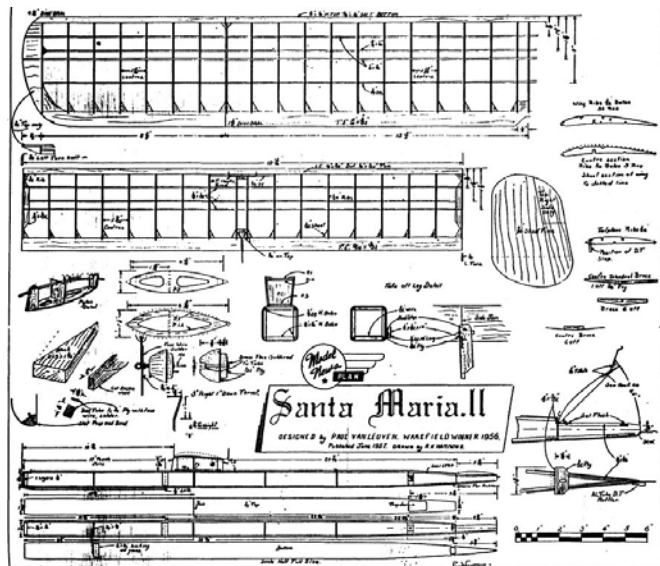
1956

Plan 082 Southern Bell, 60" span power model by Ray Halstead. Certainly one for those who like elegant, low CLA designs. This design was presented in 'Aircraft' by Jim Fullarton. For 2.5cc motors, with the washin and left rudder prescribed, the model had a "very smooth left turn on climb and glide".

Plan 249 Santa Maria by Paul van Leuven. One of Paul's wakefield's designs bearing the same name, it would make a

competitive rubber model. This plan was published in Model News in '57, so there shouldn't be doubt about its eligibility.

Plan 265 Lift Sifter, glider by Russell Hammond. Plan presented in Model News in 1957. With two firsts and a second at previous nats, it must be a potent design.



A quick thumb through some of the mags revealed some interesting models and motors:

Model	Designer	Type	Comment	Published
Omega	Don Aldridge	A2 Glider	A bit ordinary	Aeromodeller Jan. 1956.
Altair	Geoff Lefever	A2 Glider	Good model	Aeromodeller Sept. 1955.
Tototl	Carlos Gonzales de Cosio	FAI Power	Fast climb, Interesting	Aeromodeller Aug. 1955.
Shorty	Jeff Hancock	A2 glider	Good design	Aeromodeller April 1955
Atakee	Rudolph Das	FAI power		
Pelican	Jim Waldron	Open Glider	Larger than A2	Aeromodeller March 1956
Wanderer	J. Baguley	A2 glider	Good design, Lightweight, hook position incorrect, good aerofoil	Model Aircraft Oct. 1956.
Sunstreak	Brian Faulkner	1/2 A power	Geodetic wing & tail, good section	Model Aircraft Aug. 1956.
Isotope	W. Woodrow	1/2 A power	Simple, semi geodetic, Quite good design	Model Aircraft May 1956.
Gastove XVI	Michael Gaster	FAI Power	1955 W/Chs winner. Nice model!	Zaic Yearbook 1955/56
	Carl Wheeley	FAI Ppower	1954 W/Chs winner	Zaic Yearbook 1955/56

ETA 29 Mk IV	ETA	Twin BB, rear disc valve induction, high performance glow	Ad in Aeromodeller Nov. 1956
Elfin 2.49 BR	Aerol Engineering	Twin BB, rear read valve.	Test in Aeromodeller Nov. 1956
Frog 149 'vibramatic'	International Model Aircraft (Frog)	Plain bearing sports motor. Read type rear induction. Also	Test in Aeromodeller July 1956. Also a glow version
Super Tigre G20s	Super Tigre	Twin BB 2.5 glow. FRV	Test In Aeromodeller March 1956
Frog 249 BB	International Model Aircraft (Frog)	Twin BB 2.5 diesel	Test in Aeromodeller Jan. 1956
Byra 2.5	F. Battlo (Spain)	Twin BB 2.5 diesel. Rear disc valve	Test in Aeromodeller Dec 1955
AM10	Allen-Mercury	Powerful PB 1 cc diesel	Test in Model Aircraft July 1956
Cox Thermal Hopper	L. M. Cox	About the first of these great engines	Tested in Model Aircraft Aug. 1955

VM

63rd Nationals

News as at 12/12/09

One of the more important items considered at the 63rd Nationals Committee's meeting on December 10 was entry numbers received by the cutoff date of Dec 7. Events with less than the required 5, and with little prospect of reaching this number, were cancelled.

In Free Flight all outdoor events had sufficient entries but the only indoor event to get more than two entries was Hangar Rat. As a result all indoor events except HR have been cancelled.

The total number of entries is 188. If all these eventuate (or those that don't are compensated by late entries) this will be the largest Nationals since Albury/Wodonga in 2003.

Particularly pleasing is the even spread of entries and the resurgence of events that have had low entry numbers in recent years. The big "F" events F1A, F1B & F1C have had fairly constant entry over the last 10 or so years (with the exception of the Nats held at Narrandera in 2006 which were boosted by being part of the AFFS/SCC) however the small "F" events, F1H & F1J (which have become almost as technical as A&B&C) have seen entries drop to numbers like 2. For these Nationals however there are some new special rules. Older style A1s may be flown at any weight and Class 1 power models can use an 8 second motor run. It seems to have helped - entries are relatively healthy. And Open Power which had entries of 5, 5, 4, 4, in the last four Nats has 18 - almost certainly thanks to the Dixielander initiative!! Entries on next page.

Don't forget late entries are accepted up to Dec 28.

You can register on the FF field. You do not have to go into Albury.

F1A, F1B and F1C are team Trials for the 2011 World Championships to be held in Argentina in April/May.

There is a special prize for the highest placed Dixielander in Open Power



Program

Day/Date	Event	Time	Location	Contest Director
Tuesday Dec. 29	F1C Open Rubber	7 rounds, 0700-1400 3 flights, 0700-1200	McMahon's Field	Harry Sokol
Wednesday Dec. 30	F1A Scale	7 rounds, 0700-1400 Flight 0700-1000 Static 1000	McMahon's Field	Leigh Morgan
	Swap meeting	1900-1000	Stadium	
Thursday Dec. 31	F1G Oz Diesel Day Scramble	5 rounds, 0700-1300 (1 hour gap for Scramble) 0800-0900	McMahon's Field	Colin Collyer Vin Morgan
	New Years Eve Function	BYO Food & Drink	Twin Cities MAC field. BYO food, drink, chair	
Friday Jan. 1	F1J P-30 HLG/CLG	5 rounds, 0700-1200 3 flights, 0700-1200 0900-1100	McMahon's Field	Garry Odgers
	Night Scramble	2000 (Sunset is at 2008)	McMahon's Field	Colin Collyer
Saturday Jan. 2	F1H Vintage Power	7 rounds, 0700-1400 3 flights, 0700-1200	McMahon's Field	Peter Greenhill
	Get Together Dinner			
Sunday Jan. 3	F1B Open Power	7 rounds, 0700-1400 3 flights, 0700-1200	McMahon's Field	Brian Hammond
Monday Jan. 4	Vintage Rubber	0700-1200	McMahon's Field	Garry Odgers
	Vintage Glider	0700-1200	McMahon's Field	Garry Odgers
	Indoor CLG Hangar Rat H'Rat Scramble	1700-2200	Stadium	Ken Osborne or deputy
Tuesday Jan. 5	Reserve Day		McMahon's Field	

F1A	
Tahn	Stowe
Des	Slattery
Malcolm	Campbell
Ivor	F
Phil	Mitchell
Ted	Burfein
Albert	Fathers
Vin	Morgan

F1B	
Paul	Rossiter
Ted	Burfein
Albert	Fathers
Leigh	Morgan
Vin	Morgan
Graham	Maynard
Adrian	Bryant
Terry	Bond
Richard	Blackam

F1C	
Roy	Summersby
William	East
Graham	Maynard
Stuart	Sherlock
Terry	Bond

F1G	
Jim	Christie
Malcom	Campbell
William	East
Sonya	Burfein
Albert	Fathers
Leigh	Morgan
Vin	Morgan
Terry	Bond

F1H	
Fred	Roberts
Des	Slattery
Malcom	Campbell
Phil	Mitchell
Sonya	Burfein
Howard	Gostelow
Colin	Collyer
Gary	Odgers

F1J	
Roy	Summersby
Fred	Roberts
Peter	Lloyd
Des	Slattery
William	East
Ted	Burfein
Graham	Maynard
Howard	Gostelow
Terry	Bond
Colin	Collyer
Harry	Sokol

Open Power	
Roy	Summersby
Peter	Scott
Fred	Roberts
Peter	Lloyd
Des	Slattery
Malcolm	Campbell
William	East
Peter	GreenHill
Albert	Fathers
Vin	Morgan
Brian	Hammond
Stuart	Sherlock
Gary	Odgers
Howard	Gostelow
Terry	Bond
Colin	Collyer
Harry	Sokol
Steve	Rothwell

Open Rubber	
Fred	Roberts
Jim	Christie
Des	Slattery
Malcolm	Campbell
Ted	Burfein
Sonya	Burfein
Peter	GreenHill
Albert	Fathers
Leigh	Morgan
Vin	Morgan
Brian	Hammond
Graham	Maynard
Adrian	Bryant
Gary	Odgers
Howard	Gostelow
Colin	Collyer

P-30	
Roy	Summersby
Fred	Roberts
Jim	Christie
Malcolm	Campbell
William	East
Peter	GreenHill
Albert	Fathers
Leigh	Morgan
Vin	Morgan
Brian	Hammond
Adrian	Bryant
Howard	Gostelow
Terry	Bond
Nanette	Dodd

HLG	
Michael	Towell
Peter	Lloyd
Ivor	F
William	East
Phil	Mitchell
Colin	Collyer
Greg	Stanfield
James	McFall

CLG	
Malcolm	Campbell
Ivor	F
Phil	Mitchell
Pike	Raymond
Peter	GreenHill
Adrian	Bryant
Terry	Bond
Colin	Collyer

Night Scramble	
Greg	Lepp
Mark	Poschkens
Maris	Dislers
David	Hobby
Walter	Bolliger
John	Goodwin
Bruce	Hoffmann
Andrew	Heath
James	McFall

Oz Diesel	
Roy	Summersby
Fred	Roberts
Peter	Lloyd
Des	Slattery
Malcolm	Campbell
William	East
Phil	Mitchell
Peter	GreenHill
Brian	Hammond
Grahame	Maynard
Stuart	Sherlock
Gary	Odgers
Howard	Gostelow
Harry	Sokol

Hanger Rat	
Gary	Sunderland
Greg	Lepp
Michael	Towell
Jim	Rae
Denver	Harvision

Scramble	
Tahn	Stowe
Ivor	F
Graeme	Wright
Phil	Mitchell
Brian	Hammond
Howard	Gostelow
Walter	Bolliger
John	Goodwin
Bruce	Hoffmann
Andrew	Heath
James	McFall

Vintage Power	
Roy	Summersby
Fred	Roberts
Peter	Lloyd
Des	Slattery
Brian	Hammond
Graham	Maynard
Adrian	Bryant
Howard	Gostelow
Colin	Collyer
Martin	Williams
Harry	Sokol

Vintage Rubber	
Roy	Summersby
Fred	Roberts
Jim	Christie
William	East
Peter	GreenHill
Albert	Fathers
Brian	Hammond
Peter	Koch
Adrian	Bryant
Howard	Gostelow
Colin	Collyer
Ian	Read

Vintage Glider	
Fred	Roberts
Peter	Lloyd
Des	Slattery
Malcolm	Campbell
Albert	Fathers
Colin	Collyer
Harry	Sokol

Scale	
Gary	Sunderland
Roy	Summersby
Fred	Roberts
Eric	Holland
William	East
Gary	Odgers
Howard	Gostelow

Southern Skies Free Flight Series

Australia and New Zealand

Friday, March 21 - Sunday, April 6

Free Flight Open International – World Cup Events

for

F1A, F1B, F1C

Competition for other classes including

Open, Mini (F1G, F1H, F1J), Vintage, Scale, Scramble

In a period of just over two weeks there will be four open international free flight competitions in Australia and New Zealand.

Round 1.	March 29-31	Southern Cross Cup 2010, Narrandera, NSW, Australia,
Round 2.	March 31-April 4	33rd Annual Australian Free Flight Society Championships, Narrandera, NSW, Australia,
Round 3.	April 10-14	Kotuku Cup, Omarama, New Zealand
Round 4.	April 15-18	Omarama Cup, Omarama, New Zealand

Program

Rounds 1 & 2 - Australia

Southern Cross Cup

Monday, March 29	F1B	7 x 1 hour rounds	0800 - 1500
	O/Power	5 flights	0800 - 1500
Tuesday, March 30	Fly-offs from Monday		0700 - 0800
	F1A	7 x 1 hour rounds	0800 - 1500
	F1C	7 x 1 hour rounds	0800 - 1500
	O/Rubber	5 flights	0800 - 1500
Wednesday, March 31	Fly-offs from Tuesday	0700 - 0800	

AFFS Championships

Wednesday, March 31	Scale		0700 - 0800
	Combined % open	3 flights	0800 - 1500
	F1G	5 x 1 hour rounds	0800 - 1300
	F1H	5 x 1 hour rounds	0800 - 1300
	F1J	5 x 1 hour rounds	0800 - 1300
	*****AFFS AGM		1930-----
Thursday, April 1	Spare day		
Friday, April 2	Flyoffs from Wednesday		0700 - 0800
	F1B	7 x 1 hour rounds	0800 - 1500
	Open Power	3 flights	0800 - 1500
	Combined Vintage	3 flights	0800 - 1500
	HLG/CLG		0900 - 1300
Saturday, April 3	Flyoffs from Friday		0700 - 0800
	F1A	7 x 1 hour rounds	0800 - 1500
	F1C	7 x 1 hour rounds	0800 - 1500
	Open Rubber	3 flights	0800 - 1500
Sunday, April 4	Fly-offs from Saturday		
	Scramble		0730 - 0830
	P-30	3 flights, 120s max	0800 - 1400
	Oz Diesel	5 flights, 120s max	0800 - 1400
	Evening. Presentation Dinner for SCC& AFFS		

Rounds 3 & 4 - New Zealand

Kotuku Cup

Friday, April 9	Arrival
Saturday, April 10	Registration (both events) and practice
Sunday, April 11	Kotuku Cup F1A
Monday, April 12	Kotuku Cup F1B & F1C
Tuesday, April 13	Kotuku Cup Mini events
Wednesday, April 14	wind/rain reserve day

Omarama Cup

Thursday, April 15	Omarama Cup F1A
Friday, April 16	Omarama Cup F1B/F1C
Saturday, April 17	Omarama Cup Mini
Evening	Combined prizegiving
Sunday, April 18	wind/rain reserve day; departure

Contact

AFFS

Phil Mitchell
PO Box 44, Terrigal, NSW 2260 Australia
Email: filnoels@bigpond.net.au
Telephone: +61 24 38 43 217 mobile 0419 414 653 Fax: +61 24 36 78 316

Southern Cross Cup

Tahn Stowe
PO Box 138, Winmalee, NSW 2260 Australia
Email: stowes@ozemail.com.au
Telephone: +61 24 75 41 334 Fax: +61 24 75 41 334

Kotuku Cup

Robert Wallace
956 Riverslea Rd South, Hastings, New Zealand
Email: ffonzrjw@xnet.co.nz
Telephone: +64 6 878 4993 Fax: +64 6 878 4993

Omarama Cup

Chris Murphy
5/126 Bishop Street, Christchurch, New Zealand
Email: chrismurphy@inet.net.nz
Telephone: +64 3 374 33 84 Fax: +64 3 384 3394

Further information can be found on the NZMAA website:
www.modelflyingnz.org

The Trans Tasman

The Trans Tasman is a team competition between Australia and New Zealand. The original idea was to provide a competition that, like World Championships, involved travel and individuals flying in a team. The TT would be held in non-world champs years and would allow flyers to improve their skills in team events. A large perpetual trophy in the form of a silver rose bowl, was provided for the winning country. In the original system there were separate contests for F1A, F1B and F1C and the country that won two out of the three classes was the winner. This was a good scheme if there were full, 9-person, teams but if a team for a class had less than three members it was practically impossible to win that class. And if one country had more than one incomplete team it was almost impossible for them to win a TT against a full team. Since 2002 several different scoring systems have been used. In recent years, the system has been to simply take the average score of the countries's flyers. This means that everyone's score counts (previous systems allowed the country with the larger team to discard the score of their poorer performing competitors) and it copes with any number of flyers. There have been some close competitions. At the moment, in terms of numbers of wins, Australia and New Zealand are equal with 10 wins each. In 2010 the Omarama Cup will include the 21st Trans Tasman challenge.

Year	Location	Winner
1970	Christchurch, NZ	NZ
1972	Richmond, Australia	NZ
1974	Hamilton, NZ	NZ
1976	Anberly, Australia	Australia
1978	Hastings, NZ	Australia
1980	Deniliquin, Australia	Australia
1982	Kaiapoi, NZ	NZ
1984	Goulburn, Australia	Australia
1986	Carterton, NZ	NZ
1988	Canowindra, Australia	Australia
1990	Carterton, NZ	Australia
1992	Swan Hill, Australia	Australia
1994	Omarama, NZ	Australia
1996	Wagga, Australia	Australia
1998	Omarama, NZ	NZ
2000	Marong, Australia	NZ
2002	Omarama, NZ	NZ
2004	Narrandera, Australia	NZ
2006	Omarama, NZ	Australia
2008	Narrandera, Australia	NZ
2010	Omarama, NZ	???

ENTRY FORM

33rd Annual Australian Free Flight Society Championships World Cup - Open International for F1A, F1B and F1C

Narrandera, NSW, Australia

March 29 - April 4, 2010

Name: FAI Licence no.
Address: Tel:
..... E-mail
.....
.....
..... Age (if Junior)yrs.

Events entered

Event	Tick
1. F1A World Cup Event	
2. F1B World Cup Event	
3. F1C World Cup Event	
4. Combined % Open (re-entry allowed)	
5. Open Rubber	
6. Open Power	
7. Scramble (Russ Hammond Perpetual)	
8. P-30	
9. Scale	
10. F1G (Coupe d'Hiver)	

Event	Tick
11. F1H (A1 Glider)	
12. F1J (1 cc Power)	
13. HLG	
14. CLG	
15. Combined Vintage (Entry in more than one class allowed)	
16. Oz Diesel	
Dinner.	
AFFS subscription for 2010/11	
AFFS sub for 2008/09	

Fees: Registration is free for AFFS members
Registration for non AFFS members \$10
World Cup events F1A, F1B and F1C \$30
Any number of other AFFS events \$20
Presentation Dinner (Monday Night) \$35/person
AFFS membership \$20
There are no fees for juniors

Individual category	Fee	Write in fee
AFFS member entering non World Cup events only or,	\$20	
AFFS member entering World Cup events only or,	\$30	
AFFS member entering World Cup and one or more other events or,	\$50	
Non-member entering non World Cup events only or,	\$30	
Non-member entering World Cup events only or,	\$40	
Non-member entering World Cup and one or more other events	\$60	
Dinner	\$35/person	
AFFS membership for 2009/10. Optional (includes FF DU)	\$20	
Total fee payable		

TO HELP THE ORGANISATION, PLEASE SEND PRE-ENTRY BY March 15 , 2010.

Send completed entry form with money (cheques payable to AFFS) to:-

Vin Morgan, Treasurer AFFS
644 Canning Street, Carlton North, Vic 3054 Australia

Overseas people can pay on arrival but it would help organization if entry forms were returned so we know numbers – especially for the dinner. Forms or entry details can be e-mailed to: vin.morgan@utas.edu.au.

ENTRY FORM

Southern Cross Cup 2010

**World Cup - Open International for F1A, F1B and F1C
also Open Power and Open Rubber**

Information

Entry Fees - (There are no entry fees for Juniors). Registration Fee \$10.00.

World Cup Events (F1A, F1B & F1C) \$20.00 each.

Open Power & Open Rubber \$10.00 each.

Send entries to:

Tahn Stowe

P.O. Box 4138 WINMALEE

NSW 2777 AUSTRALIA

Please make cheques payable to NSWFFS Inc in \$A

Late entries will be accepted on the field prior to the event. Payment will also be accepted immediately prior to the event however it would assist the organization however if entry forms could be returned by 15 March 2010.

Events F1A, F1B & F1C are world Cup Events. We need timekeepers for each pole, and we need your help.

Please indicate if you can assist with timekeeping any events.

Enquiries: stowes@ozemail.com.au

Name:.....

FAI number:

Address:.....

.....

.....

.....

Ph:

Event	Fee	Amount
	Registration	\$10
F1A	\$20	
F1B	\$20	
F1C	\$20	
Open Power	\$10	
Open Rubber	\$10	
	Total	

KOTUKU & OMARAMA CUP

(2010 World Cup Events)

Sunday 11th April – Sunday 18th April 2010

Killermont Vegas Flying Site, Omarama, New Zealand

OFFICIAL ENTRY FORM

PLEASE PRINT, CIRCLE PRICES AND ANSWER APPLICABLE QUESTIONS

Name:

Address:

.....

.....

.....

Phone Number: E-mail:

Country Representing:

FAI Registration and or Licence number: eg NZL378/09am02

Kotuku Cup Events		Omarama Cup Events	
F1A Glider	\$45.00	F1A Glider	\$45.00
F1B Rubber	\$45.00	F1B Rubber	\$45.00
F1C Power	\$45.00	F1C Power	\$45.00
Percentage Combined	\$10.00		
F1G	\$10.00	Mini Combined (F1G,H,J,P-30)	
F1H	\$10.00	(please circle model type)	\$10.00
F1J	\$10.00		
P.30	\$10.00	Kiwi Power	\$5.00
Discus Launch Glider	\$5.00	Discus Launch Glider	\$5.00
Hand Launch Glider	\$5.00	Hand Launch Glider	\$5.00
Catapult Launch Glider	\$5.00	Catapult Launch Glider	\$5.00
TOTAL KOTUKU FEES	\$	TOTAL OMARAMA FEES	\$
T.SHIRTS (combined W/C Event)		PRIZEGIVING BANQUET	
Sizes SM, M, L, XL, XXL		(\$35.00/person)	\$
Price @ \$30.00 each	\$		

TOTAL AMOUNT \$

Send payment in \$NZ with Completed form before February 28, 2010 to:

Robert Wallace, 956 Riverslea Road South, Hastings, New Zealand

Cheques or Money Order should be made out to: NZMAA Free Flight Technical Committee

Kotuku Cup Organiser/CD: Robert Wallace, 956 Riverslea Road, South, Hastings, New Zealand.

PH / FAX : 0064 6 8784993, e-mail: ffonzrjw@xnet.co.nz

Omarama Cup Organiser/CD: Chris Murphy, Flat 5/126 Bishop Street, St Albans, Christchurch New Zealand. PH 0064 3 3743384 , FAX 0064 3 3743394, email: chrismurphy@inet.net.nz

Late entries may attract a late fee of \$20.00NZ

Photocopies of entry form are OK. Overseas Visitors may arrange payment on arrival but must send completed entry form prior to February 28th 2010 confirming attendance. Details may be sent by email or snail mail (posted) to Rob Wallace.

Narrandera Flying Site

The flying area used for the Australian Free Flight championships and the Southern Cross Cup is about 45 km south of the city of Narrandera, NSW. Narrandera is a rural centre on the Murrumbidgee River near the junction of the Sturt and Newell Highways. It is 556 km South West of Sydney, and 431 km North of Melbourne. The surrounding country is flat, with few trees and fences. In March the average 9am temperature is 19.6 and the average 3pm temperature is 27.1. For April the average at 9am is 15.7 and 3pm is 22.3.

We will use one of two areas (labelled flying field 1 and flying field 2 on the map). Which one is used depends on surface conditions and is decided after discussion with the farmer, usually just before the competition. It is most likely that for 2010 field 1 will be used. Notices will be placed at the field entrances showing which is selected.

To get to Flying Field 1 from Narrandera, head south on the Newell Highway. Make sure to take the left turn onto the Newell Highway as you leave Narrandera (otherwise you may drive 50 km west on the Sturt Highway before you realise your error). After ~30 km, just before the grain silos at Morundah, turn off to the left. The road swings around to head south again. The road into the field is on the left, about 20 km from the turnoff. For Flying Field 2 travel about 23 km after turning off the Newell Highway until you reach the Widgiewa Station turnoff to the left. Turn into Widgiewa and follow the dirt road past the buildings and through the gates (close if closed) to the field. For the AFS and SCC the turnoffs will be signposted.

Locations

Newell Highway turnoff

34° 45' 46"S 146° 32' 06"E

Urana-Morundah Road turnoff

34° 56' 10"S 146° 18' 24"S

Flying Field 1 turnoff

35° 02' 06"S 146° 19' 01"E

Flying Field 1

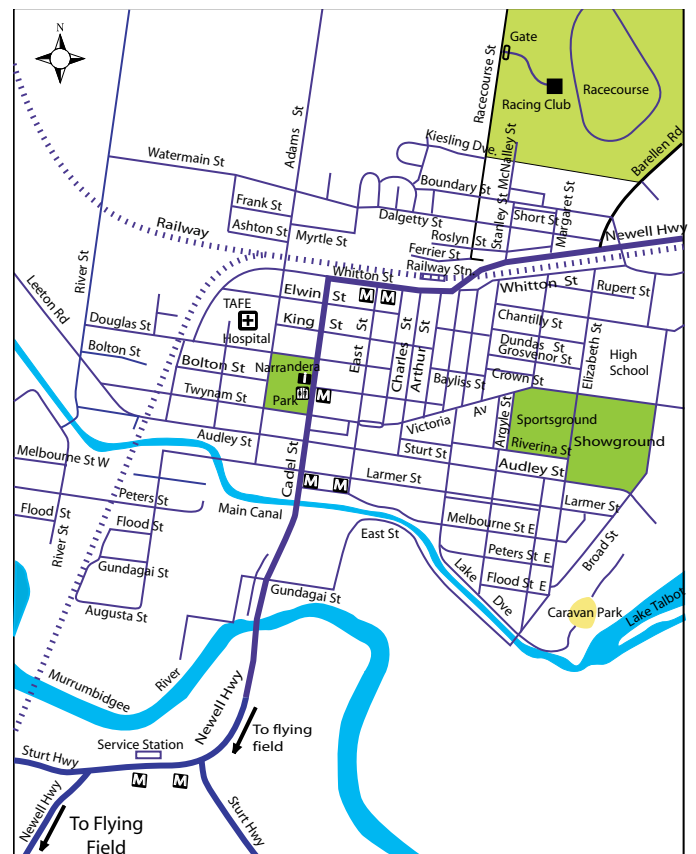
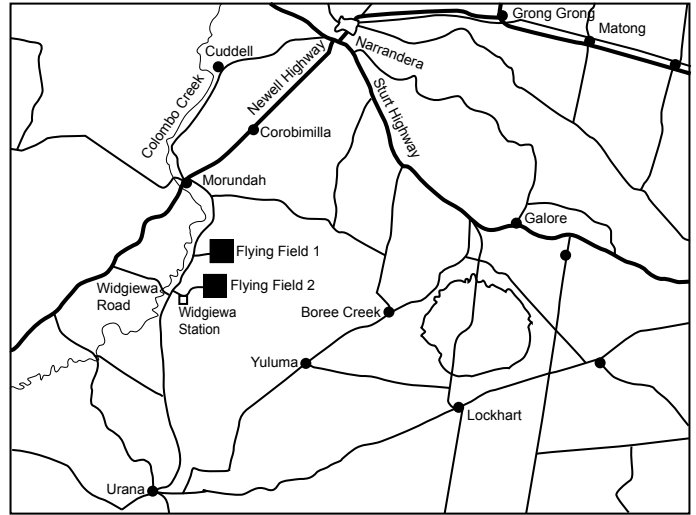
35° 02' 30"S 146° 20' 37"E

Flying Field 2

35° 04' 30"S 146° 19' 48"E

To get to the Race Club (for the dinner).

Take Whitton St/Newell Hwy out of Narrandera to the north. After you cross the railway line take the first turn to the left into Stanley Street. Cross Roslyn and Dalgetty streets and turn left into Boundary Street. Turn left at the next intersection into Racecourse St. The entrance to the racecourse is on the right about 500m from Boundary Street. Follow the track to the clubhouse.



Omarama Flying Site

- Killermont Vegas flying site consists of ~13 sq km of flat sparsely vegetated land located at an altitude of 500m (1600ft) above sea level, approximately 5km SW of Omarama township.
- The location is at the southern end of the MacKenzie Basin, an elevated plateau in the central mountain heartland of New Zealand's South Island, equidistant between the east and west coasts.
- The area is bounded by mountain ranges to the west, south and east, but open to the north, and has its own microclimate.



- Prevailing winds are typically from the SW-W-NW sector for most of the year.
- Maximum daytime temperatures for late March-early April are around 20 C.
- Weather records for Omarama can be found at: www.observatory.org.nz/weather/omarama/index.html
- Access: take State Highway 8 (the Omarama-Lindis Pass road) SW from Omarama. Turn left onto Broken Hut Rd. Follow Broken Hut Road for 5.6km, and enter the flying site through the marked gate on the north side of the road. A clear formed track leads to the site HQ building.

Facilities

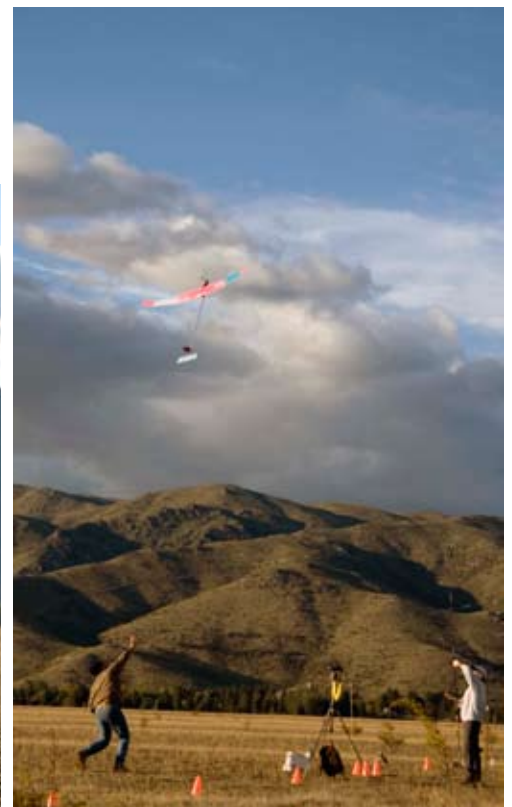
- On the Killermont Vegas site, there are five separate F/F flightlines, established to cover all the most common wind directions
- These are linked by a track network laid out in the form of a Y, oriented E-W, and usable by 2-WD vehicles
- The clubrooms complex, located in the SE corner of the site, contains a lounge and well equipped kitchen facility plus ablution and storage buildings.
- The clubroom is used for registration, briefings, general administration, and as a shelter facility during bad weather, or when the contest is interrupted for any reason.

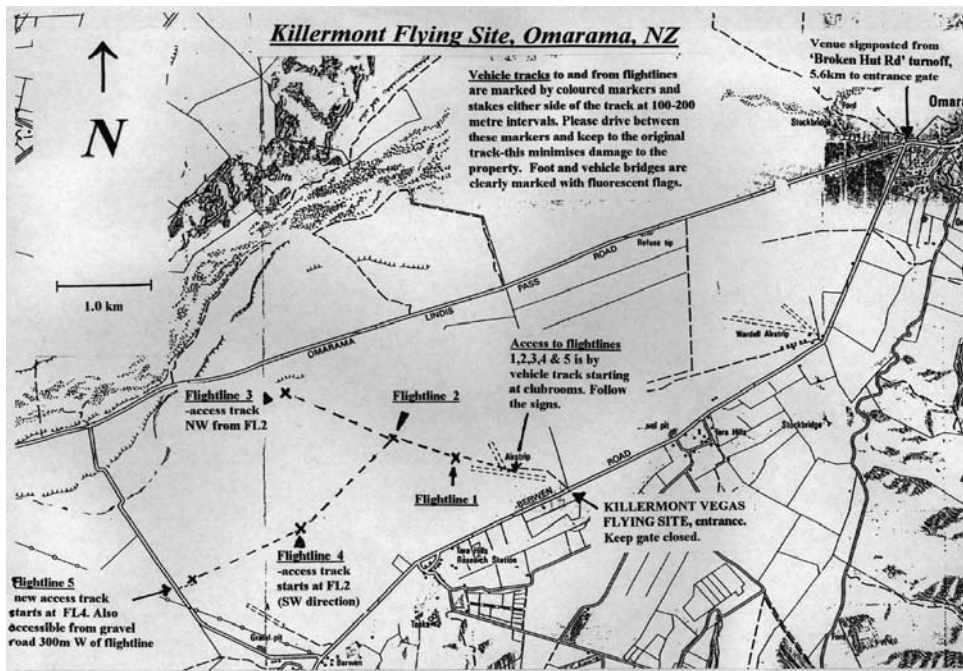
Accommodation

- In Omarama township itself there are 3 hotels: Omarama Hotel, Countrytime and Heritage; two motels: Ahuriri Motel and Sierra Motel and one camping ground: Omarama Holiday Park.
- For more information go to the websites listed below:
www.omarama.co.nz
www.countrytimehotel.co.nz
www.omaramatop10.co.nz
www.accommodation.nz.com/otago/omarama
www.accommodationz.co.nz/omarama-accommodation

Getting there

- Omarama is a long way from any major population centres
- The two nearest international airports are Christchurch, and Dunedin. By road Omarama is 4.5-5 hours driving from Christchurch, and 3.5-4 hours driving from Dunedin, all on good roads
- Omarama itself is a small village (pop: 500) with 3 hotels, 2 motels and one camping ground.





Omarama pictures. When I went to the Omarama folder to get the FF information I came across Dave Jackson's photos from 2008. They certainly deserve more of an airing. The flyers?? - you know who they are.



Team Trials

Final results of trials between December 1, 2008 and November 30, 2009 for the 2010 Trans Tasman to be held at Omarama in New Zealand. x against a score means it is not counted because it is a second overseas event.

With the end of the Trans Tasman trials we move into the next trials period December 1, 2009 to November 30, 2010. These trials are for the 2011 World Championships to be held in Argentina. The dates, which are yet to be notified, will be in the Austral Autumn, April/May 2011.

Name	Aus Nats 1/01/09	AFFS 9-13/4/09	SCC 8-7/4/09	Vic St Ch 24-26/4/09	NSW St Ch 28-29/11/09	QLD St Ch 22-23/8/09	WA St Ch 13/9/09 19/9/09	Isacsson Winter Classic 7/02/09	Max Men 13-14/2/09	Vilim Knoch 17/7/09 18/7/09	Poitou 31/7/09 1/8/09	Sum of best three
F1A												
Phil Mitchell	1201	1260	1153		1220					1260	x1260	3740
Vin Morgan		1159	1155		280			1260	x903	729	x1065	3574
Tahn Stowe		1208	1229	705	448	727						3164
Malcolm Campbell		1049	957			955						2961
Ted Burfein	789	1037	665		56					840		2666
Neil Murray							1168			1186		2354
Albert Fathers	562	855	148			863						2280
Mike Thomas		1203	900									2103
Martin Williams		1209										1209
John Lewis						1171						1171
Paul Rossiter							1029					1029
Trevor Letchford							876					876
Des Slattery						803						803
Colin Crowley							692					692
David Brawn	496											496
F1B												
Terry Bond	1143	1228	1260		1194					180	1205	3693
Paul Rossiter	528	1234	1260				1145			853		3639
William Jones	1023	1186	1208							783		3417
Leigh Morgan	1007	1136	340		453			x1219	1222	641	x1137	3365
Vin Morgan		1171	1260		787							3218
Ted Burfein		1207	1035		750							2992
Richard Blackam	1022	1162		700								2884
Neil Murray		1087	306				1064					2457
Gary Pope		1180	1225									2405
George Baynes	180	1120	1080									2380
Albert Fathers	273		1093									1366
Adrian Bryant	180	341	715									1236
Colin Crowley							1207					1207
Graham Maynard		1156										1156
Bill Pudney		1091										1091
Sean O'Connor				459								459
Mark Armour	287											287
F1C												
Roy Summersby		1201	1174		67			x1179	1260			3635
Percy Wright		1139	1119									2258
Colin Crowley							1214			870		2084
Terry Bond	512	1183	336									2031
Bill East				289	573							862

Thermal Structure and Behavior

Wayne M. Angevine

Thermals are the fuel of sailplane flight. This article describes what thermals look like (if we could see them!) and how they behave. I hope that your flying experience will be improved by knowing a little more about thermals. To start with I need to say that the atmosphere is endlessly complex and capable of doing almost anything. I'm going to try to talk about the simplest and most common cases. That means clear to partly cloudy skies, light to moderate winds, and daytime. I'll say a little about more complex cases toward the end.

For impatient readers, here are the basics: Thermals are like fat trees, with small, chaotic roots near the surface and large trunks above. The trees tilt and sway with the wind and change with time, and sometimes they let go of their roots and drift. Between the trees is sinking air. Where thermals form, their exact shape, and how fast they change is hard to predict, since it depends on details of the interaction between the ground and the air. Key principles to remember are:

- Thermals are driven by temperature contrast between the ground and the air.
- Air exists in parcels (blobs) that have mass and momentum as well as temperature and humidity.
- Plumes near the surface look and act different from thermals well above the surface.

The boundary layer

The part of the atmosphere in which we fly is the atmospheric boundary layer (BL for short). It's the air that's affected by the ground surface on time scales of an hour or so. In the kind of conditions we're talking about, it's the lowest 500 - 2000 meters (1500-6000 feet) of the atmosphere. The BL is shallow (100-200 m) at night, builds up in the daytime as the sun heats the ground, and collapses again in the evening. BL height is governed by the amount of sunlight, the amount of moisture available at the surface, and the stability of the atmosphere. Areas with lots of surface moisture, especially with crops that use a lot of water, tend to have relatively shallow boundary layers and weak thermals; deserts have deep BLs and huge, booming thermals.

Figure 1 shows the buildup of the boundary layer. The main panel is the reflectivity measured by a special radar called a

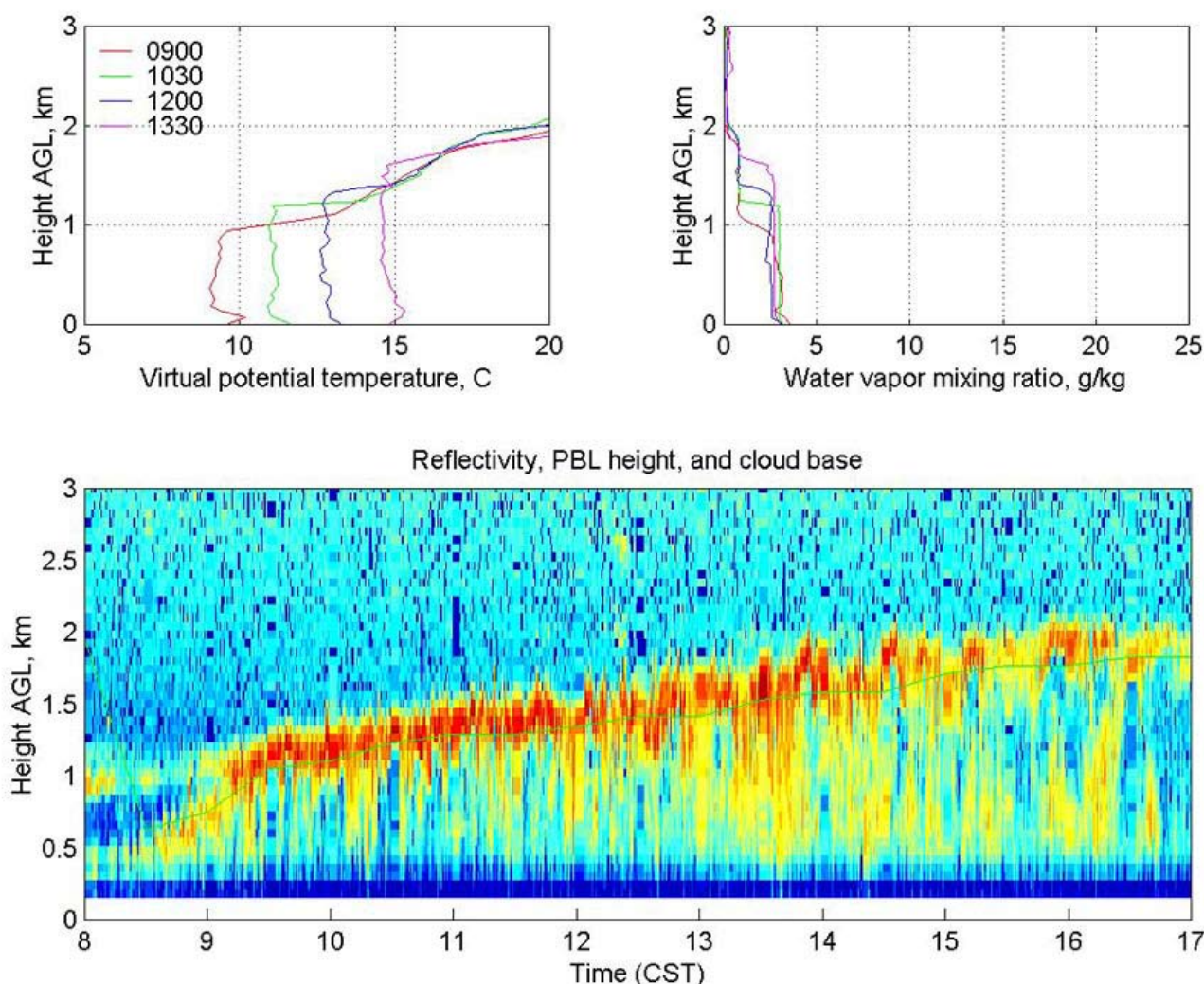


Figure 1: Boundary layer structure as shown by a radar wind profiler and sounding balloons on September 23, 1995 over Illinois.

boundary layer wind profiler. It's sensitive to turbulence at gradients of temperature and humidity, so it sees the BL top as a very strong signal. The small panels show the virtual potential temperature and the specific humidity measured by weather balloons. Virtual potential temperature is a direct measure of buoyancy; it's temperature corrected for the effects of humidity and for the heating and cooling effect of changes in pressure with height. If the virtual potential temperature line slopes to the left with height in a layer of atmosphere, that layer is unstable. If it slopes to the right, the layer is stable, and a vertical line shows a neutral layer.

The boundary layer has three important sublayers, the surface layer, mixed layer, and entrainment zone. The surface layer is the lowest 100-200 m, so it's where model sailplanes fly a lot of the time. The mixed layer extends from the top of the surface layer to near the BL top. This is where cross-country models and full-size sailplanes spend their time. The wind speed is zero right at the ground, increases through the surface layer, and is roughly constant with height in the mixed layer. In fact, the mixed layer is called that because turbulent mixing causes all quantities (potential temperature, wind speed, water vapor, pollutants) to be uniformly mixed throughout the layer on average. That doesn't mean that differences don't exist at the scale of individual blobs; if everything were perfectly uniformly mixed there wouldn't be any thermals and we might as well stay home! The entrainment zone is the interface between the BL and the free atmosphere above, and is where clouds form. The surface layer is unstable, the mixed layer is neutral, and the entrainment zone and the atmosphere above are stable.

Thermals and plumes

The sun warms the ground, and the ground in turn warms the layer of air nearest to it. As soon as a parcel of air is warmer than its surroundings, it starts trying to rise. Air has mass and momentum and it's immersed in other air, so it can't just go to its desired level instantly. Furthermore, the ground is not uniform, some parts are darker and/or drier and heat up faster, and some parts are moister or lighter in color. The result is that there are blobs (parcels) of air forming, rising, and pushing other parcels out of the way. Some of those parcels end up at the ground, get warmed up, and want to rise themselves. All of this turbulent motion leads to small plumes of varying shapes and sizes of rising and sinking air. Some of the rising parcels meet up with others and form larger blobs; others get torn apart by turbulence and lose their identity. The size of parcels in the surface layer is roughly proportional to their distance from the surface. The air within a plume is rising, but it is also turning in all three dimensions, its motion depending in a completely unpredictable way on the small-scale shape, color, and moisture of the ground and the motion of all the other parcels in its vicinity. Plumes start out at the surface with no average horizontal speed. They pick up bugs, seeds, and sometimes trash, all of which help us to see where the air is rising.

The plumes converge as they rise (figures 2 and 3). By the time they reach the top of the surface layer, 100-200 m above the ground, they have joined into relatively large columns of

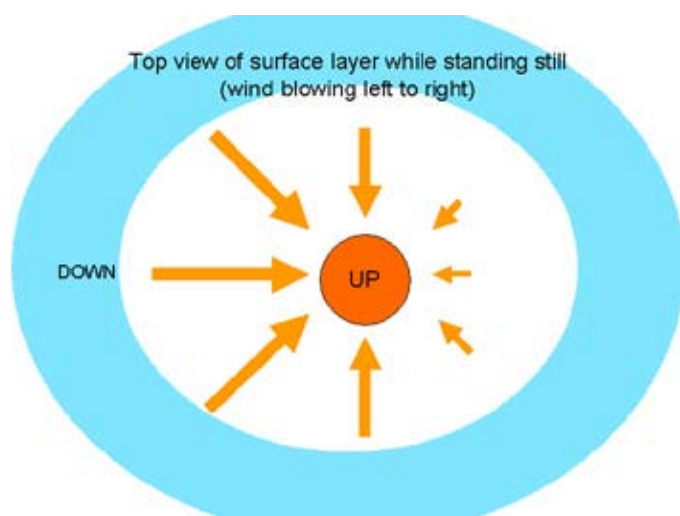


Figure 2: Plumes (orange) and sinking air (blue) in the surface layer.

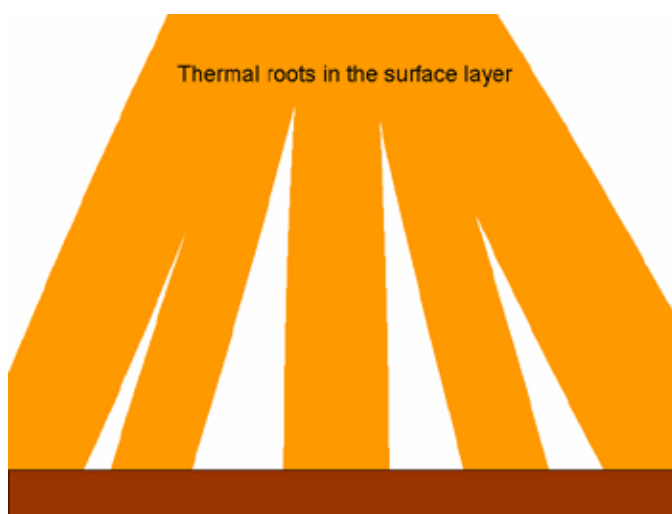


Figure 3: Side view of thermal roots (plumes) in the surface layer. The vertical extent of this figure is 100-200 m. Real plumes are much more ragged and chaotic than this schematic drawing.

rising air. The size of thermals in the mixed layer is roughly proportional to the BL height, so the columns are a few hundred meters to as much as a couple of kilometers in diameter. We could think of the thermal as a tree with a trunk in the mixed layer and roots in the surface layer. The air within the thermal still has horizontal and turning motions as well as rising, and those motions depend on the motions of the surface layer plumes that formed its roots. Remember too that these are fat trees, roughly as wide as they are tall (figure 4). Thermals are a degree or two Celsius warmer than the surrounding air, and they rise at 1-3 meters per second. The air in thermals moves horizontally more slowly than the surrounding air because it "remembers" being near the surface where it was moving very slowly.

When rising air reaches the top of the BL, it spreads out, again like the top of a deciduous tree. The air is now more dense than its surroundings, not because it has changed but because the air around it is warmer. You may remember from high school physics that a gas cools when its pressure is reduced, and that's true of rising air in the atmosphere as well. Scientists often work with potential temperature, which corrects for that change. In any case, the air at the top of the BL is warmer in potential

temperature than the air rising from the surface. In fact, that's what defines the BL top. If the air in the thermal were still warmer (less dense), it would continue to rise, and wherever air from the surface can reach in a short time is, by definition, part of the boundary layer. Sometimes the tops of thermals are visible as cumulus clouds. Because the rising air has momentum, it actually overshoots its level of neutral buoyancy before falling back. If the stable layer (sometimes called the inversion) atop the BL is weak, the clouds may build up and it may rain. Looking again at figure 1, we can see the tops of the thermals as rises in the reflectivity plot.

All of the parcels and their motions also have time scales, which can be thought of as the lifetime of a parcel, the time it maintains a recognizable identity. The time scale is related to the parcel's size and therefore to its place in the layered structure of the BL. Surface layer plumes have short lives before they merge into thermals or mix with other air and lose their identity. Thermals live about as long as it takes them to move from the bottom of the mixed layer to the top. Since they are rising at a few meters per second and the BL is 500-2000 meters deep, thermals last several hundred seconds or 10-20 minutes. So our tree analogy is at best a snapshot in time. It would be more realistic to think of thermals as fat logs. By the time the top reaches the BL top, the bottom of the thermal may have changed or moved. The log or tree analogy is also good because the sides and edges of thermals aren't smooth, they are complex just like the bark of an old tree. Around the edges, the thermal air mixes with the surrounding air in chaotic swirls and eddies.

While we've been focusing on a bunch of plumes that got together to make a thermal, the rest of the boundary layer hasn't just been sitting idly by. Any time a parcel of air moves, other parcels have to move as well to accommodate it. Two parcels of air can't occupy the same space any more than solid objects can! Furthermore, conservation of mass requires that when one parcel rises another has to fall to keep the total amount of air at any level roughly constant. We've also been thinking of the thermal as an isolated individual, when really it's part of a field of thermals. They may be organized roughly hexagonally or in horizontal lines, and they occupy somewhat less than half the horizontal area at any height (except at the very top of the BL). In between the thermals is cooler, sinking air. That's right, there's more area of sink than lift! The good news is that it's generally not as strong. Again, conservation of mass applies; if the thermals are smaller than the sink, they must be stronger to move the same amount of air. As a thermal reaches the top of the BL, it spreads out and finally loses its identity, becoming part of the sinking air. Individual molecules may reach the surface, be warmed again, and become part of another plume and another thermal, and so on.

Observations

How do we know about thermal structure? There are several ways to "see" what the air is doing in the boundary layer. Sometimes we can get clues visually. Clouds often mark the top of the thermals; on a polluted day we can see the dirty BL as we look down from an airplane or a mountain. Dust devils are particularly strong surface layer plumes.

Scientists have developed more sophisticated techniques. Water tanks in laboratories have been used to visualize atmospheric flows. More recently, remote sensing instruments have been developed for use in the real atmosphere. The boundary layer wind profiler radar that made figure 1 is one example. I've used profilers to study BL turbulence. The best pictures of thermals come from lidars (laser radars). Figure 5 is from a vertically-pointing lidar showing thermals moving over a site in Illinois. Lidars are also sometimes scanned to produce pictures of a volume of the atmosphere a few kilometers on a side. Some more lidar images (and higher resolution versions of the other figures) are shown in a picture gallery. The lidar pictures show two whole days and also 2-hour segments of each of the days. You can see that in the morning, the thermals gradually get stronger, larger, and farther apart. They are largest and strongest in the middle of the day, and then get weaker, smaller, and closer together in the afternoon. The two days are also different. On August 6, the wind speed in the middle of the boundary layer was about 7.5 m/s

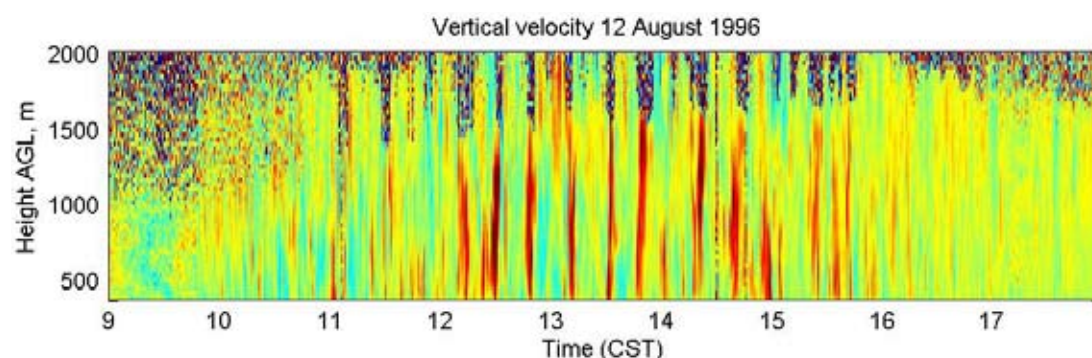


Figure 5: Thermals shown by a lidar on August 12, 1996 over Illinois. Upward velocities are in red, downward in green and blue. Random colors near the top of the figure are low signal above the BL.

A thermal as seen while traveling with the background wind

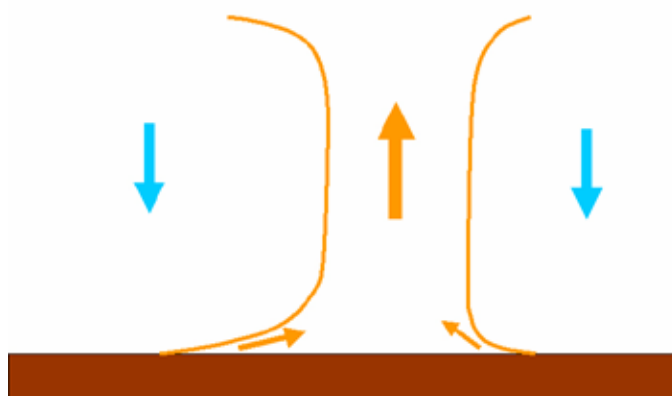


Figure 4: Side view of a thermal. Rising air is inside the orange outline.

(15 mph) and at the surface it was about 5 m/s (10 mph). On August 12, the wind was a little less, 5.5 m/s (11 mph) in the middle of the BL and 3.5 m/s (7 mph) at the surface.

Another way to "see" thermals is with numerical models. Even with modern computers it's still too

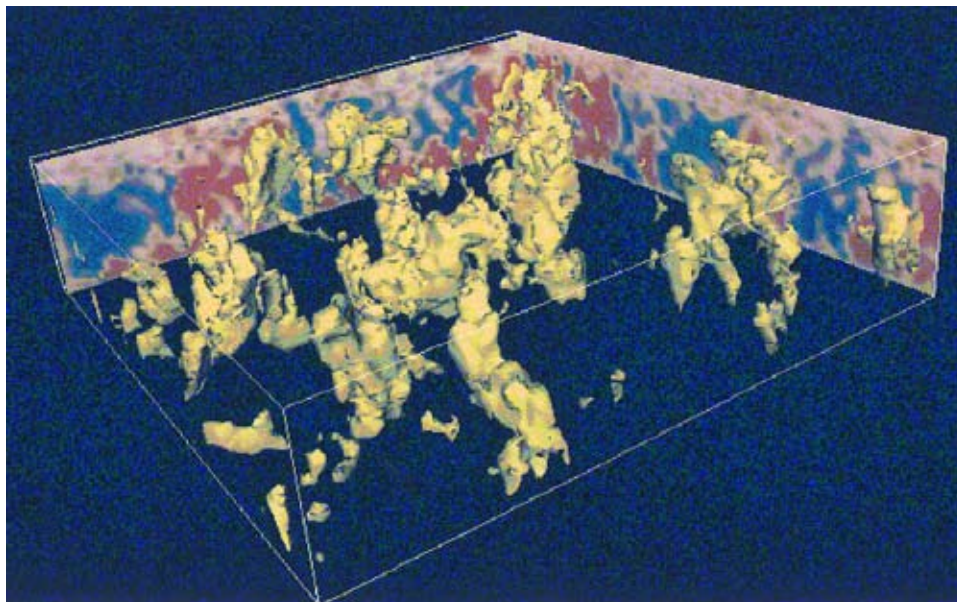


Figure 6: Perspective rendering of thermals in a computer model. Volumes enclosed by yellow surfaces are thermals. On the back and side walls, upward motion is in red and downward in blue. The resolution is 52 m in the horizontal and 21 m in the vertical, and the box is 5 x 5 x 1.25 km. Graphic copyright 1998 Peter Sullivan / National Center for Atmospheric Research, used by permission.

isn't perfect, though, because other physical phenomena still play a role. For example, thermals may be kicked off by an obstacle that causes warm air to break away from the surface. Even over large hot patches of ground, a vigorous thermal may suck up all the warm air, bringing in cooler air from the sides, and the thermal will disappear while the ground warms the air again. What happens depends on details of the patch size, wind speed, and temperature contrast. The wind in the mixed layer is roughly uniform with height, so thermals over uniform surfaces tend to move as columns with little or no tilt. Thermals kicked off by terrain features, on the other hand, move downwind as they rise.

Model sailplane pilots, standing still on the ground, have a different perspective than full-size pilots who are immersed in the moving air. The local wind at the surface is the vector sum of the background wind and the flow into the thermal. A thermal upwind will reduce the local wind speed, or even reverse the direction if the background wind is light enough. A thermal downwind will increase the wind speed. Figure 7 is like figure 4, but it shows the wind vectors (in two dimensions) from the point of view of a stationary pilot.

Thermal myths

People naturally try to explain what they observe, often by making analogies, and sometimes those explanations grow into persistent myths. Probably the two most persistent myths about thermals are that they rotate in a particular direction because of the Earth's rotation, and that they are doughnut-shaped (toroidal). Neither is true of observed or modeled thermals. The Coriolis force due to Earth's rotation is much too weak to act significantly on small, short-lived flows like thermals. Thermals have rotation, due to the differing momentum of the plumes that make them up, but they don't rotate in any predictable direction or at a predictable rate. Even dust devils don't have a preferred direction of rotation. As for doughnuts, the only way that air can recirculate is by going down to the surface and being reheated there.

Weak thermals

As the wind gets stronger or the sun weaker, buoyancy due to heating at the surface becomes less important. Thermals become smaller and less well-defined. It's hard to state a simple rule of thumb for when the wind is strong enough to have a major effect, because that depends on the strength of the sun and the surface moisture. On overcast or very windy days, turbulence is produced by the wind shear, that is, the change in wind speed or direction across a layer. Shear-driven turbulent motions are small compared to thermals, and can't usually be taken advantage of to keep a sailplane up.

difficult to simulate the BL with full resolution. Large Eddy Simulation models (LES) resolve the main features of the BL. Figure 6 is a 3D rendering of LES output for the sort of day we're talking about. We can see the thermals as blobs of rising air of various sizes and shapes. The surface layer plumes are not resolved by the model.

Movement, tilt, relationship to ground features, bubbles, etc. Over flat, smooth terrain, thermals move with the wind. The measurement site in Illinois where the figures were made was specifically chosen to be as simple as possible, in fact, we called it the Flatland site. If stronger terrain features (hills, for example) or changes in surface characteristics (lakes, large parking lots) are present, plumes may tend to form over hotter or higher spots. This can make it easier to find a thermal. The tendency

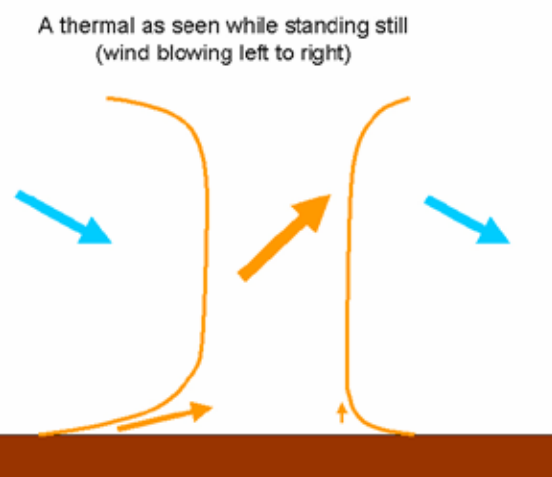


Figure 7: Thermal outline and wind vectors (in the plane of the picture) from the point of view of a model pilot standing on the ground.

Conclusions

I hope this article has been helpful in explaining thermals and showing some of the latest methods of observing them. Remember that the atmosphere is very complex and almost anything can happen, but what I've described here is what happens in the simplest case.

References

The best current textbook on the boundary layer is *An Introduction to Boundary Layer Meteorology* by Roland B. Stull. It's quite readable at least in the introductory parts, and should be available in any decent university library. Dennis Pagen's *Flying Conditions* is a good small book written from the perspective of a hang-glider pilot. The classic text on soaring meteorology is C.E. Wallington's *Meteorology for Glider Pilots*. Both appear to be out of print, but could probably be found with a little searching. My article in the March 1998 *Bulletin of the American Meteorological Society* entitled *The Flatland Boundary Layer Experiments* shows several more examples like figure 1 of different boundary layers. It should also be in libraries.

Acknowledgements

Shane Mayor and Steve Cohn of the National Center for Atmospheric Research made the lidar measurements shown. Peter Sullivan, also of NCAR, provided the simulation figure.

Fellow pilots Kurt Rosner and Stan Sadorf provided helpful comments on the first draft of this article.

New Stuff

nanoAlt

Favionics, a new venture of Rene Limberger & Allard van Wallene would like to announce the preorder availability of their latest product, nanoAlt.

nanoAlt is the smallest, lightest, lowest power, highest resolution and largest recording capacity altimeter module on the market today! nanoAlt was designed for a variety of applications where space and weight are highly restricted such as FAI and other FreeFlight classes. The power consumption of nanoAlt has been designed so it can run off the smallest power sources available today, including watch coin cells or even solar cells.

<http://www.favionics.com/Favionics/nanoAlt.html>

nanoAlt is the smallest, lightest, lowest power, highest resolution and largest recording capacity altimeter module on the market today! nanoAlt was designed for a variety of applications where space and weight are highly restricted. The power consumption of nanoAlt has been designed so it can run off the smallest power sources available today, including watch coin cells.

nanoAlt specs:

Size: 9mm x 15mm x 3mm

Weight: 0.8g

Recording capacity: 43min @ 9Hz

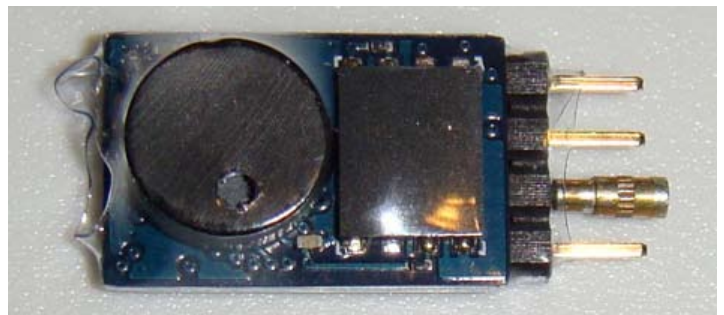
Power supply: 3.4V-6V

Power consumption: 580uA

Resolution: 10cm (19bit)

Samples @ 9Hz (9 samples per sec)

Records altitude & temperature



The 2009 NFFS Symposium now available.

The 09 Sympo is now available to the general free flight public and would make a nice Christmas gift to any interested modeler. The cost is \$35 per copy. Also available is the 09 BMFA FF Forum for \$25. Postage for up to 2 books is \$5 in the USA. Foreign postage is \$13 for up to 2 books.

Also available are some recycled issues at \$10 each. They are (One each unless otherwise noted): 1969, 1971, 1972, 1976, 1977 (2), 1978, 1980, 1982, 1983 (2), 1984, 1987, 1988 (2), 1989, 1990, 1991, 1992, 1993 (2), 1994, 1995, 1997, 1998. These are all used but in good shape.

Interested? Contact Bob Stalick at <freefliter@aol.com>

Payment by check or money order to the NFFS, PO Box 1775, Albany, OR 97321.

Need a new needle valve assembly for your Taipan2.5 Diesel. I have just completed these as part of the production for the Taipan replica. This assembly will fit most Sabre and Taipan 2.5 engines up to 1967. Price is \$20 each, including postage. There is a minor difference in the spray bar diameter between models, so state at the time of ordering whether yours is the 2.7mm waisted style or full 3.6mm diameter.

These parts are available from Dave Owen 02-42272699 or email: owendc@tpg.com.au

FFDU Visits - Den Sparker!

Dennis has been a fixture at FF comps in Australia since immigrating here from South Africa in '59, though he hasn't attended the last few (Nats too hot in December...). We all know him as the keen vintage & rubber flyer, the fellow with the great sense of humour. But, how did he get into model flying? George Car dropped in on an old friend while visiting Melbourne recently.....



In his Den—and flying RC, too! Dennis is really enjoying the chopper—he can do a tour of the lamps, bookcases doing spot landings....

“My eldest brother was flying powered models in the late ‘30s and for a present bought me a Megow Kit—the rubber scale Stinson Reliant—you know, printed balsa sheet, plan, strip of rubber, wheels, covering, and two little bottles, one balsa cement the other dope. They were so small, enough dope for the fin and half the elevator, the glue good enough for about half the fuselage.....My brother helped me build it. He was killed at Sidi Rezegh in ‘41. After the war, American motors became available, such as the Super Cyc, then later the British ones. But my first love was always rubber scale. All of the kits, Comet, Megow etc could be made to fly well. After that, well I’ve been flying models all my life, mainly FF scale, then for competition open rubber, later vintage rubber. I’ve always had a soft spot for vintage power models such as Sal Taibi’s Powerhouse and competition models such as the Playboy. Best of all was the Goldberg ‘Sailplane’, a power model.

An uncle of mine, an architect, wanted to invest in a model shop business—a booming trade after the war—and asked me to run the shop. But the retail trade wasn’t for me, so I suggested he approach a friend—Monty Malherbe. Monty just blossomed in the business! He sponsored a visit to South Africa by

Bob Palmer and Howard Bonner, which really stimulated interest in model flying. Monty, together with another friend, Cliff Culverwell, were the leading lights, both doing well at the first few RC World Champs. Cliff suddenly stopped flying: he was part of a team giving public model flying performances—popular in the 60s— and was bringing a large model in to land, over a hangar, when his model hit a young lad who had been hiding on the roof, the boy was killed. Cliff never flew models again, though exonerated in the enquiry.... But I had left South Africa by that time. (*Ed— Culverwell went into politics, becoming a Senator, Malherbe became a modelling entrepreneur along the lines of HJ Nicolls in the UK or the Hearne brothers here— well known internationally until his early death in a light plane crash. Model air shows were a big thing over there, I attended one at which an out of control 60 powered RC job crashed into the honoured guests stand, the local beauty queen and her two princes were all badly injured....*).



At the scale event—Dennis' solution to a windy Nats

“I had worked at several occupations since leaving school, starting as an apprentice smelter at the Iron & Steel Corp in Pretoria. The foreman was a nazi-sympathizer (it was the last year of the war, the Nazis weren’t doing very well.....) and resented having an English-background apprentice, despite my family having lived in the area for almost 100 years by then, my grandfather actually fought in the Boer commandos against the British. The foreman made my life difficult, doing all sorts of things, like suddenly opening the blast-furnace door as I walked past— quite a shock, I can tell you. I lost a lot of weight, and it wasn’t long before management moved me to the assay lab. I subsequently worked for GM. I did well there, and one day they offered to move me to Melbourne. Well, we came over by ship, arriving at the port to find the local GM HQ had a car and some chaps to meet us at the ship and whisk us off to a motel (it was 3 am when the ship docked), leaving other staff to sort out our immigration and luggage etc—very civilized, I thought, till a few weeks later I got the bill from Head Office—I was charged for everything, car hire, hotel, wages of the chaps involved, and of course, the fare for the trip over. No free lunch in those days!



Dennis taking a straffing run seriously, Bill and Col unperurbed at a nats peanut event.

“In 1956 I built the “Model Aircraft” 2 valve Hill receiver without a knowledge of electronics, and what a wonderful, reliable thing that was! I had it in a Bonner designed Piper Tri Pacer, and used a Bonner compound escapement to give rudder, elevator and two speed motor. That was quite a challenge, as it was bang-bang, not proportional, but you could get really good at it, lots of

well controlled flights, even touch-and-goes. The motor control was via a sponge throttle clapper. When on, the motor ran really rich—you'd have this thing spluttering as it came in to land, and while still off the deck, open it up—a moment to clear the rich mix, it would have touched down, then with the power increase, taken off again. But after a couple of years of this, I found RC boring (you had to wait your turn at the field, one flyer at a time as all sets would interfere, often only get a flight or two in a day) and went back to FF. That coincided with migrating to Australia, and I've flown FF since.

"I attended the '79 WC at Taft, as an observer. The one when Itzak ben Itzak won the Wakefield for Israel, and Van Leuven got second place for Australia—still the highest place for Australia apart from King and Baker. I processed the model of an Austrian chap, his model weighted exactly 340.0 grams—the mini-



Dennis getting away in vintage, long time friends Col and Garry looking on...



Dennis with his "Beat Bill Gordon" team and uniform slogan T shirts, in 2000. Gary Odgers, Jan Thomas & Himself.....

Dennis would be grateful and would recompense. A letter duly arrived - the model was an own design, and he hadn't kept the working drawings. He was on the verge of his annual vacation, but undertook that after the vacation he would draw up a plan. The months wore on without word, and Dennis was getting anxious - but could hardly write again asking for progress on the generous offer. Some months later he had given up hope when a neat parcel arrived containing a magnificent, detailed plan. The model was built and flown for many years. A couple of decades later, Ron Moulton visited Australia, and Dennis asked him if he knew the designer, recounting the story. Moulton did indeed, and added - well, you know that he lived quite some distance north of London. The reason he took so long is that on any spare Saturday he would have taken the train to London, walked to the museum, had them lower the SE5 from its storage in the roof and take measurements - he is the sort of chap who would have been painstaking in getting the details right.....he would only have had a couple of hours access to the machine each Saturday, it would have taken many trips to get it done.....a truly wonderful man and modeller.



Dennis with his first love—large rubber FF scale models

mum. I suggested he add a little weight to the CG, as it was morning and during the day in that desert atmosphere, it might dry out. He was having none of it, as he had gone to great pains to get the weight down...after the last round, his flights were disqualified being underweight, losing his second place to Paul van Leuven.....

"I had always been interested in the early model planes, so after my visit to the States and John Pond's visit here, Bill Gordon, John Tidey a few others and I started the Australian chapter of the Society of Antique Modelers (SAM 1788). To begin with, there was a strong FF section in SAM, but it soon became RC only, and Bill and I moved on to flying at the FF events elsewhere.

"I met Bill at one of the 1970s FF events, and we became firm friends—or friendly rivals....he had a special trophy made, and at one event he had a word with the chap giving out the place prizes. After the 3 prizes were awarded, I was called and presented with the "Second Place" trophy. He had beaten me, though neither placed. Thereafter, the trophy went back and forth between us, until Bill won it 3 times in a row, and retained it. It was a private comp between Bill and I—if I beat Bill, he got it and if Bill beat me, I got the prize, irrespective of where we actually placed in the competition.



Dennis' humour extends to vintage power fuselages - apt for a Playboy.....

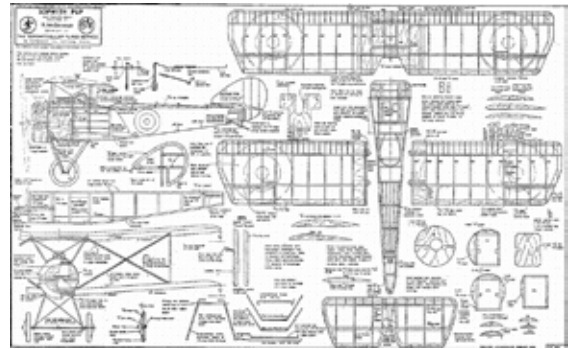
The SE5 story..... In the 1950s Dennis noticed a photograph in *Model Aircraft*: There were three modellers, each holding a scale FF model. The SE5 caught Dennis' fancy, so he wrote to the builder via the magazine, asking if the fellow had a copy of the plan spare, for which

Printing Full Size Plans

Got a heap of back issues with thousands of plans that just have to be built one day? How do you get a plan from the very-much-reduced picture of the plan in the mag? George Car has been forced into 'Fiddling With Computers, 101'.

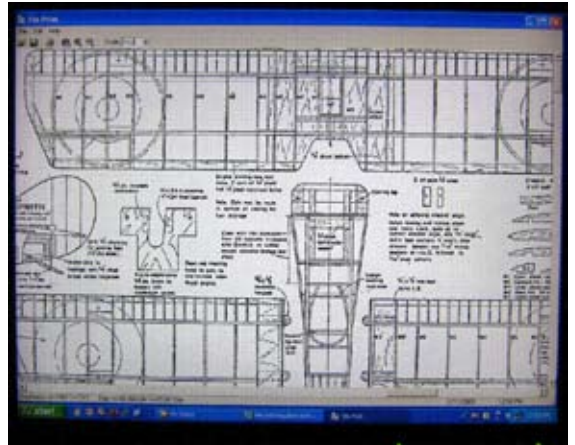
NOTE: there will be a heap of gurus who know much better ways of doing this. The problem is their compubabble is incomprehensible to me, anyway I would have to buy some software. I found out how to tile print the hard, but cheap, way.....

What is a fellow to do when he wants to build a model from a reduced scale plan? One way is photocopying—blow it up stage by stage until you get to a size that is a bit smaller than the final, measure carefully, work out the final scale factor, and make the final print. Usually there are a few problems this: the lines get very much wider and fuzzier (not often terminal, can still use plan); you end up with heaps of pages, most with intermediate size plans, and often some parts of the plan actually missing But this can work. I have, much to the amusement of the lass at the local video hire shop (only close photocopy place I can access - I offered to pay to use the copier at work, but they had no mechanism of accommodating private copying).



As we all seem to have computers and printers/scanners now, there is another way. Scan the plan in a reasonable resolution (say 300dpi), use the B&W document setting, and save as a bmp file. Take the plan up in a picture editing program (say Microsoft Office Picture Manager) and trim the edges (ie, crop), and you may need to straighten it up first (I find I usually have to adjust it a half degree or so using the 'rotate' function). Next, open the plan up in a "Tile Print" program, specify the plan size, and hit print. Many printers will do this anyway, but if yours can't, you can download a suitable program from the URL below (if this paragraph is incomprehensible compubabble to you, it's time to ask any passing kid to do the above bit for you. If you don't have computer scanner/printer, just ask your neighbour/ model flying buddy.....).

Once you have the picture of the plan open in a tile print program, it needs to know the final size of the plan. Many plans, particularly from US magazines, have scales on them, making it easy. If not, use the wing-span or other dimension you know. Lastly, hit print, and the plan will be tiled over as many pages as necessary from your printer. Now you can sticky-tape the plan together and build.



This (using the tiling print program) means of course that you can easily change the size of the model, just by setting a different dimension. For instance, if you liked Ronnie Mouton's classic plan of the Fokker DVIII, but always thought the 22" span a bit small for your 0.5cc diesel (it is, unless you use an AE 0.5 which happens to be weak enough—if you can get it to start....), you can easily increase the span to say 28", still quite small for a Dart, but I find my Dart can throttle back quite easily and spin a bigger prop, though the AE can't do either.

There are thousands of scanned plans on the web, they can all be printed just like the above, even plans from Adrian's FF plans collection. What happens if the plan isn't in bmp (or related raster formats, such as tiff) needed by the tile print program? For instance, a pdf (such as from Adrian's plan collection) needs the following steps: Open the pdf, go to the printer section, and print the file to "Microsoft Office Document Image Writer" this is some kind of pseudo-printer that Microsoft give out with "office". It will print the pdf to a file which will open in the "Writer" software, now "save as" a bmp or jpg. Now you can open the bmp or jpg in the tile print program, and make a tiled hard copy. (if your version of image writer can only save as tiff, you may have to open the tiff in another program—such as MS Paint, which all computers seem to have— and save it as a bmp which the tile print program can use).

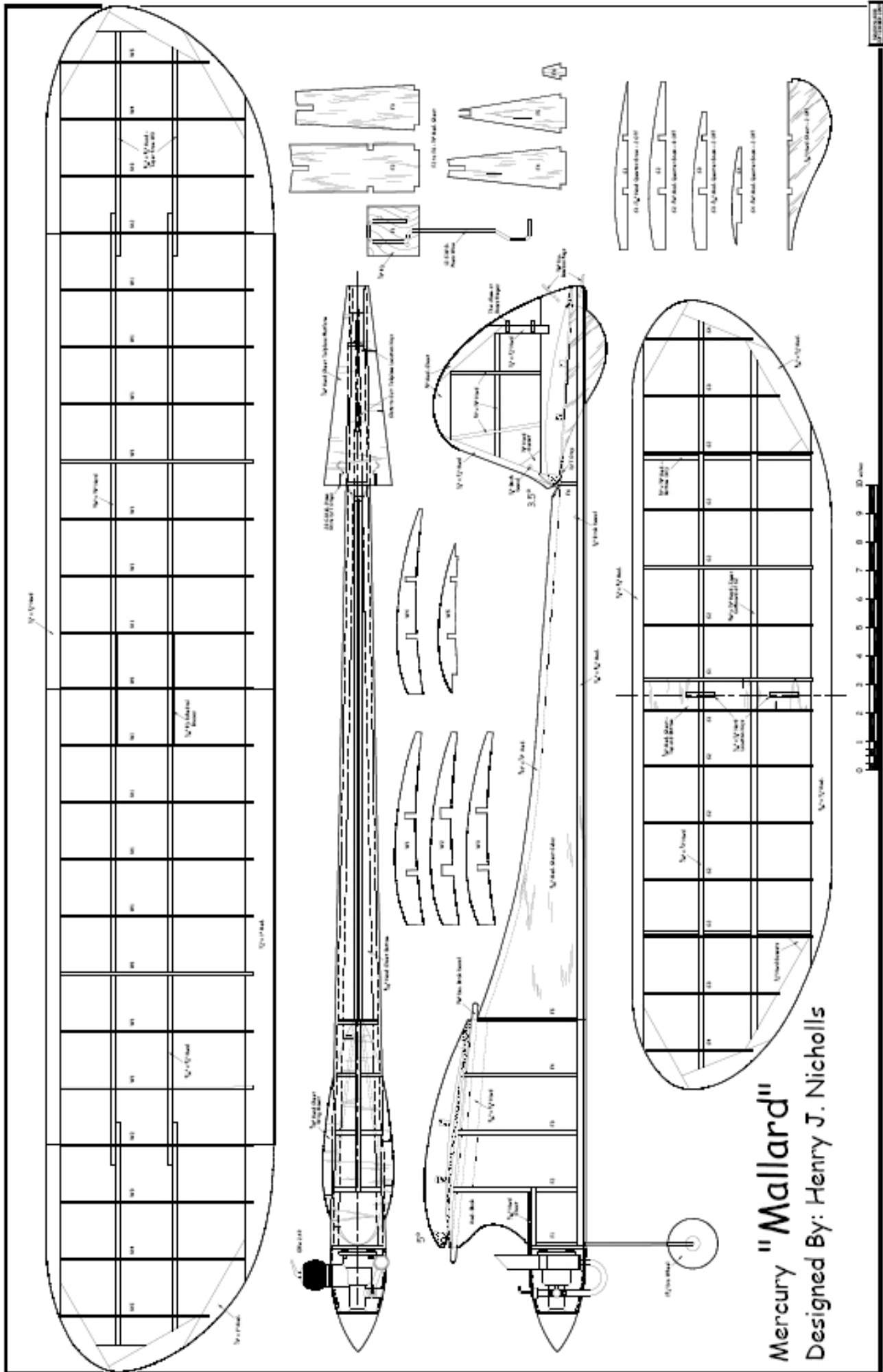
In this case (Ken McDonough's Sopwith Pup, AeroModeller, Feb '60), the 26 1/2" span plan is over 18 pages. The middle pic shows the plan in "Tile Print". To specify size, I clicked on one edge of the wing, and drew the cursor across to half span, then specified 13.25" in the size box

Good Luck!

Tile print URL <http://homepage.ntlworld.com/j.reap/ProgramsandDocs.html> (If the link doesn't work any more, google "tile print" and you will find many programs available on the web).

Disclaimer: as far as I know, scanning and printing from your own mag for your use does not contravene copyright, unless you sell the plans, of course.....





Henry J Nicholls Mercury Mallard is a classic FF power model of its era. It's Vintage - even under the old rules - since it was mentioned in an ad in Aeromodeller September 1950
 One of Mike Glaister's drawings. From Flypaper Dec 2009.

BREAKING A 36 YEAR OLD RECORD

By Stan Buddenbohm - 12/09

We are talking about the Holy Grail of hand launch glider, Ron Wittman's unlimited ceiling record of 90 seconds, plus a second flight of over 88 seconds. Ron set this record back in 1973 at the Tustin Blimp Hangar. The invention of tip launching with a free flight glider, thanks to Mark Benns and Mick Page, gave tired javelin throwers like me a new lease on life. Bruce Kimball showed us that, and inspired us, when he won the outdoor Nationals several years ago by tip launching.

No record is easy and this one was the toughest for me. The plan took shape. I designed and kitted an approximately 100 sq. in. outdoor glider called DynoMite (AMA has a 100 sq. in. limit on indoor gliders). For about 3 years I have thrown this size model to quietly practice for the record. Ralph Ray and I traveled to the Nationals at Johnson City, TN, in 2008, where I had a flight of 86.5 sec. Then we went to a contest in Moscow, ID where my flights were only about 80 seconds. Next up was the 2009 Nationals at Johnson City again. My 82 second flight was the longest of the meet but not near the record. My models had a much improved glide; unfortunately they also had killer poor transitions from launch to glide. The glide gave me hope, my determination did not waver.

Outdoors, transitions from launch to glide seem fine. There are two reasons for that: Thermals help and we are less demanding outdoors. If the high throwers have a stall at the top that costs 10 ft. it still seems very high and we overlook it. But indoors that large a stall looks horrible. There is no way to have that and get the record. Could a near perfect transition be had indoors? I believed so and began a serious program to solve the problem.

During this time Ralph and I began preparing for the next likely venue, Moscow, Idaho. We also wanted to investigate the Tustin Blimp Hangar where Wittman set his record. No one has been able to fly in the facility for at least 10 years. The rumor was that you could - for \$2,000 a day! Several have tried, receiving the same answer. We were hoping to get it for a contest around March of 2010. Ralph (a Past national gas champion, past HLG record holder, current national catapult champion and record holder, a dozen patents, designer of the famous carbon ZIPP bicycle, professional engineer, the list goes on much longer) never gives up. He used his extraordinary telephone skills to get past the usual answer the city of Tustin gives about the Blimp Hangar. We don't know about our contest proposal, yet, but during the process Ralph found a way to get a small group inside the hangar on short notice. AMA is really helpful with this type of situation and we were able to secure a record trials sanction with only three days notice. Norm Furutani had been helping us throughout the project and stepped in as our Contest Director. Lee Hines

volunteered to be the CD if Norm could not attend.

Two new hand launch gliders were ready the day of the event and Ralph had some new Standard Catapults. He was going after Bob Deshields' 11 year old record, also set in the Hangar. Among the nine attending there were 6 past and present HLG record holders: Tim Batiuk, Lee Hines, Phedon Tsiknopolous, Ralph Ray, Dick Peterson, and myself. What an honor to be flying in the presence of these champions.

It turned out that I had learned. Both of the new models ended up flying the same good patterns, very predictable with not perfect, but pretty good transitions - much better than I have had indoors to date. My launch was on and Tim seemed a bit perplexed. I had to admit to him that I usually hold back a little instead of pushing myself, tired of being injured, but that there was no choice but to go all out now. I believe that Tim had some great 86 second flights but struggled to the death with girders.

It is weird to have plenty of time, timers, and space. When I worked up to 92 seconds in practice I started going official. The record was broken right away but some cracks in the tip of the left wing made the times less than the best they might have been. Repairs were made for the following two strings. During my three strings of nine official attempts I had many flights over 90 seconds. Some claimed ridiculous altitudes for my launches but likely they were just a little over one hundred feet. I was so pleased that my body responded, I don't think I had a bad launch. All flights weren't good but that was due to something cracking. I actually broke the 7" x 3/16 x 5/8 nose off on launch, it had never crashed. It is hard to understand how violent the forces are on these gliders. That flight was funny, the nose went about 20 to 30 ft to the right and the model went up something over 50 ft. It fluttered down pretty much like a parachute, rocking somewhat.

At least 40 full throttle throws left me sore for a few days, but not injured! The best two flights in a series were 96.8 seconds and 97.6 seconds.

Yes this is all about me, but I guess I will mention that Ralph Ray did set a NEW NATIONAL RECORD in Standard Catapult. Ralph was launching better than anyone I have ever seen, had perfect transitions, and beat the old record by several seconds. Congratulations Ralph.

Well, thanks again to all that attended, those that gave me good advice and encouragement. And special thanks to Ralph for getting us a shot in the famous Tustin Blimp Hangar. Let's hope our contest proposal is accepted and all the flyers that want to can give it a try.

Answer

Ron Bird launching Tony Farnan's entry in the 4 mile race across Hobson's Bay, Melbourne. Printed in AeroModeller, May 1955