

The Thermaleer



VALE: BOB MUNN

Bob lost his long fight with multiple health problems in September, in Yuba City, California. Though in declining health, friend Jack Cudd told others at Ethyl's celebration of Bob's life, that Bob often worked through his pain when Jack took him out to fly. The look on Bob's face while flying his models told Jack that the pain was held at bay for a while.

Bob Munn is known for his master craftsmanship in applying silk and dope finishes to his models. His article on silking techniques is still considered the "bible" on the craft.

However it is less well known that Bob (with Ethyl at his side) was a career Diplomat in the U.S. State Department for many years. A fluent speaker of Arabic, they served in such exotic

places as Lebanon, The Sudan and various other Mid-Eastern locations.

SAM 600 members express their deepest sympathy to Bob's wife Ethyl (shown above with Bob) and members of their family.

*Bob was a very well liked Life Member of SAM 600 of Australia and demonstrated his confidence in our Chapter by his generous donations through the years. i.e. A gift of an Irvine 40 diesel engine to raffle for the club, specially set up for Texaco, was won by Kevin Fryer, who has had considerable success with that engine. A number of Old Timer and Antique plans were donated, as was a model of a Stinson aircraft for use as a perpetual trophy
Bob Munn, we salute you.*

President's Report	2
A Review of Ray Matthews' Designs	
• Review of book by Tandy Walker	3
WebMaster's Report	
• Web page visits and Model Recognition	3
International 1/2 A Postal	
• Results of this exciting 2002 competition...	4
Corrections to the USA SAM NFFS list	
• Gene Wallock adds to the Old Timer list....	5
Facts About Fuel: No. 1	
• First in a series from PowerMaster	6/7
Old Timer Fly-In, Leopold	
• WestCoast Soarers invitation details	7
SAM 600 Contest Calendar	
• Updated details for the 2002/2003 year	8
SAM Champs DownUnder	
• Claiming the Date, Cootamundra details...	9
"Cloud Tramp" by Charles Grant	
• Notes on the Leopold Field Mouse model..	9
Interesting Facts about Balsa Wood	
• From the SIG web page.....	10/11
The "Cloud Tramp" by CH Grant	
• Plan & construction notes.....	12/13
8th Eastern States Gas Champs	
• Report & full results.....	14/15
The CO-YUNE-AH Factor	15
Ramblings, by Don Howie	16
Photo Update	17



President's report:

Hi folks,

I hope you are all well. Remember the October meeting is an "Auction Nite" so bring along all those unwanted engines, kits, unwanted models and so forth. Anything you want to get rid of.

I would like to take this opportunity to wish everyone a happy and safe Christmas & New Year season. See you at the next meeting.

Your President, Chris Lawson.

**DON'T FORGET !
NEXT MEETING IS
AUCTION
•NITE•**

HADDON
Ballarat Aeromodellers Inc.
OLDTIMER FLY-IN
November 16th - 17th 2002

Saturday: 1/2 A Texaco, .25 Clubman & Duration

Sunday: Texaco and Nostalgia & GB Combo.

ON FIELD CATERING

Club Raffle, \$100 of Goodies

Flying Field: Carnham Rd,

Haddon via Ballarat, VicRoads 76 D3

Meeting #82, Thursday 28th Nov, 2002, 7:30pm

Saturn Hobbies, 17 Ardena Ct, Bentleigh E (Melway 68 J-12) off E Boundary Road.

Meeting #83, Thursday 23rd January, 2003

Meeting # 84, Thursday 27th March, 2003

Meeting # 85, Thursday 26th June, 2003

Meeting # 86, Thursday 28th August, 2003

A Review of Ray Matthews' Designs

Tandy Walker has just written and self published his new book titled "A Review of Ray Matthews' Free Flight designs". The subject matter deals with Ray Matthews life and goes into great detail about his many design contributions to the nostalgia free flight period. It consists of 133 pages and is in a softbound 8 1/2 X 11 format, with computer graphic quality photos, plus charts, plan views, airfoils and coordinates. Print is large and easily read.

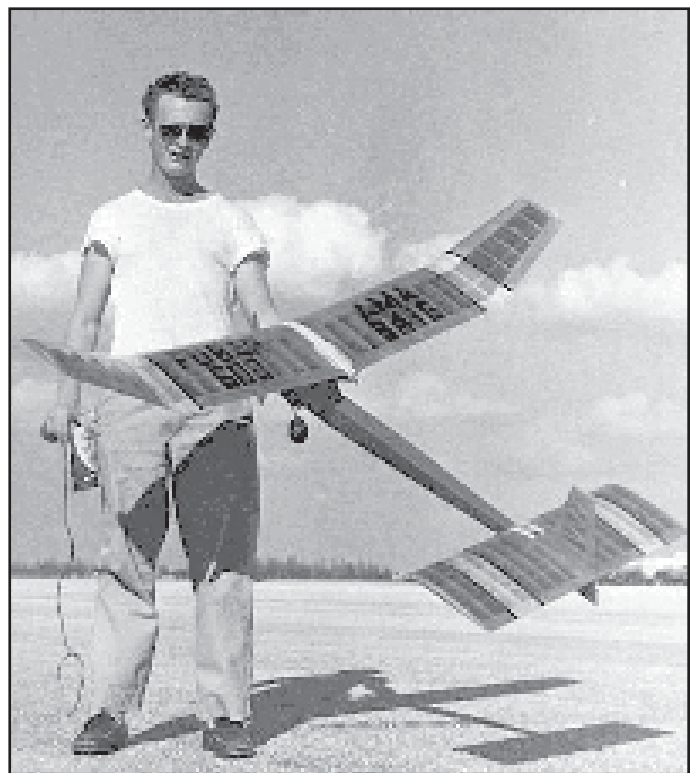
It begins with biographical sketches of the author and the subject designer. Names, places, and dates of several modeling associates and activities in and around Oklahoma and Texas during Tandy's formative modeling years are described. In mid year 2000, Tandy was able to locate Ray Matthews, who now lives in Florida and provided significant background information for the book. Most of us have at least heard of Matthews, famous free flight design, FUBAR.

The period covered in the book is generally the late 1940,s and mid 1950,s. The main feature is the FUBAR design made in over a dozen different sizes/versions. The same information is presented for three sizes of a design called the Crowbar, which was a catchy name for his PAA Payload, or weight lifting event ship. Ray also designed an FAIbar for international competition, a FUGAN hand launched glider, Rubar, a rubber powered ship, and a Cherokee sport free flight designed for Midwest. A mass of data is presented for each design variation, including every measurement imaginable for accurate reproduction. Airfoil sections and coordinates, along with spar arrangements appear at the back of the book. Narrative of development and flying is also included. There's a reprint of Ray's comprehensive three part article, "Secrets of Free

Flight" from the March, April, and May 1953 issues of Model Airplane news.

The detail included in this production makes it obviously a labor of love. Tandy will be selling copies of his soft bound book for \$16.00 plus \$2.50 for packing and "book rate" postage in the US. There is also a hard bound version of the book available for \$40 plus shipping on special order. All of the plans discussed in this new book are now available through Aero Dyne, Phone: (760) 948-6334.

Author Tandy Walker can be reached at 3602 Lynnwood Drive, Arlington, TX 76013-1120, Phone (817) 274-9600 or E-mail: tandyw@flash.net



Ray Matthews with his "Fubar 600 X"

WebMaster's Report:

The SAM 600 and Model Recognition , web pages can be seen from

www.boundy39.com

The WebMaster can be contacted by email at trevor@boundy39.com.

Over the last two months I have had 365 visitors to The Model Recognition page and 347 visitors to the SAM 600 home page

Mailing labels for this issue run at 53 persons, against 71 people for the end of the last financial year.

The Model Recognition page now displays 1189 pictures and 3 views for Antique OldTimer and Nostalgia.

Regards TrevB



VOTA's (SAM 600 of Australia) International 1/2 A attempt.

Several elderly modellers assembled at Dave Chigwidden's Lang Lang property in early Spring weather in an attempt to redress last years situation when one lone Victorian got involved in the worlds only team-based International 1/2 A competition.

"Thermaleer" Editor in Chief, Peter Bennett, was first off the ground in the early, cloudy, cool conditions with a steady Nor'Westerly blowing. His yellow "Red Ripper" climbed steadily to the limit of our collective, anxious old eyes, maintained its height & to our amazement clocked up his first 15 minute max with ease.

The second attempt was fraught with peril, with the weather steadily improving the "Red Ripper" climbed beyond the limit of several sets of elderly eyes and disappeared behind a bank of fast moving lower level cloud. "What shall I do?", the anguished cry, "Don't panic" (shades of Dad's Army) came the reply.

Spiralling down, the model was spotted way down-wind and brought under control only to be attached by nesting territorial magpies, with some damage being sustained to the port wing tip.

After a lengthy period of nerve-calming rest, Peter put up his "Red Ripper" in even better air & got his second 15 minute max.

Next up was immediate past President Kevin Fryer and his "Atomizer". With the air apparently improving, he was expecting to match Pater's performance. Alas, it was not to be, for as the weather cleared the lift vanished. The purple "Atomizer" strove mightily to come within 10 seconds of a max. What a disappointment.

From here on the assault turned into a whimper. Times gradually worsened, climbs under power were phenomenal to the limit of vision, but lift there wasn't. Barry Barton's "Stardust Special" put up a 13.57, Trevor Boundy's "Stardust Special" turned in an 11.43. From then on it was all downhill with Fred Chigwidden's "SS" getting re-kitted after flying into the sun & Graham McDonald refusing to risk his "Bomber" in the terrible wind.

Even though we will all be a year older next year, as a famous American General once said, "we shall return."

Results: 1/2 A Texaco International Postal

SAM 93 out of Tulsa, OK, with the great team of Dan Hodges, Marcy Martin, Don Hartman, Bill Taylor and Cal Sutterfield have won the Frank Ehling Trophy for 2002!

This is the first time SAM 93 has won this Postal, barely beating out longtime Champs, SAM 51 from Fair Oaks, Ca.

17 SAM Chapters participated in this years Postal, with nearly half from outside the United States, making this truly an International affair.

This is how they ranked:

SAM 93 - Tulsa, OK
SAM 51 - Fair Oaks, Ca
SAM 62 - Italy
SAM N-X-211 - St. Louis, MO.
SAM 600 - Victoria, Australia
SAM 84 - Queensland, Australia
SAM 26 - Santa Maria, Ca
SAM 270 - Willetton, Australia
SAM 40 - Highland, Mi
SAM 96 - Sedona, Az
SAM 60 - Johnstown, Pa
SAM 1993 - Willunga, Australia
SAM 1 - Denver, Co
SAM 21 - San Jose, Ca
SAM 82 - Houston, Tx
SAM 89 - Ontario, Canada
SAM 1928 - New Zealand

There were no losers in this fun event, only some with a little more luck than others.

SAM 40 had that luck in 2001, but now that this years Postal is over, looking forward to the challenge of 2003.

Thank You,

Joseph Roose, SAM 40 Editor

*1/2 A Texaco International
 Postal Manager-2002*

Gene Wallock, from SAMTalk 17.09.02

Hi All, Remember, the criteria for establishing model vintage is "DESIGNED, KITTED or PUBLISHED". The "Timer's Nightmare" was designed prior to 1943, therefore it is an Old Timer and is listed so in the SAM Approved gas Model Designs.

About 44 of the NFFS Nostalgia Ignition Powered Gas designs, are in fact legitimate Old Timers. NFFS has been made aware of this. A list of these designs is attached.

Corrections to the NFFS Approved Design List

The following corrections were noted during a review of the NFFS List and the SAM Approved Gas Model List. The majority of the corrections were due to Design Date changes on the SAM List, dated 1996. Any corrections will be appreciated.

Ad Astra design date is 1941
 Airfoiler by DeBolt design date is 1942
 Anzac design date is 1941
 Ascender, 46 & 51 inch; design date is 1941
 B source is AT 5/45
 Banshee by Shulman & Megow;
 design date is 1942
 Brigand design date is 1941
 Classy Gassie, all sizes; design date is 1941
 Flyaway design date is 1938
 Fly Baby design date is 1941
 Flying Goose 40 design date is 1941
 Flying Goose 56 & 70 design date is 1942
 G-8 design date is 1942
 Gnat design date is 1942
 Hayseed A design date is 1940
 Hayseed A/B & C design date is 1941
 Jersey Javelin by Schroder & Consolidated;
 design date is 1941
 Larky design date is 1942
 Locust design date is 1942
 Modenaire design date is 1942
 Modern Bombshell, by Larsh;
 the article states it was glow powered
 Pine Needle design date is 1942
 Porkey design date is 1942

Sky Rocket Super A design date is 1940
 Slick Stick shows a diesel for power.
 It's an FAI Power Model
 Sparrow, 33 & 49; design date is 1942
 Spearhead Jr & Sr; design date is 1942
 Sporty design date is 1940
 Stormer design date is 1942
 Super Rocketeer, 43 & 58; design date is 1941
 Super Skyrocket design date is 1940
 Timer's Nightmare design date is 1942
 Vagabond, by Winter & Eagle;
 design date is 1942
 Westerner A design date is 1942
 Westerner B & C design date is 1941
 Whizzawing 42 & 38; design date is 1940
 Wog, by Winters & Megow; design date is 1942

Gene Wallock, SAM Librarian

Design Approval Committee Chairman
 Velinak@aol.com



Ray Mathews, on the left, designer of the "Fubar" series of F/F designs, shown with Tandy Walker, author of the complete works of Ray. 1993 Fubar 600x SAM Nostalgia R/C assistCovered with UltraCote Lite, powered with a plain bearing Veco .35.



FACTS ABOUT FUEL No. 1 - What's the Oil Content?

(The following is the first in a series of articles exploring all facets of model engine fuel. The writer is Don Nix, past owner of POWERMASTER, Inc.,)

Fact (A) - It's quite likely that no other single facet of modeling generates as many myths, misconceptions, misunderstandings, errors (and more than a few lies), or as much outlandish goofiness as model fuel....one of our absolutely necessary, non-optional items for powered flight.

Fact (B) - Of all the above, the one fact that rouses the most questions - and without doubt the most wrong answers - is the ongoing nonsense about the amount of oil required in model fuel.

Myth: Model Glow Fuel must contain XX% oil to operate properly, perform well and protect the engine.

Fact: There is no such fixed number....at least not a valid one.

Why not? Think about it: In order for this to be true, all oils used in model fuel - all of them - would have to be identical in every characteristic. Does anyone honestly believe they are? I doubt it.

While lubricants compounded for full-size engines - automotive, recreational vehicle or aircraft - are rarely, if ever, suitable for use in model engines (for many reasons), nevertheless, there are a number of base lubricants that are available for our highly specialized use. However, most of these must be modified slightly or extensively by the use of a variety of additives and modifiers.

While Klotz model oils are perhaps the most well-known to the average user, and are quite good, they are by no means the only lubricants available to model fuel blenders, and there are currently a number in use. Each has its own "personality" - its own set of technical specifications and characteristics.

At this point, we should point out that we're speaking of the so-called "synthetic oils" popularly used in modern model fuels. Castor oil...the oil of choice, and, indeed, the only suitable model engine oil for many years, is more of a common and known factor. Assuming a good grade, if a fuel uses only castor as its lubricant, then we could give you a fixed percentage, at

least for the various engine groups and types.

However, few model fuels intended for R/C use today contain only castor oil as the lubricant. For the purposes of this discussion, we will only deal with fuels containing either straight synthetics, or a blend of castor and synthetics.

So...what does all that mean?

Let's draw a little picture here: Suppose at some point in your life, you become concerned about living a long and healthy life, so you decide to consult a doctor for advice as to how to accomplish this. When you come to the subject of food, you say,

"Well, tell me, Doctor....if I wanna still be healthy and virile at 90, how do I eat?" The good doctor replies, "M'boy, if you will eat two pounds of food a day, you'll be fine!"

My guess is your response would be something like, "well, what kind of food, Doc? After all, no two are exactly alike....is that two pounds of lettuce or two pounds of pork chops?" If he replied, "It doesn't matter. Just as long as you eat that two pounds every day, you'll probably outlive your kids." My bet is that you'd run, not walk, out of that quack's office!

Why, then do we blindly follow someone's Word From On High when they say (in words engraved on stone tablets), Thou shalt use no fuel that does not contain XX% oil." It makes absolutely no sense to me, nor do I think it will to you, if you just stop to think about it. All foods are different; so are oils.

If that's true, why do the instructions with my engine specify a fixed percentage of oil? Simple - to protect themselves. All engine manufacturers have been burned (figuratively and literally) in recent years by "bargain priced" fuels containing either inferior oils, or insufficient amounts of oils. Every one that I've talked to will admit off the record that they know that fuels containing good oils won't need as much as their instructions say. But they also say they know they have no control over that, so they are going to print a high number, in hopes that amount of even a cheap oil will be sufficient. Frequently, it isn't.

So why not just put a lot of oil - at least 20% or more - in fuel and not worry about it? A lot of reasons....all good ones. For example: Too much oil - any more than is necessary - makes the engine run really crappy. Think about it: methanol burns; oil doesn't - or at least it shouldn't. (Some do, but that

will be dealt with in another installment.) Common sense would tell us that the less oil (nonburnable) we can safely use (to an irreducible minimum point, of course), the more methanol (burnable) we will have in our combustion chamber. More burnable ingredients = more power. One well-known magazine writer, with more than 50 years engine experience, tells me that in his experience, for every 1% oil removed from model fuel, the effect is about the same as adding 1% nitromethane. And it costs a lot less!

By the same logic, the less oil we use (to the predetermined minimum, of course), the less the oil is going to be dousing the glow plug element, and we should be able to achieve a lower, smoother idle.

Next to nitromethane, oil is the most expensive ingredient in model fuel. By not using an unnecessary amount of oil...especially if it's just to satisfy some Great Guru's edict...the manufacturer can keep the cost of the fuel down, which puts a smile on all modelers' faces. Remember that even an additional 25 cents in manufacturing cost translates to an additional dollar...or more...at the retail level.

So, what is the right amount?

It all depends...on what kind of oils, in what combinations, with what additives, etc. And for what use? Sport airplanes... Racing... Helicopters... Boats... Cars... Ducted Fan? What size engines? (As engine size increases, they need progressively less oil. Why? Simple mathematics. Surface area of the combustion chamber increases at about half the rate as the displacement increases.) Most people know that the big T.O.C. and Unlimited racing engines use oil in the 4% to 5% range.

Ducted fan and helicopter engines typically need more oil, 4-strokes less. It might be surprising to most airplane flyers to know that top competition model car engines use fuel with oil contents in the single digits, even though they are turning in the 40,000 - 50,000 rpm range, and have no fan in front to cool them! As matter of fact, they will hardly run on regular airplane fuel.

**Next installment:
Synthetic or castor oil...
which is best?**

WESTCOAST SOARERS

OLD TIMER FLY IN, (LEOPOLD Melway 409 F7) 8th & 9th February 2003.

Westcoast Soarers invites you attend and participate in our 3rd Annual "Leopold" Old Timer Fly In.

SATURDAY 8TH FEBRUARY.

9am: Registration,

10am: 1/2 A Texaco,

Field Mouse round 1 & 2, during lunch break

2pm: Duration.

SUNDAY 9TH FEBRUARY.

10am: Texaco,

Field Mouse round 3 & fly off during lunch break

1pm: Combined event,

[2cc, Gordon Burford & Nostalgia.]

3-30pm: Concours d'elegance Presentation.

*ON FIELD CATERING, Hired Toilet
TROPHIES 1st, 2nd & 3rd PLACES, CONCOURS,
CHAMPION OF CHAMPIONS & FIELD MOUSE.*

ENTRY FEE \$5-00 PER EVENT.

MAX OF \$15-00 PER FLYER Field Mouse FREE

Contact:-Chris Lawson 03 5275 8482

Peter Hosking 03 5248 5461

email: peterh@webaxs.net

Fred Roberts 03 5256 2273

CAMPING AT SITE IS PERMITTED BUT NO OPEN FIRES ALLOWED

CARAVAN PARKS:

BEACON RESORT CARAVAN PARK 78 BELLARINE, HWY. QUEENSCLIFFE. 03 52581133.

MOOLAP CARAVAN PARK 365 BELLARINE, HWY. MOOLAP. 52501381.

PELICAN SHORES HOLIDAY PARK CLIEFTON AVE. LEOPOLD. 1800816429.

SANDS CARAVAN PARK. 140 ALEXANDER AVE. LEOPOLD. 52501290.

B&B's COTTAGE GARDEN. 395 GRUBB RD. WALLINGTON. 52502620.

FIELD MOUSE RULES:

THE MODEL MUST BE THE "CLOUD TRAMP" AS DESIGNED BY CHARLES H. GRANT

See page 9 for details, plan p12, construct p13.

SAM600 Contest Calendar 2002 / 2003.

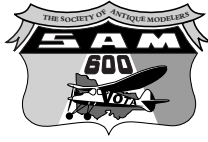
Sept 7-15	Old Timer International Postal Comp.	Contact Barry Barton, 03 5655 1767
Oct 5-6	Eastern States Gas Championships	Albury/Wodonga SAM1788
Nov 16-17	Old Timer Fly-in	Haddon BAM
	Saturday 1/2A Texaco, .25 Clubman & Duration	
	Sunday Texaco & Combo 38 Antique / Nostalgia	
Dec 28-Jan 4	56th AUSTRALIAN NATIONALS	Albury/Wodonga MAAA
	MAAA Old Timer Events:-	
	Sunday 29th Dec. - Texaco (10.00 am start) - (Fuel allotments as flown at 55th Nats, 2002)	
	Monday 30th Dec. - Duration (10.00 am start) & Nostalgia (2.00 pm start)	
	Tuesday 31st Dec. 1/2 A Texaco (10.00 am start) & 38 Antique(2.00 pm start)	
	Wednesday 1st Jan. - Gordon Burford (10.00 am start)	
	The venue for all Old Timer Nats events is the Wodonga Racecourse.	
Jan 3- JAN 6	1st SAM CHAMPS DOWNUNDER	Cootamundra SAM1788/600
	Friday 3rd January	0900 Start Rally (F/F, C/L, R/C) 1800 BBQ & get-together
	Saturday 4th January	0900 Start Gordon Burford Duration
	Sunday 5th January	0900 Start 1/2 A Texaco Texaco
	Monday 6th January	0900 Start '38 Antique Nostalgia 1900 Presentation Dinner
Jan 25-26	17th Roy Robertson Memorial Trophy	Cardinia P&DARCS
Feb 8-9	3rd Old Timer Fly-in	Leopold WSC
	Saturday 25th	1000 Start 1/2 A Texaco & Field Mouse 1400 Duration
	Sunday 26th	1000 Start Texaco & Field Mouse 1300 Combo 2cc, Burford & Nostalgia
Mar 1-2	VICTORIAN STATE CHAMPS	Haddon BAM
	Saturday 1st	1000 1/2 A Texaco & Duration
	Sunday 2nd	0900 Texaco, 38 Antique /Nostalgia co
Mar 22-23	1st North Vic. Old Timer Champ	Cohuna CMFC
Apl 18-21	11th SAM600 EASTER FLY-IN	Swan Hill SHMAC
May 24-25	3rd Tri State Gas Champs.	Jerilderie SAM600
	Contest calendar contacts:-	
	Contest Director: Peter Hosking, 03 5248 5461, email: <peterh@webaxs.net>	
	President: Chris Lawson 03 5275 8482	

After receiving queries on what RULES are being used for our various events :- All SAM600 events will use SAM600 rules. SAM Championships Downunder will use SAM1788 rules.

56th Australian Nationals will use same rules as used at 55th Australian Nationals. eg Texaco-Four Strokes will be allotted 3cc per pound, diesels 2cc per pound. Advice from MAAA has advised that Wodonga Racecourse is CASA friendly.



Claiming the Date



Inaugural SAM Champs "Down-Under"

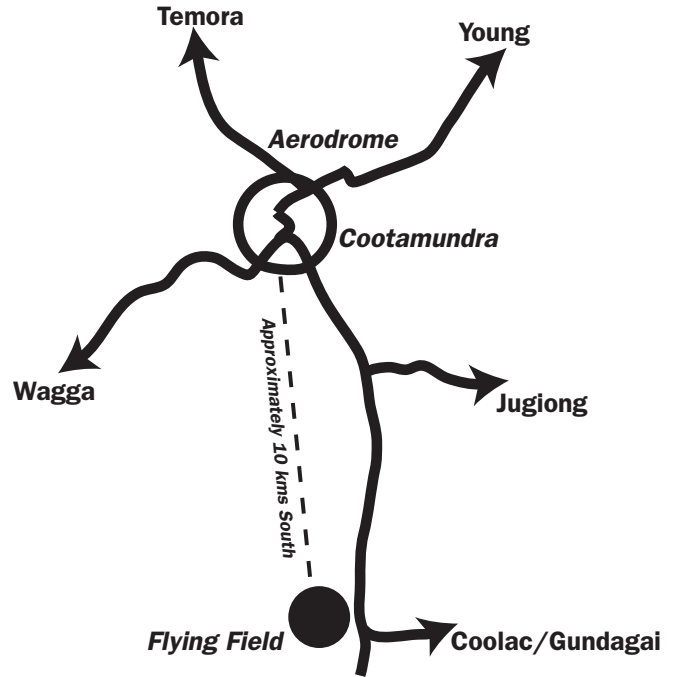
Jointly hosted by SAM 1788 & SAM 600

When: January 3rd - 6th, 2003

Where: MAS NSW State Model Flying Field
Cootamundra NSW Australia

Proposed Programme

Friday 3rd January	0900 Start	Rally (F/F, C/L, R/C)
	1800	BBQ & get-together
Saturday 4th January	0900 Start	Gordon Burford
		Duration
Sunday 5th January	0900 Start	1/2 A Texaco
		Texaco
Monday 6th January	0900 Start	'38 Antique
		Nostalgia
	1900	Presentation Dinner



If you would like to have more information, please contact:

SAM 1788:	Basil Healy	basnpat@tac.com.au
SAM 600:	Chris Lawson	peterh@webaxs.net
Field Manager:	Sharon Smith	shaz416@ozemail.com.au



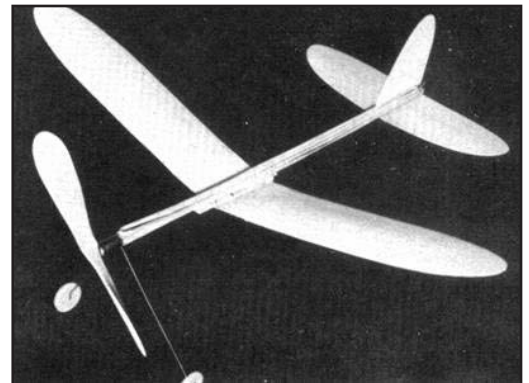
Cloud Tramp. (model for the Field Mouse event).

For forty years, Charles Grant had experimented with fundamental rubber powered models like the "Cloud Tramp". The proportions and areas in these photographs make for sport performance second to none.

This may be a beginner's model but its performance commands respect. Put one together and fly it in between the major events at the Westcoast Soarers OldTimer Fly-in 8th & 9th February 2003, to be held at the Leopold Field. Who knows, the "Cloud Tramp" and the Field Mouse may themselves become a major event in their own right.

Info on page 7 of this issue. Plan on page 12.
Full construction notes on page 13.

Why are you an Old Timer model fan? Is it because you enjoy the frustration born of balky gas engines with only an occasional flight; because you enjoy the labour of building intricate structures; or is it because you reap deep satisfaction from repeated, realistic, completely stable free flights requiring minimum construction effort and damage repair? If you prefer the latter, build and fly this simple model, at Leopold.



Interesting Facts About Balsa Wood from the SIG Manufacturing web page.

Model airplanes are no different than any other type of flying machine, large or small - THE LIGHTER IT IS BUILT, THE BETTER IT WILL FLY! With that in mind, it is easy to understand why balsa wood has been the standard material for model airplane construction since it first became readily available in the U.S. in the late 1920's. Its outstanding strength-to-weight ratio enables hobbyists to construct durable models that fly in totally realistic manner. Balsa also absorbs shock and vibration well and can be easily cut, shaped, and glued with simple hand tools.

WHERE DOES Balsa WOOD COME FROM?

Balsa trees grow naturally in the humid rain forests of Central and South America. Its natural range extends south from Guatemala, through Central America, to the north and west coast of South America as far as Bolivia. However, the small country of Ecuador, on the western coast of South America, is the primary source of model aircraft grade balsa in the world. Balsa needs a warm climate with plenty of rainfall and good drainage. For that reason, the best stands of balsa usually appear on the high ground between tropical rivers. Ecuador has the ideal geography and climate for growing balsa trees. The scientific name for balsa wood is *ochroma lagopus*. The word balsa itself is Spanish meaning raft, in reference to its excellent flotation qualities. In Ecuador it is known as *Boya*, meaning buoy.

HOW DOES Balsa WOOD GROW?

There is no such thing as entire forests of balsa trees. They grow singly or in very small, widely scattered groups in the jungle. For hundreds of years, balsa was actually considered a weed tree. They reproduce by growing hundreds of long seed pods, which eventually open up and, with the help of the wind, scatter thousands of new seeds over a large area of the jungle. Each seed is airborne on its own small wisp of down, similar to the way dandelion seeds spread. The seeds eventually fall to the ground and are covered by the litter of the jungle. There they lay and accumulate until one day there is an opening in the jungle canopy large enough for the sun's rays to strike the jungle floor and start the seeds growing. Wherever there was an opening, made either by a farmer or by another tree dying, balsa will spring up as thick as grass. A farmer is often hard put to keep his food plot clear of balsa. As the new balsa trees grow, the strongest will

become predominate and the weaker trees will die. By the time they are mature, there may be only one or two balsa trees to an acre of jungle.

HOW LONG DOES IT TAKE A TREE TO GROW?

Balsa trees grow very rapidly (like all pesky trees). Six months after germination, the tree is about 1-1/2 inches in diameter and 10 - 12 feet tall! In 6 to 10 years, the tree is ready for cutting, having reached a height of 60 to 90 feet tall and a diameter of 12 to 45 inches. If left to continue growing, the new wood being grown on the outside layers becomes very hard and the tree begins to rot in the center. Unharvested, a balsa tree may grow to a diameter of 6 feet or more, but very little usable lumber can be obtained from a tree of this size. The balsa leaf is similar in shape to a grape leaf, only a lot bigger. When the tree is young, these leaves measure as much as 4 feet across. They become progressively smaller as the tree grows older, until they are about 8 - 10 inches across. Balsa is one of the few trees in the jungle which has a simple leaf shape. This fact alone makes the balsa tree stand out in the jungle.

THE PERFECT NURSE!

Nature evidently designed the balsa tree to be a "nurse tree" which would protect the slower-growing species of trees from the scorching jungle sun during their critical early years. For instance, in an area of the jungle that has been ravaged by a tropical storm or other natural disaster, the balsa trees will quickly sprout and beginning to shoot up to impressive heights in a very short time. Their fast growth, and the extra large leaves they have in their early years, provide shade to the young seedlings of the slower-growing forest giants. By the time the seedlings are established enough to take care of themselves, the balsa tree is beginning to die. Undoubtedly, the balsa tree's rapid growth, fast spreading crown of first very large and gradually smaller leaves, and its relatively short life span were intended to make it the "perfect nurse" in the jungle ecosystem.

HOW ARE Balsa TREES HARVESTED?

While nature intended the balsa tree to be a short lived nursemaid, mankind eventually discovered that it was an extremely useful resource. The real start of the balsa business was during World War I, when the allies were in need of a plentiful substitute for cork. The only draw back to using balsa was, and still is, the back breaking work that is necessary to get it out of the jungle. Because of the way the individual balsa trees

are scattered throughout the jungles, it has never been possible to use mass production logging procedures and equipment. The best way to log balsa trees is to go back to the methods of Paul Bunyan - chop them down with an axe, haul them to the nearest river by ox team, tie them together into rafts, and then float the raft of balsa logs down the river to the saw mill. The logging team usually consists of two native Ecuadorians, each armed with a broad Spanish axe, a machete, and a long pole sharpened like a chisel on one end for removing the bark from the downed trees. Because of the hilly terrain, an ox team may only be able to drag two logs to the river per day. At the saw mill, the balsa is first rough cut into large boards, then carefully kiln dried, and finally packed into bales for shipment to the U.S. via ocean freighter.

Final cutting and finishing of our model aircraft balsa is done right here at the SIG factory. As a result of the balsa tree's fast growth cycle, both the quality and lightness of the lumber obtained from a balsa tree can vary enormously depending upon the tree's age at the time of cutting.

WHY IS BALSA WOOD SO LIGHT?

The secret to balsa wood's lightness can only be seen with a microscope. The cells are big and very thinned walled, so that the ratio of solid matter to open space is as small as possible. Most woods have gobs of heavy, plastic-like cement, called lignin, holding the cells together. In balsa, lignin is at a minimum. Only about 40% of the volume of a piece of balsa is solid substance. To give a balsa tree the strength it needs to stand in the jungle, nature pumps each balsa cell full of water until they become rigid - like a car tire full of air. Green balsa wood typically contains five times as much water by weight as it has actual wood substance, compared to most hardwoods which contain very little water in relation to wood substance. Green balsa wood must therefore be carefully kiln dried to remove most of the water before it can be sold. Kiln drying is a tedious two week process that carefully removes the excess water until the moisture content is only 6%. Kiln drying also kills any bacteria, fungi, and insects that may have been in the raw balsa wood.

HOW LIGHT IS KILN DRIED BALSA WOOD?

Finished balsa wood, like you find in model airplane kits, varies widely in weight. Balsa is occasionally found weighing as little as 4 lbs. per cu. ft.

On the other hand, you can also find balsa which will weigh 24 lbs. or more per cu. ft.

However, the general run of commercial balsa for model airplanes will weigh between 6 lbs. to 18 lbs. per cu. ft. Eight to twelve lb. balsa is considered medium or average weight, and is the most plentiful. Six pounds or less is considered "contest grade", which is very rare and sometimes even impossible to obtain.

IS BALSA THE LIGHTEST IN THE WORLD?

No! Most people are surprised to hear that botanically, balsa wood is only about the third or fourth lightest wood in the world. However, all the woods which are lighter than balsa are terribly weak and unsuitable for any practical use. The very lightest varieties don't really resemble wood at all, as we commonly think of it, but are more like a tree-like vegetable that grows in rings, similar in texture to an onion. It is not until balsa is reached that there is any sign of real strength combined with lightness. In fact, balsa wood is often considered the strongest wood for its weight in the world. Pound for pound it is stronger in some respects than pine, hickory, or even oak (see chart below).

STRENGTH OF BALSA WOOD COMPARED TO OTHER WOODS

Species	Weight. Lbs./F ³	Stiffness Strength	Bending Strength	Compression Strength
Balsa	8	72	70	75
Balsa	10	100	100	100
Balsa	14	156	161	149
Spruce	28	230	260	289
Yellow Pine	28	222	277	288
Douglas Fir	30	241	291	341
Hickory	50	379	638	514
Oak	48	295	430	366
Basswood	26	261	288	288
Black Walnut	37	301	506	512

NOTE ABOUT CHART: The strength of balsa varies in direct relation to its density or weight - the heavier the wood the stronger it is. The above chart was designed with 10 lb./cu. ft. balsa as the median. In other words, balsa at 10 lbs./cu. ft. has been tested given a value of 100. The other woods were then tested in the same way and given a figure that is numerically in proportion. By comparing the relative strength figures in the chart, it will be seen that balsa is as strong or stronger, pound for pound, than most of the species shown.

FIELD MOUSE RULES: THE MODEL MUST BE THE "CLOUD TRAMP" [ABOVE] AS DESIGNED BY CHARLES H. GRANT IN 1942 AND DEVELOPED TO THE FINAL VERSION IN 1954. CHARLIE GRANT WAS A FULL SIZE AERONAUTICAL ENGINEER AS WELL AS CONTRIBUTING A GREAT DEAL

TO THE HOBBY OF AEROMODELLING. HE DESIGNED THE "GRANT SERIES" OF AIRFOIL SECTIONS USED BY MOST OF THE EARLY U.S. MODEL DESIGNERS. 3 ROUNDS WITH ALL TO COUNT. 45 SEC MAX. FLY OFF TO USUAL SAM 600 RULES.

Cloud Tramp, construction notes.

Longer flights of a minute or more to altitudes of more than 300 ft. can be obtained by lubricating the motor with glycerine, stretching it 2-1/2 times its length and winding it to 900 turns. The motor should not be wound more than 400 turns when it is dry and wound by hand. Study the plans carefully and before you start building be sure you know the exact function, material, size and shape of each part and how all parts are placed and held together in the assembly.

Start with balsa sheet: medium hard, 40 in. total length, 3 in. wide, 3/64 in. thick. From this, cut the wing, 22 in. long; the stabilizers, 10 in. long; and the fin, 3-3/4 in. high. Shape the wing tips, the stabilizer and fin outlines all according to the patterns given full scale in the plans.

From balsa sheet, medium hard, 4 in. long, 3 in. wide, 1/8 in. thick, cut wing incidence block and four ribs to the exact outline given in the plans.

Then use: Balsa: medium hard, 4 in. long, 3/4 in. wide, 3/16 in. thick. Cut wing center block from this to length and cross-section shown in plans. Sand the "V" bottom to precise shape. Balsa sheet: hard, 2 x 2 x 1/16 in., from which cut two wing mount strips, 1-5/8 in. long and 3/4 in. wide, with grain running crosswise.

Balsa stick: hard balsa, 18 in. long, 1/4 in. square cross section.

Sawed balsa propeller: 8 in. long. Shave down blade faces, round tips, sandpaper all surfaces and "balance" on pin through shaft hole. Cut trailing edge at hub to concave shape shown in side assembly view.

Molded plastic propeller: 8 in. long. (This may be used if balsa propeller is not available but flights will be shorter because of greater weight and lower pitch of types now on market).

Wheels: hard wood, 1-1/4 in. dia., 1/4 in. thick. Hanger-bearing for prop: steel, "L" shape, legs 13/16 and 5/16 in. long, cross-section half round 3/32 in. wide.

Washers: two, brass, 3/16 in. outside dia., 3/64 in. hole (min.), on propeller shaft between propeller and bearing.

Steel wire: hard (not annealed), 21 in. long, .032-.035 in. dia. From this make landing gear, prop shaft, tail hook, and motor hook according to size and shape given in plans, (Prop. shaft, tail and motor hooks are shown full scale). Rubber for motor: 10 ft. long, 1/8 x 1/30 in. (Brown 1/8 in. flat is common designation). Quick drying, waterproof model cement. Miscellaneous implements, as pins, clothes pin spring clamps, sandpaper, pliers, knife, razor blade, etc.

To assemble, crease wing sheet at exact center

and cement "V" center block in the crease. Hold in place until dry with pins and clamps as indicated, and support wing tips at dihedral angle shown until dry.

Cement four wing ribs to under surface of wing: hold with pins and clamps until dry. Cement incidence block to wing "V" block rear edge.

Cement stabilizer and fin to motor stick: hold until dry with pins.

Cement prop hanger bearing to top of motor stick and bind firmly with thread.

Bind landing gear to underside of stick below bearing with thread, using plenty of cement to coat joint. Put wheels on axles and bend up wire ends with pliers.

Cement tail hook to rear of motor sticks. Pass end of prop shaft through prop, bend over end into loop and drive loop back into front face of hub after applying cement to loop.

Cement wing mount strips to motor stick at location shown. Fasten wing in place on mount with 2-1/2 in. rubberband (use two if required). Place washers on prop shaft and hook shaft into bearing. Hook motor "S" hook over tail hook and string four strands of rubber through the prop shaft hook and the "S" hook, without tension.

Tie ends of rubber together and locate knot at rear end of motor by adjusting the rubber loops. The motor should include four strands of rubber, (two loops). One extra strand may be used with Sawed Balsa Prop when ROG take-offs and high climbing rates are desired. Care in constructing, finishing and aliening your Cloud Tramp will give you the most reliable and best performing model plane you have ever built,

Don't let its simplicity fool you. To fly, balance plane on ends of two fingers, supporting plane at two points, each about 2 in. from and on opposite sides of the center wing chord from one another and just half way between leading and trailing edges.

If plane does not balance level, move the wing back and forth along the stick as required to bring plane in balance when supported on fingers. When in balance, glide plane gently from hand launch. When glide is smooth and even, wind motor by the propeller about 100 turns and hand launch gently.

If plane flies without stalling or diving, wind about 300 turns and launch for a long flight. If plane stalls, move wing back 1/4 in. If it dives, move wing forward 1/4 in. Then wind it again and fly, adjusting wing on stick until flight is even. Maximum winds by hand are 400; with winder, 900.

(From August 1954 Model Airplane News)

8th Eastern States Gas Champs

Twin Cities Field, Albury. (A Mexican Invasion).

The first O/T event of the season, over two days of superb weather at a venue which is rapidly becoming one of Australia's best, was notable only for a distinct lack of entrants.

Now in its eight year, during which that competent Victorian flyer, Trevor Boundy, took Top Gun position four times, the event this time attracted only a dozen entrants, making organisers consider scrapping it from next seasons calendar.

"User-friendly" in the extreme, witness the unanimous decision to give ballrace Burfords 40 seconds and the high level of camaraderie throughout all made for an outstanding weekend that deserved better.

Gordon Burford the first off, with ten starters, seven of whom made it to the fly-off.

The Alan King "Flying Pencil" of organizer Paul Farthing showing the way home by a single second from Brian Laughton and his Collinson-Lanfranchi "Swiss Miss", a model attracting many builders in Victoria.

Run concurrently with the Gordon Burford, 38 Antique had only five entrants who were once again shown the way home by the unlikely combination of Kevin Fryer and his Oliver powered "Red Zephyr". Peter Donovan would have been proud of him.

Duration followed in cooling weather. Mark Collins with his McCoy 60 powered "Cumulus" was untouchable as he out McCoyed the field rapidly becoming dominated with this motor. David Foster with his Saito powered "Cabin Playboy" split the McCoy brigade.

DAY TWO. Yet another Mexican dominated 1/2 A Texaco. Chris Lawson's "RC1" reveling in the windier conditions to outclass some fancy opposition, Darren Marshall's "Little Diamond" had its Cox really revving to take second place with "SAM Champs DownUnder" organizer Basil Healy bringing his "Schmaedig Stick" in third.

Texaco, the last event, was flown in Flukey conditions. Big lift was evident as was big sink as evidenced by some desperate landings by those scratching for a max.

Four only made the fly-off with "Eagle-Eye"

Collins once again reaching heights well beyond the vision of many older oldtimers. Despite the many first placings from those South of the border it was 1788's Paul Farthing with his Gordon Burford win and consistent high placings that took him to "Champ of Champs" for the second consecutive year. BB.

Gordon Burford

1	Paul Farthing	Pencil SR	1349
2	Brian Laughton	Swiss Miss	1348
3	Darren Marshall	Little Diamond	1271
4	Kevin Fryer	Atomizer	1268
5	Basil Healy	Spacer 1953	1253
6	Peter J Smith	FAI	1229
7	Chris Lawson	Playboy	1186
8	David Foster	Lanzo Baby Bird	886
9	Barry Barton	Stardust Special P/B	874
10	Peter Buchley	Spacer	DNF

'38 Antique

1	Kevin Fryer	Red Zephyr	2525
2	David Foster	Atwood SC	2356
3	Basil Healy	California Chief	2327
4	Chris Lawson	1938 Powerhouse	1336
5	Peter J Smith	Stand By 1938	907

Duration

1	Mark Collins	Cumulus	2336
2	David Foster	Playboy Cabin	2081
3	Peter J Smith	SOS	2077
4	Paul Farthing	Playboy	2029
5	Kevin Fryer	Cumulus	1989
6	Brian Laughton	Playboy	1964
7	Darren Marshall	Playboy 112%	1948
8	Basil Healy	Blitz Buggy 1941	1426
9	Peter Buchley	Lanzo Bomber	1416
10	Tony Farnan	Playboy	1412
11	Barry Barton	Playboy Cabin 105%	1358
12	Norm Campbell		1324

1/2 A Texaco

1	Chris Lawson	RC1 1936	1578
2	Darren Marshall	Little Diamond	1569
3	Basil Healy	Schmaedig Stick	1493
	Paul Farthing	MG2	1479
5	Kevin Fryer	Atomizer	1470
6	Peter Buchley	Kerswap	1428
7	Barry Barton	Stardust Special	1282
8	Mark Collins	Lanzo Bomber	1197
9	Geoff Malone	Record Breaker	1045
10	Norm Campbell	Stardust Special	611

Eastern States Gas Champs Results, continued...

Texaco

1	Mark Collins	Lanzo Bomber	3248
2	Peter Smith	Lanzo Bomber	3417
3	David Foster	Lanzo Bomber	3378
4	Paul Farthing	Lanzo Stick	3147
5	Darren Marshall	Record Breaker	2394
6	Barry Barton	Anderson Pylon	2392
7	Geoff Malone	Dallaire 90%	2364
8	Basil Healy	Coupe de France	2245
9	Peter Buckley	Lanzo Bomber	2162
10	Tony Farnan	Lanzo Bomber	2037
11	Chris Lawson	Lanzo Racer	1702
12	Brian Laughton	MG2 75%	837
13	Norm Campbell	RC 1	492

plenty of good natural rain, the country is laser-level flat, uninspiring, irrigated & given over to dairying in a big way.

Location must have something to do with it, they have the advantage of living behind the ranges, so have the undoubted benefit of more and better flying weather but I doubt they do more R&D than the small dedicated band of TOFFS at Lang Lang, who when they do get lift suffer from many models OOS.

Perhaps the CO-YUNE-AH mobs xlanishness is a vital factor, for they do stick together very closely when away from their home turf.

Perhaps it all boils down to the “prop-carving movement” started by Rob Taylor, taken with his ability to get motors going well must be a factor.

In Texaco they seem to have the “Kloud King” really sorted out, as anyone who witnessed Robin Yates at Jerilderie in the Fly-of would attest.

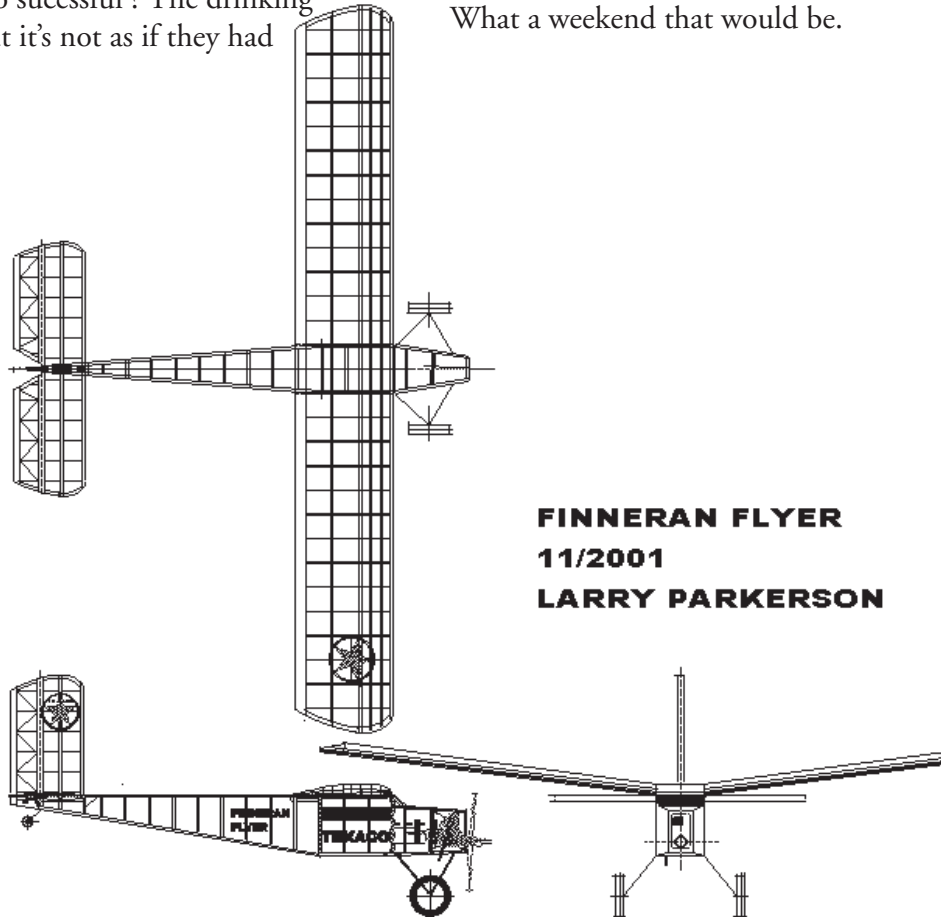
Perhaps CO-YUNE-AH should initiate a 1/2A & Texaco Challenge Cup to take on all comers in their undoubted strong events. A two-event format in the two most popular forms of O/T flying. With 1/2 A flown to the Ehling Trophy rules with more rounds & full size Texaco flown with all rounds (no shortening).

What a weekend that would be. BB

The CO-YUNE-AH Factor

First Jock McKenzie in 1/2 A Texaco, now Rob Taylor & Robin Yates in Texaco, all three regular & convincing winners in Open Competition against the large majority of Old Timer flyers who inhabit the coastal fringe.

What is it that makes this small band of modellers in a faraway country town so successful? The drinking water may be the answer, but it's not as if they had



**FINNERAN FLYER
11/2001
LARRY PARKERSON**

Ramblings, by Don Howie.

Recently took a trip overseas and some of my observations may be of interest to Old Timer flyers here in Oz. Whilst in Germany I visited the Deatsches Museum in Munich which has a quite amazing display of German model aircraft. German model engines from about 1918 are displayed together with the famour American engines from the thirties and the European diesels from about 1939.

German model development is displayed and their history of Radio Control with the Herr Stegmaier model from about 1950 that used pneumatic controls - very advanced at that time. Early German R/C from the late fifties; Grundig, Metz, Telecont, that used tuned filters were also most advanced at that time. Also the development of electric models by Fred Militky.

In England I stayed with David Baker of SAM 1066 and visited Old Warden and Middle Wallop. The cost of old engines at Old Warden was rather out of my reach as it is about 3 dollars to one pound. Free flight in the UK is very popular and many of the spark engines flown without radio control were British, such as the 6cc Stentor from 1947, and other low power models. I enjoyed seeing many of the old Frog kits that I remember as a boy, from rubber to controlline, such as the Radius and Vandiver models.

The SAM Champs at Middle Wallop was huge, the weather was very pleasant and I flew a "Tomboy" with an Indian Mills .75, until I got too tied chacing it for considerable distances. It was very pleasing to talk to many famous modellers, such as Vic Smeed and George fuller, who actually read my AMI column. George saidhe hopes to come to Australia next year. Ohil Smith, the Vernon kit designer was interesting, along with Norman Marcus who had some great F/F designs. I must have been lucky in the UK as it did not rain and I actually got sunburnt.

Over to the USA and after a fairly hectic drive from Indianapolis I arrived at a wet Muncie, not quite knowing where I was to stay. I managed to get accomodation at a motel next to the Headquarters Hotel and found that I had Sal Taibi, Larry Jenno and many other top modellers staying at the same motel.

Next morning I drove to the MECA Collecto in the centre of town at the Convention Centre; and this was like heaven seeing all the old engines and bits and pieces for sale. Out the back they were running old

engines, such as the Motton M5 radial 4 stroke, which was very quiet when running. The old Spark engines are now very good value in the USA as many of the old modellers have passed away and their collections are for sale. The perfect or as-new engines are expensive; but marked or slightly rough engines are at giveaway prices.

The AMA 1,000 acre flying site was amazing with bitumen roads going to the different areas and camping facilities on the site. The weather was a bit windy at times for the F/F flyers, but the highlight was the AMA Museum that I spent days going through, as it was so interesting.

They even have a lounge with armchairs with bound folders of all the old US magazines; you get out any magazine you require and can photocopy any article in the copying room. A truly amazing place, the Headquarters, that employs 50 people full time.



SAM Champs, Muncie, USA, August 2002

Don Howie holding the Brogginini "Stardust Special" owned by John Hatch of Canada.

Long wing version, 585 in² wing, PAW .19 diesel for A Texaco. 11x4 Topflight power point prop, Profilm (Oracover). In front of R/C area. Bitumen roads & surfaces contest sites.



SAM Champs August 2002, Muncie, USA.

Tom Ryan, SAM 600 USA member and "The Thermaleer" reader, shown here with his recent addition to his Lanzo collection. A 9 foot span Texaco "Lanzo Cabin Stick". Powered by a PAW .49 diesel, 14x7 prop, Solartex covering. Photo: Don Howie.



Trevor Boundy, erstwhile WebMaster of SAM 600 of Australia, starts his Gordon Burford Event model "Eliminator" before its test flight. "Eliminator", 50" span, Burford plain bearing 2.5cc diesel. Wings covered with SAMspan on top, Mylar sprayed black inside under.

P.W. Hobbies







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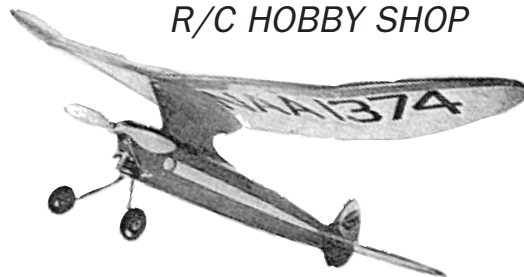
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