Model News

AUSTRALIAN and NEW ZEALAND MODELLING

MAY–JUNE
1965

REGISTERED AT THE G.P.O.
SYDNEY, FOR
TRANSMISSION BY POST
AS A PERIODICAL.

STH. AUST. SETS WORLD SLOT/CAR RECORD ★

DESIGNING AN R/O MODEL ★

VICTA AIR TOURER ★

2/6

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All above TX form part of our custom multi range, and will be available ex stock in the new year. If your particular requirements are not met by the above range, a note to us will secure details of our complete custom built range. All TX use the same basic circuit configuration, which is as follows — Crystal controlled M.O.P.A. R.F. stage utilizing a single 3A5 for high power output and absolute stability. Toroid stabilised tone generators. Stable over a wide variety of temperatures (140 degs. F.) and H.T. voltages (53-145V). Battery drain 4 m.a. (LO Power), 6 m.a. (simul) battery life at least 6 months.

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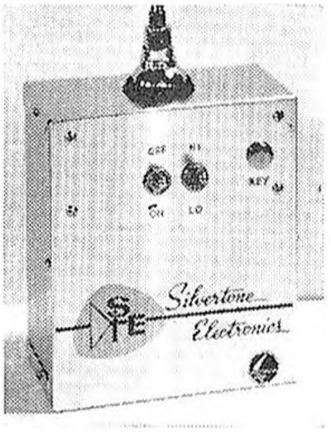

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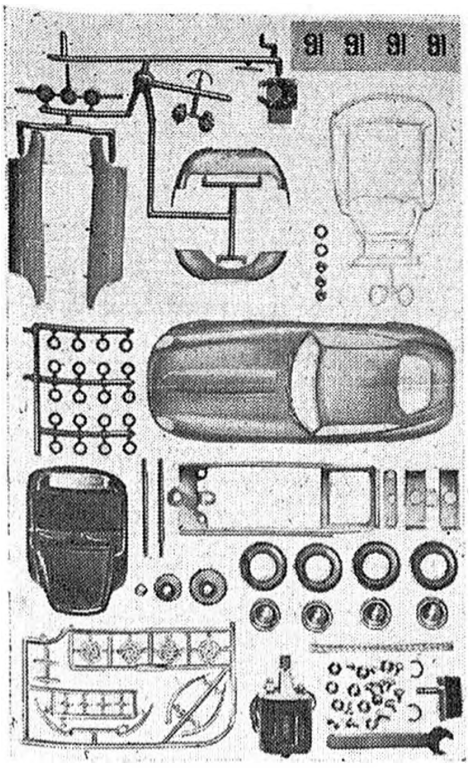

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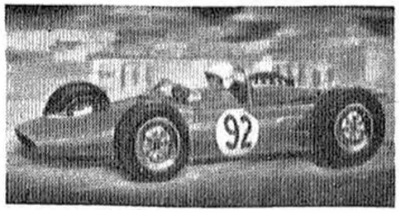

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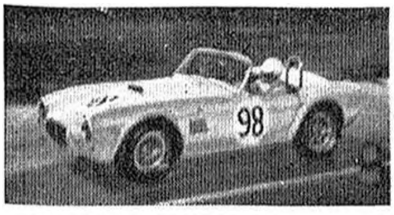

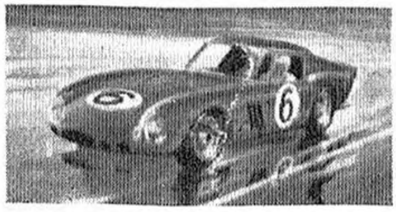

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MODEL NEWS

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Edited by ADRIAN BRYANT

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NEXT ISSUE JULY - AUGUST

Editorial deadline 1st of month prior to month of issue. Advertising deadline 25th of month prior to month of issue.

COVER STORY

The Victa Airtourer in Flight. To date Australias most successful entry into the light plane field. We wonder who will be the first with a scale model. The Airtourer has been on the market for 2 years and so far we have not seen one model. Who will be first?

Address all Correspondence to
EDITOR, 11 WEST KING STREET,
SOUTHPORT, QUEENSLAND

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News and Views

WHO WAS GUILLAUX?

Since we ran the article on "50 years of air-mail" in the December issue many of our readers have written for more information on the pilot.

Maurice Guillaux has several claims to fame in Australian aviation history. He flew Australia's first airmail flight — and carried the first commercial air freight — from Melbourne to Sydney from July 16 to July 18, 1914. He was also the first man to loop-the-loop in Australia.

Guillaux was born on January 24, 1883, at Montoiresur-Loir in France. On February 19, 1912, at the age of 29, he was issued with French Pilot's licence No. 749. On February 11, 1913, he broke all existing records for speed, duration and distance, flying a Clement-Bayad. He was also one of the first men to fly from Paris to London.

Guillaux arrived in Australia in the first week of April, 1914. He came in the S.S. Orontes with a new Bleriot monoplane as deck cargo and gave several thrilling demonstration flights in Aust including the first loop-the-loop seen in Australia.

On August 1, 1914, Guillaux crashed at the Ascot Racecourse injuring himself and almost wrecking the Bleriot.

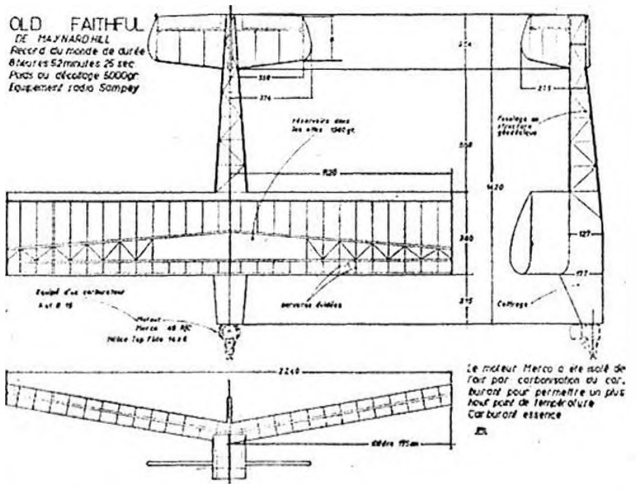
With the outbreak of the First World War, Guillaux returned to France and served with the French Air Force. In 1917, he was loaned to the Australian Flying Corps as an instructor to No. 5 Squardron. This was located at Shawbury in England.

Maurice Guillaux crashed as a test pilot at Villacoublay on May 21, 1917. He died and was buried at Neuilly-sur-Seine. — From Aircraft

R/C GLIDER RECORD

While on the subject of A 2's, former World Champion Ossi Czepa of Austria recently established a new record for Radio controlled gliders. The duration of the flight was 7 hrs. 1 min. and 18 secs.

The Model featured a fuselage moulded in expanded polystyrene with a butterfly tail. All up weight was 57 oz. with a gross area of 611 sq. ins. Radio gear was Variophon Varioton.



OLD FAITHFUL MAYNARD HILL'S WORLD RECORD HOLDER FOR R/C MODELS. 3 VIEW DRAWING FROM MODEL AVIA.

Sir,

TO THE EDITOR

I have read with interest your M.A.A.A. quiz in the March edition of Model News. I would like to give my opinion but not as per your questions but merely state a few points that I think could help modelling in our country. Some of these points are irrelevant to the immediate topic but I consider them as important as the rest.

Firstly:— There is a need for a Federal body to organize and bring together the States on an equal basis for the overall betterment of modelling, not just for the benefit of a check of record breakers and trophy hunters.

(ii) The need to instill an attitude of friendly co-operation between the States.

(iii) The organization of national championships so that all states have equal chances of competition every year, possibly by the arrangement of East and West eliminations.

(iv) To sponsor a team of top modellers to attend international competitions.

(v) The need to organize all modellers within the states.

(vi) The establishment of an organization (correspondent or otherwise) so that modellers of all degrees of experience can obtain advice from impartial persons on all modelling matters.

(vii) The improvement of modelling supplies so that Australian modellers can obtain the best equipment from all over the world.

(viii) The expansion of Model News so as to include more technical articles for experts and beginners in all fields, as well as the usual social (more or less) articles like Championship reports.

W. P. Wall
Leichhardt
Sydney.

SCALE MODELLERS

Bert Ronke and Ivor Stowe want to form a Co-op to import or have made locally, sets of left hand B.A. taps and dies for making turnbuckles etc. for Scale Modellers.

It is proposed to get 8.9.10.11 and 12 left hand taps and dies If enough enthusiats get together the price for a set of 10 should be about 50/-. Write to Ivor Stowe Kildare St. Blacktown and enclose one pound deposit.

Price will be shared equally — this a non-profit Co-op to help make better scale models.

PEN PAL.

Igor Klesniak of TOS Trencin, n.p. TRENCIN Czechoslovakia would like to correspond with aeromodellers in Australia. His interests are theoretical and practical and would like to swap magazines and experiences.

DAVE ANDERSON FOR FINLAND

One of South Australia's most consistent Towlines experts has decided to attend the World Free Championships in Finland later this year. Dave is flat out building 2 new A/2 sailplanes to take with him. Dave is leaving his old and battered but nevertheless consistent A/2 at home.

Dave was third in the A/2 Sailplane champships at the last Australian Nationals.

SPEED

The return of speed as one of the most keenly contested sections of the Nats. has created great interest in this section of Aeromodelling again. Jack Finneran who has promised a series of articles on the subject has this to say on speed at the last Nats.

'The competitors were the keenest bunch of speed fiers ever seeu at a Nats. Hard working and using a wide range of equipment they achieved a uniformly high standard of performance.

F.A.I. Speed Now firmely established. Modellers flying Mono line backward handles and assorted gear driven devices.

Super Tigre 15's Shone but didn't completely dim out the Torp. 15 R'S.

Class 11 or B. Speed was notiable for the arrival of the new O.S.29 R. An engine to watch. or may be the engine to use. It split the Torps with a second place. The Super Tigre 29's were there too and gave a good account of themselves.

In the big noise department the mighty Mac. 60 had to bow to a newcomer in the Rossi 60. Shades of the American Nationals.

Mono line did not oust the bi line brigade but brush up on your SHANZEL if you wish to stay in the speed fray.

Remember if you are not speed concious sneak up on it with a Proto Ship and have the best of two events — Speed and Team Racing.

WORLD DISTANCE RECORD TO SOUTH AUSTRALIAN ENDURANCE TEAM

By R. McLennan

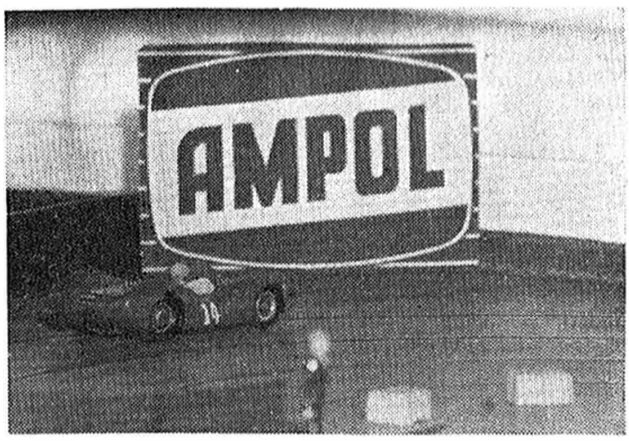
Duncan Laycock, of "Model Car" fame, donated a trophy for World-wide competition, setting the target at 150 miles. His trophy would go to the first team completing this distance in less than 24 hours. American and British teams have attempted to win the tropny, but failed to surpass the 150 mile target, reaching distances in the 120's. Our attempt, where four teams bettered 150 miles, has been accepted as a world record and the leading team has been declared the winner of the trophy.

The trophy will be accepted by a member of Australia House in London, on our behalf, and forwarded for eventual presentation here in South Australia — full details will be issued when available.

The winning team, which passed the 150 mile mark at 21 hours 52 minutes, was managed by Brian Wall with drivers, Alan Radley, Roy Shelton, David Beverley and Ross McLennan who also prepared the car for, and on behalf of, the Milluna Modellers Club — Elizabeth, South Australia.

A feature of the hobby throughout the World has been to reproduce, on a scale basis, replicas of full size motor races. The advanced state of organisation in the U.K. soon brought out the challenge for 24 hour endurance racing. Certain rules were formulated regarding cars and tracks, and a world-wide competition was organized to test cars and drivers over this distance. Unfortunately, the Commonwealth Countries were not considered in this, as no consideration was given to the time lag in magazine publications from the U.K. Example — Details of the competition were published simultaneously in the U.K. and U.S.A. in November 1964, the Australians "down under" received the relevant magazines in January, 1965 and through the young Association began organising an attempt for February 6th and 7th, 1965. The response for this attempt was gratifying, with four metropolitan clubs and one country club producing teams and cars overnight. In addition, Riverside Raceway, owned by Road Runners Model Car Club at 300 Port Road, Hindmarsh (bus stop 8) had only completed the construction of their 134' 7½" track in December, 1964. One week after the official opening, a 24 hour race was programmed for 1/24th scale cars in aid of Telethon, the money raised during the event was in excess of thirty pounds.

This event gave the teams useful information on car preparation which brought to light the fact that a car prepared for club racing only, would not necessarily go non-stop for 24 hours. Attention to detail was of prime importance, particularly, when the cars for the World record attempt would be three-quarters the size. Gear alignment and meshing called for minute attention, for example — the eventual winner used seven sets of gears before a satisfactory set was obtained for the actual race.



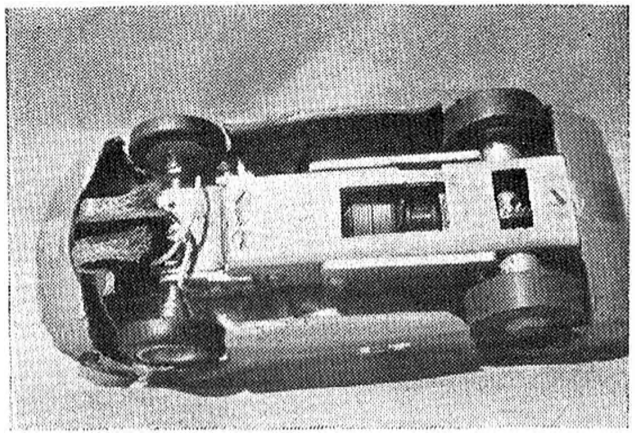
The Lotus negotiates the hairpin bend on the home circuit.

The fact that 8 teams from the five clubs entered in the race meant that some form of eliminations would have to take place in order to obtain the six finalists. Outside teams had to be given ample practice, as the challenge of racing on a circuit nearly twice or three times the size meant gear ratio and road holding problems. Problems which virtually had to be solved overnight. Waikerie had the added problem of being 110 miles away from the circuit, which called for real keenness in order to attend the practice sessions.

Team organisation, in some cases, came very close to full size Le Mans organisation, sleeping arrangement for non-duty drivers, meals etc., being only a small percentage of the problems to be solved. Would the drivers suffer from fatigue? Could the mechanics, timing clerks, managers stay awake and make the correct decisions for the team during the 24 hours?

Eliminations took place on the 2nd and 3rd of February with racing over 3 hours duration. This meant that the cars had to be capable of doing 27 hours plus practice, before the attempt would be over. The six teams, representing the clubs as follows, qualified for the final:—

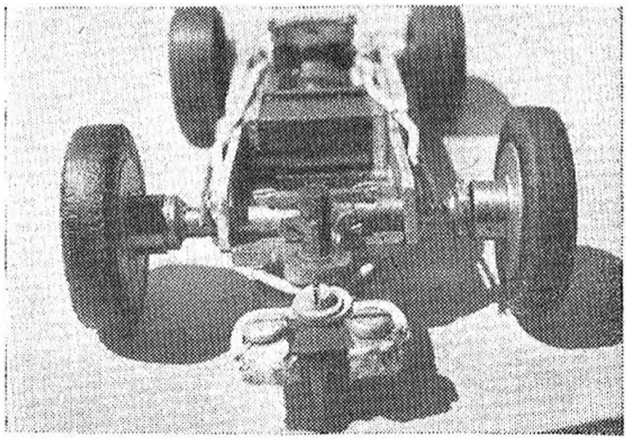
Milluna (Racing) Modellers Club
— Lotus 30.
Road Runners No. 2
— Ferrari 250 P.
Road Runners No. 1
— Porsche 904 G.T.
Kiwani Model Car Club
— Chev.-Stingray
Lincoln Park Model Car Club
— Ferrari 250 G.T.O.
Waikerie Miniature Car Club
— Ferrari 250 G.T.O.



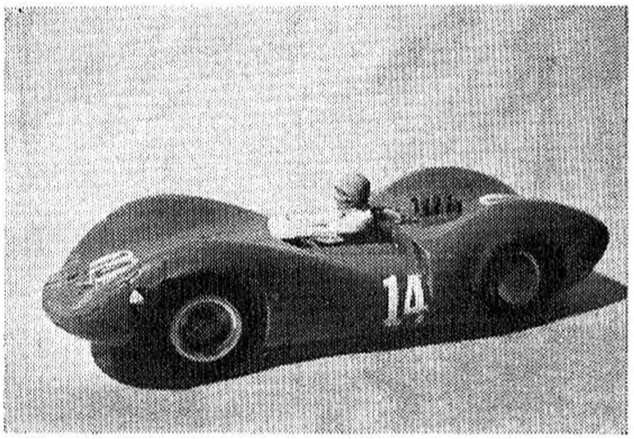
The underside of the winning Lotus.

The Lotus 30 was the only fully home-made car entered, the body was made from fibre glass and as an assembly, some 100 hours of testing, gear ratio changing, tyre changing went into the car before the event. The car was also the only car to be fully sprung at the front end.

The attempt, which was sponsored by Ampol Petroleum Pty. Ltd., began at 2 p.m. (South Australian time) on February 6th, 24 hours to go, with the target set at 150 actual, full size, miles or 5,883 laps of the Riverside Raceway. The Porsche 904 G.T. set the pace for the first 3 hours with the Lotus 30 hanging grimly to its tail, at a speed which would give 164 miles at the end of 24 hours. The Ferrari 250 P and Stingray battled for some hours for third position. The Lotus 30 was slightly slower on the straight but continually picked up its losses in the corners and soon began to build up a lead. The Porsche stopped several times for tyre changes during the race, after which its lap rate reduced until the tyres bedded in, the Lotus was not stopping for maintenance, or tyre changes at all, and at 12 hours, had a lead of 200 laps over the Porsche, the average, at this time, being 170 miles in 24 hours. The loss of its brush gear twice in succession slowed the car down, as the mechanics fought to get it mobile, so much, in fact that at 19 hours they lost their lead to the Porsche team, and by 20 hours, had dropped nearly 1 mile behind, the leading team having covered 137 miles. It was obvious that the 150 miles would be reached — but by which team? The Lotus team extended its driving spells up to three hours in an attempt to get the most out of the car. The Porsche then had its share of trouble with a broken motor connection which allowed the Lotus to take the lead at 145 miles, which it maintained until the end.



Front end of the winning Lotus 30, showing independent front sprung stub axles.



The winning Lotus after its 24 hour record. Damage to the front end occured in the last 10 minutes of the race. Windscreen removed before the race to reduce drag.

However, in the closing stages, additional drama appeared. The Lotus, with ten runs to go fractured its nose panel which allowed the Porsche to get within six laps when the race finished. Four of the six teams covered in excess of 150 miles as follows:—

Milluna	— 164.38 miles	— 6447 laps
Road Runners 1	— 164.23 miles	— 6141 laps
Road Runners 2	— 157.42 miles	— 6174 laps
Kiwani	— 156.09 miles	— 6122 laps

The Lotus covered the 150 miles in 21 hours 52 minutes, ten minutes ahead of the Porsche, one hour ahead of the Ferrari and one hour thirteen minutes ahead of the Stingray.

The results of the race were forwarded to the United Kingdom for ratification and notification has just been received that the team representing the Milluna Modellers Club — Elizabeth, South Australia, had won the trophy and were the first team in the World to cover the 150 miles. The distance of 164.38 miles was also accepted as a World record.

Radio Notes

RCMC of N.S.W.

By Ross Williams, P.R.O.

Our club scored well in the R/C events at the 18th Nationals in Victoria. Tom Prosser won three of the four events and Mike Pettigrew scored a very creditable third place in Intermediate.

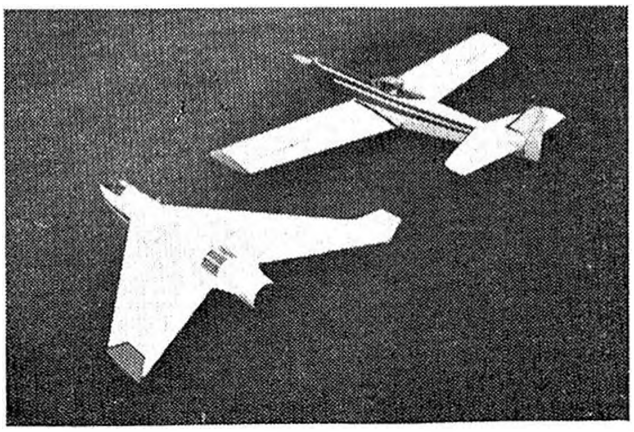
Among the new faces seen of late at Riverstone on Sundays is Philip Shambler who has only been in the game for about 6 months but already shows a lot of promise as a single channel pilot.

Richard Shaw is now flying a Merco 49 powered low wing multi of his own design which he finds more of a handful than his old "Humdinger" but which looks promising.

John Quigley has been around again lately taking advantage of the break in his studies which kept him busy last year. He is getting under way in multi and 1965 should see him flying 10 channels.

Tony Haseler impressed those present at Riverstone recently with an "Esquire" which showed a lot of promise. He was unlucky enough to have rudder stick on in a single channel contest with the inevitable result.

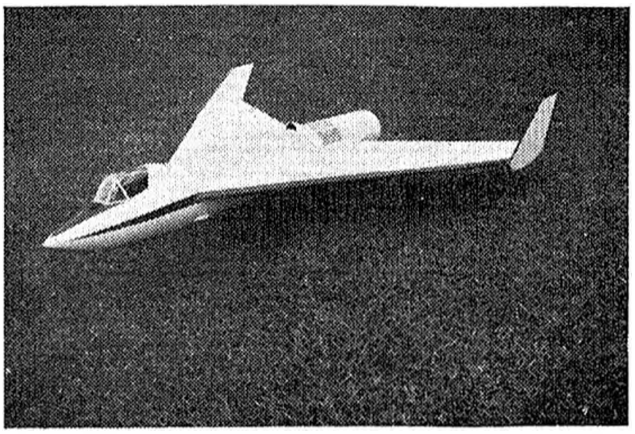
The next few months should see much practice for the N.S.W. State championships at Easter. These should provide some keen competition when the time comes.



A comparison of the screeming Meemie with a Modified Orion.

SCREAMING MEEMIE Mk. II

By C. W. Peake



An angle shot from the front shows the 'Eager to go' look which is characteristic of this design.

The ducted fan delta described in the August, 1964, issue of Model News, under the title of "Screaming Meemie", was badly damaged as a result of radio failure towards the end of that year. Although repairable, it was decided to build a new model, if possible incorporating the lessons of the first.

The first direction of improvement was weight. By careful selection of balsa, some modification of the structure, and dispensing with tissue covering (Mk. 1, although entirely planked and sheeted, was also covered with tissue) total weight was reduced to a shade over 51 ozs., 6 ozs. less than the original. This has improved initial climb-out though it is still shallower than a comparable prop job.

Secondly, the low partly sheathed undercarriage was removed, and a strip of fibreglass run along the underside of the fuselage. Initially the idea was to have no wheels at all, and a dolly was to be used for take-off. However, the surface of our field was so hard and dry that a temporary tricycle gear was bolted on in such a way that it is readily removable, and flights to date have used this gear. Removal of this will result in a further weight reduction of nearly 2 ozs., and this will be done as soon as we have some grass on which to land.

Aerodynamically Mk. 2 is identical to Mk. 1 Catapult launching is still necessary, at least from grass, although it would probably lift off unassisted from concrete or bitumen surface, and it is hoped that Mk.2 survives long enough to really test its possibilities.

Cumberland Radio Control Modellers' Club

Results --

Annual President's Cup. A closed competition for single channel models:

Expert class: 1st Ron Ewers, 2nd Lylle Winley, 3rd John Heeley.

Novice Class: 1st Bruce Townsend, 2nd Bob Foster 3rd John Sinnott.

A semi-scale "Cessna" by Veron built and flown by Tom Austin a new member of the Cumberland Club and his first attempt at model building, an outstanding first attempt and flies as well as it looks.

Nev. Sinnott manfully endeavours to start his "Houdini" for second round of Cumberland Club competition while judges, contest director and helper all offer varying degrees of helpful advice?

FLYING THE BONNER DIGIMITE PROPORTIONAL

By C. W. Peake

Captain Alan Wall of East West Airlines, based in Tamworth, recently returned from the United States with one of the first, if not the first, modern proportional control to appear in this country, and the writer was fortunate enough to be in a position to carry out the first test flights. Actually it was quite a team effort. Alan had the gear, Don Farrell produced the model and engine (a G-String with a Torpedo .45), and two Sydney modellers, Ian Macleay and Les Fairbairn, provided valuable assistance with repairs necessitated by engine failure just after the second take-off.

In common, I suppose, with most reed flyers I have frequently debated whether proportional is really any great advantage over reeds, considering what the reed expert is able to accomplish. Having now (all too briefly) flown full proportional, it is apparent that there are great advantages in at least two directions. The first of these is smoothness. In circuit flying and the minor corrections necessary in normal flying, it is nearly impossible to produce with reeds the degree of smoothness which proportional easily provides. The second is the freedom of manoeuvre provided by having all controls simultaneous. Even on the ground, the ability to hold the tail down with elevator while still being able to use the throttle results in tremendously improved taxying. Although I did not do and aerobatics (we encountered engine troubles and had to pack up for the day) one of the first things that comes to mind is sideslips — impossible with most reed set-ups, since you can't get rudder and aileron together.

The Bonner gear itself leaves very little, if anything, to wish for. There seems to be none if the so called "dead band" said to be characteristic of much of the earlier proportional gear. Response is immediate and positive, and the trim function is quite fantastic. No fighting a bad trim — you just trim it out on the control box.

The Digimite is a two stick layout, with elevator and aileron on one stick, and rudder and throttle on the other. Ailerons, elevator, and rudder are all trimmable, and an auxiliary control panel contains no less than four additional functions for retracting gear, flaps, and whatever you can dream up. I find no problems other than an initial tendency to over-control, the main thing for a reed flyer to remember being that the elevator control is now under the right thumb instead of the left.

To sum up, the Digimite is the closest I have ever come to dublicating full size aircraft by remote control.

THE VICTA STORY

THE VICTA AIRTOURER

Victa Ltd. was the first company to produce light aircraft commercially in Australia. Their VICTA AIRTOURER was granted a Certificate of Type Approval on July the 4th 1962. The Airtourer has been an outstanding success right from the start and there are now over 100 in service.

This was one project, all connected with avaition in Australia wanted to succeed. Yet most predicted otherwise.

What hope did a local firm have against the big three, Cessna, Beech and Piper on the Australian market? We need say no more than state that Victa now has 80% of the 2 seater aircraft market.

Production is now at the rate of 9 aircraft a month and in one month recently Victa sold 17 aircraft. All this in less than 2½ years, which is not long in the aircraft industry.

The lack of foresight by the UK aviation industry in producing a replacement for the Tiger Moth left the Aero Club field wide open to Victa. Over 30 Aero Clubs in Australia and New Zealand are now flying one or more Victa's. Many enquiries have been received from overseas and Victa now have 3 Airtourers on demonstration flights in England and Europe.

Recently Cessna brought an Airtourer and shipped it accross to the U.S.A. where there could be a big market for the fully aerobatic Airtourer.

The success of the Airtourer with the Aero Clubs has stimulated interest amongst private owners particulary in country areas.

Shortly after Victa announced their "Flyaway Plan" for the purchase of the Airtourer they received 820 enquiries and about 70% were from the country. They have now appointed four of Australia's major pastoral Houses in N.S.W.

Victa are in the aircraft field to stay and if as agents they do with aircraft what they did with mowers in 10 years, we should see some more interesting designs in the near future.

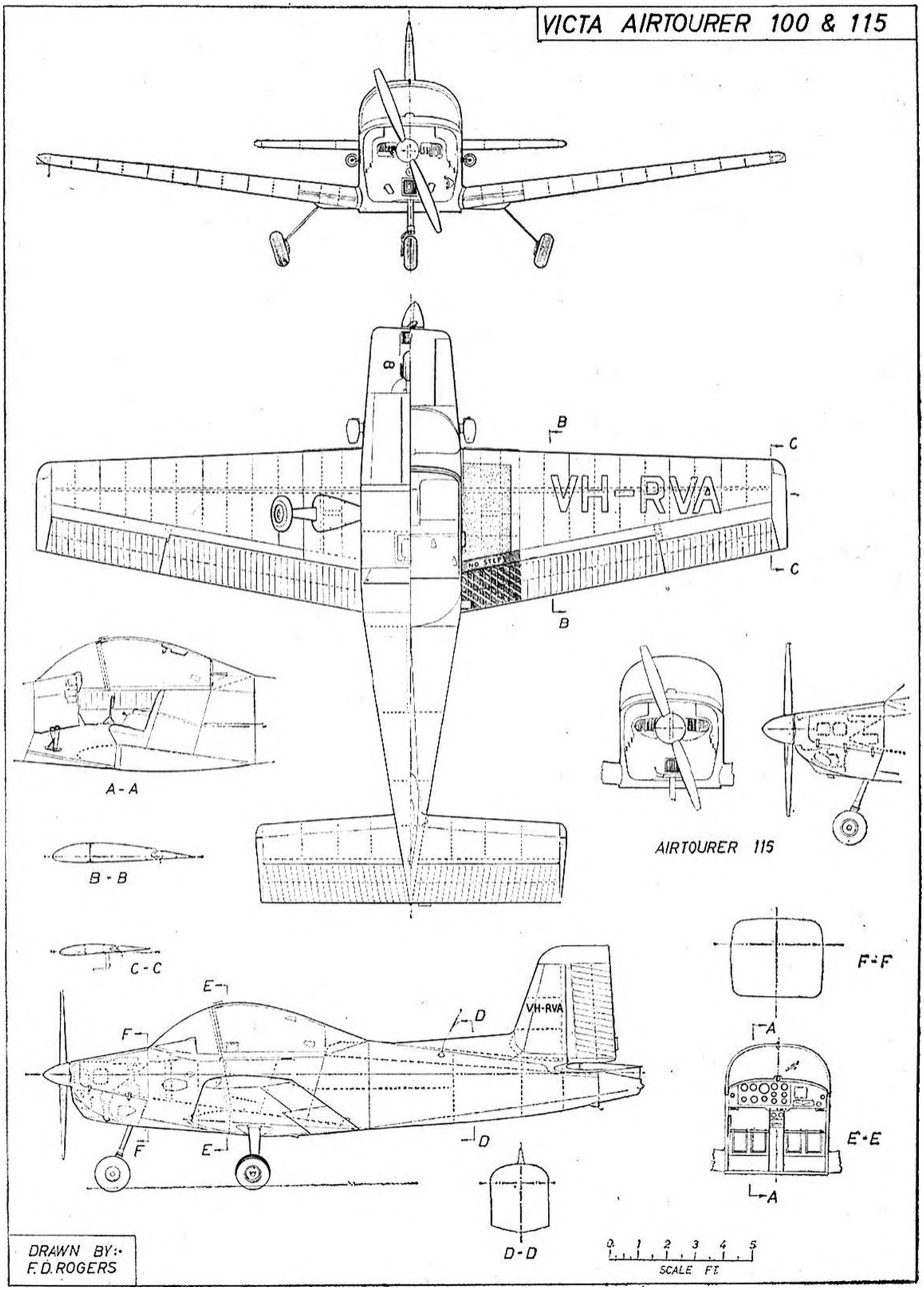
The entry of Victa Ltd. into aviation is not as strange as some may think.

Mervyn V. Richardson, Chairman of Victa Ltd., whose aviation division is producing the Airtourer 115, was interested in aviation as far back as 1914.

In that year Mr. Richardson and his brother set about designing an aircraft engine, basically for military purposes.

This was completed in 1916. It had diecast aluminium pistons and Mr. Richardson says that as far as he can gather, this was the first attempt to use diecast aluminium in a 'plane engine.

The brothers couldn't interest anyone in their engine despite the fact it stood up to severe bench tests so they decided to build a 'plane in which to demonstrate it.


VICTA AIRTOURER 100 & 115
VH-RVA
A-A
B-B
C-C
D-D
E-E
F-F
AIRTOURER 115
DRAWN BY:-
F.D.ROGERS
SCALE FT.

DISASTER

They envolved a contra-prop design, with two propellors working off a single engine. The theory of this was that the contra revolving propellor would take up the reactionary engine torque and make for better manoeuvrability

The craft was a monoplane and the Richardsons hoped to interest the R.A.A.F. in it

The 'plane came through its taxiing tests at Richmond in satisfactory fashion and was due to be test flown. But before this could happen Mr. Richardson's brother taxiing the 'plane himself, lost control and the aircraft was a total write-off.

The brothers, whose limited capital had long since given out, gave up the venture and went back to outside employment.

According to Mr. Richardson the contra prop idea was revolutionary at the time and was next heard of when the Italians used it in winning the Schneider Cup about 1933-34.

Mr. Mervyn Richardson was later to build his company on the success of the Victa mower, but his interest in aircraft has never lessened. He personally owns an amphibious aircraft and often flies to work from his Pittwater home.

The original design for the Airtourer won a competition sponsored by the Aero Club of Great Britain in a field of 104 entries.

It was submitted by Mr. Henry Millicer, now chief designer of the Victa Aviation Division.

,Mr. Millicer, who is Polish born, has been flying since 1935. When Germany invaded in 1939 he flew with the Polish Air Force against the Luftwaffe.

After the fall of Poland he escaped to England and flew with the Polish Air Force contingent attached to the R.A.F.

After being invalided out of the service in 1943, he took his M.Sc. in aeronautics and began design work for British aviation interests.

Mr. Millicer came to Australia in 1950 and was appointed to the Government Aircraft Factory, Melbourne, as Cheif Aerodynamicist.

There he became responsible for the aerodynamics of the pilotless Jindiviks and for the design of the Malkara anti tank missile.

In his spare time he worked on his entry for the British Aero Club's design completition.

After his win he organised a group of enthusiats who built a wooden prototype of the aircraft. This first flew in April, 1959, and later obtained its Certificate of Airworthiness.

Mr. Millicer joined Victa as Chief Designer in 1960 and the company decided to re-design the Airtourer for all-metal construction.

Less than twelve months after this decision was made the first Airtourer 100 was flying.

PERFORMANCE DATA

At an all-up weight of 1,650 lbs. and I.S.A. Conditions. All speeds T.A.S. quoted in Miles per hour; Knots and Kilometres per hour.

Model 115

Maximum speed at Sea Level 143 m.p.h. 124 kts. 230 kph.

Maximum cruise speed at 4,000 ft. 131 m.p.h. 144 kts. 211 kph. (1,220 metres) and 2,600 r.p.m.

Economy cruise at 4 00 ft. 115 m.p.h. 100 kts. 185 k.p.h. (1,220 metres) and 2,350 r.p.m.

Best average rate of climb from 900 f.p.m..

Sea Level to 1,000 ft. (305 metres) 274/m. min.

Stalling speed, full flaps 53 m.p.h. 46 kts. 85 k.p.h.

Service ceiling (100 f.p.m.) 14,000 ft.; 4,275m.

Time to climb from 1,000 ft. (305 metres) to 5,000 ft. (1.510 metres) 6.0 mins

Range at normal economy cruise at 4,000 ft. (1,220 m.) and 45 min. reserve st. miles; n. miles; kilometres 581 st. m. 505 n. m. 935 m.

Rate of Roll at cruise speed 110 degrees sec.

Short field take-off (ft.) (m.) 1 250 ft.; 380m.

Short field landing 1,130 ft.; 345 m.

Normal take-off 1,530 ft.; 465 m.

Normal landing 1,570 ft.; 478 m.

Fuel, total usable capacity imp. Gals.; U.S. Gals.; Litres 29 gals. (imp.) 35 gals. (U.S.) 132 l

Fuel consumption per hour imp. Gals; U. S Gals.; Litres 6.0 gals. (imp.) 7.2 gals (U.S.) 27 l.

SPECIFICATIONS VICTA AIRTOURER MODEL 115

AIRFRAME

Australian manufactured, all metal tricycle undercarriage, two place aircraft with side-by-side seating. One piece, single spar, tapered chord wing. Full span ailerons and flaps including split flap beneath fuselage.

CONTROLS

Arm rest control column, dual adjustable rudder pedals. Complete control system dependability is achieved by the use of rod and mechanical linkages on ailerons, flaps and elevator; with rod and cable linkages on rudder.

STRENGTH AND SAFETY

Stressed to 9 g design ultimate load factor permitting high turbulence penetration speeds and permitting full aerobatics under limit flight loads of 6 g at 1,550 lb., 703 kg.

Safe turbulence penetration at gross weight can be made at maximum cruise speed, while maximum aileron and maximum rudder deflection can be applied up to maximum dive speed.

Maximum design structural diving speed 220 knots, 253 m.p.h. 408 km/h. (Note: Engine overspeed limitation with fixed pitch airscrew 175 knots, 201 m.p.h., 323 km/h.). Safety under severe deceleration conditions with loose safety shoulder harness is provided by complete absence of obstructions in front of occupants, because of side arm rest control column and moving forward of instrument panel under 6 g. deceleration.

Further safety is provided by soft plastic instrument panel coaming collapsing under severe deceleration contact.

Minimum structural damage is ensured by "fail-safe" undercarriage shearing prior to any excess impact loading being transmitted to wing. Gag type fuel cell protected by foam sandwich under-pan stressed and tested to 30 g.

ENGINE AND PROPELLER

Airtourer 100—Continental 0-200A, delivering 100 h.p. at 2,750 r.p.m., fitted with McCauley metal propeller, 69 inch, 175 cm. dia, 50 inch, 127 cm. pitch. (Note: Venturi installation is necessary for air driven instruments, one for turn and bank indicator, two if artificial horizon and directional gyro are also fitted.)

Airtourer 115 — Lycoming 0-235 engine, delivering 115 h.p. at 2,800 r.p.m., fitted with McCauley metal propeller 70.5 inch, 179 cm. dia., 53 inch, 135 cm. pitch. Engine is equipped with vacuum pump for air driven instruments.

UNDERCARRIAGE AND BRAKES

Wide track (9 ft. 2.75 m.) tricycle undercarriage with nosewheel steerable from rudder pedals privides small minimum turning radius for inner wheel of 9 ft. 6 ins. 3m. Dual hand operated hydraulic disc brakes with park lock.

CANOPY

Aerodynamic lift, sliding type, three rail suspension, maximum vision screen and canopy with covered canopy top for cabin comfort.

BAGGAGE

Baggage compartment aft of seats; capacity of 100 lb., 45 kg., with luggage tie-down provision.

DIMENSIONS AND AREAS

Wing span 26 ft., 7.93 m. Wing area 120 sq. sq. ft., 11.2 sq. m. Length Model 100 — 20 ft. 9 in. Length Model 115 — 21 ft. 5 in. Height 6 ft. 10 in., 2.08 m. Cabin Width 42 in., 1.07 m. Cabin Length 68 in., 1.723m.

WEIGHTS AND LOADINGS

Aerobatic 1,550 lb., 703 kg. Gross weight 1 650 lb., 748 kg. Empty weight 1,050 lb., 475 k.g. Wing Loading 13.3 lb./sq. m. at 726 kg. Power loading 16 lb. per h.p. at 1,600 lb., 7.26 kg. per h.p. at 726 kg. Airtourer 115. Power loading 13.9 lb. per h.p., 6.3 kg. per h.p.

STANDARD EQUIPMENT

Tubeless tyres (interchangeable all three). Control gust lock. Cabin heating and ventilation. Safety shoulder harness. Outside access steps and hand grips. Jacking points. Cabin sound proofing. Ash tray. External tie-down points. "Dayglow" fibreglass fairings and propeller spinner. Cabin light. Instrument panel lighting. Navigation lights. Overall paint.

INSTRUMENTS

Air speed indicator. Sensitive altimeter. Compass, magnetic. Tachometer with engine hour log. Oil pressure gauge, oil temp, gauge (combined unit). Electric fuel contents gauge. Turn and balance (Model 100 — air driven from venturi. Model 115, engine driven VAC pump). Generator warning light.

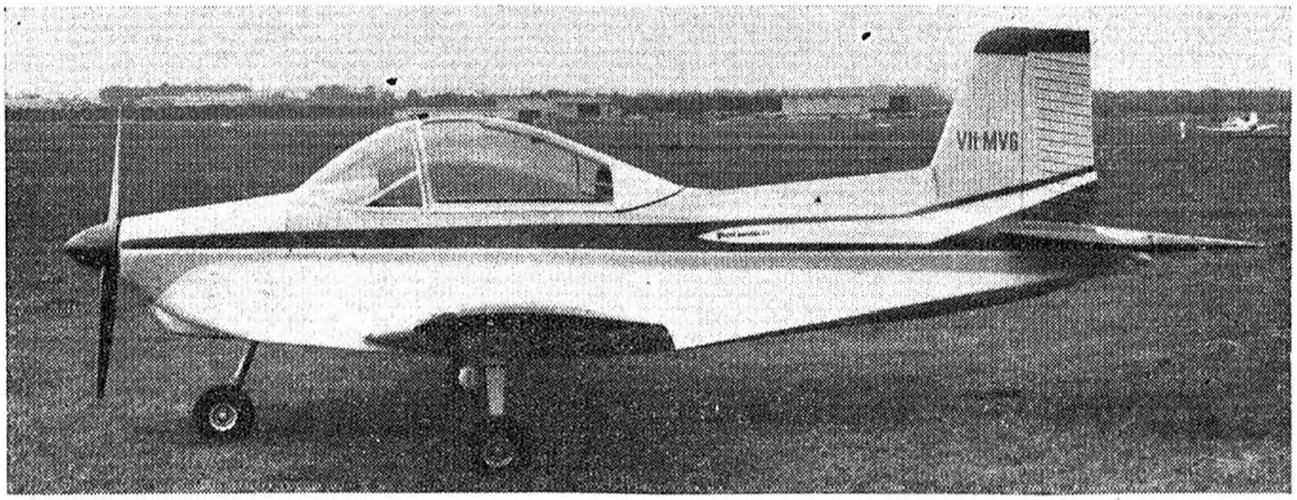
ENGINE EQUIPMENT

Radio shielding. Electric auxiliary fuel pump. Dual magnetos. Key operated ignition. Electric starter — Mechanical engagement (Airtourer 100). Solenoid (Airtourer 115). Generator 35 amp. 12 volt aerobatic battery. Oil cooler. Mixture control. Dual throttle controls. Carburettor heat control.

OPTIONAL EQUIPMENT

Airframe: Sun blind. Canopy, Rotating beacon. Landing lights.

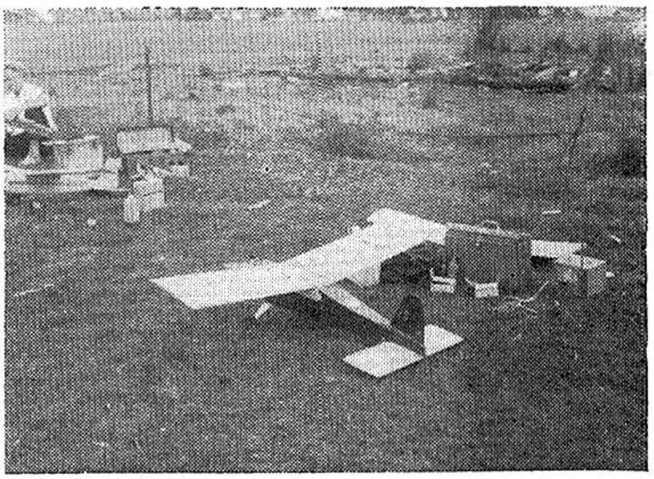
Instruments: Artificial horizon. Directional gyro (plus additional venturi Airtourer 100). Cylinder head temp. gauge. Clock. Outside air temp. gauge. Fuel pressure gauge. Vertical speed indicator. Ammeter. Vacuum gauge



DESIGNING AN R/O MODEL

By John Quigley

An old faithful Cicida flown into second place by Bob Foster at the recent Cumberland club competition recent Cumberland club competition. For single channel radio controlled aircraft.



Are you trying in vain to make your single channel model to loop and roll and wondering why it just zooms or a slow spiral? Then, by using the following ideas, design your own brainchild. I use the term 'ideas' because these are ideas tried in practice which work -- not theories from full size practice applied to models that are hard to see the reseult, if any.

First let's consider the rules which cover the type of radio equipment to be used: a single tone or carrier obviously; these days, for reliability, a tone system with a continuous carrier would be chosen for max reliability. Secondly, rudder only and optional motor control, which is virtually essential as this is an advantage for wind penetration.

Let's now consider a suitable model. It must be able to do the basic manouvre: Straight flight, loop and roll. Combinations of these three constitute the flight pattern, which will be given later. Previously I mentioned that motor control was a distinct advantage so you must have or going to have a motor which will throttle well. At the present the most popular size is a 0.19 cubic inch capacity. This must be known before you start your brain-child as everything depends on it.

Start by drawing a rough sketch of the shape of your model so that you know what you want before you start. The eventual model will be smaller than the model used for the F.A.I. precision pattern. With a smaller model it will climb much faster to enable 2 to 5 turns of spiral dive before each manouvre. This has to be done six times in 12 minutes including take off and landing. From this you will be thinking of a streamline rocket, but don't over do it.

By this you have selected your engine, now if the wing is too small the wing loading will be too high and will probably take a long run to R.O.G., for this a good figure is 110 sq. inches to 150 sq. inches / c.c. of engine capacity.

You now have a wing area, knowing that you need 9" to 10½" hole in the fuselage to install the radio gear, a wing span can now be calculated. Don't be alarmed if it comes out at say 48" to 54" this will start to show signs of a winner.

The tail plane area is next to calculate. It has been found that 28 per cent. to 30 per cent. of the wing areas. Do not go any smaller than 25 per cent. as it will become unstable. The tail plane can be any shape although a parallel LE and TE is much easier to make. For a shape that looks right keep the aspect ratio (ratio between the span and chord) to somewhere between 3 and 5.

We now have a shape for the wing and tail, the next vital component is a container ior the radio gear and a means of seperating the motor-wing and tail namely its fuselage. The length of the nose has been experimented with and is best if it is between 0.75 and 1 wing chord. This length is from the back of the propeller to the LE of the wing. The tail moment that is from the TE of the wing to the LE of the tail plane lies between 1.3 to 1.5 wing chords. The fuselage should be made deep enough to easily hold the gear, with the batteries under the tank. Remember you are after a clean design. Fuselage width is not critical but should be kept as narrow as practical, 2½" to 9" is a neat figure.

Riging angles of the wing and tail are more or less standard at 2½ deg. to 4 deg. and the wing and zero on the tail as a start. The latter can be altered when trimming.

To obtain rolls with an R/O model a rather large rudder and throw must be used. It can be almost any shape or size standing around 5" to 8" high and the tail plane chord width at the base with approx. 40% to 45% of this movable. Two important points to remember; don't forget to aerodynamically balance it and secondly stear away from swept back shapes used on a modern multi design, as I have found them very ineffective. Rudder movement varies with each model. Start with say 3/8" and increase it until either you have enough to do aerobatics or the model flies you.

At this stage we have an outline of the model, now to put some depth into the wing and tail. Lets start with the tail plane as it is the easiest. Earlier you calculated the span and chord. From the chord the thickness is determined, it may vary from 8% to 11% of the chord and symetrical in shape. Flat or lifting tail planes can be disasterous the former is critical to trim and the latter gives a terrifying sight as it can outlift the wing if the speed is too high. These models are lightly loaded and generously powered and consequently high speeds are obtained after short periods of spiraling.

A wing thickness of 11% to 14% of chord having a flat bottom with an entry point of 20% to 25% (see fig. 1). A Clark Y section is a good shape to start with if you do not wish to design your own. Diheadral angle for R/O models is standard at 5 deg. for high wing layouts with an increase to 7 deg.-9 deg. for low wing configurations.

A model which will climb like a rocket must be light also, a model can't be made strong enough to survive every prang — so don't try. Just keep it light, make it strong enough to take normal hard bumps.

Finally a few words on trimming. An initially different technique is used for the new rules as compared to the F.A.I. pattern.

Set the thrust to 3 deg. right and down, adjust either or both if necessary. Now move the c.g. forward until the model will loop. As the looping becomes easier rolls become harder, about 20 deg. -25 deg. is an ideal place to start. Once the loops are achieved increase the rudder throw until a smooth roll is obtained. Next step, is to adjust the packing at the stab until a reasonable reversal is achieved. When this is found [in calm conditions] no more than a 1/32 should be added for very windy conditions as the diameter of the reversal increases and the nose will drop like a stone in turns.

This can be dangerous as during a landing approach the result is a zoom with the inevitable . . . .

Follow these few ideas and your next model will be aerobatic and you will be able to have a ball flying it. Aerobatic Pattern:—

1 Take off — (a) R.O.G., (b) Hand Launch.
2 Straight flight into wind from transmitter for 10 sec.
3 Left turn 90 deg. followed by right turn 270 deg.
4 Straight flight downwind to transmitter.
5 Wing over.
6 Two loops, consecutive.
7 One roll, in either direction.
8 Immellman Turn.
9 Reversal.
10 Cuban eight.
11 Rectangular circuit.
12 Landing.

DOWN THE TRACK

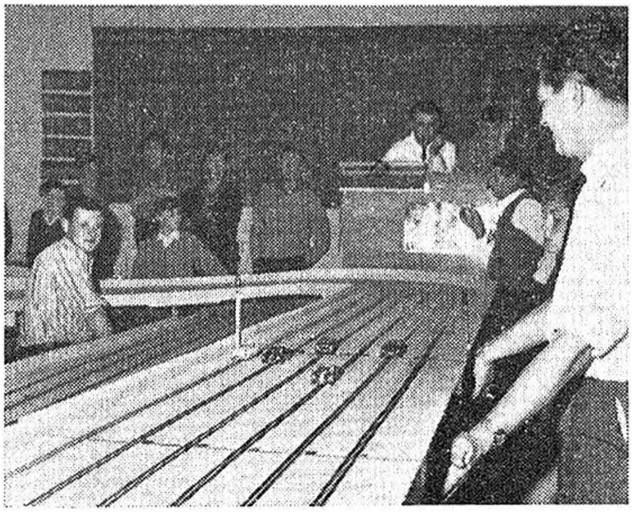
John de Horne discusses Scenery for WRENN & MINIC.

One of the beauties of the smaller scales in racing cars, is the terrific range of scenic extras that you can purchase to dress up your layout.

The Model Railway men have had a wide range of equipment built up to approximately 186th scale and we can adapt much of this to add the scenic appeal and therefor the realism of our layouts. The first thing to disregard is actual scale. While we can adapt much of this to add the scenic scale and going over them with calipers to be sure that the vital measurements are correct, this is not the way to develop a "scene" that will live.

The first essential is a backscene. Its purpose is to extend the visible area of a track and give it a setting. It is possible to purchase sheets of backscene ready made — as was illustrated last month in my photograph of the Indooroopilly circuit — and for those sufficiently skilled, a custom painting job is ideal. However, if costs and lack of skill deter you, here is a simple method which I have used with success on several occasions.

First find a suitable sheet of hardboard or ply; fill the holes and prime it. White primer is usually most satisfactory though I have used grey or even blue. Over this priming, paint a coat of Pale blue to represent sky — avoid very bright blues unless your track is set in Disneyland and remember that colours often dry darker than they are put on. Pale blue Berger Breeze broken down half white, is good colour. It has the advantage of being without a gloss, and needs only one coat. If you wish, simple cloud effects can be worked in while wet, using whites and greys. You'll find a hint of change of shade, will be more effective than an elaborate "skyrama" unless you are a real artist.



The start of a race on the track used for the Duncan 150 mile Trophy.

General view of the Road Runners Riverside Raceway.

Using spray greens, browns and greys, now sketch in some hills over the blue — later these can be brushed with clear glue. Green and brown scatter material is then blown on. Already your background is looking quite presentable. A few pieces of lichen, glued on near the baseboard, will heighten the effect.

Now relief buildings are used for the background and if you are modelling WRENN, the AIRFIX ones will do very nicely. These should be made up in the normal way and painted. Carefully cut each in half, using an Exacto saw or similiar fine tool blade. Each kit will give you two basic relief houses used in this way — cost about 2 9d. each — and these can also be glued to the background and baseboard.

Remember, when choosing your buildings, that larger scale units are used in the front of the layout, gradually decreasing in size towards the back of your baseboard. This gives a perspective to the entire scene, and will make your baseboard look much wider than it really is.

You will have a lot of fun converting kits and using your ingenuity to provide unusual applications for others. For example, recently on a WRENN layout, we used an Aurora school as a Member's Club House, and the extras provided in the kit, made a children's playground near the public parking lot. An Old Time Barn kit became a ticket office, cum garage, for the paddock area, while a conventional railway signal box, became the official control tower.

Ingenious thinking to you all, until we meet again. Down the Track, John.

PLASTIC MODELLING

(By I. CARVER)

This month we take a model that has been eagerly awaited by modellers for years. It is the 1/72 Junkers JU 88. There are few aircraft that can claim as many modifications and adaptions as the JU 88.

During its career it was used as a bomber, day-fighter, reconnaissance, torpedo bomber, ground attack and trainer, and was even used as a pilotless missile. There are two 1/72 scale kits available, one from Frog and one from Airfix.

Taking the Airfix kit first, I think that this is about the best plastic model aircraft kit yet produced. The outline is accurate and detailing is superb. All parts fit well and the retractable undercarriage works very well. There is an excellent transfer sheet and I am glad to see that Airfix are at last including Luftwaffe unit badges. I can find only two faults in this kit. Firstly, I cannot see the sense in having a retractable undercarriage if the doors will not open and close. I think that on a kit this size, Airfix could have included movable doors. The second fault is the canopy which is supplied in three pieces. I can see no reason why Airfix couldn't have moulded the canopy in one piece. However, apart from these two minor faults, this is an exceptionally good kit and is real value for money.

Now to a new offering from Revell. This is a neat little kit of the Nakajima Ki 84-la "Frank" to a 1 72 scale. This is quite a good kit and is fairly accurate except for the shape of the horizontal tail planes.

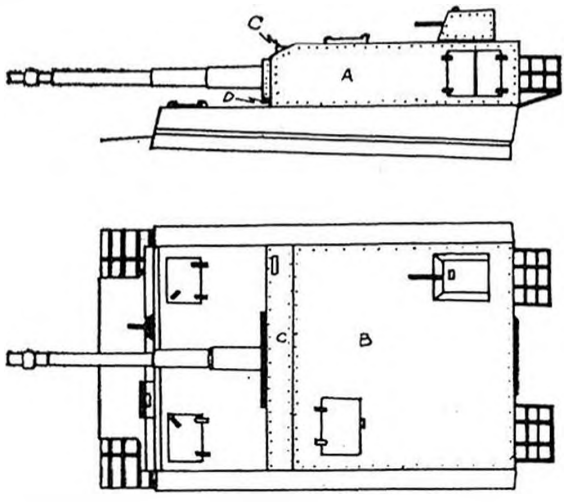


FIG. 1

Parts are neatly moulded with a minimum of flash and all parts fit well. The colour scheme is colourful and the end result is a very attractive kit. There are two more kits to be released very soon by Revell. They are the Polikarpoo I 16 "Rata" and the Brewster F2A "Buffalo," but more of these when they come to hand.

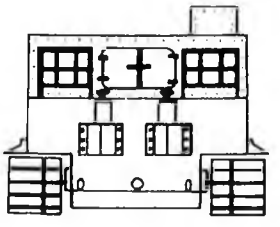


FIG. 2

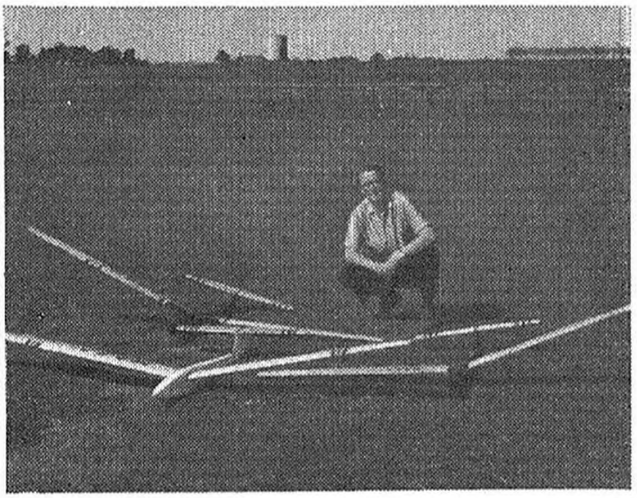
This time I am including something for the military modeller. This is a conversion of the Airfix "Tiger" tank to the Porsche "Elephant". The "Elephant" was a Porche design for an 88 mm self-propelled gun based on the Tiger chassis. Assemble the Tiger as per the instruction sheet but leave off the hull top section. Then cut the frontal armour away from the hull top directly behind the ridge which divides the frontal armour from the hull top. Then, using the full size drawings supplied, cut a new hull top and the sections for the blockhouse etc., from plastic card. These sections are then assembled to match the drawing. Assemble the turret leaving off the top. Then cut down both sides and across the bottom 1/2" from the top of the gun mantle. This section is then cemented to the hull top under he new blockhouse roof. The mantle and gun are the same but the mantle must be offset so that the gun barrel is centred in the middle of the tank. Then cut two small sections of card to fill the spaces on either side of the gun mantle. The tank should then be finished in matt dark grey overall.

During the past fifteen months Airfix have used a four lane racing circuit for demonstration purposes in Sydney and suburban stores, and various hobby exhibitions. One set of cars has been used, and so far, these cars have travelled 3,298 actual miles or 105,536 scale miles representing 1,150 896 circuits of their layout which was created from the contents of an M.R.11 and M.R. 15 stock set. The track and cars certainly show signs of wear, but they still have a life of thousands of miles.

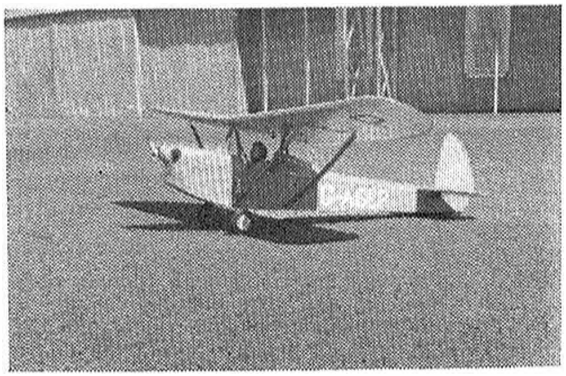
This achievement is by no means a record as the Airfix Factory has operated cars for an actual mileage in excess of 7,000 miles

PHOTONEWS— brings you a selection of readers' photographs

An original bipe by Wal Marcin who is probably the first modeller to fly radio in this country. Model is for single channel and really performs well.

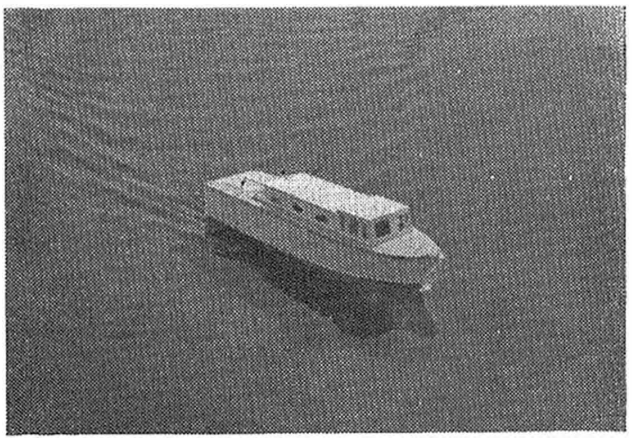


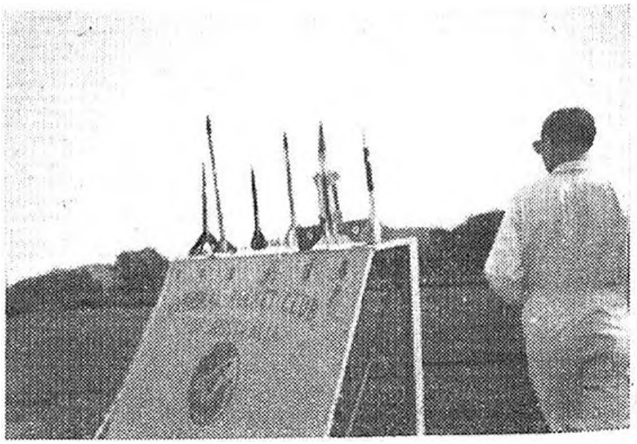
Tom Hingerty of The R.C.M.C. of N.S.W. with a trio of Radio controlled sailplanes. The sailplanes feature fibreglass fuselages moulded by Tom.



A Luton Minor by Phillip Talbot of Macquarie. Magazine Scale has revived a lot of interest in Flying Scale again.

"Telectra" built by Les Lavender of Camden. Uses Jap motor and Honda motor cycle battery. Rudder and motor control on Graupner Servo. Reverse is amusing to watch. Radio control boats are now very popular.





Model Rocketry is really catching on now. Here Brian Crompton is shown checking rockets on the Rocket launcher at a recent meet outside Sydney.

RULES GOVERNING NOVICE FLYING SCALE

Control Line Free Flight Radio Control

1. DEFITITION

Novice Flying Scale Models shall be built from drawings showing model construction, these drawings must depict a model scaled down from a full size aircraft and must be the work of an entrant who has never placed 1st, 2nd or 3rd in a State or National True Scale event and has never placed 1st in a State or Nationals Novice Flying Scale event.

2. CONTEST REQUIREMENTS

(a) M.A.A.A. safety requirements shall apply.

(b) Line sizes:— The sizes as laid down for Scale Contral line models in the official M.A.A. rules book shall apply.

(c) Processing: —
  (i) All models shall be processed after the qualifying flight, and
  (ii) All models shall be impounded immediately after the qualifying flight.

(d) Entries shall be built from planes which are published in magazines or kits or from some recognised commercial source and depicting a model scaled down from a full-size aircraft.

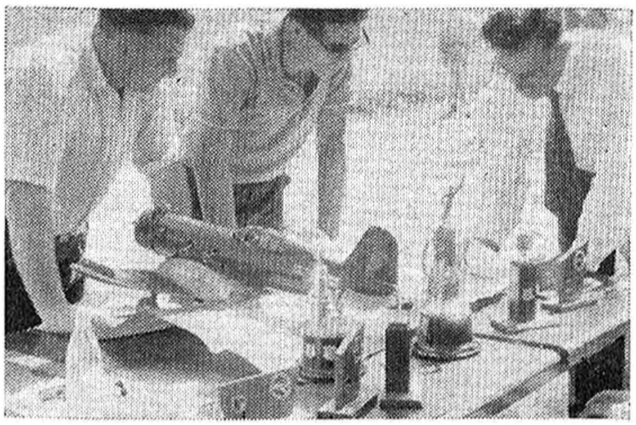
(e) The contestant must produce with the drawings at least one photograph, scale three view or silhouette of the full size aircraft to show the model is designed in proportion. If these cannot be produced, the contestant will accept the judges' decision as to scale appearance. Semi-scale models will not be accepted. e.g., wings built to one scale and fuselage built to a different scale.

(f) Colour markings and details are to be consistent with aircraft type and use, but need not be proved authentic.

3. CONTEST PROCEDURE

(a) All models will be judged for appearance, workmanship and accuracy to the drawings and details. The model shall lose 2 points for each one-eighth of error on each of five measurements.

(b) (i) A Concours d'Elegance event will be held, the winning entry gaining 15 points for starting which will be added to total score.
  (ii) Models shall be awarded 15 points for starting the qualifying flight on the first attempt.
  (iii) Up to 15 points shall be awarded if motor control is demonstrated during the qualifying flight.
  (iv) Extra Engines.
  A bonus of 10 points for each engine over one shall be given provided each extra engine contributes to thrust during the whole of the official flight time.
  (v) Free Flight models will receive a bonus of five points for each 10 seconds over the qualifying flight time to a maximum of 1 minute.



Even in Magazine Scale judging takes time. Shown here judges Jack Prince, Frank Barsanti and Bert Ronk. The model is a Vought Corsair by Denis Slattery.

  (vi) Control-line models shall receive the following for performaning loop, wine-over and inverted flying.
  Wing-over up to 5 points K-1
  Loop up to 5 points K-2 2 loops K-4
  Inverted flight up to 5 points K-3.
  The patterns as laid down in M.A A.A. rules book shall apply to the above manouvres.

(c) QUALIFYING FLIGHT: This must be made under the model's own power (gliders excepted) with no whipping. All models in all classes may be hand launched but will suffer total loss of take-off points on doing so. This flight shall consist of 30 seconds or 7 laps for control line, 20 seconds for free flight.

(d) OFFICIAL FLIGHT. Contestants shall have 5 attempts to become airborne for an official flight.
To start 1 engine 2 mins. per attempt.
To start 2 engine 3 mins. per attempt.
To start 3 engine 4 mins. per attempt.
To start 4 engine 6 mins. per attempt.
Failure to log an official flight in the time laid down shall disqualify the entrant.

(e) RADIO CONTROLLED MODELS. These shall be controlled by a single channel carrier or tone transmitter and shall fly the single channel pattern as laid down in the 1962-64 M.A.A.A. rules book except that, hand launch is permissable with loss of all take off points and the spiral is deleted.

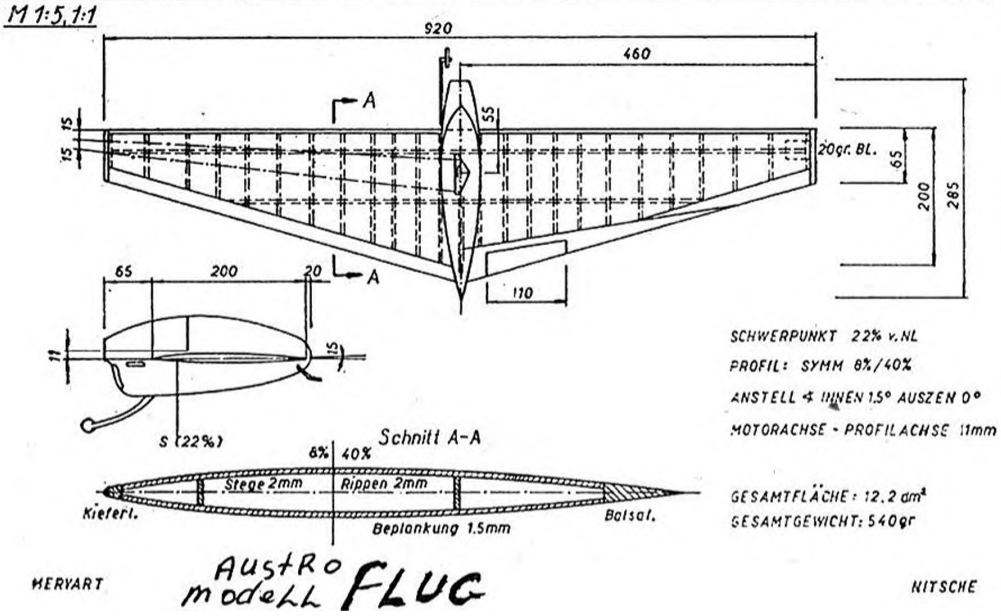
(f) JUDGES: There shall be 4 judges: two each for flight qualifying and static processing. The judges in each phase shall not confer until after the final scores are settled.

PLANS FROM OVERSEAS MODELLING MAGAZINES

Metric Measurements

FAI TEAMRACER für 2.5cm von Bugl-Nitsche-Hengsberger 1.3.1964

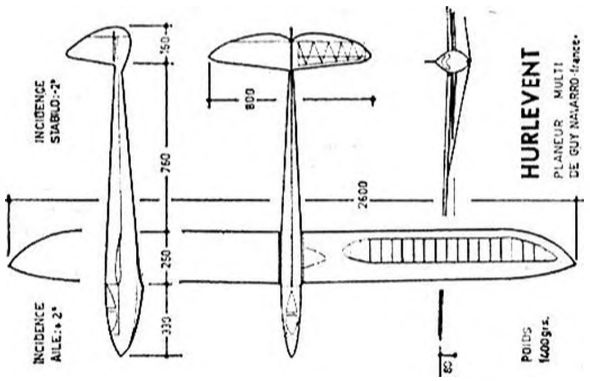
M 1:5, 1:1

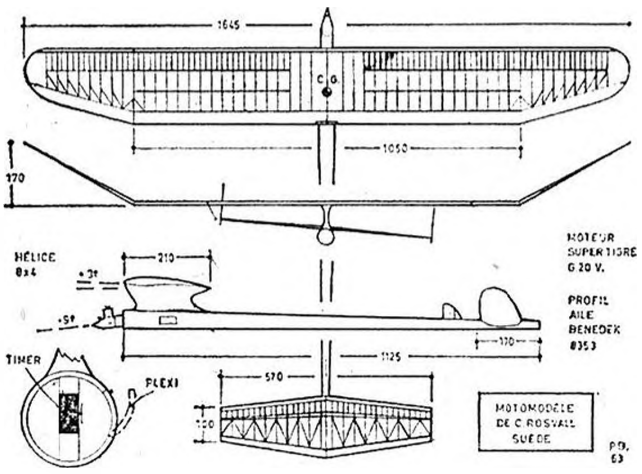


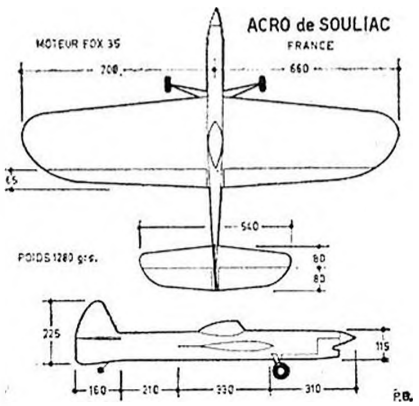
MERYART

AustRo modell FLUG

NITSCHE







BOOK REVIEW

The Douglas DC-3

Two more books to hand in recent months in Len Morgan's "Famous Aircraft" Series.

If you have a soft spot for the DC-3 then "The Douglas DC-3" by Len Morgan himself is a must for you.

The story of the DC-3 as told by Morgan is a fascinating one. For this was the plane, more than any other single type, that took air travel out of the experimental stage and made it, safe, dependable, and profitable. The book is printed offset and of very good quality. It is a large book measuring some 8½ by 11" with dozens of interesting photographs.

We in Australia have always regarded the DC-3 as our own and it was a little disappointing to read through the book and not see a mention or a photograph of the DC 3 in Australia. They have been in Service in Aust. since 1932.

However, this is a small point — the story of the DC 3 is so immense, that I doubt if it could ever be entirely told. Not yet anyway as there is still over 3,000 still flying. The DC 3 is the aeroplane that's been everywhere and done everything.

The back contains a reprint of the Pilots' Training Manual, and after reading it you feel quite confident in hopping the next DC3 you see sitting on the runway and taking off.

Our copy W. E. Hersant, 228 Archway Road, N. 6 London, England.—23/6 stg. posted.

LZ 12 Hindenburg

Our second book this month in the famous aircraft series is the "LZ 12 of HINDENBURG". This one is written by D. Robinson who is an expert on the subject.

Size and layout is the same as for the DC 3 and it also is printed offset in the U.S.A.

This is the story of the ZEPPELIN era, presented in such a way that you realise that these airships were huge. Drawn to scale beside the Queen Mary the Hindenburg is more than ¾ her length. A Boeing 707 is almost as long as her rudder.

All details and statistics are put together in such an interesting manner that the reader is left wondering at man's ingenuity even in this space age.

Scale drawings by Willis. L. Nye are included, and will be of interest to aeromodellers. The flight manual for airships by Dr. H. Echener is included in the book. A very interesting Manual some 45 years old which can still be read today with great benefit and interest although we shall never see these gas filled monsters again.

Our copy W. E. Hersant, London, England.

Price 23/6 stg. posted.

Latest titles of new books from KOOKABURRA TECHNICAL PUBLICATIONS of 81 Potter St., Dandening, Vic. indicate that they are breaking much new ground, and giving coverage to three historic aircraft never previously described in detail sufficient to suit the needs of the prospective modeller, or keen air craft enthusiast.

The three latest ones announced, which will shortly be available include the following, all of which are exciting possibilities for the keen scale modeller.

The Westland Whirlwind

The Westland "Whirlwind" described by Bruce Robertson. This author, possibly one of the best known and respected authorities on aircraft in the world today has compiled a most interesting story of his research into the development and operational history of this sleek twin-engined British fighter, creating a "first", as far as this aircraft is concerned. Profusely illustrated with some beautifully sharp photos, this one contains some more highly accurate drawings by our own Tony Shennan.

The Focke-Wulf 190

The Focke-Wulf 190 described by Geoffrey Pentland. We are frankly surprised that there has been no other book to date on this aircraft which is surely one of the most famous German aircraft of all time, but Kookaburra are right off the mark with this one. Described in two parts, on account of the wealth of information which has been made available from many sources, Part 1 describes all variants of the Fw 190 A-0 to A-10 series, whilst the second part will cover the long nosed and miscellaneous Focke Wulf fighters. The usual high standard multi scale views are provided by the author and depict the Fw 190A 3 and A 8 models, as well as all major variants.

The Sopwith Snipe

The Sopwith "Snipe" described by Anthony Shennan. With the author having been given access to the Sopwith files and much other material in the form of original factory blueprints, it comes as no surprise to expect a real gem of a publication on this formidable W.W.I. fighter. Hardly any of the photographs published have been seen before, and for the W.W.I. enthusiast this is a "must". Amongst the more interesting features we see a coverage of No. 3 Squadron Australian Flying Corps machines; this unit being one of the very few equipped with the "Snipe" which was recognized to be the most potent British type available at the time of the Armistice.

These books, printed in Canada, will not be available for approx. 7 weeks, but advance orders may be placed with Kookaburra Technical Publications. Price of all their books in the Aircraft Technical Manuals Series is 10/6 plus 6d. post, which includes packing in stiff wrappers.

TRADE TALK

AIRFIX

This year the Airfix factory has embarked upon an ambitious expansion programme. Many new items are scheduled for production including:

New Sets, new cars, new trackside accessories, and new track pieces.

The first edition of an Airfix Motor Racing Catalogue is now available, supplies are now being distributed to the wholesale trade and very soon copies should be on sale throughout retail stores, price 6d. per catalogue. The outside back cover shows the Australian retail selling prices.

New items due for release during the next few weeks include Fly-over Jump Section, Lap Recorder, Chicane Extension Section, Half Straight Track, Half Curved Track.

Following upon these items we anticipate the release of three new Motor Racing Sets, which will include many improvements, such as chrome finish of cars and the inclusion of cross over track and chicane sections in stock sets.

Other accessories for production this year include Track Border Sections, Hump Bridge, Starter Unit with Flag, Event Board and Time Keeper's Hut. Many more pieces are still on the drawing board, details will be provided nearer to the date of release.

RONALD de CHASTEL

A new line being imported is the Airsail Methane 1000 Racing Glo Fuel. This is a competition blend of 25 per cent. Nitro Methane. All ingredients are of the highest quality, and are virtually analytical grades. Packed in 16oz. bottles bearing the attached labels, stocks are now available for wholesale sales. Retail price is 18/9 per bottle.

Very good results are being obtained in Brisbane with this fuel, and it was this fuel that recorded a new Class B record speed for Brian Stanbury with his Super Tigre 29 at 138 m.p.h. earlier this month.

ARTMIL BALSA

"Balsa Wood is the lightest and strongest commercial wood in the World. The lightest grades have a specific gravity of only 4lbs. to the cubic foot, medium grades weight from 8-11lbs. per cubic foot and heavier grades from 12-18lbs. to the cubic foot.

Arthur Milner advises us that the best Balsa grows in South America as the conditions there are ideal for the growth of this timber which must have conditions equal to a hot-house throughout the year. Mr. Milner should know as he lived in South America for many years and since his return to Australia over 30 years ago he commenced the import of Balsa to this country and over the years has installed very efficient automatic machines for the processing of Balsa sheet for model planes and hobby craft work, and Balsa blocks, etc., for industrial uses and for surf boards etc. This Company is supplying increased quantities of end-grain Balsa as the core stock for fibre-glass boats, insulated trucks, etc. This end-grain Balsa when covered with fibre-glass, Celastic or other suitable material has an impact strength of 1,500lbs. per square inch.

Mr. Milner informs us that the use of Balsa for craft-work and carving etc. in schools is very much in demand and sales to stores throughout Australia are increasing rapidly. For any information desired in connection with Balsa wood we suggest you write to Arthur Milner & Co. Pty. Ltd., 4 Joyce Street, Springvale, Victoria.

The Editor will publish in TRADE TALK details of new products, services, accessories and any information concerning the Model Trade. The necessary information for inclusion in the next issue should reach Model News as soon as possible after the appearance of this edition.

NEWS FROM THE DOCKYARD

Just arrived into stock **CITIZENSHIP SERVOS — MULTI TYPE — MODEL. C.B. and T.L.B.** featuring Transistorised cam action for relayless operation and:—

* Cam Action Output, 5/8" Total Travel in .7 seconds.
* Perfect for Aileron, rudder and elevator control.
* Requires no bias battery — uses just four nicads or pencells.
* Precision moulded nylon parts and gears for long life and low noise.
* Measures 2-5/8" x 1-9/16 x 1 with a weight of 2¾ ounces.

PRICE: Both types each priced at £19/1/0.

Also in stock the new mighty **HINODE MS-100 MULTI SERVO** for all operations in Multi gear, trim and special one for aileron with wheel each side for relayless operation. Features particularly smooth running and very powerful. Does not use bias battery, will operate on pencells or nicades. Prices for either the Self Neutralising or the Trimmable units £14/15/0 each.

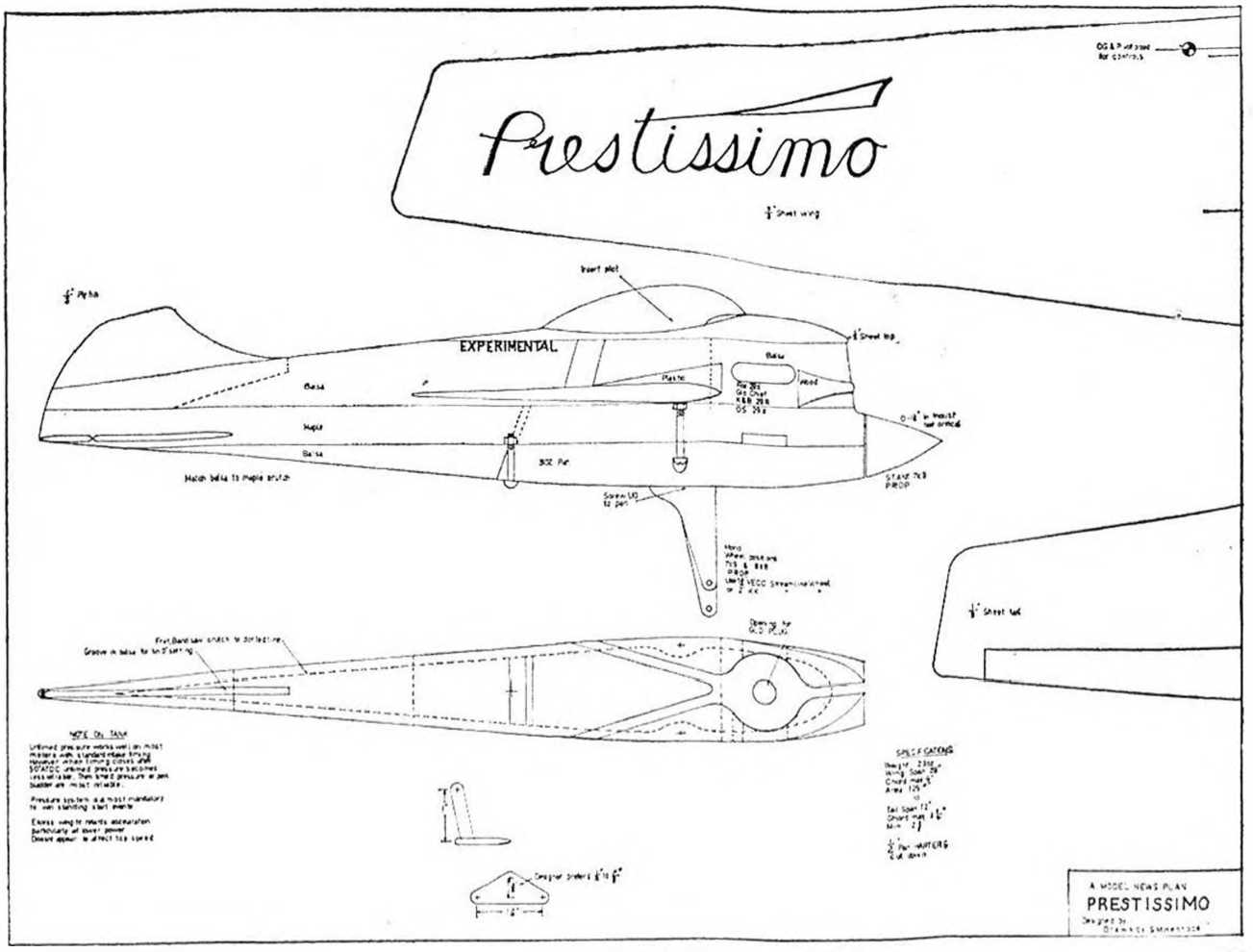
In stock once again are the **HINODE DIXIE TRANSMITTER AND RECEIVER UNITS,** have proved most helpful for new modellers entering the hobby. Transmitter is equipped with an inbuilt monitor for tone beep and the Receivers really stand up to rough handling from the newcomers.

HINODE MS-50 — new stocks are due to arrive very soon. Price: £6/3/6 each.

Our new price list is now available at 1/- per copy plus 5d. postage listing our comprehensive range of Radio Control components.

Just Landed! New stocks of the **FOX 59 R/c MOTORS** — boy oh boy what power! £26/15/6 for one of the world's most used and powerful R/c motors.

SUPER TIGRE motors — full range any minute now. Fresh stocks of **REV-UP** Propellers now in stock — new **HINODE MULTI GEAR** nearly at our doorstep write for more information.



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MAIL ORDERS WELCOME

90 Rockets Launched by NRCAM-2

By CHRIS. VINE

"ORANA PARK" Leumeah, was the site for NRCAM-2 held on January 31st. and February 1st., 1965.

Over 90 models took to the sky over the two day, 20 event contest. Host Section at the Meet was the Reaction Research Section from Punchbowl, N.S.W. The Canoplus Propulsion Section from Hamilton, N.S.W., was represented by Brian Compton, Robert Tozer and Dave Davidge.

Tracking was hampered over the two days by low cloud and occasional rain. A Movietone News camera crew were present to shoot some of the action, but unfortunely they were unable to keep with many of the models in flight, because of the high velocities involved (200-800 m.p.h.).

The first event off the pad was the Aero-Space Systems contest. Only one entry achieved flight in this contest. It could be easily seen that many of the models entered had not been test flown previous to NRCAM-2. Final placings were judged on scale data. First place went to Gryan Compton, runner up John Brown.

Next up was the Parachute Duration contest. This event proved too much, parachute failure, after failure. This is not an easy event as many people think. There are "trade offs" that must be made in the section of chute size and engine power depending upon the size of the flight area, winds aloft, size of model and the eyesight of the timing marshalls. One can no longer cram the biggest parachute into the guttiest model and throw it into the sky and hope for the longest possible flight. Anyway, the Astrons Team won the event with a time of only 1m. 35sec. (world record 14m. 8sec.), runners up were the Black Arrows Team with 1m. 7sec.

The A Altitude event was plagued with aborted flights, all contestants trying to build models as small as possible, forgetting the principles of rocket stabiltiy. The A & B Altitude events were plagued with similar aborts although several successful flights were recorded. In the A Altitude, Joseph Kesckemiti with 650 feet; and the B Altitude Peter Love with 1010 feet. B. Payload was won brilliantly by Grant Eyre with 485 feet, smashing the old record by 165 feet. Second placing went to the Astron Team with 3903 feet, also surpassing the old record. Open Payload was won by Peter Love with 590 feet, Michael Vine was second with 440 feet.

The D. E. & F. Altitude events were all won by the Black Arrows Team with altitudes of 1910 ft. 2290 ft., and 3810 ft. respectively. Several other entries were disqualified when they aborted or were lost through the overcast by the tracking crew.

The last event of the first day was the B. Boost Glide Duration. The technical qualities of this event were terribly disappointing. That some of the models had never flown before was evident when they went into glide phase. Very few of them were properely trimmed. I would advise these boys to shoot the works on a cheap chuck glider and get familiar with what makes an aeroplane work. You should be able to get at least a 45 second glide with a glider of this type. If your Boost Glider won't glide at least 75 feet when you toss it, then you have a streamlined brick, not a glider.

The second day started up with the Research & Development contest, in which all the new ideas were put to the test. The most spectacular entry was Peter Love's control line plane, from which rockets were launched whilst in flight. A spectacular prang occured in the second flight of the plane. The control lines broke, the plane started to climb, stalled, and then plunged into the ground from about 50 feet. The rocket came through the prang undamaged. Other entries in this event were Joseph Kesckemiti's Pump-Jet Rockets, Grant Eyre's high altitude payload carrying rocket and Black Arrows Team's multi-parachute ejection system. Most of the failures in this event were due to the wrong selection of engines to do the job either not enough power or too long delay charges.

The B-Scale Altitude was won by "yours truly" with a model of the ASP-1 Sounding Rocket. Second place went to the Black Arrows Team with their scale model of the Astrobee 1500. John Brown won the Open Scale Altitude with his model of the Mercury-Redstone.

The multi-stage vehicles were next with many of them vanishing into the clouds or

(CONTINUED ON PAGE 31)

Overseas Impressions

From ALAN WALL

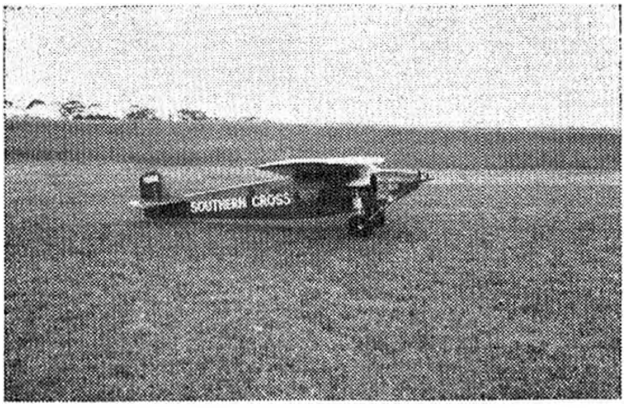
Alan recently returned from overseas with a new Fokker for East-West and a set of Digimite Proportional Gear for himself.

As far as the trip was concerned, of course it was fabulous, the only things I would have liked was more time and better weather to see a bit more model flying. We left Sydney on the Saturday afternoon, and arrived in Honolulu early in the morning of the same day, crossing the Date Line. We spent the day there, could have been longer, but I was impatient to get to Los Angeles. One tropical paradise is very much like another and we have quite a few in this country to compare. One benefit of the day in Honolulu it that it gives a chance to get used to U.S. money and customs. We left late that night on a crowded Boeing and found the long flight to L. A. very tiring, despite the wonderful service. A bit of advice would be to avoid eating for a few days before leaving and during stop-overs, as the in flight meals are delicious but very frequent, there is little else to do and nothing to see for most of the flight. We arrived in L. A. very early on Sunday morning. Our routine of days and nights was so upset by this time that we slept all day, but missed nothing as the locals don't seem to sleep, at night. On all the cafes is a notice saying 'Breakfast till 3 p.m.' That night we did the rounds of hot gospellers in the parks, and all the other attractions open all hours. The next morning saw me on the doorstep of Exportations, and made very welcome by Cliff Rausin and his charming wife. After meeting the staff and admiring the goodies in the place we had lunch, then were taken to Phil Kraft's factory to see the latest progress in his products. His is a very new, light and airy building which would be a delight for any R/C modeller to visit and Phil a very friendly bloke as were all the Californians I met. Next we went to meet Don Dewey of the Radio Controlled Modeller magazine at his new home in the hills, and were able to natter on modelling matters at some length, before going out to dinner. Next day I was taken to Colonel Bob's Hobby Shop to admire a typical American model shop, very well laid out and stocked with all the latest gear in every department of modelling, plus a case of vintage motors, some well known but a few very rare, including multi cylinder jobs. A separate section was devoted to train gear with a very large collection of all types, and room for a few layouts. The wide range of accurate plastic models in this section was a joy to behold. After this I was taken on what was to be the highlight of the whole trip, a tour through Howard Bonner's new factory. On the way out to it I was told about his new proportional gear being nearly ready for release, and I devoted most attention to this, but of course all the famous Bonner lines are also produced here.

With his usual thoroughness, Bonner set up shop with the best of machinery to be as independent as possible and has large and small lathes, drill presses, and so forth, to be able to handle any machine shop jobs as required on his famous motors, plus printed circuit etching, armature winding, and injection moulding, and the multitude of precision work for which he is famous. The big job was finishing the Digimite gear for release, and after seeing this being produced and tested I was thoroughly sold on it and placed an order straight away. This meant extending our stay in Los Angeles for a few days and this was spent on sightseeing at Disneyland, Sunset Strip, Hollywood, as well as the older part of Los Angeles. Then on Friday a visit to Exportations to pick up the Digimite and some other goodies, and left for London next day. London weather was horrible after sunny California but I was able to visit Henry Nicholl's shop and meet the famous man and his son and a few modellers and demonstrate the gear to them and Tony Dowdeswell from the RCM & E. Also visited Peter Brogan and saw movies of the last U.K. Nationals, very impressive but the windy conditions made things hard for the scale models that the English are so fond of. During our next stay in Amsterdam awaiting completion of our new Fokker, I spent a little time with the inimitable Windy Kreulen, who had Digimites on order and was very interested in a preview. He took us out to their model flying field in Arnhem, which is also a full sized gliding field in warmer weather, but was very bleak and deserted and only Windy and a few enthusiasts turned up in freezing weather to fly very impressive multi in the snow. We returned to Rotterdam with Windy for sight-seeing for a day, and spent the next weekend in Brussels. I am leaving out a lot about non modelling sight seeing as this would take a long book. There are a lot of diverse Aircraft types from all over the world that use Schipol airport, and these were of great interest as well as the chance to see through the two Fokker factories, and the send off dinner given by Fokker executives was most memorable. The trip home was one of many contrasts in weather and customs in the various places we stopped. All were most interesting, Rome, Athens, Cairo, Bahrein, Karachi, Delhi, Calcutta, Bangkok, Singapore, Djakarta, Den Pasar, Derby, Alice Springs, then Tamworth. Of course, the best sight of all was the West Aussie coast and the best meal was barbecued steak in Alice. The trip took ten days, about 60 flying hours without auto pilot, so we were quite glad to have a few days break before getting back to the milk run to Sydney and back. This sort of flying will be very tame for awhile, until the next cyclone season anyhow. I hope this account doesn't sound too much like blowing my own trumpet, but I would like to point out to the younger modellers among you that there are lots of opportunities in flying if you are prepared to work for them. My own interest in flying started too long to remember, fostered by modelling, and when I finally got the chance to join the Air Force I found the knowledge gained in modelling a big help in the

Continued on Page 31.

CLUB NOTES



A huge model of the ever popular Southern Cross. This model with a 9 ft. 3 in. wing span was built by A.T.C. Cadets under the guidance of Keith Hearn. Model is powered by an O.S. 50 and the radio gear is O.S. 10 channel. Keith has just left for a 4 month trip to see what's new in the modelling game.

STUNTMASTERS

The event was highly different this year. Instead of running Junior and Open, the Junior event was limited to trainers type models and ready-to-fly plastics. Max. engine size was limited to 2.5.

Contestants were judged for take off, level flight at different altitudes, climb and dives, general handling, and landing.

Results were as follows:

1st. P. Mather 75 Pts. O/D Model Taipan 2.5
2nd K. Hale 71 Pts. Aeroflyte Cobra O.S. Pet.
3rd G. Chapel 70 Pts. Central Tenderfoot O.S. Pet.
4th D. Lokker 69 Pts. O/D Model Taipan 1.5

The open event saw some excellent flying although there were only 9 entrants.

This is to be expected because many flyers manage to place in other contests throughout the year thus eliminating themselves.

Special mention must be made of young Roger Druce, although physically handicapped managed a very fine 4th position.

Ian Ferris splaffed in a horizontal eight blowing both model and motor apart.

Both D. Thiesz and B. Bland flew very well some manouvres partically good but I. Gadsen flying his own design Majestic, with a 49 up front, maintained a steady even flight, with fine manouvres to take out first place.

It is quite obvious that when the top Stunt boys are not flying, the up and coming perform much better.

While the Stuntmaster continue to run these events, Victoria will remain the main stay of Stunt flying.

Judges: K. Taylor and R. Bwablent.
First prize in the open event Glow 35
First prize in the Junior event Glow 15.

RYDE M.A.C.

On the 7th of February we held our first competition of the year being The Harold Turner Stunt Trophy and 2½ c.c. combat.

In Stunt there were seven (7) entries and was won by JOHN WILLIAMS flying a much battered 4 year old Thunderbird from GEOFF WHITTACKER (Best Junior) flying a Valiant.

Combat with 11 entries was won? by STUART SHERLOCK using an O.D. flying wing and another borrowed model. In second place was JOHN WILLIAMS, who went through the competition with good motor runs except in the finals when his motors failed him badly. Third place was taken out by GREG ARDILL by sheer luck alone.

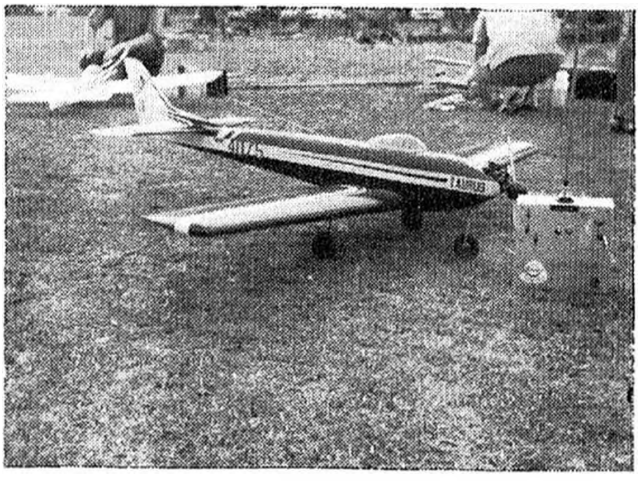
Thanks are to the stunt judges. CHRIS LLOYD-OWEN and BARRY JONES, and BILL SMITH (WHO'S HE) who ran Combat very well

PENNANT RACE

Centenial Park, Sydney, 21st March. Weather mild, sunny, a little breeze.

F.A.I. TEAM RACE

Flown to new current rules: 1st Brian Eather — 11.427, 2nd Tony Hill 15.33.4, 3rd Max Stokes — Retired — 200 laps final.



Lyell Winley's "Tauris" and transmitter by "Silvertone" which carried him to a very close second place at the recent "Nats" in Melbourne.

COOTAMUNDRA M.A.C.

From Geoff Barron

The boys continued to make up in enthusiasm, what they lack in numbers. The average age is about 15, and Norm Roberts and I hope some older flyers may come back to the ranks. (Any one reading this Coota, or vicinity, please note).

At present, the most active flyers are Norm Roberts, Geoff Barron, Grant Manwaring, Robert Shelley, Roger Roberts, and Stephen O'Reilly. These chaps form that hard active core, which every club has. The others come and go in great numbers.

Combat with 2.5 c.c. models is still the most popular, with Robert Shelley and I flying even in the dark. (It's fun until you can't see the model at all.)

Grant Manwaring continues a stockpile of "Weapons" for his new Glochier 35 when it arrives. As well as a couple of his own, he has a few he cleverly got for nothing from ex-modellers. They didn't want the battered planes gathering dust, and he only needs a few bob in glue, dope and tissue and he has a new stunter,

To date he has a P 40, Thunderstreak, Firestreak, Blue pants and Stunt Queen plus a Stentorian freeflighter.

Norm Roberts, Robert Shelley and yours truly are anxiously awaiting "Pixie" receivers. The beautiful weather here can't last. We have had 6 weeks of calm days. My model for twilight flying is a tiny Cox Peewee powered job with a 3 volt receiver and compound escapement. Spot landings on the hand should be a possibility. Roger Roberts is building a new "Typhoon" for his 2-5 c.c. Webra diesel, and Stephen O'Reilly has put his new 2-5 c.c. Taipan Glo in his much worked "Cobra".

We are slowly pushing the yo-yo boys into freeflight (and then radio)?

We urge all young clubs to push on and further the modelling movement as we are trying to do. Don't forget those articles in your local paper, either!

MODEL AERONAUTICAL ASSOCIATION OF QUEENSLAND from Arthur Gorrie

SPEED RECORD ATTEMPTS

"B" class 138 m.p.h., Brian Stanbury B.A.R.-C.S. Super Tigre 29. New record.

"C" class 130 m.p.h., E. J. French. McCoy 60 Stardusters. New record.

Model Aeronautical Association of Queensland members have been invited to fly at the Exhibition Grounds on behalf of the 4BH Picnic Day on Wednesday, 5th May, 1965.

Secondary schools interested in flying please contact Arthur Gorrie P.R.O. M.A.A.Q Phone 4 4829.

A good day is promised all — fliers or spectators.

Frank Hettrich and Rob Edgerton going ahead with arrangements for the Queensland Industries Fair.

Charles Peake fuelling up his "Orian." Bit of a busman's holiday, Charlie flies the big ones all the week and littleuns on the week-end.

WESTERN AUSTRALIAN NEWS

Doug Murray is flying a deBolt Interceptor with O.S. radio gear and Merco 61. It's very smooth and Doug is flying well. He has just completed his second Interceptor and is going to fly it at a demonstration in Kalgoorlie.

Ralph Godkin was flying his Nimbus and Orian (Orbit 8 gear Merco 49) and is a most impressive flyer. Will take some beating when he gets 10 channel gear.

Ray Irving was flying a modified side-winder delta (O.S. gear Merco 49) and this flew well. Ray had increased the span by 2" and used motor control, aileron, elevator and elevator trim. Seemed capable of the whole pattern except for spins.

The W. A. boys are very keen. They have hired the Perth showground on Easter Saturday for their Sate R. C. championships and will charge admission. From what I heard this should be a good show.

QUEENSLAND INDUSTRIAL FAIR

Officials of the MAAQ inspecting site at exhibition and discussing conditions that will apply. Were some disappointments last time. Let us hope all things discussed and agreed upon eventuate to the satisfaction of all. Members are urged to obtain an entry form and send it in.

QUEENSLAND ACTIVITIES

from ARTHUR GORRIE

John Pkye, ex of Dalby, now at Roma, one of the oldies in Radio out West, has been giving exciting displays at Roma and is stirring up a bit of interest.

Still flying a 1959 built Equalizer painted to resemble a Rainbow with O.S. 15 Max. I and Hills (home built) receiver. John is amazed that the .15 flies this 5 lbs. model so well. Using an O.S. Minitron Transmitter and Babcock escapement.

Roma was red hot once with a bit of luck may come back.

Lyell Winley, President of the Cumberland club, walking away with the hardware after filling 2nd place in recent club competition.

SOUTH AUSTRALIA

The S.A.A.A. was asked to give radio and control line demonstrations at Edinburgh airport during a pageant in aid of the Churchhill Memorial fund Each demonstration ran for approximately 2 hours and raised very favourable comment. Doug Saxby dropped toy parachutists from his multi job and one was lost O.O.5. in a thermal.

A single channel radio contest was held recently but only 3 entries were received. The single channel rules will have to be changed or this event will disappear.

Results were:

1. Roger Duance Navigator Taipan 1.5 c.c. Own proportional gear.

2. Jim Smythe Charger Super Tigre .23 O.S. Super regen.

3. Bruce Bartholemeous Marcsman O.S. 19. Grundig gear.

Doug Saxby and Leo O'Reilly both built sidewinder deltas and just as quickly wrote them off. Doug has built another which is going very well.

Bruce Bartholemeous has finally completed his Falcon 56 (Super Tigre .23 and Grundig gear) and has about 10 flights behind him. This is an ideal multi trainer.

Dave Anderson has decided to attend the World Championships in Finland and is frantically building two new A. 2's. He couldn't possibly take his old model with him — it's so battered. Nevertheless, one of the most consistent A2's we have seen.

Malcolm Pring has built a 1.5 c.c. F.A.I. power job with high thrustline and is starting to get some good flights.

There are quite a few newcomers to free flight and radio and propects look good for the next year.

NEWTOWN MODEL AERONAUTICAL ASSOCIATION

Club quite pleased about Ray Little's effort in recent "B" Class Team race at Sandgate. Ray was a good thing beaten as he set a new State record and had a bad pit stop with one lap to go.

Many members showing keen interest in Slot car racing and much hilarity on some Saturday afternoons. On extremely hot days or wet days, this outlet can do much to keep members together competitively.

SANDGATE MODEL AERO CLUB

Many members showing extremely great interest in slot car racing and recently had an interesting visit to Redcliffe. Looks like the possibility of inter club car racing soon.
News and VIEWS

BEAUDESERT RESULTS

OPEN POWER DURATION

Nine Entries. 1st. C. Mahoney (Bdst) 123 sec.; 2nd A. Gorrie (NMAA) 82 sec.; 3rd. M. North (NMAA) 48 sec.

OPEN SAILPLANE

Eight Entries. 1st Ralph McKellar (Stardusters) 276 sec.; 2nd E. Master (Stardusters) 149 sec.

CHUCK GLIDER

Six Entries. 1st C. Mahoney (Bdst) 69 secs.; 2nd T. Spence (Bdst) 64 secs.; 3rd. M. McCarthy (Stardusters) 14 sec.

JUNIOR SAILPLANE

Three Entries. 1st D. Masters (Stardusters) 155 secs.

NOVELTY EVENT

1st. T. Spence (Bdst) 31 sec. Error; 2nd B. Mallett (NMAA) 82 sec. Error; 3rd. J. Morgan (NMAA) 94 sec. Error.

COMING EVENT

State Championships to be held at Beaudesert — 1st Day 30th May 1965.

A very nice aerobatic scale model of the RAAF's basic Trainer. The WINJEEL. Built and flown by Jim Hutley of the RAAF RICHMOND M.F.C.

By the smile on Bruce Townsend's face it is easy to tell he is pleased with his first in Novice class at the recent Cumberland competition.

CONTINUED FROM PAGE 25

drifting under their chutes in the 8-10 knot breeze that had come up. The A-A Altitude was won by the Black Arrows Team with 980 feet, closely followed by John Brown with 960 feet. The B-B Altitude was won by Charles Brown with 1380 feet, followed by Peter Love with 1320 feet. The C-B Altitude was won by "yours truly" with 1920 feet. The highest altitude of the contest was recorded by the Black Arrows Team in the D-D Altitude with 6400 feet, establishing a new record. The last event of the meet was the Open Altitude. It was won by Michael Vine with his model "FARSIDE X-3". It was a three stage model, the only one at the meet. At the time of launching the sky had cleared and the wind had dropped. The model soared to an altitude of 2680 feet using B3-0; C.8-0 and B.8-6 engine combination. Seperation of all stages was neat and clean. You can expect to see a few more three stage birds at NRCAM-3 at Easter. I was informed after the flight that Robert Tozer had filmed the complete flight on colour film, a real treasure.

Individual placings went to Chris Vine with 70 points, runner-up John Brown with 62 points. In Team placings the Black Arrows stole the show with 176 points, their rivals, the Astrons managed to obtain 56 points.

CONTINUED FROM PAGE 26

theory involved. I find nowadays a lot of pleasure in flying models as airline flying is very routine, but pays well. In the States it is obvious that a big percentage of people in the aircraft and space industry got their start in modelling, and I found a lot of modellers in the Fokker factory. All these people were very friendly and made me very welcome wherever I went. I was even fortunate enough to meet some of the local modellers in Singapore, where they are very well equipped with the best gear from all over the world. Also saw some R/C flying, in Single and Multi Proportional — an Orbit in a G String, which went very well. Fong and his friends are very capable and keen to visit Australia and have a go at our Nationals some day. I hope this can be arranged some day as it is obvious that we do not have enough contact with the rest of the world in modelling as in other spheres.

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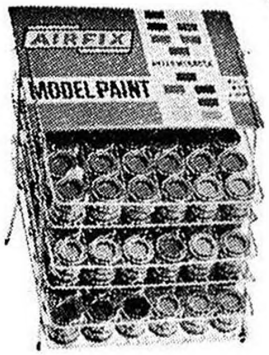

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