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AUSTRALIAN & NEW ZEALAND MODELLERS' MONTHLY .60c*

OFFICIAL JOURNAL OF THE MODEL BOAT CLUB of NSW

* RECOMMENDED RETAIL PRICE

Vol 3 No 5**May 1976**NEWSAGENTS!
PLEASE DISPLAY
TILL NEXT
ISSUE ARRIVES

NSW STATE CHAMPIONSHIPS

MODELLERS MONTHLY



AUSTRALIAN AND NEW ZEALAND MODELLING

VOLUME 3, No. 5.

AUSTRALIAN AND NEW ZEALAND MODELLERS' MONTHLY

MAY 1976

NSW MODEL AIRCRAFT CHAMPIONSHIPS



NSW STATE CHAMPS

STUNT REPORT

By MICK CAVAN

The NSW Control-line Aerobatics Championships held at Holsworthy this year saw a rather light roll up with only 13 entrants. It was pleasing to note a few new faces, however we could do with a lot more, especially juniors.

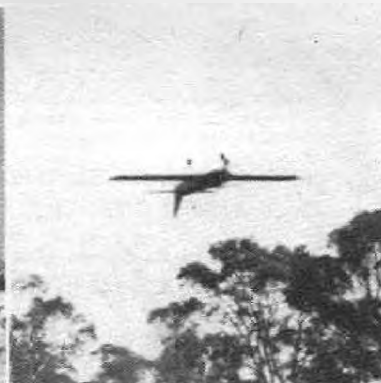
The first round was held on Saturday with Reg Towell as contest director getting the competition off to a good start at about 10 am. After the first few flights it became obvious the standard was going to be very high due to excellent weather and fine aerobatics site. No problems arose in this round, although Reg Towell elected to judge owing to the lack of judges. This problem was overcome in the second and third rounds, enabling Reg to fly.

Sunday morning saw the start of the second round get under way with almost perfect weather conditions again. It soon became obvious the competition would be very tough with D. Hanna putting in a seemingly unbeatable flight, only to be just pipped by R. Towell flying his faithful old Superbone. N. Carlos and J. Tidey also had fine second rounds, leaving only a few points between the first four placings.

Sunday p.m. and into the third and final compulsory round. This went smoothly for most flyers except J. Tidey unluckily clipped his prop on take-off, leaving him no score for this round. Competition was still very close and by late afternoon it was clear flyers would have to wait until the final scores were in to determine the placings. Reg Towell took first place, D. Hanna, was second with N. Carlos in third.

Noteables were D. Harrison with his new Super Five high wing model putting together a well-deserved 1700 final score, also good to see Graham and Charlie Gough back to the contest scene.

Our thanks to the judges, Noel Hoffman, Dave Tomas and Ross Molony for their time and very precise judging.



	1st Round	2nd Round	3rd Round	Total
R. Towell	—	1085.3	1112	2197.3
D. Hanna	1062	1062.6	1081.3	2143.9
N. Carlos	1025	1042	1082.3	2124.3
M. Cavan	1048	984	1028.3	2076.3
B. Hoffmann	986.5	878.6	996	1982.5
R. Walters	995.5	966.6	986.6	1982.1
G. Gough	910.5	846	895.3	1805.8
D. Harrison	812.5	847	853.3	1700.3
A. Jacobson	780.5	820.6	810	1630.6
C. Gough	814.5	830	754.3	1584.3
B. Gough	684.5	580.6	704	1299.5

Top: Ron Walter from Brisbane with his 'Typhoon' stunt. Above: Graham Gough with pretty 'Stuka' stunt (soon to be a NM plan). Charles Gough is making a comeback in modelling, after serious hospitalisation. Good to see Charles and Graham at NSW Champs. Right: Herb Hanna's 'Blue Angel' settles into level inverted flight. Photos: A. Shennan.

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NSW CHAMPIONSHIPS

(Continued from Page 1)

CONTROL-LINE SCALE

NSW CHAMPS 1976

Unfortunately I feel the true spirit of the model world appears to be waning. I can only say 'appears to be waning' because we still managed to have four (4) entries out of the whole state of NSW!

Come on now, you guys — what's happened to our enthusiasm.

We can't blame the Radio boys for stealing all the glamour. Or is it just too much of a challenge to 'have a go'!

This year's entries were

1. Ray Ogle (Spitfire Mk 9)
2. Ern. Holden (Stinson SR9)
3. Barry Franklin (Hurricane 2C)
4. Bert Ronke (Piper J3 Clipped wing).

Ray Ogle was first off the line with the Spitfire.

This model, though lacking detail flew well. As it was Ray looped it on his second flight, only to find the ground was about 24" higher than he thought it was. The result — a badly smashed model.

I hope this lad continues to fly scale. I am sure with what he has learned over the past 12 months, he'll give better account of himself.

Ern. Holden followed with the Stinson. This model has always placed well up in the top circle of point scorers, both for finish as well as 'flyability', and never fails to put in a good flight. Though not overpowered by any means, it still manages a fair performance at almost every contest or exhibition.

Barry Franklin's Hawker Hurricane 2C is one of the most consistent flying models to have been flown in NSW.

The most startling thing to see is the model flying with two sets of lines being held by Barry, one handle in each hand that is! Barry has a distinct approach in this respect and appears quite relaxed when flying his model this way. The Hurricane has been used by Barry almost as a general work-

horse. I don't want to detract any opinion by saying this. This model is another one that never fails to put in a good performance. At any exhibition club contest or major contest that it has been entered, I don't recall ever hearing that he failed to please the crowd. (He does the same when flies his autogyro model).

Bert Ronke and his clipped wing version Piper J3 Cub had what is usually termed 'One of those days!' Since he flew this model at the National Championships he has all but rebuilt the 'whole box and dice'.

Having expected to use this unit as a general sport flying model he made considerable effort to present it in the condition, at the Nationals, to arrive at a second placing.

Realising it lacked the finer detail additions, he has spent the last three-four months, just adding these refinements.

Like the undercarriage. The suspension system really worked! Real bungee cord set up. Telescoping sections etc. etc. But it was not to be so easy this time. First of all the motor would not percolate. After considerable time, and one attempt later, he found the throttle linkage had broken. Oh well, back to the drawing board. If profanities could have healed his soldering iron, I think it would have melted the lip.

Finally all seemed well. Back to the circle. One again, same trouble. Oh well

Meanwhile, back at the ranch — the other contestants had completed their second flight. As stated before, Ray Ogle 'stacked' the Spitfire while coming out of a loop. The fuselage broke into two distinct pieces. Bad luck Ray, but that's competition for you.

Bert Ronke was now back in business again. This time he got the model airborne. Flight was realistic enough but it lacked 'oomph'. While doing a wing over it looked as if he had lost control, but after a few anxious moments all seemed right again. Landing the model he checked his lines and found they had fouled at the lead out guide.

Clearing this and fitting another propeller seemed to have removed all problems. The model really went well this time.

However Bert flunked like Ray Ogle. Coming out of a spectacular loop he made a spectacular pan-cake landing against terra firma wiping out the undercarriage, propeller and later discovered some airframe damage as well.

However, as he had declared his second attempt, this still allowed him a placing.

Point score totals for this event were as follows:

1st	A.E. Ronke	5793
2nd	B. Franklin	4736
3rd	E. Holden	4699

One more point I wish to make — this concerns the judging panel.

I feel not enough interest is shown in this area by our more experienced modellers.


I would like to see if possible, an independent panel of modellers judging these contests. By achieving this, no ambiguities can be directed against the group, nor can any inferences be uttered or harboured.

This section of modelling, just as the other respective areas require personnel with experience, patience, unselfishness towards others and just good old commonsense to perform an honourable task.

This last item is meant sincerely as constructive criticism as it is by such that we can improve modelling in gen-

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SCALE MODEL AIRCRAFT SOCIETY

At our previous club meeting, the scale situation was discussed at great length and it was decided to hold a 'Scale Seminar' in the very near future to discuss the rules interpretation and what a judge expects to see in a particular manoeuvre and to outline a guide for judges in scale contests so that anybody, irrespective of experience, can come along and judge a scale model.

There must be many members of other clubs with more than just a 'passing interest' in scale who would or may be willing to process scale models, and so ease the burden on the usual scale judges.

The Scale Society has no objection to doing the processing at the contests, but we feel that, like a Nats event, or World Championships, the one State (or club) should not control the situation for obvious reasons. This year we were fortunate that all but one of the entrants was a Scale Society member.

If any body is interested in attending such a seminar, I would like them to get in touch with me as soon as possible so that I can arrange a date and place for the discussion. On the other hand I would also appreciate some constructive suggestions if an interested party is unable to attend because of the distance from Sydney, as the meeting will be held in one of the subjects of Sydney, whichever is most central for the participants.

— Bert Ronke.

SCALE CONTEST

VENUE: ST. MARYS FIELD

DATE: 23 MAY 1976

EVENTS: JUNIORS & PEANUT

ALSO

VENUE: ST MARYS FIELD

DATE: 26 SEPTEMBER '76

EVENTS: MILITARY SCALE

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ENQUIRIES: A.E.W. Ronke,
51 Arden St., Campbelltown 2560

Scale Model Aircraft Society

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EDITORIAL

(Continued from Page 18)

Airborne and R/C Models is at the printers, and wouldn't you know it? They had a 'system' strike that has held it up. We understand that it's over now, so we expect the magazine in about three weeks following publication of MM. Bear with us, we look like we may be able to increase



Bert Ronke and winning Piper J3 featuring sprung bungee u/c, controls from cockpit.

ROCKHAMPTON MODEL AERO CLUB STATIC DISPLAY

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MAY 1976 — For 4 Weeks

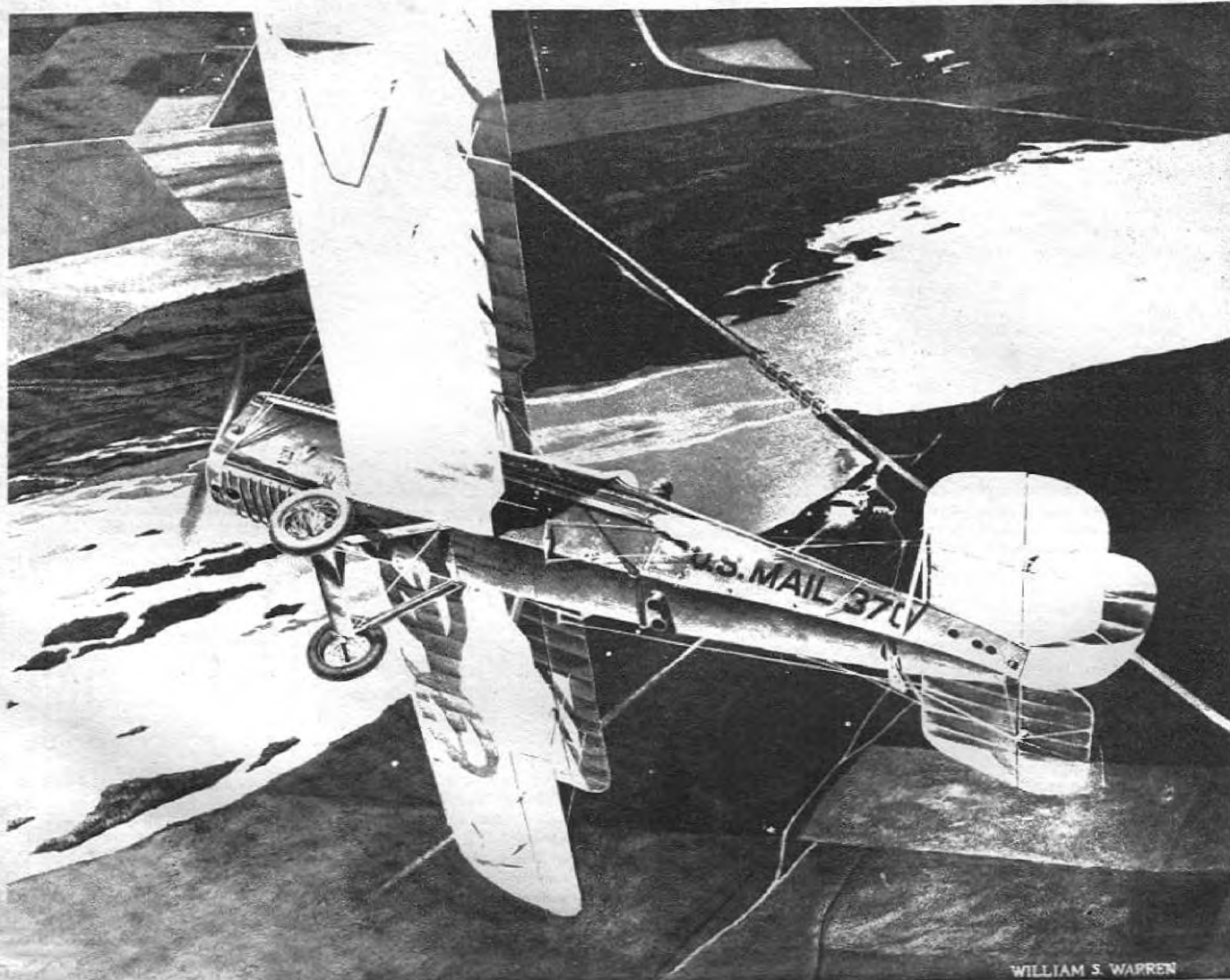
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- ***** MOTORS
- ***** RADIO
- ***** ACCESSORIES

Special display of partially completed models show 'how'.

Display will be changed once.

*** PROWASH will be there ***

Club members will be on hand at various times to answer questions, explain display



"Flying the Mail" in the Twenties. War Surplus DH-4s were used to carry the US Air Mail across America in fair weather or foul. Famed Jack Knight made a name for himself at this hazardous occupation. Flyers were A US Army Air Force pilots.

Painting by William Warren, Courtesy of the American Aviation Historical Society.

AMERICAN DH-4 DESCRIBED

THE AMERICAN-BUILT VERSION OF THE BRITISH de HAVILLAND DH-4.

Described by ANTHONY SHENNAN from material researched at Wright-Patterson AFB Museum, OHIO, USA. Thanks to Royal D. Frey for providing access to records.

PLANS, courtesy of Felix Pawlowicz, Melbourne, Australia.

When the United States entered WWI on 6 April 1917, it was without a single up-to-date warplane, either in the air or on the drawing boards. Rather than have new designs initiated without the benefit of combat experience, it was decided that the US aircraft and automotive industries would build proven European designs.

The Bolling Commission went to Europe in the late spring of 1917 to look over the aircraft situation and select the best designs that were suitable for production. It was decided that the US should build two single-seat fighters, the French Spad and the British SE 5, and two two-seaters, the British Bristol F2B Fighter and a day-bomber/observation type, the British de Havilland Model 4, or DH-4. Production was not carried through on the fighters, but the DH became the most widely used, cussed, discussed, and investigated airplane of US aviation history up to WWII.

The DH-4 was a 1916 design that had been highly successful since its first appearance over the front. Thanks to its big 250 hp Rolls Royce Eagle engine, it was far ahead of equivalent two-seaters, and its speed of 119 mph at 3,000 ft was equal to that of the contemporary single-engine fighters. Because of the heavy V-12 engine, the DH was one of the biggest single-engine types in service at the time, with a wing span of 42 feet 4-5/8 ins and a gross weight of 3,313 pounds. With twin guns fore and aft, it could take care of itself in a dogfight and carry 460 lbs of bombs as well.

A British-built DH-4, minus engine, arrived at McCook Field, Dayton, Ohio, on 13 August 1917. Following successful testing,

it was ordered into production on 18 October. The design was revised to take the new American Liberty engine, a water-cooled V-12 of 420 (eventual) hp that was to become one of the aeronautical wonders of the world and was to fix American production methods. Much time was lost in converting all the details and measurements to SAE Standard. Three firms, the established Standard Aircraft Corporation of Elizabeth, New Jersey, the newly-formed Dayton-Wright Company, and the Fisher Body Corporation of automobile fame turned out nearly 5,000 DHs between them by the Armistice. The final product was 400 lbs heavier than the British original, but had equivalent performance because of the higher power.

By the spring of 1918, the production of American military aircraft was in a terrific mess, and the DH-4, renamed the Liberty plane in keeping with the mood of the times (good old German sauerkraut had been renamed 'Liberty cabbage'), was far behind schedule. To quiet public and congressional demands for results, a single hand-built DH-4 was hurriedly crated and shipped off to France with appropriate fanfare. (Thus informing the Germans it was on its way and making it easier for them to take appropriate action!) Needless to say, the ship carrying it was torpedoed and sunk en route, so the first DH to reach France was a genuine production article that arrived 11 May and made its first flight 17 May.

As soon as it went into action, serious deficiencies in the Americanized DH became

apparent. The worst was the location of the gas tank, between the pilot and observer. This not only made communication between the two almost impossible, but made the tank itself extremely vulnerable to enemy gunfire. In a crash, the pilot stood little chance of survival with the heavy tank behind him. These features, combined with power plant installation faults that frequently resulted in fire in the air without help from the enemy, soon brought a demand for further investigation of American aircraft production and the military policies that forced 'our boys' to fly against Germany's best airmen in 'flaming coffins'. The term was originally applied to the Liberty DH, but eventually came to mean any obsolete, inadequate, or useless death trap of an aeroplane.

The resulting investigation brought about action in the right places, however, and by the Armistice the original 'Liberty plane' designed had been revised as the DH-4B with changes based on the later British DH-8. The major change consisted of relocating the gas tank to a spot just behind the engine, which moved the pilot aft and put him, properly, close to the observer. Another notable change was relocation of the landing gear to a more forward position to correct an extremely nose-heavy condition that prevailed when the plane was on the ground. This had caused many nose-overs during landings on soft or muddy fields. Some intrepid observers had taken countermeasures of their own on the old model by climbing out of the

rear cockpit and sitting on the aft part of the fuselage during soft-field landings in order to keep the tail safely down!! The method was effective, but was subject to severe official criticism in investigative reports of DH-4 performance.

Altogether, 1,213 Liberty planes were delivered to France, but few if any were returned after the Armistice. They were not combat casualties, for less than half of them reached the front. By war's end they were the 'old' model, still with their original deficiencies, and unwanted as combat types for postwar service. They were not considered to be worth the effort and expense of dismantling and shipping home. So, along with most of the worn-out trainers and obsolete fighters obtained from the French by the AEF, they were stacked and burned. The resulting 'billion dollar bonfire' raised more hue and cry in the States and brought about still another investigation of American aircraft and the Army's Air Service.

The end of the war did not end the career of the DH-4. While the airplane was technically obsolete, a huge investment had been made in it and the taxpayers would not stand for any more bonfires on their side of the Atlantic. Funds for new aircraft procurement were almost nonexistent in the early postwar years, but 'maintenance' funds were available that were to keep the 1916 design going for more than a decade. After 1,500 service models had been converted to DH4Bs

(Continued on Page 4)



Above: Typical scene at a US airport during the twenties. The DH-4s of the US Airmail Service flew at night as well as by day.
Below: Surplus DH-4s of the type used by the 11th Pursuit Squadron. Upper colouring was khaki brown with creamy white sides to fuselage and all undersurfaces. Photo: Aero Digest (USA).



DH-4 (Continued from Page 3)

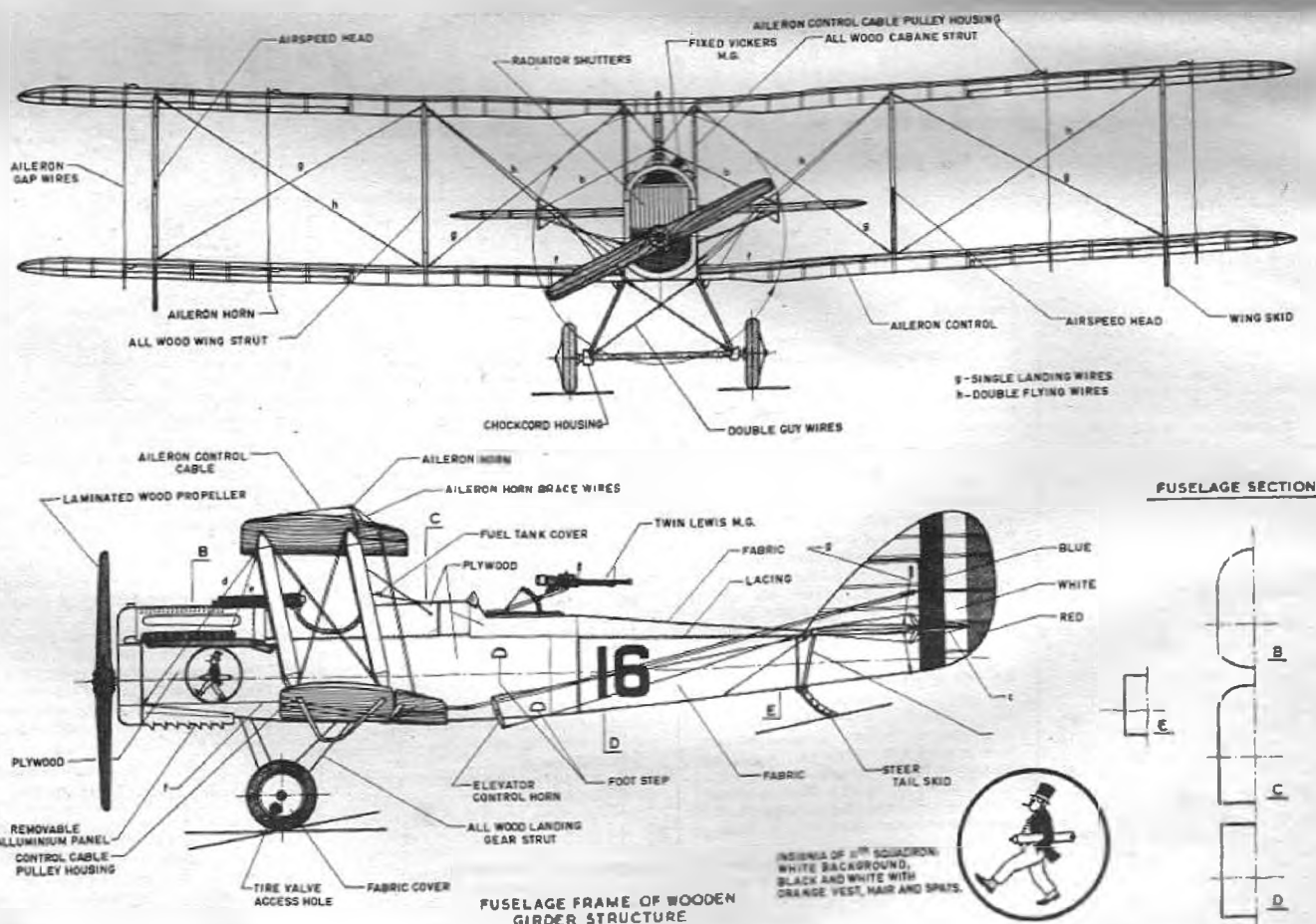
still greater changes were worked out that resulted in a new version, the DH-4M (for modernised). The major improvement was the adoption of a steel-tube fuselage based on that of the wartime German Fokkers. The building of several hundred of these kept the then struggling Boeing Airplane Company alive during the lean early postwar years and gave the famous Anthony Fokker his start in the United States.

Wooden fuselage DH-4s served the post office on the pioneer airmail routes until 1927 and the last of the steel-tube DH-4Ms were not withdrawn from Army service until 1932. This gave the DH-4 the longest continuous service life of any World War I plane — a final mark of distinction for the once-hated 'flaming coffin'.

The DH-4 aeroplane with the Liberty 12 motor constituted the backbone of the American Air Service Production Program almost straight through from shortly after the beginning of World War I to the signing of the Armistice. The grand total of all DH-4s produced was 4,846, of these, 3,341 had been completed and shipped from the aeroplane factories up to the armistice on 11 November 1918. Of the 4,846 freighted from factories, a total of 2,297 were floated from ports of embarkation. Of this number a total of 1,885 with engines and 204 without engines had been floated up to the armistice date. On 11 November 1918, in addition to those actually floated, there were 964 on the docks or en route from factories to ports of embarkation for shipment. The de Havilland DH-4 originated in England, having been designed by Capt Geoffrey de Havilland, Royal Air Force, for use as an observation plane. It was, however, also suitable for service as a day bomber. All DH-4s built in the United States had Liberty 12 engines and the general statistics of the aircraft were as follows: Wing span: 42ft 8½ ins; Length: 29ft 11 ins; Height: 8ft 8 ins; Total Wing Area: 400 sq ft; Weight Empty: 2732lbs; Weight of fuel: 515lbs; Weight Oil: 60 lbs; Weight Armament: 282 lbs; Weight Equipment: 348 lbs; Weight of Crew: 360 lbs; Gross Weight: 4297 lbs.

The estimated total cost of a fully equipped DH-4 in 1918 was about US\$13,122.27 (this figure included armament, engine and instruments and oxygen equipment). During the development programme on the DH-4 in the USA, 200 men

(Continued on Page 5)



(Continued from previous page)

were assigned to the project for a period of approximately six weeks at the Dayton Wright Airplane Company from the time the first DH-4 arrived at McCook Field until the date in October of 1917 when the first American-made model was flown at the Dayton-Wright Plant.

The number of man hours required for assembling one DH-4 was estimated to be 589 once in full scale production.

Armament cost was \$1763.27 US, cost of engine (Liberty 12) was \$4,400 and cost of instruments and oxygen equipment was \$447.00. The Lewis gun itself cost \$300.85 each.

T.H.S./P.P.-7/18

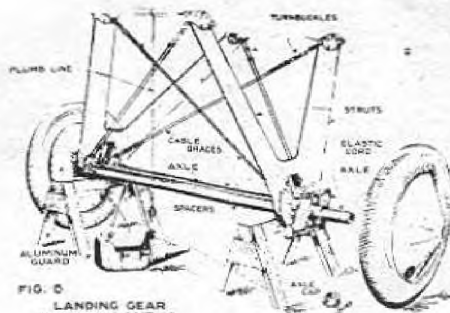


FIG. 10
LANDING GEAR
DE HAVILLAND 4

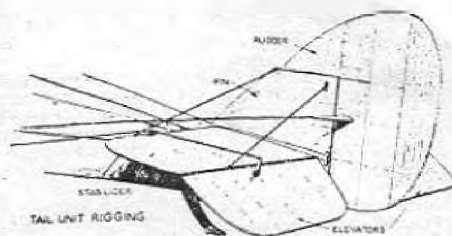
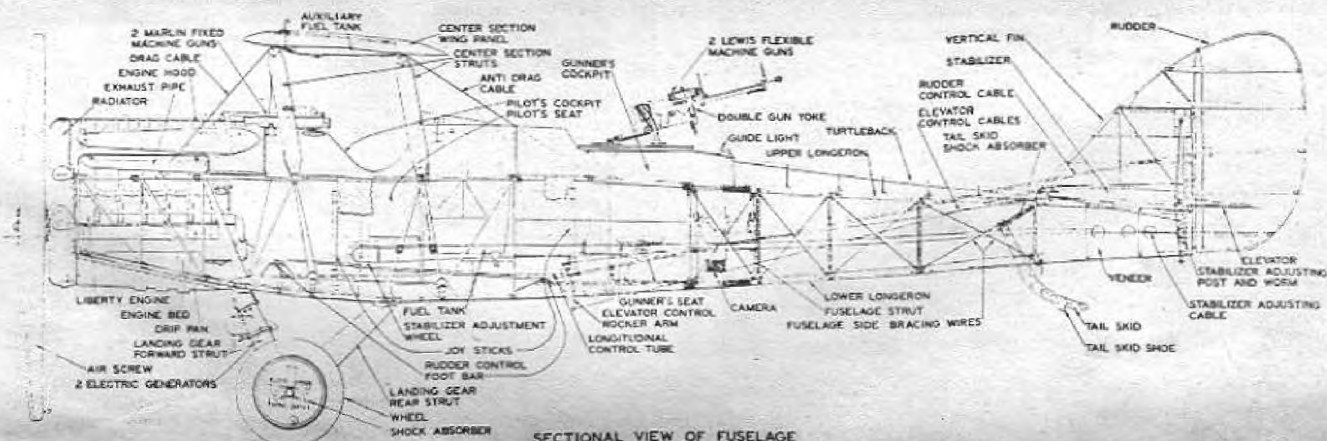
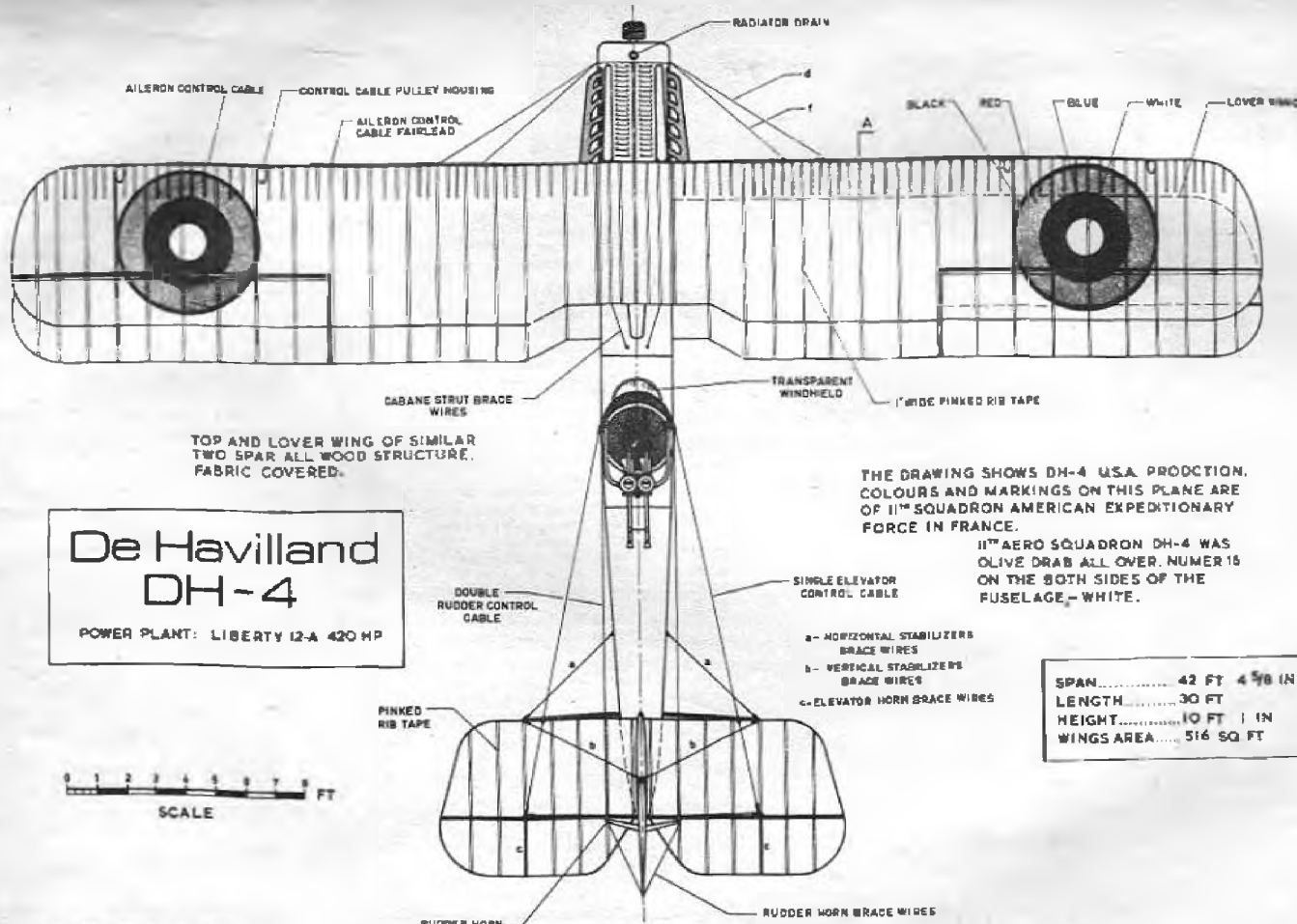


FIG. 12



SECTIONAL VIEW OF FUSELAGE
DEHAVILLAND 4 WITH LIBERTY 12

T.H.S./P.P.-7/18



**De Havilland
DH-4**

POWER PLANT: LIBERTY 12-A 420 HP

0 1 2 3 4 5 6 7 8 FT
SCALE

THE DRAWING SHOWS DH-4 USA PRODUCTION. COLOURS AND MARKINGS ON THIS PLANE ARE OF 11TH SQUADRON AMERICAN EXPEDITIONARY FORCE IN FRANCE.

11TH AERO SQUADRON DH-4 WAS OLIVE DRAB ALL OVER. NUMBER 15 ON THE BOTH SIDES OF THE FUSELAGE - WHITE.

SPAN..... 42 FT 4 5/8 IN
LENGTH..... 30 FT
HEIGHT..... 10 FT 1 IN
WINGS AREA..... 516 SQ FT

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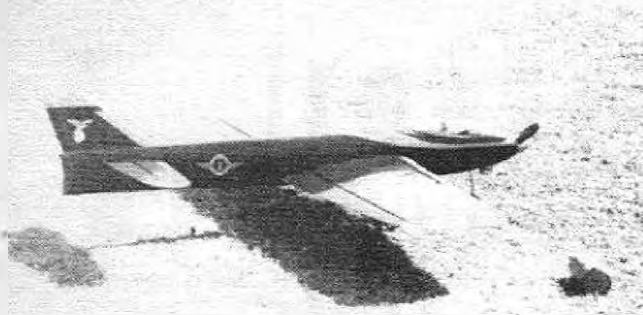
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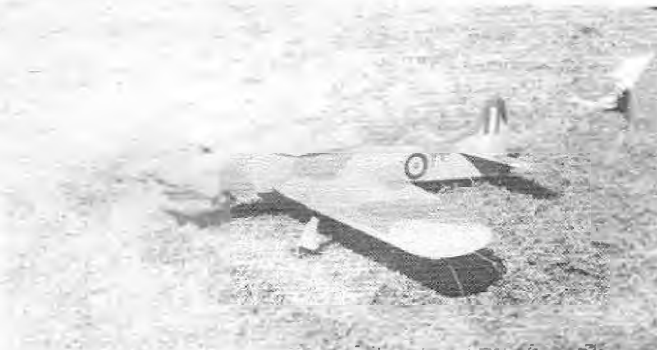
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Above: Herb Hanna's 'Blue Angel' brought him second place with 2143.9 points.

Below: Ron Walters' 'Typhoon' — Ron is from Brisbane. His score: 1982.1 points
Photo: A. Shennan.



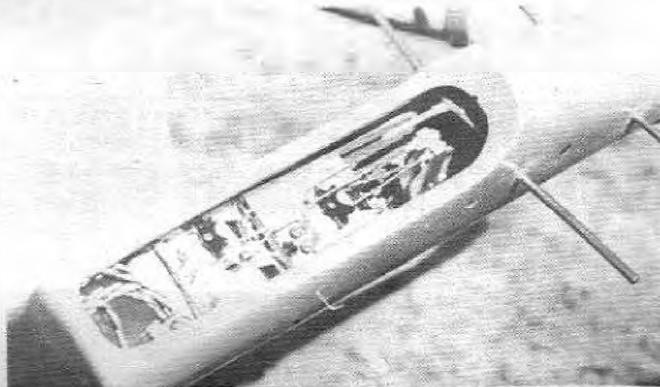
Graham Gough's 'Stuka' in flight (See photo Page 1). Stuka will be published in a future 'Modellers' Monthly' and plans will be available from Plans Service. Photo: A. Shennan.



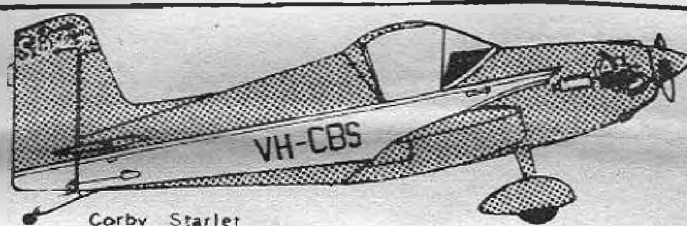
What every well-dressed C-D should look like! Len Brown, angrossed in Team race, was contest director. Len is from Eastern Districts MFC. Photo: A. Shennan.



John Tidey (finally photographed without his sunglasses!) with his monster Maestro sailplane. Photo below shows the R/C installation. Model has a 'mixer' at the rear that gives ailerons, droop flap and airbrakes. Photo: A. Shennan.



KEITH HUDSON'S



Corby Starlet

MODELLERS' WORLD

Well, we managed to get the doors open, but we're still serving direct out of the packing cases. Had a few problems with the white ants in the old palings we used for the shelves, but luckily they don't eat plastic, so the contents are okay. **WHY NOT FORGO YOUR REGULAR HOBBY SHOP FOR ONE VISIT?** If you come in, you would find how bad a mess a shop can get into in a short time. You might even find something you need.

FOR THE RAILROAD MODELLER

We have our initial stock of Peco, Roundhouse, Vollmer, Kibri, Rivarossi, Atlas, Roco, Brawa, Heki, Scenimat, Ratio, Arnold, Minitrax, Fleischmann, with many other goodies on the way.

FOR THE PLASTIC MODELLER

Opening specials in Revell, Airfix, together with an ever-expanding range including Tamiya, Otaki, Heller, Monogram, Hasegawa, Italeri, Esca, and the range is increasing each week.

FOR THE AIRCRAFT MODELLER

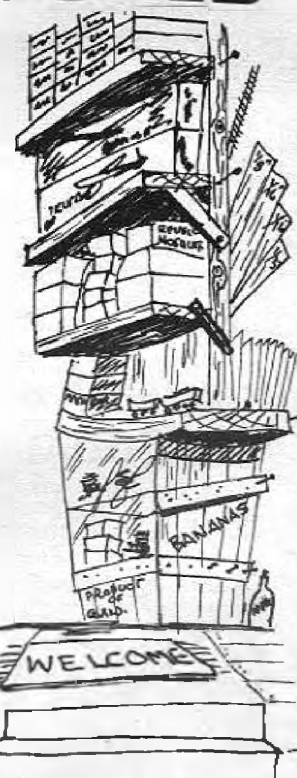
Although I got carried away with a too large range of Scale kits, Radio, Control-line and Free Flight, the stock is becoming more balanced now, and there is a full range of accessories.

FOR EVERY MODELLER

In our opinion, every modeller needs a comprehensive library, and the coming months will see a tremendous expansion in reference books to go with the wide range already in stock. We still carry the stock of scale aircraft drawings built up in the past four years as K. H. PLANS SERVICE and this is being expanded to railroad drawings and other lines. Already on the way from overseas are a wide selection of magazines, some of which, such as Model Builder, have not previously been regularly available.

THERE'S ALWAYS SOMETHING HAPPENING AT
MODELLERS' WORLD

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IKUTA KITS

Sales: 285 Military Road, Dover Heights, N.S.W. 2030. Phone: 337-4311
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Dave Platt



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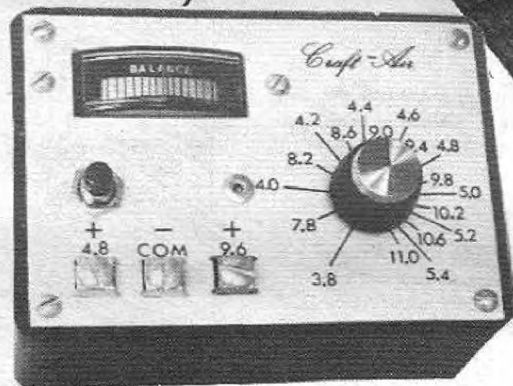
- 10 lbs. All Up Weight
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- All Wood Construction
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- Designed and Produced by Bud Nosen



SOME OF THE IKUTA RANGE WHICH INCLUDES OVER 70 KITS - SCALE, AEROBATIC, PYLON RACER, BIPLANE, TWIN ENGINES, TRAINERS AND SEAPLANES. THESE KITS HAVE EVERY PART MACHINE-CUT FROM CONTEST GRADE Balsa.

NEVER BEFORE HAS A SAILPLANE WON SO MANY TROPHIES IN SUCH A SHORT TIME

Craft-Air



DUAL RANGE

Expanded Scale Voltmeter

Windrifter

Wing Span.....99.3 in.
Wing Area916 sq.in.
Lifting Surface -- 1051 sq.in.
Surface Loading - 5oz./sq.ft.

LEO

WING SPAN 12 ft., 7 in.
LENGTH 6 ft., 4 in.
ASPECT RATIO 12 to 1
WEIGHT (MIN.) 7 lbs.
WEIGHT (WITH BALLAST) 11 lbs.
LIFTING SURFACE AREA 2,160 sq. in.

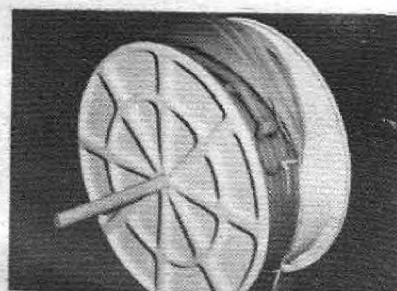
MINIMUM SURFACE LOADING 7.5 oz./sq. ft.
WING LOADING* 8.5 oz./sq. ft. (Min.)

Drifter

Wing Span 72 in.
Wing Area 480 in.²
Weight 20 oz.
Wing Loading 6 oz./ft.²

DELUXE HEAVY DUTY HI-START
Suitable for radio-controlled sailplanes weighing more than 35 ounces.

DELUXE STANDARD CLASS HI-START



TRADE NEWS

FROG INTERNATIONAL SCALE MODELS

ROVEX

Rovex Limited



Delightful and unusual subject from Frog, is the Arado AR 234 'Blitz' with V1 Flying Bomb pick a back version. Kit will be available in Australia and New Zealand soon.

TRADE NEWS

Rovex Limited have just announced the release of two new kits. No-one can criticise Rovex for not producing out of the rut designs — the first is the Arado AR 234 'Blitz' and a V1 flying bomb is included in the kit.

This gives rise to a number of modification possibilities — for example, a piloted V1 can be made using the parts from this kit. During tests in Germany several piloted V1's were flown to test stability and reliability — famed German aviatrix Hannah Reich flew one safely and survived.

Arado AR 234 'Blitz' Orange series F.417 comprises 90 parts, including a V1 flying bomb. All parts are numbered and a full colour painting guide is included. Pictorial assembly instructions make building easy. The kit gives choice of parts for three alternative versions: AR 234 B-2 Blitz, 9 Staffel, 111/KG76, Achmer Germany, Feb 1945. AR 234 C-3 Production machine, early 1945. AR 234 C-2 with Fi 103 Flying Bomb Project.

First flown in June 1943, the AR 234 was to become the world's first operational jet bomber, and its high speed fully earned it the name of 'Blitz' (Lightning). A squadron of bombers and a number of reconnaissance units were in action up until the end of the war which cut short production of the 4-engined C versions.

Max speed: 461 mph at 19,685ft. Armament: two 20mm MG 151/20. Cannon and 2205 lb bomb load.

The other kit is of the Grumman F8F-1B Bearcat. While a more mundane kit, the subject is still far from exhausted. A wide variety of markings are available for Bearcats, ranging from Thai markings to US Navy or

The kit comes with decals depicting a machine of l'Armee de l'air Hanoi, Vietnam 1952 and the aircraft is fitted with under-wing fuel tanks and rockets.

US Navy markings are also provided. Grumman Bearcat F8F-1B Red series F.407 comprises 39 detailed parts with all parts numbered. Full colour painting guide is provided, pictorial assembly instructions as usual in Frog kits and choice of parts for two versions are included: VF-72 US Navy, Rhode Island USA, and carrier based on USS Leyte 1950, and GC1/21 'Artos' French Air Force, Hanoi Vietnam 1952.

The Bearcat followed the Wildcat and Hellcat and was specially designed to outperform the Japanese Zero fighters. First flown in June 1944, it was just too late to see service in World War 2, but nevertheless became a most successful plane with the US Navy and Marines. It had a large, four-bladed propeller and this, together with a very powerful engine and a relatively light-weight airframe, gave the Bearcat a sensational performance despite its stubby appearance.

Engine: 2,100 hp Pratt & Whitney R-2800-34W. Maximum speed: 421 mph at 19,700 ft. Service ceiling: 38,900 ft. Armament: four 20mm cannons, two 1,000 lb bombs and four 5" rockets.

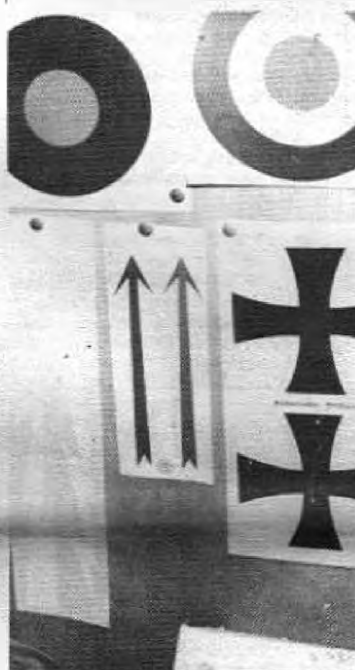
AMBASSADOR DECALS

Available from Model Airports and Hobbies, 11 Station Street, Nundah, Queensland, the wholesalers and retailers. Ambassador Decals are just what the modeller needs for finishing



A new Bearcat kit — this time from Frog. Markings are of French Airforce in Indo-China — 1952.

Ambassador Decals make model decoration easy. From Model Airports, Station St., Nundah Qld. and other retailers.



job. A wide range of military markings, roundels, stars and bars, swastikas, crosses, lightning flashes, flames etc., are available as water-slide transfers.

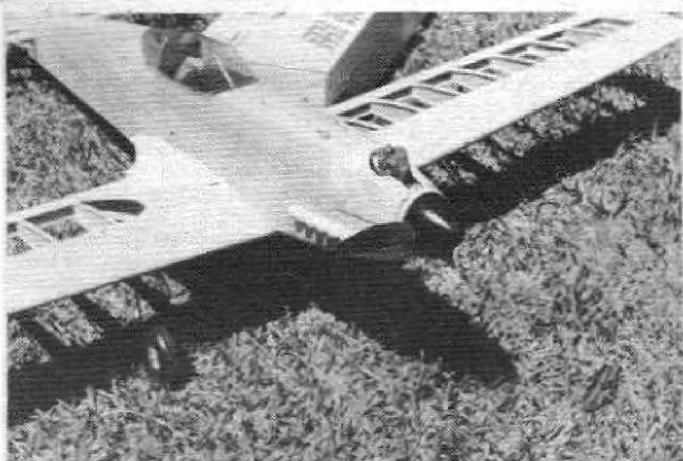
We used the 3" US pre-war stars on our Curtiss 'Shrike' stunter for a realistic effect. The transfers only take a minute in warm water and adhere well. The transfers can be moved around while wet, positioned and then patted down with a dry cloth. When dry, we sprayed them with gloss Estapol clear — fuelproof and non-yellowing.

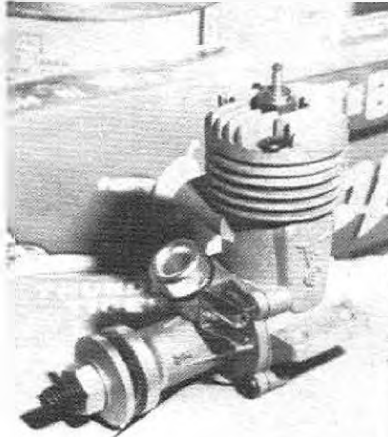
Right: Peter Shennan displays his father's Ikuta 'Tony' recently completed and test flown. Ikuta kits are available wholesale from EK-Logietrol, 44 Macquarie St., Earlwood, NSW. Enquire at your retailer. Below: Construction shot of 'Tony'.

IKUTA KITS

Here's our Ikuta 'Tony' completed from the EK-Logietrol R/C kit. This was delightful to build, and an exciting machine to fly — especially since we used 3 channels for a 4-channel job. Our EK-Logietrol 'Little Red Brick' has plenty of muscle and the TX is very reliable. However, we made the mistake of flying before adjusting the sensitivity of the stick! (Since remedied.) Result, an inadvertent left aileron command when 'up' was required! Ah well! We have now rebuilt the nose of the fuselage — the only part damaged in a prang that would have wiped out most R/C models. No wing damage! We have stiffened the TX stick response by adjusting the gimbal screws, and reduced aileron response to 1/8" movement.

R/C coupled rudder and aileron DOES work but the danger is too much control movement.





Left: The Thunder Tiger 2.5cc (1.15cu.in.) glow engine is low priced at \$19.50. 'Silent Flight' are the wholesale distributors.

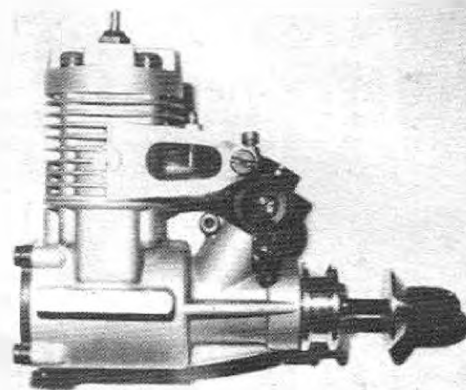
Right: The new Tarpan .40 has beautifully pressure die-cast crankcase and unique front exhaust with schneurle porting. At \$69.00 is moderately priced for a .40.

IKUTA KITS (Continued)

If we have any criticism of the kit at all, it would be that the fuselage sides were too soft. We notice, however, that other Ikuta kits we have examined have good grade wood for the fuselage sides, so perhaps we had one that just 'slipped through'. For choice, we prefer medium-hard sides. Considering the completeness of the machine cutting, these kits are excellent value.

Also, when an engine range of say, .15 to .19 cu. inch is given on the kit, preferably, the larger engine should be used. We found a .15 inadequate for the 'Tony', and have moved up to an Enya .19 R/C which is highly satisfactory. The Trainers and powered sailplane kits could get by with the smaller engines but the 'fighter' types such as the Tony, Zero, Spitfire etc., need the more powerful engines.

Verdict: Well-cut, fairly complete kits (excepting wheels, tank, pushrods, a fairly common status quo in kits these days), good quality wood generally used, designs which really fly. Stand off scale models tend to be built more to fly than to be 'scale' — but can be detailed to improve appearance. Value for money — excellent. Retailers' enquiries invited. Wholesaler: EK-Logictrol, 44 Macquarie St., Earlwood NSW.



JOHN STIDWELL BOAT HULLS

Johnson Products have been appointed sole Australian agents for the range of high performance 'Racing Models' model boat hulls and accessories produced by John Stidwell.

The most recent success in Australia by a 'Racing Models' hull was in this year's South Australian Championships. A 'Jaguar', powered by an O.S. 40SR and using Futaba radio equipment, won the 40 class multi-boat event.

'Racing Models' products are now stocked by most leading retailers, but if unavailable locally, may be ordered direct from Johnson Products, 136 Sturt Street, Adelaide, SA. 5000. Telephone: (08) 212 2795.

R/C ACCESSORIES

It has recently been brought to our attention that a new electronics firm in Canberra, R/C Electronics, of P.O. Box 73, Lyneham, ACT 2602, is manufacturing a number of useful devices for R/C and aircraft, boats, and perhaps scale control-line models. SPEED CONTROL FOR ELECTRIC MOTORS.

This is a proportional speed control for electrics with two models available: SCIR: Proportional Forward-Stop-Reverse, approximately 1 volt drop at 10 amps at full speed. For use in scale models.

SCIF: Proportional Forward-Stop, approximately 50 mV drop at 10 amps at full speed, for use in speed models (higher currents available). Price of each is \$45.00, Recommended Retail Price.

FAIL-SAFE 'BLACK BOX'

This is a dual purpose fail-safe 'black box' going between receiver and (throttle) servo with two functions:

a) Detects loss of signal and sends servo to a position previously selected (by screwdriver adjustment). When signal resumes, the servo then operates normally from the transmitter. For aircraft, this could be used for other functions besides throttle.

b) A small (5 cent piece size) thermostat is attached to the water-cooled head of the engine in a boat. Under normal operation, the thermostat does not operate, but when water cooling failure occurs (caused by weed over the water scoop etc.) the thermostat operates (at about 125 degrees C) and sends the throttle servo to the pre-selected (SLOW!) servo position. This should protect the engine from overheating and in fact, the throttle could shut the engine off in this position if this is desired and can be arranged. Price: \$20 for aircraft.

\$25 for boats (with thermostat). Recommended retail prices.

Dealers' enquiries are invited, and individuals may write direct to Geoff

had to be very gentle on the stick — in other words, it was meant as a learner's second or third plane, never as a first!

While I'm still handing out advice and idease, here's one for the C/L boys. You know how tedious it is unwinding new wires fresh out of the packet, hand over hand? Well, push a piece of foam plastic about 6" x 4" or so through the coil, cut the sticky tape put the outer end in the vice and walk away, spinning the foam between two fingers, (or push a sharpened dowel through the foam if you can spare it). That's quick.

Well, fellow modellers — all that may be very old hat to you, but I wish someone had told me!

Bill Purcell,
(Address supplied).

We have had a complaint from modellers in NSW that they travelled 300 miles to attend a competition only to find that it had been run three weeks previously! While we sympathise with them, surely it would have been the right thing to do to check first that the comp is actually ON? After all, contest calendars are printed up to 12 months in advance and anything can happen in the intervening months.

Dear Sir,

I feel that the following criticism is well justified and if the matter does not concern you directly I would be obliged if you would make this letter available to the people whom it does concern.

On two occasions in the last few months, the most recent was today (14 March) a modelling companion and myself have travelled literally hundreds of miles to attend model aircraft fixtures which were advertised in the calendar of events for 1975 and 1976 contained in issues of the publication Modellers' Monthly. On both occasions we have arrived at the venue to find that the event was just not on, and had extreme difficulty to find that out too. The first event concerned was at Wagga last October when we travelled over three hundred miles to be told that the event we had come to watch had been staged three weeks earlier than the published date. Fortunately, due to the extreme kindness of Jack Gilmore and the Wagga modellers we were not disappointed and they made the day for us. The second event was set down for Cooma today and we made the trip (three car loads) only to find the modeller's airfield completely deserted and after a couple of hours searching we were unable to locate a modeller or a model anywhere. There were no signs at the airfield to indicate a change of venue or cancellation of the event and eventually we gave up in disgust and returned to Bega having wasted a beautiful day which we could have spent having a

This sort of thing should not be allowed to occur, it is not only frustrating after having made the effort to attend but also extremely embarrassing when we pass on the information which appeared in the above publication to our friends and have them waste their time and money also.

We have knowledge of other people who have travelled even further than us to attend these 'non-events' and we appeal to you to ask those responsible to publish more specific details of venues, just Cooma or Wagga is very vague, and also to have the people at the venue make the site identifiable so that persons like ourselves do not have to spend much valuable time just trying to find them.

— S.A. Hergenhan
G.W. Buddie.
(Proposed Bega Model Flying Club).

LETTERS TO THE EDITOR

Dear Ed,
BRISBANE HOBBY EXHIB.

The final figure for the Exhibition was 20,421 (listed in places as - 413).

The final figure handed over to the Children's Hospital Appeal a few days ago was \$6,014.07. According to the Chairman of the Appeal it was the greatest Christmas present he had received.

We are pretty pleased with the whole thing. Imagine seven blokes taking on such a project without a red cent to back them up. The committee and the participating hobby groups made nothing out of the whole show, but derived a great deal of satisfaction and also a lot of interest in their respective clubs.

The BRISBANE HOBBY EXHIBITION 1976 is on the drawing board and the site is already booked — the Brisbane City Hall. More and more hobbies will be included and we are looking for selected items from other States of Australia and also other countries. I have already written to some areas in America with a view to publicising the show and soliciting entries.

A Primary Schools Hobby Competition will also be held for any boy or girl attending a Primary School from anywhere in the world. Further details will be provided but acceptance of the article is not necessarily an assurance that it will appear in the Exhibition. We are likely to receive so many that prejudging will have to take place in order to arrive at a workable number for display in the City Hall which will be in the final judging.

Any person throughout Australia and New Zealand — reading this publication — may write direct to me for further details, although these will be published later in MODELLERS' MONTHLY.

Sgd. Arthur Gorrie,
604 Stanley Street,

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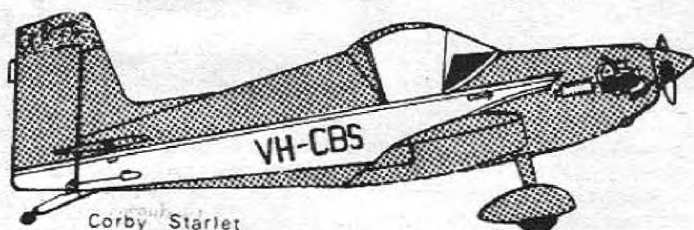
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M.A.N.	Yak 18P	72"	\$5.00

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Ernie Holden's	Stinson Reliant	52"	\$5.00
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	Ryan P.T. 22	1/6th	\$6.50
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	Pitts S2A	1/12th	\$2.75
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R/C FUN-FLY AT TAMWORTH on 12/13/14th JUNE 1976

There will be an R/C Fun Fly held at Tamworth on Queens Birthday weekend. Events will include Sailplane Stand Off Scale, Loop event, Elementary

Pattern, Loop & roll event, Helicopter, Mystery event, Balloon bursting and Limbo event. Last date for entries: 1st June. Contact G.C. Eddy, 27 Coronation Ave., Werris Creek 2341, Ph 26 day, 122 after hours.

MODELLERS' MONTHLY,
P.O. BOX 31, ROSEVILLE. NSW 2069.

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BLOCK CAPITALS PLEASE! PRINT CLEARLY THANK YOU.

COMPETITION SCENE

LETTER FROM MAAA

Please note that individual entrants will be accepted for the Trans Tasman events. It was stated in last Modellers' Monthly that only official teams and members would be allowed to fly, but this has been amended in a circular from the MAAQ Sub Committee sent out on 3rd February, stating that 'all Free Flight, Control Line FAI Speed and R/C Thermal events will be open to individual entries at \$5. entry fee per event, and will be run concurrently with the Team's contests.'

We have also been informed by the MAAA that the money allocated by the Government towards the Loxton Nationals administrative costs is still available when all the accounts have been audited. However no allocations have been made for any 1976 events.

URGENT CORRECTION

We regret that in publishing the R/C R/C Aerobatics pattern in Modellers' Monthly, a number of errors have been made. The rules have been changed since that drawing was first published. Gordon Burford has kindly provided details as follows:

R/C AEROBATICS PATTERN

Illustration in Modellers' Monthly Jan/Feb 1976 is very much out of date.

ROLLING EIGHT

Replace previous description by the following:
'Model starts in level flight, pulls up into an inside loop, at the bottom of the loop, at the point of entry, rolls through 180°, executes another inside loop downwards, at the top rolls through 180° and recovers on same heading and altitude as entry. The manoeuvre should be downgraded for the following reasons:

1. Model not level at start
2. Loop not round.
3. Wings not level before and after first half roll.
4. Second loop not round.
5. Second loop not immediately under first loop.
6. Model deviates left or right during loops.
7. Model not level at finish.
8. Model does not finish on same heading and altitude as entry.'

LANDING PATTERN

The first three legs will be at constant altitude, the descent to touch down will commence after second crosswind leg.

We apologise for any inconvenience we may have caused — Editor.

WORLD CHAMPIONSHIPS 1976 CONTROL-LINE TEAM & SUPPORTERS

This event will be held at Utrecht, Netherlands July 7th to 12th inclusive. The team is as follows

F.2A SPEED

Mr Robin Hign (VMAA)

F.2B AEROBATICS

Mr D. Harlow (VMAA)

Mr J. Tidey (NSWAA)

Mr D. Hanna (NSWAA)

F.2C TEAM RACE

Mr Stuart Thomson (VMAA)

Mr Peter Roberts (VMAA)

Mr Theo Georgiadis (VMAA)

Mr Dennis Prior (VMAA)

Mr Ron Wilson (VMAA)

Mr M. Vella (VMAA)

TEAM MANAGER

Mr Warren Williams (NSWAA)

ASSISTANT TEAM MANAGER

Mr Ian Liddicut (VMAA)

SUPPORTERS

Mrs G. Harlow

Mrs A. Prior

Mrs G. Thompson

Patricia Parsons

WORLD INDOOR CHAMPIONSHIPS 1976

This event will be held at Cardington United Kingdom, August 26th to 29th.

COMPETITOR

Mr Boyd Felstead (NSWAA)

SUPPORTERS

Mrs B. Felstead

Miss L. Felstead

— Fed. Sec. MAAA.

1976 QUEENSLAND CONTROL-LINE STATE CHAMPIONSHIPS

DATE: May day weekend, 1st, 2nd and 3rd May, 1976.

VENUE: Petrie Paper Mill (Subject to confirmation).

PROGRAMME & EVENTS:

SAT 10am. Processing TIR & Good

1st May year.

11am. Goodyear.

1 pm. Team Race, FAI.

3.30pm 1/2A Rat Race & Fun.

A Rat Race.

SUN 9am. Stunt. Junior Novice Open.

10am. 1/2A Combat, FAI Combat.

Open Combat, Jun. FAI Combat.

MON 10am. FAI Scale Jun. Nov. Open.

10am. Stand Off Scale

10am. A Rat. B Rat.

10am. Speed FAI.

10am. Class II. Class III.

10am. Intermediate.

10am. 'B' Proto.

3pm. Bendix 35.

ELIGIBILITY:

Open to all financial MAAA affiliated members.

ENTRIES:

CLOSE 9am — Late entries

10am. Prior postal and phone entries to N. SPAIN, Ph 496215 welcome.

FEES: Nomination Fee \$1.00

Entry Fee Senior \$1.00 per event.

Junior \$0.50 per event.

Team Entry Double fee.

Late Entry Double fee.

RULES:

1. All models and lines must be presented for processing before advertised starting time for the event.

2. Rules as per current rule book and local MAAQ Safety Rules. Engine Tethers must be used on all Rat Race and combat models. No thongs or similar loose footwear permitted in pilots' circle. Pilots' headwear to be approved by C/D. FAI Scale will be divided into Junior age basis: Novice — those who have not won basis: Novice — those who have not won an FAI Scale event in any State Championship in the last 3 years and Open.

Open to all MAAA Affiliated Modellers

Rules for Stand Off Scale and Bendix 35 to be found elsewhere on this page.

PRIZES:

Trophies for first, second and third places in each event. Championship Trophy to C/L Champion. Points allocation as decided at MAAQ Meeting 15/9/75.

BENDIX RULES:

A set of Rules for Stand Off Scale based on MAAQ Radio Stand Off Static and C/L FAI Scale flying rules was proposed by N. Spain, seconded by R. Morrison.

It was moved by R. Morrison that as current Bendix Rules are restrictive and eliminate a number of otherwise excellent kits, that they be revised for 1976 as follows:

To be similar to Goodyear in all respects as to rules regulation, construction etc., but with the following variations:

ENGINE SIZE: Up to 6cc Nominal capacity (40 engine definitely excluded).

TANK: Aeroflyte No. 1 commercial tank, plumbing may be altered and pressure feed allowed.

AIR FRAME: A semi-scale profile model which must resemble in general outline of fuselage and flying surfaces on existing full size aeroplane. Onus of proof, i.e. photo, drawing etc., to be on entrant.

CG kits eligible.

UNDERCARRIAGE: Two 2" diameter wh

adjustable minimums

CONSISTENT FLYERS DAY

Feb. 8th

Apr. 11th

Aug. 8th

Oct. 10th

i.e. — the second Sunday in the month.

FEB 8 THUNDERBIRDS

Team Race, FAI & B

Combat 1/2A, FAI, OPEN JUN. FAI

Rat Race 1/2A, A, Jun. A.

'Sleek Streak'

'Sleek Streak' models purchased on ground.

APR 11: STARDUSTERS

Bendix 35 Trophy Race

Stunt 1st Round

Combat 1/2A, FAI, Open Jun. FAI

'Stand Off' Scale

AUG 8: COUNTRY CLUB INVITATION

Combat, 1/2A FAI, Open Jun. FAI

A Rat

Goodyear

Club choice

OCT 10: IPSWICH LIGHTNINGS

Combat, 1/2A FAI Open, Jun. FAI

Stunt, 1st Round

Rat Race, 1/2A, A, B, Jun. A

ENTRIES:

Close 9 am. Late 10am.

Fees: Senior 50c, Junior 30c.

Late: Double

Team: Double

RULES:

As per State Championships.

PRIZES:

Certificates for 1st, 2nd and 3rd, and points (allocation as decided at MAAQ meeting 15.9.75), towards one

Trophy to be called 'THE CONSISTENT FLYER TROPHY'.

TASMANIAN STATE CHAMPS (Continued from Page 14)

Damaged gliders were much in evidence and very few competitors emerged with models unscathed. The major interest in the soaring event centres around Robyn Anderson who very nearly eclipsed all male fliers and finished a very creditable second to Steve Ralph.

I hope all you male chauvinists realise that Robyn may enter 'B' pattern in the near future!

RESULTS

F.A.I. PATTERN

1. I. Kristensen, Saturn, OS60FSR, Proline.
2. B. Angus, Northerner, Kraft 61, Kraft.
3. B. Green, Whistler, OS60FSR, Kraft.
4. J. Tracy, Saturn, OS60FSR, Kraft.
5. G. Anderson, O/D, OS60, Micro.
6. S. Ralph, Tiger Tail, Webra Speed, Kraft.

7. O. Badcock, Northerner, OS60FSR, Kraft.
 8. I. Watts, Gemini, Kraft 61, Sankyo.
- ### QUARTER MIDGET
1. L. Tandy, Miss Q/M, Taipan .15, Futaba.
 2. B. McKay, Miss Paranoia, Taipan .15, Kraft.
 3. P. Foxton, Mustang, Taipan .15, Kraft.
- ### 'B' PATTERN
1. M. Glover, O/D, Enya 45, P.C.S.
 2. G. Haley, O/D, Merco .61, Kraft.
- ### FAI & OPEN PYLON
1. B. McKay, Minuteman, K&B 40, Kraft.
 2. C. Pentland, Minuteman, HP40, Kraft.
 3. B. Angus, Minuteman, K&B40, Kraft.

HELICOPTER

1. M. Tandy, Lark, Webra 20, Futaba.
2. W. Lampe, Shark, O & R, Futaba.
3. L. Tandy, Lark, Webra 20, Futaba.

THERMAL SOARING

1. S. Ralph.
2. R. Anderson
3. J. Firth
4. G. Anderson
5. C. Barringer
6. B. McKay.

The Championship weekend is always one of the highlights of the year for most modellers and we always enjoy the company and competition provided by interstate visitors. We would like to thank Ivan Kristensen, Jeff Tracy, Brian Green, Graeme Pentland, Barry Angus, Max and Lance Tandy, Bill Lampe, Ian Watts and John Firth for their attendance. These fliers ensured the success of the weekend at the flying field and also provided some fine company.

T.R.C.S. TROPHY

Support for the events counting towards the T.R.C.S. Trophy was a little disappointing and although 28 fliers collected points only Bernard McKay and Gerald Haley competed in all 5 contests.

Bernard McKay emerged as the outright winner however he was closely pressed by Steve Ralph, who only managed to compete in two contests. Perhaps a fresh start for the 1976/77 Trophy will result in keener competition, however it is apparent that interest in this type of flying is waning.

RESULTS

1. B. McKay	40 points
2. S. Ralph	44
3. G. Haley	43
4. G. Wilmot	28
4. D. Christian	28
4. G. Leverton	28

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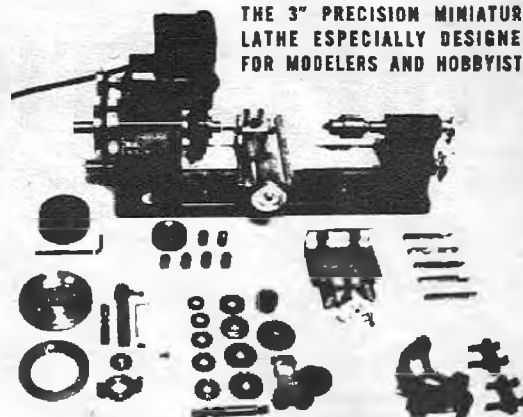
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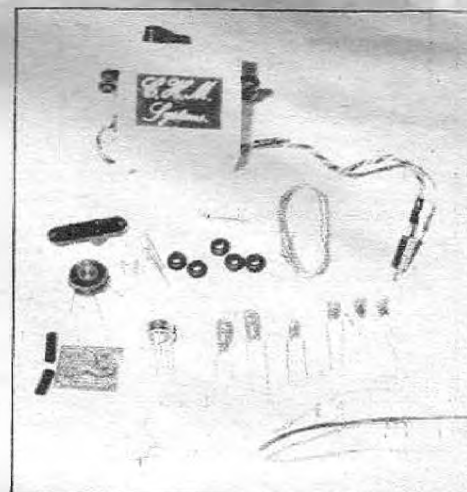
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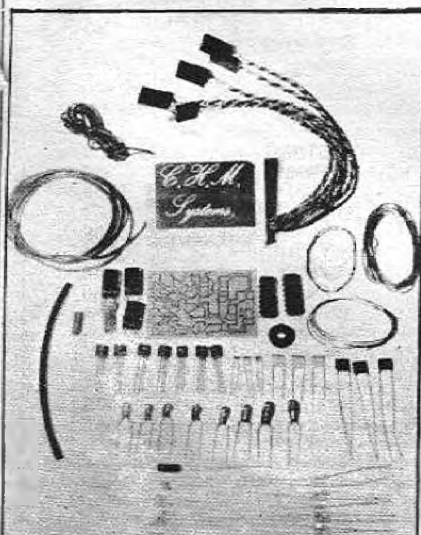
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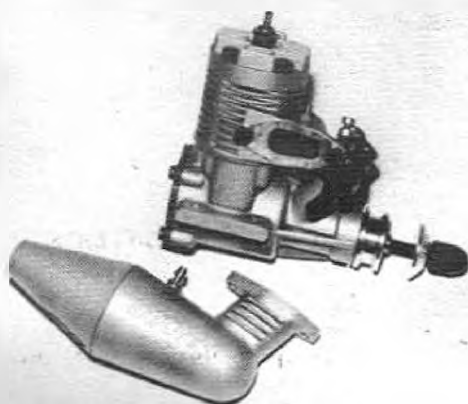
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Brass tanks - small control line 40 cc.
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COMPETITION SCENE

MORE TRANS TASMAN NEWS

TEAM MEMBERS

- F/F 3 each event. A.2, Wakefield,
FAI Power
C/L 3 each event. Aerobatics, FAI
Speed, FAI Team Race.
R/C 5 in pattern.
4 in Pyton.
5 in Thermal.

Total of 32 members from each country.

Non team entries will be accepted for separate events. There will be no limit in R/C Thermal and C/L Speed, but a limit of five in each F/F event. Entry fee of \$5.00 per event for non team members.

Souvenirs are being selected and special badges being struck. Social evenings and banquet are being arranged.

Everything is working up to a fabulous Trans Tasman.

The MAAQ will be distributing programmes of flying events through hobbyshops and other points of associations of aeromodellers. Non-member hobbyists are welcome spectators.

— Arthur Gorrie,
Qld. P.R.O.

RESULTS MAAQ C/L CONSISTENT FLYERS DAY AT THUNDERBIRDS. 8/2/76.

GOODYEAR

1. J. & M. Dillon (ILMAC)
2. J. Jamieson & D. Emmerson, NMAA
3. G. King (ILMAC)

MAA COMBAT

1. J. Jamieson, NMAA
2. C. Hutton, S'dusters.
3. —

OPEN RAT

1. K. Dawes, T'Birds
2. Brown & Walker, S'Dusters
3. M. & J. Dillon, ILMAC

JNR RAT

1. P. Barraclough.
2. —
3. —

CHASING OVERSEAS STANDARDS.....

..... a worthy target?

By DON BROUGHTON

FAI Team Race at 95-100 mph with 40 laps and 3.55 to 4.10 race heats. Goodyear speeds at 105-115 mph. Open Rat Race at 150-160 mph and Class 2 T/C at 115/125 mph speeds and 50 laps

Does this make you feel bad? Wait a minute though; what sort of gear are the fasties using? Bugis, Rumpel Rossis in FAI T/R, Rossis and nitro fuels in Goodyear, OS 40R and H.P.'s with 60% nitro in Open Rat Race and sleeved Schneurle 40's for Class 2 Team Racing.

Now, the thing that strikes you about all this, is the cost and expertise required to produce this year. Great for World Champs etc., but how about our local club events?

Our 2.5cc rat races are great stuff with stock 2.5cc diesels showing up pretty well and everyone has a bash. What effect on the entry will the appearance of a Rossi do have?

Two years ago in FAI T/R Taipans were used and the racing was close and good fun. The whole point is, given the same gear, the best operators will win, so why raise the cost of flying

with exotic complex gear which cannot be made by the average bod?

Dave Kidd's scheme to encourage T/R with a 'B' grade race for triers will need to be revived and sponsored by the modellers who can afford the fancy gear.

Before you rush out to buy a Rossi, just take a look at the performance out of the box of non-Rumpel tuned engines. My own was selected tight to enable correction of the taper and fit and would not make 80 mph or 25 laps fitted with a cox choke. Peter Roberts has since told me that Rossis like a 3.5 to 4mm choke to go well. Anyway, Bruce Treagus tried to re-fit it to no avail, so it's a chrome job now.

Dave O'Brien's motor was reputed to have 50 laps at good speed but struggled in the actual racing. Warren Shurmer also did not have the performance he expected, so DON'T be disappointed. Bruce Fellow's diesel conversion achieved 34 laps at 90 mph but may go better when chromed.

Now look at Ron Wilson's FI Super Tigre and the 4.38.2 heat time at the 29th Loxton Nats; only a fraction down on Hutton Oddy's Bugi at 4.32. And to quote Ron's past comment 'I'll stay with FI Supers because I know they can really go'. Ron has recently bought two RV Rossis.

Will good gear make you fly better or will it allow you to make more errors and still break 5 minutes? (Courtesy of Victorian Control-line Aeromodellers 'Circle Torque')

WANTED!

MR EXPERT MODELLER.

DESCRIPTION:

Been in the modelling game for years. Considered an expert in his particular field. — R/C modelling, or Rubber-powered models, or Control-line aerobatics or Control-line speed, or Control-line Team Racers or Control-line Rat Racers or Control-line Combat or R/C Yachts or R/C scale boats or Plastics aircraft modelling or Plastics military modelling or Plastics ship modelling

OR ?

If you fit the description and can write reasonably coherently, contact us. We are looking for simple 'How to' articles on gadgets, new designs of model aircraft, ships, etc., and we need plans and photographs.

We pay for successful contributions — for example, a 3000 word article with four photographs and an inked plan of good quality (on draughting tracing paper, acetate or linen, is worth from \$30.00 to \$60.00. Not a fortune, but still, some remuneration. If you have something worth more, please submit anyway.

Note: We don't pay for Club publicity orientated articles! They give your Club publicity and we publish them free of charge as a service to Clubs.

(One author, who provides articles of a 'Club' report nature, thinks he's entitled to be paid for them. We don't mind paying photography costs but the articles are slanted to give his club publicity and even promotes his friends' model plans! Fair crack of the whip!)

Anyhow, — have a go. You may not be an expert, but your modelling attempts may be of interest to others.

— The Editor.

Scale Racing (Goodyear) Equipment Analysis:

Supplied by: T. Georgiadis

Courtesy of Victorian Control-line Aeromodellers

TEAM	STATE	MODEL DESIGN	ENGINE	* PROP SIZE/MAKE DIA x FLITE (INS.)	FUEL SYSTEM **
Liddicut/Georgiadis	VIC	"Buster 20"	Super Tigre G15	7x6 Taipan Modified	Squeeze+Q/Fill
Dillon/Dillon	QLD	"Miss San Bernadino"	Super Tigre G15	7x5 Graupner - N	Squeeze Bottle
Adler/Turna	WA	"Owl Racer"	Super Tigre G20/15D	7x7 1/2 Bartel G/Fibre	Squeeze+Q/Fill
Rowney/Benkesser	WA	"Cosmic Wind"	Super Tigre G20/15D	7x7 1/2 Bartel G/Fibre	Squeeze Bottle
Roberts/Wilson	VIC	"Argander"	Super Tigre G15	6x6 Bartel G/Fibre	Squeeze+Q/Fill
Lee/Holland	NSW	"Argander"	Super Tigre G20/15D	7x7 1/2 Potter (Drazek) G/F	Squeeze Bottle
Holmes/Nugent	VIC	"Miss San Bernadino"	MVVS 15	6x6 1/2 Don G/Fibre	Squeeze Bottle
Owen/Owen(Snr)	NSW	"Buster 20"	Super Tigre G20/15D	7x6 Taipan	Squeeze+Q/Fill
Steel/Coombs	SA	"Cassutt"	Taipan 15TBR-S	6x6 Taipan Modified	Squeeze+Q/Fill
Dislers/Pellschmidt	SA	"Boo-Ray"	Cox 15 Special	6x6 Taipan	Squeeze Bottle
Gilbert/Williams	NSW	"Argander"	Taipan Blackhead D1.	6x6 Taipan Mod. to 7x5	Squeeze Bottle
Nugent/Nicholls	VIC	"Argander"	PAW 15	7x8 Top Flite wood	Squeeze Bottle
Oomen/Townsend	NSW	"Boo-Ray"	Taipan 15TBR-S	6x6 Taipan	Squeeze Bottle
Jeffery/Jeffery	VIC	"Little Gem"	Super Tigre G15	7x4 Taipan	Squeeze Bottle
Shurmer/Rule	NSW	"Buster 20"	Super Tigre G20/15D	7x6 Bartel(Iorn.) G/F	Squeeze Bottle
Stivey/Collins	WA	"Cassutt"	Rossi 15RV-N	5x7 Bartel(Iorn.) G/F	Squeeze Bottle
Owen/Owen(Jnr)	NSW	"Buster 20"	Super Tigre G20/15D	7x6 Taipan	Squeeze Bottle
Rule/Shurmer	NSW	"Miss San Bernadino"	Super Tigre G20/15D	7x6 Taipan Grey	Squeeze Bottle
Miles/Smith	NSW	"Bonzo"	Super Tigre G20/15D	7x6 Taipan Grey	Squeeze Bottle
Waterbeemd/Houstein	ACT	"La Jolita"	Rossi 15FI-N	7x6 Top Flite Nylon	Squeeze Bottle
Jenkinson/Jenkinson	VIC	"Pitts Special"	Taipan 15TBR-S	6x6 Taipan Grey	Squeeze Bottle
Squire/Sweetnam	VIC	"Pitts Special"	Taipan 15TBR-S	7x4 1/2 Top Flite Maple	Hand Pump+Q/F
Burke/Warburton	SA	"Shoestring"	Rossi 15FI	7x6 Taipan	Squeeze Bottle
Herron/Boughton	VIC	"Cassutt"	Taipan 15D	7x7 Don G/Fibre	Squeeze Bottle
Thomson/Edmonds	VIC	"Argander"	Taipan 15TBR-S	7x4 Taipan	Squeeze Bottle

Note:

* Propeller Abbreviations: G/F - Glass Fibre, C/F - Carbon Fibre, N - Nylon.

Diameters quoted in fractional sizes are trimmed from standard diameters in their particular brand sizes:

** All models incorporated fuel shut-offs. Fuelling System Abbreviations: Q/Fill - Tanks filled via Quick-Fill plug. Squeeze Bottle - Hand held fuel bottle.

ADHESIVES - WHICH ONES?

By RICK HARRIS

With so many adhesives available today, it can be confusing, especially for the beginner, to decide which adhesive to use for what purpose.

This article is not intended to 'sell' any particular brand, but rather to give a few brief comments on the more common types and to provide a table of adhesives for quick easy reference and comparison.

Adhesives are usually classified either by their setting mechanism or their ingredients.

A few misconceptions should be cleared up first:

1. Cramping time — the time needed for the adhesive to 'grab' before the cramps can be safely removed without the joint breaking.
2. Setting time — the time needed for the adhesive to dry completely and reach maximum strength.
3. Water resistance — the ability to resist water penetration for a short period of time.
4. Waterproof — the ability to be completely impervious to water penetration.
5. Pot life — the time an adhesive remains usable once it has either been mixed or removed from its container.
6. Shelf life — the length of time an adhesive can be stored in its container before it starts to deteriorate through slow chemical change.

ive can be stored in its container before it starts to deteriorate through slow chemical change.

7. Strength — an adhesive should be as strong or stronger than the material or materials to be joined.

THE ADHESIVES

1. Epoxy Resins — there are two types - standard and fast setting. These were developed originally for metal to metal bonding or for bonding most non-porous materials. However they can be used for bonding wood and balsa. It is rather brittle compared to other adhesives and will fracture under vibration. The fast set type is more brittle than the standard type.

2. Balsa Cement — designed specifically for bonding balsa to balsa. It is suitable for most modelling purposes except for powered radio control models which exert fairly high forces on joints during some manoeuvres. It is toxic and inflammable.
3. P.V.A. (white glue) — a water based glue prepared to join wood, paper, leather and most porous materials. It is suitable for bonding bearers to bulkheads as it has good shock resistance. P.V.A. dries either clear or translucent. It does swell soft timbers and curls balsa if spread over a reasonably large area. This glue should not be thinned down as it will lower the bond strength.
4. Contact adhesive — these impact cements are either water soluble rubber latex base or a neoprene, toluene, MEK base. They are suitable for bonding doublers to fuselage sides and cap strips to ribs, though the water based type tends to curl the balsa. The other type is toxic, has a pungent odour and is inflammable — so use it in a well ventilated area and away from naked flame (smoking is definitely a health hazard in this case).

Spray contact adhesives are ideal for bonding large areas but are also toxic and inflammable. BOTH surfaces must be coated with glue and must be touch dry before bringing the two surfaces together. Its great advantage is that it does not need cramping but its bond strength is much lower than most other adhesives.

5. Formaldehydes (Resorcinol, Melamine) — these are completely waterproof and fuel proof, making them ideal for marine use and joining bearers to bulkheads. They do stain the timber at the join.
6. Cyanoacrylates — a VERY fast setting adhesive. Extreme care must be taken when handling this glue as it will bond fingers together in about 5 seconds. Cleaning and thinning agents are toxic like the cement itself. These adhesives are more suitable for bonding non-porous materials though it will bond balsa, plywood and timber. However it will not bond teflon or any 'greasy' plastics. It is recommended that these types of adhesives be kept in the refrigerator (or freezer) to main the short shelf life (6 months). A single drop on metal will cover about one square inch so that its cost is balanced out by its economy. Let the cement warm to room temperature before using.
7. Polystyrene — a cement prepared for joining plastics except for teflon and some of the thermosetting 'greasy' plastics. It does have a rather pungent odour, is toxic and inflammable. Use the glue in a well ventilated area — there have been several deaths from 'sniffing' of this cement in confined areas.

(Continued on Next Page)

29th Loxton Nats.

Photos by:
T. Georgiadis & D. Holmes



1. Beautifully engineered Avro Lancaster by Max Newnham (Old). Its last appearance was at the 1969 Wallacia Nats where it was extensively damaged. Seen here during the static judging at the Loxton Sports Complex. Came equipped with 4 OS 30 engines, fully retractable undercarriage, throttle control, and all home-made except tyres. A clear winner on this occasion.
2. The Avro Lancaster again in flying mode. It was a real handful to fly, necessitating complete concentration by Max. An entry to the next C/L Scale World Champs, more detail must be added to upgrade its World Champs hopes.
3. Three-quarter rear view of the Avro showing the fine detail of the turrets. Beautifully constructed.
4. Flying view of Bart Ronke's (NSW) Piper J3 Cub Clipped Wing, during a high elevation fly by. Blue and white trimmed it was very eye catching. OS 30 powered, swinging a 10x4 prop, with fully detailed interior and fully working control assembly, eg. joy-stick, rudder pedal. Undercarriage and tailwheel fully sprung.
5. Nothing like a bit of relaxation from the hot weather as seen here by Barbara Kowalski (Vic), who was also the CLAM team official mascot carrier.
6. Rather serious look in Dougal Holmes (Vic) face as he poses with the Nugent/Holmes FAI team racer.
7. Camera-shy(?) Peter Roberts with his Open Rat Racer with K&B 40RV. Disqualified in one heat for flying high.
8. Colin Jeffery (Vic) and open rat racer using inverted pen and K & B 40 power. Took 2nd spot.
9. National winning open rat racer of Bourne/Cook team equipped with Harter's Mac pen and OS 40 SR power. Timed at

ADHESIVES

Adhesive	Setting Mechanism	Cramp time	Setting time	Water-proof / Resist	Advantages / Disadvantages	uses	Form
Epoxy Resin	Polymerization	30 mins to 24 hrs	1 hr to 5 days	Proof	Mix thoroughly. Brittle joints. Dries clear to translucent	Joining non-porous. Quick minor field repairs (fast set type) metal to wood.	2 pot. 1 tube resin, 1 tube hardener, both liquid.
Balsa Cement	Evaporation of solvent	Up to 30 mins	Up to 12 hrs	Resist— high	Clear, gap filling. Pungent odour. Inflammable. Not suited to R/C models.	Joining balsa to balsa	Ready to use. Clear liquid
P.V.A. (white glue) [Poly vinyl Acetate]	Evaporation of water	Up to 24 hrs	Up to 3 days	Resist— low	Dries clear, gap filling. Non toxic. Both surfaces must be coated.	Joining any two porous materials, — balsa, timber, paper, leather, material	Ready to use white liquid
Contact Adhesive	Evaporation of solvent	Instant bond	10 mins to 40 mins	Proof	No cramping needed. Both surfaces must be coated. Pungent odour, inflammable.	Joining most materials but not greasy plastics. Balsa, plywood, material, leather, metal, paper.	Ready to use cream liquid.
Formaldehyde	Polymerization	Up to 24 hrs	Up to 8 days	Proof	Completely waterproof. Slow drying. Stains the timber.	Bonding wood to wood. Ideal for marine use.	2 pot. Liquid resin plus powder hardener.
Cyanoacrylates	Polymerization at room temp.	Up to 10 mins.	5 secs to 60 mins.	Proof	Very fast setting. Only small amounts needed. Toxic — care needed. Good joint needed.	Joining non-porous materials except teflon, greasy plastics. Can be used on porous materials.	Ready to use clear liquid.
Polystyrene	Evaporation of solvent	Up to 6 hrs	Up to 24 hrs	Proof	Pungent odour, toxic, inflammable. Dries clear	Joining plastics to plastics except for greasy plastics (teflon).	Ready to use clear liquid.

ADHESIVES - WHICH ONES?

(Continued from previous page)

A FEW TIPS

1. Always thoroughly mix any two part adhesive and use the proportions as per instructions. In cold or damp conditions it may be necessary to add about 5% more of the hardener to help the curing process.
2. Always have the cement and the materials to be joined at room temperature.
3. Always make sure the materials to be joined are clean and free from grease and dust.
4. Always read the instructions carefully — and its uses.
5. Always use the right adhesive in the right place.
6. Always use the smallest amount of cement to do the job properly — but better too much than too little.
7. Try to avoid butt joints (end to end) as these are the weakest type of joint.
8. Most cemented joints need to be cramped for a certain period of time — failure to do this will result in an 'open' joint which is much weaker.
9. Temperature and humidity affect the cramping and setting time of most adhesives.

Editorial

Examining new engines recently, we were struck by the fact that while most silencers (or mufflers) are probably efficient, all of them are terribly bulky and detract from the lines of any model on which they are installed.

Why, oh why, must they be round section? Why must they be separated from the engine by a length of connecting spacer? Why couldn't the muffler be built close to the engine or wrapped around the head? Why couldn't they be square or rectangular section?

We have put up with these unfortunately necessary excrescences for too long. Manufacturers! How about giving this some thought? Try cowl one of these monstrosities INSIDE a scale model. One has to build unnaturally large to enclose it all.

Saw Barry Franklyn of KMFC flying his scale Hurricane just before the NSW Championships. He showed me the very neat silencer he had built around his .40

engine, a silencer that was almost completely hidden inside the cowl! Silencing was most effective. It CAN be done.

With the new anti noise laws in effect, we will have to make greater efforts to see that we are 'without sin' where our engines are concerned. Yes, a trail bike sounds noisier than a .60, but they will have to come under scrutiny soon. Let us set an example and SILENCE.

NSW CHAMPIONSHIPS

The Easter weekend has come and gone and the delightful weather experienced over that time made it sheer pleasure to fly. This was reflected in the excellent aerobatics. We'd like to commend the sportsmanship of Reg Towell who, when he found that a stunt judge was needed, dropped out of the first round and acted as judge. — This made his subsequent performance in the last round doubly pleasing and his win all the more deserved.

OTHER EVENTS

Over the Easter and Anzac weekends, numerous other competitions were held interstate, and we urge Club Secretaries to send in their reports promptly. Slowness in doing this delays the magazine, and in some cases, you may miss having your comp. reported. PLEASE report promptly and send us photos if available. Remember, OTHER readers are interested in what happened in YOUR area.

Modellers' Monthly is actually running bi-monthly, and if we are to continue in this way, we'll have to call it just 'The Modeller' — we find that the many delays caused by chasing material and advertisers mean that it is difficult to print monthly. We do our best but it is frustrating when vital material has not come in and we know it is available. Nevertheless, we are regular and when time and staff permits, will revert to full monthly.

RACING MODELS

by John Stidwill

HULLS

- Jaguar** ... Winner of the 6.5cc British Champs (beating the 10cc class as well).
- Panther** ... Very safe 3.5cc hull in rough water.
- Cheetah** ... Very fast 6.5cc hull for calm to mild chop conditions.
- Gazelle** ... Winner of the Eliminating race for this year's World Champs.
- Impala** ... Winner of the South African Champs (For 6.5 and 5.5cc).
- Eagle** ... South Africa's most successful 10cc hull (also for 6.5).

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Fuselage 1,370 mm
Wingspan 1,800 mm
Wing Area 47 dm²
Airborne Weight 4.3-4.8 kg
Engine 40-45 twin

Fuselage 1,127 mm
Wingspan 1,300 mm
Wing Area
Upper 28, lower 24.5 dm²
Airborne Weight 3.3-3.5 kg
Engine 60

LITTLE STINKER



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ZERO FIGHTER

\$76.95 (.40)
\$99.95 (.60)



Fuselage 1,318 mm
Wingspan 1,592 mm
Wing Area 43.6 dm²
Airborne Weight 3.2-3.7 kg
Engine 60-61

PHANTOM II

Fuselage 1,200 mm
Wingspan 1,200 mm
Wing Area 34 dm²
Airborne Weight 2.5-3 kg
Engine 40-60



\$94.95 (.40-.60)

FW-190 - A8

Fuselage 1,310 mm
Wingspan 1,530 mm
Airborne Weight 3.2-3.5 kg
Engine 50-60



\$103.95 (.60)

HAYABUSA (OSCAR)

\$99.95 (.60)

Fuselage 1,250 mm
Wingspan 1,500 mm
Wing Area 40 dm²
Airborne Weight 3.3-3.5 kg
Engine 60



CORSAIR F4U-1D

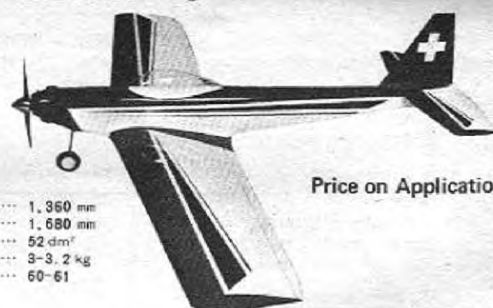


Fuselage 1,200 mm
Wingspan 1,570 mm
Airborne Weight 3.2-3.5 kg
Wing Area 45.6 dm²
Engine 60

\$109.50 (.60)

MARABU MK-3

Fuselage 1,360 mm
Wingspan 1,680 mm
Wing Area 52 dm²
Airborne Weight 3-3.2 kg
Engine 60-61



Price on Application

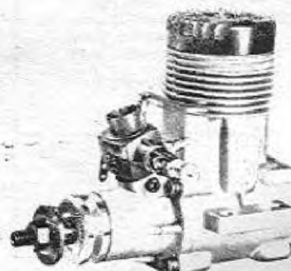
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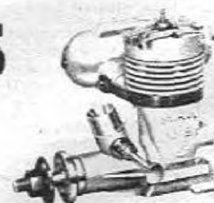
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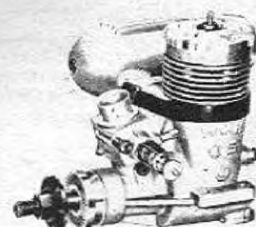
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MAX-60F SR



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With Silencer



MAX-40R/C (illustrated)

MAX 40SR R/C \$75.87
With Silencer

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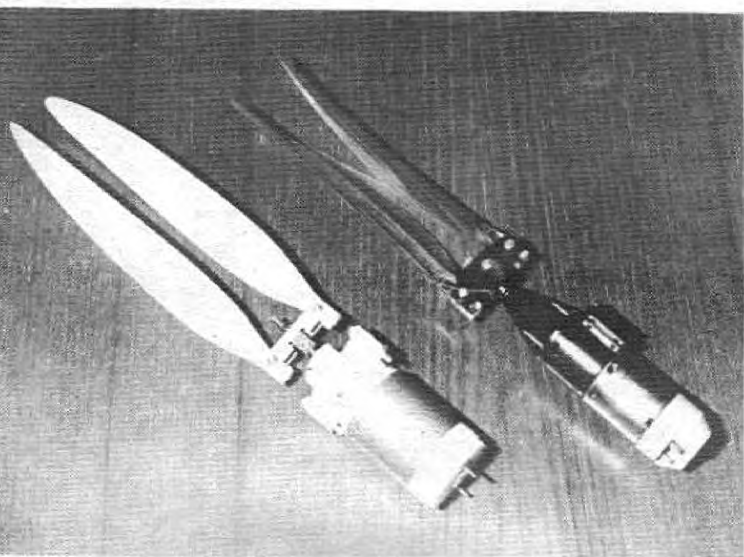
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ELECTRIC

FLIGHT

JOHN C. BLACK'S COLUMN



ELECTRIC POWER UNITS FOR GLIDERS

It became clear fairly quickly, as more and more experimentally minded aeromodellers built electric motors into their models, that one of the most useful applications of such power units lay in the boosting to altitude of radio controlled gliders. The large wing area and slow flying speed of the average glider enabled the weight of the battery pack to be carried with ease.

One of the problems which limited the results obtainable was the matter of propeller diameter. A large wing span requires a large propeller, and the slower the flying speed, the more necessary this becomes. Look at the case of ultra slow flying indoor models where the propeller diameter can be two-thirds of the wing span. Obviously gearing between electric motor and propeller was called for, and the first commercially available geared assembly was put on the market by Graupner, in 1973. The propeller was mounted on the reduction gearbox as a pusher, and was designed to fold when the power was switched off in order to minimise drag on the glide. By using the units in pairs, a very large propeller disc area was achieved, and good aerodynamic results obtained in a suitably designed glider, even though the actual measured power output was modest. Graupner deserve credit for their initiative in breaking new ground.

The actual motor was made by a well-known German specialist in electric motors as a 6 volt boat motor. To obtain more power, it was run in the aircraft application on 12 volts. As a boat motor, it had been designed totally enclosed (to exclude water) and consequently, the heat build-up when running on a doubled voltage, could not be dissipated by any air flow through any part of the motor. The major source of heat build-up in a DC motor is the commutator/brush area; the second source being the armature windings. Any heat in the permanent field magnets and casing only comes from radiation or convection from the

primary heat sources. What is required, is an air blast right through the heart of the motor.

Graupner provided a corrugated aluminium housing, which they claimed provided cooling, but which in practice, was merely a means of mounting the motor. The armature was five pole, and the brush design simple, but effective. It was a great pity the motor had no effective cooling as its potential power output was probably twice as great as could be safely utilised. A planetary gear-box was attached to the drive end, with three planet gears. The sun gear, planets and ring gear were all moulded in nylon with nylon shafts and bearings. The propeller shaft was of steel, running in a sintered bronze bush and the blades of the 350mm diameter folding propeller were moulded in a thin plastic. The reduction ratio, motor to prop, was 5 to 1, and the measured prop RPM static on the flight battery pack was 1600 RPM at an input of 41 watts.

The battery pack consisted of ten 1.2Ah Nickel Cadmium cells in two plastic boxes of five cells each. No radio interference suppression was build on to the motor, but disc capacitors were provided which could be soldered into the circuit. The motors ran smoothly and well, giving about a six minute run on a fully charged battery, but the whole assembly was very heavy, and the drag of the wing mounted motors was high, even with the propeller blades folded. Graupner ceased production in 1974, and at the Nurnberg Hobby Fair in February 1975, revealed a completely new design, utilising a single motor, with one folding prop, designed for nose mounting.

The pressure on Graupner to drop their twin installation came from another German manufacturer named Multiplex. This firm, in early 1974, produced a twin pusher set, also with folding propeller blades, but the engineering approach was rather different to Graupners.

The Multiplex motor is a small and

very simple three pole design, of slot car ancestry, and operating normally in the RPM range 21,000 to 25,000. To reduce this very high RPM to a useful figure, a 10 to 1 reduction gearbox is fitted. The gear-box is a nylon moulding, packed with a special grease, and with the gears of steel and bronze. The countershaft is of polished steel, and the propeller shaft runs in a grease lubricated bearing 30mm long. The gearbox has moulding lugs moulded to the sides, so that the whole assembly can be mounted to bearers with four screws just like a piston engine. The location of the lugs is such that half the total bulk of the motor/gear-box is buried in the wing to minimise drag. The propeller blades are moulded with a deeply undercambered aerofoil section of a rigid unbreakable plastic. The motor casing has an airhole 13mm x 10mm so that in flight an airflow is passing around the armature and brushes. Attached to the commutator end of the motor is a small fibreglass printed circuit board with four disc capacitors and two ferrites for radio interference suppression. The battery pack has 7 1.2Ah cells, and is connected to the switchboard and motors by lengths of ultra flexible cable which are already made up with gold plated five pin plugs. The switchboard is of glassfibre 60mm x 55mm and mounts connector sockets, a fuse for each motor, a master safety switch, and a servo operated three position switch designed so as to start up the motors and unfold the propellers gently. This is achieved by passing the current momentarily

through a resistor as the servo moves between OFF and ON. Using its 7 cell flight battery, the 300mm diameter propeller is turned at 2100 RPM, at an input of 45 watts. Note that the input wattage is a little greater than for the Graupner motor.

As the batteries are made up of cells of the same size, and Multiplex uses less of them, the power run obtained with the Multiplex is less; averaging about four and a half minutes.

It proved quite simple to mount the Graupner propeller on the Multiplex motor. Running on its normal battery, the little Multiplex motor spun the prop at the same RPM as the Graupner motor, that is, as near as it was possible to rear on a light operated tachometer. To do it, the Multiplex motor was absorbing 5 watts more power than the Graupner, but this would be largely due to the Multiplex motor being held below its optimum RPM.

To sum up then: These two glider boost assemblies of rather differing engineering, produce practically the same power. The Graupner set uses a little less current and provides a longer run. At the cost of a shorter motor run the Multiplex assembly is 345 grams (12.2 ounces) lighter. This is an extremely significant amount for a R/C glider of normal size. The Multiplex set also has a lower installed drag and a better shaped non-flexing propeller blade.

(Continued on Page 22)

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CONQUEROR

Conqueror represents the end of an era. Its service life extended over a period of eleven years, from 1955 to 1966. With its withdrawal the tank of popular imagination disappeared forever. Conqueror was the last AFV for the British Army designed in the massive armoured landship mould.

Conqueror, intended as heavy support for the medium Centurion, was finally supplanted by an up-gunned and up-armoured version of the tank it was supposed to supplement. Adoption of the physically smaller heavily armed and armored Chieftain made Conqueror obsolete.

When Centurion's 20-pounder became outranged by the 122mm gun of the Russian JS III heavy, it was deemed necessary to provide a vehicle capable of engaging these tanks at the longer ranges it was considered the 122mm gun was capable of penetrating Centurion's armour. Sitting out of range the JS III could pick off the Centurions as they revealed their positions while engaging the Russian mediums.

FB201, a design originally intended to supersede Centurion as a universal tank design was chosen to form the basis of the new heavy gun tank. The 120mm L1 gun, based on an American

design, and its turret were not ready for production when the design of the hull and running gear of the FV214 Conqueror was finalised and it was decided to produce a limited number of FV214 chassis fitted with Centurion 3 turrets with their 83.4mm 20-pounder gun. The resultant hybrid was the FV221 Caernarvon Medium Gun Tank. Weight was 60 long tons.

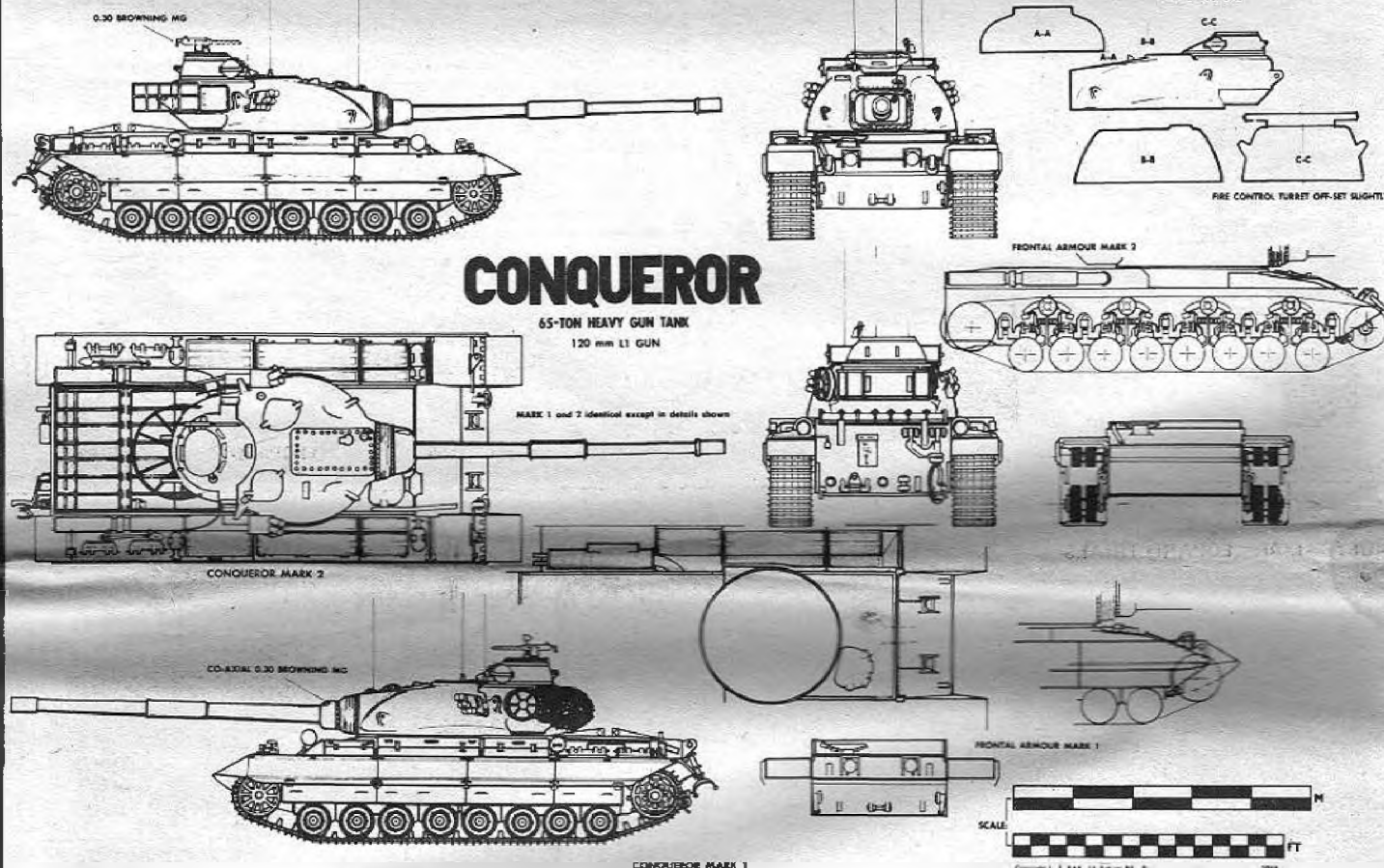
The outstanding visual feature of the Conqueror was the massive fully-cast turret. The turret contained gunner and loader and, situated slightly off-centre to the right looking down on the tank, the commander in a firecontrol turret. The driver was situated in the right front of the hull provided with three periscopes in the prototype Mk 1 tanks and a single periscope in the Mk 2 production vehicles.

Fitted with a split image range

finder the fire control turret could be traversed independently of the main turret. This feature enabled the commander to select the target and let the gunner and loader carry on from there while he selected the next target to be engaged. The first target destroyed, the Commander pressed a line-up switch and the main turret traversed into position to engage the second target leaving the Commander free to select another target. This set-up was in line with the tank's only role, long-range support for the mediums.

The L1 gun fired split ammunition, the projectile and the propellant being loaded separately, the sealed brass cartridge ramming home the projectile. Empty cases are ejected from the turret through an armored door.

Conqueror was the last heavy tank to be powered by a petrol engine. The



ANSWERS TO READERS

CHRIS FORSYTH, Hamilton, Vic:

Engine tether is a twisted steel wire looped tightly around engine and fastened securely to the fuselage of the model, preferably to the engine mount-bellcrank support.

A safety thong is a loop of leather strapping fastened around control handle and through which the wrist is placed.

ELECTRIC POWER UNITS FOR GLIDERS

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The result is that, assuming the same airframe, Multiplex powered glider will get higher and get there faster, and sink slower on the way down. Lack of commutator and brush cooling prohibits any deliberate overboosting of the Graupner units. A pair of Multiplex units has now been flown 40 times with an 8 cell battery pack which boosts the input power up to 60 watts. No harm has resulted at this overload.

In the next issue, the new Graupner single motor unit will be discussed, together with a comparable direct drive motor suitable for either nose or pylon mounting in a R/C glider.

AUST LEOPARD TRIALS

We are indebted to our correspondent, Geoff Truman, for the accompanying photographs of Leopard tanks. We published scale drawings of the European Leopard tank in *Modelers' Monthly* No. 2 Vol 3/4, March/April 1975.

The Leopard underwent assessment trials in North Queensland where these photos were taken. Of interest, is the extension 'conning tower' for underwater running, and the Berg Leopard recovery vehicle.

All photographs courtesy of "Perth Military Modelling Society", C/- Geoff Truman, 39 Cartwright Rd., Balgo, Western Australia.

Barbarossa again, with turret traversed to the rear undergoing breaking test.



powerplant was a Rolls Royce M120 12-cylinder Vee 12 of 810hp at 2800 revs. This engine uses fuel injection which is responsible for the increase in power over earlier versions of the Meteor engine.

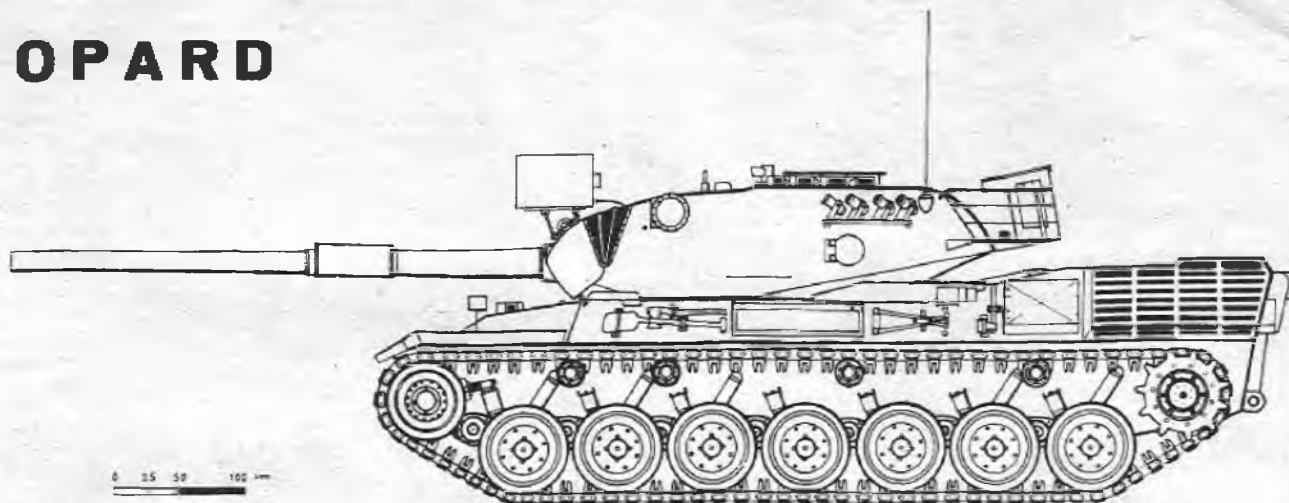
Conqueror was not a success as a heavy main battle tank, but then it was never intended for this role. As a support tank, capable of handing out dreadful punishment, and when necessary accepting damage, it filled the bill excellently.

From the modeller's point of view kit manufacturers have neglected this vehicle, probably because it lacked notoriety, and there do not seem to be any plans of the vehicle available commercially. It is a pity such an eye-catching and well-proportioned vehicle has been neglected.

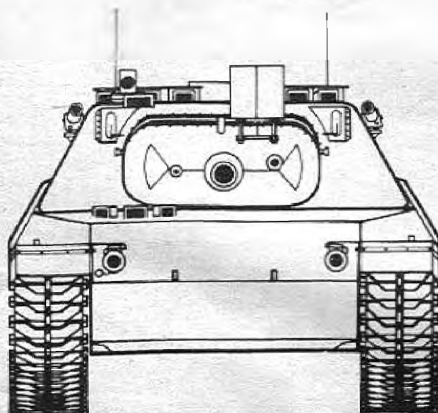
SPECIFICATIONS:

Crew: Four.
Length overall: 38 ft (11,582mm)
Hull: 25 ft 4 in (7721.6mm) measured from tip of front armour over lifting rear lifting eyes.
Width: Over skirting plates, 13 ft 1 in (3987.8mm).
Height: 11 ft (3352.8mm).
Weight: 65 long tons (86.04 tonnes).
Ammunition storage: 35 rounds (projectiles and cases).

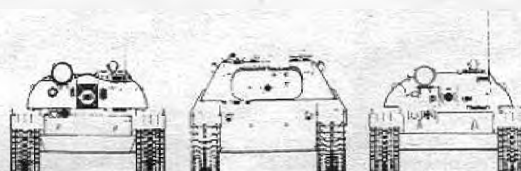
LEOPARD



0 25 50 100 mm



View from the side and front of the mass-produced LEOPARD. On the turret, which is of type III, it has been omitted to draw the MG. 1 type 7.62 (NATO) mg., normally allocated on the tank. The undercarriage composed of fully 7 road wheels, proves particularly well thought out. The thickening visible at about half way along the barrel of the 105 51 gun is the gas evacuator. The height is kept within reasonable limits, as can be confirmed by comparison with the Russian tanks, well-known for being the lowest in the world.



T. 55

LEOPARD

T. 62

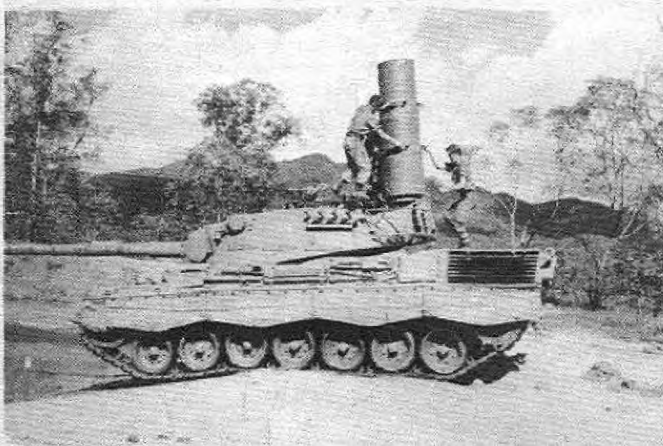
Ready to commence deep wading tests (note life-jacket on commander.) Berg Leopard recovery vehicle standing by.

AUSTRALIAN LEOPARD TRIALS



Beach trials. Note removal of some skirt armour sections.

Leopard named Barbarossa being fitted with deep wading gear.



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