

THE AUSTRALIAN

JULY/AUGUST  
35c 1968

# modeller

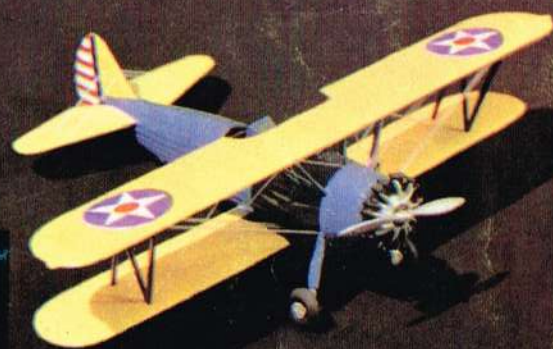
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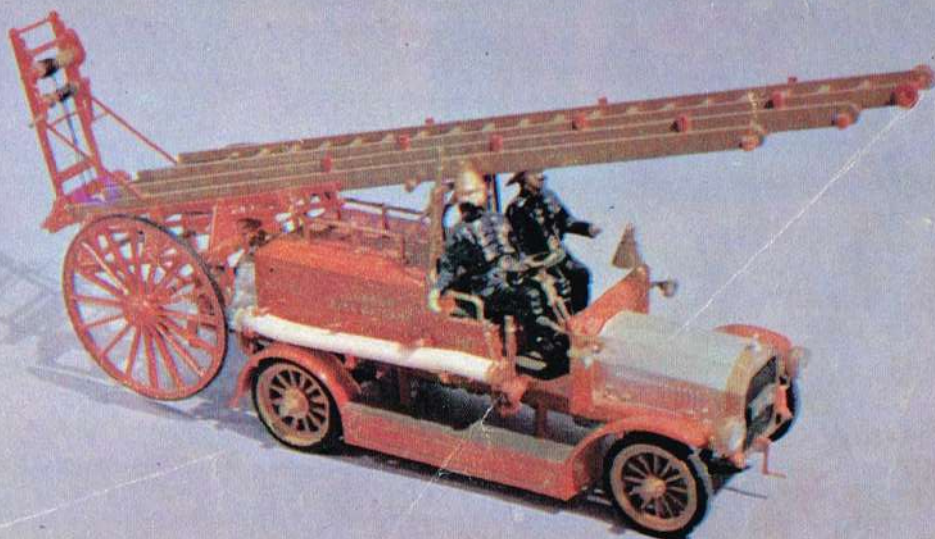
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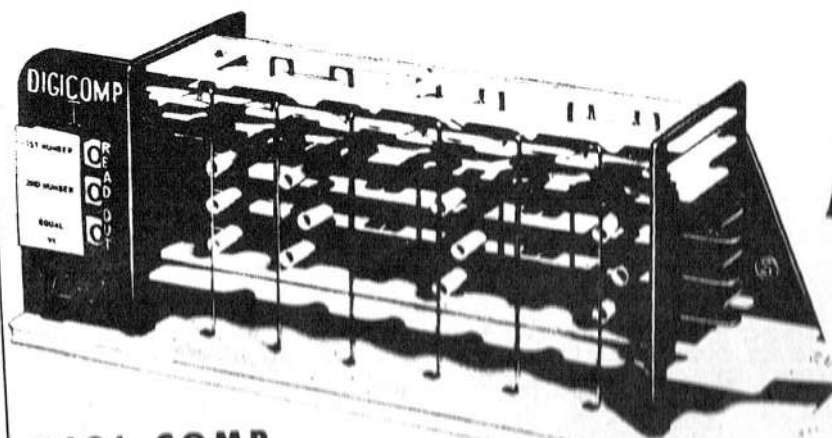


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# THE AUSTRALIAN modeller editorial

THE AUSTRALIAN Modeller is bursting at the seams! In this issue you will find we have included the popular field of control line flying, and also military modelling, together with bigger and better drawings in the aircraft and car departments.

Thanks for all the letters. Some criticise, most applaud, but they are all welcome, because they tell us what you want,

and this helps us to give a better magazine.

Keep those letters coming but, sorry fellows, we just cannot answer each one personally. If the editor tried to do that there would be just not the time to produce the magazine.

Many clubs have written to us, including Wangaratta Wheelers, Victorian Slope Soaring Association, Cootamundra MAC, giving

details of their activities, and we are glad to hear from them.

Our big problem is space and it is difficult to print all letters received.

To cope with this situation, from now onwards we are going to devote space to a section called CLUB NEWS.

Club secretaries are invited to send in information for these columns, but please keep your letters concise. Copy should be in before the end of August.

Whether your club is interested in cars, boats, aircraft or any other form of modelling—let us hear from you. We will print it in CLUB NEWS.

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AMJ/A1

AUSTRALIAN MODELLER, July-August—3

# letters to the editor

Sir,

I am trying to form a slot car club in my district, but I am short of money and members. As yet we have only three members. Can you help us? Thanks for the mag, we really enjoy it.  
Tim Morland, 213 Napier St., Essendon, Victoria 3040.

Tim,

We are publishing your full address so that any enthusiasts in your area can contact you. There is a commercial raceway at Moonee Ponds, and you will find the address in the Classified Ad section of this issue. I am quite sure you will be able to contact many interested people there.

Sir,

I have just come upon a late issue of Australian Model Car and as I have recently developed an interest in this hobby I would like to know how I could order a subscription to the magazine. Also could you give me any information on the make-up of up-to-date models.  
G. Starke, New Plymouth, New Zealand.

Mr Starke,

Here is a copy of Australian Modeller magazine, which incorporates Model Car. You will find that there is a coverage of slot cars and particularly interesting to you should be the drawings of the Elfin car as this is a New Zealand version. You will also find the form and subscription rates included.

Sir,

I am building a slot car. The chassis is of aluminium and is a sidewinder. The intended body is a Morris Cooper S and is about 6in long. My main problem is fitting the body to the chassis. Can you help by suggesting a method, or do you know anyone in the Cowra district that could give

advice?

John McNair, C/o Cowra Post Office, Cowra, NSW.

John,

Your best method of mounting the body would be to drill two small holes either side of the chassis and corresponding holes in the lower sides of the body, and then use self tapping screws. If the chassis is not as wide as the body then you may have to fit four extended brackets and put the mounting holes in them. Anyway we have included your address in full so if there are any more enthusiasts in the Cowra area, get in touch with John!

Sir,

I commend you on the new magazine which fills a long-felt need. I appreciate that you have many fields to cover and that every modeller thinks that his particular interest should have more space. However, may I make a plea on behalf of the military enthusiast? A few articles on armaments, AFV's and such, would be very welcome and in my opinion make a fine magazine even better.  
Cyril Jarvis, Devonport, Tas.

Cyril,

In this issue you will find an article on the Owen Gun that is only the first of such a series. Also plans are under way for future articles on military vehicles. As you say, it is a problem covering so many interests, but we are very much aware of the interest in this hobby branch, and will do our best to give you some really interesting stuff in the near future.

Sir,

I was very interested in the conversion article on the Wirraway, and carried this out as suggested. Everything went together very well, but where were the instructions regarding painting and finishing?

What about a colour scheme? Albert Victor, Chelsea, Victoria 3196.

Albert,

Sorry about that. You have a fair choice of finishes. In the early days the Wirraways were painted all silver with red, white and blue roundels being used. Later they were camouflaged in either olive green or "sand and spinach", but still with the red, white and blue roundels. Later, however, the roundels were changed to the blue and white type. Incidentally, Fantastic Hobby Store have some really first class decal sheets of these blue and white roundels. They are accurate in size and colour and are a matte finish.

Sir,

I would like to suggest a few ideas for the magazine as you invited readers to do. I would like to see more flying models featured, particularly control line planes. What about some plans of control liners? Also could you provide me with a list of clubs in Victoria, and what about a question and answer page?

Joe Luxford, Fernbank, Victoria 3864.

Joe,

As you will see, in this issue we are featuring control line news. In the next issue we hope to give you plans of the top combat winners. We are working on this at the moment. Space will not permit a question and answer article and this column fills that need at the moment. Regarding the list of clubs, sorry we cannot help, but suggest that you contact Paul Straney, 26 Korait Avenue, Broadmeadows, Victoria 3047.

**RADIO FLIERS PLEASE**  
NOTE: There have recently been complaints from the Department of Civil Aviation that models have been flown at excessive altitudes in restricted areas (near airports, etc.). It cannot be too strongly stressed that to fly ANY radio controlled aircraft a license must be obtained from the PMG. When this license is granted, a copy of all DCA regulations will be supplied, AND MUST BE ADHERED TO.



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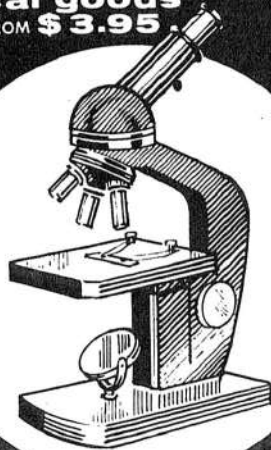


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AUSTRALIAN MODELLER, July-August—5

# MILITARY MODELLERS:

## BUILD THE OWEN GUN

WHEN I decided to build up a collection of military weapons some months ago I chose the scale of 1/6 fullsize.

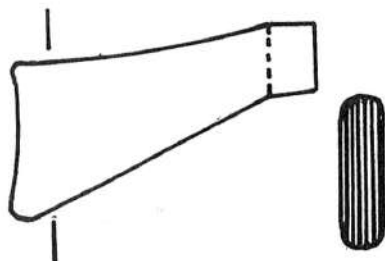
This makes the models large enough to incorporate plenty of detail, but not too big to store or display.

In choosing the Owen to start off this series, I was influenced by the fact that at last we have got an Australian model magazine and it seemed only fitting that the weapon that was made famous by Australian fighting men during World War II and later in Malaya and Korea, should have pride of place.

### Construction:

As with the actual weapon, the model is easily divided into three basic components — butt, body group and barrel.

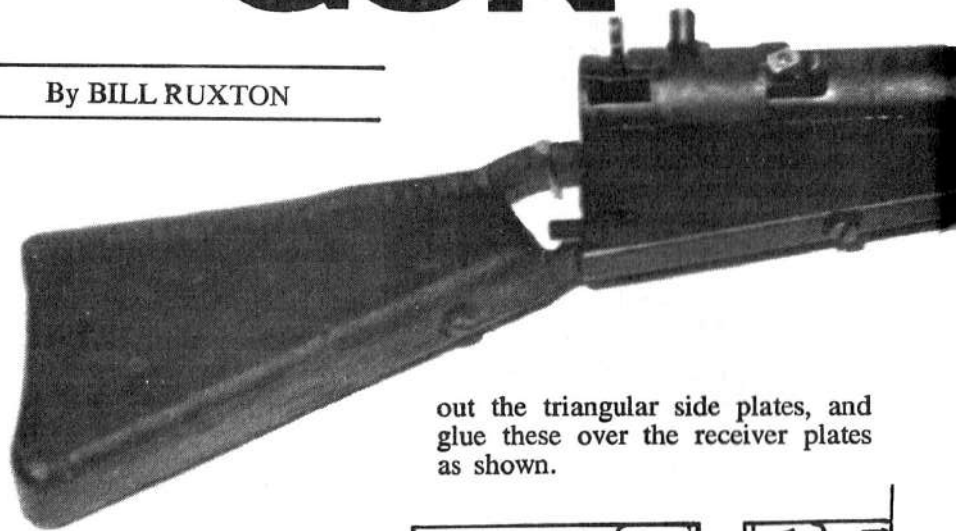
The butt is simply a number of laminations of plastic card, built up to a thickness of 2/10in. Carve a little oversize, and allow to dry. Then file down to size, and round off the corners as per the full size drawing below. Do not round off that portion of the butt to the right of the dotted line, as this will fit inside the sides of the receiver later on.



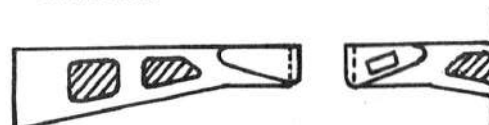
### The Body Group:

Sheet plastic is again laminated till you have a solid block 1/4in x 1/4in x 2 1/2in. It will be necessary to cut from the centre laminations the portion shown shaded above. This forms the slot in which the cocking handle operates. When dry, sand to circular section and finally file out the aperture on the lower surface. This is the cut-out which allows the empty cases to eject

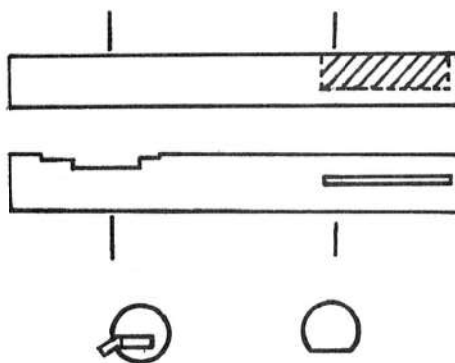
By BILL RUXTON



out the triangular side plates, and glue these over the receiver plates as shown.



downwards during firing. Note when filing this aperture that the slot for the cocking handle is not horizontal with the axis of your file, but should cant down slightly to the right.

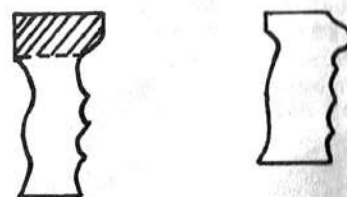


The barrel may now be added, and is mounted centrally against the body. This is simply a 1 1/2in length of sprue, and for the sake of strength, may be made a little longer and let right into the body piece. Compensator cuts are made in the top of the barrel, as shown, to a depth of 1/4in.

Next, using the full size drawing below, cut two receiver side plates from 10/1000 plastic card or thin sheet, and fret out the lightening holes as shown shaded below. Cut

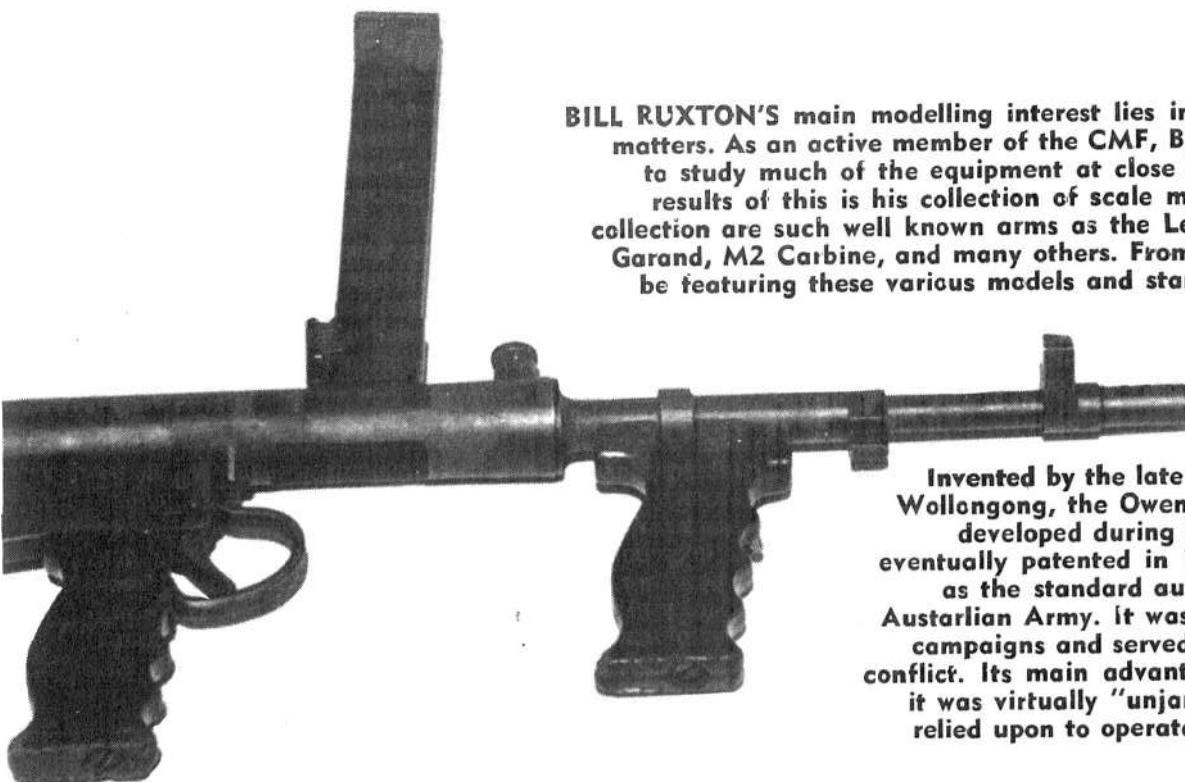
The completed units are then cemented, one either side of the butt, using that portion forward of the dotted line as indicated earlier. The composite butt and receiver plates are then cemented to the lower side of the body group, keeping the ejector slot horizontal.

The pistol grip type handles are laminated, as was the butt, to 1/4in thickness, and when dry, the edges rounded and sanded smooth. The rear grip is then inserted up between the receiver side plates, and cemented to these plates and the bottom of the body. The front grip is cemented directly to the bottom of the barrel, as shown.



A strip of 10/1000 card is cut, 1/16in wide and bent and glued to the rear grip to form the trigger guard. The trigger is also cut from 10 thou sheet and glued in.



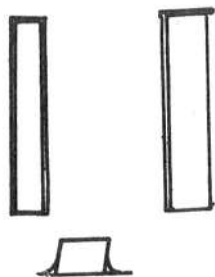


**BILL RUXTON'S** main modelling interest lies in the field of military matters. As an active member of the CMF, Bill has the opportunity to study much of the equipment at close hand, and one of the results of this is his collection of scale model weapons. In this collection are such well known arms as the Lewis, Sten, Thompson, Garand, M2 Carbine, and many others. From time to time we will be featuring these various models and start off with Australia's famous Owen Gun.

Invented by the late Ernest Evelyn Owen of Wollongong, the Owen Machine Carbine was developed during the late 1930's. It was eventually patented in 1941 and was adopted as the standard automatic weapon of the Australian Army. It was used in all the jungle campaigns and served as late as the Korean conflict. Its main advantage was the fact that it was virtually "unjammable" and could be relied upon to operate in the most appalling conditions.

The magazine housing may now be laminated to a thickness of  $\frac{1}{4}$ in, and then filed down slightly till the completed housing is just a little narrower than the body, on top of which it is now cemented. Fill in the joint lines with body putty to emulate the welded joint of the actual weapon.

The magazine itself is also laminated to  $\frac{2}{10}$ in thickness, and the forward edges slightly rounded. A strip of 10/1000 card is then cemented to the rear face and trimmed in place, so that a very narrow lip is left on the magazine rear. Another piece of 10/1000 card is cemented to the magazine top and similarly treated.



Now cement the completed magazine on to the housing on top of the gun. Make sure that the magazine leans forward a little as indicated.

The barrel release catch is a

piece of 1/10in plastic sprue with another slightly larger diameter piece of sprue cemented to the top. Cement into place forward of the magazine.

The offset sights are now added, cut from scrap sheet and glued into place. The rear sight is drilled with a peep aperture, and a blade added to the foresight.

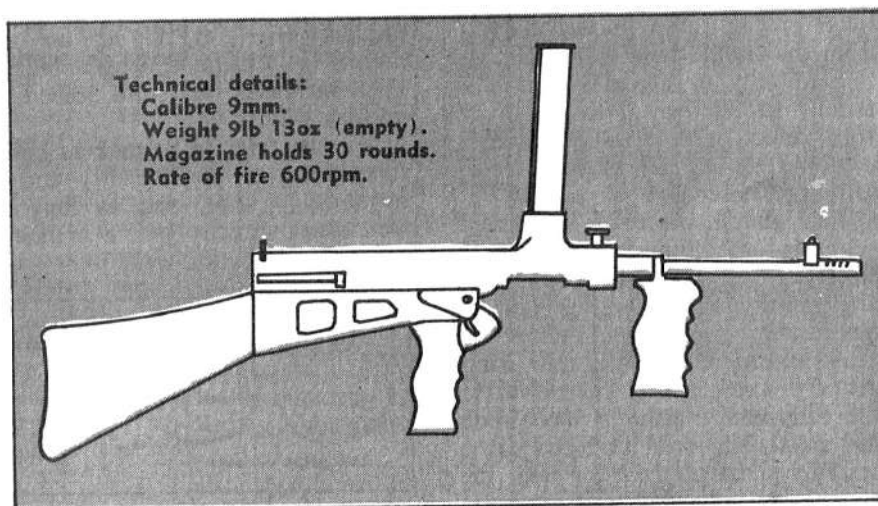


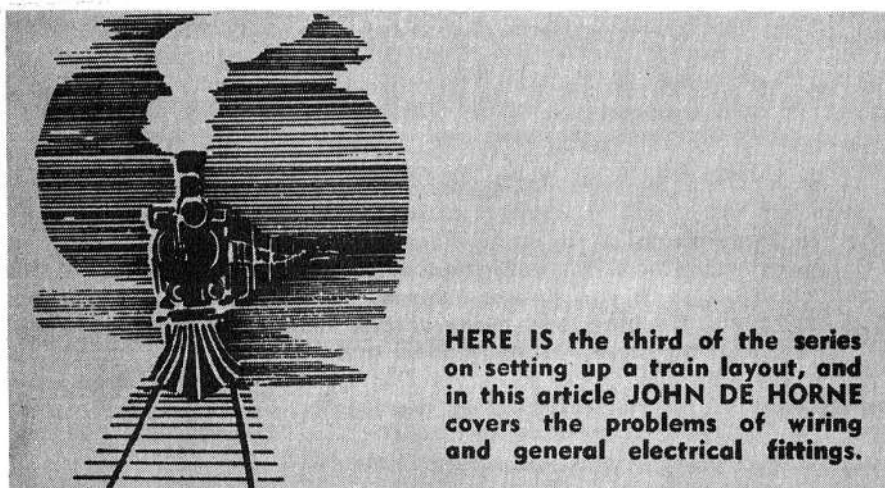
The final piece to be made is the cocking handle, which is a piece of 20/1000 card  $\frac{1}{4}$ in wide and  $\frac{1}{4}$ in long. The cocking handle is

cemented into the forward end of the slot left for it in the body.

#### Colour:

Overall colour of guns used in jungle areas was a very light, almost sickly, green. Sometimes a darker green was used to paint irregular patches over the basic colour, butt included. Guns used in other areas were painted black for metal areas, while the wooden butt and grip were dark stained or painted brown. These gradually went almost black under service conditions. The top of the cocking handle was brass.





HERE IS the third of the series on setting up a train layout, and in this article JOHN DE HORNE covers the problems of wiring and general electrical fittings.

# BUILDING A RAILROAD Part 3

## BASIC WIRING

## CONTROL PANEL SCHEMATIC

## CHOICE OF TRANSFORMER

## CAB CONTROL

## CONTROL SYSTEMS

**M**ODELLERS refer to our hobby as model railways, but to those outside the hobby the models are often referred to as electric trains. Although the term is frowned upon by the enthusiast, it is perfectly true that the models rely on electricity for power. So, in this issue, let us look at the electrical side of the hobby starting from the simple base principles.

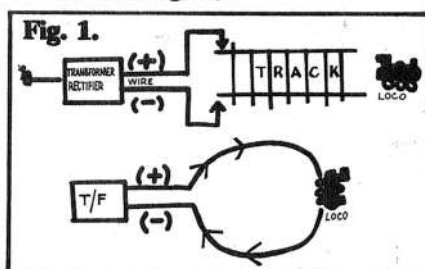
Electricity to model railways is usually supplied by a source of 12 volts direct current (DC) which is achieved by the use of a transformer/rectifier.

This simple piece of equipment converts the normal household electrical supply of 240 volts alternating current (AC) to our required 12 volts DC.

An electrical circuit is then completed by connecting this power to the rails and placing a loco upon the rails. The rails can be just a straight piece of track or take the

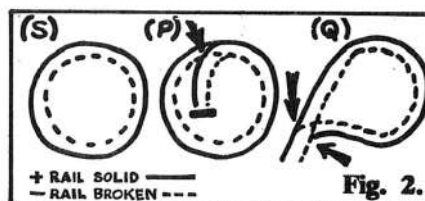
form of a circle, or complicated layout.

The difference between a circle of track and an electrical circuit often confuses people. In fact, the circuit is completed by placing the loco on the track, thus bridging the two rails and allowing the current to flow (see fig. 1).



So it follows that the simplest possible track is a length of straight rail and all layouts are merely an extended length of rail that has been bent and joined in various ways.

We can refer to a track as being formed by a positive (+) and a negative (-) rail, and as long as we do not directly join a + to a - then all will work well.



Consider fig. 2: In (S) all is well as the + and - rails are effectively kept apart. However, in (P) we have introduced a point leading to a siding and at the arrowhead we have + and - coming together and therefore a short circuit occurs and the train will not run.

At this point I would mention that many of the brand name tracks such as Peco, Triang, Flieschman have insulated frogs, usually of plastic, which pass the current without creating this particular problem. I mention this for those who use metal frog points or construct their own points. Check with your hobby shop or write to me if you have this problem. It can be overcome.

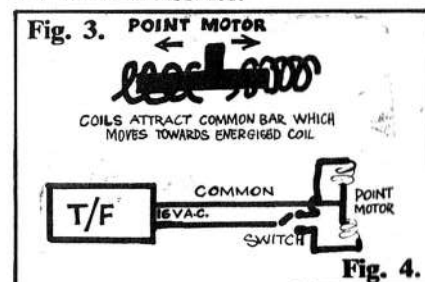
In (Q) we have a reversing loop, and again a short circuit occurs at each of the points arrowed. Avoid this complication if you are a beginner, although once again it is possible to overcome the problem by careful choice of components.

RELAYS are electric switches which can be operated by remote control. Basically they are electro magnets and are often used in pairs to provide a push-pull action, an example being an electric point motor.

It is important that the current is allowed to flow only to these relays for a second or two, so we use a special passing contact switch to energise them, or a spring push-button that only passes current while being pressed.

In fig. 3 and 4 we have illustrated a wiring diagram for a point motor. The common supply is fed to the centre terminal of the motor, and the switch allows either one or the other coils to be energised, thus attracting the common bar in one direction or the other and thus changing the point position.

Note that the current used to actuate these motors must come from the 15 or 16 volt AC supply on the transformer.

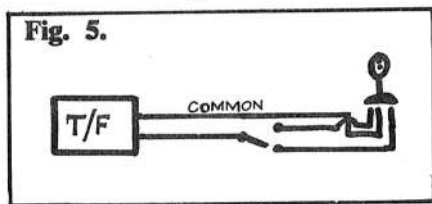


COLOUR LIGHT SIGNALS require a constant current that can be switched to either red or green



bulb. This is very simple and is illustrated in fig. 5.

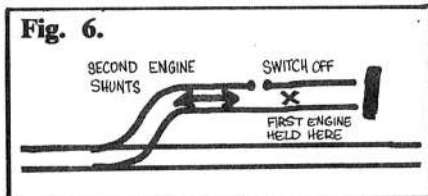
Fig. 5.



ISOLATED GAPS are used to cause electrical breaks in a rail which appears to be continuous. The simplest use is to electrically isolate a dead end siding so that an engine can be held on a section of track while another shunts near to it.

In this case an on/off switch is used to energise the rail when required. Only one rail is gapped as this is sufficient to break the circuit (see fig. 6).

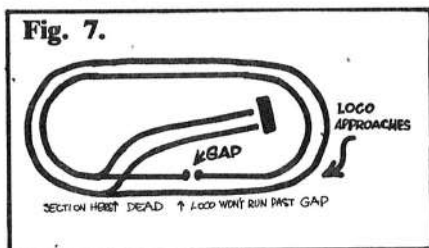
Fig. 6.



Isolating gaps can also be used to sectionise the track for control purposes and can be of use in solving problems introduced in figs 2 (P) and 2 (Q). If a point is self-isolating (that is, the point switches the electrical current in the direction to which it is mechanically directed) an automatic safety device to stop an engine over-running points set against it can be employed.

The isolating gap is placed about 12in before the point frog. No switch is required in this instance as the point will allow the current to flow in the "dead" section once the point is set to straight again (see fig. 7).

Fig. 7.



CONTROLLERS. There are two concepts of operating model railways. One is the signal box method, where a separate speed and direction controller is supplied for each electrical section of line.

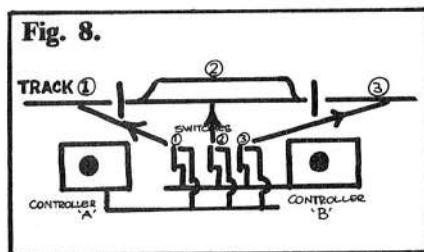
The second method is cab control

which allows the current from any controller to be switched to any section to control any engine on the layout.

In one case the operator is a signalman, and in the other he is like the train driver.

In the Central and Southern layout I used the signal box method, but on private layouts the cab control is more common owing to the fact that cab control common return wired transformers are simple to wire up.

Fig. 8.



Switches are three position and are wired to controller A, and controller B with an "off" position in the centre.

In fig. 8 I have illustrated one wire to one rail only since the other is joined to all sections or blocks, and to both controllers in the common return system.

There are many different controllers on the market. Most of them incorporate transformer, rectifier, speed and direction control in the one box.

Two main methods are used as far as speed control is concerned. The cheapest is to vary speed by a variable resistance, which produces a change in amperage, whilst voltage remains the same.

This is quite satisfactory providing all the locos you own respond to the same resistance inasmuch as their current consumptions are the same.

The best method is to vary the voltage to control speed, and this is done by tapping out various voltages from the transformer windings.

The engine then draws the amperage that it needs at any time, thus one controller can control most engines available.

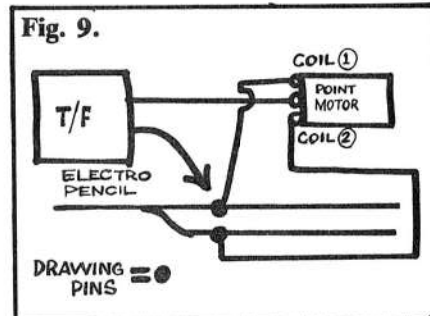
I have used a pair of Hammet & Morgan "Powermaster" transformers for many years with excellent results, even though I have used various types and gauges of engines for both display layouts and private use.

The control panel of the Central and Southern (Jan./Feb. Modeller)

is in the form of a schematic diagram with drawing pins used to indicate the various directions in which points can be thrown.

These drawing pins are wired through to the coils in the point motors so that by tracing the route required across the layout diagram with an electro pencil, the drawing pins are touched, the points set in the direction required, and the trains proceed along the required route automatically.

Fig. 9.



The basic wiring as shown in fig. 9 can be repeated as many times as required.

Don't be worried over the apparent complexity of electrics and wiring. Break down your track to essentials, and plan your electrical scheme for each section. Understand the wiring of one point before you wire the lot.

One last word of advice. If you feel lost, go to your local hobby dealer and ask him. He is a man who knows the ins and outs of the business and most of the shortcuts. Hobby men are friendly people, so don't worry about asking for help.

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# CONTROL LINES

**T**HE BIG news concerning control line clubs was the NSW championships at Minto from April 12-15.

Entries were good in all events but as this column is devoted to the control line field I will deal only with those events. The most outstanding performance was the flight by Jack Finneran in FAI Speed. Jack recorded a time of 137.35mph which if submitted would have been a new Australian record.

A complete result sheet of all

events is shown in this issue. After all the flying was over the presentation dinner was held at the Police Boys Club, Marrickville, on Saturday, May 18, and I would like to congratulate the association on a well organised and very successful evening.

Details of the winning team race are:

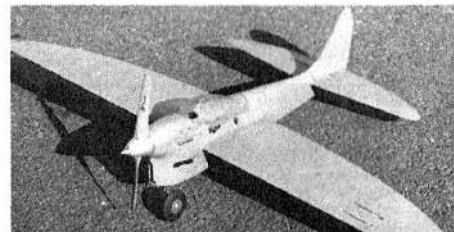
**B Class:** Andy Kerr—engine Super Tigre with chrome liner and home-made peripheral 3/16in bore venturi, prop 8x8 Top Flight speed, fuel 20 per cent oil (UCON LBII45) 20 per cent Nitro methane 20 per cent Benzol 20 per cent Benzyl alcohol 20 per cent Iso Propyl alcohol.

**FAI:** Allan Shing—engine Super Tigre Diesel with Cox 049 venturi and needle, prop 8x6 Tornado nylon, fuel 50 per cent kerosene 30 per cent Ether 20 per cent oil 2 per cent Amyl nitrate, weight including motor 24oz.

**1A:** Bill East Jnr—engine Oliver Cub diesel with home modified piston and liner, prop 7x6 Tornado nylon, fuel 50 per cent kerosene 30 per cent ether 20 per cent oil 2 per cent Amyl nitrate 2 per cent Redex.

**NOTE:** All placegetters used Edmonds type home built tanks.

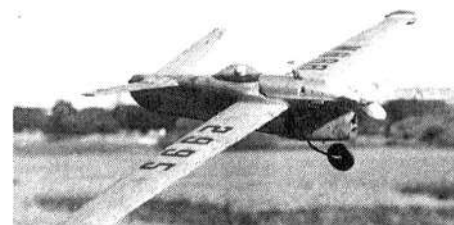
Speed flying seems to be gaining popularity once again, and to give it a further boost Jack Finneran and other prominent speed flyers will hold a speed get-together sometime in July/August. Those attending will be shown how to set up a complete speed model. A few flights will then be made to demonstrate flying and tuning techniques. All interested should contact me at 50 Brown Street, St Peters, NSW, at the beginning of July when all



**ANDY KERRS' Class B winner.** Note that lines run through wingtips and clip onto lead in wires in slots. arrangements will have been made.

All States are at present voting on a change to 1/4A team race rules. The proposed change is that wing area should be 90 sq in and tank size 6cc. Watch this column for further information.

From June 1 the diameter of dual lines for B class team racing is .014in instead of .012in as previously. This change applies to all sanctioned meets in NSW and has been made in the interests of safety. It is hoped that all clubs will insist on this change on their own flying fields. 1/4A enthusiasts will be pleased to know that Gordon Burford's new 1.5 ballrace diesel is showing up extra well, and should surprise some of the characters who insist that you must have an imported motor to win. More about this motor later.



**FAI WINNER by Bill East Jnr.** Powered by modified Oliver Tiger.

Members of clubs who register with the NSW Aeromodellers Association will in future receive a key-ring badge with their membership number on the back. Lapel badges will also be available at a small charge. I have seen the drawing and was most impressed with the smart design.

The Australian titles will be held at Warrnambool, Victoria, this year, and contestants are advised to make immediate bookings as Warrnambool is a very popular summer resort.

The Eastern Districts MFC, which flies at Centennial Park, Sydney, every Sunday afternoon, is holding two unusual contests that should interest control liners. One is a 1000-lap team race and the other is an endurance contest. Both are open to all and elsewhere in this



**Introducing BILL EAST,** who will be covering the Control Line scene as a regular contributor. Bill has been flying models for many years, and for the past four years has been Secretary of the Eastern Suburbs MFC. Prior to this he was Secretary of the NSWAMA. His main interest is in giving the younger fellows a helping hand and has been directly responsible for promoting a safe, sane approach to club activities.



issue you will find the rules.

In conclusion may I explain that as this is the first contribution that I have made to the magazine, my comments have been, of necessity, centred around Sydney and my own club. However, the idea is that this column should cover ALL the control line scene so club secretaries wherever you are—get in touch and let the rest of Australia know all about you and what you are doing.

—BILL EAST.

Here is a list of model flying clubs in NSW and the ACT:—

MAITLAND AEROMODELLERS CLUB: I. Roach, Flat 3, Lot 9, Railway Road, New Lambton 2305.

CANBERRA MAC: R. Neville, 68 Torrens St., Bradden, A.C.T. 2601.

C.R.M.C. (RADIO): J. Ryder, 17 Tanderra Ave., Carlingford 2118.

M.F.C. OF A.: J. McFall, 2 Erith St., Botany 2019.

R.C.M.C. (RADIO): R. Wallace, 55 Adelaide St., West Ryde 2114.

CRONULLA M.A.C.: W. Edwards, 2 Toomerara St., Kogarah 2217.

E.D.M.F.C.: W. East, 50 Brown St., St. Peters 2044.

MACQUARIE M.F.C. (RADIO & C.L.): N. Shennan, 3 Grandview Rd., Campbelltown 2560.

DOONSDALE-BLACKTOWN A.C.: I. Stowe, Box 11, P.O. Doonside 2767.

NEWCASTLE M.A.C.: L. Folbigg,

102 Griffith Rd., Lambton 2299.

ILLAWARRA M.A.C.: D. James, 75 Hertford St., Berkeley 2506.

S.C.M.A.C.: A. Edwards, 4 Bare St., Lurnea 2170.

LAKE MACQUARIE M.A.C.: S. Weiss, 18 Jamieson St., Gateshead 2290.

OLDS M.A.C.: K. Hudson, 36 The Esplanade, Sylvania 2224.

WAKEHURST M.F.C.: G. Holland, 104 Plateau Rd., Avalon Beach 2107.

RYDE-EPPING M.A.C.: G. Mc-

Kern, 19 Archibald Rd., Roseville 2069.

CESSNOCK HUNTERS M.A.C.: L. Kennedy, 30 Anstey St., Cessnock 2325.

I.M.A.C.: R. Kennedy, 3 Algernon St., Oatley 2223.

KURINGAI M.F.C.: B. Bothwell, 6 Gladys Ave., French's Forrest 2086.

SYDNEY R.C.S. (RADIO): J. A. Turton, No. 1 Central Ammunition Depot, R.A.A.F., Kingswood 2750.

## COMP RULES

**TEAM RACE:** (1st prize Supre Tigre 2.5 diesel): Entry fee 40c per team per race. Each team will run in four 1000 lap races. The best three times of each team will be added together and the lowest average will take first place. Event to be flown to current M.A.A.A. rules (as amended, September 1967) except that the model may be retrieved and lines may be changed. Contest dates: August 18 and November 3.

**ENDURANCE FLIGHT** (1st prize Supre Tigre 2.5 Glo). Entry 25c per flight. The pilot recording the longest time in the air will be declared the winner. The following rules apply: (1) Two wheels and one tailwheel only, (2) maximum wingspan 60in, (3) no jettisoning of parts, (4) plane must take off and fly with all fuel to be used during flight, (5) no helicopter or autogyro

type plane, (6) pilot only allowed in centre, (7) pilot must remain standing throughout flight.

Engine: (1) Minimum 1.5cc, maximum 6.5cc, (2) one engine only, (3) no throttle control, (4) no radio gear allowed on plane.

Line length: 1.5cc 40ft, 2.5cc 50ft, 5cc 60ft, 6cc and 6.5cc 65ft. Line length cannot be increased or decreased at any time and three-strand wire must be used.

Timing will start when plane leaves the ground and completes one circuit, and will cease when the plane touches the ground or engine stops, whichever occurs first.

All contestants will receive a pennant with their official time recorded. Contest started June 2 and will finish December 1, 1968.

Please contact the secretary, E.D.M.F.C., who will arrange flight date. Number of flights not restricted.—W. East, Hon. Secretary, 50 Brown St., St. Peters 2044.

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Nell Mk. 23	\$2.69
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Hasegawa Emily	\$7.80
Renzan Rita	\$5.89
A-7-A Corsair II	\$1.99
MIG 21 Fishbed	\$1.65

English Electric Lightning	\$1.99
Tamiya 1/48 Val	\$2.35
Tamiya 1/48 Pete	\$1.99
Monogram 1/48 P47D	\$3.20
Revell 1/48 Doolite B25	\$3.70
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Fighter by Fujimi	\$2.40
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# BUILDING PLASTIC MODEL AIRCRAFT: BIPLANES

IN THIS ISSUE Peter Williams goes on to give valuable information on the building and rigging of biplanes. Many model builders reckon that it is just a case of "sticking on another wing," and if you feel that way just look at Pete's model of the Avro 504K (right) and see the difference that a little extra work makes.



**T**HE SIMPLER the biplane we choose for a first model the better. Models like the Revell Sopwith Camel, or Airfix Roland in 1/72, or Aurora's Albatross DIII in 1/48 are ideal if that is your scale.

The range of biplane kits is increasing all the time, with the In-pact range of antique and between-the-wars aircraft reaching the market, and Airfix giving us the occasional biplane kit, such as the recent World War I vintage Halberstadt C1-III. Before long a new version of their old Hawker Hart kit is coming, the Hawker Demon, which should be a really good little model and ideal for the beginner, as it does not sport too much rigging.

The first step when building any biplane, and especially one of the older kits which have been around for up to 10 years or more, and have developed many moulding faults is to check the components for warping, and consequent bad fit and incorrect dihedral angles of the wings.

You can check the dihedral angles from drawings, if you have them, or any photographs that you may have, or from the box-lid or wrapper illustration of the aircraft. The wrappers are usually fairly accurate these days. Check that the wings present the correct angle to each other. If they do not, or are warped, correct this by putting

them in near boiling water and bend or straighten them by hand (after taking them out of course). If you fail to correct any faults at this stage, you will find it extremely difficult to assemble the top wing later.

Also worth watching for before you go any further, is the alignment of the holes for the struts, especially on the fuselage. An example of this is the Airfix Albatross DV, which has the cabane strut sockets on one side of the fuselage nearly  $\frac{1}{2}$ in further forward than the other. This must be corrected by filling in the incorrect holes with body putty and drilling new holes of a suitable size in the correct positions.

When you are sure of the alignment of the main components, assembly can begin. First assemble the fuselage, tail unit and lower wing. This should now be painted with the exception of the wing under-surface, and any detail which will be covered by the upper wing. Also paint the lower surface of the top wing and the struts to save an unnecessary wait later on.

After allowing the paint to dry, the first stage of the rigging procedure can begin. The first requirements are a drill and holder, a 1/64in drill or a little smaller, and a pin vice or small power drill,

depending on your preference, and of course finance. I am not yet convinced of any great advantage in using a power drill for this job, but then maybe I am a conservative.

Once again look at your drawings, pictures and box-lid, and determine where the rigging goes and where it comes from, and at each of those points drill a hole right through the wings as close to the strut sockets as possible.

Where more than one wire appears to go to the same spot it's easy to drill individual holes within an extremely small space. Holes will also have to be drilled in the fuselage and tail unit where the rigging is attached. Be careful not to bend the drill—they break easily. With care one drill can last for months. Always keep a spare. They only cost 16 or 18 cents.

When all the drilling is completed, continue with the assembly. Cement all the struts to the lower wing and fuselage, keeping them roughly in the correct alignment. When almost dry, but still flexible, place the top wing face up on the table, put cement in the sockets and carefully fit the lower wing, fuselage and struts to it.

By doing it this way you can see where the struts are going. It is at this point where the initial



correction of alignment faults pays off—the better the alignment, the easier the assembly. Now, when the whole thing is almost dry, give the top wing and struts final alignment, check the assembly is square, and that you have the correct stagger horizontal distance between the leading edges of top and bottom wing). Let the whole thing dry.

When the cement has properly set, ream out all the holes with your 1/64 drill to make sure they are clean. We can now proceed with stage two of the rigging. We require something to represent the rigging itself; there are two possibilities — nylon monofilament, and terylene thread. Cotton is useless, it is too hairy.

The nylon monofilament can be obtained in a scale thickness. However, being a single strand it is difficult to get the cement to grip it, so it is much harder to use than terylene thread (I use Coates 'Gossamer', in silver-grey), which being multi-stranded, has something for the cement to soak into. The disadvantage is that it is over-scale in thickness, but I do

not think that it is objectionable. After all, you want to see that there is something there after you have gone to the trouble of putting it in!

Cut the thread into lengths, approximately two to four inches longer than required, using a sharp blade to prevent fraying the ends. Feed one piece through the required holes, starting with the least accessible wires, such as between the cabane struts and between the interplane struts. Then use a very thin cement, such as Airfix, or Testors liquid cement, and apply it to one hole with a pin. Only a very small quantity is needed, so that it runs down into the hole and soaks into the thread. If the wire is to be attached to the fuselage, cement the fuselage hole first. Leave the other end loose. Continue in this way until all rigging threads are in place, and leave it to dry.

Now turn to the loose ends, and working one at a time as before, pull each one taut and again run cement down into the hole, holding the thread tight until the cement is dry. Continue until all

the threads are taut and dry, then trim off the excess with a sharp razor blade.

Finally fill in all the holes in the outer wing surfaces with a little spot of body putty or a smear of plasticene. The rigging is now complete. If you wanted, you could have fitted the control wires by fitting control horns made from scrap plastic or plasticard in the early stages and leading the wires from suitably placed holes to these horns at the same time as the rest of the rigging.

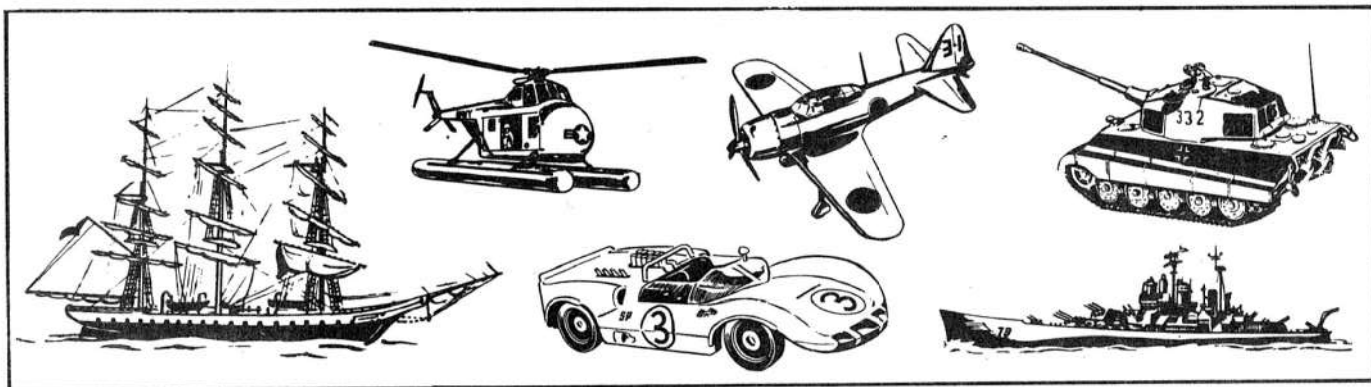
The rest is pretty plain sailing, painting the outer surfaces of the wings and applying transfers. You will find that some aircraft, particularly if you fit control wires, will need to be painted and have transfers applied before the rigging is finished. You will just have to plan ahead and work out the exact order for yourselves.

Biplanes take much longer to build than monoplanes, but I'm sure you will find the extra effort is well worth while. It requires a little patience and care and plenty of forethought to produce a real gem. Go to it!

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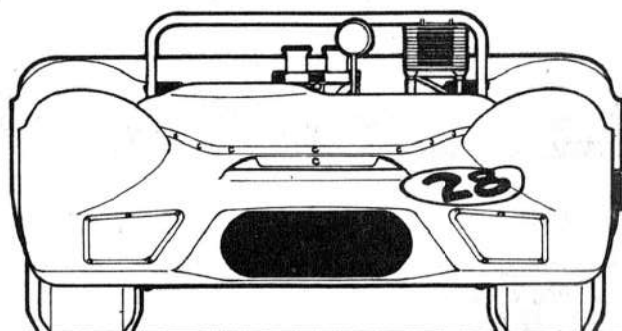
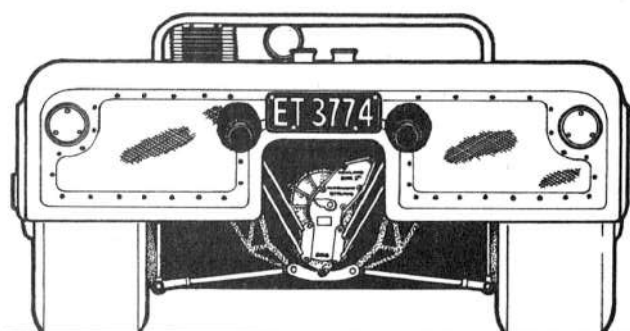
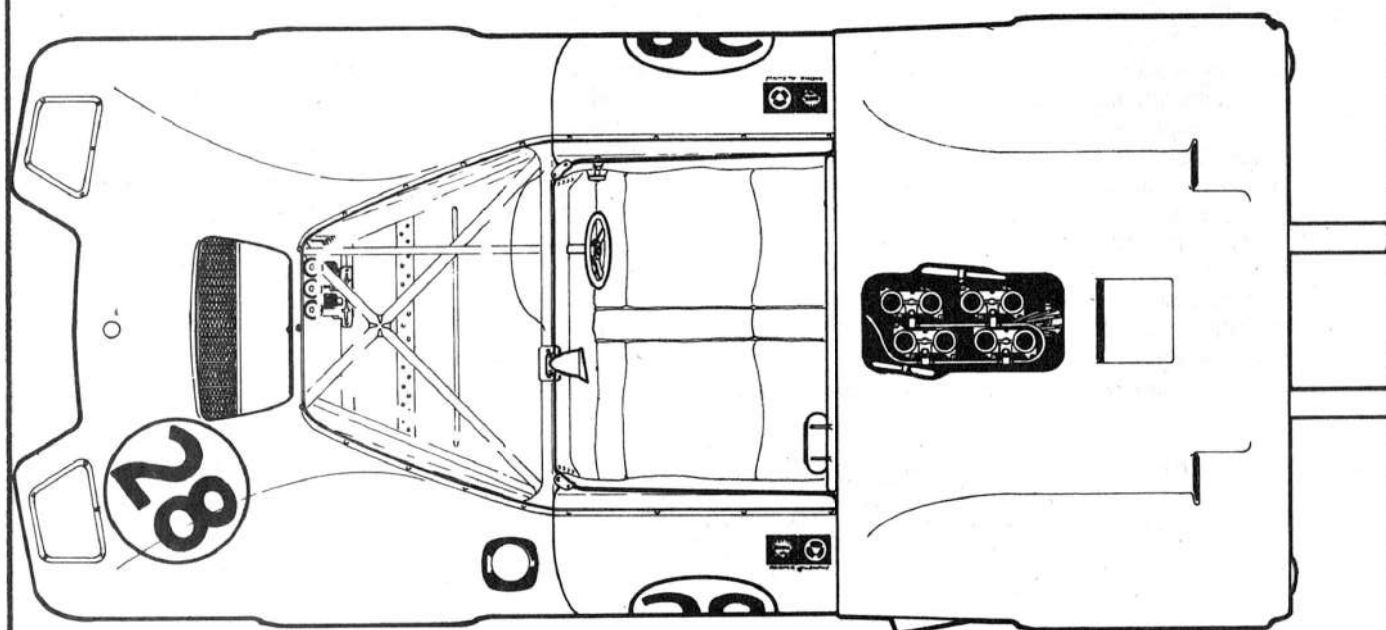
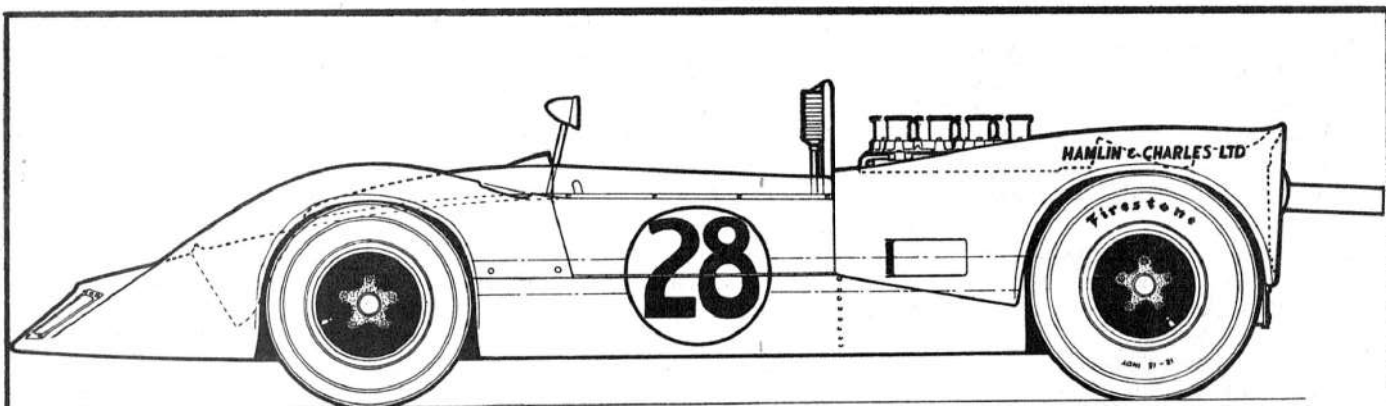
We carry a full range of model products — Aircraft, trains, plastic, ships, etc. But mostly we pride ourselves on being really up-to-date. Here are a few of our new lines.

L S 1/72 plane kits — Nippon Go (civil), Nell Type 96 (army), Nell Type 23 (navy), \$2.69, K1-44 Experimental Fighter \$3.20.

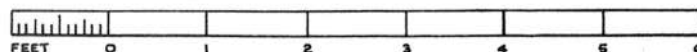
TAMIYA 1/50 motorised plane kits — George navy type, Raiden, K1-44 Shoki, Pete Float plane (without motor) \$1.98, navy bomber type 99 (not motorised), \$2.30, C6-N1 Saiun \$2.98.

KSN Science Fiction. All motorised action models — Space Control Mercury, Planet Space Command \$2.75. Big Mogras \$4.75 — more of these exciting models on the way.

HONDA F-1 1/12 scale car kit with motor \$9.20, super detailing!



# ELFIN T400



J. TEMPLEMAN



# ELFIN T 400

## New Zealand style!

**T**HIS New Zealand-owned sports car is powered by a Chev. 396 power unit and has been driven most successfully this season by A. A. (Andy) Buchanan, who unfortunately had to give up racing during the latter part of the season due to other pressures.

However, spectators will remember the stirring battles between the Elfin and New Zealand's own Stanton Corvette Group 7 sport car.

In particular they'll remember the "squirts" of acceleration from the 6500cc engine, which gave the Elfin the edge over its rivals.

This particular model is painted white all over with a red stripe down both sides, and the racing numbers and circles in black. On

each door is a double badge consisting of a Shell sign and the steering wheel, and underneath the words "Racing, New Zealand" all in red. On each wheel arch is "Hamlin & Charles Ltd." in black lettering and the rear number plate is black with clear metal figures. The rear gauze is silver and the gearbox and exhaust pipes are gun-metal grey. The carburettors are polished metal, as is the rear vision mirror, and the oil cooler mounted on the roll-over bar is sand colour.

All upholstery is black as is the dashboard, and the dials are black with white figures. The steering wheel is polished metal with black leather binding.

The wheels are matt black, with

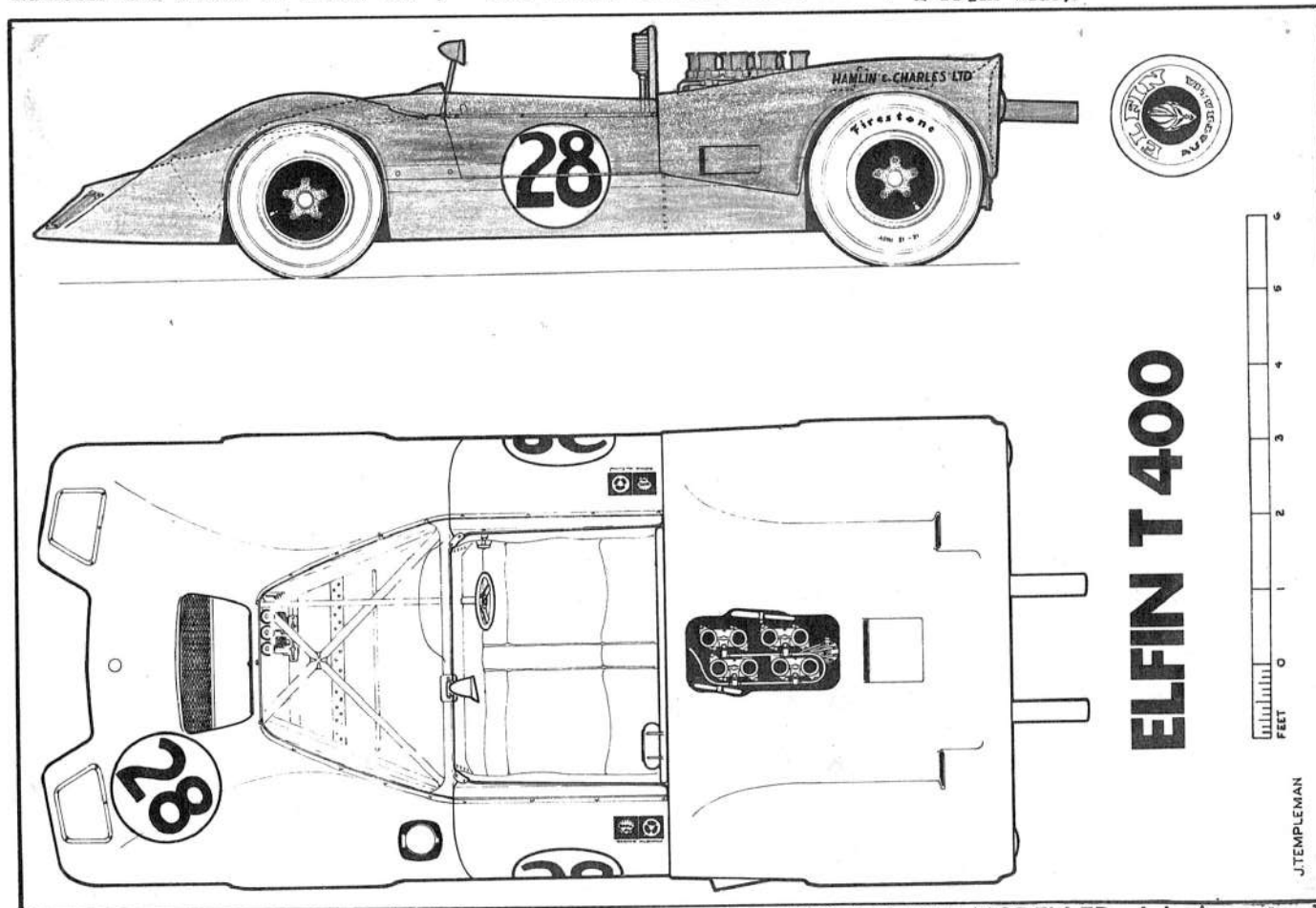
polished metal rims, and the tyres have "Firestone" and the ring picked out in gold.

The driver's battledress is white overalls with red piping and sports a "Shell" and a "Firestone" badge over the breast pocket and dons a "Bell" helmet in white, with a peak in the same colour. White gloves with black edging, black rimmed goggles and a white cloth over the mouth complete the dress.

The Elfin badge is basically chrome with a black background for the elf, black lettering for "Australia" and yellow lettering for Elfin. The badge is well used, and can be found on the nose of the car, in the centre of the steering wheel, and on each wheel hub.

I should like to express my appreciation to Mr Buchanan for my inspection.

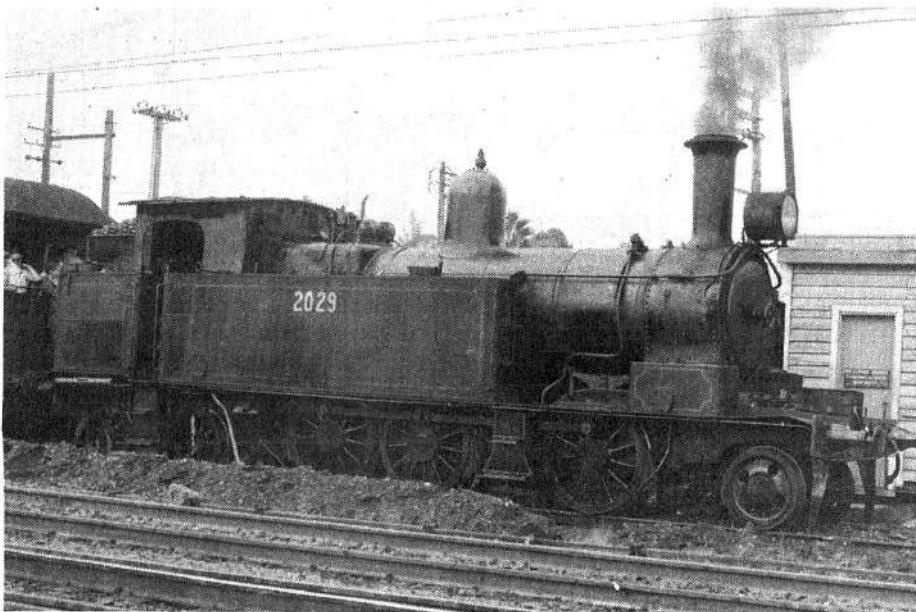
The dimensions are: Wheelbase 7ft 10½in; front track, 4ft 7½in; rear track, 4ft 8½in; length overall, 12ft 8½in (excluding tail pipes); width overall, 6ft in; height overall, 2ft 9in (excluding roll-over bar); tyres — front, Firestone 9.20-15 (25½in dia. x 11½in wide); rear, wet Firestone 6.6/12.30-15 Indy, dry Firestone 12-15 Indy (28in dia. x 13½in wide).





## A SENTIMENTAL JOURNEY

FAREWELL TO THE 20 CLASS



SUNDAY, March 24, saw a farewell run by locomotive 2029, the last survivor of the 20 class, from Campbelltown to Thirlmere and return.

This excursion was well supported by members of the NSW Rail Transport Museum, an organisation that is doing excellent work in preserving and restoring locomotives and rolling stock in these last days of steam. Engine 2029 will now be kept as a static exhibit.

The 20 class numbered 21 engines, 2029 being built at the Everleigh workshops in 1911 and having a tractive effort of 19,400lbs. Engine 3025, seen in the other illustration, brought Museum members from Central to Campbelltown and is one of several of this class still running in the metropolitan area.

Readers wishing to join the NSW Rail Transport Museum may contact the secretary care GPO Box 1983, Sydney.

—CLIVE HEATH.



**THIS LETTER**, recently received from well known driver Steve Hutchesson, is too long to be included in the usual "Letters to the Editor" column, but owing to its controversial nature we are printing it in full. The subject he covers has long been a matter of much controversy and we feel that by publishing this letter, and airing the subject fully, all parties can do battle. Any reader who disagrees with Steve's point of view can write in and we will give space in the next issue.

Dear Sir,

In my travels interstate in the last 18 months I have competed in all types of races on every manner of track and competition condition. In this period I have observed various matters which have caused me much concern.

I have noted with particular concern an attempt by some track owners and clubs to, in effect, stifle the advancement of slotting techniques by their customers and/or members and to discourage general progress and improvement in equipment and techniques. In a number of instances some track owners refuse to buy the latest equipment and prefer to sell outdated equipment. Surely anybody would encourage their customers or members

to use the most up-to-date equipment and give instructions and guidance in the art of scratch-building and motor rewinding.

Certainly the argument put forward to refute my complaints is "Oh, what about the price?" but second-rate outdated equipment, which was designed in America over two years ago will neither perform as well or last anywhere as long. This has been proved by Sydney endurance race teams which can get 12 hours' wear out of a pair of microcel tyres where the old type solid rubber tyres you are lucky if you get three hours' wear. Also with the new types of motors available like Mura and Champion you can get a lot faster and much more reliable than with

36Ds and other refugees from the past.

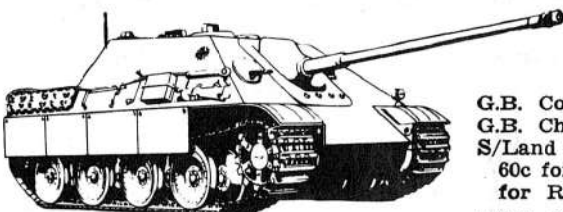
Surely these knockers of progress would be better engaged if they boosted their power supplies and painted their tracks with black gloss and allowed a sensible and controlled use of approved tyre dressings and the use of microcel tyres, this would vastly improve the standard of slotting and nullify the inequality of some getting traction and some not.

One cannot stand in the way of progress. This has been proved in motor racing with the 3 litre limit on Group 5 cars at Daytona where Porsche was the only factory team to attend. Restrictions in slotting will eventually cause lack of interest and slotting as we know it now will eventually die out.

There is a definite policy with some track owners and clubs to organise racing on such terms that the competitors are sheltered or protected from progress.

—STEVE HUTCHESSON.

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- Soviet T55 Tank, \$3.35 (R/C).
- Soviet T10 Tank, \$3.35.
- U.S. MH A3E2 Sherman Tank, \$1.95.
- U.S. M41 Bulldog Tank, \$1.95.
- U.S. M48 Patton Tank, \$3.35 or \$4.70 (R/C).
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- German 36-ton JAGD Panther, \$2.70 or \$3.55 (R/C).

- G.B. Coventry A/Car, 99c.
- G.B. Chieftain Tank, \$3.35.
- S/Land Ax4 Mowag A/Car, 99c.
- 60c for Motor—Two Motors required for Remote Control.

### 1/21 Scale.

- German Mk. 3 Tank, \$7.60.
- German 75mm Assault Gun, \$6.40 or \$9.70 R/C.
- U.S. M2 150mm Gun, \$3.70.
- U.S. M40 Self-Propelled Gun, \$10.80 R/C.
- U.S. M4 Sherman Tank, \$6.40 or \$7.80 R/C.
- Motors 90c extra. R/C requires two motors.

### 1/25 Scale

- G.B. Chieftain Tank, \$11.55.
- Panther Tank, \$9.00 or \$10.80 R/C.
- JAGD Panther Tank, \$9.00 or \$10.69 R/C.
- All the above can be motorised.
- Motors 90c extra. R/C requires two motors.

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#### "Tamiya" 1/50

- Type 99 (VAL) Bomber, \$2.15.
- Type 9 (PETE) Seaplane, \$1.95.

### "LS" 1/72

- Type 96 Mk. 11 Nell Navy Bomber, \$2.69.
- Type 96 Mk. 23 Nell Army Bomber, \$2.69.
- Type 67 Hiryu Bomber, \$3.20.
- Type 67 Yasukuni Bomber, \$3.20.
- Type 109 Interceptor, \$3.20.

### "HAWK" 1/72

- Lysander, \$1.85.
- Bearcat, \$1.85.

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AUSTRALIAN MODELLER, July-August—17

# RADIO CONTROL PART 2

**THIS IS THE** second in a series of articles aimed at preparing the budding radio control enthusiast for the practical aspects of the hobby.



**O**NE OF THE most difficult problems facing the newcomer is the correct mating of equipment and model. A mistake at this early stage can result in a chain of problems that will set our enthusiast back for a long period, and in many cases result in complete discouragement.

As the subject of choice of model and equipment is a very complex one, we will start with the more general considerations and then expand to a more detailed explanation of each major group.

The type of model you choose plays a large part in deciding which radio system to use. For example a 40in cabin cruiser can be controlled very well with any control system including single channel, whereas such a model as a twin engined scale model aircraft would have to use a five-channel digital system.

At this stage I would like to point out one of the most common mistakes made by the aircraft beginner. That is to choose a scale model of a low wing fighter design. This type of aircraft is to be avoided at all cost, as they are extremely difficult to fly.

Instead choose a conventional high wing model with a generous fuselage size to allow your equipment to be installed without cramming. The actual size of the model should be in the region of 48in span for single channel (S/C) to about 70in for multi-channel (M/C).

The real complexity begins in choosing the actual radio control equipment. Due to the wide variety of systems available and the great

variation in cost, it is difficult to advise a beginner on which system to choose. However, here are the general points to bear in mind.

1. Your system for boats will depend on the number of controls to be operated. Most boats need only steering and motor control, and these can be handled quite well by S/C, multi reeds, or proportional. If you intend to race, a reed or proportional set is essential. If a large number of control functions is required a reed set is ideal.
2. When choosing a system for aircraft, keep in mind that for perfect operation, an aircraft must be controlled in three planes or axis (yaw, pitch and roll). This requires the use of aileron, elevator and rudder control. On top of this motor control is highly desirable. To achieve all this a very elaborate system is necessary, as it is preferable to have elevator and ailerons (or rudder) operating

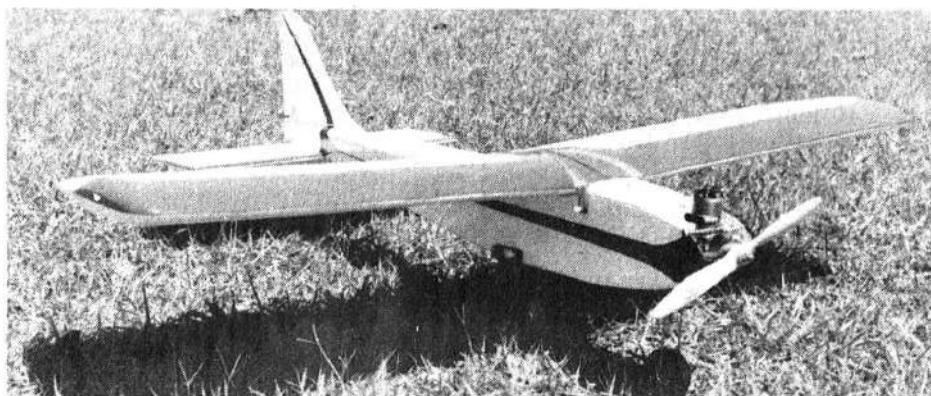
**AN IDEAL** trainer, this Instructor was built by John Summerfield, and is powered by an Enya 35.

simultaneously. As mentioned in the last issue, the two best systems for aircraft are reeds and proportional. Reeds will give all controls with two simultaneously. Proportional will give all controls with up to six or more simultaneously.

This does not mean that S/C can't be used successfully with aircraft. Quite to the contrary. S/C can be used even to the extent of looping and rolling the model. This will be explained later in detail. The main objection to S/C aircraft is the fact that having no elevator control to raise or lower the nose, leads to a certain amount of frustration, particularly when landing and in high winds.

This then leads us to the main point that for full control of model aircraft, control of the elevators, rudder and motor is essential. Hence pulse proportional, multi reeds, or digital proportional are the most desirable control systems, if you can afford them. If not, then S/C will give you a lot of fun and give you plenty of experience.

Once you have chosen your par-





ticular system the next thing to consider is the technical requirements of your set. Firstly the choice will be between Superhet or Superregen receivers. To the uninitiated, a Superhet R/X is a very selective (sharply tuned) device that will allow six models to be operated at the same time. A Superegen R/X is cheaper but more broadly tuned and will only allow one model to be flown at the time on the 27mc band. However, it is possible to fly another aircraft at the same time if the second aircraft is on the alternative 40mc band.

Therefore, if you fly on your own, then a Superegen R/X is quite OK, but if you are going to fly from a busy club field then this type of R/X is a liability and a Superhet R/X is almost a must.

When buying a transmitter be sure it has enough power output for adequate control. For aircraft, 400yds ground range is the minimum to accept, and it is wise to allow a factor plus 100% for deterioration of batteries or detuning of the set to age or other factors. **Single Channel.**

Having decided to take the plunge on S/C the problem is to decide on the model to put it in. When choosing an aircraft pick a conventional high wing design large enough to house all equipment without cramming. Another point to keep in mind is the wing loading. This is usually expressed in ounces per square foot of wing area and for S/C can vary between 10oz to 16oz per sq ft.

As the wing loading is increased so there is a definite loss in manoeuvrability and the aircraft may develop some nasty flight characteristics. For this reason always build your model as light as possible, keeping in mind that the average S/C plane carries about 12oz of deadweight in the form of radio equipment.

A 48in to 55in high wing model powered by a 1.5 to 2.5 motor would be about the ideal for beginners. This type of model is easy to fly and is roomy enough to install and service any type of commercial equipment. Wing loadings on such models are within reasonable limits.

Choice of a motor falls mainly into which brand of Glo Plug motor to buy. Diesel motors are unsuitable for throttle control.



**NICELY finished Beachcomber by L. Winly. Powered by Enya 60, it weighs in at 6½lb. Silvertone RX.**

When operating a throttle control motor, reliable idling is the most important thing to look for. To achieve best results here, particular care should be paid to the choice of plugs. A special type of plug is available called the Idle bar plug that has a special bar across the bottom of the plug which shields the element and keeps it hot under idling conditions.

The last major items to decide on are the Servos or actuators. These fall broadly into three types—rubber driven, clockwork and electric. The servos provide the power to operate the rudder and the throttle control, and must be absolutely reliable. The clockwork type is really only suitable for boats. Rubber driven types are only suitable for the small ultra light aircraft.

Most of the work recently has fallen upon the electric motor types. These are reliable and eliminate the possibility of running out of turns in the middle of a flight, as could happen with the

**KEN JACKS' own design model has real fighter lines. Finished in opalescent red with black and yellow trim. Power is Enya 60.**

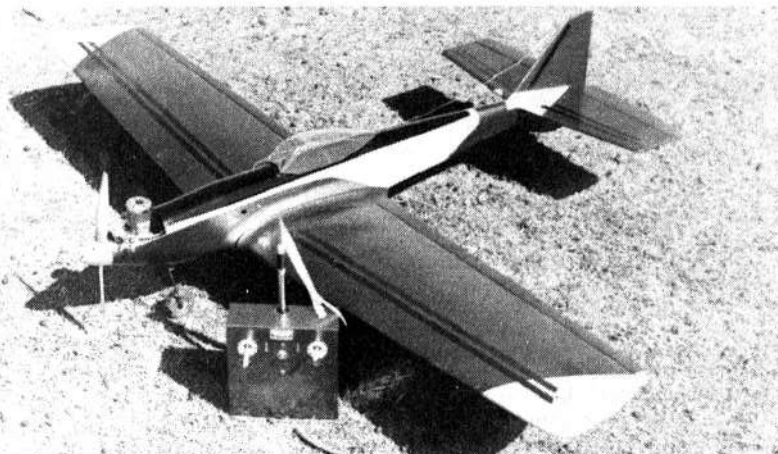
other types.

The two most popular types are the OS S 103 (rudder servo) and the OS S 104M (motor control servo). These work as a matched pair and give left and right rudder, and fast, medium and slow speed on the motor, all from S/C. Perhaps a more unique system is the MK E3PN 3PN and 3P servo system which comprises three servos all interconnected to give the same results as above. However the problem with this setup is that to change motor speed five pulses must be sent in very rapid succession which requires a lot of skill, so beginners beware.

Now, a few words on the plug sockets and switches. Choose these with the greatest care and avoid at all cost the use of cheap components. These items can be very vulnerable to vibration and could easily prove the weak link in the chain, with disastrous results.

All this applies equally to aircraft or boats, but of course the boat man has one extra thing to cope with and that is the problem of waterproofing the equipment. Water being the electrical conductor that it is, just a tiny drop can short circuit the whole installation.

—BOB YOUNG.



# PECO'S WONDERFUL WAGONS

**F**IRST introduced to this country several years ago and now available in an ever increasing variety, the Peco Wonderful Wagon merits the consideration of all serious railway modellers.

The van bodies are white metal, and the floors perforated to enable the solebars, break gear, axle boxes, etc., to be pegged in and secured. These attachments are easily made permanent by sealing over the inserts with a hot wire or soldering iron.

A remarkable feature of the Peco Wonderful Wagon is the way resilient plastic is used to give sprung buffers and individual springing on each wheel. The wheels are seated in brass bearings and are extremely free running.

Most of the Peco Wagon range feature a private owner's markings and these are shown by the use of heavy card sides and ends suitably

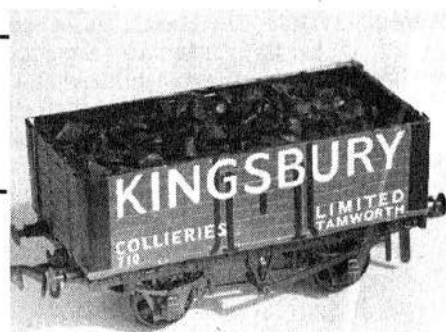
printed and embossed, giving a most realistic effect.

Experiments showed Polystyrene cement did not bond the card sides to the metal body particularly well. A PVA resin glue or a 'Bostock' type cement is much more effective.

The Peco Wonderful Wagon kits prove to be much easier to assemble than they appear and even the beginner should have little trouble.

The wagons are available only in British markings at present but the metal van, without the card over-sides and suitably painted, should make up into a free-running wagon similar to the "S" type of NSW for those who are modelling the Australian railway scene.

The Peco couplings used will not automatically couple with Triang vans and locos but when manually locked, the Wonderful Wagons give no trouble running be-



hind Triang locos and stock.

The wagon interiors are bare metal and in some instances card floors are not provided, thus allowing the melted plastic inserts to be seen. To provide realism, a load of some description does much to enhance the wagon's general appearance.

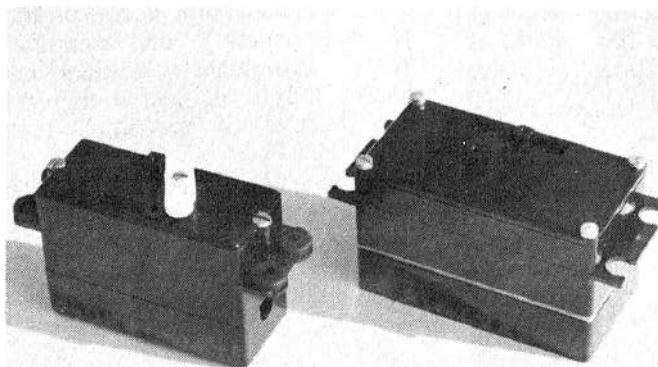
As can be seen from the picture we used a load of "coal" (Merit, a 35c pack, will fill several wagons) to give a satisfactory display.

Peco Wonderful Wagons vary in price but are generally around \$1.50 to \$2 plus, retail. Our models supplied by The Fantastic Hobby Shop.

**CLIVE HEATH.**

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FLYING WEIGHT NOW ONLY 16 oz.



**Orbit PS-3 Servo.**

The heart of the new lightweight system, these servos are the most versatile of the new miniature servos. A full 11-transistor Schmidt trigger amplifier is housed internally, resulting in extremely low current consumption, very high resolution, and full torque on the smallest control increment. Retains all previous electronic and mechanical features. Only the size and weight are changed. Servo weight, 2oz. Size, 2in x 1½in x ¾in.

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Complete 5 Channel system, ready wired including TX, RX, 4 servos, nicads and battery charger, \$47.05.

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Orbit PS-3 servo (mechanics only).

Kraft KPS-9 servo (mechanics only).

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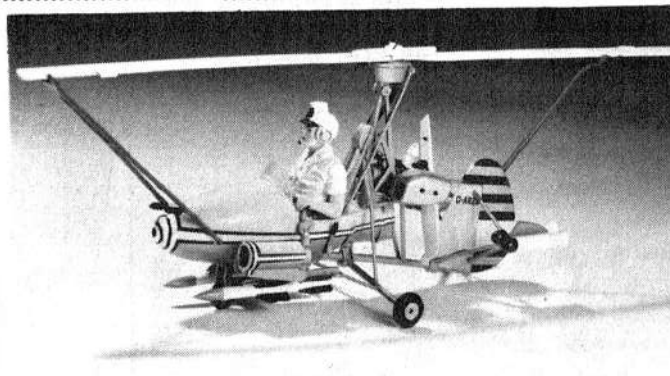
# NEWS FROM **AIRFIX**

THE WORLD'S GREATEST VALUE IN CONSTRUCTION KITS

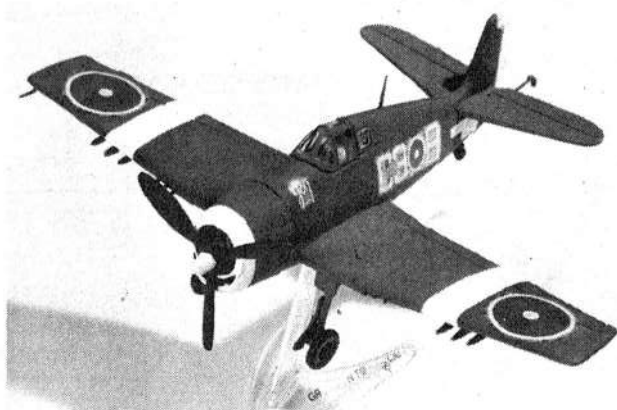
★ **CARS**  
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★ **ARMoured VEHICLES**



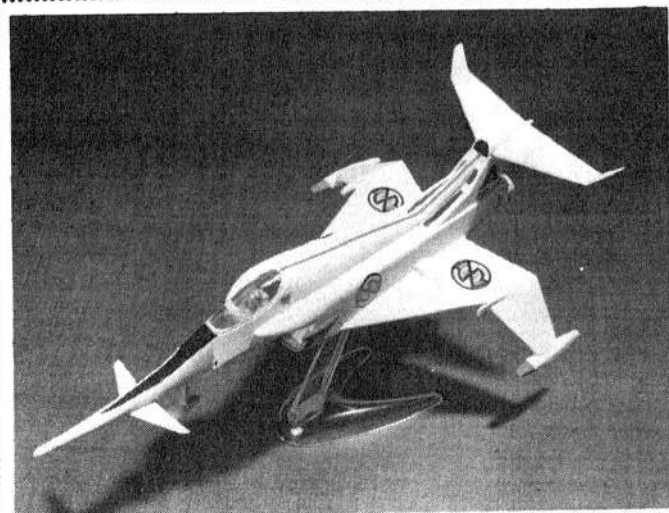
**Dogfight Double Series 3 1/72 Scale. MIRAGE & MIG 15.** 69 parts go together to give you the most up-to-date double possible. The MIG in this kit is a fighter bomber of the United Arab Air Force, and the Mirage that of the Israeli Air Force. These aircraft were locked in combat during the recent conflict of June 1967. Here is your chance to be really up-to-date. Both aircraft in the one kit for \$1.40.



**Elite Series 3. WALLIS "JAMES BOND AUTO-GIRO".** The latest, and as invincible as James Bond himself. This is a kit of the aircraft that features in the film "You Only Live Twice". Completely authentic and with 27 easily assembled parts this kit will give you such details as rocket guns, which actually fire plastic missiles, detailed pilot figure, and all the various weapons used in the film. All for only \$1.40.



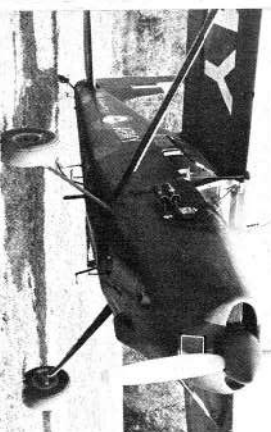
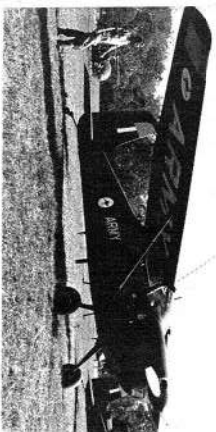
**Aircraft Series 2. 1/72 Scale. GRUMMAN HELL-CAT.** One of the most successful carrier aircraft of World War II, over 12,000 Hellcats were produced and the aircraft was in constant service with the U.S. Navy and also used by the R.N. The kit incorporates many refinements such as optional u/c assembly, wings in folded or open position, and rotating propellers. Authentic Decals enable an actual aircraft of World War II to be built. A real value kit at only 90c.



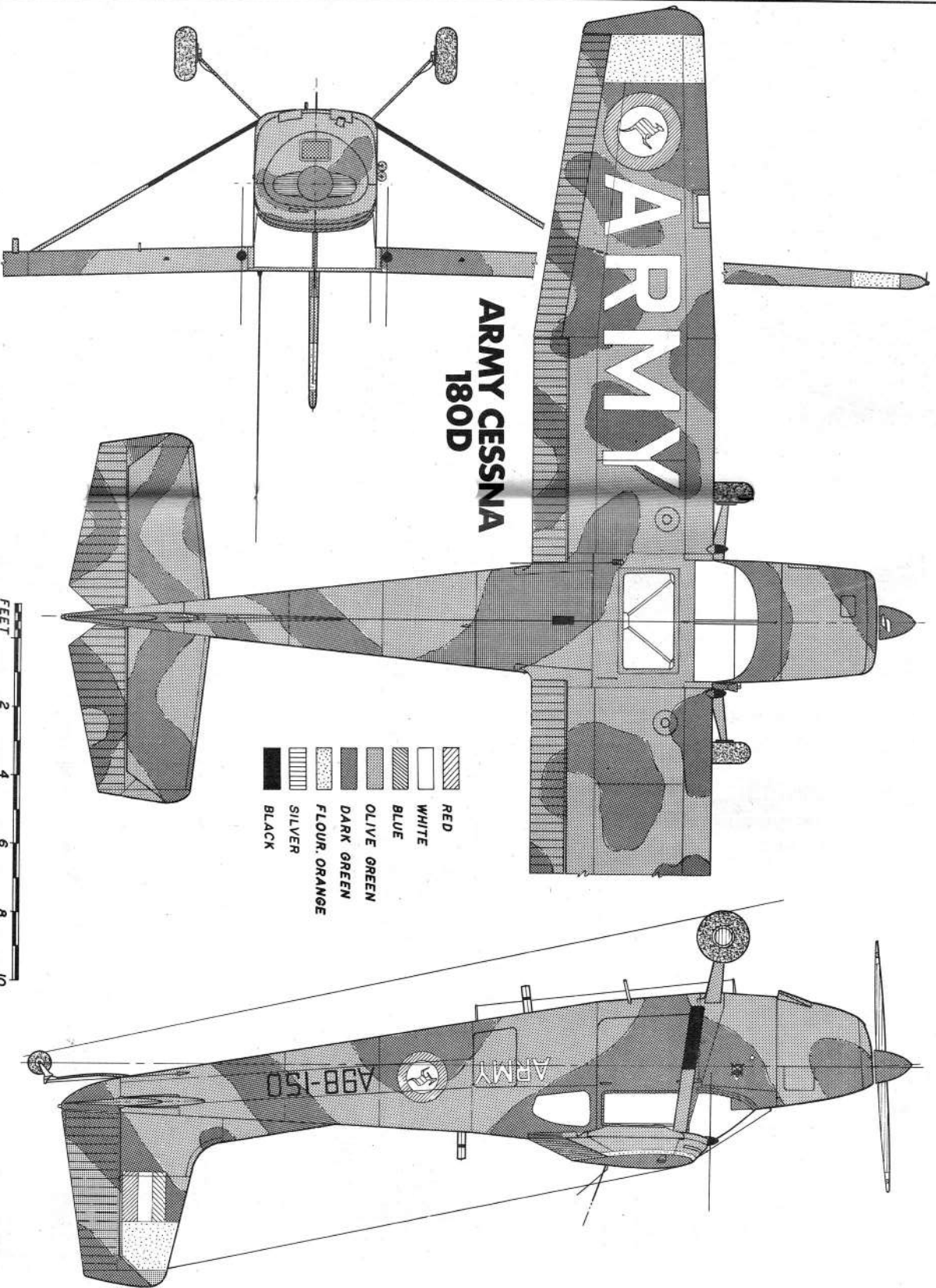
**Aircraft Series 1/72 Scale. ANGEL INTERCEPTOR.** The 3000mph interceptor featured in the "Captain Scarlet" TV series. Heavily armoured and of unusual design these aircraft are well known to TV viewers and may well indicate the interceptors of the not-too-distant future. Good material here for the boys who like to modify. Cost is only 90c.

AUSTRALIAN MODELLER, July-August—21

# THE EYES OF THE ARMY



**ARMY CESSNA  
180D**



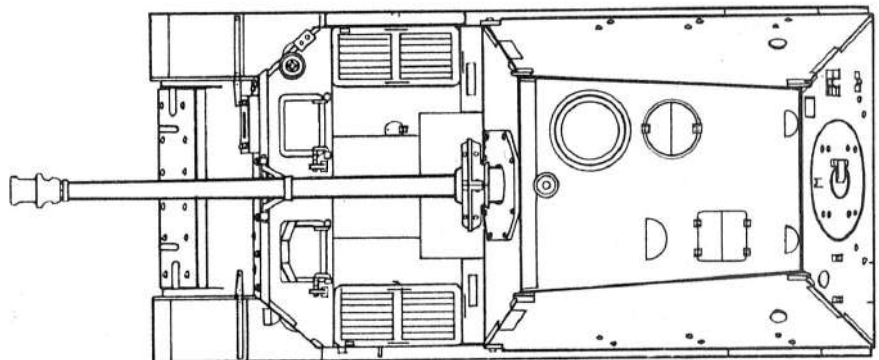
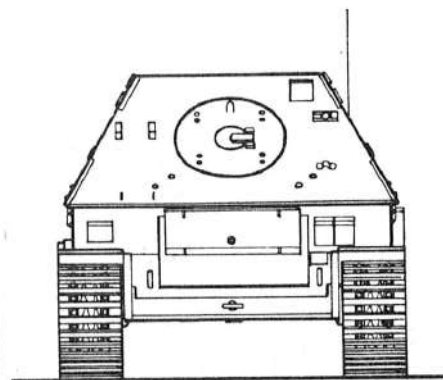
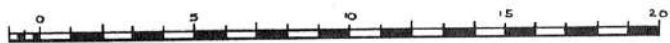
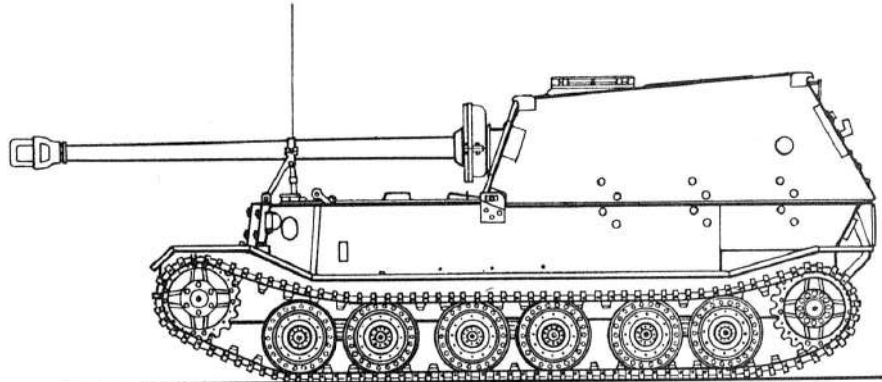
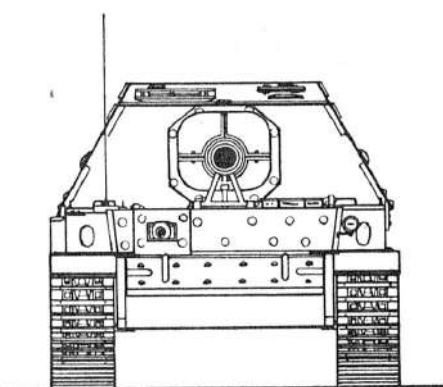


# PANZER JAGER ELEPHANT formerly FERDINAND :

Crew	Six. Driver and Wireless/MG operator in front. Commander, gunner and loaders in rear.
Weight	65 tons empty, 71.7 tons in action.
Performance	
Speed (max. road)	21 m.p.h. (34 km. p.h.).
Speed (cross country)	12.5 m.p.h. (20 km. p.h.).
Max. gradient	30°.
Fording	2ft. 4in. (71cm.).
Range (roads)	50/62 miles (80/100 km.).
Engine Details	Two Maybach HL 120-TR V-120 H.V. watercooled petrol engines developing 320 h.h.p. each, at 3,000 r.p.m. 11.9 litres. These engines provide power for two electric motors driving the rear sprockets.
Armament Details	
Main armament	1 x 8.8cm. PAK 43/2 71 calibres long plus muzzle brake.
Elevation	— 6° plus 25°.
Traverse	12° right and 12° left.
Ammunition storage	40 rounds (A.P., H.E., and Hollow Charge).
Max. sight range	4,000yd.
Secondary Armament	1 x 7.92mm. MG 34 in ball mounting right hand side of hull.
Ammunition storage	3,000 rounds.
Sight range	1,200yd.
Armour	
Hull	Front (top 200mm.; front (nose) 200mm.; side (nose) 90mm.; back (nose) 90mm.
Superstructure	Gun mantel 185mm.; front 170mm.; side 90mm.; back 90mm.

## MILITARY MODELLING:

# NAZI ELEPHANT



# THE AUSTRALIAN modeller club of the month

# ZOOM!

## MODEL ROCKETS

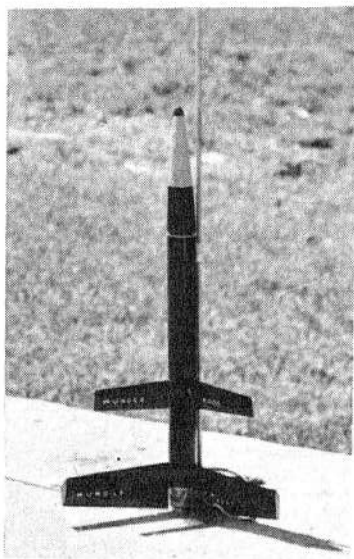
**T**O BE correct we are not introducing a club this month, but an association that will eventually bind together clubs all over Australia. Meet the recently formed National Association of Rocketry, or NAR for short.

Living as we do in a world of rockets, satellites, jets and space travel, it is only natural that the ever inventive mind of the modeller will seek ways to emulate the progress we are making in these fields, and so this body has been formed to promote interest in the designing, building and flying of model rockets in a controlled and scientific manner with a very strong emphasis on safety.

Being a young organisation, membership is small, but already one club has been formed under the NAR, and this is the Campbelltown Model Rocket Society, or CAMROCS. Headed by Chris Vine (who is also president of the NAR) this club has built up a complete store of range equipment such as launching console, multiple launch racks, tracking theodolites, and a telephone communication system. Even a low velocity wind tunnel will be finished shortly.

The Society has access to an area of land at Leumeah where it holds a contest day every two months. Interested parties should contact Chris Vine for further details. Also, if you are a rocket enthusiast but live elsewhere, then contact Chris in his capacity as NAR president and he will help you to form your own club.

His address is 105 Macquarie Avenue, Campbelltown 2560.



**BELOW LEFT:** Boost-Glide vehicle. Front pod is ejected after boost phase of flight, remainder of vehicle returns to the ground in a glide.

**BELOW:** A Jet-Pump rocket. This highly efficient model makes use of the ramjet system of propulsion.



**LEFT:** A two-stage model, on the pad, ready for take-off.

**BELOW:** A large model being placed into a launch tower by John Currey.



**ABOVE:** Rocket range crew at work, at recent contest in Newcastle.





# ARMATURE: WIND IT THE EASY WAY

**W**HO WANTS an armature winding machine? From the number of letters received by the editor after the first article on re-winding appeared, it was apparent many who had rewound small Mabuchi armatures had difficulty in stacking the 62 turns of 29 B/S on them.

I have, with a simple winder of the type we are going to construct in this article, wound 75 turns of 29 B/S on the small armatures.

You'll need one piece  $1\frac{1}{2}$ in x  $1\frac{1}{2}$ in x 6in hardwood, one piece  $\frac{1}{2}$ in rod (brass or steel), one piece 16G or 18G brass or steel  $1\frac{1}{2}$ in x  $\frac{1}{2}$ in, one only  $\frac{1}{2}$ in x 1in bolt and nut, one piece  $\frac{1}{2}$ in close grain hardwood, two only  $\frac{1}{2}$ in washers.

Start by boring the  $\frac{1}{2}$ in hole through the  $1\frac{1}{2}$ in square stock as shown in fig. 1. Then plug one end

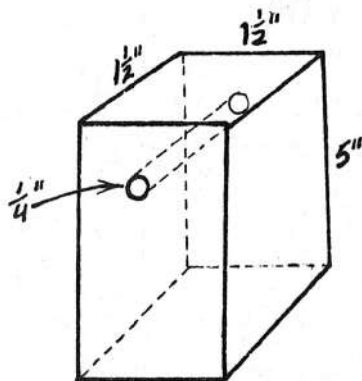


FIG 1.

of the hole and fill with oil. As the oil soaks into the timber fill up again, allowing the metal spindle to turn freely. If you use a steel spindle it also helps prevent rust.

Take your  $\frac{1}{2}$ in rod, bend to the shape as shown in fig. 2, place

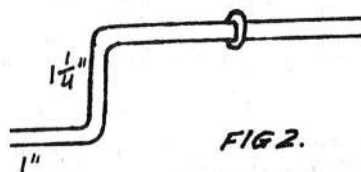


FIG 2.

washer on shaft and securely solder as shown. The shaft is then placed through hole in post and checked for free rotation. The other  $\frac{1}{2}$ in washer is then soldered on shaft to give minimum of end play in shaft without restricting rotation of shaft.

Now the difficult part. I'd suggest the following procedure for making the collett to hold the armature.

Mark a centre line on the  $\frac{1}{2}$ in hardwood, then a line at right angles approximately in the middle of the timber as shown in fig. 4. Bore a

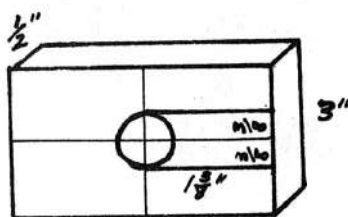


FIG 4.

$\frac{1}{2}$ in hole through it, being careful not to split the timber. This is why I recommend you start with a piece at least 3in wide.

Once the hole is bored, mark out the outline of the collett as shown in fig. 4, then carefully cut out and sandpaper smooth. Then wrap wire 30G B/S (or whatever size you have for winding your armatures with) around the collett as shown in fig. 3 and coat with araldite or

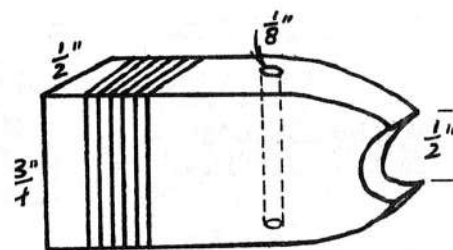


FIG 3.

something similar. This is necessary to prevent collett breaking when winding the thicker gauge wires.

When araldite has cured, centre mark end of collett and bore a  $\frac{1}{2}$ in hole  $\frac{1}{2}$ in deep and through side of collett bore  $\frac{1}{2}$ in hole (see fig. 3).

The last step is to shape and fit 16G brass strip to collett to hold armature firmly (see fig. 5), then

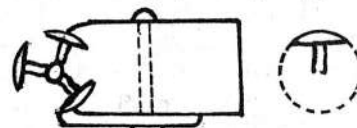


FIG 5.

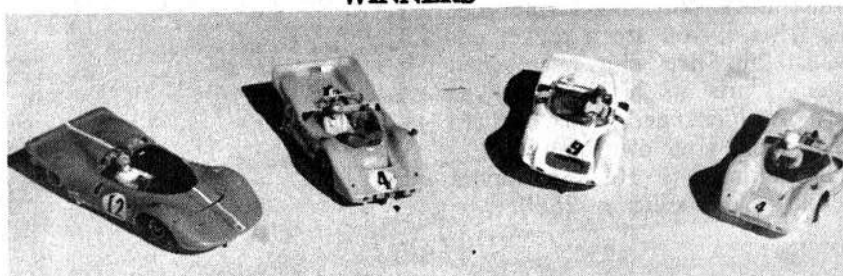
araldite collett to shaft.

When using the winder, with a little practice you will be able to maintain an even tension on the wire. The tighter you can wind without stretching the wire, the more even you will wind and the resistance will be closer to the same on each pole.

Start winding from the inside of the pole piece, laying each turn tightly against the preceding turn. With 29G B/S you should have 10 turns on when you reach the outside of the pole piece. Then wind from the outside to the inside once again placing each turn closely alongside the previous one, continuing on until each pole is completed.

This should solve the problem of placing on those extra turns.

## TASMANIAN SPORTS CAR CHAMPIONSHIPS—THE WINNERS



LEFT TO RIGHT: Robert Clayton's Ferrari P4 (first), John Brocks' McLaren Mk. 6A (second), Vic Holloway's Porsche Carrera (fourth), Graeme Poke's McLaren Mk. 64A (third).

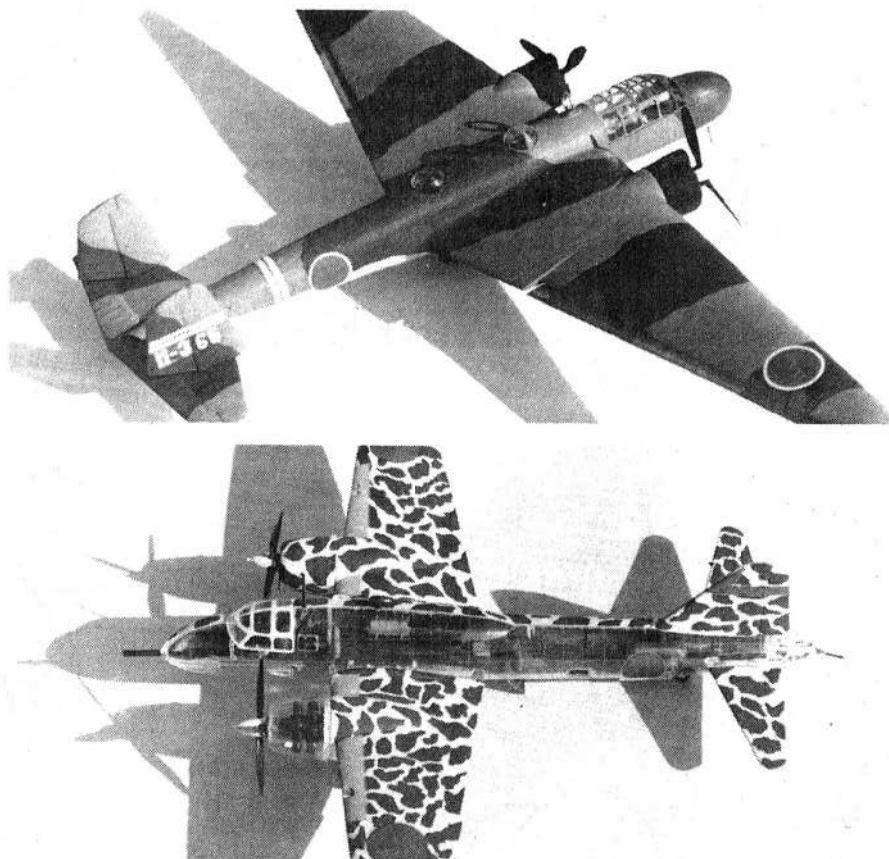
## LATEST JAPANESE AIRCRAFT KITS

Readers looking through the ads in this issue will notice mention of the new "LS" aircraft kits. Messrs Sydney Model Railroads who distribute these kits to the trade kindly sent us a selection for examination.

Shown in the photos are the KI-109 Experimental Interceptor Fighter (the kit of which includes an optional transparent fuselage side and cowl), and the Mitsubishi 96 Mk. 21 (Navy version).

The thing that impressed us most with these kits was the attention that has been given to fine detail, not only in the component parts but also in the accurate matte finished decals and the fine instruction sheets. These not only give building instructions but also COLOURED pictures of alternative finishes, and very detailed histories of the aircraft concerned.

These kits are obviously designed for the discriminating collector and historian and indicate much research on the part of the manufacturers.



# VILLAWOOD RACEWAYS

## SHOPPING CENTRE, VILLAWOOD N.S.W.

### KITS 1/24 SCALE (with motor)

TAMIYA King Cobra	4.50
TAMIYA Dodge Charger	8.50
PACTRA Red Ball Special	3.95
PACTRA Morgan, Ferrari F1	3.95
RUSSKIT 2D Chaparral	9.95
RUSSKIT McClaren Mk II	9.95
(Russkit 27 motors)	
RUSSKIT Porsche Carrera	6.95
(Russkit 23 motors)	
K & B Chaparral, Ford GT	3.95
K & B Cobra GT, Porsche 906	3.95
K & B Lola T70, Ferrari 250	3.95
K & B Ferrari 330 P2	3.95
MONOGRAM 36 Ford Coupe	4.95
MONOGRAM 34 Ford Coupe	4.95
TWIN KITS Mustang/Chaparral	6.95
TWIN KITS Ferrari/Ford GT	6.95
TESTOR Mirage GT, Honda GP	3.50
COX Lotus 40, Cheetah	4.95

### READY-TO-RUN CARS 1/24 SCALE

PACTRA Red Ball Special Ferrari GP	4.95
TESTOR Demon Deuce, Terror T	4.95
K & B Lotus 30	4.95
AMT Fantum	4.95
RUSSKIT Porsche Carrera	4.95
(in line 23 motor)	
TESTOR Plymouth GT	4.95
TESTOR Harrison Indy	4.95
RUSSKIT Cooper F1	3.95

### READY-TO-RUN CARS 1/32 SCALE

SAN Ferrari F1, Brabham F1	4.50
(ball race motors)	

### KITS 1/32 SCALE

COX Ford GT, Cheetah	4.50
AMT Chevette, McKee, Lotus 30	4.50

### MOTORS

Hemi 400	6.95
Russkit 23	1.50
Classic 150	1.50
Classic 160	1.50
Classic 360	1.50
Classic 450 (26D-3V)	3.95
Testor Mk IV (26D-3V)	3.95
Testor Turbo (3V Bal)	3.25
Mabuchi 16	95
Mabuchi 16D	1.20
Mabuchi 26D	2.50
Mabuchi 36D	1.20

### CHAMPION MOTORS

517 (16 type)	16.95
617 26D type	16.95
Magnets (16 or 26 type)	4.85

### CALEX MOTORS

Ball Race 16D 1.2 volt	4.95
------------------------	------

### MURA

Silver wound armatures, Dyn balanced 26D, 16D	8.10
Silver rewind wire	1.80

### CONTROLLERS

Classic Dual	8.45
Russkit (10 or 15 ohms)	2.95
MRC (15 ohms)	6.50
Revell Professional	4.95
Cox Variable	12.50

### MICROWIND HOT MOTORS

26D (2.5 volts)	6.50
Russkit 23 (Special Magnets)	6.50
16D Special Magnets	6.50
36D	4.50

### HOT ARMATURES

(all balanced and epoxied)

16	3.00
16D	3.50
26D	3.50
36D	3.00

### CHASSIS

DYNAMIC (inline or S/W)	3.60
16, 16D, 26D, 36D.	

CLASSIC 26D Piano Wire

(with axles, gears, etc)

COX Cucharacha 26D

COX Cucharacha Kit

(everything except motor and body)

RUSSKIT S/W for 23 motor

VINTAGE CARS 1/24 (complete with motor)

MONOGRAM Duesenberg, Mercedes

4.95

### SPECIALS

TEXACO Friction drive Vanwall

RUSSKIT spoked wheels (pair)

DYNAMIC test blocks

Large range clear bodies and scratch builders equipment.

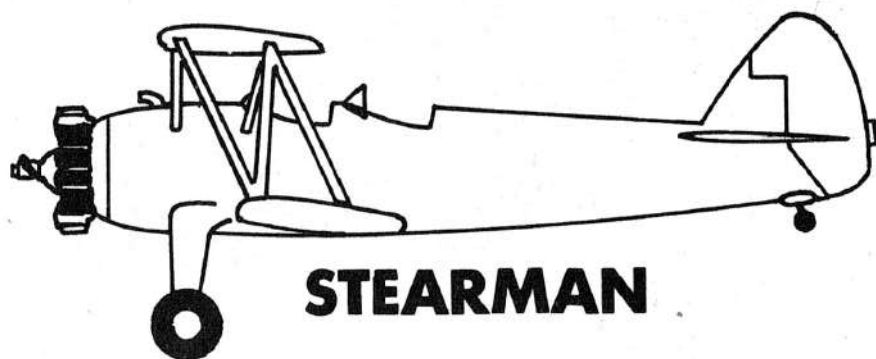
MAIL ORDERS, please add 40c post and packing.

Orders over \$5.00 post free.

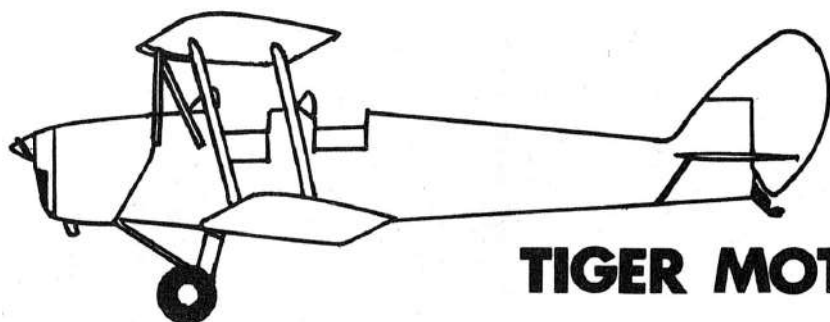
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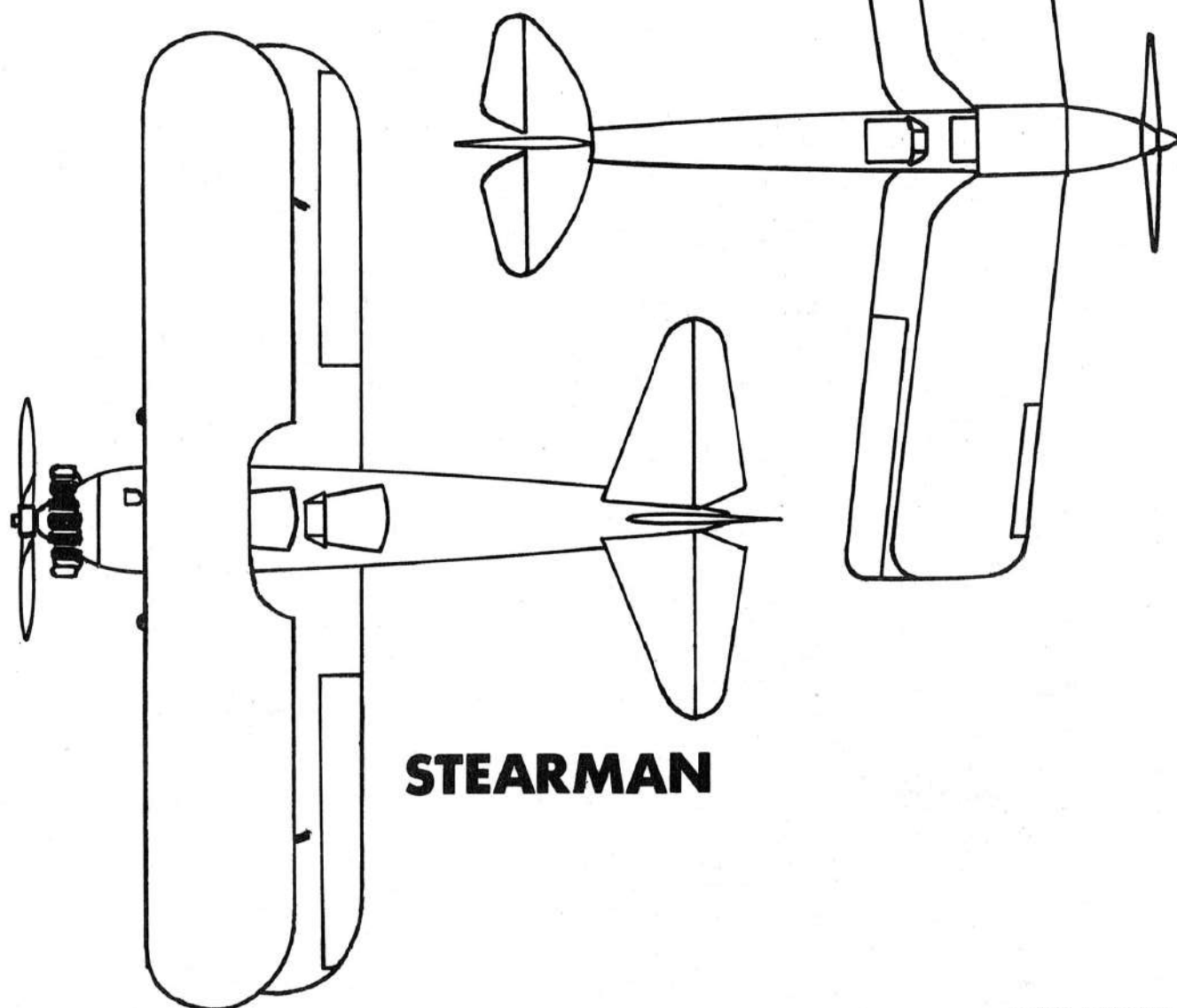




**STEARMAN**



**TIGER MOTH**



**STEARMAN**

RAY SMITH.

# TWO OF A KIND: STEARMAN & TIGER MOTH

— RAY SMITH

**L**OOK through the log-book of almost any allied World War II pilot and you will find in the early pages (usually printed very neatly, and with obvious pride) the entry "first solo". This was indeed the great moment when the fledgling pilot found himself alone in the skies for the first time.

But what of the aircraft that enabled this great event to occur? Look at the right hand column of the log-book and inevitably you will find alongside the solo entry either the name Tiger Moth or Stearman—for these were the aircraft used almost exclusively by the allied nations for elementary training.

In Australia, Britain, Canada and Rhodesia the Tiger Moth was

the backbone of the flying schools. In the USA the Stearman was fulfilling the same function.

It is interesting to compare two machines designed to do the same job and that is what we are going to do.

The **Tiger Moth** first flew in October, 1931, and was a development of the famous Gipsy Moth.

The first 'Tiger' version was powered by a 120hp Gipsy III motor but the 130hp Gipsy Major motor was substituted soon after production began.

By the outbreak of war the RAF had more than 1000 Tigers serving, and the final wartime production figure was 4005. A further 2949 were built in Canada, Australia and New Zealand.

With a top speed of 109mph, and a cruising speed of 93mph the Tiger was fully aerobatic and a delightful aircraft to fly. Canadian versions had a full length canopy covering both cockpits and some were fitted with ski undercarriage.

A radio-controlled pilotless version was also developed and was known as the Queen Bee.

The **Stearman**, designed as a military trainer, first went into service in 1936 powered by a Lycoming motor of 225hp. Various models were fitted with Jacobs and Continental motors of similar power, but the Lycoming version was by far the most numerous.

When the Stearman concern was taken over by Boeing in 1943 the aircraft became known as the Boeing PT-13 and to further confuse matters the US Navy called them N2S-3. However, to anyone who has affectionate memories of flying this superb little aircraft, it will be the Stearman always.

Having more power than the Tiger it was slightly faster with a top speed of 124mph, and a cruising speed of 106mph. Landing speed of 52mph was about 6mph faster than the Tiger.

In the field of aerobatics the Stearman could really show its paces, being stressed to be capable of an outside loop. This manoeuvre was prohibited, however, owing to the excessive strain thrown on the airframe.

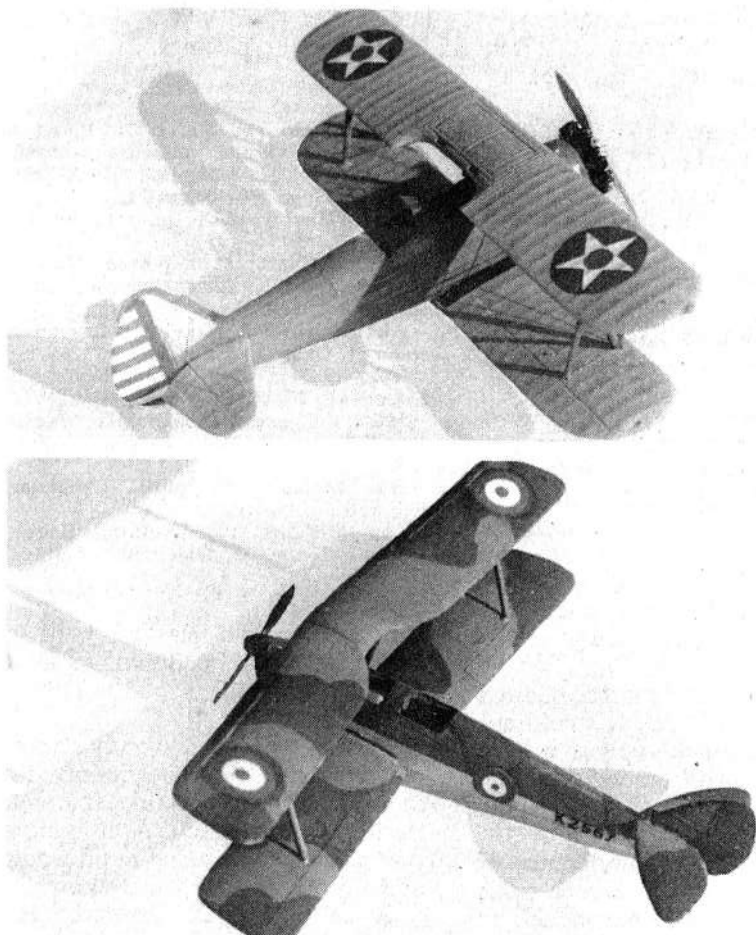
One unusual manoeuvre that was not only permitted but taught in the flying syllabus was the outside spin. This was a rather frightening situation where the aircraft was rolled on to its back and then thrown into a spin.

This meant that the plane was spiralling down with the pilot on the outside of the spin and with all the forces trying to throw him out of the cockpit.

Safety belts underwent a very thorough tightening before such an operation was attempted!

It is a tribute to the Stearman that even today it is still used for competitive aerobatics with engines of more than twice the original power.

Airfix have a kit of the Tiger Moth, and Revell put out the Stearman, both kits being to 1/72 scale. If your taste runs to the larger model then Lindberg have a 1/24 Stearman available.







# ON AIR N.S.W. STATE RADIO CHAMPIONSHIPS

**ONLY FOUR** competitors contested Class II in this event. Weather was nearly perfect. First up was Tom Prosser, whose flight was smooth but perhaps not as good as some he has made. He scored 1426.

Basil Healey flew next. He handicapped himself by flying a "Penetrator" on Reeds. It was obvious to all that Reeds are a definite competition handicap and the Penetrator, though a fine Class I model, is not a match for a good Class II. Score 874.

Mike Pettigrew was third up flying his well known "Aristocrat", a smooth flight for 1353. Bob Bennett, the last to fly, really pushed Tom Prosser hard to draw even (1426).

Bob was definitely the boy to watch in the future.

The second round saw Tom put in a much better flight. When the pressure is on Tom can be sure to respond with even better flying. He scored 1596. Basil did a little better in the second round to score 931. Bob Bennett couldn't repeat his first round performance and dropped to 1407. Mike was very consistent and scored 1366.

**1—Tom Prosser, 3022:** Aristocrat Merco 61 Kraft Proportional.  
**30—AUSTRALIAN MODELLER, July-August**

**2—Bob Bennett, 2834:** Aristocrat Merco 49 Micro Avionics.

**3—Mike Pettigrew, 2719:** Aristocrat Merco 61 Micro Avionics.

**4—Basil Healey, 1805:** "Penetrator" Merco 49, OS/10 Reeds.  
**Class III.**

This event was well contested and place winners were to be the NSW team members for selection

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By **RAY MURRAY**

---

to fly for Australia against New Zealand in October.

The FAI pattern was flown for the first time in competition in Australia. Some of the low scores by some competitors were not due to poor flying but to the inability of their models to perform the rolls quickly enough—4sec plus of minus  $\frac{1}{2}$ sec.

The double stall turn also showed up some design faults. It would appear that some new designs will be forthcoming with more fuselage side area perhaps to help with the slow roll.

There was some interference at times, not enough to cause a crash but enough to cause the models to wander around.

Though Tom Prosser was a clear-cut winner there was a real tussle for the minor placings.

**Tom Prosser, 3884 points:** Crescendo III/Crescendo IV, Merco 61, Kraft 6 and Micro-Avionics, mixture control.

**Lyle Winley, 3456 points:** Beachcomber, Enya 60, Silvertone.

**Basil Healey, 3355 points:** Safari, Merco 61, Micro-Avionics.

**Bob Bennett, 3180 points:** Beatle Juice, Merco 61, Micro-Avionics, mixture control.

**Alan Turton, 3098 points:** Crusader, Veco 61, Orbit 7.14, flaps.

**Tony Hasler, 2949 points:** Kwik Fly, Merco 49, Kraft 6.

**Mike Pettigrew, 2665 points:** Beatle Juice, Merco 61, Micro-Avionics, modified.

**Bob Young, 2372 points:** Crusader, Enya 61, Silvertone.

**Ian McLeay, 2116 points:** Beachcomber, Rossi 60, Silvertone, modified.

## Radio Scale.

In the Radio Scale first went to B. Healey with a Bolkow Junior powered by K&B 45 with OS/10 Reeds control.

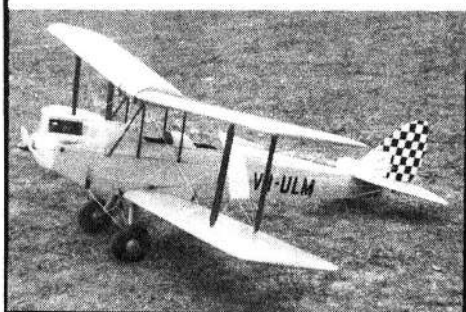
The model looked slightly underpowered and flew rather jerkily due to a right turn condition that left Basil busy pulsing left. A little more power and proportional radio would make a fine flier of the Bolkow.

Second was D. Everett. His Gypsy Moth was powered by a



VIEW of the control area showing in the foreground Lyle Wenley's Enya 60 powered Beachcomber. Behind this are two De Night Specials. These competed in the pylon event.

DICK EVERETT'S Taplin Twin powered Gipsy Moth, 6-channel radio.



## N.S.W STATE CHAMPS RESULTS

Results of the 11th State championships of the New South Wales Association of Aeromodellers are:—

Junior Stunt—S. Masterton 1, D. Arthur 2, G. Clarke 3; Open Stunt—J. Tidey 1, R. Ogle 2, J. Toyer 3; Control Line Scale—M. Mitchell 1, W. Edwards 2, B. Bowerman 3; Junior 1A Team Race—R. Black (12-13.3) 1, M. Chinchin (no time) 2; Open 1A Team Race—W. East/W. East (10-34.3) 1, W. Logan (12-29.8) 2, R. Black (no time) 3; FAI Team Race—Shing/Tilley (11-36) 1, R. Lee (11-43.3) 2, W. East/W. East (12-17.7) 3; Class II Team Race—A. Kerr (6-59.8) 1, L. Kennedy (7-25.5) 2, Shing/Tilley (7-32.1) 3; Junior Combat—R. Black 1, D. Baird 2, D. Arthur 3; FAI Combat—W. East 1, Summersby/Smith 2, L. Hamilton 3; Open Combat—M. Bell 1, B. Wilkinson 2, J. Tidey 3; FAI Speed—J. Finneran (137.35) 1, I. Vodopivec (129.44) 2, R. Lee (116.08) 3; Class II Speed—I. Vodopivec (160.65) 1, L. Buck (155.76) 2, Cantwell/Cobcroft (147.48) 3; Class III Speed—P. McGee (165.07) 1, I. Vodopivec (159.23) 2, Cantwell/Cobcroft (146.28) 3; Proto Speed—I. Vodopivec (109.71) 1; Novice FAI Speed—G. Ray (97.79) 1; Novice Class II Speed—T. Goldsmith (118.37) 1, D. Wearne (90.87) 2; Novice Proto Speed—D. Curry (101.06) 1; Class III Radio—T. Prosser 1, L. Winley 2, B. Healy 3; Class II Radio—T. Prosser 1, R. Bennett 2, M. Pettigrew 3; R/C Scale—B. Healy 1, R. Everett 2, L. Winley 3; Open Pylon Race—L. Winley 1, R. Bennett 2, B. Healy 3; Open A/I Sailplane—B. Knight 1, R. Neville 2, B. Lee 3; Junior A/I Sailplane—R. Black 1, D. Arthur 2, C. McGee 3; Coupe De Hiver—K. Murray 1, A. Cooper 2, A. Edwards 3; Open Chuck Glider—T. Sellwood 1, D. Cunningham 2, M. Bell 3; Junior Chuck Glider—D. Arthur 1, D. Brian 2, R. Black 3; Power Scramble—K. Murray 1, B. Knight 2, G. Barker 3; F/F Magazine Scale—B. Knight 1, P. Jackson 2, R. Melton 3; A/2 Sailplane—L. Fahey 1, B. Knight 2, D. Brennan 3; Open Power—Summersby/Smith 1, A. Holmes 2, M. Pettigrew 3; Wakefield—A. Butler 1, B. Beashell 2, A. Cooper 3; FAI Power—M. Pettigrew 1, A. Butler 2, C. McGee 3; Junior Open Rubber—R. Black 1, D. Arthur 2, P. Browning 3.

Senior Champion of Champions—M. Pettigrew; Junior Champion of Champions—R. Black.

Taplin Twin controlled by C&G Hedcules reeds. The model flew smoothly after Dick had overcome the problem of nose-over on take off. Dick made the smoothest landing of the meeting. A little more power would make the plane a much pleasanter model to fly.

Third place went to a team entry Ken Williams and Ron Stears using a Cessna 182 ably piloted by Lyle Winley using Silvertone Proportional and powered by Enya 60. The model featured working flaps and navigation lights, very attractive finish. Interference during flight may well have caused the model to lose first place. Very stable flier.

Also entered was Ross Woodcock's Wickner Wicker flown by Mike Pettigrew powered by Merco 61 controlled by Kraft Proportional.

This model could well have won the event. Motor trouble caused an attempt to be called on the first flight, and caused the model to crash with extensive damage on the following flight.

An attempt to stall the model and so stop a very sick motor caused the model to go into a spin that despite everything that Mike could do never recovered.

Bill Edwards entered a very well built Walrus flown by Bob Schnider. The model was powered by an Enya 0.9 controlled by Arcon 7X and Pixie Rx and OS escapement. Model crashed due to a radio failure.

Pylon racing was also flown and some close racing by Bob Bennett and Lyle Winley flying the only two Goodyear Racers (both Denight specials) showed what a really good spectacle pylon racing makes.

My own observations were that contest officials and competitors alike were to nonchalant about the safety aspect of radio flying.

Models were continually flown at low level and high speed over the spectator area. I hope it doesn't require a serious accident to shake us out of our complacency and laziness. It is high time the American system of disqualification for any one seen flying over the spectator area was introduced.

It may seem hard for the competitors to find a piece of sky that shows this manoeuvre to best advantage but it's better than a law suit for personal damages or the thought of having injured someone for like.

The reliability of modern gear has led to a "it can't happen to me"

approach.



BASIL HEALEY'S beautifully built Bolkow Junior. Although the K&B 45 did not seem to be putting out enough power, Basil flew it well enough to take off first prize. This is a model to watch in future contests.

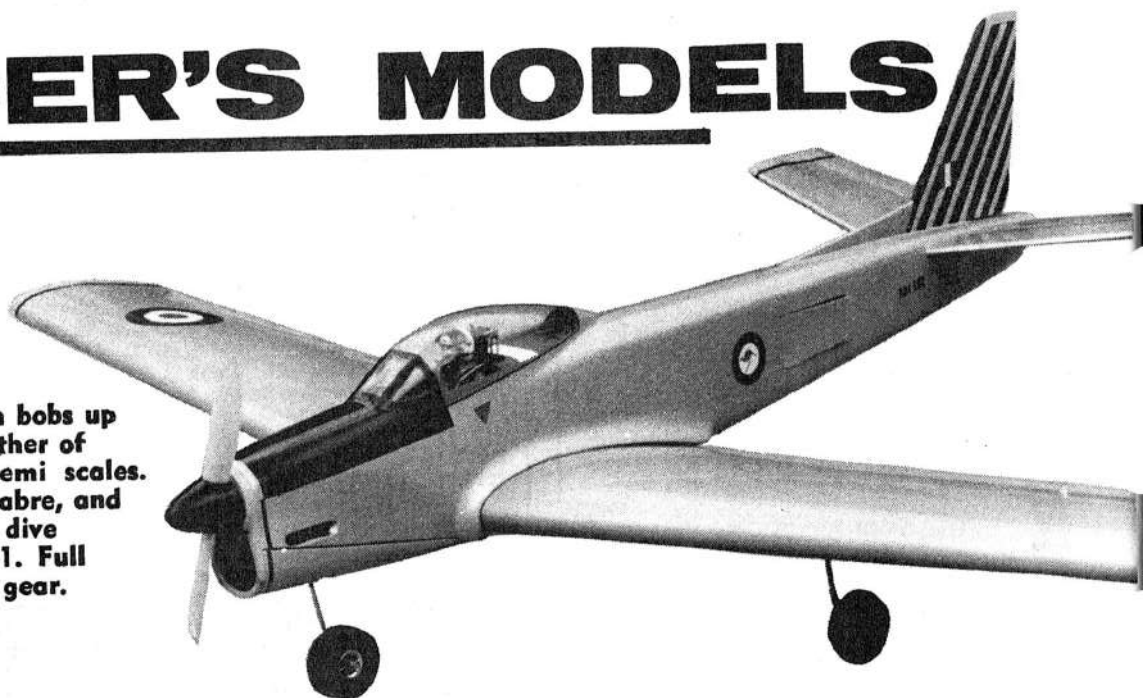
WICKNER WICKO powered by Merco 61, and controlled by Kraft proportional is work of Ross Woodcock.



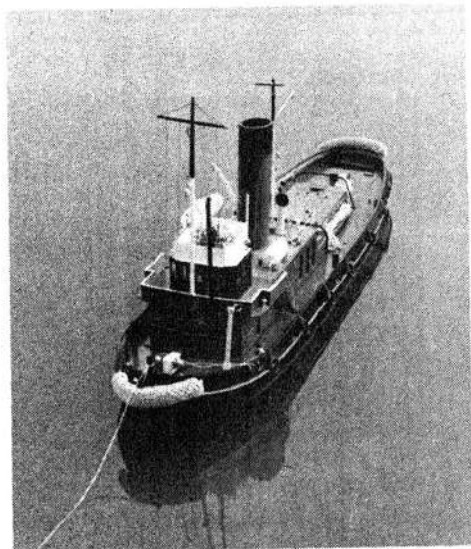


# READER'S MODELS

**OUR FRIEND** Allan Turton bobs up again this month with another of his highly sophisticated semi scales. This one is based on the Sabre, and features working fuselage dive brakes. Power is Merco 61. Full house proportional radio gear.

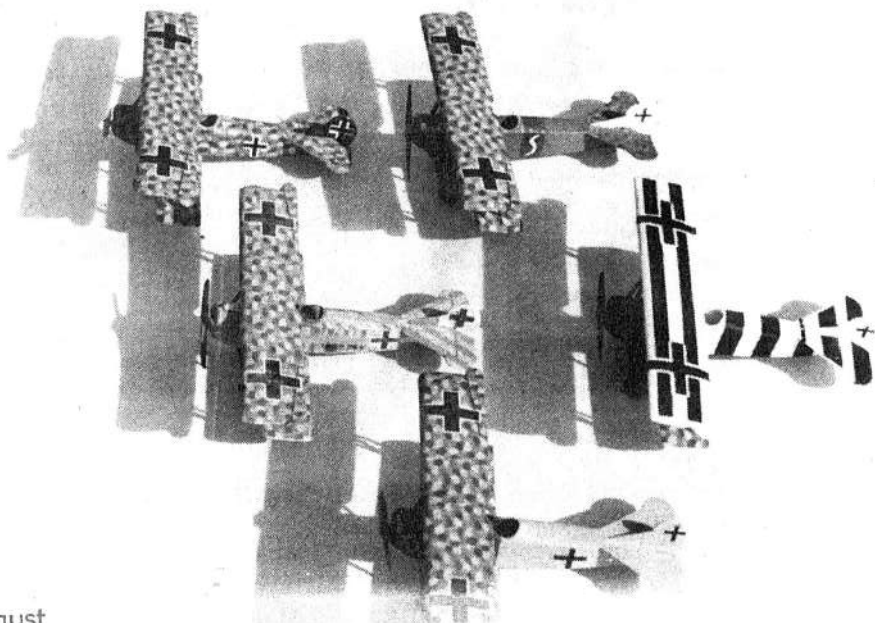


**WHO SAID** that vacuum-formed bodies can't look good? This Eagle GP by Terry Smith (Reservoir, Vic.) proves that with a little skill and patience they can have the real concours look. Nice work, Terry.

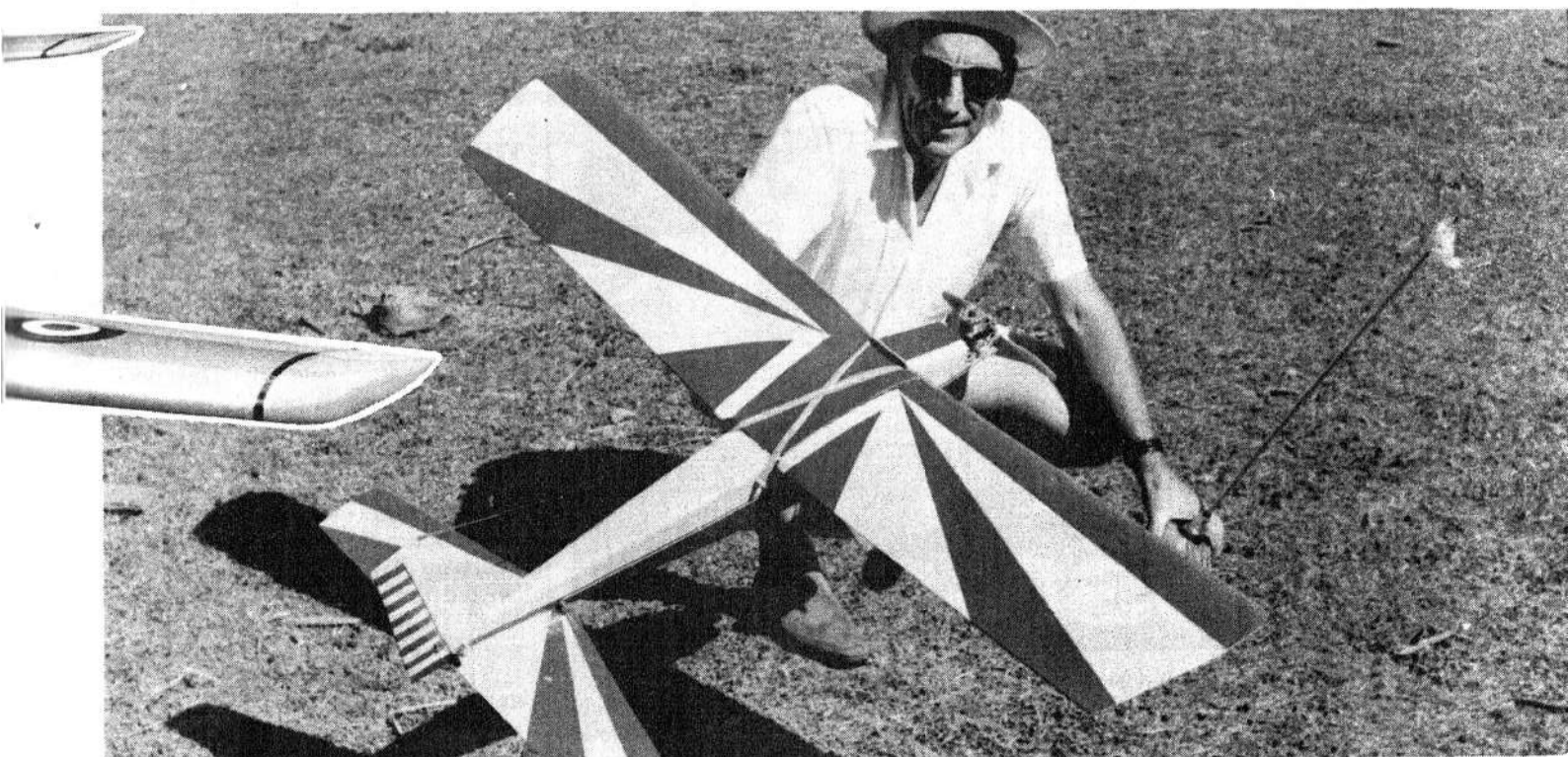


**MR H. BALDACHINO** of the Victorian Model Power Boat Society sends us a nice shot of his radio controlled tug "Cervia". All controls including radar and salvage gear operate through the control system. We will be featuring this club shortly in our Club of the Month series.

**RICHARD HEALEY** of Sydney loves WW-I models, and guess which particular type he concentrates on? The batch of Fokker D-VII's are his pride and joy. Each one is finished in authentic schemes obtained after much research.

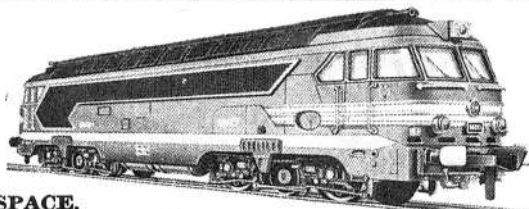


**KEITH KNIGHT** of the Radio Control Model Club poses proudly with his own design model powered by Taipan 19. It has Silvertone TX and RX, and OS servos. Finished in brilliant red and yellow.



## WE REALLY ARE THE FANTASTIC HOBBY SHOP

**RAILWAYS:** Choose from this range of brands—TRIANG, RIVAROSSO, LIMA, FLIESCHMANN, EGGERBAHN, FALLER, QUICK, POLA, VOLLMER, MERTEN, KTM, UNITED, GEM (U.K.), GEM (U.S.A.), ATHERN, ROUNDHOUSE, TYCO, PECO, MERIT, LONESTAR, H & M, MAINLINE, RADAR, AIRFIX, PLAYCRAFT, SHINOHARA—also a Full Repair Service.



### N GAUGE IS "IN"

#### 1:160 SCALE SAVES SPACE.

LIMA. All sets include battery controller.

FRENCH DIESEL LOCO. Colour blue, with three waggons, track and controller, \$12.42.

DIESEL ELECTRIC. Hauls three passenger coaches on oval track. With controller, \$15.07.

TRANSFORMER CONTROLLERS (fully transistorised), for use in place of batteries, \$15.95.

B201. A main line kit, including platform. \$2.48.

TERRIFIC MINE KIT. Authentic aged look. \$2.20.

TWO double portal Tunnel Mouths with interiors, 82c.

PECO N Gauge Flexible Track. 3ft lengths. 95c.

### TOP QUALITY HO Steam Locos (All tested and guaranteed).

FLIESCHMANN 1342 German 2-8-4 Passenger Loco, all metal heavy hauler, with automatic headlights. \$27.85.

FLIESCHMANN 0-6-0 Tender Loco. A "beast" for only \$11.60.

FLIESCHMANN Pacific 1361 with high capacity tender, \$25.98.

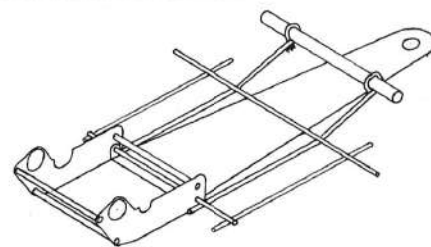
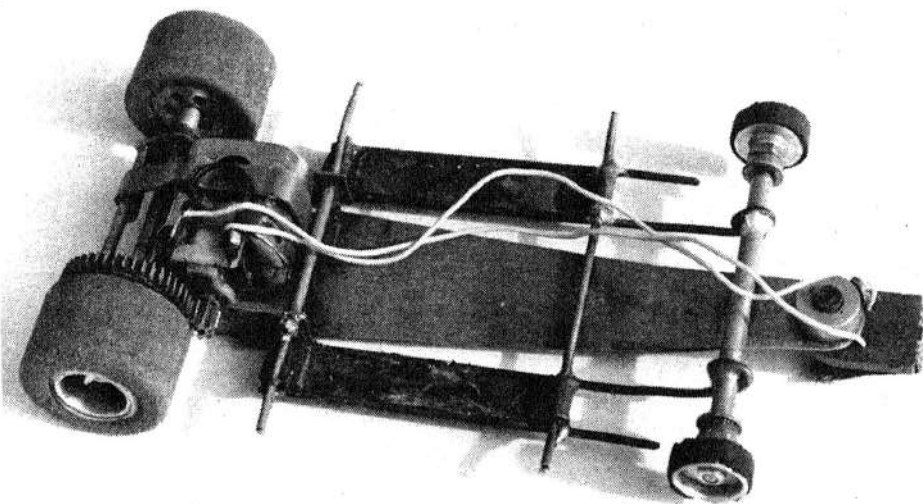
RIVAROSSO 38-wheel "Big Boy" Union Pacific, \$69.95.

RIVAROSSO Set, 4 waggons, 0-6-0 Tender Loco, \$33.75.

BRASS 4-6-0 Tender Loco by Gem of USA, \$65.70.

**THE FANTASTIC HOBBY SHOP, 33-34 ANGEL ARCADE, ASH STREET, SYDNEY**

AUSTRALIAN MODELLER, July-August—33



**THIS CHASSIS** was first built in October 1967 by Steve Hutchesson for the DS Testor Team for the first 12-hour race at Cessnock in which it won the race by 197 laps.

The second race it was entered in was a 10-hour at Magnet Raceways at Rockdale in December 1967, in which it led till the ninth hour by 120-odd laps until motor trouble relegated it to second place.

The third and last endurance race it was entered in was the Point Score 10-hour at Waitara in February 1968, in which again the car led the race by 190 laps in the ninth hour until again motor trouble relegated it to second place.

The car then retired from endurance racing and given to Ian Bannister for Group 2 sprint racing. In Ian's capable hands it convincingly won the first Sports and GT Group II sprint at Earlwood in March 1968 and again at the second Sports and GT Sprint at Mayfield in Newcastle in April 1968.

It is the only car this year that has won two Calendar races in New South Wales.

assembly speed kit end cap.

The motor has Champion new super arco magnets and a Champion blow-proof commutator. The shaft and stack of the armature are insulated by Champion insulators.

The armature is wound with 50 turns of 28 gauge Simco polythermalex. The motor is secured to the motor mounting bracket by a strip of 20 gauge brass sheet shaped in the form of a motor clip.

**To complete the picture:** Mila Miglia 1/16in Grey Grabbers suitably ground and profiled to the 1/16in Associated wheels are bonded to the wheels with contact cement.

The outside diameter of the wheels and tyres is approximately 1in.

For all soldering of the brass sheet, piano wire and brass tubing sections of the chassis and axle carriers 80/20 solder was used.

## WHAT A CHASSIS!

**Description:** 1/16in piano wire semi-perimeter single-rod, floating drop-arm, scratch-built sidewinder with lead outriggers.

**Component parts:** Cox quick change 3/16in long post-guide shoe; Calex copper braids; International Engineering 3/16in brass guide collar.

**Front axle and wheel assembly:** Testor 2 1/2in stainless steel free-turning axle mounted through AYK 1/8in ID brass tubing and Rikken 1/8in x 5/32in brass spacers.

**Front wheels:** Testor free-turning mounted on the above axle.

**Drop arm:** 20 gauge, 4in long brass sheet shaped in the form of a hinge at the rear extremity and mounted upon a piece of 1/16in OD brass tubing which is connected to the rear of the perimeter.

**Chassis proper:** Consisting of 2in x 3in longitudinal strips of 1/16in piano wire soldered to front axle carrier (AYK brass tubing) flanked externally on each side by a 2 1/2in strip of 1/16in piano wire.

**Cross rods and body supports:** 2in x 3in 1/16in OD AYK brass tubing.

**Outriggers:** Two rectangular strips of lead 2in x 1/4in soldered to external perimeter areas piano wire and brass rod sections of chassis.

**Motor mounting bracket:** Side-34—AUSTRALIAN MODELLER, July-August

winder type consisting of two strips shaped and cut accordingly of 24-gauge brass sheet reinforced with two rear bracket struts of 1 1/4in strips of 3/32in OD AYK brass tubing. Each section of motor bracket contains a 1/8in OD hole into which is inserted a Harris (Mila Miglia) ball race 1/8in OD x 1/8in ID.

Through the ball races are inserted a Testor 2 1/2in stainless steel (high tensile strength) sidewinder axle with 5/8in wide Associated rear wheels at either extremity. The axle is secured externally by Testor 1/8in knock-offs.

On the non-gear side of the motor mounting bracket, the ball race is flanked by 3in x 1/8in ID brass washers separated from the wheel by a Rikken brass or steel spacer 9/32in long x 1/8in ID.

On the gear side of the motor bracket a 44-tooth 48 pitch Wilson nylon spur gear is separated from the wheel by a Rikken 1/8in brass jam nut.

The gear meshes with a nine-tooth 48 pitch .078 shaft 1/8in long Weldun inline steel pinion.

**NOTE:** Because of the 1/8in length of the Weldun pinion range they can be used alternatively for either inline chassis or sidewinders.

The pinion is mounted on a 26D type motor consisting of a Calex case and a Simco open brush



# MODEL BOATS FOR BEGINNERS

**M**ODEL BOATS cover a very large field, but broadly can be divided into two main classes—yachts and power boats.

Power boats are the most popular so I'll start with them. These, of course, can be further sub-divided into classes such as steam powered, electrically powered, or engine powered, with engine meaning either glo plug or diesel type motors and they can be free running or radio-controlled.

As this article is for beginners, I won't delve deeply into the intricacies of radio or motor systems, but concentrate more on the selection of suitable models and elementary pointers on construction. In later articles I will examine in detail the more advanced aspects such as power units, controls, cooling and radio.

I think you should build your first model from one of the many fine kits available. It's better than building from a plan for the following reasons:

**KITS** are made around models that have been thoroughly tried and tested.

**ALL** kit parts are usually pre-formed, cutting out much tedious work, and making accurate assembly relatively easy.

**KIT** materials are generally better quality than materials available separately.

These are all good reasons for starting with a kit and we can assure you that you will never regret this way of taking your first step towards being a model boat builder.

Kits are available for tugs, fishing boats, luxury launches, air-sea rescue, and many other types. Take your pick, but remember one very important thing—size.

If your model is too small it will almost be impossible to install radio control equipment.

A larger model gives you more room to get your hands at the internal parts for adjustments, and believe me, this is most important.

But if your model is too large, it will cost more, take longer to build, and need a lot of water to manoeuvre.

I'd say the best size is about 30in long. This will give you the best of both worlds, and still be an impressive model.

The next step is the choice of power unit. I'd strongly advise an electric motor. They are simple to operate and about their only servicing problem is battery drain. A really good electric motor can put out a lot of power to give your boat really snappy performance.

It's one important point that you choose your fittings carefully, particularly shafts, tubes and couplings. Always use silver steel shafts and good solid couplings. They last much longer and enable you to change over to diesel or glo motors later on. Do not use brass shafting—it's just not strong enough.

You should also remember to provide for further development such as installing a radio, water cooling, etc.

To do this simply drill  $\frac{1}{4}$ in holes on both port and starboard sides of each bulkhead or former. These should be about  $\frac{1}{2}$ in below the deck level and 1in from the sides. If this is done during initial construction you will only have to feed through your water pipes or wiring when the time comes.

Now a few simple tips on general construction. Most kits supply you with small brass nails. We strongly advise you to discard these and

use fine brass screws instead. If you screw and glue properly you will never have any water seepage problems.

Make sure you use good glue. For internal construction I suggest one of the "two part" epoxys such as Araldite or Britfix. These are rather slow drying but give immensely strong joints. They are also waterproof, and to a large degree heatproof.

For external use I prefer Selleys Panel Metal, which is similar but faster drying. It does not shrink so is ideal for sealing any seams or joints in the coverings.

If you are a model yacht enthusiast a kit is still the best way to get started for the reasons I've already stated. Usually in a yacht kit the sails are ready-made.

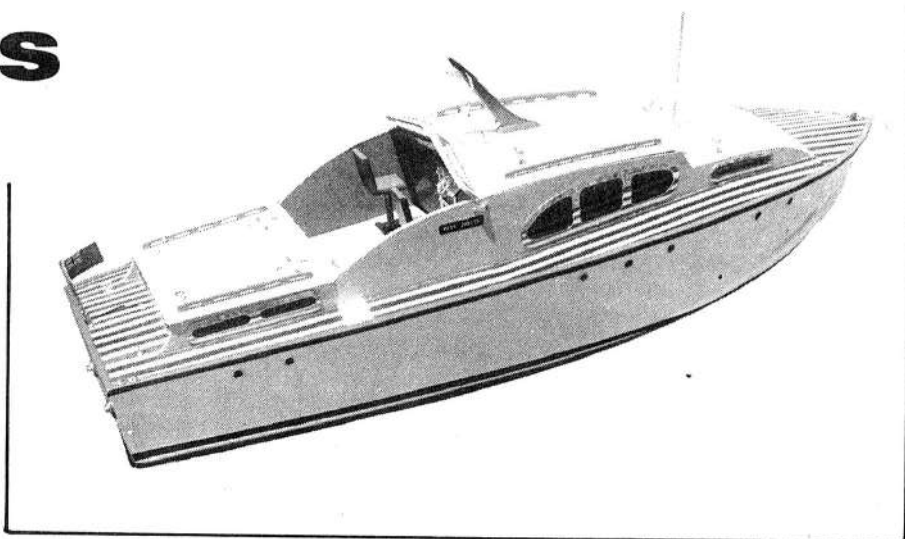
Radio controls for yachts has now reached a peak of sophistication with a practical system of winching for complete sail control. This means in the near future we will see model yachts being sailed and handled as though in the hands of a crew.

In later articles I will cover such details as radio, power units, rigging, etc., all in detail.

I hope this general look at the boating scene has triggered off enough enthusiasm to get some readers started. If there are any points you would like covered or if you have any questions, write to me C/o the Editor, Australian Modeller.

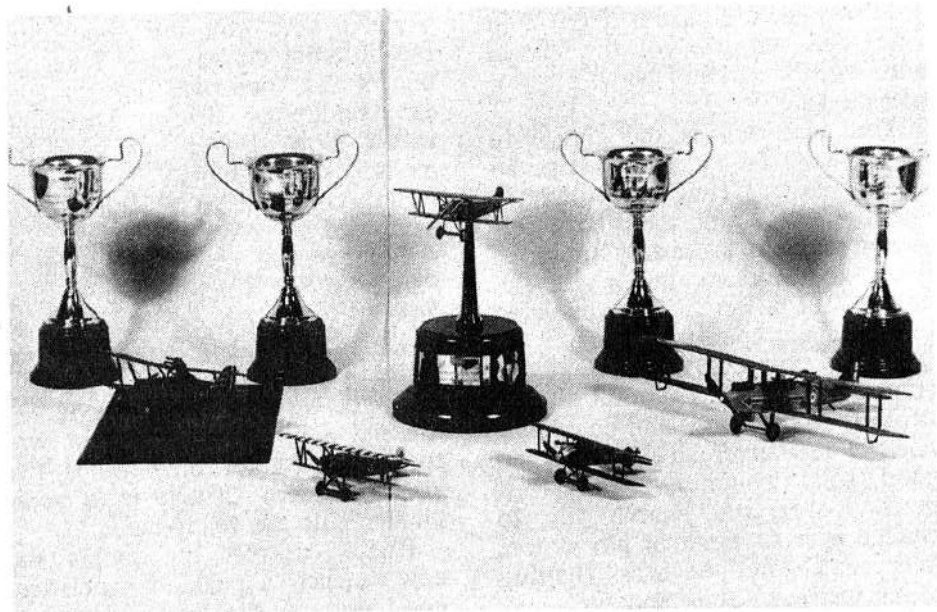
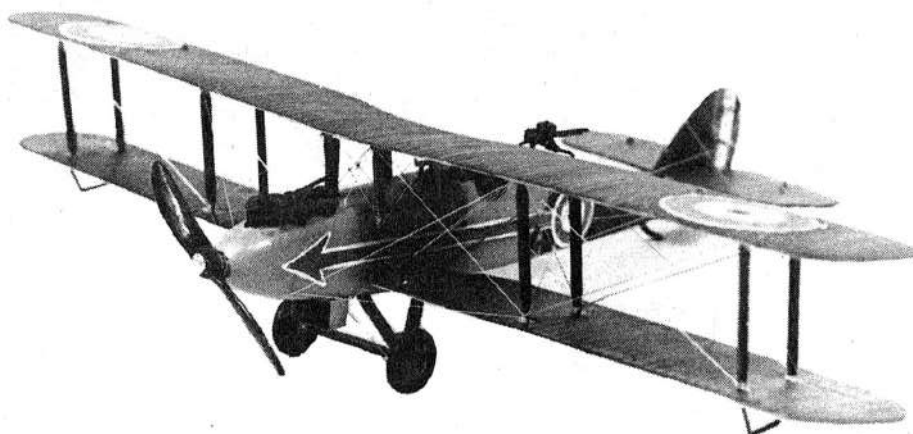
—KEN ANDERSON.

AUSTRALIAN MODELLER, July-August—35



# HISTORIC MODELS

ROSS WILLIAMS.



**T**HE Australin Society of World War I Aero Historians although primarily a historical society, has many modeller members. Because of this an annual modelling contest for members, confined to the 1914-18 war period, was held on April 20 last.

More than 100 individual models were entered in the four categories. This set judges Eric Bushell and John de Horne a difficult task.

Sections were 1/72 scale plastic kit models, 1/48 scale plastic models, conversion of plastic kit models and scratch built models.

It took the judges two hours to decide winners and placegetters.

Winners and placegetters were:

**Category A** (1/72nd plastic kit models): Ross Williams, Fokker D-VIII, 1; Ross Williams, Roland C-II, 2; Ross Williams, Vickers Vimy, 3.

**Category B** (1/48th plastic kit models): Ted Webster, SE-5a, 1; Jeff Baker, Deperdussin, 2; Ted Webster, Pfalz D-III, 3.

**Category C** (conversions of plastic kits): Ron Cooper, DH-9, 1; Peter Williams, Siemens Schuckert D-I, 2; Richard Healey, Bleriot Penguin, 3.

**Category D** (scratch built models): Norm Forrester, Roland D-VI, 1; Ron Cooper, Ansaldo SVA-5, 2; Bill Buxton, BE-2E, 3.

The Model of the Year perpetual trophy was presented by its donor, Mr Bill Stevens of Hobby and Toyland, Roselands, to Norm Forrester for his model of a Roland DV-I—also the winner of the scratch built section.

After the presentation of awards entries were displayed along with a large selection of non-competitive display models.

Judging by the response to our inaugural effort the 1969 contest should be even more successful.

## CLASSIFIED

**FOR SALE**, "Model Airplane News" since 1930; "Aeromodeller" since 1935; "Model Aircraft" 1947-1966. Many bound volumes, plus other mags. Best offers.—Inquiries to F. Steven, 104 Gepp Parade, Moonah, Tas.

**FOR SALE**, Futaba SC Superhet (26.995 mags), TX FT5C, RX F6-STR, Servo-motor, FE3B, Rudder FR36. Ready wired, switch, etc. Excellent condition and little used. Also some props. \$80 o.n.o.—F. Steven, 104 Gepp Parade, Moonah, Tas.

**FOR SALE**, Copper Tape, .008 x in. Only 11c per yard. Post free.—Moonee Raceway, 672 Mount Alexander Road, Moonee Ponds, Vic.

**INTERESTED** in Proportional R/C? How about a Bonner Digimite Eight in immaculate condition at only \$300 then? Be early for this one as it is a real bargain.—Inquire Smith, 23 Liberty St., Belmore, Sydney. Phone 78-5313.

**FOR SALE**, Silvertone 10 channel Reed Outfit with 5 Transmitters. All

in very good order.—Inquire W. Marden, 885 Punchbowl Rd., Punchbowl, Sydney. Phone 70-6262.

**FOR SALE**, Assorted Gears. Cox, AYK, etc.; 4 Bevels 3½-1, 4-1, 4½-1; 7 Spurs 46-48T, 9 Pinions 8-12-14-18T; 7 Crowns 33-35-37T. Sell all 27 gears in one lot, \$3.00.—Inquire H.W., 223 Sutherland St., Paddington, Sydney 2021.

**FOR SALE**, New Motors. 16 D's, \$1.00; 26 D's, \$2.00.—Inquire Box 139, P.O., Paddington 2021.



HE NSWMRRA and VSCA believe that interstate contests foster harmony and goodwill between the members of the various State associations in Australia.

The Victorian Slot Car Association was the first to break the ice and invited the NSWMRRA to send a team to compete in the VSCA's annual Easter classic, the Total 24-Hour Enduro, held at the Melbourne Miniature Racing Club, Sydney Road, Brunswick.

A team representing NSW was Ian Bannister and Steve Hutchesson (Team Testor), David Rittie and Bob Cox (DBR Earlwood), Gary Grant (G&D).

The race, held at the clubrooms of the MMCRC, began at 3 pm on April 14 and ended at 3 pm, Sunday, April 15.

Eight six-man teams from the VSCA members had attempted to qualify for two places on the four-lane track, one lane being left open for a team from South Australia and one lane left open for New South Wales. Unfortunately, the South Australians could not make it.

The race was conducted under Victorian Group 1 Rules and car specifications and the lineup was: **Team Eclipse** (red lane): Ron Meakin, John Gatens, Graham Spurrell, Doug Tipping and Bill Fraeme—Ford Mirage.

**Team Testudo** (yellow lane): Athol Holtham, Arnold Schelkinis, Robert Sharp, Ken Phillips, Les Patford and Don Pash—Ford Mirage.

**Strongman Racing Team** (blue lane): John Strongman, Robert Wallis, Noel Parker, William Wallace, "Ace" Elliott, Adrian Belalmy and John McCauley (mechanic)—Ferrari 330 P4 Berlinetta.

**NSWMRRA** (green lane): David Rittie (captain), Steve Hutchesson (builder), Ian Bannister, Garry Grant and Bob Cox—Ferrari P4 Can-Am.

Driver changes were to be on the hour with minimum driving periods one hour and maximum driving periods four hours. The first five hours saw Bannister, Rittie,

Hutchesson, Grant and Cox each do an hour in that order, whilst each of the Victorian teams seemed to concentrate (with some exception) to two-hour changes.

In the early stages of the race we saw brilliant driving by Bannister and Grant and at the end of five hours NSW on the green lane was 94 laps in front over Strongman on the blue lane.

All the Victorian teams were running the solid rubber AYK tyres whilst the NSW team at this stage was using open cell Mila Miglia cheaters. All teams had tyre changes whilst Testudo and Eclipse running 26D's had motor changes.

The Strongman team running an Iso Fulcrum inline stainless steel pan chassis with a removable back end, was running twin Russkit 27 type Hit motors and did not change motors during the race. The Strongman car was a work of art and was one of the most incredible pieces of machinery ever seen on a slot car track. Unfortunately it was built for reliability and maintenance and could not match the lightness and sheer speed of the NSW entry.

During the hours of darkness, the Ford Mirage of the Testudo team was very impressive. Arnold Schelkinis looked as though he could drive for 36 hours let alone 24 and put up a really fine performance on behalf of the Testudo team. The laps at 5 am were:

NSW 3601, Strongman 3573, Testudo 3539, Eclipse 3448.

At approximately 5.30 am NSW ran into difficulties with a collapsed bearing and for the first time in the race the Strongman Berlinetta gained the lead. At 6 am the positions were Strongman 3826 laps, NSW 3807.

Excellent driving by Grant, Rittie and Bannister in turn saw NSW recover the lead from Strongman and at 8 am NSW was 4364 and Strongman 4342. From then on NSW increased its lead slowly.

Despite excellent driving by Graham Spurrell and John Gatens for Eclipse and Arnold Schelkinis and Ken Phillips for Testudo, both these teams had further maintenance problems and by 111 am the progress lead score was NSW

5024, Strongman 4997, Testudo 4697, Eclipse 4447.

The last hour saw Cox driving with Bannister, the only other member of the NSW team awake.

Final lap score was:

1—New South Wales	6223
2—Strongman	6036
3—Testudo	5871
4—Eclipse	5568

For NSW Rittie was a very capable captain and no doubt Steve Hutchesson learned a lot of points for future endurance battles between Testor and DBR teams back in New South Wales. Bannister and Grant undoubtedly were the outstanding drivers for the New South Wales team.

Of the Victorian drivers, Graham Spurrell put up a valiant effort for the Eclipse team and in fact at times held the New South Wales car on sheer driving ability alone.

## RESULTS P.41 →

### FRANK MATICH CHALLENGE CUP

Round 1. Held at Earlwood, June 9, 1968.

1—Redline Trident (New South Wales): Brian Titheridge, Max Pearson—Lola Mark 3B Can-Am.

2—DBR Earlwood (New South Wales): Steve Slowe and David Rittie—Lola Marg 3B Can-Am.

3—DS Testor (New South Wales): Ian Bannister and Steve Hutchesson—Matich SR3.

4—GP Mini Northcote (Victoria). Lola Mark 3B Can-Am.

5—SSME (New South Wales). Matich SR3.

**DRIVER OF THE YEAR — —**  
HERE ARE the results of Group 1 1/32in scale sprint Driver of the Year event held at Sydney Society of Model Engineers, Ashfield (sports and GT cars) on April 21:

1—B. Titheridge (30 points), Redline Trident, Ferrari 330 P4 Berlinetta.

2—Ian Bannister (21), DS Testor, Ferrari 330 P4 Berlinetta.

3—Don Elmore (16), G&D, Ferrari 330 P4 Berlinetta.

4—Ray Murray (13), St George, Ferrari 330 P4 Berlinetta.

5—Max Alexander (11), SSME, Ferrari 330 Berlinetta.

6—Jim Aitken (9), Bankstown, Ferrari 330 P4 Berlinetta.

7—Dave Craig (7), Bankstown, Ferrari 330 P4 Berlinetta.

8—Dita Berkholtz (5), SSME, Ferrari 330 P4 Berlinetta.



# trackside topics

**I'M STARTING** my column this month on a low note. Namely the "high cost of racing". It's expensive enough just to keep up-to-date with all those high-priced "goodies" that are now available and in many cases essential to win. But to have these goodies stolen—yes, I said stolen—is, to say the least, a bit much.

While I realise that every activity must have its unsavoury element, we cannot afford to have this "light-fingered" element in our midst.

As we race under an "open house" policy where all competitors' equipment is on display for the purpose of encouraging junior competitors and visitors, there is a degree of vulnerability, but we must trust our fellow slotters, so it is up to you, the clubs, to stamp out this sneaky business.

Now back to local pit gossip. Heartfelt thanks from all must go to a local racing car manufacturer in coming to the fore and sponsoring an event for us mini racers. This time Frank Match of Match SR3 fame has sponsored the current Interstate Teams Sports Car Challenge between NSW and Victoria.

Now that slotting has developed into a closer activity with more firmly controlled events and a better understanding, I feel this local sponsorship can only do the hobby good and gain us more participants.

In a small way of appreciation I noticed many of the cars at the State eliminations sporting Can Am Match bodies. In fact I would go as far to say that these bodies, the Match made by Lancer, are the most popular in Group 1 racing today.

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While this item may be a little old news it is worth a mention. Over Easter a team of our Group 2 boys rushed down, on invitation, to compete in a Group 1 1/24th 24-hour Enduro in Victoria. In spite of the last-minute panic, Hutchenson, Rittie, Bannister and Co. always seem to fall into, despite lack of practice, despite last-minute chassis rebuilds, they managed to win. The hero of the day was young Dave Grant, and three cheers to all for a fine Group 1 performance by those much maligned Group 11 boys. Finally congratulations to their congenial Victorian hosts who went out of their way—in fact, delayed the race start—to make sure our drivers had every chance.

I wonder how they do it? The 1968 Indy 500 just completed and Lancer come up with the latest Lotus turbine car lightweight body. They sure cater for our every need.. Those interested drop a line to Dawn Securities (see advt. elsewhere). Speaking of Dawn Securities, who are about the only importer of latest U.S.A. "hot bits" left, have you seen their latest items? Had a drive of a car powered by their Champion's latest 517 small car—what a screamer it is. Ball bearings, magnets, magnet shield, etc. In fact "can in a can" is the name of the series. For those who like the 26D type there is the 617, both types around \$17.

To the scratchbuilder who wants red-hot motor bits there is the new Muira & Lenz cases and magnets, the Mura "Mongoose" 28 double armature S8, and even Mura 25, 26 gauge and 28 double silver and copper wire. My track spies tell me, for a hot motor on the cheap the best value is the new Calex 1.5 volt battery-bearing 16D at \$4.95—a real winner!

I read an article in an English mag (heaven forbid, say the editor)

on the art of driving to win, written by one Dave Lord. To those who do not know Dave, he was the former 1/32 scale British drivers' champion and now resident in Australia. Now the article is first rate, but where is Dave? Years ago he raced at a few open meetings here, had a couple of wins, suffered a few defeats, disappeared to Queensland and was seen at one open meeting last year. Dave is a controversial driver, and it's about time 1/32 scale opens were again injected with "His Lordship".

A special sub-committee of NSWMRRA has been formed to investigate necessary changes to Group 11 rules, namely body cleanup and the old controversy of wheel diameters. Anyone with ideas I suggest you contact Merv Rickson, C/o NSWMRRA. A reminder that CASCRA rules come into force in July—very little chance for Group 1 boys though. The 1969 Brabham has been approved for NSW. Watch for qualifying information.

Who said slotting does not pay? The proverbial Banno is off on an all expenses West Australian trip in July, courtesy of Warren Cummins of WA and Carl Melvey of Dawn, I hear.

A driver who has never been appreciated before in 1/24 Group 1 is Diter Birkholtz. However in the recent NSW-Victoria teams eliminations he put others to shame with his excellent driving and had an able backstop in Tony Livingstone Thomas his co-driver. No doubt Birkholtz would be the most improved 1/24th driver this year. Here is my quick opinion of winning combo here in the mid-east:

1. Super-Comp. Lancer Sports Body.
2. Brass scratch — sidewinder chassis.
3. Small can, 26D's, 517's and variants.
4. Riggins rims.
5. Riggins 7in wide Grey 'boots'.
6. Commutators—Champion.
7. Magnets—Hit or Mura.

Looks easy. Just go and buy those parts. But the secret lies in the way those parts are put together. Wish you luck.

While open meeting attendances have been up and down this year, even had an all-time high of 42 entries at Newcastle, it appears as I said before, the yer to topple the champs. Proof being Ray Murray leading Group 1 sprint events on 64 points. His nearest rival is Bannister on 42, Hutchenson 39, and Titheridge on 30 with three races to go. It's a close tussle in Group 2 Sprints with young Don Elmore leading on 88, Ritter on 83 and Bannister on 80. Although

Bannister is the only one in this series to have won two events, he has not been consistent. Still, only eight points separate first and third with two races to go. Redline/Trident team of Titheridge and Co. have the lead in Group 2 Enduro on 113 points. Nearest rival is Testor on 101 with G. & D. team back on 77. I predict Trident will not be toppled from the ladder the way Titheridge and Grant are driving. However, three races to go!

—BARRY BECKMAN.

## queensland news

**S**EVERAL tracks in Brisbane have had some good races in the last three months. On Saturday, March 30, the Checkered Flag Raceway in Stanley Street, South Brisbane, held a four-hour race for sports and GT models.

Results of qualifying trials were:

The Sharks (P. Stephens, P. Stilianos) 133 laps, 1; Daytonas III (R. Sinden, R. Grimmett) 131 laps, 2; CFMR I (M. Hanchard, L. Kool) 128 laps, 3; Daytona I T. Goodall, J. Dunnett 126 laps, 4; Cooper Team (B. K. Beyer, L. J. Sutherland) 124 laps, 5; Daytona IV (H. Dyer, C. Amendola) 121 laps, 6; Gold Star (R. Bonner, C. Heath, J. Fagg) 119 laps, 7; Daytona II (R. Cartwright, D. Pascoe) 119 laps, 8.

Winners of the four-hour race were: Daytona III (1966 laps) 1; Sharks (1848) 2; Daytona IV (1824) 3.

Fastest period was heat four (30min) with Daytona IV doing 267 laps.

All used 26D motors in a variety of Pan type chassis. The Checkered Flag has individual filtered transformer/rectifiers for each track, and the motor wind must be suited to this supply.

Next was a saloon car race (12 hours) at Daytona Raceway on April 27-28. This was restricted to stock chassis with saloon bodies and much work and practice went into getting this combination to handle on this track, which is a "driver's" track.

Results:

T. Goodall, G. Anderson (Dynamic chassis, rewind 26D motor, Ford Body) 4630 laps, 1; R. Cartwright, J. Dunnett (Dynamic chassis, Ford Galaxie, 26D rewind, AJ's rear) 4545 laps, 2; R. Elliott, C. Amendola (Dynamic chassis, 26D rewind, Oldsmobile Tornado body) 4534 laps, 3; B. Molloy,

N. Wiseman (Tamiya chassis, stock 26D, Chev. Impala body) 3552 laps, 4; N. Burston, R. Grimmett (Dynamic chassis, Ford Fairlane, 26D motor) 3074 laps, 5; G. Burrows, W. Brooke (Dynamic chassis, 26D Tornado body) 3044 laps, 6; D. Pascoe, G. Blank (Tornado brass chassis, 16D Chev. Impala body) 2388 laps, 7; R. Sinden, T. McMahon (Dynamic chassis, 26D rewind Ford Mustang body) 1303 laps retired, 8.

Daytona Raceway is a twisty 160ft track with two crossovers. Lap record at this date was 7sec and these larger models were getting around in 7.3sec. Daytona track is battery powered with a 25 amp charger feeding the battery continuously throughout the race.

Next was a 12-hour race for sports GT type models at the Checkered Flag Raceway on May 6.

Results:

Daytona III (H. Dyer, C. Amendola and G. Burrows with Cockroach type scratch built Pan chassis, rewind 26D motor and Lancer Match body) 5151 laps, 1; Daytona IV (G. Anderson, D. Pascoe, M. Anderson) 4996 laps, 2; Sharks (P. Stilianos, P. H. Stephens, T. Bellas) 4910 laps, 3.

Fastest heat time (1½ hour period) was done by T. Goodall (810 laps). Concours event won by G. Anderson (Match) who finished second in the event.

Since then a six-hour race for saloon cars was held at Racrama Hobby Centre, Everton Park, won by Ross Elliott and Co. Results:

R. Elliott, C. Amendola 1; T. Goodall, J. Dunnett 2; G. Spillane, Ferguson 3.

It was great fun seeing Tom Goodall win the Daytona saloon car race with a Dynamic chassis, and also for them to finish in

second and third places.

The setup on these cars was almost identical and if readers are interested in how they were rigged, here is the prescription: a rigid 26D motor mount, hinge and brass tongue (now, alas, out of production) with a Dynaflex front end and No. 403 Outrigger body mount. At the front end, Rikken 501/15 independent front wheels were used with hard "O" ring tyres ground to 11/16in diameter, as the original ¾ OD tyres did not provide quite enough clearance (1/16in required). These were mounted on a 3½in axle (under track rules the maximum width allowed was 3½in for this race; but this has since been altered to allow 3½in overall width).

At the rear, Rikken 862/9 wheels and tyres were mounted on a Dynamic 2½in axle. Before the race these were ground down to 15/16in OD—they finished the race and were 13/16in OD when subsequently measured. It is still possible to pass a hacksaw blade under the car.

Marusan ballraces were used on the rear axle and 8 x 32 Monogram diecast gears. It was powered by a 29 GA rewind Testor 26D into which magnets from a Pittman 6001 had been fitted.

Lead weights were araldited on the outer edge of the Body mounts, and on the drop tongue, and the usual brass wire stay was soldered to the body mounts and araldited into a 1/16in hole in the bottom of the rear axle bearing boss.

All our races up here are run under local track rules, which require them to be of scale appearance, but do not require the use of exact scale wheels. I think they would correspond to Group II in New South Wales and Victoria.

There is much scratch building of chassis going on here at present—everything from alloy pans to brass strip and/or wire chassis are being constructed. There is much argument and discussion about whether a chassis should be torsionally rigid or flexible, and in the latter case whether the roll stiffness should be at the front or rear end.

The 26D is still the most used motor here—especially for long races; but the new 16D II shows signs of also being a very useful motor. The torque is much improved at the lower end.

—JOHN PIKE.



# NSWMRRA RACING

**SUNDAY**, May 12, saw the fourth round of the NSWMRRA Group II teams endurance championship held at the fast 120ft Glendale (Newcastle) track. The event, a 12-hour race for Can Am cars, attracted 11 teams, seven from Sydney and four from the Newcastle area.

As has happened in the previous races, the event produced another winner, making it four different winners in as many races.

Leading from the second bracket, the top home team, Glendale I, ran out comfortable winners by 258 laps with Redline-Trident in second position followed by DBR-Earlwood, Testor and G&D I. These were the only teams who finished the race.

DeeJay (Villawood), Glendale II and III were forced to withdraw at various stages of the race.

Testor set up an early lead, but by the end of the first three hours, the Glendale No. 1 team on 1821 laps led from Testor (1787), Redline-Trident (1784), Glendale No. 2 (1782) and DBR-Earlwood on 1738 laps.

Even though only 83 laps separated the first five teams, it was evident that the race would be won by either Glendale No. 1 or the Redline-Trident team.

G&D, DeeJay and Glendale No. 3 teams had run into mechanical difficulties and were well back in the field.

The halfway mark saw the Glendale No. 1 team holding a shaky 12-lap lead over Redline-Trident, who had held the lead by 49 laps only to lose it when they had to replace a bent axle.

In the ninth bracket, Redline-Trident again took the lead, establishing a 54-lap lead, but again they were forced into an emergency pit stop and the Glendale No. 1 team, at the end of nine hours, held a 63-lap lead over the Redline-Trident team, followed by Testor, Glendale No. 2 and DBR-Earlwood in fifth place. G&D still held sixth place.

The final three hours, as is so often the case, produced the best, and the worst driving in the event. First place was now firmly in the grasp of Glendale No. 1 and Redline-Trident appeared to be consolidating second position when they were forced to replace their guide flag which all but broke in two.

This allowed the Testor team to go into second place with DBR-Earlwood in fourth, Glendale No. 2 fifth and G&D sixth.

Final placings were: Glendale No. 1, 7139 laps, 1; Redline-Trident, 6881, 2; DBR-Earlwood, 6703, 3; Testor, 6699, 4; G&D, 5810, 5; Glendale No. 2, 5763 (DNF), 6; Glendale No. 3, 3631 (DNF), 7; DeeJay, 2927 (DNF), 8.

Glendale threw the championship into a battle between Redline-Trident and defending champions Team Testor. The top seven teams are:

Redline-Trident, 83 points, 1;

Team Testor, 80, 2; G&D I, 64, 3; DBR-Earlwood, 56, 5; Glendale No. 1, 43, 5; G&D No. 2, 32, 6; GP Rockdale, 28, 7.

**REDLINE-TRIDENT** became the first team to win two NSWMRRA teams Endurance Championship races when they swamped the opposition to win the fifth round of the series—a 12-hour race for Le Mans cars—at the Sylvania Heights track. Testor, 1967 champions, finished second on 6274 laps, 52 laps behind the Redline-Trident team.

DBR-Earlwood were third with 5894 laps and G&D I fourth on 5758 laps.

Thus Redline-Trident now moves to 113 points in the championships, with Testor 101, G&D II and DBR-Earlwood on 72 points.

With competition getting stiffer the teams have to continually try to better their chassis, and this race saw some hitherto untried experiments.

Glendale ran their competitive split axle twin geared semi perimeter type sidewinder chassis which proved so convincingly at Glendale that it is as good as anything the Sydney teams can offer.

Another team ran a form of limited slip differential, which paid off, for they won the race. Sydney's newest team combination—Tiger Raceways—became the first Sydney team to try the new American idea of hinging the outriggers/body mounts, so that the body is more flexible on the track. Although the car was not fast enough, the idea worked well.

Testor shot to the lead in the first bracket to register 828 laps, the highest number of laps in any one of the eight one and half hour brackets, but Redline-Trident were in front at the three-hour mark. G & D appeared to have third place to themselves, leading DBR-Earlwood by 90 laps, only to have their Champion 617 motor throw a wire.

They held third place from DBR-Earlwood at the three-hour mark, but were then off the track for over 200 laps before they could get the car set up right. G. P. Rockdale, after a slow start, had picked up to be in fifth place, closely followed by Glendale 1 and 2 and Tiger Raceways.

Later Testor regained the lead when Redline-Trident first bent an axle and then broke their guide shoe. DBR-Earlwood took over from GP Rockdale in third place. Although they lost more than 100 laps, the accidents proved a benefit for the Redline-Trident team, for after nine hours, they were only 18 laps behind the Testor car.

The final three hours saw Testor desperately try to hold off Redline-Trident but the task was impossible. Redline-Trident were too fast and the handling was superior to the Testor car. Once in the lead, Redline-Trident consolidated their position and eventually ran out the winners by 52 laps. DBR-Earlwood held onto third place. Full results:

12-HOUR GROUP 2 PTS SCORE  
TEAM CHAMP SYLVANIA

1—Jim Light, Max Pearson, Brian Titheridge, Redline Trident, Ford Mirage, Lancer body, Trident 1/16in mixed piano wire brass rod semi perimeter with brass rod outriggers, sidewinder scratch built, Redline 26D, AJs Grey tyres, 45 tooth Cox spur to 8 tooth Weldun steel pinion gears.

2—Ian Bannister, Bryan Hunt, Steve Hutchesson, DS Testor, Ferrari 330 P/4 Berlinetta, Lancer body, Team Testor 1/16in mixed piano wire and brass rod semi perimeter double rod floating drop arm sidewinder scratch built, Champion 617, Milla Miglia Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

3—David Rittie, Steve Slowe, Bob Cox, DBR Earlwood, Ford Mirage, Lancer body, DBR 1/16in mixed piano wire and brass rod iso-fulcrum double rod inline scratch built, Champion 617, Milla Miglia Grey tyres, 26 tooth Weldun crown to 7 tooth Weldun steel pinion gears.

**A** KEENLY contested race was held at Waitara track on March 3 in which the competing teams were DS Testor, DBR Earlwood No. 1, G & D No. 1, G & D No. 2, Redline Trident I, GP Rockdale 1, and SSME 1.

The race was won by the DBR-Earlwood No. 1 team with 5417 laps from DS Testor team with 5365 laps.

The NSWMRRA champions, DS Testor, went to an early lead in the points score for the endurance title with its previous win at Cessnock. However, again they met their match at the hands of the DBR combination of Dave Rittie, Doug Fakes and Steve Slowe.

The Testor team has only been beaten three times in the past seven months, but on each of these occasions they have been beaten by the Rittie-DBR combination.

The Testor combination of Ian Bannister, Brian Hunt and Steve Hutchesson ran the usual scratch built piano wire sidewinder under a Lancer McLaren 6A super competition body and went to an early lead in the race from G & D No. 1 and DBR.

After the second lap it became obvious that the race was going to be a straight-out tussle between the Testor team and the DBR combination. Testor held the lead for the greater part of the race and at one stage were ahead by 200 laps from DBR; however, once again Dave Rittie gave Steve Hutchesson and Ian Bannister a lesson in car preparation and maintenance.

Rittie ran into numerous difficulties throughout the race but on each occasion had the car back on the track in the shortest possible time, despite the fact that he blew at least one motor.

The Testor team ran into all sorts of trouble during the last three hours of the race as for some reason the Hutchesson wound Testor 26D kept on throwing the solder on the motor wire leads. Even then as the drivers went into the last hour of the race the Testor team still had a commanding lead of 77 laps over DBR.

In the last hour the Testor car was off the track more times than it was on.

The DBR team overhauled the Testor team without half an hour

of the race to go and ran out the ultimate winners by 52 laps.

In third place was the Redline Trident combination of Brian Titheridge, Jim Light and Max Pearson.

Full results:

GROUP 2 ENDURO WAITARA

1—D. B. Rittie, D. Fakes, S. Slowe, DBR Earlwood I, Lancer Super competition Honker 2, DBR 3/64in piano wire inline scratch built, FT 16, Milla Miglia Grey tyres, 25 Cox Crown to 7 tooth Weldun steel pinion gears.

2—I. Bannister, B. Hunt, S. Hutchesson, DS Testor, Lancer Super competition McLaren 6A, Team Testor 1/16in piano wire scratch built sidewinder, Testor 26D, Milla Miglia Grey tyres, 44 Wilson spur to 9 tooth Weldun steel pinion gears.

3—B. Titheridge, J. Light, M. Pearson, Redline Trident I, Lancer Super competition McLaren 6A, Trident 1/16in piano wire scratch built sidewinder, Trident 26D, Milla Miglia Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

**THE GROUP 2** six-hour two-man endurance race at G&D Raceways, Parramatta, on March 10 was the first of 1/32 scale races that have been held by the NSWMRRA.

The race was well attended—10 teams attempted to qualify, but as only six lanes were available, only six teams appeared in the event and these were Redline Trident, DS Testor, G&D 1, G&D 2, G&D 3, and a new team, Colvid, from the Villawood track.

Redline Trident was represented by those former Parramatta stalwarts Brian Titheridge and Jim Light; G&D 1 were represented by their two star drivers John Elmore and Gary Grant.

Father and son combination, Brian Hunt and Ron Hunt, were for Testor their No. 2 and No. 3 drivers.

The race saw some brilliant driving by Gary Grant of the G&D 1 team, but Redline Trident driving on their old stamping ground of yesterday, just had too much up their sleeve for G&D 1 and Testor and ran out comfortable winners on 3748 laps, followed by G&D 1 in second place on 3694 laps, with DS Testor on 3648 laps in third place.

Full results:

GROUP 2 6 HOUR TWO MAN  
PARRAMATTA

1—Brian Titheridge and Jim Light, Redline Trident, Ferrari 330 P4 Berlinetta, Lancer body, Trident 3/64in piano wire inline scratch built, Trident Hemi 300, Milla Miglia Grey tyres, 25 tooth Weldun Crown to 7 tooth Weldun steel pinion gears.

2—Gary Grant and Don Elmore, G & D, Chaparral 2F, Lancer body, G & D 3/64in piano wire inline scratch built, Russkit 23, Milla Miglia Grey tyres, 25 tooth Weldun Crown to 7 tooth Weldun steel pinion gears.

3—Brian Hunt and Ron Hunt, DS Testor, Ferrari 330 P4 Berlinetta, Lancer body, Team Testor 3/64in piano wire inline scratch built, Testor 3, Milla Miglia Grey tyres, 25 tooth Weldun Crown to 7 tooth Weldun steel pinion gears.

**WHO SAID** slotting is dead! Thirty-eight entries on March 26 at Earlwood in the Sports and GT sprint event indicated just how popular these Group 2 sprint events are becoming.

The outstanding features of the event was the overwhelming victory of Ian Bannister of Testor team, the popularity of the new Lancer lightweight and super-competition bodies, the battle of the 26Ds against the small cars and the growing popularity of



scratch built piano wire sidewinder chassis.

Of the 38 entries, 34 ran Lancer lightweight or super competition bodies with the super competition McLaren 6As and Ferrari P4 Can-Ams being the most popular followed closely by the Match and the Honker 2.

In the motor field, of the 38 entries 24 ran rewind 26Ds and 14 ran rewind small cans, being a mixture of Hemi 300s, Testor IIs, Russkit 23s and Russkit 27s with component parts of FT-16s and FT-16Ds being used liberally.

Every one of the 38 entries ran a piano wire scratch built chassis, which is an indication of just how far NSW drivers have progressed in the car preparation field, but even more significant was the fact that sidewinder scratch builds filled first, third, fifth and sixth places.

The final included the fastest racing seen in Sydney for years.

Ian Bannister, driving at his superb best, got off to an early lead, hotly pursued by Gary Grant and Steve Slowe, whilst Don Elmore drove very steadily.

As the race progressed to the halfway mark, the position was Bannister in front by three laps from Grant, two laps behind was Dave Rittie with just a lap back to Elmore and Slowe. At this stage Dave Rittie was really flying and appeared to be the only driver with a chance of catching Bannister.

With one bracket to go, Rittie "suiciding" through the bends, attempted to catch Bannister, but ran into difficulties. Bannister drove away to a 10-lap lead from Rittie with three laps to Elmore, but Elmore pipped "pipped" Rittie on the post.

#### Full results:

##### GROUP 2 SPRINT EARLWOOD

1—I. Bannister, DS Testor, McLaren VIA, Lancer body, Team Testor 1/16in piano wire sidewinder scratch built, Milla Miglia Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

2—D. Elmore, G & D, Ferrari P4 Can-Am, Lancer body, Elmore 1/16in piano wire inline scratch built, Milla Miglia Grey tyres, 29 tooth Cox Crown to 7 tooth Weldun steel pinion gears.

3—D. B. Rittie, DBR Earlwood, McLaren VIA, Lancer body, DBA 1/16in piano wire sidewinder scratch built, Milla Miglia Grey tyres, 46 tooth Wilson spur to 8 tooth Weldun steel pinion gears.

4—G. Grant, G & D, Match SR3, Lancer body, G & D 1/16in piano wire inline scratch built, Milla Miglia Grey tyres, 25 tooth Cox Crown to 7 tooth Weldun steel pinion gears.

5—S. Hutchesson, DS Testor, McLaren VIA, Lancer body, Team Testor 1/16in piano wire sidewinder scratch built, Milla Miglia Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

6—S. Slowe, DBR Earlwood, Honker II, Lancer body, DBR 1/16in piano wire inline scratch built, Milla Miglia Grey tyres, 25 tooth Weldun crown to 7 tooth Weldun steel pinion gears.

**THE GROUP 1 Driver of the Year**, round two, Sports and GT was held at Tiger Raceways, Drummoyne, on March 31.

This race, though not as popular as the Group 2 counterpart event, had 19 entries with emphasis on the new Lancer lightweight bodies of which the Match SR3 is by far the most popular.

The racing was featured by some rather brilliant driving of a finely prepared Match SR3 car by Ray

Murray (formerly of the Earlwood track, no of St George club).

Ian Bannister, driving a car not ray's, staged a remarkable recovery nearly as competitive as Ray Murray to finish in second place and there were also fine performances by Dita Birkholtz of SSME and Jim Donald of GP Rockdale, who appear to be improving with every race.

The final was conducted by 8 x 5 minute runs on each of eight lanes, all lanes counting. As soon as the cars left the starting grid, Ray Murray jumped to a narrow lead over Steve Hutchesson, followed by Bannister, Donald, Clarke, Birkholtz and Craig, all closely locked together.

Ritchie Handley unfortunately ran into difficulties.

The second heat saw Murray increase his lead by five laps over Hutchesson, with Jim Donald and Dita Birkholtz a further four laps behind Hutchesson, followed by Clarke, Bannister and Craig closely locked together.

By the halfway mark, Murray had increased his lead by eight laps over Hutchesson, with Birkholtz and Donald locked in second place one lap behind, followed by Bannister a further two laps back, and Clarke three laps behind Bannister.

The final bracket saw Steve Hutchesson get into difficulty while Bannister was still overhauling Murray. However, Murray had too many big guns in reserve and ran out an overwhelming winner by nine laps from Ian Bannister to take the 30 points; Bannister gained a creditable second place to take 21 points after a slow start, whilst Dita Birkholtz put up a praiseworthy performance to finish in third place taking 16 points.

#### Full results:

##### GROUP 1 DRIVER OF YEAR

##### ROUND 2

1—Ray Murray, St George, Match SR3, Lancer body, Murray 1/16in piano wire inline scratch built, Murray 26D, 26 tooth Weldun crown to 7 tooth Weldun steel pinion gears.

2—I. Bannister, DS Testor, Ferrari 330 P4 Spyder, Testor body, Team Testor 1/16in piano wire sidewinder scratch built, Testor 26D, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

3—D. Birkholtz, SSME, Match SR3, Lancer body, SSME 1/16in piano wire sidewinder scratch built "Fallaway", Russkit 23, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

**TWENTY-FIVE** entrants attended the Group 2 sprint points score race for sedan cars held at Pacific Raceways, Ramsgate, on April 7. This was conducted under the Car Model and Arco Repercharge system of racing.

Once again this sprint produced a first-time winner for the season. It was David Rittie scoring his first sprint victory of the season after a succession of of noticeable placings.

Driving a 1/16in piano wire semi-perimeter fallaway DBR inline scratch built chassis powered by a Champion 517 motor, Rittie won a very exciting contest by just over 1½ laps from Brian Titheridge of Redline Trident team, with the ever-consistent Donnie Elmore of G&D in third place.

The racing was conducted with each of the 25 entrants attempting to qualify with the best four of six two-minute runs on each of the

six lanes.

Jeff Howland of Glendale had a very interesting piece of machinery seen on the tracks for the first time. It was a fixed end double sidewinder semi-perimeter 1/16in piano wire scratch built (it is believed that all the boys from Glendale will be running this type of equipment in future races).

The chassis was mounted under a tangerine Tornado body. The car was a screamer and but for some braid trouble Jeff would certainly have fought his way into the final.

Steve Hutchesson was a last-minute entry in the day's racing and ran his usual competitive perimeter double rad floating drop arm sidewinder piano wire chassis mounted under a very unorthodox looking Dodge Dart body.

The final was conducted as usual by eight five-minute runs on each of eight lanes, all lanes counting. Judging on earlier performances, Donnie Elmore with his Hit Hemi 300 powered Tornado, looked to have the race in the bag, but he had not reckoned with the Champion 517 powered Rittie Chev. Impala or the 26D powered Tornado of Brian Titheridge.

The final was a neck and neck tussle between David Rittie and Brian Titheridge with Don Elmore and Steve Hutchesson catching up on the two leaders in the closing stages, but not having enough to overhaul them. Rittie's car was the fastest thing possibly yet seen in the Association's programme to date.

#### Full results:

##### — GROUP 2 SPRINT PTS SCORE

1—D. Rittie, DBR Earlwood, Chev. Impala, International Engineering body, DBR 1/16in piano wire fallaway semi perimeter inline scratch built, Champion 517, Milla Miglia Grey tyres, 32 tooth Weldun crown to 7 tooth Weldun steel pinion gears.

2—B. Titheridge, Redline Trident, Tornado, International Engineering body, Trident 1/16in piano wire perimeter multi rad sidewinder scratch built, Trident 26D, Milla Miglia Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

3—D. Elmore, G & D, Tornado, International Engineering body, Elmore 1/16in piano wire fallaway inline scratch built, Hemi 300, Milla Miglia Grey tyres, 29 tooth Cox crown to 7 tooth Weldun steel pinion gears.

4—S. Hutchesson, DS Testor, Dodge Dart, Aztec body, Team Testor 1/16in piano wire perimeter double rad sidewinder floating drop arm scratch built, Testor 26D, AJs Blue tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

5—G. Grant, G & D, Tornado, International Engineering body, Grant 1/16in piano wire semi perimeter fabricated pan inline scratch built, G & D 26D, Milla Miglia Grey tyres, 25 tooth Weldun crown to 7 tooth Weldun steel pinion gears.

6—I. Bannister, DS Testor, Chev. Impala, International Engineering body, Team Testor 1/16in piano wire perimeter sidewinder floating drop arm scratch built, Testor 26D, AJs Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

**T**HERE were 44 entries at the Mayfield track for the Group 2 sprint round four individual State title points score for sports and GT cars at Newcastle on April 28. Of them 28 were Sydney drivers.

Scratch built piano wire and brass rod perimeter type sidewinders dominated the event, as the six finalists, with one exception, all ran sidewinders and of the total 44 entries more than half were out-rigger or perimeter type piano wire

or brass rod sidewinders.

Of even greater interest was the fact that both Don Elmore and Steve Slowe ran small can sidewinders (Russkit 23) and finished second and sixth respectively.

As far as bodies were concerned, the Lancer super-competition range, as was expected, dominated the racing as 40 entries ran these bodies with Match and McLaren VIA being the most popular; 16 entries ran Match bodies and 13 ran McLaren VIA, the balance being a mixture of Ferrari P4 Can-Am King Cobras, Honker IIs and Chaparral 2Gs.

Of the motors, once again small cans and 26Ds finished about even, with at least half the entries running 26Ds and the balance running a mixture of Russkit 23, Testor IIs, and Hemi 300s.

Ian Bannister in winning the event became the first driver to win two races for the season. The race was conducted under the car model system with the fastest single run of three runs qualifying drivers respectively for the final, semi-final and quarter-final with the repercharge system applying to the top three in the quarter-final and semi-final.

#### Full results:

##### GROUP 2 SPRINT ROUND 4

1—I. Bannister, DS Testor, McLaren VIA, Lancer body, Team Testor 1/16in piano wire perimeter single rod sidewinder floating drop arm scratch built, Testor 26D, AJs Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

2—Don Elmore, G & D, McLaren VIA, Lancer body, Elmore 1/16in piano wire semi perimeter double rod floating drop arm sidewinder scratch built, Russkit 23, Milla Miglia Grey tyres, 28 tooth Cox spur gear to 10 tooth Weldun steel pinion gears.

3—Dave Rittie, DBR Earlwood, McLaren VIA, Lancer body, DBR scratch built 1/16in piano wire perimeter double rod with stress bar floating drop arm sidewinder scratch built, Mura Magnum 26D, AJs Grey tyres, 46 tooth Wilson spur to 8 tooth Weldun steel pinion gears.

4—G. Grant, G & D, Match, Lancer body, Grant 1/16in piano wire Iso Fulcrum single rod inline scratch built with brass outriggers, G&D 26D, AJs Grey tyres, 32 tooth Cox crown gear to 8 tooth Weldun steel pinion gears.

5—M. Pearson, Redline Trident, Match, Lancer body, Trident 1/16in brass rod fabricated Pan floating drop arm sidewinder scratch built, Trident 26D, AJs Grey tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

6—S. Slowe, DBR Earlwood, Match, Lancer body, DBR 1/16in piano wire semi perimeter double rod floating drop arm sidewinder scratch built, Russkit 23, AJs Grey tyres, 42 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

#### FROM P.37 VSQA ENDURO

1—NSWMRRA, Ferrari P4 Can-Am, Lancer body, Team Testor 1/16in piano wire brass rod semi-perimeter double rod sidewinder floating drop arm scratch built, Testor 26D, Milla Miglia cheaters and Dynamic 495S tyres, 44 tooth Wilson spur to 9 tooth Weldun steel pinion gears.

2—Strongman Racing Team, Ferrari 330 Berlinetta, stainless steel pan Iso Fulcrum detachable back end inline scratch built, twin Russkit 27 type hits, AYK 154 tyres, 35 tooth Classic to 8 tooth Weldun pinion gears.

3—Ecurie Testudo, Ford Mirage, Lancer body, Dynamic 521 modified die cast sidewinder with semi steering front end, Holtham 26D, AYK 154 tyres, 42 tooth Cox spur to 10 tooth Cox pinion gears.

4—Ecurie Eclipse, Ford Mirage, Lancer body, 1/16in Iso Fulcrum piano wire inline scratch built, Strongman 26D, AYK 154 tyres, 34 tooth Weldun Crown to 7 tooth Weldun pinion gears.

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#### **Points score at May 26, 1968:**

Ian Bannister, Testor, 51 points, Brian Titheridge, Redline Trident, 32; Steve Hutchesson, Testor, 32; Don Elmore, G&D, 31; Dave Rittie, DBR Earlwood, 26; Brian Hunt, Testor, 22; Jim Light, Redline Trident, 21; Max Pearson, Redline Trident, 16; Ray Murray, Drummoyne Tiger, 16; Doug Fakes, DBR Earlwood, 10; Steve Slowe, DBR Earlwood, 10; Garry Grant, G&D, 9; Geoff Cowell, G&D, 6.

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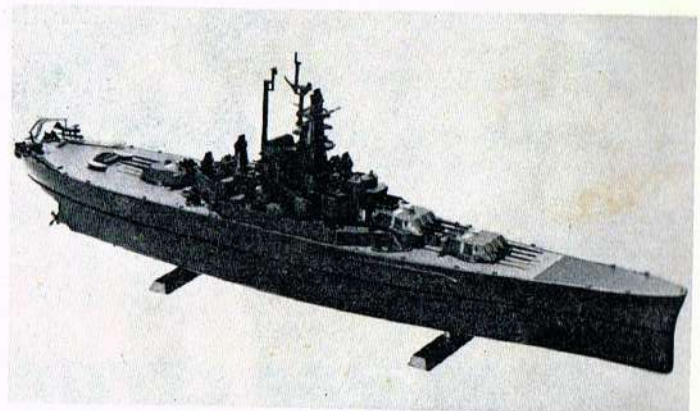


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