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modeller

FW190 COLORS -
FACT OR FALLACY?



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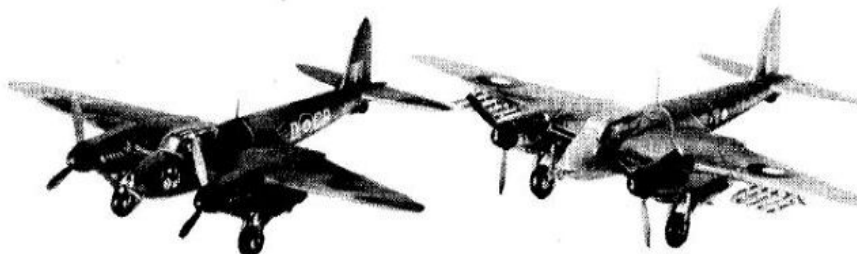
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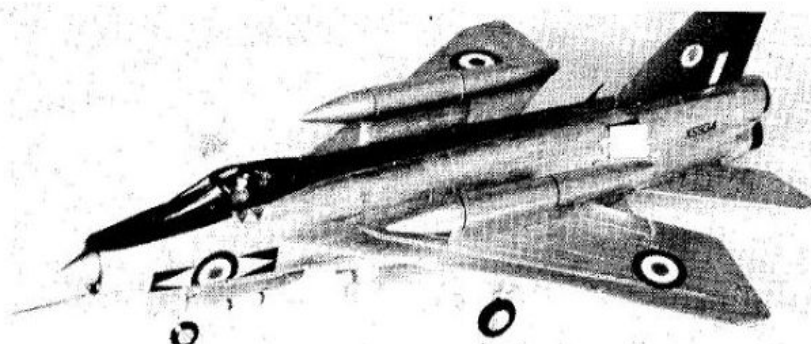
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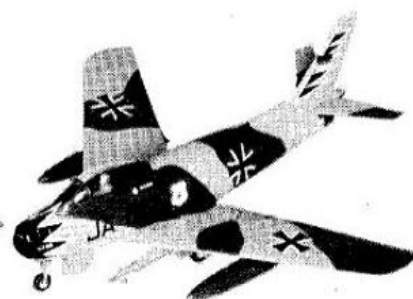
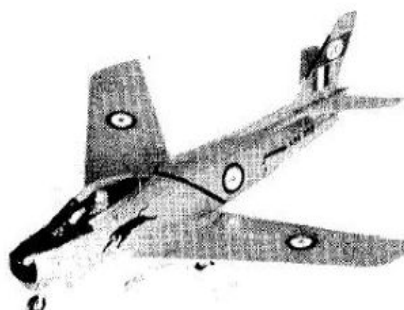
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editorial

Readers will notice several changes in this issue.

The most apparent will be the increase in cost to 40 cents. This has been made necessary owing to rising costs in printing, plus the additional productions costs as the quality of the contents improves.

We have had many letters on the subject of preferences as far as editorial material is concerned and we use these letters as a guide to compiling future issues. One point has been most obvious, and

that is the preference for more plans and drawings. In this issue you will find that we have increased this department accordingly.

Unfortunately Australian Modeller has been plagued with many problems and although these are being eliminated gradually it has always been difficult to appear on time. To help matters in this respect a considerable amount of reorganisation has taken place, and the main factor arising from this is that the publishing address is

now: Australian Modeller, 83 Beresford Road, Rose Bay 2029, NSW. Will readers please note that ALL correspondence should in future be addressed accordingly.

We have received many editorial contributions from readers and many of these have been published. Unfortunately a lot more have not been used owing to general unsuitability or writing we just can't decipher—and photos we cannot print. Please try to submit copy in typed form (double spaced) and include good sharp photos.

We can help with a little re-writing if required, but we just cannot convert a fuzzy, small picture into something reproducible.

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letters to the editor

Sir, — I have your magazine on permanent order at my local newsagent and have obtained the following copies:— July-August, Nos. 4 and 5. I am, however, rather bewildered as to the numbering system. Could you tell me how many copies I have missed, and if I can obtain them?—**Derek Hanbridge, Turramurra, NSW.**

Derek, — Sorry about your confusion, but this will help straighten things out for you. The first edition of *Modeller* was the Jan-Feb issue, followed by the March-April, July-Aug issues. Then we changed over to the numbering system and continued on with Nos. 4, 5 and 6. It would appear that you have missed the first two issues, and these have been dispatched to you with the editor's compliments.

Sir, — For some time I have been trying to obtain a set of drawings of the Lancaster bomber for the purpose of building a model of approximately 4ft wingspan. Would you have any source of information as to where I can obtain such plans?—**David Rodd, South Yarra, Victoria, 3141.**

David, — We are sending, under separate cover, a set of 1/72 scale plans of the Lancaster III. These should be of great help to you, but of course, you will have to scale them up to the required size. If you scale these drawings up three times it will give you a span of about 50in.

Sir, — I was wondering if anyone with a mutual interest in WW-I model kits would like to contact my friend and me with a view to swapping information, kit parts, ideas, etc. Incidentally, does anyone know a source of reference on the Siemens Schukert D-I fighter?—**Steven Breber, 25 Clifton Street, Nunawading, Victoria.**

Steven, — We have published your address in full so that any fellow enthusiast can contact you direct. However, we feel that the obvious course to take would be

to join the Australian Society of WW-I Aero Historians. They can give you all the help that you will ever need and they are a really fine crowd of blokes to know. You will find their advertisement in this magazine, so get in touch with them. In the meantime we have sent you under separate cover some illustrations and information on the Siemens series. Hope that this will help.

Sir, — My newsagent tells me that your magazine is no longer a monthly publication. I would like to become a subscriber, but do not know how long a period the \$2 subscription would cover. — **Simon Chipper, Cremorne, NSW.**

Simon, — Australian *Modeller* has never been a monthly periodical. It is produced every second month. We have endeavored to make this six-weekly but printing problems have, for the time being, kept it to the two-monthly schedule. However, as the popularity of the magazine increases, we hope to see our way to achieving the six-weekly production. In any case, the subscription covers five issues (as printed on the subscription form).

Sir, — Could you help me with specifications, photos or drawings of Sir Donald Campbell's record-breaking hydroplane? I have attempted two models without much success. The power unit is to be the Jetex Scorpion unit in the initial model, but I hope to progress to a larger version later. — **Robert Harvey, 18 Tyne Avenue, Kilburne, 5084, SA.**

Robert, — We have searched all the material that we have to hand but cannot find anything that will

COVER ACKNOWLEDGMENT

OUR COVER illustration this issue is from a painting by Geoff Pentland of Kookaburra Publications. Thanks for permission to use it, Geoff.

be of help to you. However, we are publishing your name and address in full in the hope that some kind reader will have the drawings you need and can get a copy sent off to you. What about it, you boating types?

Sir, — In a model ship contest recently organised by the Fantastic Hobby Shop, Sydney, I was lucky enough to win second prize in the modern ships section. The model that won the prize was a conversion of the Airfix Cossack into the Warramunga. Thank you, Clive Heath, and also Australian *Modeller*, for this interesting series of articles, and please keep them up. Incidentally, I am a master mariner and ex-lieutenant RNR, but have a strong interest in WW-I aircraft. Thanks for the high-quality plans that you have recently been publishing. — **Derek White, Croydon Park, NSW.**

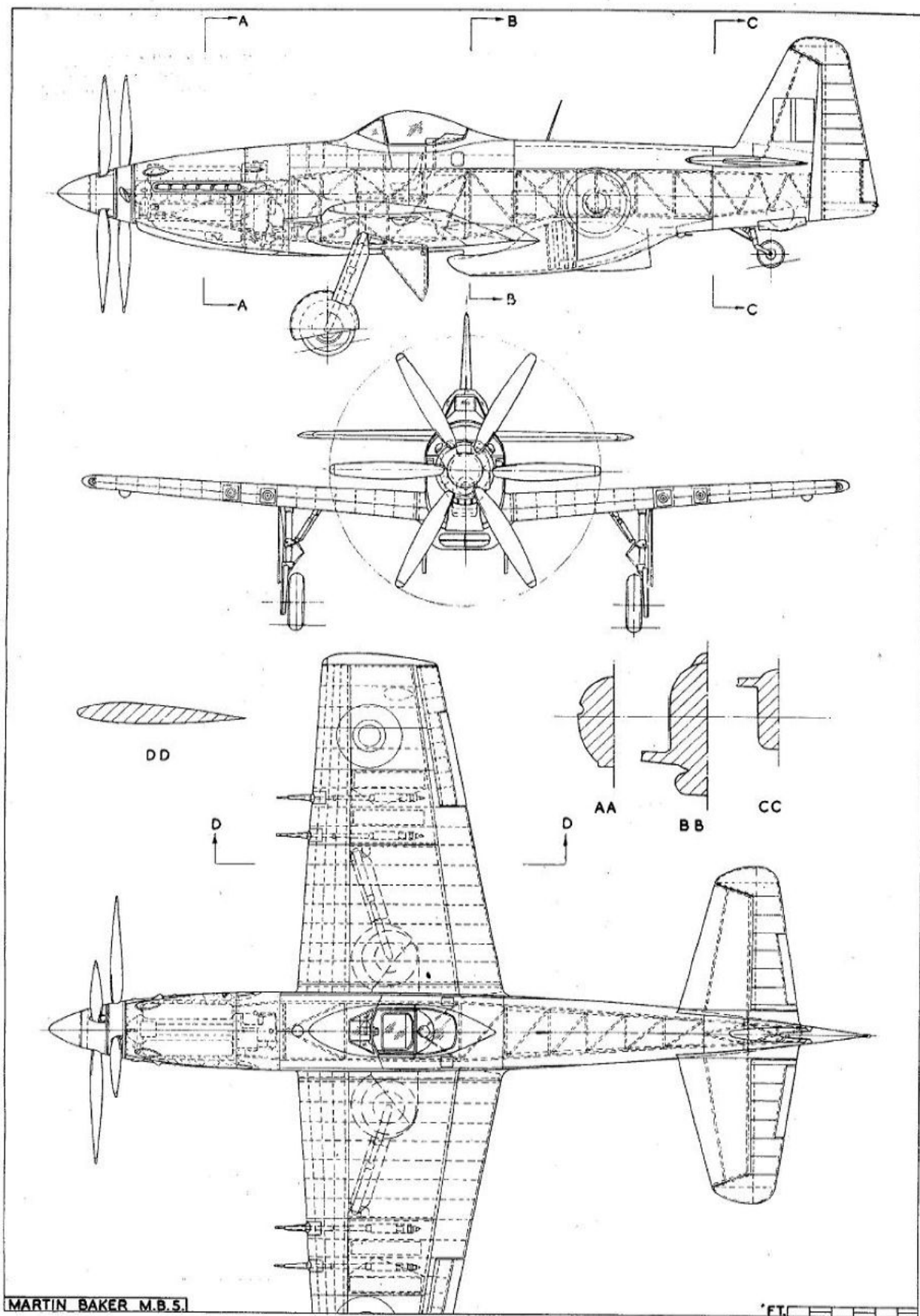
Derek, — It is good to hear from readers who derive benefit from our drawings and articles. A lot of research and work goes into these things and it is good to know that they are appreciated. We have more of these naval conversions coming up, such as the Suffolk-Australia conversion in this issue, and a conversion based on the Battle class destroyers following that. Stay with us for more interesting projects, Derek, and thanks for the compliments.

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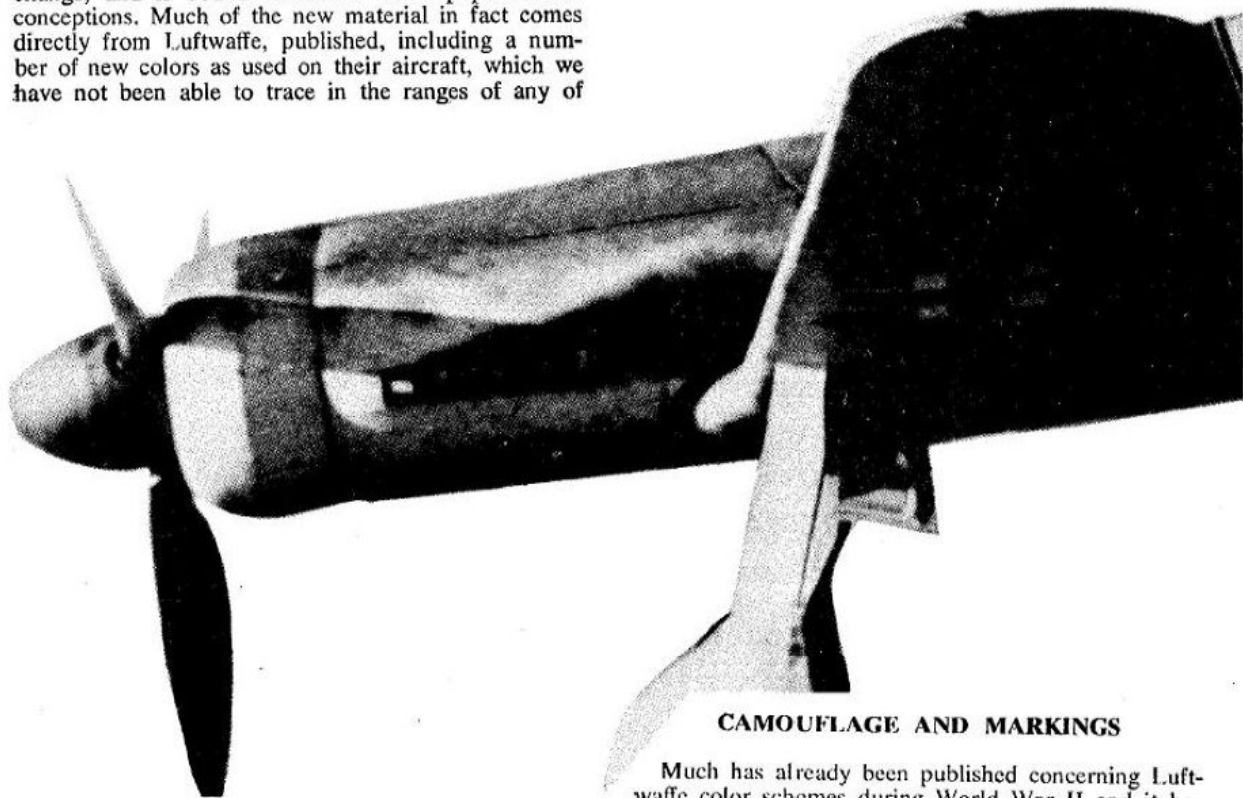


FW-190 COLORS-

Few aviation books published in the past five years or so are likely to cause such a stir in the modelling fraternity as the new title "Focke-Wulf FW-190 and TA-152 Described, Part 2", by Anthony Shennan and Geoffrey Pentland released this month by Kookaburra Technical Publications, of Melbourne. For those especially who pride themselves on their knowledge of Luftwaffe fighter camouflage in WW-2, this book, with six pages of color illustrations is nothing less than a bombshell. Correct camouflage schemes for the popular, but elusive FW-190s have always been hard to track down, and now the matter is effectively brought to a head by the offering — at last, and probably for the first time ever — of some well documented evidence as to what these colors really were.

In an area where the private opinions of an army of "experts" have long held sway, the publication of so much factual material comes as a most refreshing change, and is bound to shatter some popular misconceptions. Much of the new material in fact comes directly from Luftwaffe, published, including a number of new colors as used on their aircraft, which we have not been able to trace in the ranges of any of

little use building a beautiful model if its color scheme is not correct; the real fault seems to be in the nature of the information published and hitherto accepted as gospel. It surely underlines the obvious fact that you can't necessarily believe what "so and so" says in print just because "he" says it. His sources — or guesses — may be no more dependable than those of anyone else and it is time, perhaps, that the buyers of aviation literature were encouraged to examine a little more closely what they were paying good money for. As far as we can see after examining the various publications available on German fighter aircraft and their color schemes, Kookaburra are the only publishers to offer so much as a shred of solid evidence for the colors of the FW-190 series. We have permission to reprint part of their seven-page camouflage and markings section of the FW-190 and TA-152 book as follows:



CAMOUFLAGE AND MARKINGS

Much has already been published concerning Luftwaffe color schemes during World War II and it has become an accepted fact that the two-tone green pattern applied to the upper surfaces of most single-engined fighters was a combination of Schwarzgrün 70 and Dunkelgrün 71. This scheme was officially specified in 1938 and there is ample photographic evidence of its widespread application which, in isolated instances, lingered on until mid-1940.

A comparatively rare original Luftwaffe color chart, LDV 521/1 issued in 1938 is currently held by the

the world's leading plastic model paint manufacturers. Perhaps now this matter will receive proper attention.

If the evidence produced in this new book really is reliable, one may safely conclude that the color schemes on the vast majority of the hundreds of thousands of FW-190 models no doubt built to date are decorated in hopelessly inaccurate color schemes! To a lesser extent the same is bound to apply to the Messerschmitt BF-109. This seems a great pity; it is

FACT OR FALLACY?

publishers and contains actual samples of the paints used on German aircraft. The difference between 70 and 71 is very slight and both colors are quite dark. Many photographs of this period give the impression that the aircraft have been given an overall application of 70 or 71. This is a result of the low contrast between the two colors combined with the limitations of the photographic film of the period. It is not denied that there were instances of aircraft finished in overall dark green, but this practice was not common.

A distinct change of camouflage is apparent, however, in photographs taken from 1940 onwards. The almost monotone finish gives way to two distinctly contrasting colors, which time and time again — and

England in 1940 make specific reference to the camouflage schemes employed. Accompanying photographs distinctly show well defined segmented patterns and the reports refer to the color "greenish-grey", or sometimes "light olive green". Both these descriptions appear to correspond exactly with RLM grau 02. The



frequently with an almost complete lack of supporting evidence — have been incorrectly quoted. The darker of the two, a moderately dark green, is almost certainly 71, but the other could not possibly be 70. The contrast in the photographs is far too great. The weathering action of the elements can be discounted since the difference is just as noticeable on aircraft straight from the production line. It is evident therefore that either the existing paint specifications were revised and one of the dark greens lightened appreciably or an entirely different color was substituted.

Examining the first possibility, it is significant that two further color charts were issued: LDv 521/2 in 1941, introducing three new shades of grey; 74, 75 and 76, and LDv 521/3 issued later in the war adding four more colors; 79, 80 and 82. The latter two are both described as dunkelgrün and were probably used as a splinter pattern on some aircraft, such as the Dornier 335, late in the war. Clearly, while the range of colors was increased there is no evidence to suggest that any of the individual colors were revised. Therefore it must be assumed that one of the other existing colors was used in conjunction with 71. A number of British Air Ministry technical analysis reports on BF-109 and FW-190 fighters brought down in

name "grey" is slightly misleading as the color has a distinct greenish tinge, and is in fact identical with the British wartime light slate grey. Further, black and white photographic tests using a pattern of 71/02 on a model will produce an identical set of contrasts to those shown on the original aircraft photographs. On a basis of this evidence it is assumed that a combination of 71/02 and not 70/71 was used as the normal scheme on the FW-190*. Exceptions did occur and the substitution of hellgrün 25 for 02 appeared in isolated cases during the closing months of the war when the supply situation was very serious.

The idea that FW-190s normally used an irregular-shaped sharp-edged "splinter" pattern can also be shown to be no more than another popular fallacy. This scheme certainly applied to many earlier fighters but not to production FW-190s. Actually when one examines some hundreds of photographs it is immediately apparent that the camouflage pattern varied according to the manufacturers at either the Focke-Wulf or Arado works, the latter pattern being seen chiefly on F-models. Further, the colors themselves were not sharply delineated, but had soft-sprayed edges. Any variations which did occur were usually on account of the difficulties experienced in completing aircraft in a country coming under increasingly heavy air attack by the allies.

In common with all single-seat fighters the FW-190 carried the standard Luftwaffe system of Geschwader and Gruppe identification markings as follows:

FW-190

Staffel	Color
1 4 7	White
2 5 8	Red
3 6 9	Yellow

Gruppe
I
II
III

Staffel	Marking
1 2 3	None
4 5 6	Horizontal bar
7 8 9	Vertical bar



An early operation Fw 190A-1 still bearing the manufacturer's call-sign on the fuselage. Color scheme was basic hellblau 65 on sides and undersurfaces with two greys 74 and 75 on top.

At the time of the FW-190's debut in mid-1942 Luftwaffe camouflage had undergone what was to be its last major transformation. The static war in the west, with its daily forays over the dark waters of the Channel, dictated a change of colors for those fighter aircraft based in the coastal regions. The colors 71/02 were soon replaced by more appropriate tones of dark grey 74 and medium grey 75 but the familiar light blue undersurfaces and sides of 65 were retained, the blending being accomplished by mottling. It should be noted that this coloring applied only to aircraft based in coastal regions in western Europe.

The FW-190 made a fleeting appearance in support of Rommel's Afrika Korps when SKG 10 transferred its tropicalised FW-190A-4/U8s to the Libyan desert in May, 1942. In common with the BF-109s operating in this theatre they wore an overall base color of sand yellow 79 often oversprayed with patches of brownish green 80. Undersurfaces remained the standard 65. However, unlike the BF-109s the application of the white 21 campaign markings appears to have been random in the extreme. Officially they should have carried a white half-metre band around the rear fuselage, white wingtip undersurfaces and a white spinner and lower engine cowling. In actual fact they carried part or whole in a quite original series of combinations. The FW-190 made a second appearance in North Africa during the Tunisian campaign in November, 1942 albeit again only as a relatively small force of about 35 aircraft. No doubt the speed with which they were transferred from the Channel coast to the Mediterranean theatre accounted for their standard western European camouflage to which was hastily added part or all of the required tactical white markings. Basically committed to a defensive campaign they did, however, carry out a small number of low-level bombing attacks against allied harbor facilities and supply dumps.

Further strengthening of the Luftwaffe forces in the Mediterranean was undertaken during May and June, 1943. Again FW-190 equipped fighter-bomber units from western Europe were transferred to this theatre. However, their grey tonings were not entirely anomalous since they were used to attack allied shipping lying off Pantellaria and Lampedusa during June.

With the allied invasion of Sicily in July the Luftwaffe was forced to withdraw to Italy, where a small number of mixed fighters was maintained in the south-

ern tip to assist in the rearguard action being fought in the Catania area. As the allied invasion progressed to the Italian mainland the Luftwaffe withdrew its forces to the north and no further distinctive changes in camouflage were recorded.

Production of the FW-190, which had been relatively slow initially, accelerated rapidly and by December, 1942, the Luftwaffe had a first-line strength of 580 aircraft of this type. The war in the east with its enormous attrition rate absorbed large quantities of all war equipment including the FW-190. Its excellent ground attack capabilities soon lead to its introduction into the newly-formed Schlachtgeschwaderen (SG). Finished in the familiar 71/02 scheme on the upper surfaces with 65 on the sides and undersurfaces the SG units were readily identifiable by a solid black triangle, outlined either in white or the Staffel color, carried on the fuselage side. Its position, either in front of or aft of the Balkankreuz varied from aircraft to aircraft. This marking was to disappear within 12 months. The Jagdgeschwader system of Gruppe identification replacing it. However, their identity remained quite apparent by the retention of a single letter for each individual aircraft instead of a numeral as used on fighter aircraft.

Fighter aircraft operating on the eastern front carried conspicuous yellow 04 tactical markings. These





were usually confined to the lower engine cowl, the undersides of the wing tips, the rudder, and a single band around the fuselage with the Balkankreuz superimposed upon it. In many cases the yellow on the rudder was restricted to the lower portion from a line approximately level with the tailplane. A revision to the early war period style of camouflage scheme, with the upper surface colors carried right down the fuselage sides, made a reappearance among the aircraft of JG 51 and JG 54.

The use of temporary distempers was prosecuted to the extreme in this theatre of operations, particularly during the winter months when most of the upper surfaces and sides received a uniform coating of white. Due to the temporary qualities of the finish this rapidly eroded, revealing the original colors in varying shades which, far from detracting from the intended purpose, added to the camouflage effect. A further example of these temporary distempers was the application of a dusty brown finish over the upper surfaces of the FW-190Gs of SG 1 operating in the Crimea.

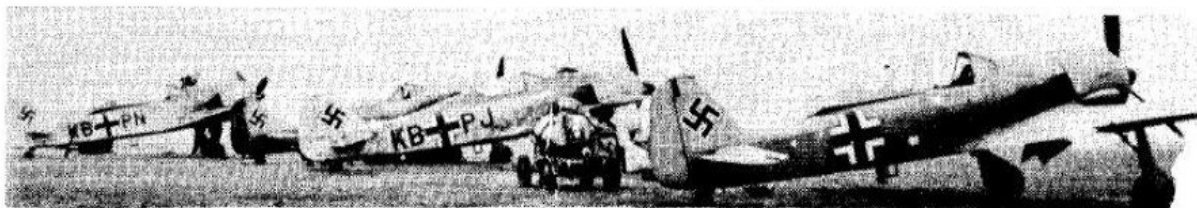
Perhaps the most significant reaction as far as camouflage and markings are concerned, to the allied invasion of Europe was the issue of an order by the Oberkommando der Luftwaffe on July 20, 1944. Portion of the order referred specifically to fighter aircraft and instructed that, as from this date, all were to carry a black and white spiral on their spinner; the purpose being for rapid identification. Other minor variations involving the actual camouflage were also to be seen on home-based fighters during the late war period. The upper surfaces of the wings and tailplane usually remained finished in 71/02. However, the upper portion of the fuselage sides were sprayed with light grey 76 which was carefully blended into the normal 65 of the lower fuselage sides. The dorsal spine of the fuselage was then given a soft sprayed coat of 02, the same color being used to mottle the fuselage sides. It is possible that in the final weeks of activity some FW-190Ds and TA-152s carried an upper flying surface

pattern of the two greens 80/82 but as no reliable evidence has yet been produced to verify this, the point must remain obscure.

National markings themselves ran the whole gamut of change during the war years, reducing in boldness from the stark black and white to either a subdued black or white skeleton outline type which would not compromise the camouflage.

However, the risk of attack from friendly sources during the milling confusion of the mass air battles of late 1944/45 made rapid identification a vital necessity. As a result many aircraft had their Balkankreuz emboldened by a background panel of 02 or 71. The spiral marking of the spinner was also intended as a means of rapid identification but was usually the last thing seen by an attacking fighter! Another solution to this pressing problem lay in the adoption of a broad red band around the rear fuselage and a similar colored panel beneath the engine cowl. Its use appears to have been successful and in an attempt to utilise its benefits further the Oberkommando der Luftwaffe issued a final order on February 20, 1945. From this date a specific sequence of colored bands were allotted to individual Geschwadern of the Reichsverteidigung. These were to be applied to the rear fuselage as either two bands 450mm wide, or three of 300mm each. Inevitably, during those last hectic weeks of the war variations as to the size as well as the position of the bands were to be seen. In a way, it was fitting that the Luftwaffe should end its last battles bearing a touch of the flamboyant colors which had marked the beginning of its career a few short years before.

* Should any reader be in a position to prove otherwise and provide satisfactory and convincing evidence, the publishers are prepared to supply a complete set of all Kookaburra titles, including all books to be published during the next two years. Communications should be addressed to Mr K. Merrick at our address.





BIG 1 GLIDER

BILL MARDEN, with his record-breaking glider.

The wing is made in two halves permanently joined by two 3/16" ply dihedral braces. These are capped with 1mm ply strip 1/2" wide to distribute load over a reasonable area of the balsa skin. After the cores are cut, 1/8" inserts are let in for the aileron cutouts and tracks and recesses cut for the aileron pushrods and bellcranks.

The skins are built up from three 48" x 4" x 32" panels of soft balsa with a 2" splice on the ends to three 18" x 3" x 1/16" panels. After the four skins are completed, they are sanded from approximately 3/32" at root to 1/16" at tip, with an orbital sander.

After joining at the centre with Araldite, the centre section is covered with approximately 9" wide strip of 2oz, fibreglass cloth, then a 3" strip of 6oz, over that again. The whole wing is monokoted bright red after the ailerons are cut out.

The tail plane is done the same way, except there are no centre braces, the skin being put through in one length with 1/16" x 3" ultra-soft balsa and monokoted.

Plywood inserts are put in under the skin for screwing on the nylon control horns and rudder hinges are used throughout on ailerons and elevators.

Rudder and fin are of orthodox

balsa construction with balsa ribs covered with silk, the nylon hinges pinned in place with toothpicks.

The fuselage is of elliptical cross-section with plywood keel. Formers are of same material back to the trailing edge of the wing.

All other formers are 1/8" balsa. From the nose block to the trailing edge a fill-in between formers of soft 1/8" balsa is used with a 1/4" fill-in at fuselage bottom from nose to trailing edge bulkhead approximately 1 1/2" wide each side of ply keel.

A spruce longeron 1/4" square extends from the nose block the same distance aft and 1/4" balsa side panels are glued into the top of these and shaped to act as wing seats.

The whole assembly is held together by 1/4" square balsa top and bottom longerons to permit plank-ing with 3/32" balsa all over. After this is sanded smooth, it is covered with 6oz cloth to the trailing edge of the wing and 2oz from there to the rudder post.

Great care must be taken to work out all excess epoxy resin or the weight penalty will be too great.

Many local and overseas experts are critical of the use of ailerons on sail planes. This is something which I feel very strongly about. It would not have been possible to have made the long flight under

conditions existing without them.

This glider, in particular, is not sufficiently manoeuvrable on rudder. I believe the use of ailerons enables one to reduce dihedral for better wing efficiency. Recovery from steep turns is instantaneous.

Rudder is rarely used except in poor lift, when I find very fine amount of rudder and aileron is used together for a flat turn. Normally a slight bank is initiated with ailerons and the glider does the rest. Elevator turns are only used for steep turns and manoeuvring a few feet off the ground.

The glider is heavy. Record attempting weight is near 8lb, as the large batteries used are put in the radio compartment and the receiver moved back behind the servos and beneath the two pushrods.

The aileron servo is mounted transversely in the centre section and projects up into the wing centre section cover.

It is a matter of personal taste that the glider is not made to maximum performance design by the usual small cross-section fuselage. This makes for scale-like appearance and leaves room for plenty of foam rubber around the electronics. The high wing loading of around 11lb per sq ft is not acceptable on smaller machines.

From what we have found of gliding conditions, it is particularly noticeable that if wind is to be continuously available from dawn till dusk, then at some time during this period it would be most fortunate if conditions did not become at least a little boisterous.

Here the heavier machine comes into its own and flies past and can penetrate through turbulent gusts without as much chance of loss of control or blowing back. On the other hand, "Big 1" has made good flights in light breezes on the larger coastal ridges. One flight made when Bob Young came with me to test the transmitter battery change-over he had worked out was over four hours and much of this was with only about 10 to 12mph of wind. The flight was voluntarily terminated under these conditions and we had to literally dive it down onto the ground after about five or six landing circuits.

At the present time, a world record is possible for this country. Business commitments may prevent me from a sufficiently serious effort, however.

If some other flier should read this and become fired with enthusiasm, then I, for one, will be more than gratified should he succeed.

It would be appropriate at this stage to mention that Bob Young, the manufacturer of Silverton proportional radio, was entirely responsible for the loan of special battery packs and necessary transmitter modifications, thus relieving me of a worry with which I would have had neither the time nor ability to cope with.

—BILL MARDEN.

THE RADIO EQUIPMENT

The equipment used in Bill's model was a standard Silvertone DF-5 Digital Proportional unit approx 18 months old. The servos used were the small Orbit-Silver-tone PS-3 Micro. These servos were used on aileron, elevator, and rudder, and though they only weigh 2oz each, were more than adequate to handle the very large control surfaces fitted to "Big 1".

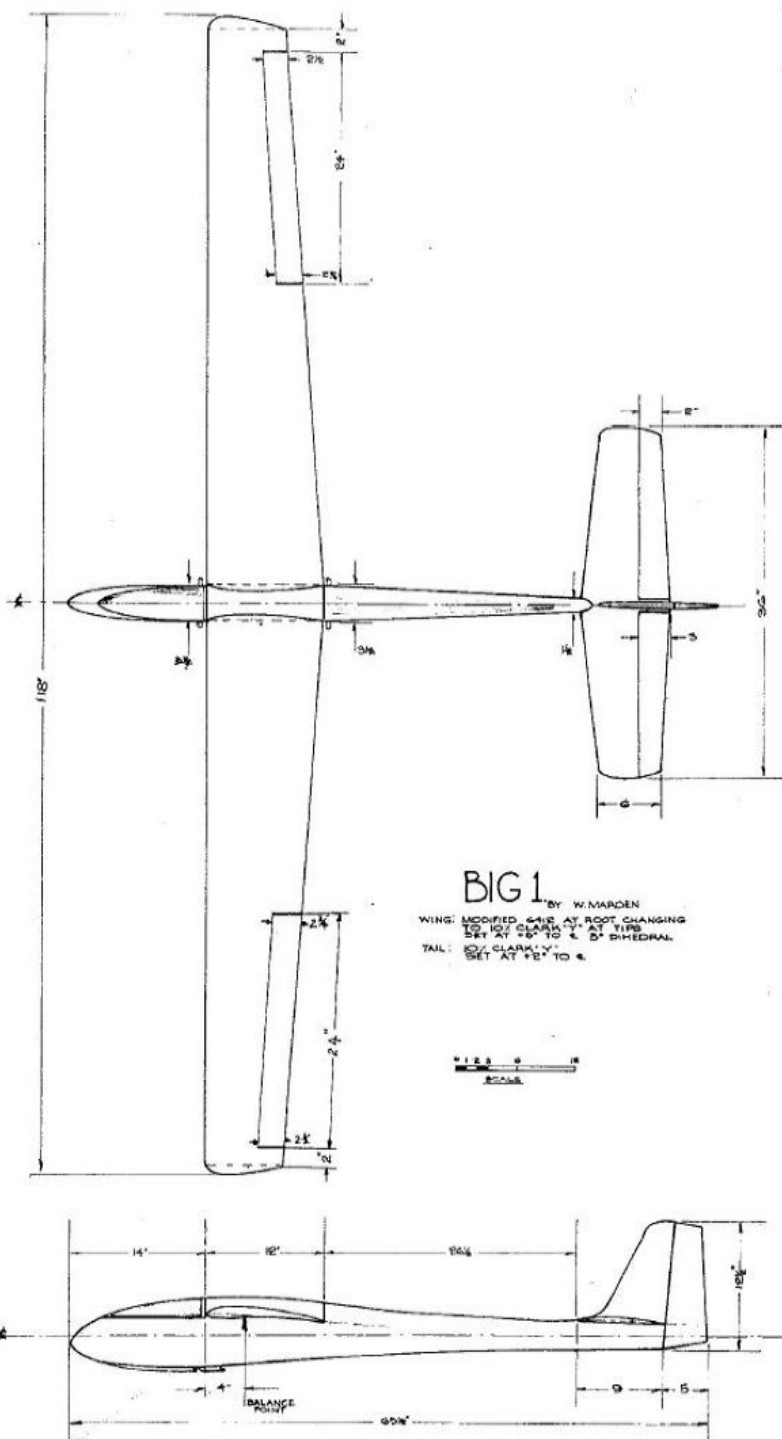
Bill's T/X was modified to incorporate a switch that enabled him to change from internal to external battery packs, thus allowing a virtually unlimited operational time. The switch was a miniature toggle switch and was mounted in one of the holes in the base, replacing one of the rubber feet.

For the record flight, one spare battery pack was provided in addition to a standby T/X fitted with an 8hr battery pack. Normal operational life of a standard Silvertone T/X battery pack is 5 hours plus half an hour safety margin, thus we had a safe time of 18 hours with the two transmitters.

The glider was fitted with four 3.5amp hour batteries weighing 6 oz each, giving an estimated 24 hours safe time.

During the work-up period, several flights of 5 to 6 hours duration were made on the standard mah receiver battery, which would seem to indicate that 3.5amp hour cells should give 24 hours plus a reasonable safety margin. During the same period, tests were made on changing over from one T/X to another during flight. This proved to be completely successful and no loss of range was apparent in spite of the fact that the T/X was not specially matched to the R/X.

—BOB YOUNG.



LITTLE WILLIE- THE FIRST

As the very first armored fighting vehicle in the world, the "Little Willie" really deserves more mention than it has so far been afforded. Designed by Sir William Tritton, and constructed by Messrs William Foster & Co, the 28-ton machine was demonstrated before King George V in late 1915. It was built of boiler plate, and entered through an access door in the rear. Top speed was a mere 3½mph, and steering was by means of trailing wheels. Proposed armament was two machine guns and a two-pounder, but the prototype was never fitted with weapons. The later rhomboidal design, known variously as "Mother" or "Big Willie", was the first vehicle to bear arms. Slow, clumsy and unreliable though it was, "Little Willie" certainly was more than a mere hint of things to come.

THE MODEL

Construction is commenced by cutting out two hull sides as per the full-size template A. A piece of sheet plastic, ½" x 2½", is then cut and cemented along the bottom. Piece B is the next to be added, and forms the floor of the fighting compartment. The nose and rear may now be blocked in, using 20 thou sheet plastic. If the door on the completed model is to be shown open, it is cut out now prior to cementing in the rear plate.

Commence now to build the upper part of the hull by adding in the front bulkhead, from which the forward vision ports are first cut. Note that these ports are not square, but have slightly filled-in corners. This is easily done by drilling the corner holes first and then joining up the holes to cut out the port. The roof of the vehicle is all that remains now to be cut out and cemented on, and the sides blocked in using 10 thou sheet. The full-size vehicle was provided with six separate pieces of plate per side, and the same procedure may be adopted here for realism. The alternative is to use only three pieces, and score the join lines into the centre piece once it has set and been trimmed.

SUSPENSION

This type of suspension is very easy to model, being no more than four track frames of sheet plastic, paired off and packed to an outside width of ½" with scrap plastic or balsa. Apertures are cut from the outer frames, and also from the packing, and a box built up to fit between each set of frames. Tracks are from the Airfix model of the WW-I Mark I. Suspension units are completed by the addition of ball-bearing roller covers, which are made from thin slices of suitable thickness spruce, and the small rectangular plate, which is either cut from the side of an Airfix Mark I, or made from scrap 10 thou card.

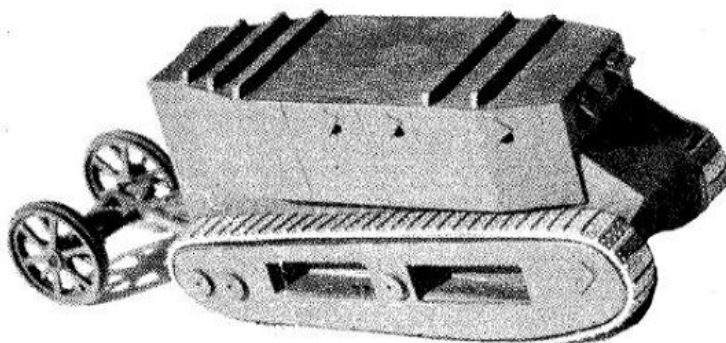
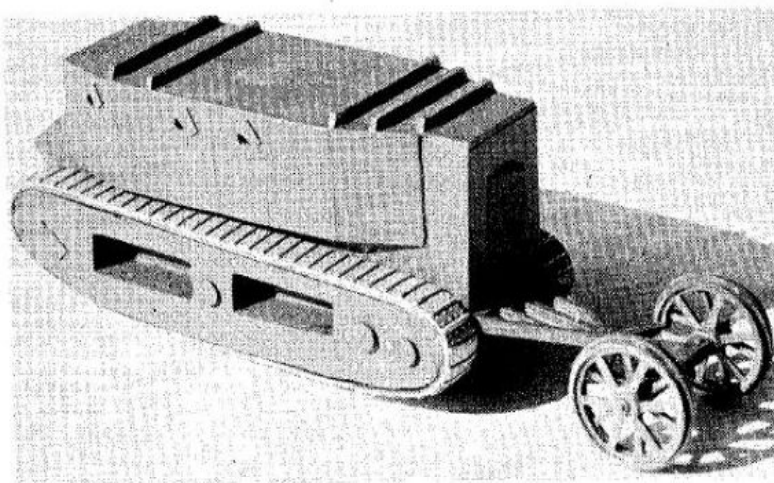
Glue completed units to hull sides, and align so that model sits square.

Steering tail-assembly comes direct from Airfix Mk I, only modification being the shortening of the

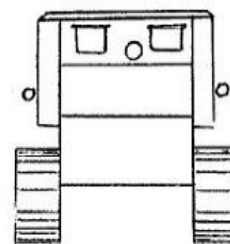
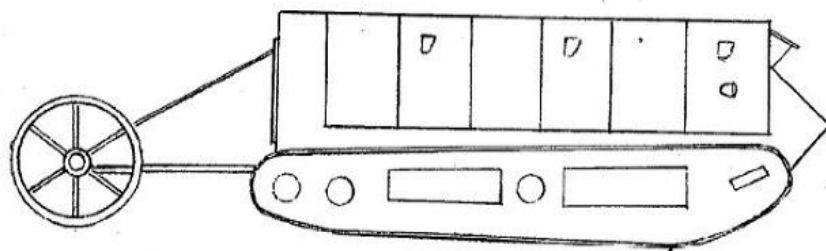
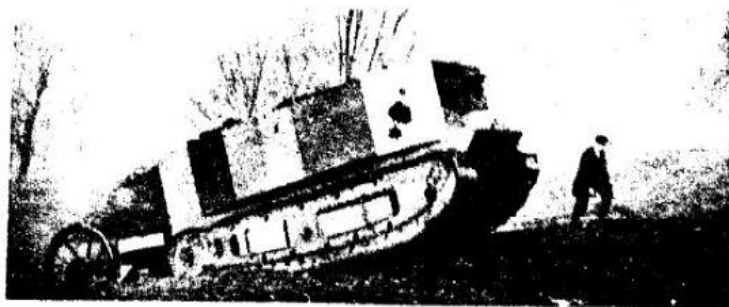
trail. Refer to drawing for detail. Note steering cables from trail to rear face of fighting compartment.

Final details may now be added prior to painting.

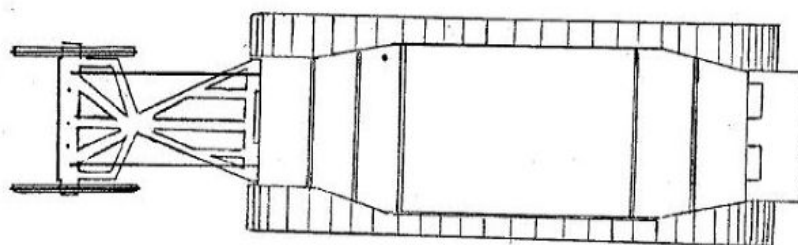
Pistol ports are drilled into hull side plates, and covers of scrap 10 thou card cemented either over or to the side, as required. A headlight is required on each side, and covers from 10 thou card are placed over the vision ports in the front bulkhead. If these are to be shown open, make supports from ½" pins with the heads cut off. A circular aperture is also drilled between these ports (for the intended armament). Finally, add the cross members atop the roof. This completes the model, leaving only the painting now to be done. Finish is overall khaki green with white lettering on both sides, if required. This was painted onto the full-size tank when it was placed in the Bovington Armor Museum.



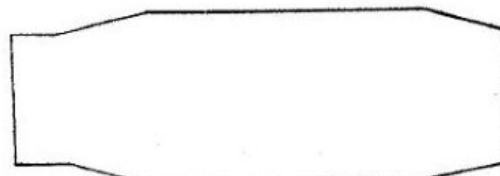
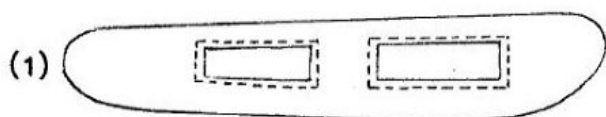
TANK



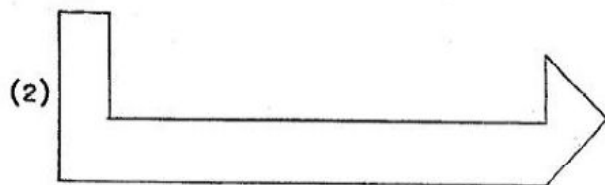
FT



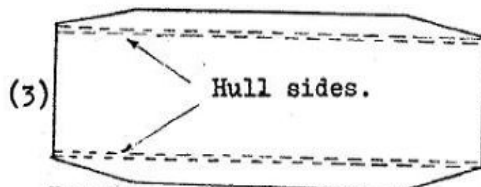
Drawn by W. Ruxton



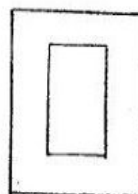
(4) Roof template



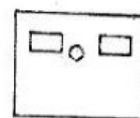
Template A



Template B.



(5) Rear Plate.



(6) Front plate

KEY TO DRAWINGS ABOVE: (1) Track frames, four required, showing outline of inner box construction between each pair of frames. (2) Template A, hull sides, two required. (3) Piece B, forming floor of crew compartment. (4) Roof template. (5) Rear plate, showing door outline. (6) Frontal plate.

QE2

The list of great ocean liners that suffered faults and breakdowns in the months following their launching is amazingly long. To mention but a few, the **City of Rome**, now remembered as one of the most beautiful steamers ever built, was returned to Barrow-in-Furness in 1881 because a bearing ran hot during her trials. The P&O liner, **Canberra**, had to have concrete added to her forward staircase well to trim her level on the water. She too had troubles with her engines on the first voyage, albeit suspected sabotage was given as a cause. **Canberra** now sails the oceans of the world trouble-free.

The great liner, **Rex**, put in to Gibraltar on her maiden voyage from Genoa to New York because of turbine failure — yet she later went on to take the Blue Riband of the Atlantic at an average speed of 28.92 knots. She sailed the seas without further trouble till September 9, 1944, when she was destroyed by bombing.

The point made is that "teething troubles" seem to be the lot of many great liners and are sometimes the inevitable result of circumstances surrounding the building of unique "one-off" designs that are seldom duplicated. Each ship is a prototype and production model in one. There are no second

chances to rectify faults in the "next" ship for the next one will be unique also.

Such is the case with the magnificent **Queen Elizabeth II**. Superb in hull design, unique in superstructure, bearing a funnel design that caused controversy and discussion, and even now only just forgiven by the die-hard "shellbacks", the Queen is now in service on the high seas, despite the earlier troubles with shaft vibration, now solved and rectified.

The **Queen Elizabeth II** was built by Upper Clyde Shipbuilders (formerly the famous John Brown & Co) for Cunard Steamship Company Ltd. She is the most carefully planned ship ever built. A unique feature of the great ship is the fitting of bow thrusters to facilitate berthing when tugs are not available. Appointments include a toilet and bath or shower with every cabin and even in a full ship, only 178 of the passengers will sleep in upper berths.

She replaces her larger sisters, the **Queen Mary** and **Queen Elizabeth**, and although one-third smaller, can carry as many passengers as each. She is designed to carry passengers on the Atlantic run, and also on cruises with considerable economy, since she can cruise at the same speed as the other Queens

but at only half the fuel consumption.

The QE-II is the brainchild of John Rannie, who designed such other famous and successful ships as the **Queen Elizabeth**, **Kungsholm**, **Caronia**, **Saxonia**, **Corinthia**, **Ivernia**, **Arcadia** and **Transvaal Castle**, but the QE-II must be acclaimed as his greatest achievement.

Airfix launched their model of the QE-II before she was completed and have produced a very fine kit at 1:100 scale, and we have taken pleasure in building an example. The model measures 19 1/2 in long.

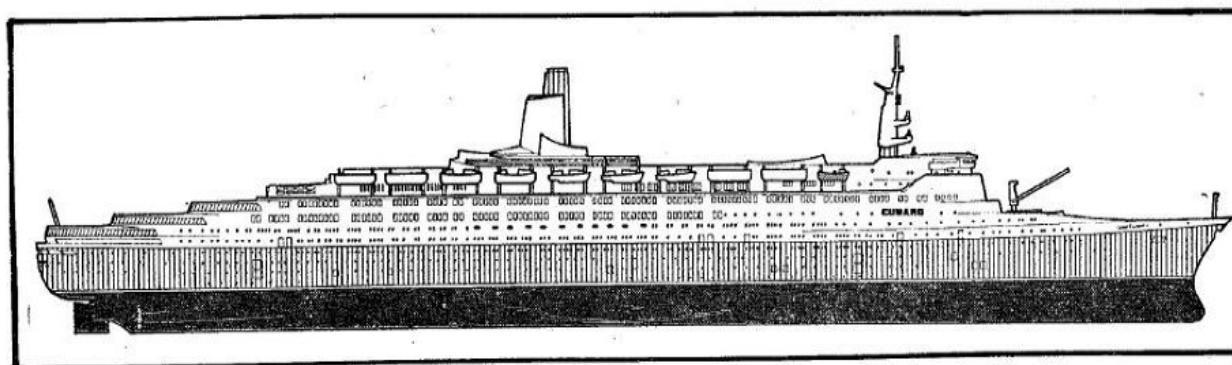
In the usual clean mouldings, for which Airfix is noted, the parts require little preparation or cleaning of "flash" and assembly is relatively straightforward.

The hull and all parts are moulded in white plastic and there is almost no distortion in the hull mouldings on our example. We thought at first that the mouldings were a little on the thin side for such a length, but after assembly this was found to be adequate for the job. Until the decks are fitted, care should be taken not to distort the hull.

We stress that the instruction sequence should be followed carefully. Deviations can cause considerable frustration!

Considerable care has to be exercised in aligning the hull sides and it is recommended that the open "windows" on the upper part of the stern should be cleared carefully of "flash" before assembly. We successfully used spring clothes pegs to hold the stern and bow part of the keel together. Liquid cement was then applied sparingly to the inside of the hull join, allowing capillary action to draw the thin cement into the join.

Wherever possible, paint super-



structure parts before assembly and assemble with minimum cement. In some cases, such as in the deck games areas, the transfers should be applied before assembly.

It will be found that it is better to paint the hull undersurface and sides before fitting the fiddley little bits topside. The hull can be mounted then, on the stands provided, and assembly continued.

This is a fine kit — don't hurry it. It is probably easy enough for a youngster to put together — I had help from my five-year-old, but he could not have finished the job by himself. The painting and fitting of boats takes a little time, but care here, and in the applying of transfers (which are clean and sharp) adds the finishing touch.

This model is not very difficult, and will be an exercise in relaxation!

When the QE-11 arrived in New York on her maiden voyage, she was escorted by two other unique products from Britain — Hawker Harriers (nee P-1127s).

These VSTOL fighters were in New York after flying the Atlantic. A fine diorama could be made using a painted Hudson River, a photo of New York, and the model of the QE-11, along with two Airfix "Harriers", suspended in the air, and small craft around about.

SPECIFICATIONS

Length (overall): 963ft.

Beam: 105ft.

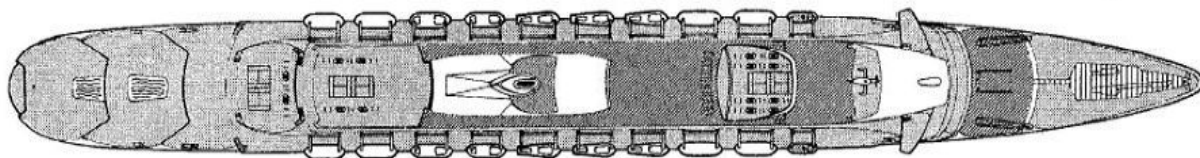
Displacement: approx. 65,000 tons.
(Queen Mary: 81,000 tons.)

Twin-screw turbine powered liner,
each engine developing 55,000
hp. Propellers, 6-blade.

Service speed: 28.5 knots.

Number of passengers, one class:
1,400; peak holiday season,
London-New York: 2,025.

Anthony Shennan



LimaRail

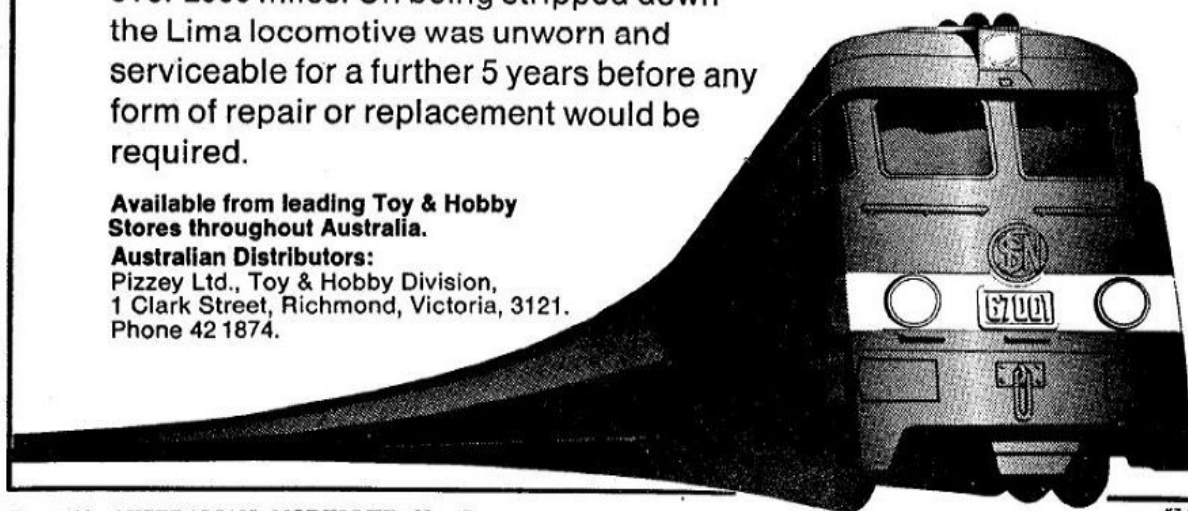
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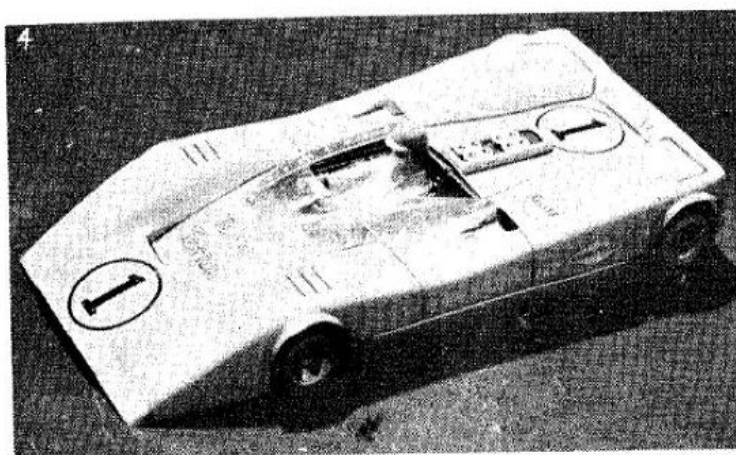
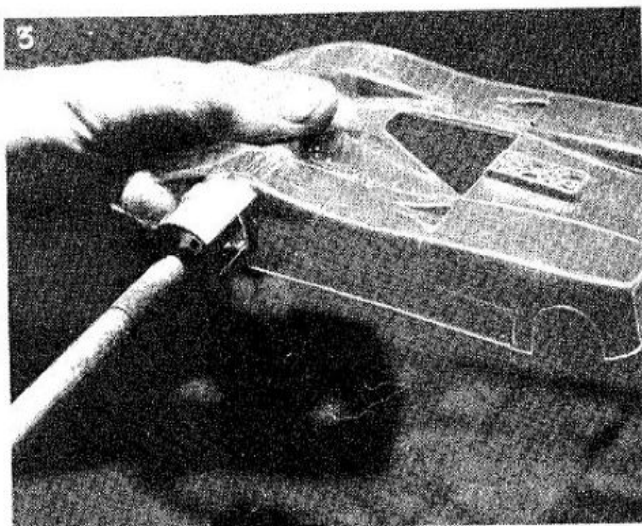
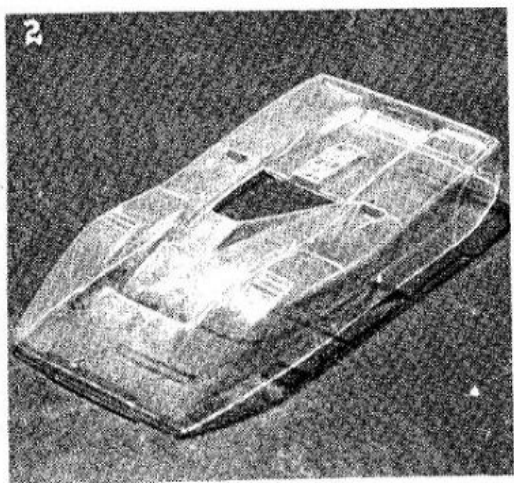
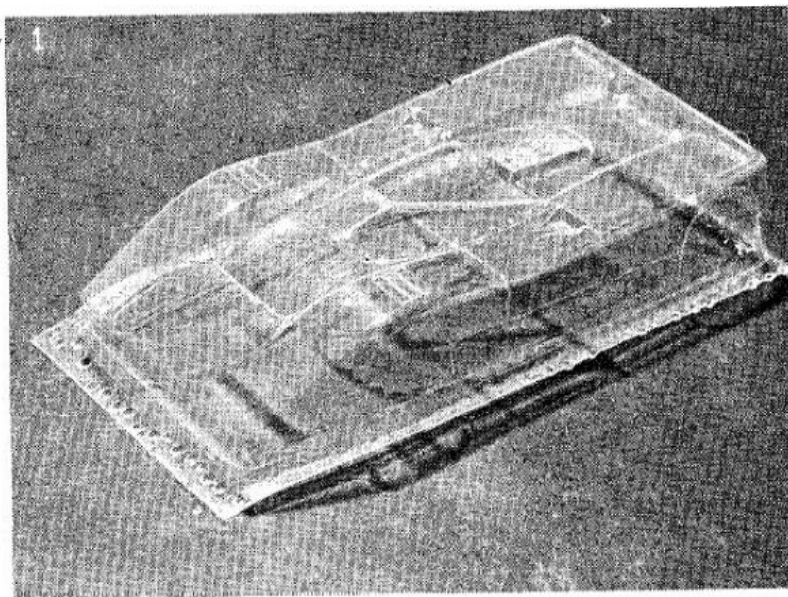
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BUILD BETTER BLOBS



(1) The body as you purchased it from your local track or store.

(2) Body trimmed of excess "flash" and driver's position and air intakes also cut away.

(3) Soldering iron embedded in a can type motor casing is used to flair the wheel openings. Note that the openings are trimmed to a smaller radius to allow excess material for the flair. Practice this bit on some scrap material first to establish the correct temp. and pressure.

(4) After washing in detergent and warm water, thoroughly dry the body and paint on the inside. Then add the required trim. Who said a "blob" couldn't look good?

AUSTRALIAN PRODUCTION MOTORS

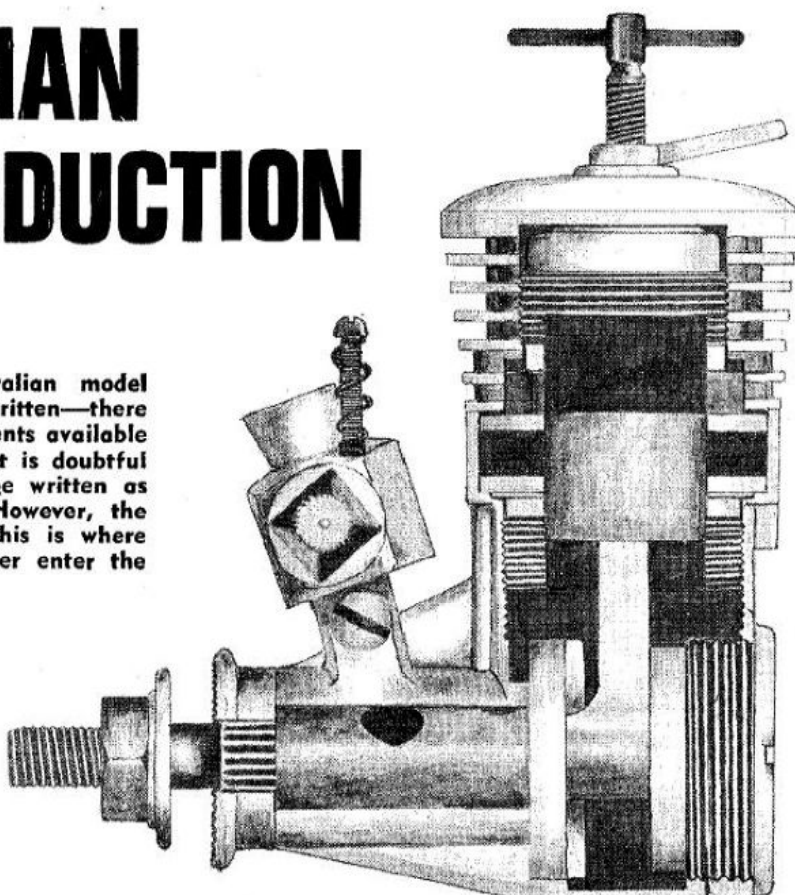
A definitive history of Australian model engine production will never be written—there are just not enough source documents available—because they've been burned. It is doubtful if even an adequate story can be written as historians would understand it. However, the main outlines are possible and this is where the readers of *Australian Modeller* enter the scheme.

From replies and correspondence received as a result of the article on motor collection which appeared in the last issue, it is obvious that there is a vast body of knowledge available if readers will bother to amend, or add to, or even flatly contradict, the story as it is hoped to tell it in the next few issues. If you feel some statement is inadequate, or just plain wrong, or if you know of motors or photos or documents about motors then tell us. This way it will be possible to get much closer to an accurate history.

The big production names are easy, as there is only one in the whole southern hemisphere — Gordon Burford. On a much smaller scale, as far as both model types and total production, but of the same dimensions as far as heart goes, there is Ira Pepperill, in New Zealand. There is just nothing from the other three southern continents. As well there have been other serious attempts at production, but it would appear that the total additional production of all of these would not reach 2000.

Gordon Burford and Ira Pepperill are both dedicated humanists, who can probably best be likened to Harry Orwick, the Olivers pere et fils, Ted Martin, and many of the other unsung dedicated characters (perhaps even ratbags from a Machiavellian view), who had more love of creation than profit motive. They are the salt of our modelling world, in fact.

Far too little information is available on Ira Pepperill's motors for



any sort of article yet, so you'll have to start telling what YOU know. Suffice it to say that eventually he saw that he would starve to death making Pepperills, so he is now making things and repairing things for full-size aircraft in NZ, and at last contact did not even know where there were any Pepperills, let alone one of his own. If the information is forthcoming, *Australian Modeller* would certainly like to run a story on these Pepperills, so start jotting down what you know.

Gordon Burford, with a population of 12 million, as against Ira's potential two million Kiwi customers, has survived, firstly by automating as much as a relatively small firm can, secondly by regarding aeromodellers as very nice guys but an undependable market, and thirdly because of his wife, Jose, who is a very rare person indeed—a female who understands aeromodellers. The Burford story will be attempted over the next few issues.

Gordon Burford was born on August 3, 1919, and as a Leo he had as much or as little chance as

all the other Depression generation. He saw his first motor, a Brown Junior (what else?), in 1936, but such things were beyond the pocket of the average bod. The affluent teenager hadn't yet arrived, but he was hooked any way, having built an MFC Rosella in 1931. He served his time as a metal machinist. Skilled personnel were quite ruthlessly manpowered during the Second World War, and Gordon was skilled personnel, so he put in 1939-1945 as an automatic-pilot-instrument mechanic, making sure that if the pilot let George do it, he would.

First attempts at manufacture were quite successful — he made three Sparey 5cc diesels in 1946, and the following year went into his first production motor, the GB-50 fixed-compression diesel, also called the Stunt-Mota. This came in a nice black box big enough to hold several of today's 5cc types, and the instructions were Roneoed. Gordon is not sure of actual production, but his usual run was about 250, and he thinks this figure would not be very far out either way. This was the only Burford

motor with an aluminium needle-valve body, probably because the Drone on which it was based also used this metal. All 5cc diesels have been brutes unless you're a sophisticate, and this was no exception, although once started it swung a 12x8 quite happily. Last sales of this motor by Gordon were early in 1949, although, of course, they would have been available in shops until later.

Next production effort was the much more original GB series. The first was the variable compression diesel pictured. Some had GB on one side and 50 on the other. Later versions have the GB superimposed on the 50. The Glo-plug versions were called the GB-50 Glo and the GB-75 Glo. This last was a well over square monster that had a bark like nothing but old Stentor himself. The total combined production of all three variants was about 400.

Then came the GB-250, which is reputed to have been in two forms — Mk I with a round venturi and Mk II with the "U" shape as in the picture. Any reliable information as to the Mk I will be greatly appreciated. A later production variant is shown which has a mod'd tommy bar and the exhaust ports milled much bigger so that the remaining posts are almost knife edge. About this time there was another version with the front of the lower crankcase of quadri-spherical form rather than the now almost universal cylindrical shape. This was the last of the production motors to be labelled GB. From here on they were intended to be called Sabres. Why

Sabre? Well, if South Australian Burford Racing (or Reciprocating) Engines won't do then try again.

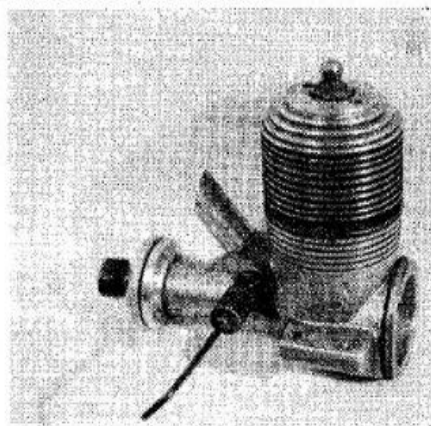
It will be noticed that as well as vagueness about production totals there is no reliable method yet of dating each production. All of the motors listed so far were produced between 1947 and 1950. Documents or other evidence of purchasing dates will be welcome. As for totals it can be said that most of these motors survived a normal production run of 250, some of them, perhaps, even reaching 1000. Where are they?

This episode ends with a jump forward in time to about 1959. The story is that Gordon Burford set up a production run of 250 3.5cc Taipan R/C diesels. When all the parts were finished he hand assembled the first one himself, matching the parts by "educated finger method" and sent it to Tom Prosser for evaluation. Tom found it too vibratory and not sensitive enough, and said so. Gordon didn't see any market for ordinary 3.5cc diesels so he junked the whole remaining 249. They were used as filling in the concrete floor of the new factory along with all the original dyes for all the previous models. At, as the heart grows older it will come to such sights colder! So there's only one of them left — the world's most expensive motor. The cutaway by Sand Stowe shows the similarity to its contemporary 2.5. Strong men may be forgiven if their eyes are moist.

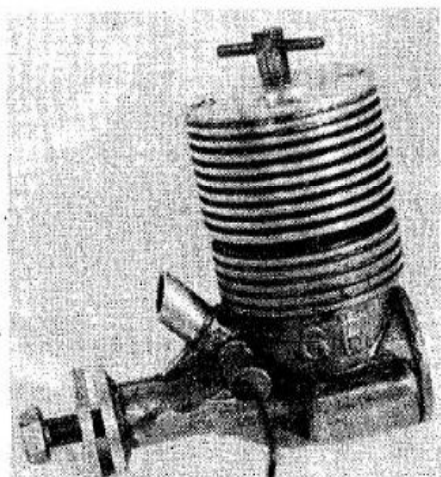
Next issue: The Sabre Story.
Photos by Dave Hegarty.



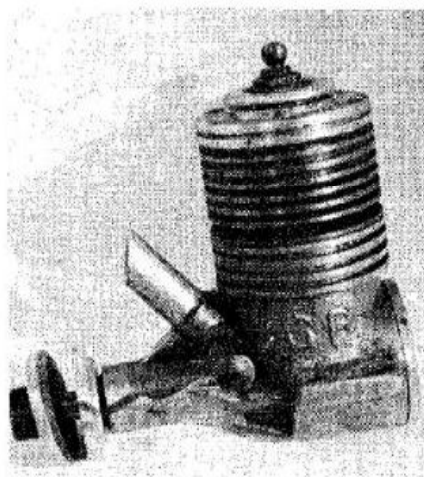
TOP: GEE BEE 5cc fixed compression.
ABOVE: GEE BEE 5cc glo with recessed steel head.



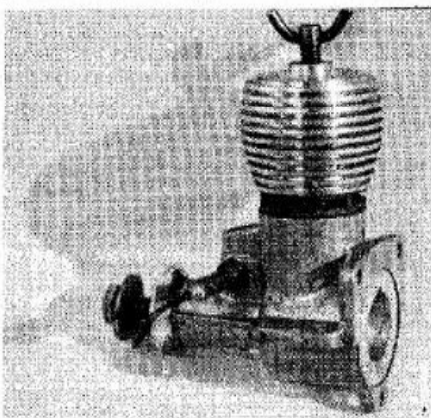
GEE BEE 7.5cc extra short stroke glo. Very noisy!



GEE BEE 5cc with variable compression (would swing a 12in x 8in prop!)



GEE BEE 5cc glo with alloy head.



GEE BEE 2.5cc with improved exhausts (thin posts).

modeller club of the month

For our Club of the Month article in this issue, we go over to the world of model yachting with its billowing sails and sleek hulls. One of the growing number of clubs catering for this fascinating hobby is the Canberra Model Yacht Club, who meet and sail under the most idyllic surroundings in the bounds of our national capital.

The club started when Mr R. E. Dunster arrived in Australia from Scotland in 1968 with two Marblehead class model yachts and one A class model yacht. After sailing these boats for a while on the Nerang Pool, Canberra, with a couple of other keen sailors, there was enough interest to start a club. A representative went to Melbourne to attend the Australian Model Yacht Association Annual General Meeting in April, 1968, when the club became affiliated to them. This club, with a membership of seven, and three registered boats regularly raced. It was a really good start!

For the 12 months ending April, 1969, the number of members increased to 15 and boats to eight, and competition grew stronger.

The club was proud to be host to the 1969 Australian Marblehead National Open Championship held on the very picturesque lake, the Nerang Pool, over the Easter holiday weekend, the club founder, Mr Dunster, winning the event, followed by Mr Bell, from Bayside Model Yacht Club, of South Australia, in second place.

The club now races regularly, with seven boats consistently entering. The boats raced at this stage are the Marblehead class, with the not-to-distant appearance of a couple of 10-rater class and A class yachts on the scene. The three classes mentioned are briefly described as follows:—

Marblehead class is a machine of about 20lbs displacement and restricted to 800 square inches of sail area and 50.25 inches overall length. This is the more common boat, due to its size, and provides a fast sport.

Ten-rater class is a larger machine than the Marblehead with a



displacement of approximately 30lb and because of the rating rule this will give a sail area of about 1200 square inches and an overall length of approx. 72 inches. This boat is a very fast machine and is becoming popular throughout the world.

A class is a yacht which, due to its rating rule, is a big model of approx 55lbs displacement — 1500 sq inches of said area and 75 inches overall length. This boat is very popular and has a great resemblance to the 22-metre yachts in the full-size world.

All these classes are recognised by the International Model Yacht Racing Union and are raced to the Model Yachting Association General Sailing and Rating Rules.

Any information on the yachts and/or the clubs can be obtained from any of the following addresses:—

Canberra Model Yacht Club,
Mr G. Langdown,

10 Harris St,
Hackett, A.C.T.

Sydney Model Yacht Club,
Mr K. Byrnes,
54 Hodge St,
Hurstville, Sydney, NSW.

Albert Park Model Yacht Club,
Mr A. Thomson,
20 Dale St,
Pascoe Vale, Victoria.

Frankston Model Yacht Club,
Mr P. Weir,
6 Lingi Court,
Frankston, Victoria.

Bayside Model Yacht Club,
Mrs G. Bell,
15 Coronation Ave,
Henley Beach, South Australia.

MSPBC of South Australia,
Mr G. Middleton,
29 Hooking Ave,
Royston Park, South Australia.



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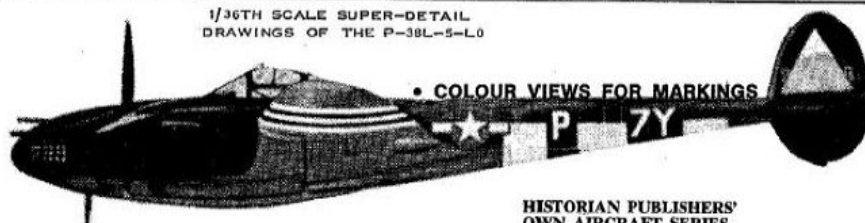
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GUNBOAT

In the last issue of A.M., we presented plans of this little gunboat, used by the American Navy in the war of 1812. We described construction up to the hull stage. To continue with construction, the plates will have to be applied to the hull if such detailing is desired. Notice that the pieces of thin card are applied with contact cement, and lill pins at four corners. Lap the card so that each successive plate forwards overlaps the last by about $\frac{1}{4}$ ".

Paint the plates copper and, when dry, rub a skim of dirty turps mixed with verdigris shade green paint across the plates to age them.

We suggest that the most be made from pine rather than balsa since it carries some strain. Make it about two inches longer, so that the stump end can be rounded, a hole drilled in the deck and the mast forced in.

Note the forward "rake" or slope to the mast. The hole will have to be sloped accordingly. Slot the top of the mast, insert a small pulley (a commercial variety from a hobbyshop will do), use a pin for a shaft, and cap the slot with a flat piece of wood. Paint the mast white. Construct the spar from pine, round it off, and steam it to bend shown by holding it in the steam from a kettle. When it is well soaked, bend it carefully and hold. When it is dry, sandpaper it smooth and paint it brown. Make the sail from off-white cartridge paper. Mark the joins in with soft brown pencil on both sides. Using paste, give "doubblers" of cartridge paper to the sail to make the reefing strips. These were canvas, NOT wood, as we incorrectly marked on our plan (we apologise!). Cement stout thread around edge of sail. Using a needle and strong brown thread, sew the sail edge to the

spar, tying each "ring" off at the sail. Place a dob of cement on the knot. Attach the support chain to spar (use jewellers' chain), hoist spar to mast over pulley, and tie off. Attach blocks to sail and rig to deck stanchions using brown thread. Gently shape sail to a curve.

If desired, the reefing ropes can be sewn into the sail where marked.

A simple stand can be made by drilling two holes in the keel, and through a suitable baseboard, then insert two long screws through the baseboard, and up into the keel.

Eighteen-pounder Gun: To make the gun, photostat the drawing to the correct scale you have used. Make the barrel from dowel and place a short piece in a hand drill chuck. Fix the drill in a vice, so handle can be turned freely and shape the barrel with a sharp blade and glasspaper. The blade should be supported on a block, about on the centreline of the barrel. Get someone to turn the drill fast while you work with both hands! Drill across the barrel for support pin. Make carriage from sheet pine or balsa. No wheels were used on deck. Paint the barrel black and the carriage brown.

LEVENSON'S HOBBIES

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Nichimo 1/35 Scale: Abbot 105mm Gun \$2.99, U.S. Army 155mm Gun \$3.50.
1/24 Scale Tamiya: German 75mm Assault Gun \$7.80, German Med. Tank \$9.00, U.S. Army Heavy Gun \$3.55.
1/35 Scale Tamiya: Hunting Tigers \$3.75, King Tigers \$3.75, Panther \$4.75, Jag. D. Panther \$5.99, Panther R/C \$5.69.
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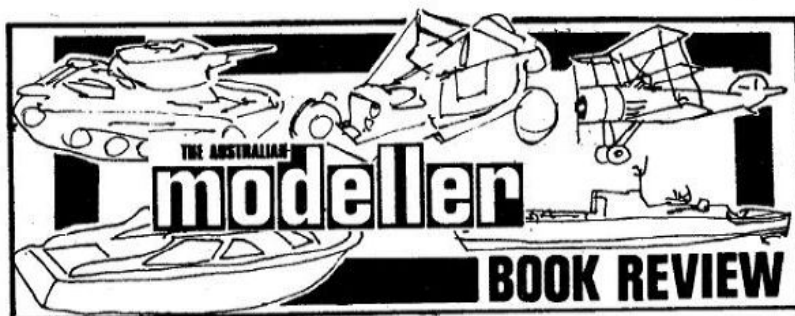
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AUSTRALIAN MODELLER No. 7—Page 25



Books on war subjects have been appearing regularly over the years. Many of these had no material for the modeller, the authors being more concerned with the "big story" rather than the details of color and form that make a book interesting to a modelling type. The last few years provide a change and a feast for our previously, if not starved, then rationed, modeller. We hope this page of brief reviews will give you some idea of what is available in some of these recent publications, whether you are a plastic modeller seeking gen, a scratch-builder, a wargamer (a rare breed), or just a collector of information.

Caproni-Reggiane Fighters, by Piero Prato, 11½in x 8in, Inty Books, Italy, agents Historian Publishers, \$3.00.

Too little has been written about Italian fighters but this large format book fills a gap. Text in English and Italian describes chronologically the products of this famous factory.

Modellers will appreciate the scale drawings and detail photos although the variety of scales and lack of sections will be a slight drawback. It's good reading, though. Bet you have never heard of a Bifusoliera! (It is a twin-fuselage RE-200S a la Twin Mustang.) Plenty of good scale modelling subjects here!

(Our copy from the publishers.—N.R.S.)

Scale Model Warships, by Ed Schnepf, 11in x 8½in, Challenge Publications, U.S.A., Historian Publishers, \$4.95.

Soft-bound, 66 pages, has many scale drawings of submarines, destroyers, cruisers, battleships, etc., and many helpful hints to model warship modellers.

(Our copy, Swain and Co., George Street, Sydney.—H.P.)

Soldier, Challenge Publications, U.S.A., monthly, \$2.25.

In a word, EXPENSIVE, but if you want full color illustrations, battles, background info, advts, articles, this one is for you—available soon in Australia. Will have appeal to the specialists and the RICH specialists. Nicely produced. at \$U.S.2.00. Look for it!—A.W.

Battle of Britain, Aircam series, Osprey Publications, England, \$2.95.

Essentially describing the aircraft of the battle (Spitfire, Hurricane, BF-109, etc.) the dozens of profiles in color and the many photos will delight readers.

Some may argue over the colors of the codes—dark sea grey? Pale blue? Surely not dark sea grey!

However, along with the rest of the Aircam books, it is good value. Others in the series are P-51 Mustang I-IV, Mustangs in foreign service, Republic P-47 Thunderbolt, Curtiss P-40, Spitfire I-XIV.

Tanks of the Great Armies, by Enrico Po, 11½in x 8in, Inty Books, Italy, agents Historian Publishers, \$3.00.

Wargamers and tank modellers will want this one! This is good VALUE with 64 pages of large format, including eight pages of color photos.

Text is in English and Italian, describing the T.54/55, M60, Leopard, T62, Chieftain and AMX-30—an excellent coverage of modern types. Illustrations include numerous line drawings.

(Our copy from the publishers.—A.W.)

Republic P-47 Thunderbolt, Part I, Geoff Duval, 10in x 6½in, 24 pages plus color cover, Kookaburra Technical Publications, \$1.25.

Modellers will recognise the author's name as that of the

draughtsman who provided superb "Spitfire" scale drawings in "Aeromodeller" some years ago.

He also drew the C-47 Dakota and, more recently, Curtis P-40 scale drawings in that journal.

Several original WW2 color photos provide interest, the selection of photos (count em!—60, the most in a Kookaburra) are of extreme interest and most have not been seen before.

This book is a feast for markings enthusiasts. Geoff Duval's detailed scale drawings of the P-47B and C have been inked carefully and beautifully by Ken Merrick.

Our only criticism is that the undersurface drawing of a P-47C might have been more profitably, that of the P-47B (since the C nose is longer by 10½in).

We were agreeably surprised to find the pages of color profiles as well as the fine 1/72nd scale drawings. This book will have appeal to the plastics scale modeller. A neat cutaway of a P-47B and a side elevation of a P-47D-15-RE (razor-back) round off the drawings.

To sum up, excellent value and will be sought after as a standard reference. All versions up to XP-47L are tabulated, as are serial lists.

(Our copy from Historian Publishers, 3 Grandview Drive, Campbelltown, NSW.—N.R.S.)

Focke-Wulf Fw 190 and Ta 152—

Part 2, by A. Shennan and G. Pentland, 10in x 6½in, 30 pages, Kookaburra Technical Publications, \$1.25.

Long awaited, Part 2 of the Focke-Wulf Fw 190 story follows a similar pattern to the Thunderbolt book. Color drawings by G. Pentland and black and white drawings by Canadian, Peter Mossman are masterful.

Printers being what they are, there are variations in the color chart, but are merely a guide to the best. A good range of unusual photos, 48 plus one in color, a clean cut-away, and good 1/72nd scale drawings of Fw 190D and Ta 152H1 provide excellent coverage.

We did detect the omission of the pitot head and labelling of the starboard navigation light as "Pitot head" (!), but these type of errors are merely slightly annoying and do not detract from a fine publication.

######

the following year (1941) intercepted the German raider Coburg in the Indian Ocean, along with accompanying supply tanker Ketty Brovig.

On being intercepted, both vessels were promptly scuttled by their crews!

The end of 1941 saw Japan's entry into the war and Canberra was really up against odds. She met her end in action against Japanese cruisers in the battle of Savo Island, August, 1942.

"Australia carried on, taking part in the battle of the Coral Sea, the Solomons offensive and the invasion of the Philippines. At Leyte, in October, 1944, she was severely damaged by a Japanese suicide bomber and at Lingayen Gulf sustained further damage from Kamikaze attacks. Australia continued to serve with the RAN until the mid-fifties. (Modellers should note that towards the end of her career "X" turret was removed.)

Those wishing to model Can-

berra should bear in mind that, until her end she carried her original pole-type masts and not the tripod type supplied in the kit which are correct for Australia.

MODEL CONVERSION

To begin the conversion, first study the drawings and make yourself familiar with the changes in outline. When you are sure that you know the variations, you can commence the structural work, using the following sequence:

1. Cut away the bulkhead and steps from the quarterdeck.
2. Build up the stern and replace the cut-away portion of the quarterdeck so that you have a flat, continuous maindeck.
3. Fill in the gap between "X" turret (part No. 18 in kit) and the aircraft hangar (part No. 22).
4. Lower hangar so that the top is level with "X" turret.
5. Place searchlight tower (this can be obtained from the Airfix

Campbelltown kit) on top of the hangar and in front of the director.

6. Extend bridge by adding piece across the front of existing bridge. (Reference to the photos will clarify this.)

7. Add tubular director tower between mainmast and existing tower.

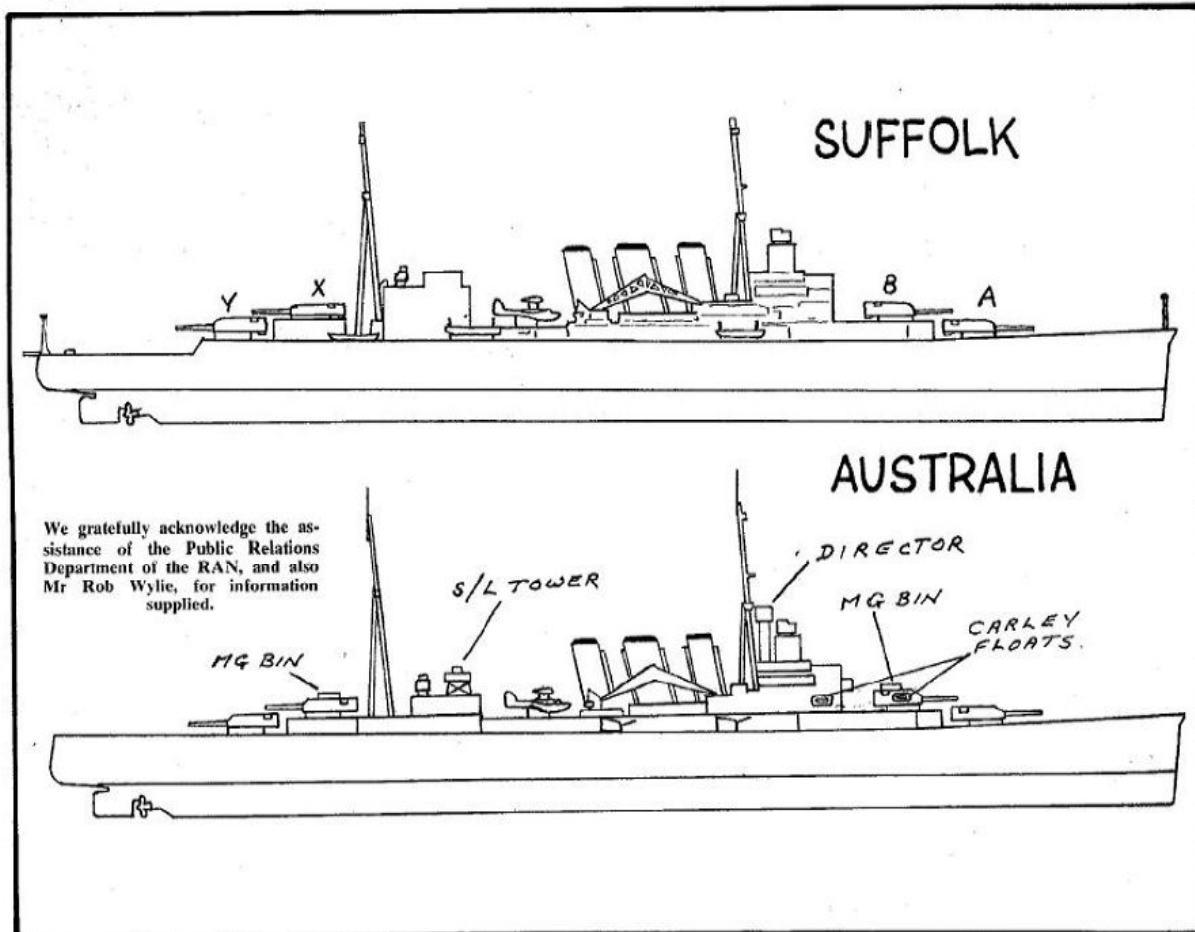
8. Add machine gun bins to tops of "X" and "B" turrets (part Nos. 18 and 12). These bins can be formed from thin plastic strips or stolen from an Airfix Tribal class kit. Note that the open entrances are situated to the rear in every case.

9. Extend masts as shown, using nylon bristles.

10. Add additional Carley floats to bridge and to "B" turret (these can be obtained from either Campbelltown or Tribal kits).

11. Finally, further reference to the photos will show small details that the advanced modeller may consider within has ability to add to make an even more detailed model.

CLIVE HEATH



This model was designed with just two things in mind, first to be capable of winning any 1/2A T/R contest, and secondly to have the simplest possible construction consistent with the strength required for rigorous contest work.

For this reason, block balsa is used wherever possible, and this means that it is an ideal design for the relative beginner as it offers simplicity and speed. To help matters further it is very stable in flight.

These are the contest requirements that had to be met:—

Fuselage cross section: Minimum height 3in, width 1 1/2in (measured at the cabin regardless of wider parts augmenting the frontal area).

Wing area: Minimum of 90 sq in.

Tank capacity: 6 cubic centimetres.

Line length: 46ft 8in, measured from centre of hand grip.

Minimum line diameter: .088in.

Model must show contestant's registration number.

Construction details.

1. Cut wing to shape and form to correct airfoil, fit wire guides, wingtip weight, and bellcrank

ORBIT

prizewinning 1/2A team racer

2. Cut tailplane/elevator to shape and form correct airfoil. Separate elevator and join again using linen hinges.
3. Mark out crutch and cut to shape.
4. Strengthen crutch inside with 1/2in balsa as shown.
5. Extend crutch with 1/2in balsa fuselage sides.
6. Fit metal pan to crutch and angle top block to fit flush with rear of pan.
7. Glue top block lightly to crutch and shape according to plan, then remove.
8. Glue wing to crutch and then fit bellcrank.
9. Glue tailplane into position and connect controls via pushrod and control horn.

10. Repeat step No. 7 with bottom block.
11. Glue engine cowling block in place and shape to outside form.
12. Remove cowling, hollow to accept motor, and shape air ducts.
13. Glue in position top and bottom blocks (previously shaped).
14. Form undercart and Araldite to bottom block and inside of engine cowling.
15. Glue block to bottom of engine cowling and shape as shown.
16. Fit tail fin. Fit wheel and secure with soldered washers.
17. Araldite pilot and cockpit to pan.
18. Make up fuel tank as shown and Araldite inside pan.

—BILL EAST.

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Page 34 AUSTRALIAN MODELLER No. 7

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To most aircraft enthusiasts the name Martin Baker conjures up visions of ejection seats and similar escape equipment. True, the company did excel in this field to the point where they could be considered world leaders.

However, this was, in fact, only one field that Martin Baker covered in the wide range of experimental work that it undertook during the 1940s. In August, 1942, a sleek, deadly-looking fighter rolled out of the MB factory and took to the air for the first time. Powered by the Sabre II motor, it impressed all with a speed of 415 mph at 20,000ft, 372mph at sea level, and an initial climb of 4350 ft/min. On top of this it was designed to carry no less an armament than six 20mm cannons!

However, the future of this promising design was brought to a sudden end with the crash of the prototype, owing to engine failure during a landing approach. A second

version was in the offing, but was not completed, as MB had a far more advanced design up its sleeve.

During May, 1944, the fields around Harwell echoed to the full-throated roar of a RR Griffon, developing well over 2,000hp, and into the air screamed Martin Baker's dream child, the MB-5. The six-bladed contra-rotating Ro-

tol airscrew hauled this remarkable aircraft at 460mph at 20,000ft, 395 mph at sea level, and an initial climb of 3,800ft/min. Armament consisted of the then standard four 20mm cannons, and with the outstanding manoeuvrability that the prototype showed, it is a wonder that this very advanced aircraft was not placed in production. It would surely have acquitted itself well!

THEY ALMOST MADE IT

META SOKOL

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Dawn Trading (Dawn Securities Pty Limited) pays tribute to Ian Bannister, who earlier this year announced his semi-retirement from most active forms of competition. Although Ian has all but retired, Champion, the company with whose products he won most of his later races, still continues stronger than ever.

Now available from Champion: The new 5525-5526 Orange Picker motors.

Also available from Champion: the new DZ magnets for small cans. Still as popular as ever, Champion 617 medium can motors and their ingredients, such as the 617-1PB end bell kit, 617 magnets and magnets in case, which are still the top competition weapon in all major endurance races throughout the country.

Note also that no end bell on today's market is unmeltable unless it is bullet-proofed and Champion's 525-517 BPK Bullet Proofing Kit has met with enormous popularity in bullet-proofing Champion, Mura, Dyna Rewind and Certus motors.

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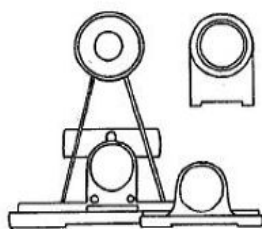
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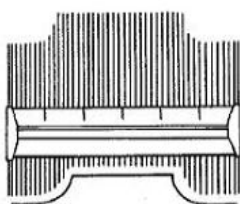
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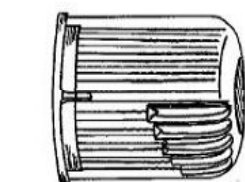


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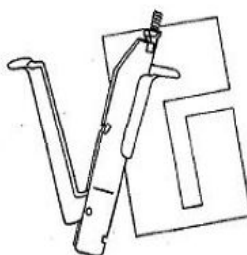
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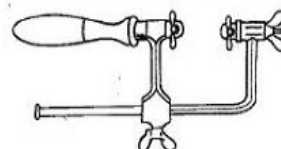
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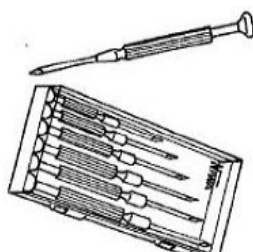
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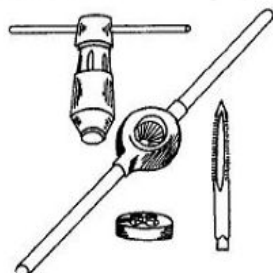
Hand Nibbling Tool — Cuts sheet metal like a punch and die. Ideal for templates, shims, model parts. Cuts holes to any size and shape clearly and with no distortion to the edges or the original form. Capacity, steel 18 gauge (.046) max. 1/16in. aluminium, copper and plastic. Prices: Paulco \$2.75 each, Adel \$5.95 each.



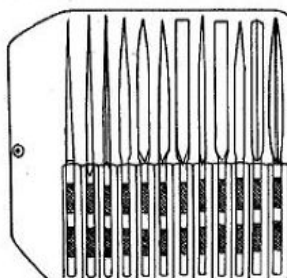
Piercing Saws — Essential for every modeller. These saws have been designed to efficiently cut extremely fine scrollwork or general cutting of steel, gold, silver, brass, copper, aluminium, wood, etc. Fully adjustable for correct tensioning of blade. Prices range from 90c to \$2.32 each. Plenty of spare blades, M4/C to M5, 13c doz.



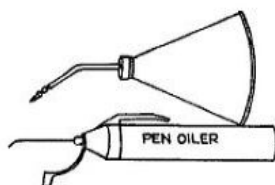
Jewellers' Screwdrivers — Precision ground blades. Knurled handles for non-slip grip. Available in sets of 5 or 6 packed in soft plastic wallets or hard plastic stand with cover. An integral part of any modeller's kit. Spare blades also. Prices from \$1.12 to \$4.60. Single screwdrivers in all sizes from 19c each.



Taps and Dies — Pauls for Sydney's largest range of taps, dies and holders. Threads: BA, brass, metric, SAE, BSF and Whitworth. All types available in taper-intermediate and plug form. Also a complete range of Tee & Bar-type tap holders. 1 and 2in O.D. button die holders.



Needle File Sets — "Paulcall" sets of 12 precision files in assorted shapes, fine and medium cuts — available in 2 lengths, packed in convenient plastic wallet. 14cm (5½ in) \$3.20 set, 16cm (6½ in) \$3.60 set. Single files in all shapes and cuts also available — 14cm 33c each, 16cm 35c each.



Reach-All Pen Oiler — The modeller's oiler designed for those hard-to-get-at lubricating points, fine needle nose regulates on flow. Many small oil cans of all types also.



Tweezers — Select from our large range of precision electronic and industrial tweezers. All shapes, including light hollow point, curved, sharp bent bevel point, locking and many others to choose from. Made from NP steel, stainless steel and non-magnetic steel. Prices range from 63c to \$2.28.



Jewellers' Broach Sets — Favorite, Swiss-made, 12-piece broach sets. These broaches are precision made for accurate reaming and enlarging of all small holes. Designed specifically for the modeller and jeweller. Price \$2.55 a set.



Pliers and Cutters — Miniature precision tools for the exact requirements of the modeller. A complete range of all shapes and types available. Round, flat or bent needle side and end cutters, in straight or diagonal pattern, to name a few. Choose from such famous brands as Lindstrom or Berg, from Sweden, Pastorino from Italy. Price start at \$1.50 and range to \$6.05.

CLASSIFIED

FOR SALE

SILVERTONE 10-reed outfit, together with 5 transmitters and OS connectors. Complete in Tauri with OS 29 power. Ready to fly, \$100 o.n.o. Also Heathkit Digital 5 set with 4 KPS-9 servos, deacs, charger and transformer. Fully wired and in perfect operational condition. This outfit has only had 60 flights and has never been crashed. \$300 o.n.o. One only Kraft KPS-9 servo, hardly used (Kraft plug), only \$30. One Enya 60 radio motor (new, in box), \$45. One latest Taipan 61 radio motor (new, in box), \$30. One latest full set (3-leg) positract retracting gear set with actuating switch (new, in box), \$55. For all these bargains ring Cootamundra 73, or send SAE to G. Manwaring, 14 Parker St, Cootamundra, NSW, 2590.

CHOICE of 2 6-lane slot car tracks. Would suit club or commercial use. Trade built to highest standards, and in sections for easy transport. Excellent condition. Offers to Roy Summersby, 6a Hill St, Woy Woy, NSW, 2256. Phone 41-1280.

AEROFLITE Hustler, equipped with Silvertone 10-channel Super Regen, 3 servos, including motor, rudder and elevator. Powered by Merco 35, all equipment is near new. All you need are new batteries. Dick Cole, 55 Laycock Rd, Penshurst, NSW.

SPECIAL OFFER from Silvertone!!! Brand new Kraft KPS-9 capacitor servos, to clear . . . only \$11 each. Also Medco reed banks to clear, 3K or 40ohm types, 10-channel. ONLY \$12. See our ad in this issue for address and further bargains.

PUBLIC NOTICE

WORLD ENGINES Controlaire Service Centre.—Warranty service available on factory-assembled Controlaire sets and kits. All spare parts in stock. Repairs and service to all radio control equipment. Technical advice gladly given to the kit builder. W. D. Malcolm, 1 Berkley St, Forbes, NSW, 2871. Phone 52-2236.

READER'S

Looking back through the past few issues it seems that we have rather neglected the field of static model cars, and while dwelling upon this omission we received a long letter from Bob Gwynne, of Christchurch, New Zealand, with news of his latest model. Not so much just a model, but almost a work of art!

So impressed were we with Bob's effort that we decided to make it a one-man readers' models feature.

To start off with, Bob wants to become a professional modeller and complains that there is very little opportunity for him to realise this ambition in NZ. Therefore, he wonders if any progressive company in Australia would be interested. They should be if Bob's model of the Lotus 23 is anything to go by! This car was built completely from scratch to a scale of 1/10th, and shows attention to the finest detail. (Of course, Bob's personal friendship with Graham Hill, Piers Courage, Jochen Rindt, Bruce McLaren and the late Jim Clark may have something to do with the careful researching that enables such superb detail to be reproduced.) How-

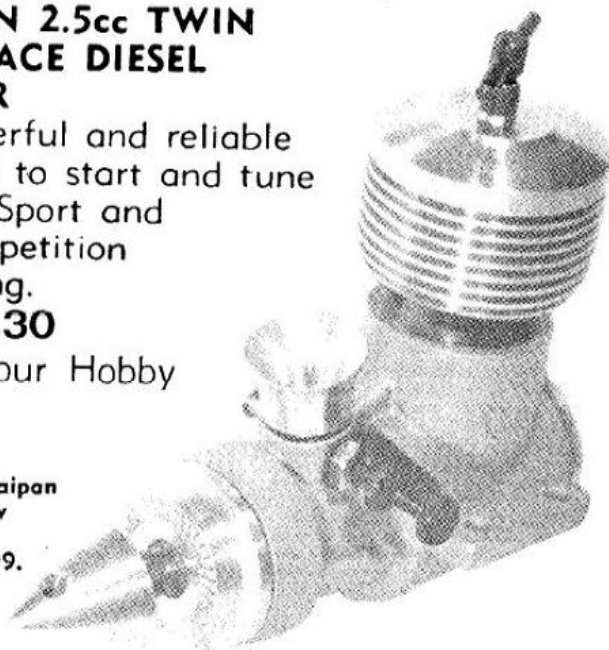


TAIPAN 2.5cc TWIN BALLRACE DIESEL MOTOR

- Powerful and reliable
 - Easy to start and tune
 - For Sport and Competition Flying.
- \$14.30**

from your Hobby Dealer.
and

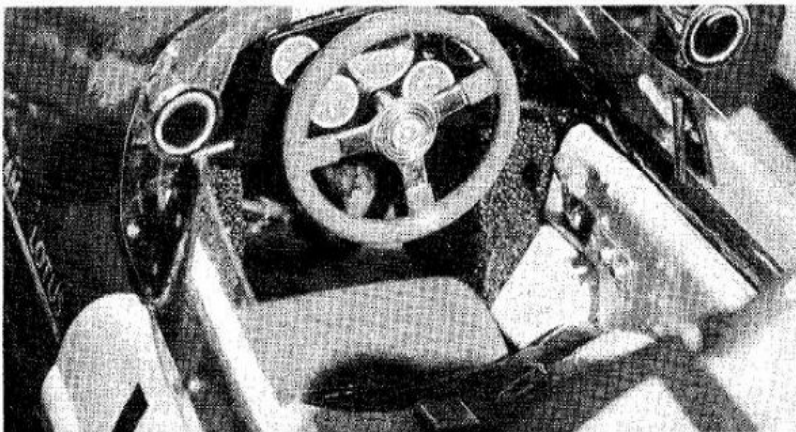
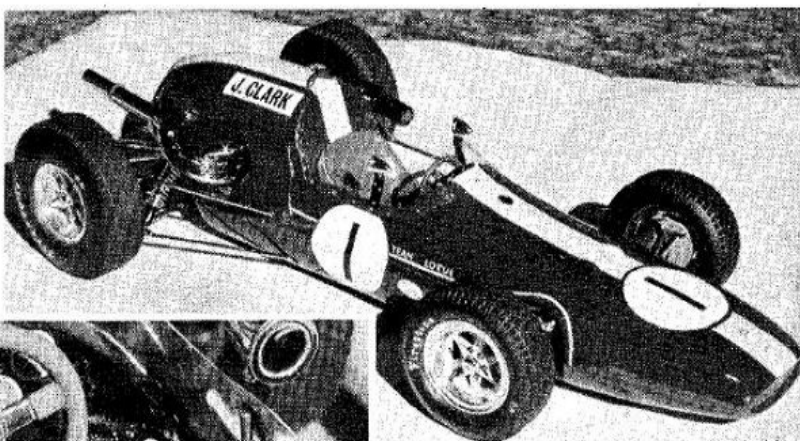
The new Taipan 2.5 Glo now available.
Price \$12.99.



**Manufactured in South Australia by
Gordon Burford & Co. Pty. Ltd.**

MODEL

ever, all the research in the world does not make the actual model, it is the hands of the man himself that form the final masterpiece. Bob, we are contacting GMH and Ford to see if they can help you in any way, but in the meantime, keep at it, and we look forward to seeing your next effort which, we understand, is to be a McLaren Ford M7A F1. Verrrry interesting!



Phone 70-7559

YAGOONA STRAIGHTAWAY'S Slot Car Centre

437 Hume Highway,
Yagoona 2199,
NSW.

220ft Track

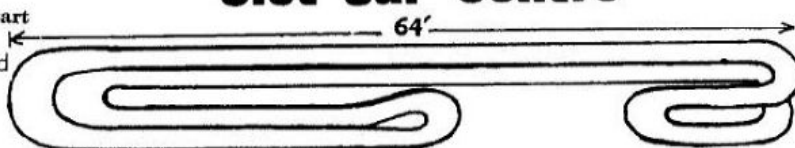
8 LANES

Record power start
9.8 sec.

Battery Powered

3 Pin Round

Earth Brake



Controls

Mon.-Fri.
1-5.30pm 7-10.30pm

Sat.
9.30am-5.30pm 7-11pm

Sun.
10am-5.30pm 7-10pm

Club Night Tues.
8-11pm.

Kits with motors 1/32 scale:

SK Ford GT	\$2.45
Tokyo Plamo Masseratti	2.45
Tokyo Plamo MG	2.45
Tokyo Plamo Cooper Ford	2.45
Marusan Nissan Cedric	2.00
Marusan Renault Caravelle	2.00
Marusan Toyopet Crown	2.00
Monogramme Cooper Ford	4.95
Monogramme Ferrari 330 P/LM	4.95
Monogramme Ferrari 275P	4.95
Monogramme MGA Sports	4.95
Strombecker Porsche RS 61	2.45
Strombecker Lotus Mk XIX	2.45
Strombecker XKE Jaguar	2.45
Cox Cheetah	4.95
AMT McKee	4.95
AMT Chevette	4.95
Revell Cooper Cobra	2.55

Revell Corvette Stingray	2.55
Revell Aston Martin	2.55

Mail orders, please add 40c post and packaging. When ordering, please make second choice.

Kits with motors 1/24 scale

Tamiya Lotus 30	\$2.95
Tamiya Ferrari 330-P2	2.95
Nichamo Ferrari F1	2.45
Nichamo Porsche F1	2.45
Testor Honda F1	4.50
Atlas Ferrari F1	4.50
Revell Stingray	3.00
Revell Ferrari	3.00
Strombecker Lancia Ferrari	3.00
KB Chaparral	4.00
KB Porsche 916	4.00
Cox Ferrari F1	4.50
Cox BRM	4.50

Cox Lotus 40	5.95
Cox Cheetah	5.95
Tokyo Plamo Lotus 23	2.95
Tokyo Plamo Lotus 30	2.95
Tokyo Plamo Ferrari 158	2.95

Chassis Monogramme Russkit F1, Midori Pipe or aluminium Tokyo, Revell Inline fit most motors. Gosen, Simco, SM, S/wind-ers \$0.75 Dynamic Chassis, any type 2.00 MRC Motors, 700 to 711 0.50

Full range of spares. Name it and I will try to get it. All correspondence answered.

NATIONALS PROGRAMME



SUNDAY, DECEMBER 28, 1969

1. Move in.
2. Processing. Facilities available in local Progress Hall in Oaks Road at Greendale, from noon to 8 pm.
3. Briefing for all three categories, 8 pm.

MONDAY, DECEMBER 29, 1969

- 5 am to 10 am—
1. Wakefield.
 2. Coup D'Hiver.
 3. Junior Rubber (Bill Payne Trophy).
 4. First rounds must be completed by 6 am, second and third rounds by 8 am. No other round times shall apply, i.e. there are no restrictions on the number of extra flights per round—you may finish at 6 am if you can. **These round conditions shall apply to all free flight events** (except where noted).
 5. Free Flight Scale.
 6. Magazine models eligible Hand launch at discretion of contest director. No round times. The contest director has the discretionary right to postpone the event if conditions are adverse.
- 9 am—
7. Class III Radio (novice event).
 8. Definition: A novice is any contestant who has not placed first, second, or third in a Class III

radio event at a Nationals since, but not including, 1964, nor represented Australia in any international Class III radio contest.

- 10 am—
9. Control line speed (F.A.I.).
 10. Control line stunt (F.A.I.), first round.
 11. Finneran proto speed.
 12. Limitations on Serial 11: 2 lines, 2 wheels plus tail wheel or skid. Max motor displacement 5cc (.29 cubic inches). Minimum wing area 125 square inches. Main undercarriage 2 leg, 2 wheel. Lines: Length 60ft, minimum diameter .014in. Model must have fin, pilot, canopy or cockpit, and be colorfully painted. The accent is on an attractive model racer, not an over area speed model.
- Fuel: Standard F.A.I.
- The prize for this event is a new racing motor, a very desirable piece of equipment.
13. All Control Line flying ceases at 6 pm each day.

TUESDAY, DECEMBER 30, 1969

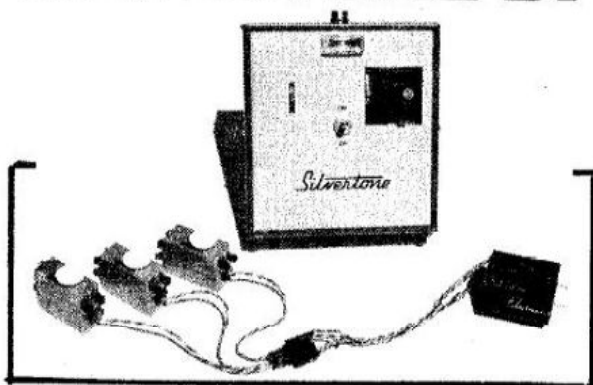
- 10 am—
1. Control line stunt (second round)).
 2. Class B speed.
 3. Class C speed.
 4. Control line scale (Magazine models eligible).
- 8 pm—
5. Night scramble (batteries and globes supplied).

WEDNESDAY, DECEMBER 31, 1969

- 5 am to 10 am—
1. Free flight A/2 sailplane.
 2. Free flight A/1 sailplane.

CONTINUED PAGE 42

SILVERTONE DP-3



SILVERTONE DP-3

This Silvertone 3-channel digital system is an expandable system designed primarily for beginners and boat enthusiasts. The system may be expanded to 5 channels when required, and the small size and low weight of the airborne system makes this the most versatile digital system available.

Address:

SILVERTONE ELECTRONICS,
727 Princes Highway, TEMPE.
Telephone 55-2101.

3 CHANNEL DIGITAL PROPORTIONAL SYSTEM

- HIGH POWER TX (1 WATT)
- SMALL SIZE (RX 2 1/2 in x 1 1/2 in x 1 7/16 in)
- OUT OF SIGHT RANGE
- GLITCH FREE PERFORMANCE
- SERVO THRUST 4lb
- AVAILABLE ON BANDS 1-6 (ABSOLUTELY NO INTERFERENCE)
- DIGITAL 2, 3 OR 5 CHANNEL SYSTEMS AVAILABLE
- (2 & 3 CHANNEL SYSTEMS MAY BE EXPANDED TO 5 CHANNEL)

Complete 3-channel system, ready wired, including TX, RX, 3 servos, nicads and battery charger, \$399.

Complete 5 Channel system, ready wired including TX, RX, 4 servos, nicads and battery charger, \$490.
Bonner Control Stick Kits, \$32.50 pair.
Orbit PS-4 Servo (Mechanics Only), \$18.50.
Orbit PS-3 Servo (Mechanics Only), \$18.50.
Special Kraft KPS-9 Servo (Mechanics Only), to clear, \$11.50 each.

MAIL ORDER FREE CATALOGUE

WORLD MODEL ROCKET CHAMPIONSHIPS

On November 23, 1968, the International Aeromodeling Committee (CIAM) of the Federation of Aeronautique Internationale, meeting in Paris, approved the bid by Yugoslavia for hosting the first world championships in model rocketry, to be held at Vrsac, in 1970. Exact dates have not yet been established. Authorised for the meet are competition events in the categories of flight duration with a parachute, flight duration with a rocket glider (boost/glider) and scale models.

The world championships will be held under the international model rocketry rules of the FAI Sporting Code. Each nation that has FAI affiliated model rocketry organisations will be invited to send at least one team, made up of three model rocketeers and a team manager.

Model rocketry organisations throughout the world are affiliated with the Federation of Aeronautique Internationale for certification of all model rocketry records. The NAR in Australia has yet to become affiliated with the FAI, and needless to say, Australia will not be represented at the world meet. FAI affiliation will be coming shortly for the NAR, along with its steady growth.

MODEL ROCKETRY "DOWN UNDER"

This was the title of a middle-page photographic spread the NAR received in the June, 1969, edition of "MODEL ROCKETRY MAG-AZINE". This journal of miniature astronautics is a monthly publication now available on Australian book stands and leading hobby stores. Cost per issue is approximately 75c. The NAR is hoping to offer subscriptions at reduced rates to members only, after current negotiations are finalised.

MODEL SPACECRAFT CONSTRUCTION

A booklet has been prepared for use in high school industrial arts and aerospace courses. It consists of 12 sets of construction plans for scale display models of satellites and launch vehicles. Since the scale data was taken from NASA data, these plans can be used as scale

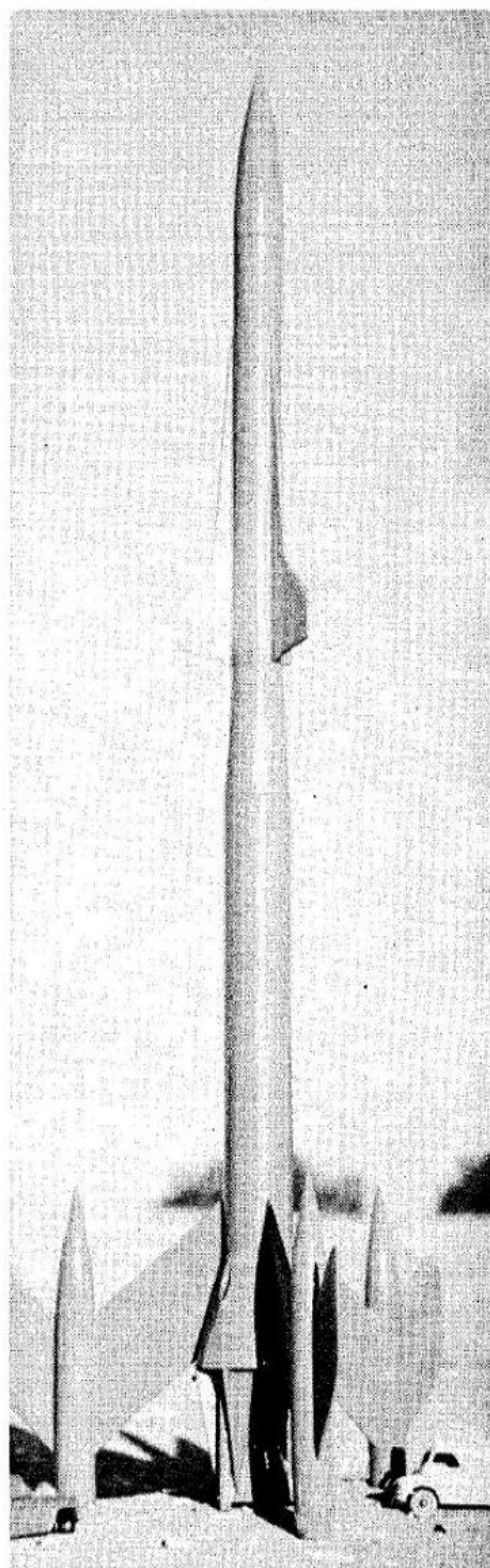
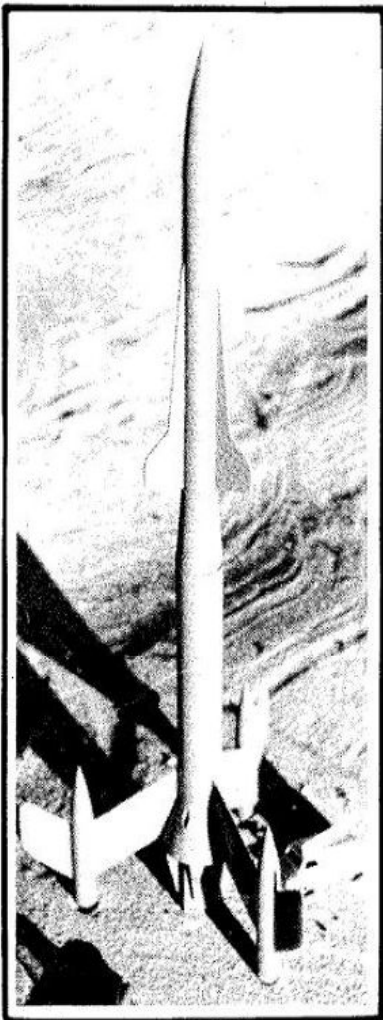
COUNTDOWN

OUR COLUMN ON MODEL ROCKETS

substantiation data for NAR competitions.

Those of particular interest to model rocketeers are the Saturn V, Titan II and X-15 plans. These contain sufficient detail to allow construction with materials now available, and would require no further material research.

This booklet, a valuable addition to the bookshelf of any rocketeer, is available for \$1 from the Superintendent of Documents, US Government Printing Office, Washington, DC, 20402. Order by document number 0-741-996. International money order will be accepted as payment, in US currency.



NATIONALS cont.

3. Free flight junior A/1 sailplane.
- 9 am—
4. Radio control scale.
- 10 am—
5. Control line 1/2 A team race.
6. Control line F.A.I. team race.
- 8 pm—
7. New Year's Eve dance, Hotel Wallacia.

THURSDAY, JANUARY 1, 1970

- 5 am to 10 am—
1. Free flight F.A.I. power.
2. Free flight open power.
- 10 am—
3. Control line stunt (third round).
4. Class B team race.
5. Advertiser Trophy.
6. Junior 2½cc rat race.
7. Open 2½cc rat race.
- 7.30 pm—
8. Motorised scavenger hunt, with Mr Brian McQuillan.

FRIDAY, JANUARY 2, 1970

- 10 am—
1. Control line F.A.I. combat.
2. Control line junior F.A.I. combat.
- 9 am—
3. Radio control Class III.
- 8 pm—
4. Auction. Bring those old motors and old magazines.

SATURDAY, JANUARY 3, 1970

- 5 am to 10 am—
1. Free flight hand launched glider.
2. Old Timers' event: Models published before January 1950. Minimum motor displacement 5cc (.29 cubic inches) R.O.G. Six attempts to make one flight. First prize: "Bunch Mighty Midget".
- 9 am—
3. Radio control pylon race.
- 10 am—
4. Control line open combat.
- 4 pm—
5. Free flight power scramble. Maximum motor displacement .099.
- 7.30 pm—
6. Presentation dinner. Cost yet to be decided.

CAMPING (tent or caravan):

1. The Manager, Blaxland Crossing Camping and Caravan Reserve, Wallacia, NSW 2750.
2. Fee \$5.00.

HOTEL ACCOMMODATION:

1. The Manager, Hotel Wallacia, Wallacia, NSW 2750.
2. Fee \$4.00 bed and breakfast.

It is important to note that when writing to either of these people, both the envelope you use, and the paper inside the envelope should be clearly endorsed "Model Aircraft Championships", and also be sure to state that you are in fact an Aeromodeller in the text of the your letter, as first preference with all bookings will be given to modellers. Once again let me stress two words—BOOK NOW.

GREENACRE HOBBY STORE

The Radio-Control Specialists

SINGLE CHANNEL FLYERS AND BOATERS

Do you know that we cater especially for the beginner with a large range of radio-control transmitters, receivers, escapements, servos and accessories?

FUTABA TX, RX escapement wired with battery, box and switch	\$45.00
FUTABA TX	19.95
FUTABA RX	19.95
OS TX	27.65
OS RX	17.60
OS TX	61.20
Silvertone TX	44.50
Superhet RX	41.95
FUTABA TX, with left, right switch and motor button	57.50
Switching servos for tanks, etc	9.60
Single-channel stick-control transmitter, receiver, three servos, battery box, harness, etc. Gives selective left, right, up, down and engine control	178.00
Imported control box and servo for your existing TX and RX. Gives left, right, up, down, ONLY	36.25

FIVE-CHANNEL Mk PROPO, \$475

OS digital proportional 3-control with servos, nicads, etc, ONLY \$299.

We also stock a large range of imported engines, planes and boat kits, including some ready-built planes and boats.

Package deal — radio-control aircraft kit — radio, engine, etc, \$56.

EXTRA SPECIAL: Ready-to-run BOAT WITH FITTED MOTOR and RADIO GEAR... ONLY \$48. Tri-ang, Lima, Sekisui TRAINS also available.

LAY-BY, HIRE PURCHASE, TRADE-INS available on most major equipment. TRY OUR MAIL-ORDER SYSTEM... P.O. BOX 107, GREENACRE, NSW, 2190.

Send for free price list listing some of our range or call on the RADIO-CONTROL SPECIALISTS, at

GREENACRE HOBBY STORE,

10 Rosedale Avenue,

GREENACRE, NSW, 2190.

(See Gregory's Directory, Map 54, J3.)

KOOKABURRA does it again!

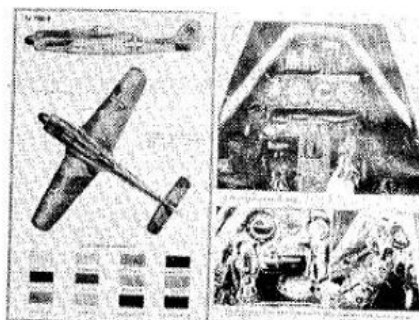
Two superb new aircraft books, IN COLOR.

Written especially for modellers. The last word in accuracy.



1. Focke-Wolfe Fw 190 & Ta 152 Described Part 2

Anthony Shennan and Geoffrey Pentland



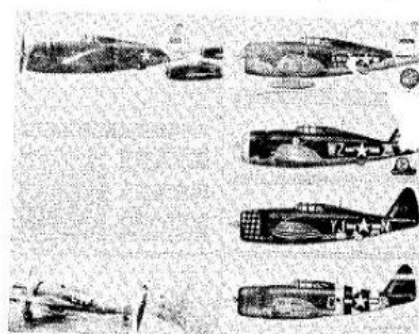
- ☆ Many unusual photographs.
- ☆ 4 pages of line drawings of the Fw 190 D-9 and Ta 152 — the most accurate ever published.
- ☆ History and development story.
- ☆ Cutaway showing structural detail.
- ☆ Eight pages of rare camouflage and markings, drawings and information. Superb reference material.
- ☆ Six whole pages in color!

Only \$1.25

2. P-47 Thunderbolt Described Part 1

Geoff Duval

- ☆ 60 extremely rare photographs, nearly half of aces' aircraft!
- ☆ Full coverage of all "razorback" versions (Part 2 will describe bubble-canopy models).
- ☆ Superbly accurate line drawings showing all variants.
- ☆ Five pages of color drawings and photographs.
- ☆ Cutaway showing structural detail.



Only \$1.25

TRADE ENQUIRIES WELCOME

ORDER FORM

OTHER TITLES AVAILABLE

Fw 190 and Ta 152 Part 2
Thunderbolt Part 1
Boomerang
Lightning
Whirlwind
Markings of the Aces, 8th
USAAF
Markings of the Aces, US Navy

Wirraway and Boomerang Markings
Sopwith Snipe (WW-I)
Albatros Scouts (WW-I)
War planes of the RAAF
Messerschmitt Me 262 Part 1
Messerschmitt Me 262 Part 2
Fw 190 Part 1 (revised color edition)

All \$1.25, incl. postage.

P.S. Fw 190 Part 1 reprint IN COLOR available now.

To the Publishers:
Kookaburra Technical Publications,
81 Potter St, Dandenong,
3175, Vic.
Please send me by return post
the books I have ticked.

Name

Address

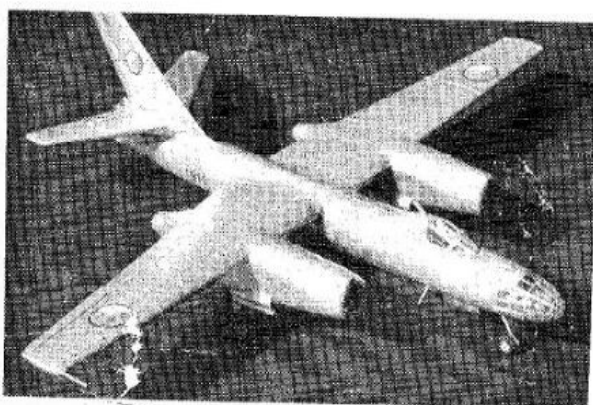
Amount enclosed \$

KOOKABURRA SETS THE STANDARD!

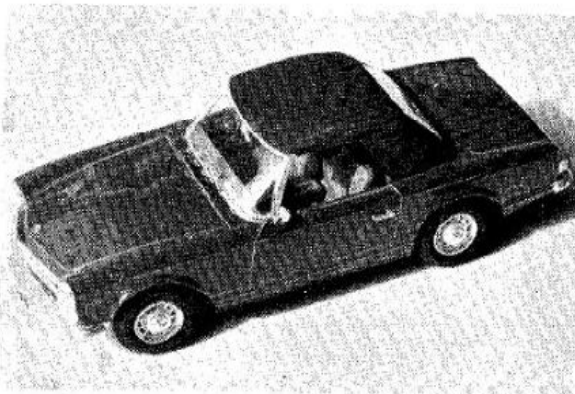
NEWS FROM **AIRFIX**

THE WORLD'S GREATEST VALUE IN CONSTRUCTION KITS

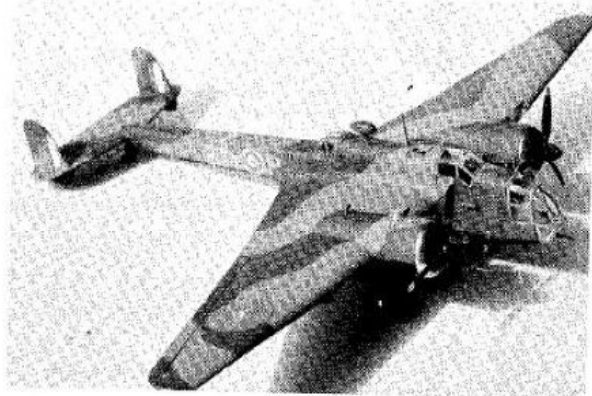
- ★ WARSHIPS & LINERS
- ★ AIRCRAFT
- ★ HISTORICAL SHIPS
- ★ ARMoured VEHICLES
- ★ HISTORICAL FIGURES



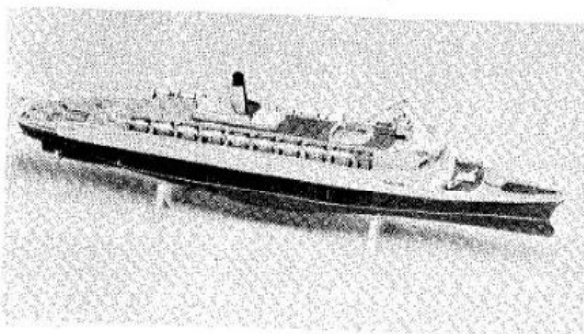
Aircraft Series 4, 1/72 Scale. ILLYUSHIN IL 28.
One of the earlier Russian jet bombers, this aircraft is still in front line service with many of the Eastern Bloc air forces. Included in the kit are decals for Russian, Chinese, Czech and Polish markings. Kit No. 490. **Price only \$2.00.**



Modern Car Series 2, 1/32 Scale. MERCEDES 280.
A sleek model of one of the world's most luxurious sports cars. All the usual Airfix features are included, plus the option of either hard or soft tops. Can be converted for slotting. Kit No. 208C. **Price only 98c.**



Aircraft Series 4, 1/72 Scale. HANDLEY PAGE HAMPDEN. Used throughout World War II by the RAF, the Hampden took part in most of the earlier raids on Germany. However, it was gradually replaced with the larger four-engined aircraft and continued to serve in the role of mine laying and torpedo dropping. Kit No. 491. **Price only \$2.00.**



Famous Ships Series 2, 1/600 Scale. QUEEN ELIZABETH 2. The latest Cunard liner and the world's most modern luxury liner. The QE-2 was launched at Clydebank in September 1967. This fine kit contains almost 150 pieces and builds up into a 19in super model. Kit No. F603S. **Price only \$3.45.**