VOL. XLVIII. No. 14 FEBRUARY 1964

MECCANO MAGAZINE

1/3

You'll have most fun with MECCANO

Your Hobby for a Lifetime

Meccano is better than ever. Main Outfits now contain a completely new-style Book of Models. In these Books, the construction of the fascinating new models is shown by means of pictures and "exploded" drawings. The result is that it is much easier and much more fun building by this new method—rather like a real engineer working from his "blueprints"!

Some interesting new Parts have been added to the Meccano System, too.
Look for the Outfits in distinctive Green, White and Red striped wrappers.

Outfits from **13/3**

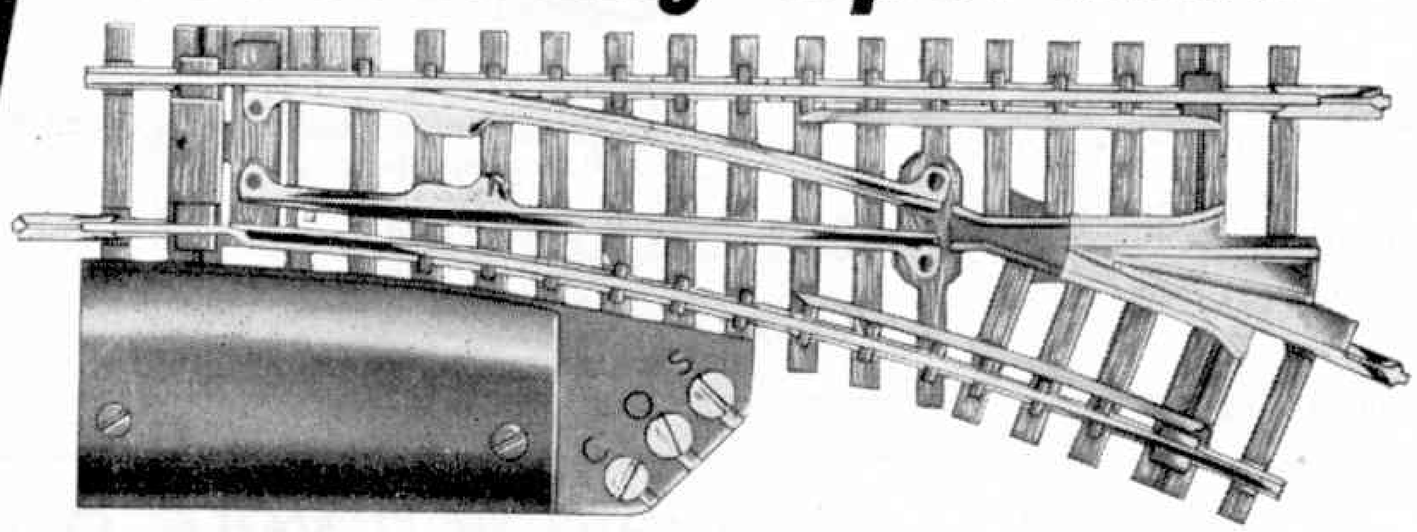
MECCANO

MADE BY MECCANO LIMITED, LIVERPOOL

HORNBY DUBLO

Simple Simpler Simplec POINTS

Electrically Operated



2752/3 R.H./L.H. Electrically-Operated "Simplec" Points

As the name implies there are no complicated procedures to follow when Points are added to a layout—making the use of 1963 Hornby-Dublo child's play in its simplest form.

2752 R.H. "Simplec" Electrically-Operated Point.
U.K. Price 15/– each

2753 L.H. "Simplec" Electrically-Operated Point.
U.K. Price 15/– each

Available at
Gamages, Hamleys, Harrods, Selfridges, and all good toy shops everywhere.

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2750/1 R.H./L.H. Hornby-Dublo (00 Gauge) "Simplec" Hand-Operated Points

The new "Simplec" Hand-Operated Points are available in Right-Hand and Left-Hand form. Since these points are self-isolating, there is no need for the inclusion of Double Isolating Rails in any track circuit to which they are added.

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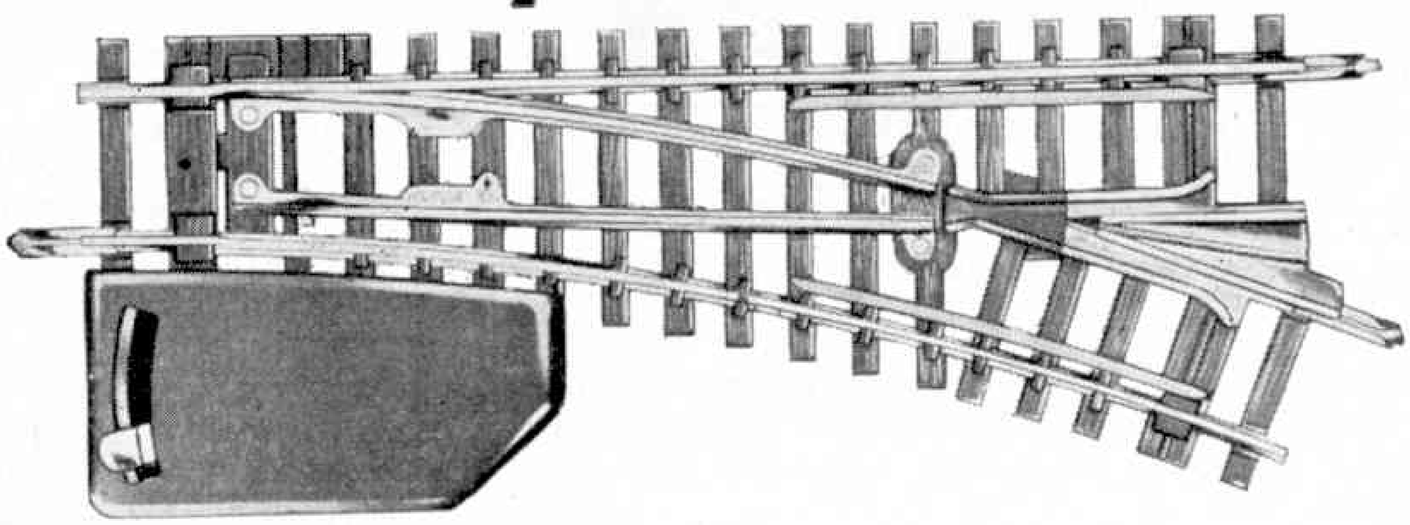
U.K. Price 7/9 each

No. 2751 L.H. "Simplec" Hand-Operated Point.
U.K. Price 7/9 each



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10.30 a.m. to 9 p.m. daily.

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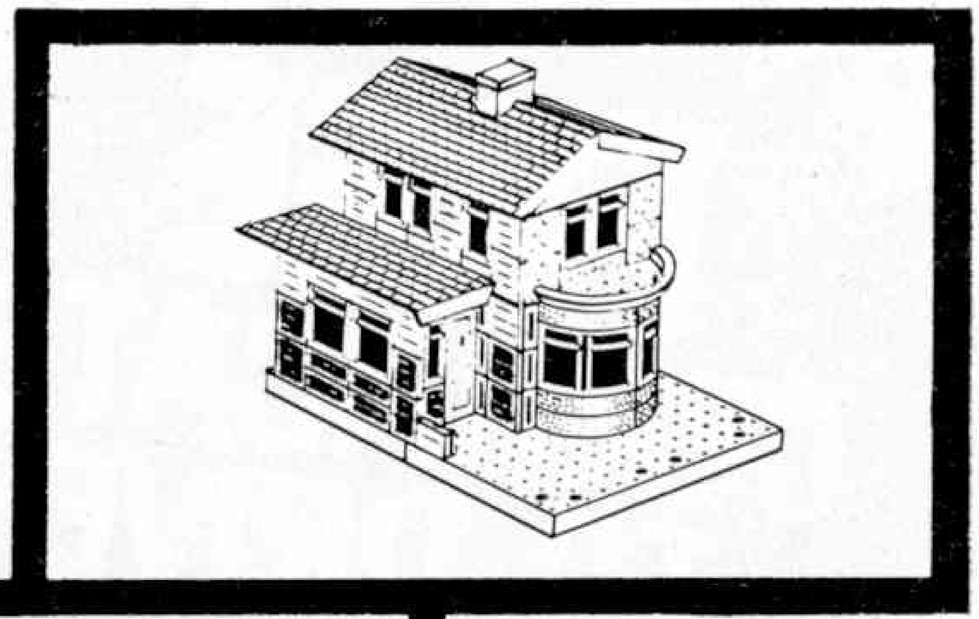
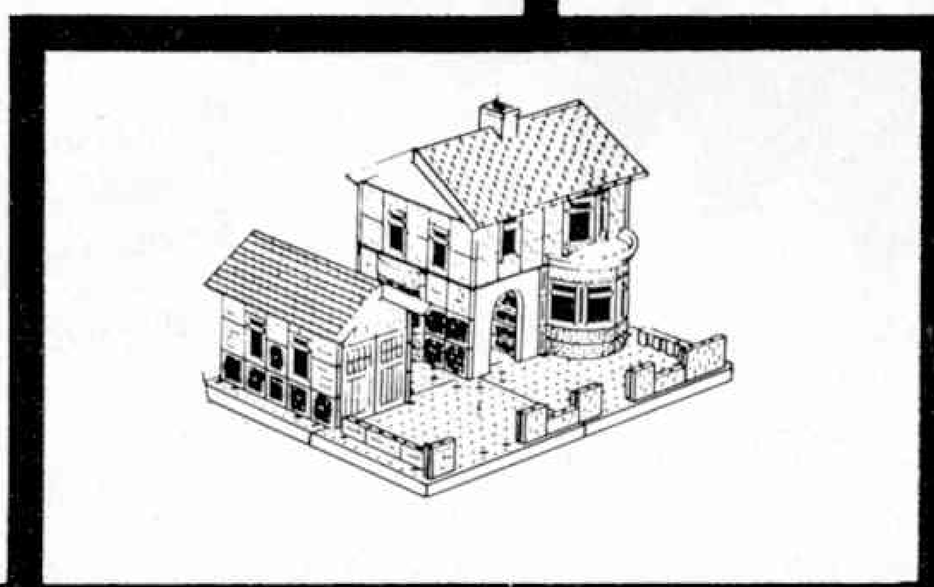
Right from the foundation

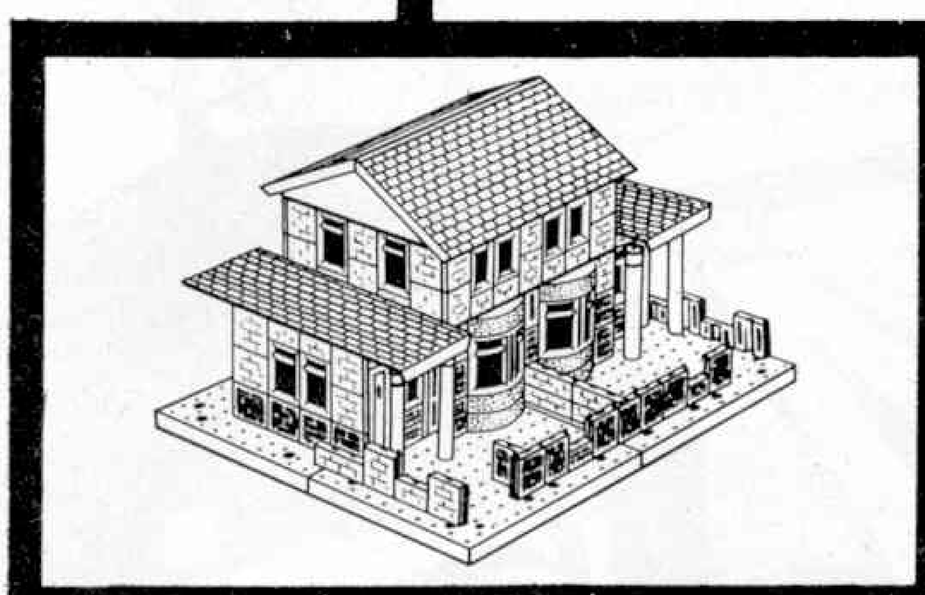


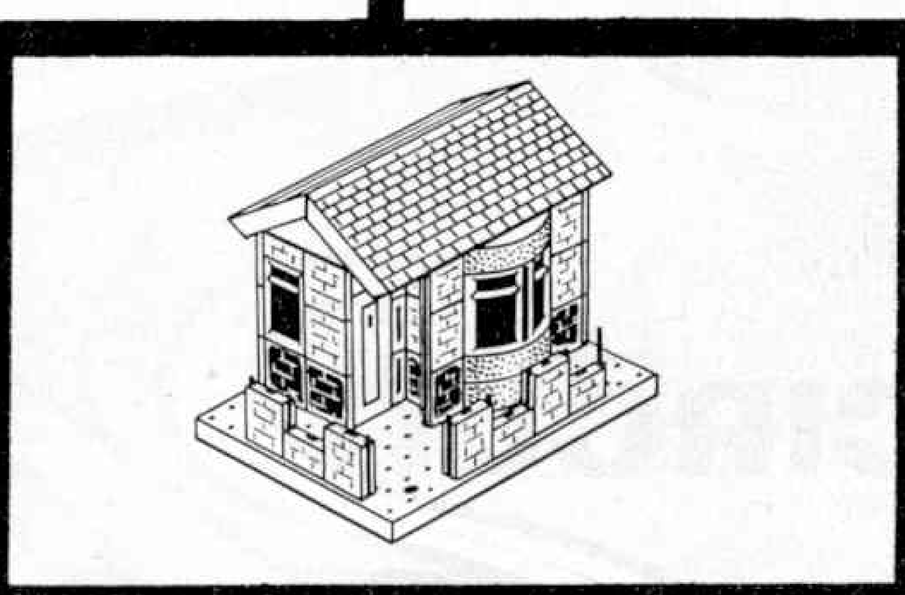
BAYKO BUILDS BEST



U.K. PRICES OF MAIN OUTFITS

	£	s.	d.
No. 11		11	3
No. 12		19	9
No. 13	1	8	3
No. 14	2	4	6
No. 15	3	15	0





BAYKO

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Available at : Gamages, Hamleys, Harrods, Selfridges and all good toy shops everywhere

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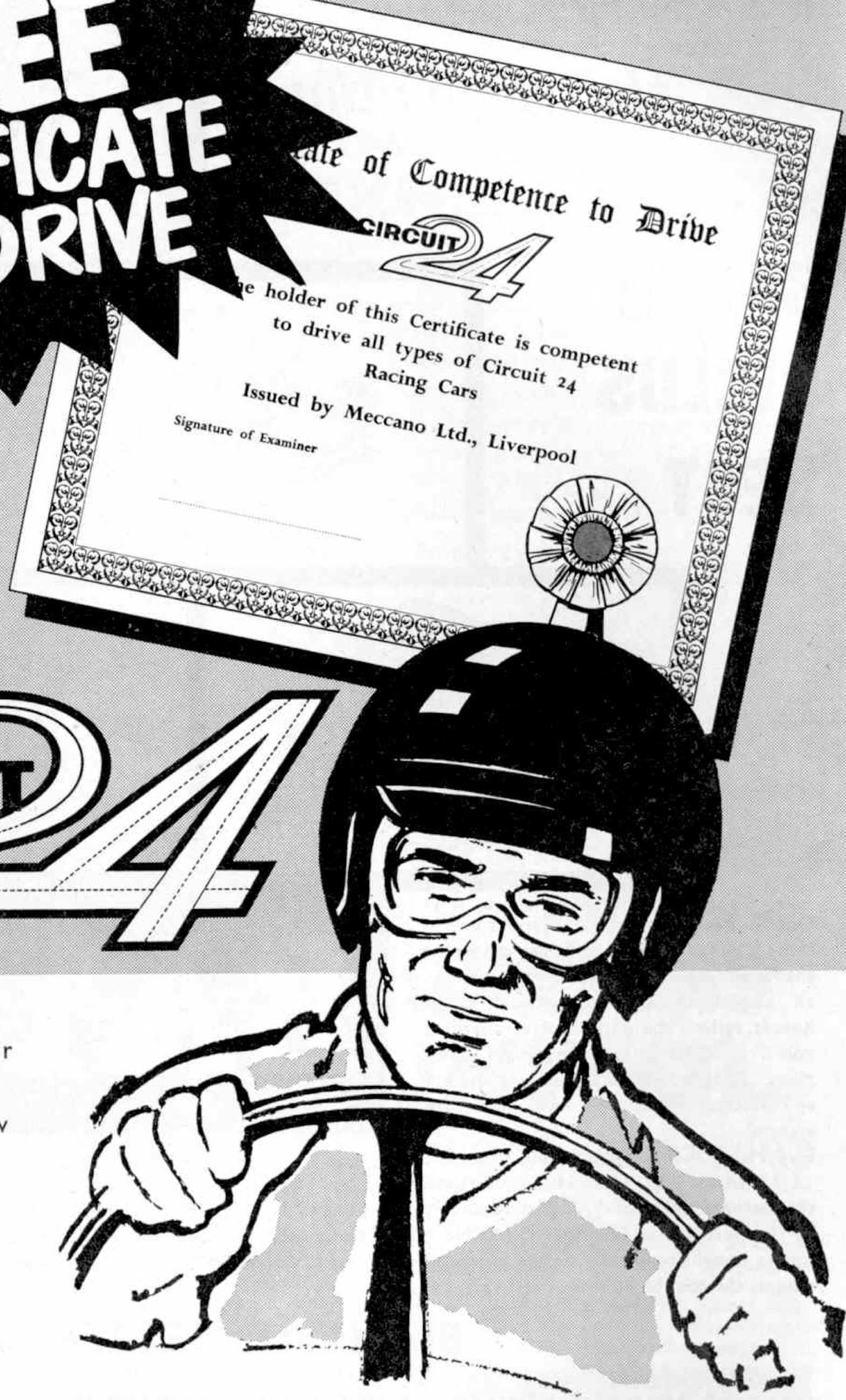

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Control the speeding cars on an actual layout—and win yourself a Circuit 24 Driving Certificate.

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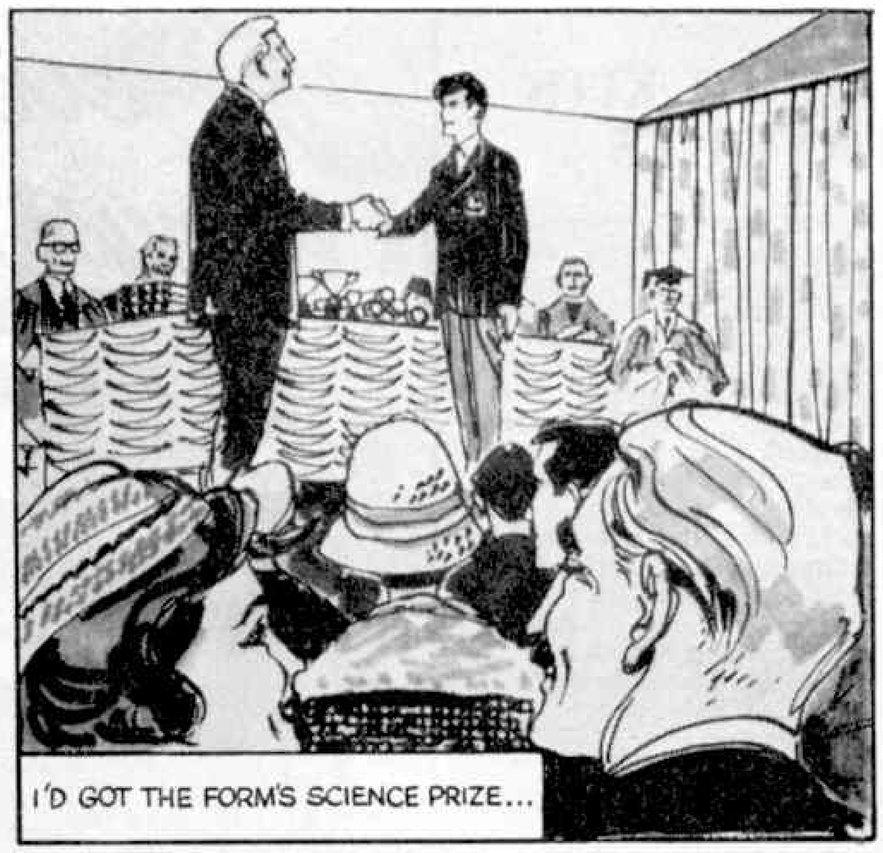
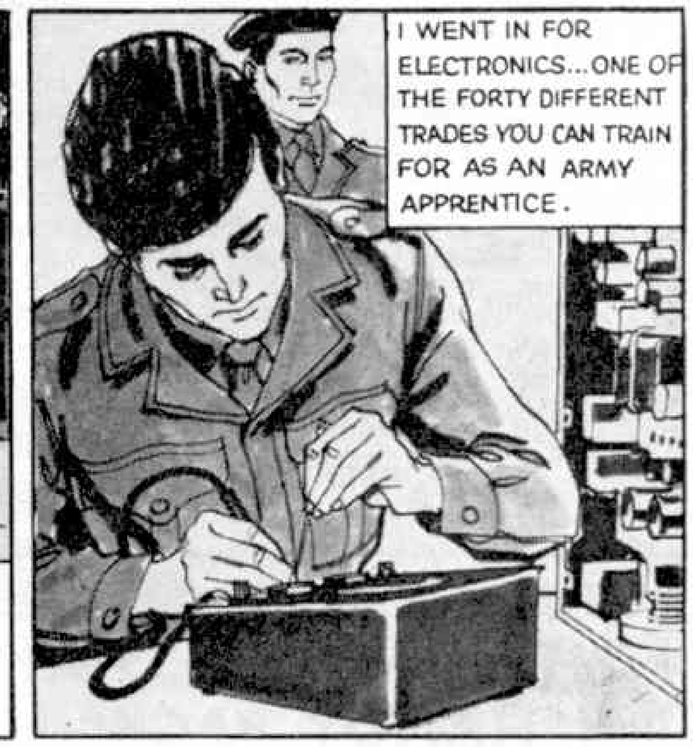
Finished with school... *now what?*





That trade I learned as an Army Apprentice brought me extra pay—*and* it's recognised by the trade unions in civilian life. If *you're* between 14½ and 16½, you could join the Army Apprentices, too. Why not check up on it?

TO: THE WAR OFFICE, (MP6), LONDON S.W.1.

Please send me full details of Army Apprentices without obligation.

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QP/27/C

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ML.4. Marigold Cottage—Red and white Farm Cottage with flowers and outhouse. **6/3d.**

ML.5. Dove Cottage—Slate roof, with red and white detail, guttering and down-pipe. **4/9d.**

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ML.12. Bermuda Bungalow—With front porch, paved entrance, flower box and dove cote, etc. **8/11d.**

ML.13. Kent Bungalow—Picture windows, timber facing and yellow door. **6/6d.**

ML.14. Post Office—Combined with Greengrocer's shop, which is complete with fruit and vegetables. **7/11d.**

ML.15. Tea Shoppe—With leaded bay window, flower box, outhouse, picket gate, bench seats and shoppe sign. **6/11d.**

ML.16. Villa Capri—Charming Continental-style villa, with sun-deck over garage, dormer windows, brick wall, flowers and picket gate. **7/6d.**

ML.17. Village Church—With stained glass windows, etc. Tower has clockwork musical chimes. **24/-**

ML.18. Heathview — Detached two-storey house, balcony and garage with sliding door. **8/6d.**

ML.19. Parkview—Charming detached two-storey house, yellow windows, pot plants and carport. **8/6d.**

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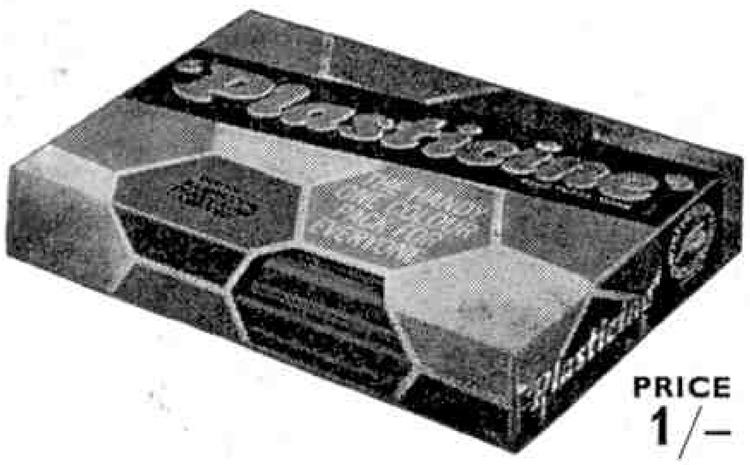

PRICE 1/-

This colourful handy sized pack contains a generous supply of "Plasticine" the world-famous modelling material, with the colour shown through a specially designed cut-out, ensuring easy colour recognition.

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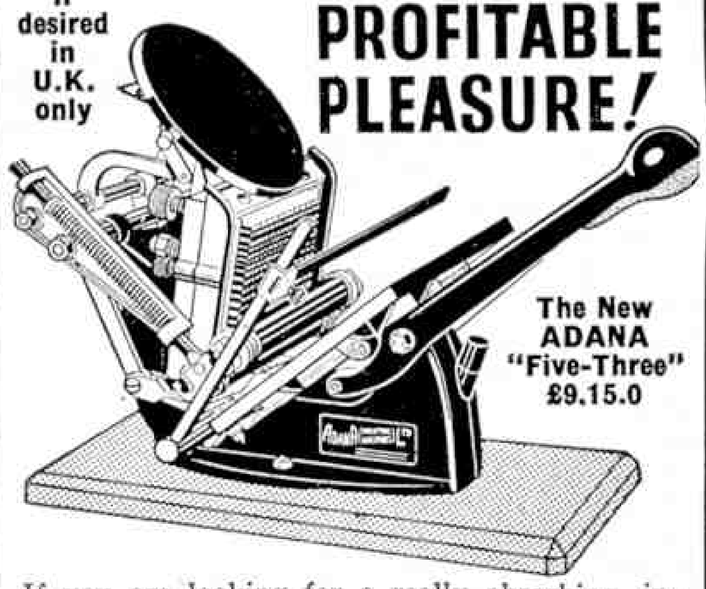

The New ADANA "Five-Three" £9.15.0

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Add sidings, where you can shunt your train, lay loop lines as alternative routes, or arrange double track so that trains can travel correctly in either direction. Track Packs contain extra rails and Simplec Points to add to the track supplied with Hornby-Dublo Train Sets. They provide an easy way to track extensions and more interesting layouts.

Simplec Points, with their built-in isolation feature, readily make possible layout extensions without complicated wiring.

TRACK PACK No. 1	**45/-**
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TRACK PACK No. 3	**68/6**

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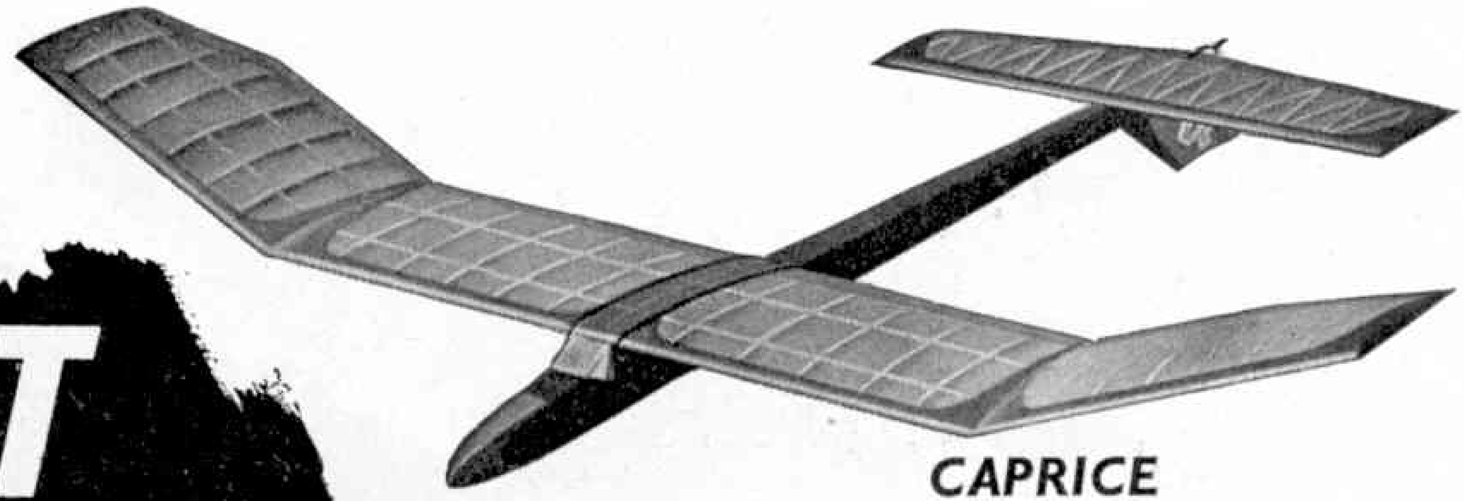
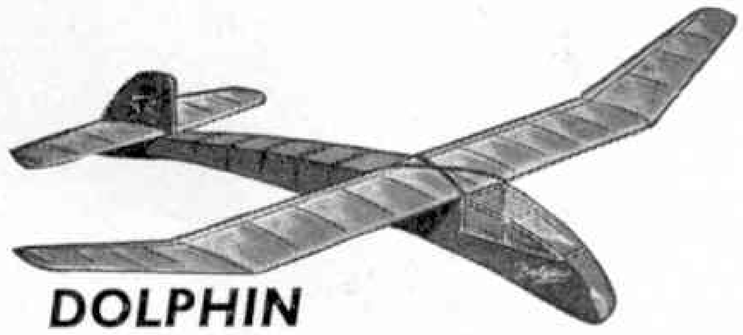


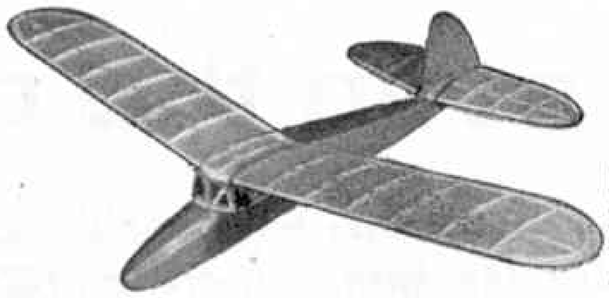
CAPRICE

The beautifully clean-cut lines of this 51-inch span contest sailplane will appeal to all glider enthusiasts. The kit contains ample highest quality materials, including die-cut parts for easy building. 17/11



DOLPHIN

Easy-to-build towline glider with performance to please even the most critical. 30 in. span. 6/8

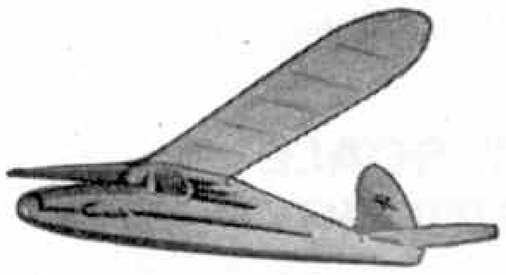


CADET

Ideal beginner's model. Simple, strong construction, and very easy to trim. 30 in. span. 6/8

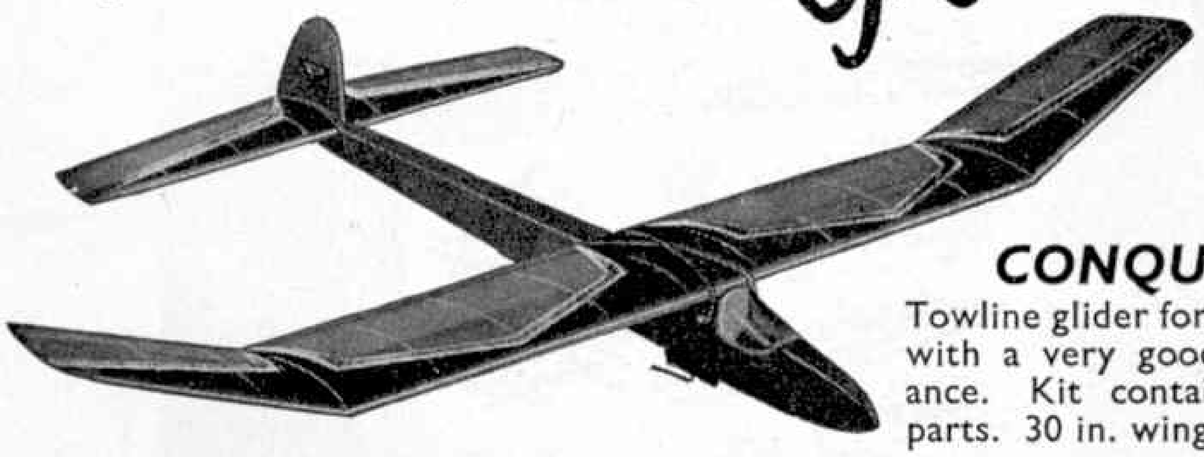
A KEILKRAFT GLIDER

Graceful as a Gull!



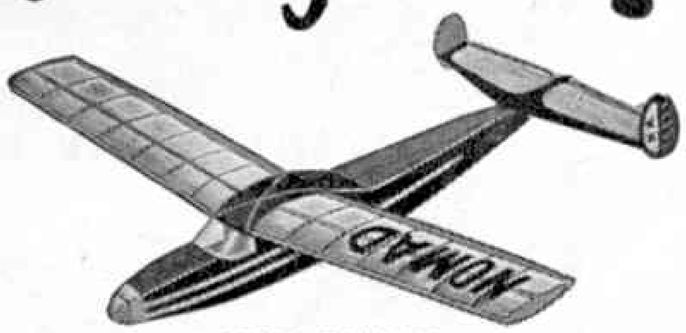
CUB

Snappy little beginner's model that flies very well indeed. Neat design that is simple to build. 24 in. span. 4/3



CONQUEST

Towline glider for the novice with a very good performance. Kit contains die-cut parts. 30 in. wingspan. 9/–



NOMAD

20 in. span prefabricated model with all fuselage parts, tailplaine and fins pre-cut and coloured. 5/6

KEILKRAFT

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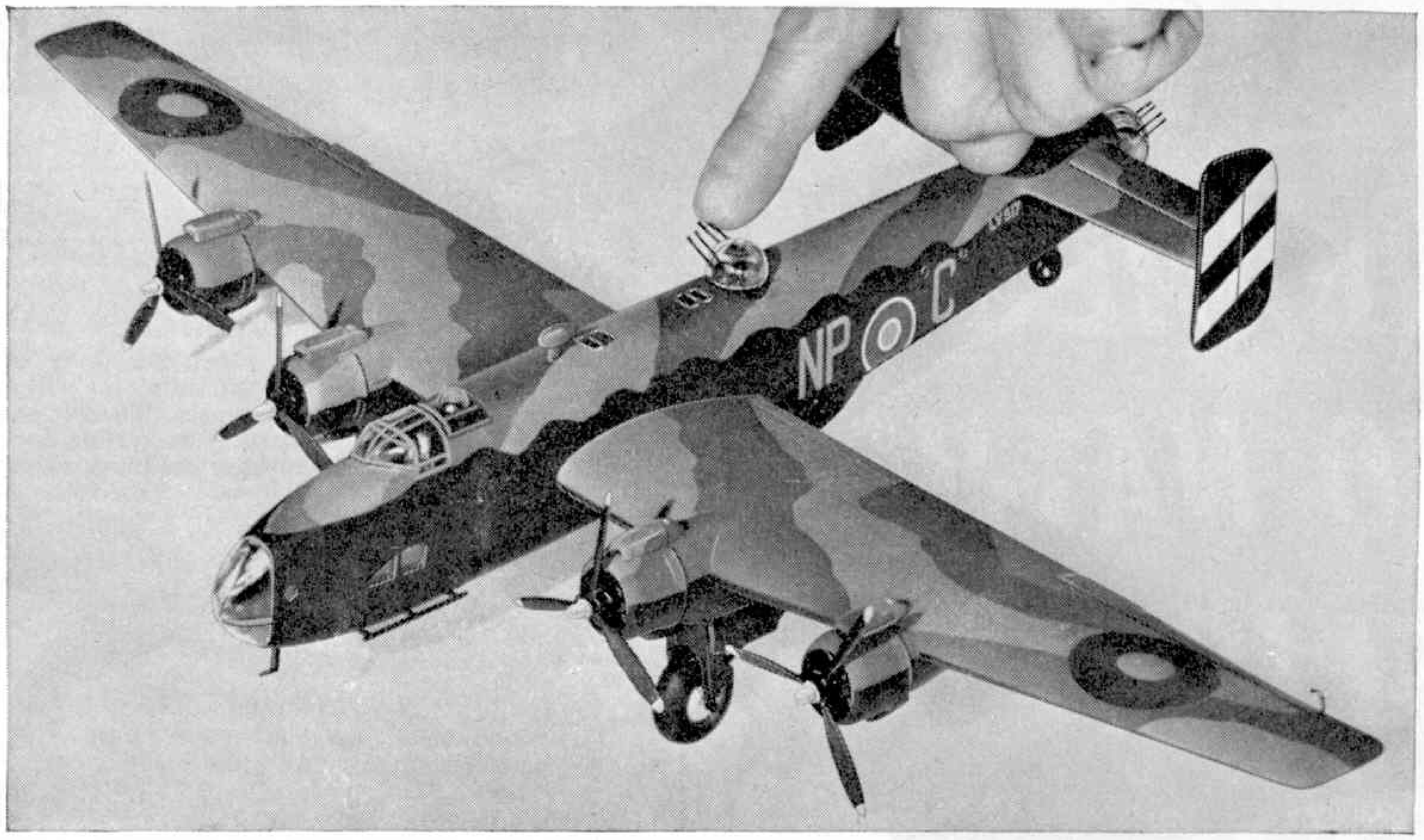
SEE THEM AT YOUR NEAREST MODEL SHOP



. . . even the guns elevate !

This Airfix 1/72nd scale Halifax bomber is loaded with realistic detail. 16¾″ span, fully crewed, 122-part kit 7/6. It's typical of the realism you get with Airfix models. They're just like the real thing! More than that, though, Airfix give you constant scale, so that the models of every series are proportionately right; and a great ever-increasing range—there are 13 series now, with over 200 kits. At prices from 2/- to 17/6. Airfix are great on value too.
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CONSTANT SCALE CONSTRUCTION KITS

From model and hobby shops, toy shops, and F. W. Woolworth

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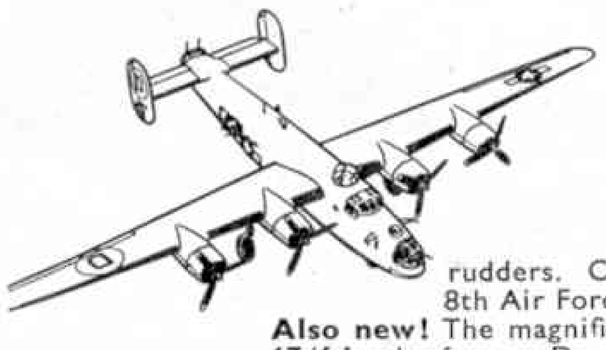

LIBERATOR B24J

A 124 part kit making a superbly detailed 1/72nd scale model which has retractable undercarriage, ball turrets, moving wheels, guns, ailerons, elevators and rudders. Complete with U.S.A. 8th Air Force markings. **7/6d.**

Also new! The magnificent Royal Sovereign **17/6d.**, the famous Douglas Boston III **4/6d.**, and the Saddle Tank Locomotive **3/–.**

A.162

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32 pages of models, facts and kit details from your dealer - only 9d

February 1964

MECCANO MAGAZINE

Volume XLVIII No. 14

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The story of the first sea ferry to operate in New Zealand.

Soccer Skills 580
Jimmy Armfield, England International full-back, tells young players how to improve their game.

Eskimos of Canada 581
Michael Lorant describes how, over thousands of miles of Arctic territory, the life of the primitive Eskimo is being transformed.

Trackside News 584
A study in diesels: Eastern Region's new dive-under: Doncaster change-over: News from London Transport: Chesterfield Station plan.

Boatyard in the Midlands 590
How the time-honoured craft of boat-building is practised in the heart of industrial Britain.

A Giant Meccano Roundabout 600
"Spanner" shows how to build a fascinating model.

The Ortogo Railway 608
A two-level layout that really is different.

For Stamp Enthusiasts 611
A philatelic glance at Nyasaland: South African watermarks.

MONTHLY

Editor:
GEOFFREY BYROM

Assistant Editor:
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Editorial Offices:
LIVERPOOL 13, England
Telegrams: Meccano, Liverpool 13

Publishing and Advertisement Offices:
THOMAS SKINNER & CO. (Publishers) Ltd.
ST. ALPHAGE HOUSE, FORE ST., LONDON E.C.2

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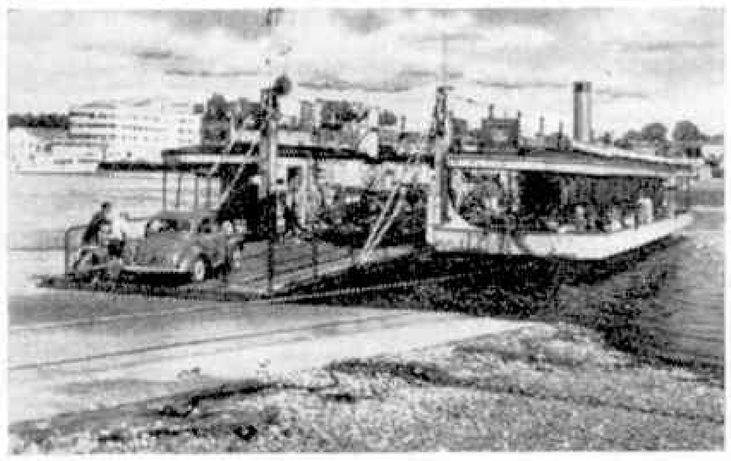
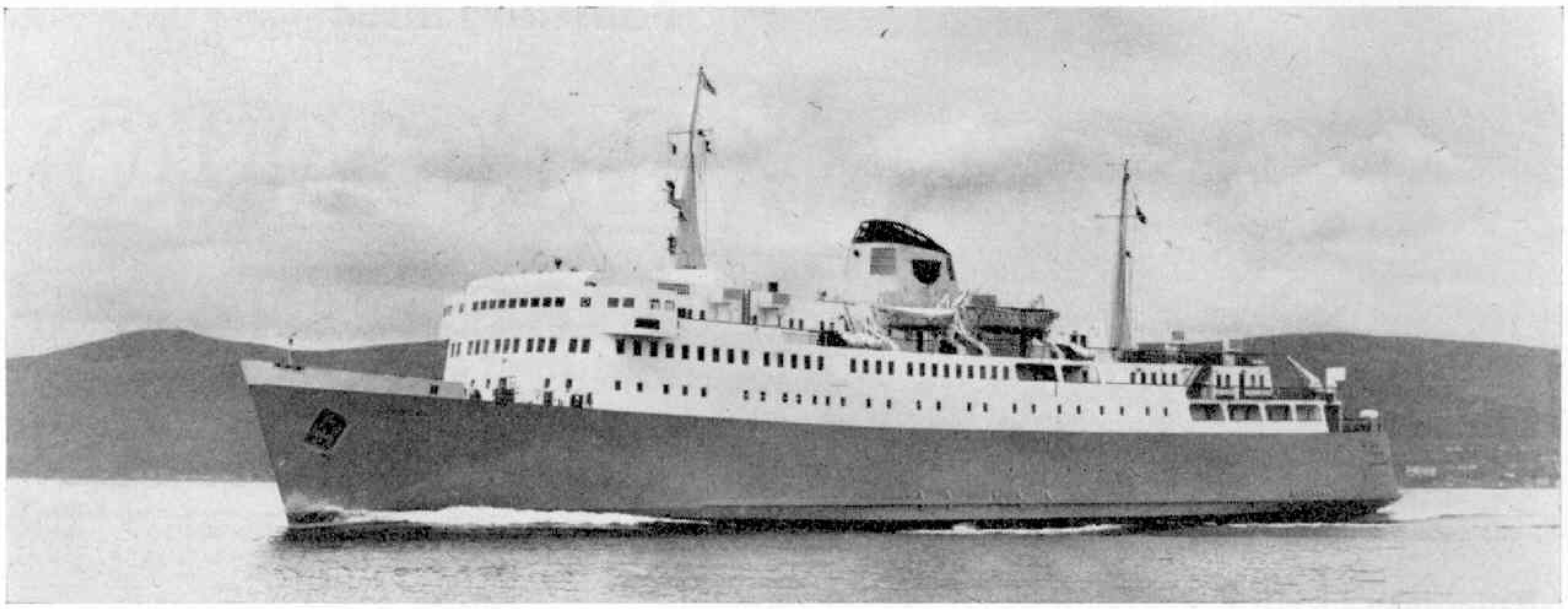


Two floating bridges operated by Southampton Corporation Transport Department provide a crossing of the River Itchen between the dock area and Woolston, a distance of 400 yards. No. 9 Bridge, shown on our front cover, was built in 1902 and will be scrapped in June, 1964, giving way to a diesel hydraulic craft. The bridge runs on wire ropes, one acting as a guide. The other, on the opposite side, passes over rollers along the hull and in addition a full turn is taken over a grooved driving wheel 8 feet in diameter, which is driven by an overhead steam beam engine.

Next Month: THE JIM CLARK STORY
FIREBALL XL5

A THOMAS SKINNER INTERNATIONAL PUBLICATION



The passenger-carrying train and car ferry G.M.V. "Aramoana" undergoing ship's trials on the Firth of Clyde.

Aramoana—the path across the sea

NEW ZEALAND'S INTER-ISLAND LINK

"*ARAMOANA*" is a Maori word meaning road or path across the sea. This, indeed, was a most fitting name to give the first train ferry to operate in New Zealand.

Launched in November, 1961, this vessel was built at the Leven Shipyard, Dumbarton, by William Denny and Brothers. A twin-screw diesel-electric she was designed by Burness, Corlett and Partners Limited, naval architects and marine consultants of Basingstoke, for the New Zealand Government Railways Department at a cost of £1,750,000. She

By Gordon Woosey

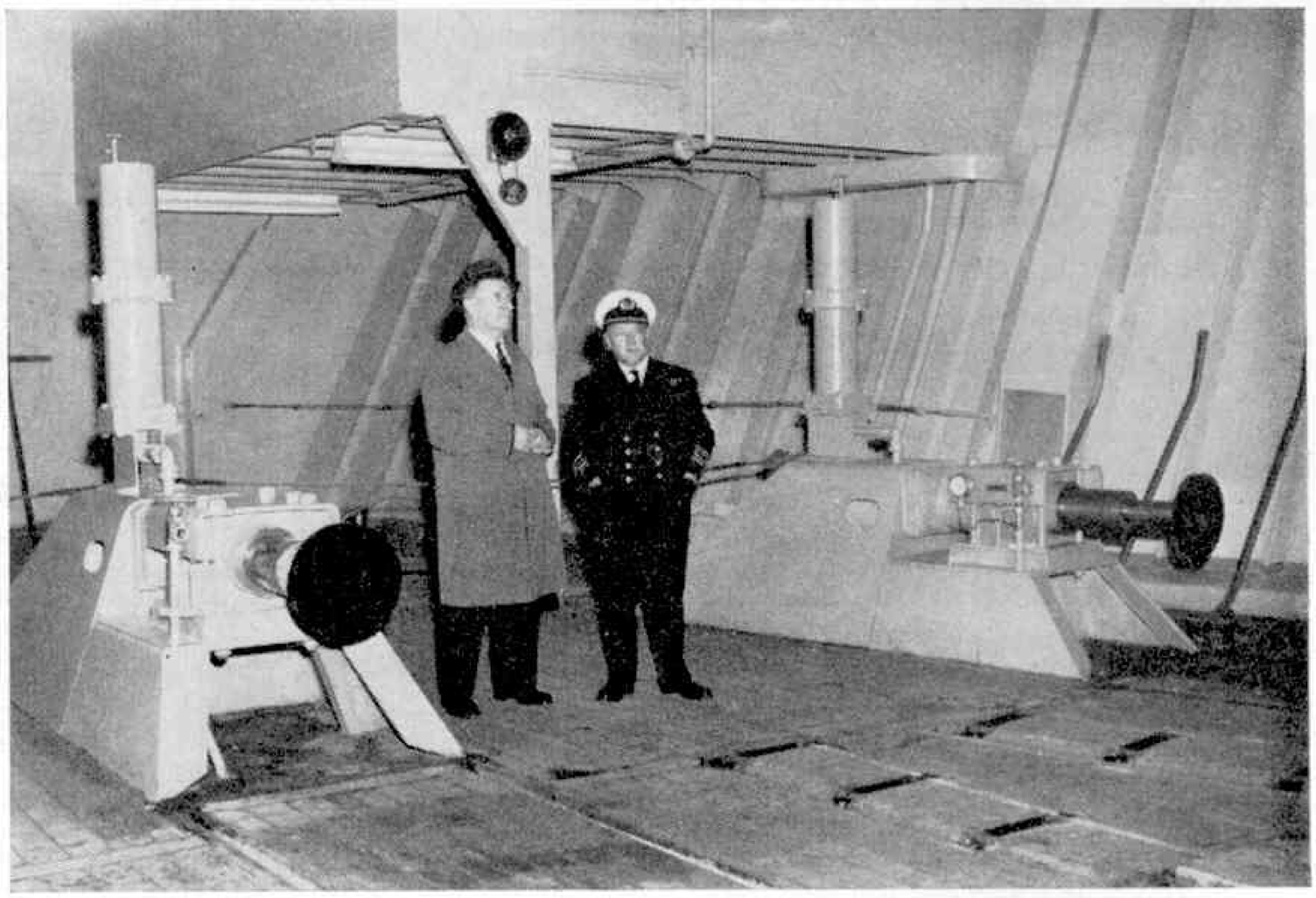
links the railway and road systems of the North and South Islands between respectively, Wellington, the capital city, and Picton, the port of the Marlborough Province.

Aramoana has added greatly to the fleet of vessels, totalling more than 50, which have been built in British shipyards for New Zealand since the war ended. These craft, with a total tonnage exceeding a quarter of a million, consist of passenger ships of up to 8,000 gross tons, naval frigates, a cargo-passenger ship for the Pacific Islands service, a dead-weight bulk ore carrier, a self-loading and discharging bulk cement carrier, dredgers and cargo ships for coastal and inter-colonial trade. The orders for these were secured by British shipyards only in the face of strong foreign competition.

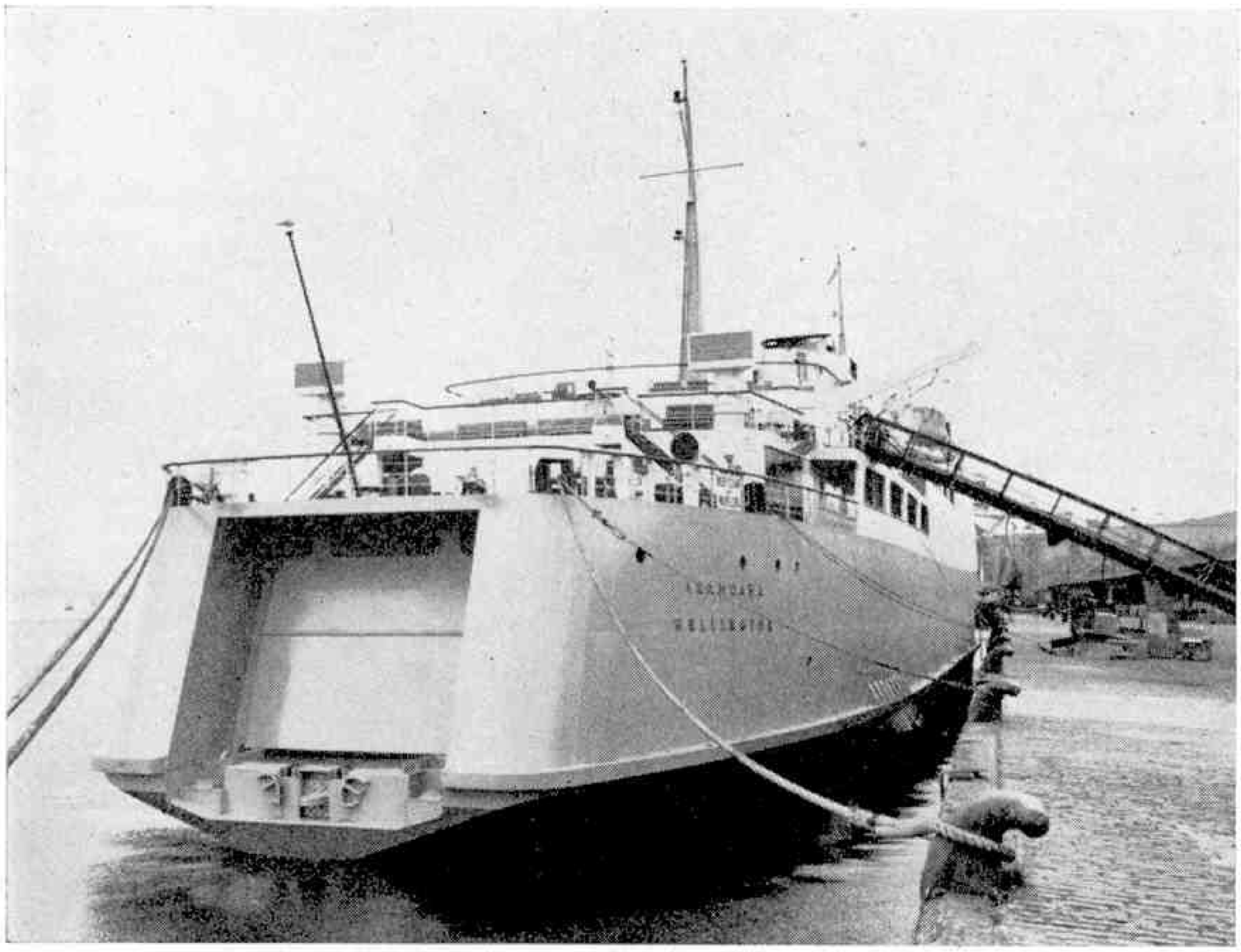
This ship replaced the existing service conducted by the Union Steam Ship Company's 36-year-old 1,968-ton *Tamahine*, now past its economic life, and, in the summer holiday season, with the 6,152-ton *Rangitira*. Both these passenger-carrying vessels take cars in holds or on decks. The same company also operates two other vessels on the principal inter-island passenger and car service which involves an all-night trip of about 200 miles between Wellington and Lyttleton, compared with 51 miles between Wellington and Picton.

The Union Company operates the new ferry on behalf of New Zealand Railways, and it is now possible to make a daily crossing, and, in busy periods, a twice-daily each way service between the islands, compared with three return trips made weekly by the *Tamahine*.

The New Zealand Railways already operate a steamship on Lake Wakatipu,



The New Zealand High Commissioner the Rt. Hon. T. L. MacDonald and Captain J. E. Peake of the "Aramoana" inspecting the buffers on the car and railway wagon deck.



The aft end for loading and unloading cars and railway wagons.

in South Island, and a rail-air freight service between the islands, with chartered aircraft.

A vessel of very attractive appearance, *Aramoana* carries 1,150 passengers and has room for 120 cars, the numbers of which are reduced according to the total railway wagons to be carried—25 being the maximum. The principal dimensions of the vessel are: Length overall about 370 feet, length of load waterline 355 feet, breadth moulded 59 feet, depth to vehicle deck 21 feet, deadweight about 1,000 tons.

Extensive day accommodation is provided including eight four-berth cabins and a ladies' lounge on the upper deck and, on the promenade deck, a cafeteria providing a continuous service of light meals for about 100 people at each sitting, extensive forward and after observation lounges seating passengers in aircraft type seats, and a lounge bar and smoke room.

About half the journey between the two ports is made in open sea, sometimes in most turbulent conditions which can be encountered in Cook Strait. This factor was considered by the designers and the ferry has particularly powerful diesel-electric propulsion. The remainder of the journey is made through the picturesque Marlborough Sounds, a favourite holiday area of which Picton is the principal resort.

Single and two-berth cabins are provided for the crew of 68, combined with comprehensive messing and laundering facilities. The deck officers and engineer are accommodated in single cabins on the boat deck, the rest of the crew in cabins on the upper deck.

The vehicle deck is provided with three lines of rail track with a three-row turnout at the after end, all designed to take a full load of New Zealand rolling stock, while the aftermost 160 feet of centre track can carry locomotives up to 110 tons in weight. This deck may alternatively hold a total of either 20–25 railway wagons and about 20 cars, or about 80–90 cars when no wagons are carried. Provision has been made at the fore end of the vehicle deck for the carriage of motor-cycles and cycles. A garage is also fitted on the upper deck aft and arranged to carry 31 cars, average size 14 feet by 5 feet 6 inches, the garage also being provided with a 14 foot diameter, hand-operated turntable. The twin deck layout has been designed with a minimum of engine exhaust casings and pillars in order to provide clear deck space for the manœuvring of motor vehicles and especially heavy articulated lorries.

To permit stern loading, the aft end of the vehicle deck is fitted with a watertight folding door and the aft end generally is designed to take the seaward end of a newly-designed loading ramp.

Separate low pressure mechanical ventilation and heating systems are fitted throughout the passenger and crew accommodation. Independent supply and exhaust ventilation of the vehicle deck is designed to prevent fouling of the 'tween deck space from the exhaust fumes of a full load of motor vehicles.

Of particular interest is the life-saving equipment in accordance with the New Zealand Marine Department's current regulations. These allow, for a vessel of this class, the fitting of only four glass-fibre lifeboats plus a sufficient number (including spares) of inflatable liferafts to allow for all passengers and crew.

Roll stabilisation is provided by the Denny-Brown retractable-fin stabilisers, while extra manœuvrability is catered for by the fitting of a bow rudder in addition to the twin aft spade-type rudders, all electro-hydraulically controlled. For very low speeds when berthing stern first into the specially constructed terminals, and to counteract the very high winds (velocities of over 100 m.p.h. are not uncommon), a large bow lateral thrust unit is installed.

The vessel is powered by English Electric Company twin screw diesel electric installation, with sufficient horse power to ensure an average weather service speed of seventeen knots. The criteria for the selection of the main propulsion machinery have been reliability, flexibility, and the application of the continuous maintenance principle.

As this ship has a two-compartment standard of sub-division the extensive machinery and associated auxiliaries require four separate watertight compartments. These have been arranged so that there is a motor room and two main engine rooms, the latter being separated by the auxiliary machinery space. As each engine room has been arranged as a complete unit with its own emergency control station, the vessel can operate in a damaged condition, provided that the motor room and at least one main engine room are intact. The engine room control cubicle, located in No. 2 auxiliary alternator room, is efficiently insulated against heat and noise and is well ventilated. All engine controls, instruments and switches are fitted in this control cubicle, thus providing a central control position from which the duty engineer operates the main and auxiliary electrical machinery and supervises the operation of the diesel engines and pumping installations. Visual and audible alarms protect the main auxiliary installations against damage through electrical failure, overspeed, or sudden reversals. These alarms are fitted in each engine room and flashing indicator lights operate in the control room.

The vessel berths stern first into special terminals and consequently a new ship's berth, with railway sidings, road access, and passenger terminal facilities has been provided at both Wellington and Picton. At both ports a link span gives access to and from the shore, the link consisting of a steel truss span, hinged at the shore end and arranged so that it can be raised or lowered mechanically or electrically. At the seaward end it has a kingpin, which, when the span is lowered into position for loading or unloading, fits into a socket in the aft end of the ship's vehicle deck, the span carrying a combined rail and road deck. Each link span can cope with the rise and fall of the ship, with varying conditions of tide and loading, and can also accommodate the heel or list of the ship, up to a maximum of five degrees either way.

The link spans are 90 feet long and are hinged at both ends to allow for the rise and fall of the ship, the transoms being hinged at their supports on the trusses to allow a limited movement, up to about one foot, as the ship heels. Each truss is

(*Continued on page 595*)

SOCCER SKILLS

LESSON No. 4 — CHESTING THE BALL

IN a previous article in this series you may remember that I discussed two or three ways of getting the ball under control with the foot, a method which is commonly known as trapping. This, I think, many of you will learn to master in time. With a fair amount of practice and the use of your own initiative it will come naturally to you young boys who are keen to improve your football.

But, of course, the ball does not always come to the foot. Many is the time when a player has to head the ball and try to control it at the same time (we will discuss this in a later lesson). More difficult even than this, I would think, is the occasion when he has to control a ball, which is coming quickly at him, with his chest. When I have watched young players facing a ball which is directly heading

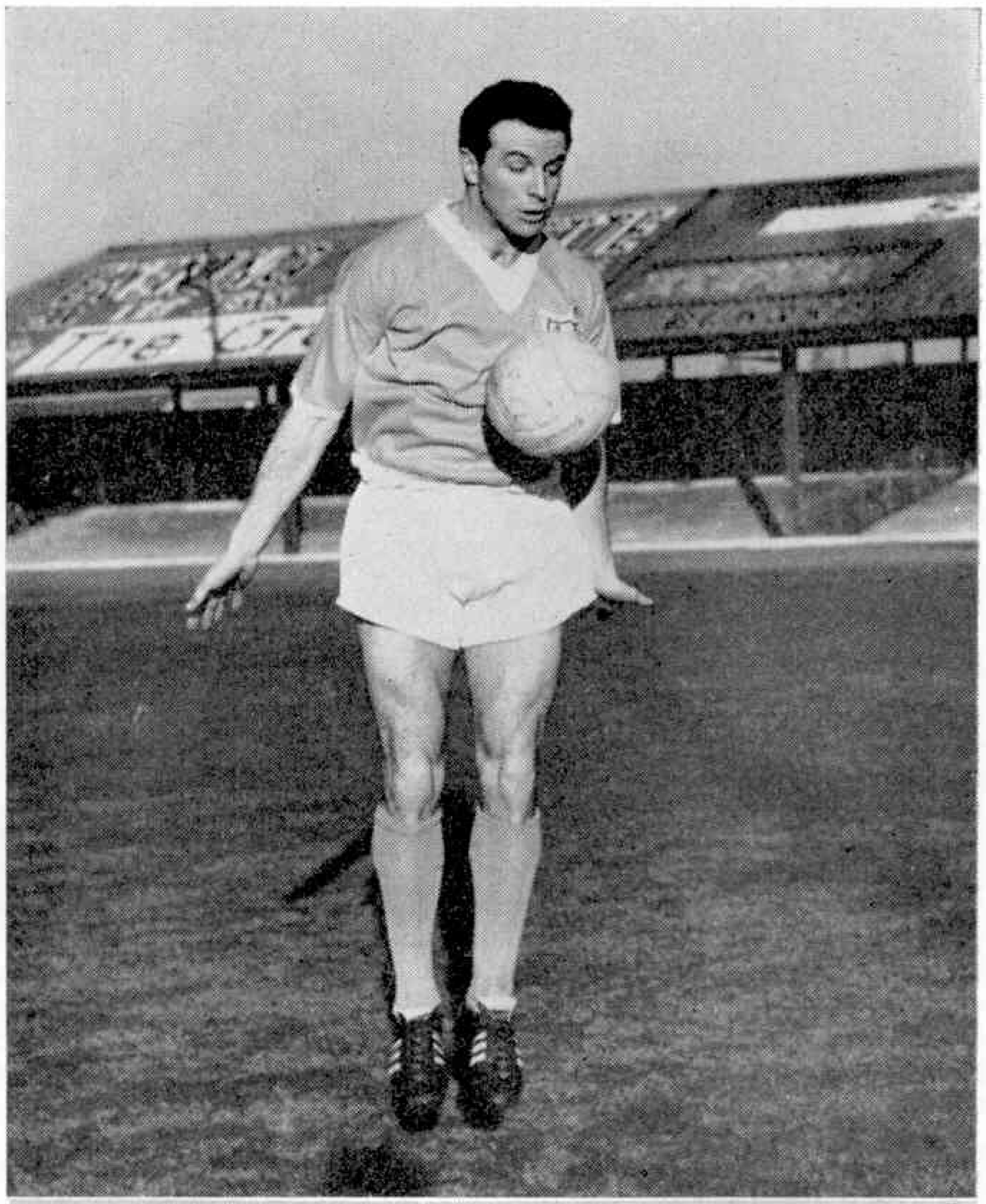
By JIMMY ARMFIELD,

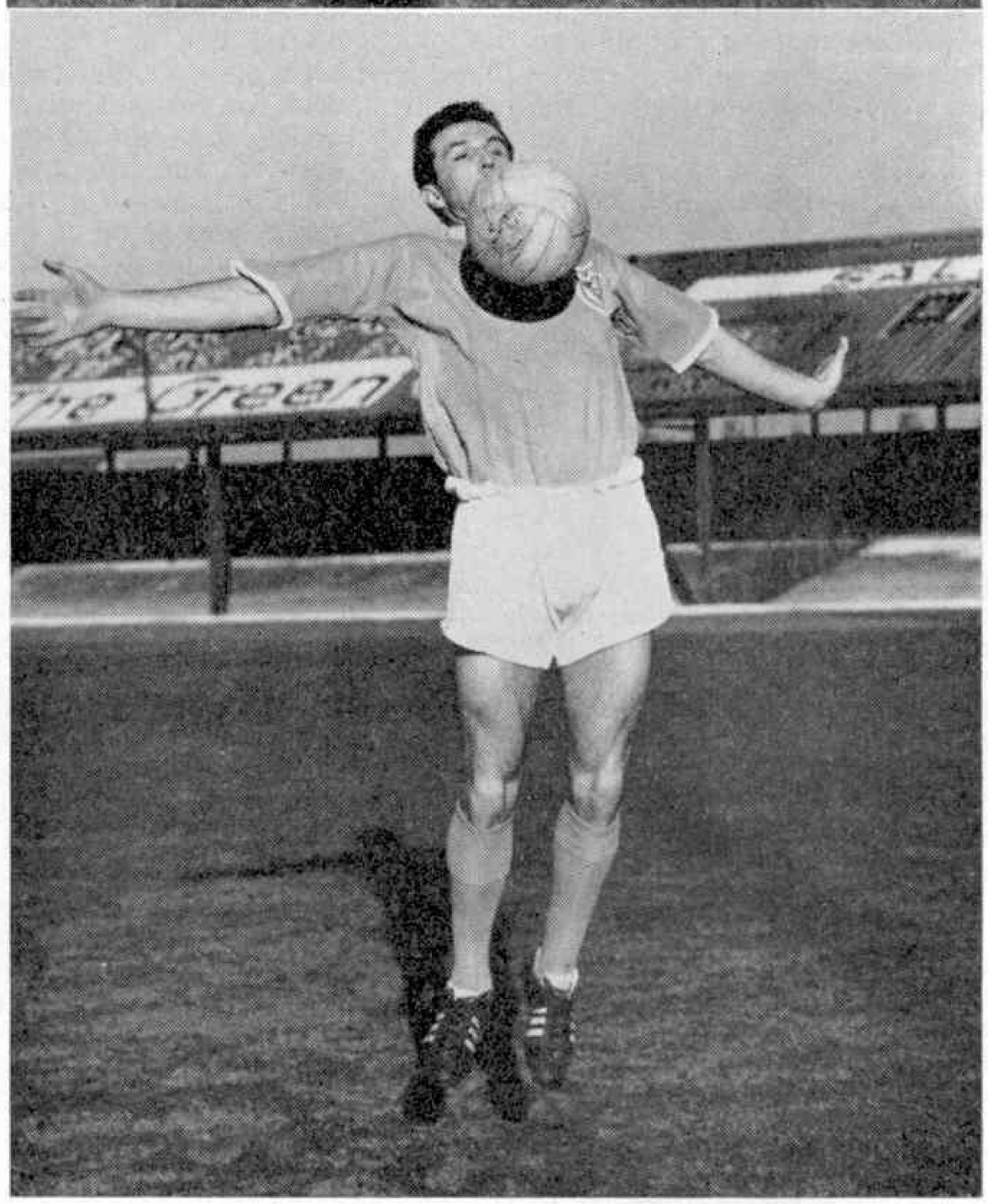
England International Full-Back

for their body they have either headed it aimlessly anywhere or tried to lift a leg to control it. Both these ways can, of course, be used but when one learns "chest control" it is much easier.

Look at the first picture; it shows me with my toes just off the ground after I have made a slight jump to chest the ball. This ball was coming to me about four feet high and so, to get it under control, I have jumped and let the ball strike my chest. You will note, however, that I keep a steady balance and that my eye is fixed on the ball all the time. My body is slightly jack-knifed so that my trunk is leaning forward. This forces the ball, when it actually hits me, to the ground and to my feet, where I hope to bring it quickly under control.

In the second picture, the situation is slightly different. Here the ball was heading for my face and so, in this instance, I have jumped higher than I did in the first case and again let the ball strike my chest. In this second example you will see that I have arched my back so as to try to "ride" or "cushion" the ball on my chest. If I had remained rigid, the ball would simply have cannoned off me and landed about five or six yards away, which, of course, was not what I was after. Note too, that this time I have lifted my arms (*Cont. on page 595*)





THE ESKIMOS OF CANADA

MICHAEL LORANT describes the transition which has come about in the life of primitive people.

Blowing up balloons is just as much fun to Eskimo children as to young folk anywhere else in the world. You can see that the results being achieved by the youngster in the foreground are awaited with mixed anticipation.

THE north is the largest undeveloped area of Canada, itself the second largest country in the world. Forty per cent. of Canada's land area is made up of the 1,500,000 square miles of Northern Canada that taper towards the North Pole. Of the six countries whose coasts thrust into the North Polar seas, Canada is responsible for the administration of 37 per cent. of the world's Arctic regions.

The geographical size of Canada's north is almost incomprehensibly large. Few Europeans know of Baffin Island, yet it is larger than Sweden. Belgium could fit as an island into Great Bear Lake, while the Yukon, smaller of the north's administrative districts, almost equals continental France in size. If one moves across Canada from east to west, one will have travelled 3,500 miles. The distance between Southern Ontario and the northern tip of the Arctic's Ellesmere Island is 2,800 miles.

In undertaking the development of its north country, Canada has relied on the initiative of her people. No incentives, other than the natural ones of the northland itself, are offered those who would develop the Canadian North into a productive part of the nation. Those men who are drawn by the immense possibilities of the huge territory can find encouragement from the Eskimos, the most northerly people of Canada.

The economy of the Eskimos, like that of the north itself, is still primitive but is undergoing a transition. For more than 2,000 years the Eskimos have lived off the land, relying on hunting and fishing for their food and clothing. Commerce with the white man did not develop until the early years of this century when trading posts were established in the Arctic. Trade goods, offered in exchange for raw furs, interested the Eskimos in trapping, and the white pelt of the Arctic fox soon became an accepted medium of exchange for such luxuries as woollen cloth, tea and tobacco.

An economy based on the animals of the land and the creatures of the sea is indeed a precarious one; when hunting was poor, or the market for furs depressed, living was hard and the Eskimo suffered. The introduction of the rifle provided a greater drain on the wildlife resources. To strengthen the Eskimos' economy, and eliminate the insecurity of their daily life, the Canadian Government has helped them in many ways. To improve their health, medical services are provided. Monthly allowances for Eskimo children are paid in the form of nutritious, supplementary foods, clothing, and small household articles. Education at the lower level is directed towards raising the health standards of the Eskimos and improving the skills that are vital in their native way of life. Education at the higher level includes vocational training, which will teach the Eskimos trades and skills useful in the growing development of the North.

To widen the Eskimo economy, new projects are being started, boat-building among them. The possibility of introducing domesticated and semi-domesticated animals to the Arctic to provide food and revenue is constantly being studied.

Seated on a sledge, against a background of unbroken white, an Eskimo woman plays a concertina while the little ones dance a jig at Resolute Bay in Canada's North-West Territory.

New suspension bridge over the Severn

TO carry the new M.4 London–South Wales Motorway, a giant suspension bridge is being constructed across the River Severn a few miles north of Bristol. At present the most southerly road bridge over the river is at Gloucester, a notorious bottleneck when traffic is heavy. The new bridge is to be operated on a toll system but the time saved will be tremendous.

This new motorway will relieve Gloucester, Cheltenham and the A.40 road between London and Gloucester of a large proportion of the present traffic. At present, a ferry is being operated near the bridge site, but this can only carry about 56 cars per hour in each direction.

This suspension bridge, having the second longest main span in Europe—3,240 feet, exceeded only by the 3,300 ft. main span of the new Forth Bridge—is expected to cost a total of £16,000,000 and is due to be completed in 1966. Consulting engineers are Messrs. Mott, Hay and Anderson, and Messrs. Freeman, Fox and Partners. The architect is Sir Percy Thomas.

To carry the cables, 400 ft. steel towers have been built on concrete piers in the river. Each tower consists of a pair of hollow box-shape sections constructed from stiffened ¾″ thick high tensile steel plate. The weight of steel in each tower is about 1,200 tons.

The cables will be about 20 inches in diameter, comprising in all some 18,000 miles of wire 0.2 inches diameter and

By

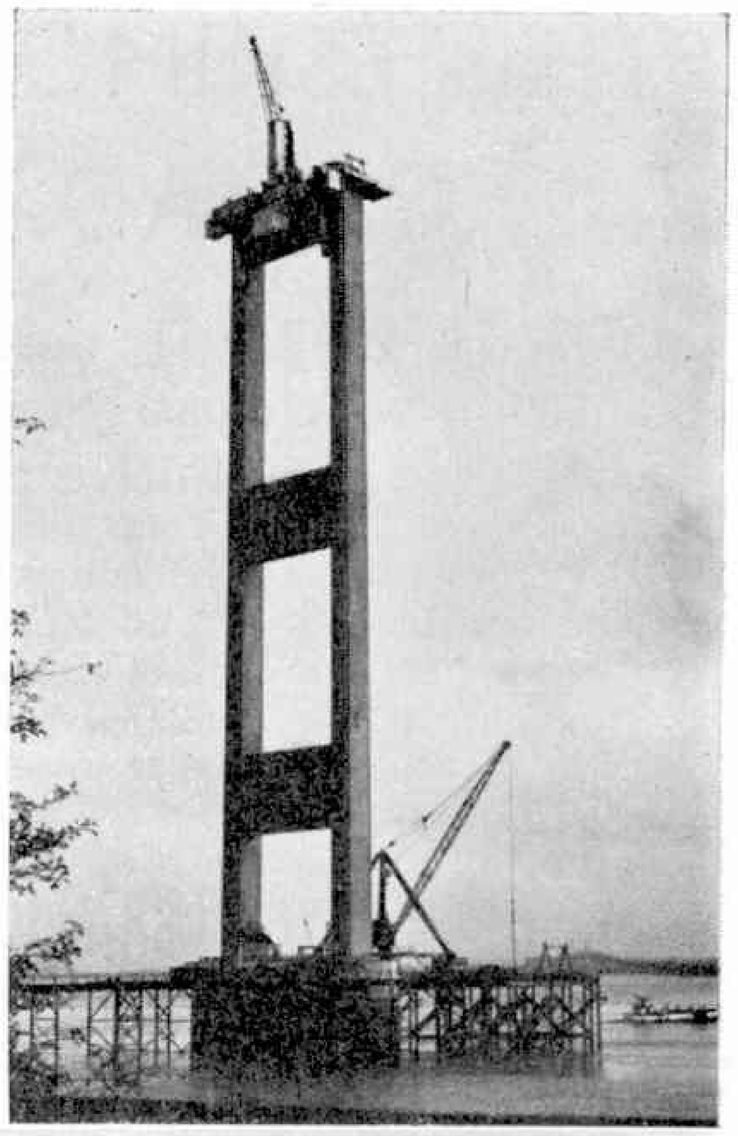
Edward G. Hodgkins

weighing about 4,200 tons. The roadway will be suspended from these cables by steel wire ropes, between which will hang the main deck in the form of a hollow 80 feet wide by 10 feet deep. On this will be laid a 24 ft. carriageway in each direction while outside the ropes there will be a 12 ft. wide cycle track on one side and a 12 ft. wide footpath on the other. The total weight of steel in the deck will be 11,000 tons and this will be assembled in 60 ft. lengths in a local shipyard, floated to the site and hoisted directly into position to be finally welded into one continuous length. The road will be about 120 feet above high-water at mid-span.

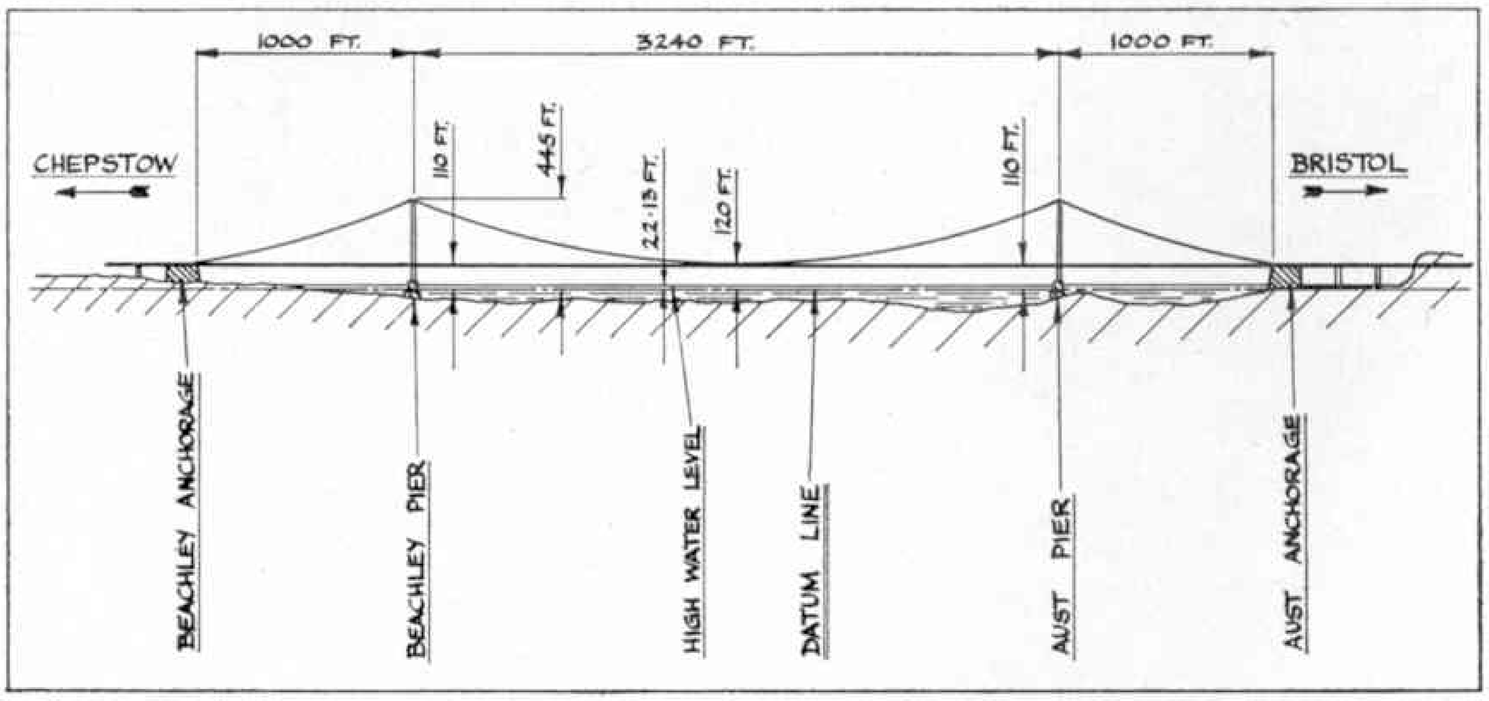
The foundations of the bridge, already complete, are in four main parts and are of reinforced concrete. The Aust pier, weighing about 20,000 tons, is built on a limestone outcrop in the river. The Beachley pier, however, is founded on two 60 ft. diameter shafts sunk 35 ft. into the river-bed and filled with concrete. The pier consists of some 35,000 tons of concrete.

Each anchorage comprises a hollow block of concrete 140 feet long by 110 feet wide by 120 feet high and weighs about 80,000 tons. The main cables will each exert a horizontal pull of some 10,000 tons on these anchorages.

The bridge, which will be the sixth longest suspension bridge in the world, has been designed to withstand wind speeds of up to 100 m.p.h. and to carry vehicles of up to 180 tons in weight.



(Top) The Beachley Tower nearing completion. The roadway of the bridge will pass over the lower cross-piece of the tower. The Aust–Beachley Ferry, at present the only car-crossing south of Gloucester, can be seen on its journey across the river. (Centre) The giant Beachley anchorage nearing completion. (Below) A diagrammatic view of the new bridge, giving height and distances. Illustrations by the author.



SHOP WINDOW

● *Here is the second survey of products which we think will interest* Meccano Magazine *readers. We hope to continue this as a regular feature in forthcoming editions of the "M.M."*

* * * *

TO complement your train layouts are the wonderfully realistic buildings which form the Faller range, some of which are seen in the top picture. These attractive construction kits range in price from 4s. 9d. for houses, mountain huts and chalets, to £2 2s. 6d. for a working sawmill powered by two small motors. All parts of the kit are appropriately coloured, so that no painting is necessary, and they contain easy-to-follow illustrated instructions. Even if you don't own a train set, you can still enjoy making attractive model villages and towns, trees, bushes, flowering shrubs and hedges, surfacing materials and electrical accessories can be purchased to add to the realistic effects of the models.

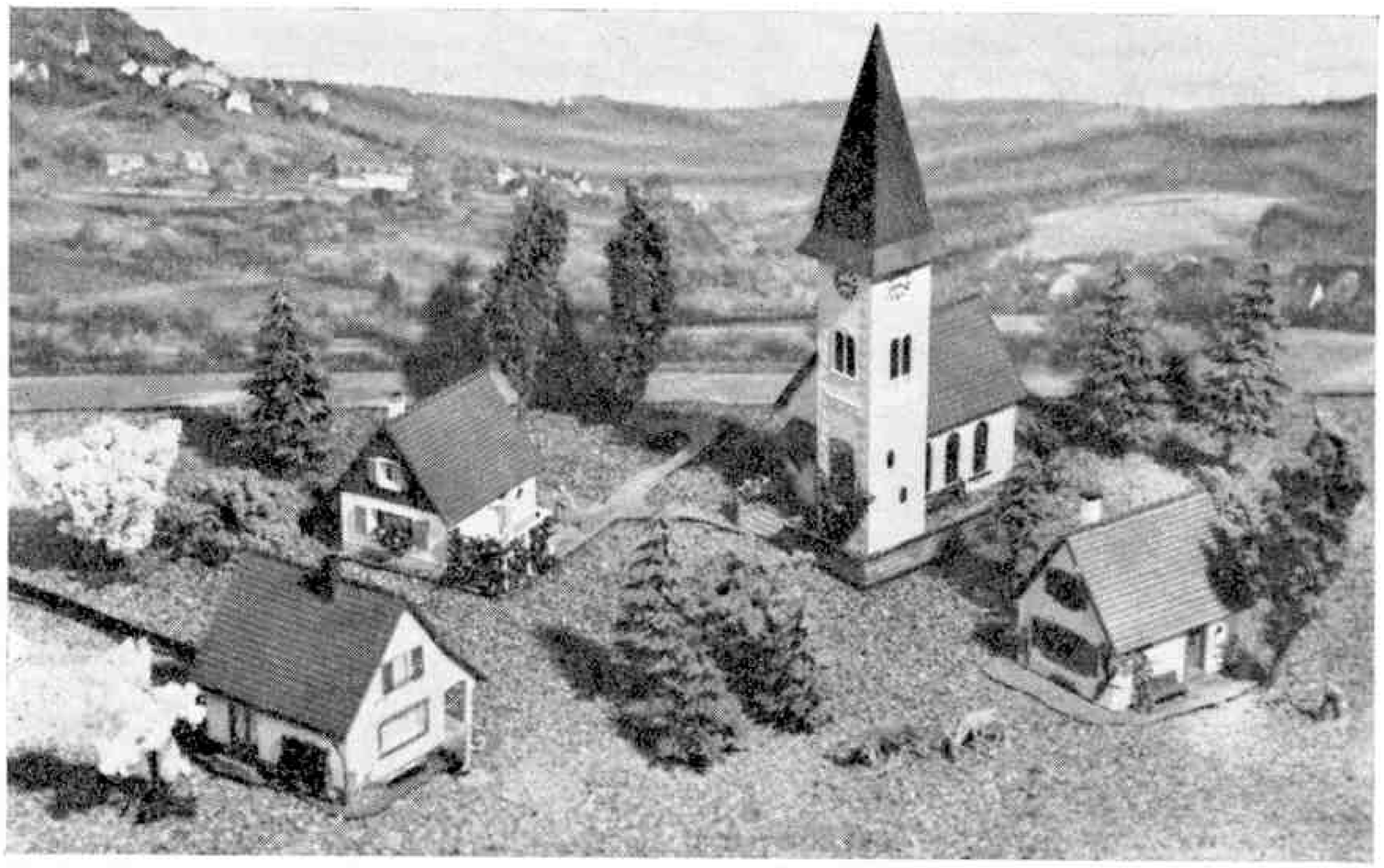
* * * *

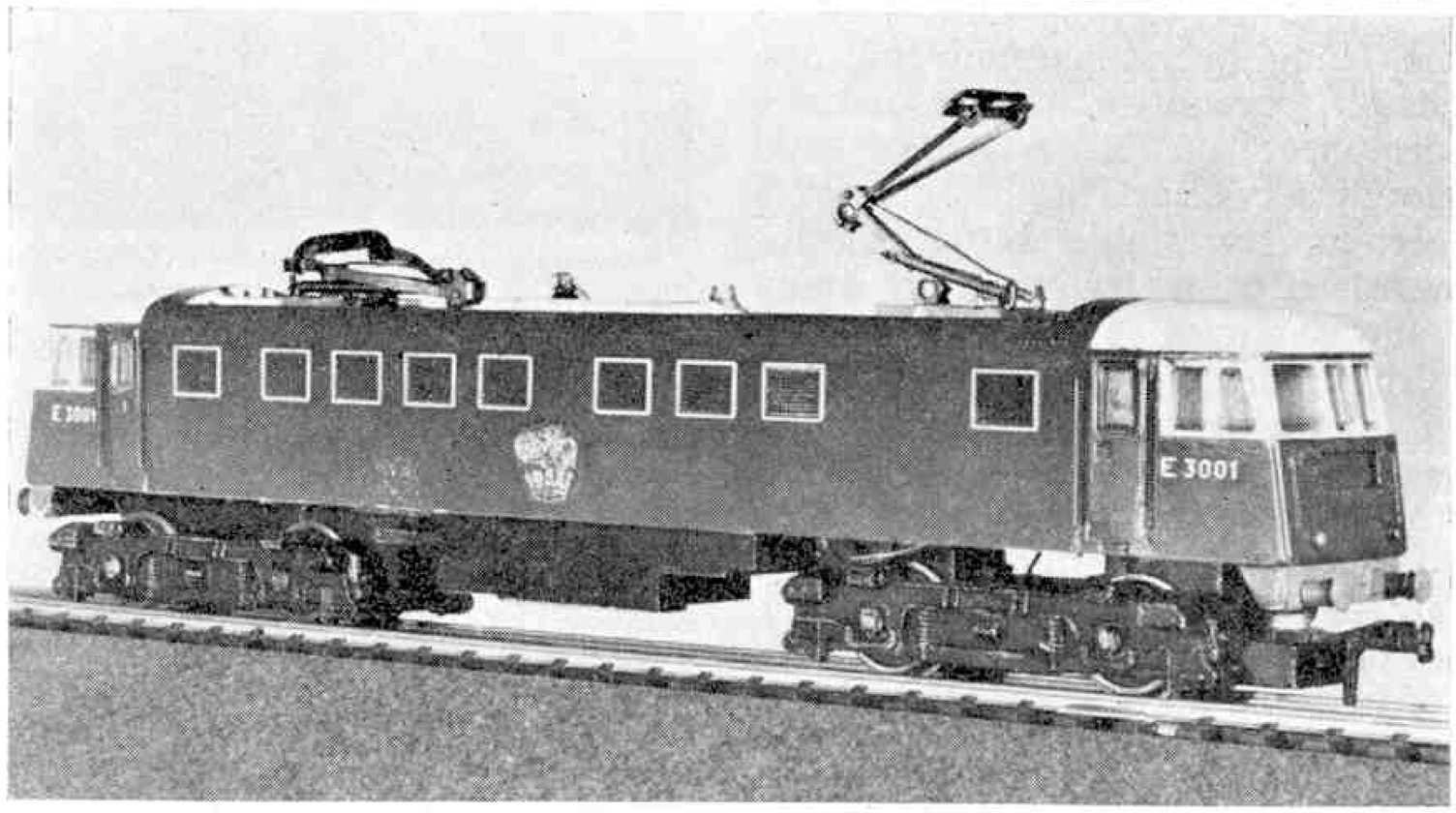
One of the most comprehensive catalogues of model railways and components ever produced is issued by Beatties of London, Southgate Hobbyshop, 1 and 5, The Broadway, London N.14. The catalogue costs 2s., but with each copy there is given a voucher which can be exchanged at Beatties.

* * * *

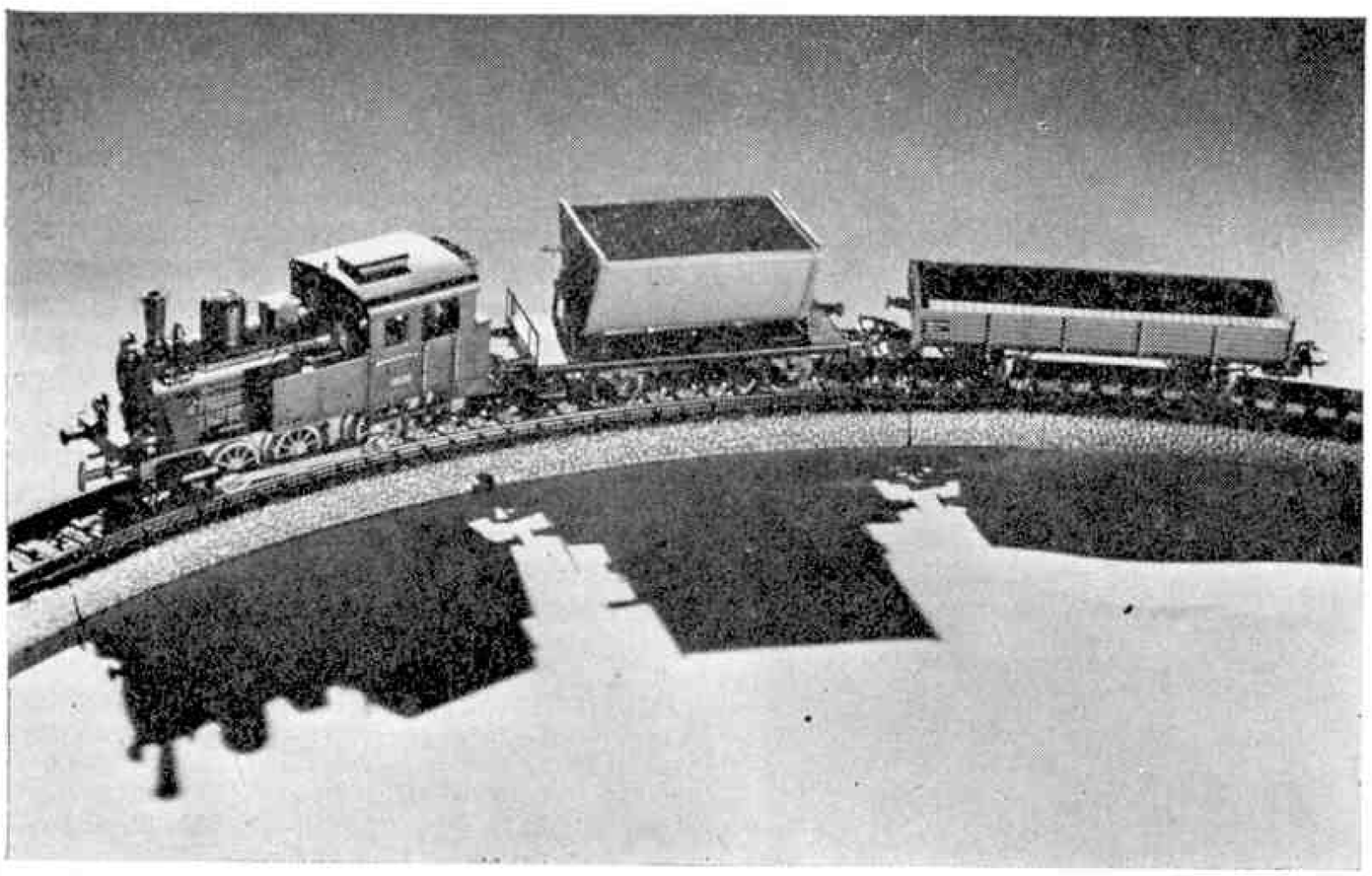
Like Hornby-Dublo, Marklin model trains, one of which you see illustrated (bottom left) on this page, have a long history behind them and the set shown here has

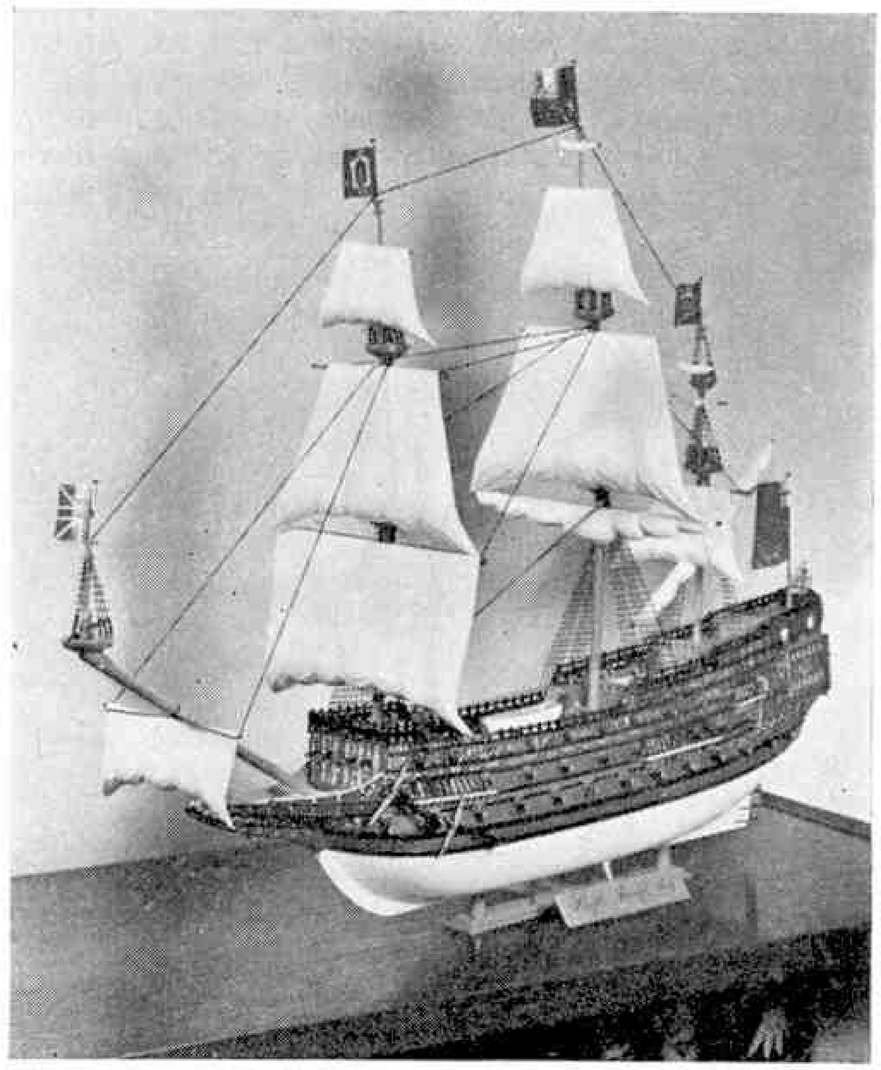
(*Continued on page 591*)





Pictured above is the L.M.R.-type electric locomotive which is shortly to be added to the Hornby range. More details will appear later.

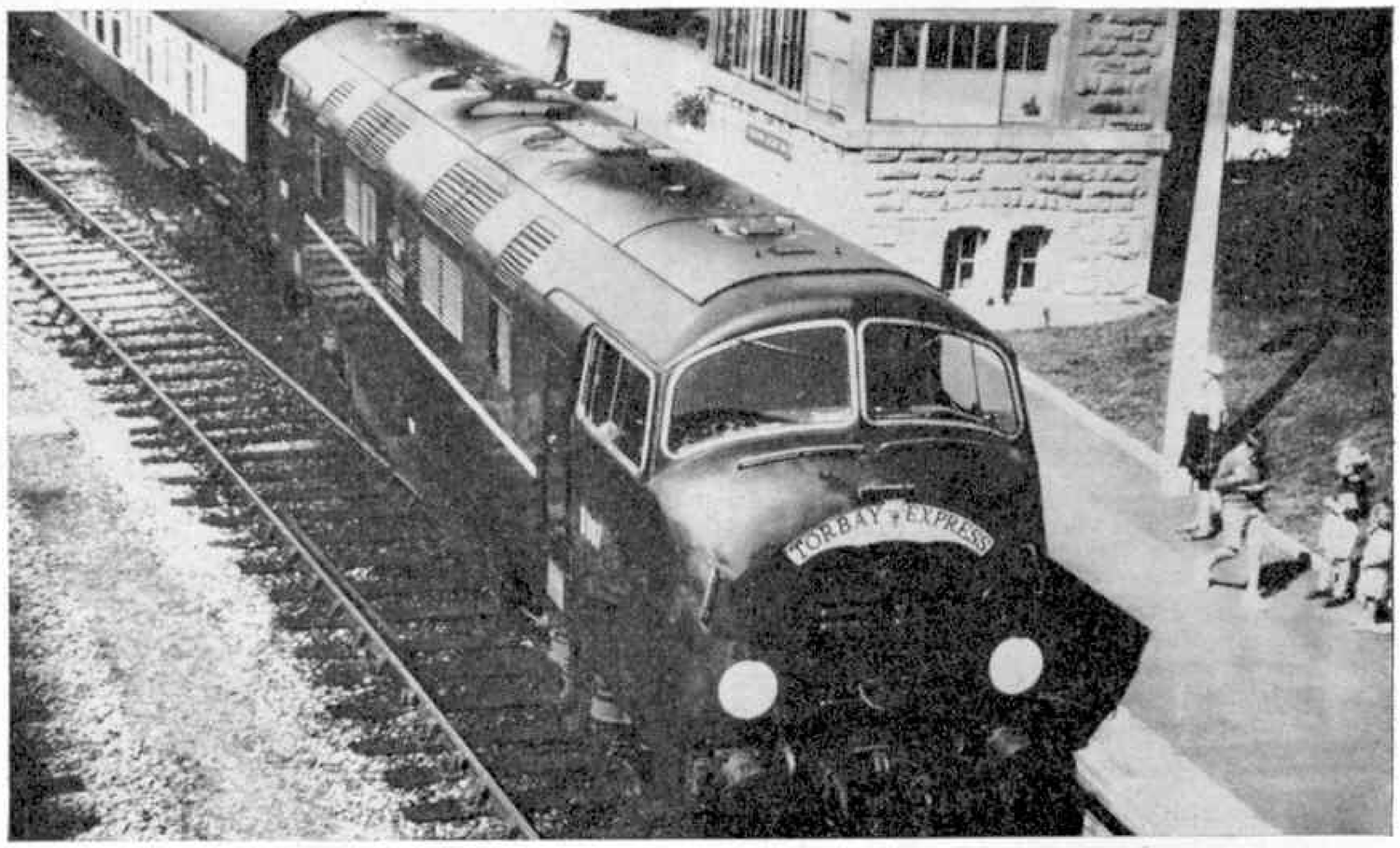




TRACKSIDE NEWS

By
"PLATELAYER"

A study in diesels



Warship class diesel "Caradoc" No. D807, with the Down Torbay Express at rest in Torquay Station.

TO the public, and more especially, the railway enthusiast, it has long been apparent that the steam locomotive must eventually disappear on all passenger and goods services. This has created a certain regrettable bitterness towards British Railways in many railway circles. I must admit that, although historic steam locomotives are my special preference, I would be the last to begrudge BR their right to modernise our railway system. A great many trains are already propelled by either electric, or diesel traction, either in the form of multiple units, or separate locomotive units, and their numbers are planned to increase.

It has been felt by many enthusiasts that this form of motive power is not as glamorous as the more spectacular steam engine, with its hissing steam, barking exhaust, and symmetrically-moving valve gear. The diesel locomotive, as many enthusiasts will know, has charms peculiar to itself, and contrary to popular opinion, is constructed in a variety of attractive forms.

* * * *

I illustrate in this article four main line locomotives, which will be the beginning of an occasional series in *Trackside News*, where we hope to show our readers the number of different types of diesel locomotive in service. Those who are not familiar with the power classification system employed by BR for diesel locomotives, will be interested to read details of it before learning more about the locomotives themselves. All locomotives have the prefix "D" before the number which not only identifies the locomotive, but also indicates its power range. Type 1 800–1,000 hp; type 2 1,000–1,365 hp; type 3 1,500–1,750 hp; type 4 2,000–2,750 hp; type 5 3,000–. Since this was introduced in 1957, new batches of locomotives outside the original groups have been added, so that it is not always possible to deduce the horse-power of a locomotive from its number.

During 1958, the Western Region of BR introduced the type 4 Warship class B–B diesel locomotive, built with two Bristol-Siddeley Maybach engines. The class of 33 locomotives, each being named after a warship, are of a modern design, and quite attractive. The first type 2 Bo–Bo diesels to be built at the Darlington (North Road) locomotive works of the North Eastern Region of BR were introduced in January 1960. The class is one of the mixed traffic type, and 398 have been built so far. A Brush prototype 2,800 hp Co–Co diesel electric *Falcon*, which was built with two Bristol-Siddeley Maybach engines, appeared on British Railways metals in 1961. This, however, was not taken into stock, but was allocated the number D0280 while on BR metals. A similar arrangement occurred when *Lion* was on loan to BR during 1962. This was a 2,750 hp Co–Co locomotive, built by the Birmingham Carriage and Wagon Company. It was not taken into stock, but was given the number D0260 while on BR tracks.

* * * *

A dive-under, which is to be constructed to carry the Eastern Region's East–West

view of D5030 type 2 diesel—the first diesel locomotive to be built at Crewe Works.

main lines (Grimsby–Sheffield) underneath the East Coast main line at Retford, at a cost of more than a million pounds, has been given approval. The dive-under became necessary to eliminate confliction of train movements on the East Coast main line, and the East–West lines; which at present cross on the level at this point. It has been decided to construct the dive-under to give fast, and unobstructed running to the traffic, which is expected to travel over the line when the new power station being built by the Central Electricity Generating Board is finished. The power station will require coal, which will be brought from the East Midlands, and North Eastern Division coalfields and, which will pass through Retford. The dive-under will be an attempt to eliminate conflicting train movements which would otherwise occur. The East–West lines will be taken under the East Coast at a gradient of about 1 in 100 on the east side and 1 in 133 on the west side.

New up and down goods loops for the East–West lines will be provided, and the existing 65 mph speed restriction on the East Coast main line at Retford will be raised to 80 when the work is complete. The whole of the permanent way work will be carried out by the Chief Civil Engineer's staff. As part of the scheme, it is proposed to install electrically-operated lifting barriers at Thrumpton and Gringley Road level crossings, which would be operated from Thrumpton Signal Box, while similar barriers will be installed at Rushley Siding level crossing controlled from the adjacent Mansfield Road crossing. The work should be completed in about two years.

* * * *

Doncaster locomotive works, birthplace of *Mallard*, the holder of the world's speed record for steam traction, and other famous locomotives, is changing over entirely to the building of electric locomotives and the repair of diesels. Steam repairs are to be transferred to Darlington. The works, which is locally known as "the Plant", was opened by the Great Northern Railway in 1853. More than 2,200 steam locomotives were built there —the first in 1867 and the last in 1957. They ranged from Patrick Stirling's famous 8 ft. Single locomotive, which took part in the railway's Race to the North in 1895, to Sir Nigel Gresley's streamlined A4 class Pacifics, introduced on the East Coast main line in 1935.

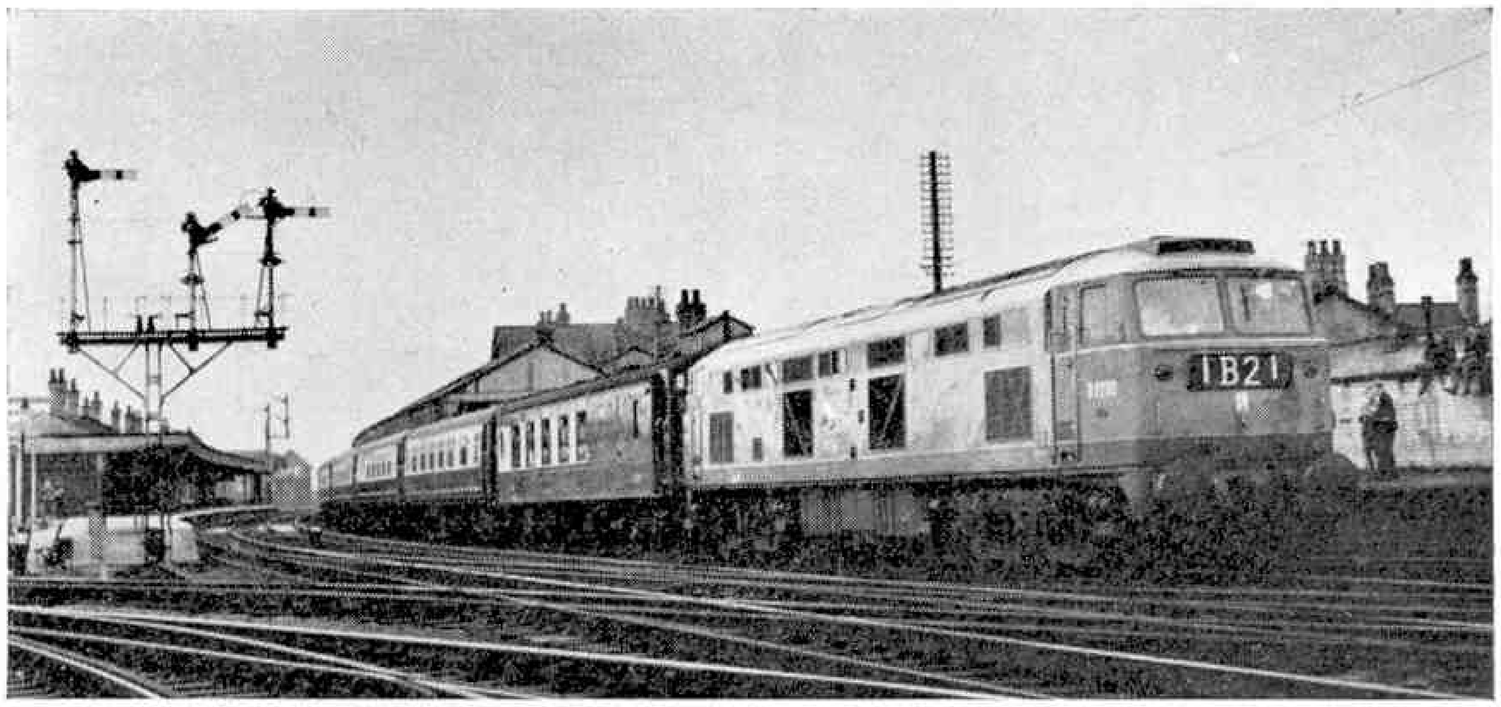
The number of steam locomotives overhauled and repaired is estimated at 40,000. The last of these, which left the works on Wednesday November 6 last year, is an A4 No. 60009, *Union of South Africa*.

The first locomotive built at Doncaster, in 1867, was an 0–4–2 mixed traffic tender engine, which was also the first to be designed by Patrick Stirling; the company's Locomotive Superintendent from 1866 to 1895. His famous 8 ft. Single locomotive was introduced in 1870. Stirling's successor, Mr. H. A. Ivatt, who was appointed in 1896, introduced Atlantic class locomotives into the country in 1898. The first small engines had 4 ft. 8 in. diameter boilers, the prototype being named *Henry Oakley* after the chairman of the Great Northern Company. In 1902, a bigger and more powerful Atlantic was built in Doncaster works.

When Ivatt retired in 1911, H. M. Gresley (later Sir Nigel) the Carriage and Wagon Superintendent of the Great Northern, was appointed to succeed him. His first notable design was a 2–6–0 mixed traffic engine fitted with Walschaerts valve gear, a new departure for the company, although several experimental Atlantics had previously been so fitted. These had Robinson superheaters instead of the Schmidt system used by Ivatt. A remarkable locomotive, No 461 *Consolidation* 2–8–0 appeared in 1918. Two years later came an even more advanced type; GN No 1000 K3 class, a development of the earlier 2–6–0 mixed traffic locomotive. The climax of Great Northern design came in 1922, when a Pacific locomotive, GN No 1470, was built at Doncaster. This was the forerunner of many variations on the same theme. Like the previous types, it had three cylinders having Walschaerts valve gear.

The greatest achievements of the LNER Pacifics followed the introduction of Gresley's A4 class in 1935. The first of these, No 2509, turned out from Doncaster in September of that year, was described by one writer as an "apparition". It was enveloped in a streamlined casing, the wedge-shaped front being designed to lift the smoke and exhaust steam and so give the driver an uninterrupted view from the footplate. Apparition or not, the new locomotive *Silver Link* was an immediate success, for on the trial run in September 1936 it reached a speed of 113½ mph, while for a distance of 43 miles an average speed of over 100 mph was maintained.

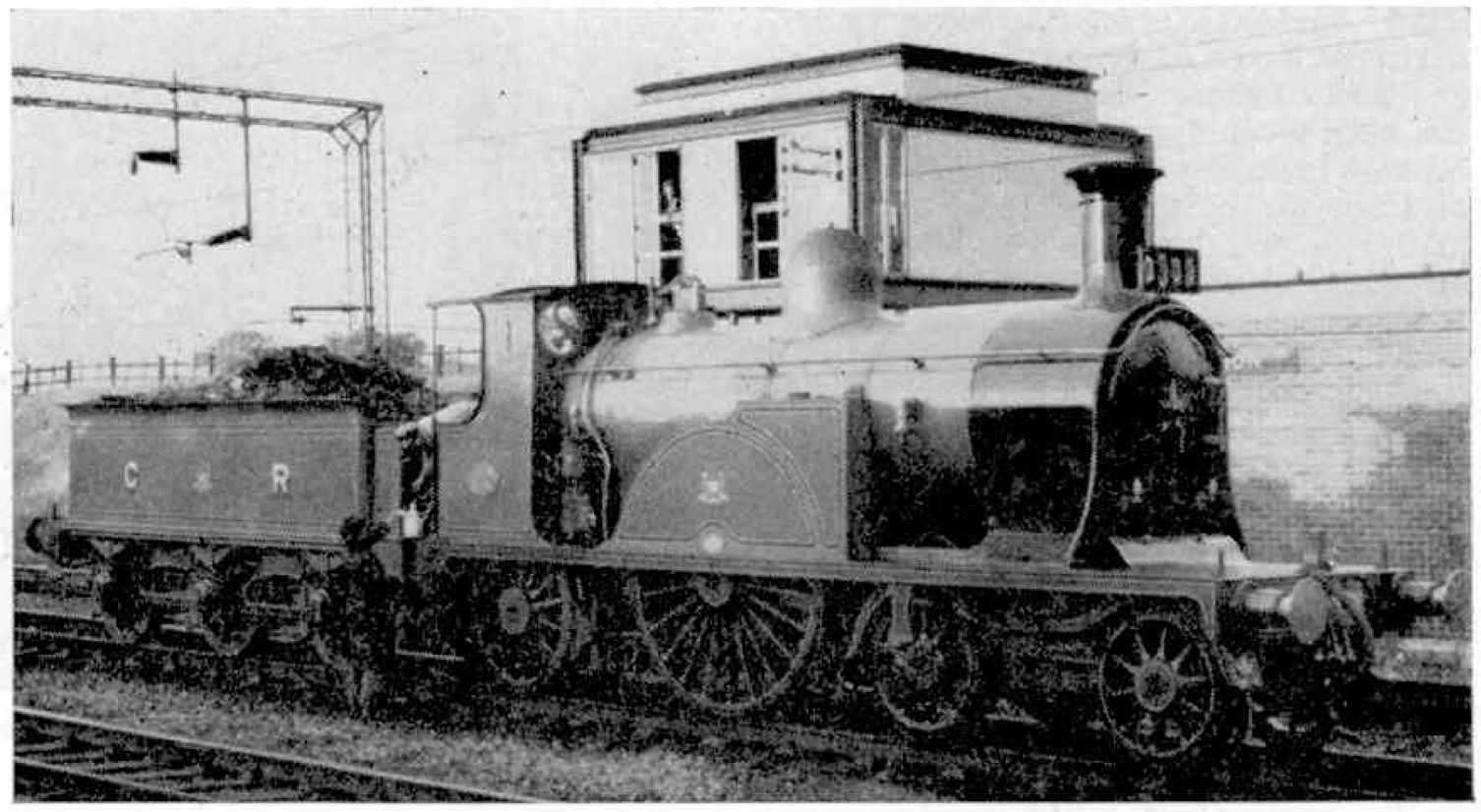
(*Continued on page 616*)



The experimental diesel locomotive built by Brush, and named "Falcon" halts at Retford with the up Sheffield Pullman. The locomotive was not taken into BR stocks.

Diesel electric locomotive No. D0260 "Lion", hauling the 6.55 a.m. ex-Cheltenham to Paddington express passing Tilehurst. The locomotive was built by the Birmingham Carriage and Wagon Co., and was not taken into BR stocks.

ROUND THE SOCIETIES



A photograph of the preserved Caledonian Railway No. 123 at Weaver Junction while travelling from Scotland to the famous "Bluebell Line" to work a special train.

READERS who wish to join any of the organisations whose activities are described below should contact the secretary of the society concerned and not the editorial offices of the Meccano Magazine.

LEICESTER SOCIETY OF MODEL ENGINEERS

The Leicester S.M.E. has always tried to cater for a wide variety of modelling interest, rather than specialise in one particular branch of the hobby. Therefore, whether your interest is 00 gauge, or live steam in the larger scales, model boats, radio control, or any other branch of model engineering, you will be made welcome. There is, in addition, considerable interest in prototype railways and general engineering practice. The society's meetings are held in the lecture room at the Leicester Museum in New Walk. Entrance to this room is in Princess Road. In Abbey Park, Leicester the society owns and operates a 3½″ and 5″ continuous track, approximately 640 feet in length, situated alongside the Cave's Walk.

Forthcoming meetings will be held as follows: February 10, 24; March 9, 23 (Film, Virginian Venture), 30; April 13, 27 (annual general meeting).

Meetings held since September have been well attended with 30–36 members being present, and the programmes have included talks on Christmas traffic control, by Mr. C. S. Smith of the Coventry S.M.E., 8 mm film evening by the Rev. E. Boston of Cadeby, 16 mm B.T.C. films and a colour slide evening. Write to Hon. Secretary, Mr. B. H. Newman, of 8 Farmway, Braunstone, Leicester for details of membership rates.

THE LANCASTER RAILWAY CIRCLE

The new year brings with it the possibility of acquiring a permanent room or rooms in which to install a model railway layout and other facilities. Membership has increased rapidly over the past six months. All activities are well patronised and the club's own publications are in constant demand. The membership fee of 10/– includes delivery of the club's own monthly newsheet and entitles members to take part in Circle activities, which include visits to motive power depots, works, signal boxes and private railway locomotive builders. Anyone wishing for further details should contact the Hon. Secretary, Mr. M. Firth, of 57 Cleveleys Avenue, Lancaster, enclosing a large stamped addressed envelope.

RAILWAY ENTHUSIASTS' CLUB

Until the sixth of this month (from January 14), the club will be staging an exhibition in the centuries-old Guildford House in High Street, Guildford. Entitled "On the Move", it will cover the history of 300 years of service transport in the South of England, the way first being made navigable to Guildford around 1663. The exhibition is open every day except Sunday from 11 a.m. to 5 p.m. admission being free, and evening lectures have been held in an adjacent building. The last of these is on February 5. Request for any further information should be sent to the organiser, Mr. Hugh Davies of the Railway Enthusiasts' Club, Farnborough, Hants.

The club is also pleased to announce the re-commencement of London meetings at Brunswick House, 30 Wandsworth Road, London S.W.8. (near Vauxhall Station). The first was on January 22 when members devoted the evening to colour slide displays, depicting R.E.C. activities in the last few years, both at home and abroad. The second meeting is on February 19, when it is hoped to stage an illustrated talk on the Pullman Car Company. Meetings start at 7.15 p.m. and visitors are welcome. Further information can be obtained from Mr. Martin J. Beckett, of 19 Faversham Avenue, Enfield, Middx.

2 mm SCALE ASSOCIATION

Meetings are twice monthly at Keen House, Calshot Street, London N.1. There will be lectures on subjects of interest to all during February on Saturday, the 15th at 3.30 p.m., and on Friday, the 28th at 6.30 p.m. Society publications and models will be on view. Further information from the Hon. Sec., Mr. V. D. Willis, of 69 Hawkhurst Way, West Wickham, Kent.

EAST HAM & DISTRICT MODEL RAILWAY CLUB

The club hopes either to move to a larger hall in the same grounds as it is in at present, or alternatively to enlarge the existing clubroom in the very near future, possibly before this is printed. This has been necessitated by the continued growth of membership, and a similar growth of the club's 00 layout. The club's EM and TT layouts also urgently require additional space. Whatever decision is reached will be for the benefit of the club. If the moving schedule is delayed the programme for February will be as follows: February 3, Practical Night (All groups); February 10, Talks by Mr. R. A. B. Thompson on "The advantages of Universal Couplings" and "Wheel standards on a Club Layout"; February 17, Practical Night (All groups); February 24, Track Night (L.N.E.R.).

If your aim is to get the fullest enjoyment possible from the hobby, you will be welcome to attend any Monday night at 7.30 p.m. in St. Gabriel's Church Hall, Aldersbrook Road, London E.12 (101 bus to the door) when the secretary will be pleased to supply further details. Alternatively, write to the Secretary, Mr. G. R. Lloyd, of 32a Goldsmith Road, London E.10 (LEY 9270).

THE MODEL RAILWAY CLUB

The club fixtures for February 1964 are as follows: Feb. 6, Track Night (Southern

Group); Feb. 13, Track Night (Great Western Group); Feb. 20 Members' Photographs. (This evening is devoted to showing colour slides and cine film of railway—including model railway—interest). Meetings take place at the club's Headquarters, Keen House, Calshot Street, King's Cross, London N.1. Please address all inquiries to the Hon. Secretary, Mr. D. A. Boreham, of 135 Mandeville Road, Northolt, Middlesex.

THE NORTHERN RAILFANS' CLUB

The February 1964 programme is as follows: February 1, Visit to York Motive Power Depot, and Museum; February 2, Visit to Crewe Locomotive Works; February 8, Visit to Manchester Motive Power Depots and Horwich Works (trip starts from Manchester); February 15, Visit to Leeds and Wakefield Area Motive Power Depot (from Leeds); February 29, Visit to Darlington Locomotive Works and Motive Power Depots (from Leeds).

Details of membership to enable prospective members to participate in these visits can be obtained from the Lancashire and Yorkshire Divisional Secretary, Mr. C. B. Brown, of 17 Glen View Street, Cornholme, Todmorden, Lancashire.

MIDDLESBROUGH M.R. & TRAMWAY CLUB

The club has under construction a 00 gauge layout, and a tramway layout is to be started in the near future. Details of membership may be obtained by contacting the Hon. Secretary, Mr. R. S. Banks, of 1 Grove Road, North Ormesby, Middlesbrough.

CRAWLEY MODEL RAILWAY SOCIETY

The February programme is: Wednesday 5, Talk by G. P. Overton, "Freelance Modelling"; Friday 14, Talk by F. J. Briggs, "The Three Wise Men"; Friday 28, Rummage Sale; Friday 21, Timetable Running; Wednesday 26, Discussion; Friday 7, and Wednesday 19, Track Nights; Wednesday 12, Working Night.

Further details from Hon. Secretary, Mr. B. E. Champion, of 175 The Birches, Three Bridges. All meetings at the clubrooms, Hut 30, Tilgate Forest Recreational Centre, Tilgate, Crawley. Open 7.0 p.m.

EAST MIDLANDS COMMITTEE

A committee composed of the Festiniog Railway, Welshpool and Llanfair Light Railway, and the Talyllyn Railway Preservation Societies has been formed in the East Midlands. Its purpose is to promote co-operation between local members of the above societies, and a winter programme is being arranged accordingly. Everyone will be welcome to attend these meetings which are to be held at the Clarendon Hotel, Midland Road, Derby, commencing at 7.30 p.m. A slide show entitled "Continental Narrow Gauge", is to be given by Mr. B. Roberts on March 19.

THE SOUTHERN SOCIETY

Work is at present in progress in the society's headquarters on a 00 layout, and a programme of talks and visits to railway installations has been arranged for the coming months, including brake van visits to motive power depots, and signal boxes. The society also publishes a monthly newsletter with articles and news from both modellers and prototype enthusiasts. Meetings are held each Monday. On the first Monday of the month they take place at Victoria and take the form of a talk either by a society member, a prominent modeller, an official of a preservation group, or a member of B.R. Members cine films and transparencies are also shown at Victoria meetings. The three remaining meetings of the month are held at the Streatham Common Station H.Q. of the society. All meetings commence at approx. 6.45 p.m. and end at 9.0 p.m.

Visitors and new members are always welcome, and those interested are invited to write to the Secretary, Mr. R. Merry-Price, of 10 Girdwood Road, Southfields, London S.W.18. Programme: February 3, A talk by the British archivist, Mr. Atkinson; February 8, Brake van visit to the Merton Abbey branch; February 29, Visit to the Redhill, Three Bridges, and Brighton Motive Power Depots. All inquiries regarding outings should be addressed to Mr. D. A. Guiver, of 46 Birchwood Avenue, Wallington, Surrey.

R.C.T.S. Railtours described

THE most recent tours organised by the Railway Correspondence and Travel Society took place during October 1963. The first of these was the "Duchess Commemorative Rail Tour", on October 5. This tour provided what might turn out to be the last opportunity to travel from Crewe to Edinburgh (Princess St.) behind a Duchess Pacific. Locomotive No. 46251 City of Nottingham, *which was in excellent condition, with its polished sides and connecting rods, was the locomotive provided by British Railways for the occasion. The train was formed from eleven L.M.S. coaches, and carried approximately 350 passengers.*

The run was uneventful as far as Preston, but between this point and Garstang the running was considerably slowed by a freight train, which was given the right of way, ahead of the special train, resulting in Lancaster being passed eleven minutes late. When the train reached Shap, the weather was in typical form, the rain beating down mercilessly. The driver whistled for a banking engine to assist the train up the bank, the climb taking eleven minutes instead of the nine allowed for. Carlisle saw the exchange of locomotive crews, the new driver announcing his intention to climb Beattock bank "on his ain". This he succeeded in doing in twenty minutes, only two minutes over the time allowed.

The train finally reached Edinburgh at 2.0 p.m., and the return trip was started at 3.45 p.m., Crewe being reached by 8.28 p.m. All members participating in the tour congratulated the locomotive crews on their high standard of enginemanship, which had resulted in a very noteworthy trip.

The Nidd Valley Special

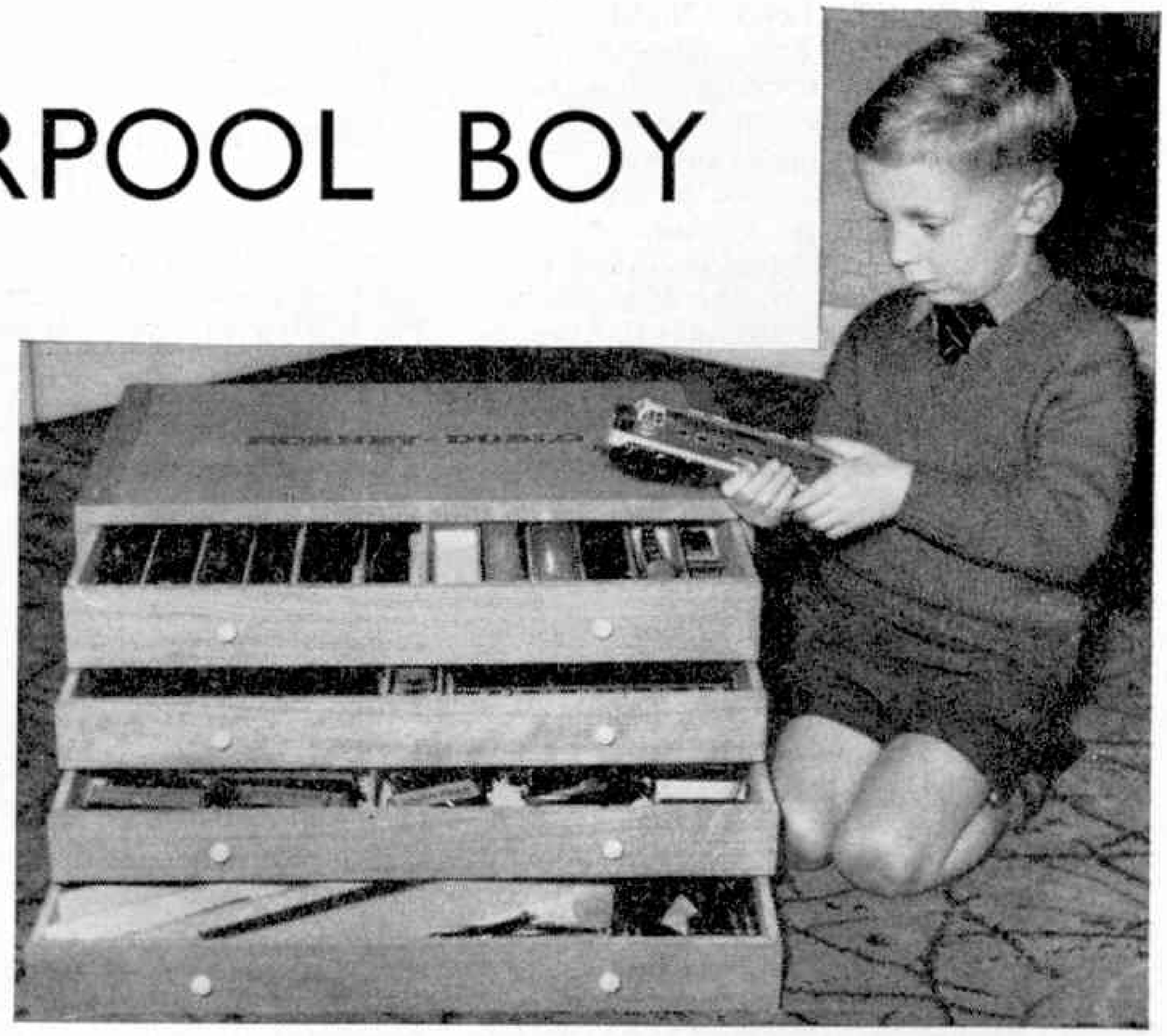
A 2-6-4T and five coaches containing 230 passengers left Leeds at 12.41 p.m. on Saturday, October 19, to travel on the last train to run over the Nidd Valley branch. The train was booked to run non-stop to Wetherby, via Cross Gates, Micklefield, Church Fenton, and Tadcaster.

Approaching Wetherby the remains of the racecourse station, closed in 1959, could be seen, as could the course of the former direct connections between Wetherby East and West Junctions. Leaving Wetherby at 1.41 p.m. the locomotive attacked the 1 in 90 rising curve to the site of the former Wetherby West Junction. After falling slightly towards Spofforth, the grade steepened shortly before reaching that station, and the next three miles rose continuously to the outskirts of Harrogate. The locomotive tackled the bank with spirit, and was soon roaring across Crimple Viaduct, allowing passengers fine views of the Yorkshire countryside. The track of the former Leeds and Thirsk line between Pannal and Starbeck could also be traced from the top of the viaduct.

At Harrogate, the chairman of the Pateley Bridge and Ripon Rural District Council, together with the Clerk to the council and his wife, joined the train for this last trip over the Nidd Valley lines.

Restarting from Harrogate at 2.9 p.m., the train was soon crossing the Nidd beyond Bilton, and after a brief halt at Ripley Junction the journey up the Nidd Valley branch began. After leaving Birstwith four minutes early, a halt was made to allow the crew to open the gates at Ross Crossing. A further halt for crossing gates was necessary at Glasshouses, and it was 3.44 p.m. when the train made a triumphant arrival at Pateley Bridge, to be welcomed by half the population. One party went off to explore the remains of the Nidd Valley Light Railway, while others patronised the shops. At 5.10 p.m. the return journey was begun, and the occasion became distinctly sentimental as the engine whistled loudly and children waved as the train departed. And so, to the accompaniment of the click and whirr of lineside cameras, the last train over the Nidd Valley branch made its stately progress down the valley.—**M.R.**

A LUCKY LIVERPOOL BOY



NOT often is a five-year-old made an honorary engine driver by British Railways. That was the honour accorded to young Robert Rogers of Aintree, Liverpool on December 11 when he made a special return trip to London as the guest of B.R.

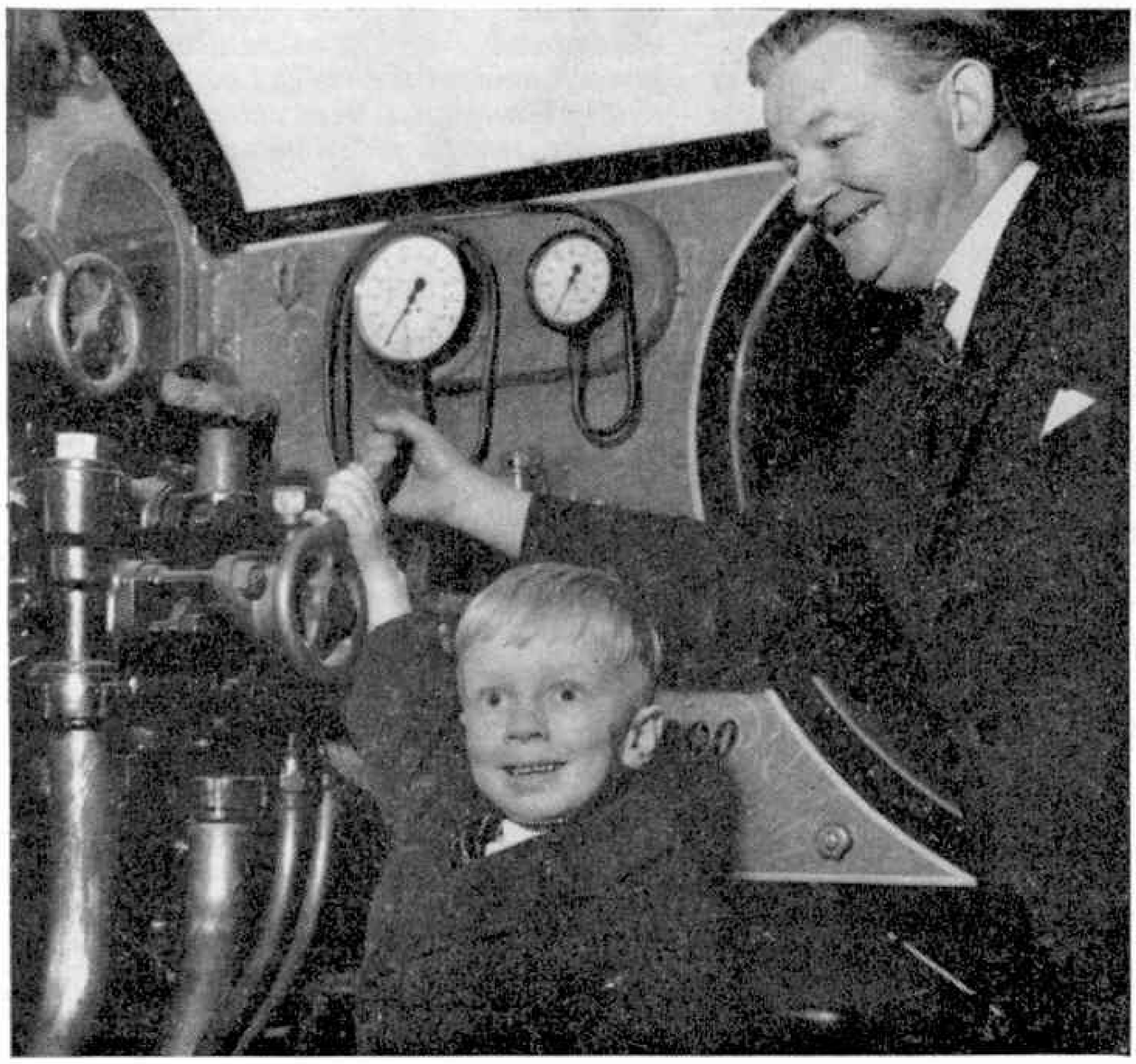
The excitement began for Robert when his father, Mr. Leonard James Rogers, who is a specifications engineer with the English Electric Company at Netherton, Liverpool, won a competition organised by the *Liverpool Daily Post* bearing on railway travel.

There were nearly 20,000 entries for the contest in which competitors had to take eight out of ten suggestions for safe and comfortable railway travel and put them in order of merit. The first prize was an award of Hornby-Dublo electric locomotives, rolling stock and track totalling over £100. The set included every locomotive in the standard Hornby range, with sufficient components to make up several goods and passenger trains, and track to make up a layout, complete with points and sidings, measuring about eight feet by four.

One of the attractive features of the award was that the whole of the contents were accommodated in a neat, four-drawer oak cabinet bearing a special Hornby-Dublo transfer.

With this award was linked a visit to London and the British Railways' Museum at Clapham. Mr. Rogers' entry, on behalf of his young son, entitled them both to the thrilling day-long trip to London in company with the Editor of the *Meccano Magazine* and Mr. James Angus, Promotions Manager of the *Liverpool Daily Post and Echo*, Ltd.

The party travelled to London on the "Shamrock", leaving Lime Street at 8.15 a.m. Just before the train left, Robert was presented with a railwayman's peaked hat and on arrival at Euston—fifteen minutes early on the train's booked time for that day—he was met by Mr. Harry S. Turrell, Stationmaster at Euston, and officials (*Continued on page 607*)



Top: Robert is seen here with his wonderful first prize—a cabinet full of Hornby-Dublo locomotives, rolling stock and track. Above: Mr. Harry S. Turrell, Stationmaster at Euston, welcomes Robert on his arrival from Liverpool on the "Shamrock". Left: This view, taken in the cab of the Midland Compound No. 1000 at Clapham Museum, shows Robert with the Editor of the "Meccano Magazine" operating an injector control.

ROAD AND TRACK

Formula One team changes

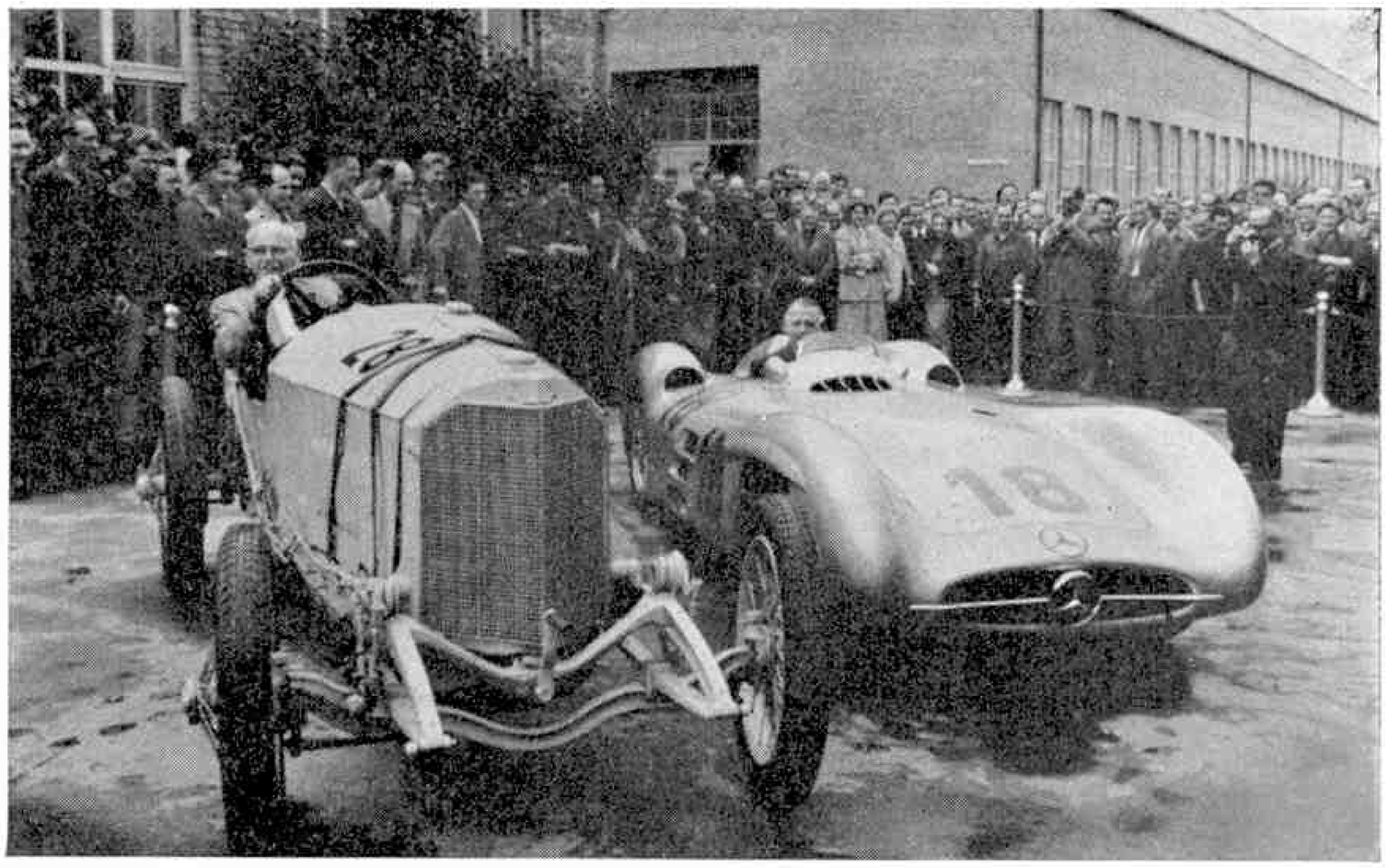
I CAN now reveal the make-up of the new season's Formula One works teams. Lotus will be led by the new World Champion driver Jim Clark, backed up by Peter Arundel, Cooper will again field two cars with Bruce McLaren who is this year joined by Jimmy Mayer, while B.R.M. has the ex-World Champion Graham Hill with Richie Ginther, who was showing such good form towards the end of 1963. New, lightweight Brabhams will again be driven by Jack Brabham and Dan Gurney.

Star driver of foreign works teams is John Surtees, a man to keep your eye on this season. He will be backed up by Lorenzo Bandini and, on occasion, the Belgian Willy Mairesse. A.T.S. are said to be continuing with former World Champion Phil Hill and Baghetti. Porsche will not be racing a Formula One team this year except perhaps in the German Grand Prix. Honda, the Japanese newcomers have been trying to engage the services of Jo Bonnier, so it looks as though an interesting season lies ahead, especially as Ferrari engines have found appreciably more power.

Recently, I had a look around the large Lotus works. Very impressive it is, and building is still going on. The occasion was the presentation of two new racing car transporters, specially built by the Ford Motor Company on their high speed coach chassis for the Lotus Formula One team. The magnificently equipped Ford transporters have a top speed of 75 m.p.h. and are designed to cruise at 70 m.p.h.

Over lunch, I had an interesting chat with Colin Chapman and learned his views about the new Formula One regulations coming in on January 1, 1966. The new formula permits the use of unblown engines up to 3 litres and will also admit gas turbines and other rotary engines. In the eyes of Colin Chapman it is attractive because it lets in supercharged engines up to 1½ litres, and he considers the current 1½ litre power units could be modified and, with two-stage supercharging, give something approaching 400 b.h.p. Colin also expounded another interesting view—the cars will have enough power to make automatic variable speed transmissions a practical reality, and it is his contention that all racing cars of the future will use this type of transmission.

Motoring this month in the G.T. version of the Ford Corsair has been a very enjoyable experience. Outwardly it follows the handsome lines of the newly-introduced Corsair range, but special under-bonnet treatment puts a real sting in its tail. As far as handling is concerned, I found it easier and certainly more sure-footed than standard Corsairs; the suspension has been stiffened to provide roadholding in keeping with the extra performance.



Karl Kling poses in the 1954 French Grand Prix winning Mercedes beside Seiler and the car in which he set up the fastest lap at 69.65 m.p.h. in the 1914 French Grand Prix, also won by Mercedes, at Lyons. (Mercedes finished first, second and third in 1914 French G.P. a few days before the outbreak of war.)

By JERRY AMES

The 1498 c.c. five-bearing engine has higher compression, Weber double choke carburettor and a different camshaft to develop 78 b.h.p. net, at 5,200 r.p.m. The engine is linked by a stout clutch to a four-speed, all-synchromesh gear box with remote control floor gear lever. Suspension, independent at the front only and conventional at the rear, is more highly developed to provide a minimum of axle bounce when accelerating hard. Brakes—disc at the front—have vacuum servo assistance.

In my test car, I saw a maximum of 94 m.p.h. but the G.T. Corsair would settle happily for an 80 m.p.h. cruising with plenty in hand. Below speeds of 28 m.p.h. in top, the engine loses its smoothness and it is more pleasant to drop down into third. The two lower ratios are under-geared and fairly close together, so it is easy to over-rev. There is a wide gap between second and third and both the upper two ratios suggest over-gearing. Speeds in the lower ratios are 29 m.p.h. 41 m.p.h. and 76 m.p.h. Acceleration is clean and satisfying; the G.T. Corsair streaks away from a standing start and can be up to 50 m.p.h. in a fraction less than 10 seconds, while 70 m.p.h. comes up within 20 seconds.

The steering is low geared for a quick vehicle, while the driving position is cramped for long-legged drivers. The steering wheel needs bringing four inches closer to the facia, which would give more room for arm movement when turning a sharp corner. Extra seat adjustment and a thickly padded roll edge to the driving seat would be welcome.

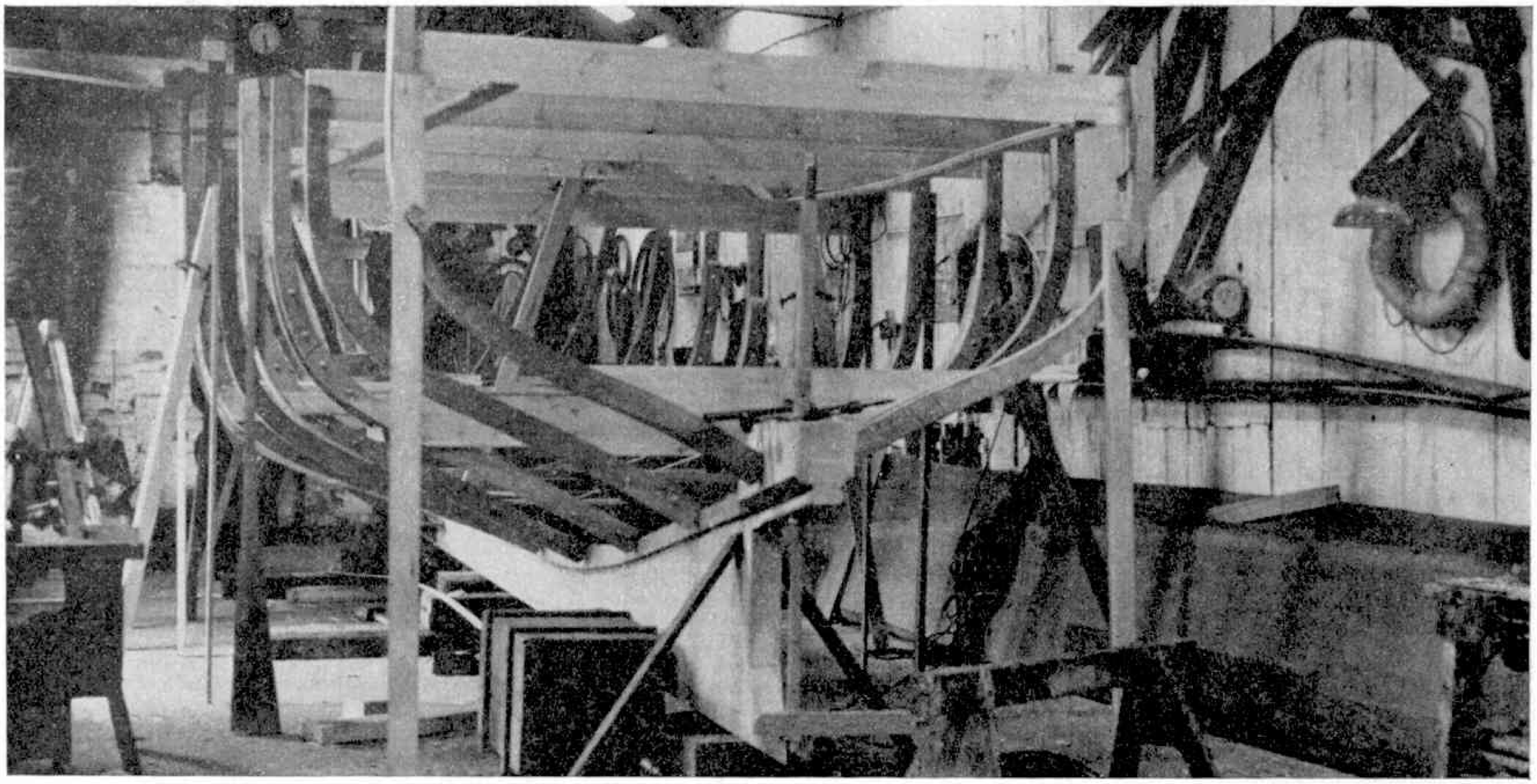
The G.T. Corsair is a delightful car to drive, much quicker than the average four–five seater family saloon. Maintenance is needed only at 5,000-mile intervals and there are no greasing points. Already this model is in keen demand.

KNOW YOUR CARS—MERCEDES-BENZ

Strictly speaking, the Mercedes-Benz story does not begin until 1925, when Germany's biggest motor corporation, Daimler-Benz, was formed by a fusion, for economic reasons, of Daimler and Benz. Its emblem became the famous three-pointed star. The firm of Benz was founded by Karl Benz, who really made motoring possible, after successfully building a single-cylinder, four-stroke petrol engine in 1885 and later fitting it to a wheeled vehicle, to introduce the first motor car. But that is another story.

Chief engineer and designer for the newly-formed Daimler-Benz company in 1925 was the great Dr. Ferdinand Porsche, later to design the original Volkswagen and the famous Auto-Union Grand Prix machines. In 1925 he introduced the 33/180 Mercedes-Benz, the first high-speed touring car with supercharger. With its high centre of gravity it had poor roadholding and was tricky to handle. This was followed in 1927 by the low-slung 36/220 Mercedes with 6½ litre supercharged engine—one of the finest sports cars ever built. The shrill screaming supercharger could only be brought in by

(*Continued on page 591*)



The half frames assembled and trued up.

Boatyard in the Midlands

BOATBUILDING is usually thought of as a maritime art, and it came as something of a surprise to me when I saw it practised only 26 miles from Birmingham. I saw the complete assembly of a 32 ft. motor launch in a small boatyard in Diglis Basin, at the south end of the Worcester and Birmingham Canal, where it runs into the Severn. Once the centre of a thriving transport system, it is now kept alive only by the recent revival in interest in pleasure craft.

The yard had received an order for a 32 ft. twin-screw diesel cruising launch, of 9 ft. 6 in. beam, and 3 ft. 4 in. draught. To reduce costs, a second hull was laid down at the same time, and was sold soon after it had been started: by building the two, it was possible to spread the costs of drawings and jigs over both.

First, the keel was made. A length of channel iron was filled with concrete and attached by galvanised iron bolts to a wooden keel. With this on its side, the stem post was keyed and bolted on to one end, and the rudder post on to the stern. This done, the keel and posts were stayed upright in the middle of the floor of the shed.

Twelve frames were double sawn (each in two halves) from oak, to the shapes which were pencilled out on to jigs laid out on the floor. Each frame was bolted to the keel, and to its opposite half across the top of the keel.

The hull planking, of caravel type, with edge to edge fitting, was of teak below the water line, and above the water was of African mimosa in one vessel, and mahogany in the other. After the lowest plank, the garboard, had been firmly screwed to the keel the remaining planks were attached on each side to the twelve frames, by two screws to each frame, a total

by Anthony A. Vickers

of 1,152 brass screws. At this stage one plank was omitted on each side to allow access for the fitting of the ribs.

Between each screw and its neighbour two ribs were riveted. Each rib was preheated in a steam chest, and quickly transferred to the hull, clamped into place at top and middle, and nailed home from the outside while still hot. Each rib required 24 nails, and the longer the time taken over each rib, the cooler it became, and the harder the work of hammering home the nails.

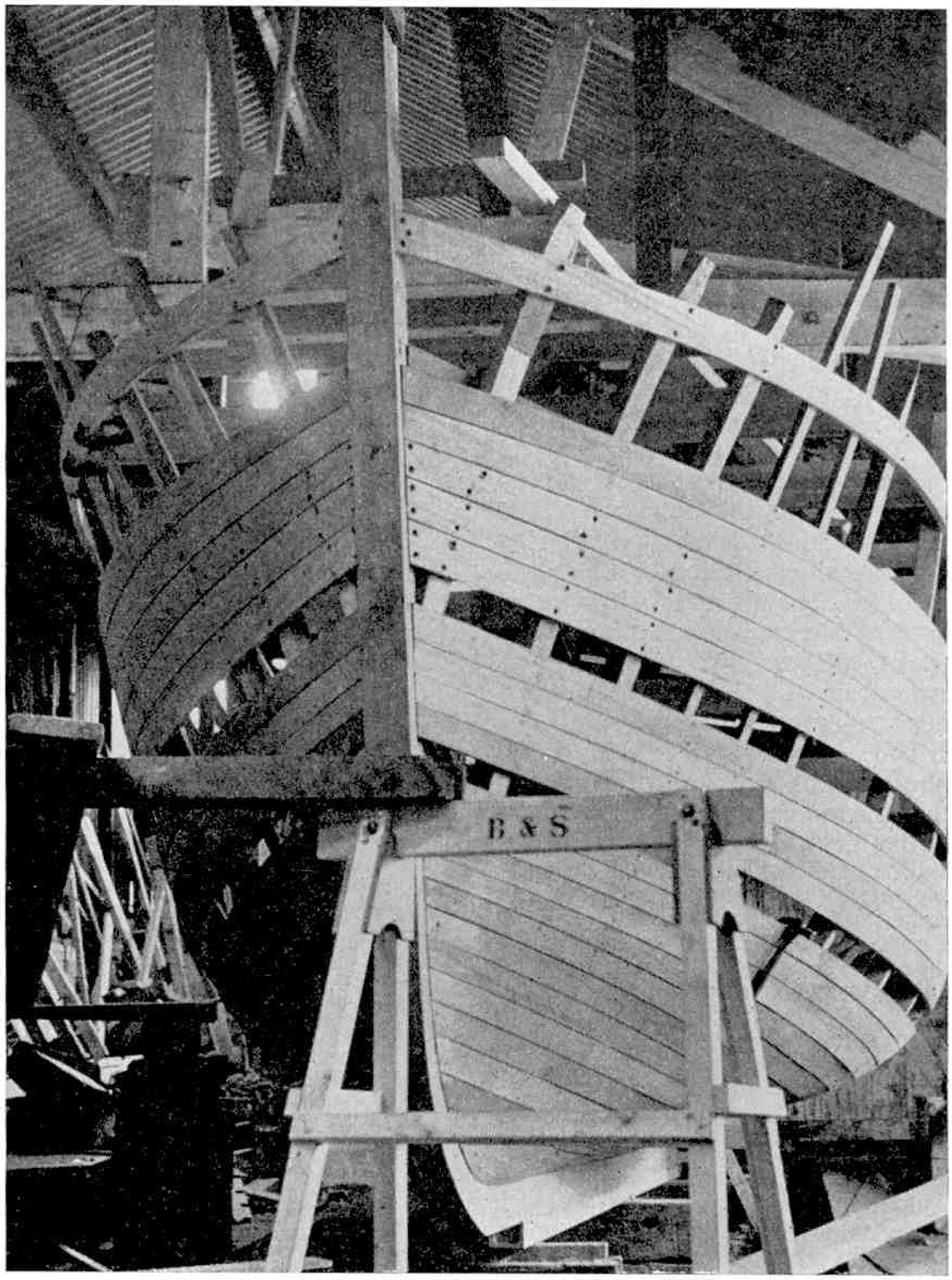
Later, the projecting points of the nails on the interior of the hull were flattened by blows from the inside, while a heavy anvil was held against the heads on the outside. The number of rivets totalled about 2,304.

The sawn deck beams were next cut and dovetailed into the top planks, together with the carlins which bordered the skylight and deckhouse fore-and-aft, these being joined to the top planks by short deck-beams. The decking was of thin planking on plywood, to reduce weight. Propeller shaft housings of solid oak were drilled out *in situ*, with 2-inch diameter holes each 3 ft. 6 in. long, a preliminary bore being reamed out in stages to line up with a visual sighting line.

The bedding for the engines was bolted to the floor, and the stern transom was built up of a double thickness of planking, doubly riveted, and braced to the last of the frames and deck beams. All woodwork was treated in turn with preservative fluid, and the planking caulked, using a modern rubberised caulking compound. All caulking and all screw tops were filled with red lead stopping, leaving the hull ready for sand papering, priming and painting.

With the propeller shafts in place, and the engines slung in, the deckhouse was added, leaving the long process of internal fitting out. This included fuel tanks and water tanks, with their external vent holes; exhaust, waste and lavatory water openings cut into the hull and all bunk, cupboard and galley fittings and furnishings. With the screws fitted to the propeller shafts the boat was now ready for launching.

The hull planking, complete apart from the gaps left so that the ribs can be clamped in place while hot and pliable.



This boatyard launches its vessels over the side of the canal, stern first. This necessitates removing the end of the boathouse, and even in some cases part of the roof, should the deck cabin be too high. In this case only a small section of the end of the roof was removed, to allow for the rise of the bows as the vessel tipped over the edge of the canal bank. The boat, of some five tons dead weight, was hauled slowly along the shed floor, partly by use of jacks, and partly by a steel cable from an adjacent winch which was taken through a tackle on the opposite bank of the canal. She was left, for the ceremony, lying on a short inclined timber ramp, resting on her main and bilge keels, the running surfaces being well coated with Russian Tallow, or horse grease. The speeches made, the safety rope on the bows was released, and a short pull on the stern hawser sent her off quickly down the last few feet of the ramp.

The two sister vessels were launched on successive days, and after fitting of deck gear and some internal electrics and minor furnishing, they were both ready to be taken over. Having called in at the yard every few days during the birth and steady growth of these two boats, I could well appreciate the feeling of achievement which prompts the spontaneous enthusiasm evidenced at the launching of every vessel, great or small.

Road and Track—

(*Continued from page 589*)

pushing hard on the accelerator, when it gave a most satisfying performance; maximum speed was 109 m.p.h. but it gobbled fuel at the rate of 12 m.p.g. Its brakes were poor and the clutch very sensitive; nevertheless, it was a fascinating car to drive.

Subsequently came the more powerful 38/250 Mercedes, but this, in my opinion, lacked the superb balance of the earlier 36/220 and had nothing like the same agility when cornering quickly. The 7 litre blown 38/250 could reach speeds of 118 m.p.h., but it went out of production in 1931, soon after Dr. Porsche left Mercedes. These cars were raced all over the world and gave Rudi Caracciola his first racing successes.

In 1934, the 100 m.p.h. 5-litre, 8-cylinder 500 K appeared, to be superseded a couple of years later by the more powerful 540 K. During the period 1934 to 1939 Mercedes Benz produced the most awe-inspiring and successful team of racing cars, led by Rudi Caracciola—machines that are still talked about to this day. After the war the 300 SL appeared, first as an experimental car in 1952 and then, in 1954, as the world's first 150 m.p.h. production sports coupé. In 1954 Mercedes-Benz returned to Grand Prix racing with fuel injected, desmodromic valve 8-cylinder engines, ending as World Champions of Grand Prix, sports car and rallies in 1955, when they dramatically and suddenly terminated their racing programme. I expect to see them return to racing when the 1966 Formula gets under way.

Today, Mercedes are concentrating on fine production cars including the 220 SE saloon and the new 230 SL 125 m.p.h. sports car. In their experimental shops they have been working on gas turbine cars and are now developing the Wankel rotary for future small cars and, possibly, racing.

Shop Window—(*Continued from page 583*)

been produced for the beginner. Complete with transformer, it costs six guineas. The train operates by a three-rail stud contact and runs on A.C. current and is part of the wide selection of rolling stock, track work, signals, locomotives, etc. which Marklin have to offer, based on railways in America and Europe. Faller and Marklin models are available from Gamages, Hamleys, Selfridges and specialist model shops.

A truly ambitious plastic construction kit now on the modellers' market is the *Royal Sovereign* by Airfix (picture on page 583). Britain's first 100-gun warship, she caused a sensation when built at the command of King Charles I and launched in 1637. The largest number of moulded polystyrene parts ever produced by Airfix for one model—297—plus a vacuum-formed polystyrene sheet of sculptured sails, coloured flags and rigging, go to make up the model, which retails at 17s. 6d. It is 17½ inches long and 16 inches high.

New books to read

TO most laymen the conjuror has always been a man of mystery. With his long black coat, top hat, and many weird gadgets he enthralls the most critical audiences, his feats amounting almost to magic. But the conjuror is not, in fact, a wizard; he is just a brilliant human artist dealing in deception. Some of his tricks are ridiculously simple and some amazingly complicated, yet they are tricks just the same.

Successful Conjuring published by C. Arthur Pearson at 21/–, lets the reader into the secrets of the trade, giving full details of how many of the most mystifying tricks are performed. It shows the make-up of numerous pieces of apparatus used by the magician, explains card tricks, delves into escapism and even deals with telepathy. The various deceptions covered are described with the help of almost 300 photographs and line drawings so that the reader understands perfectly the methods used.

In spite of the fact that the theory is explained, it is evident from the book that conjuring is a difficult business requiring a good deal of persistent practice before the novice is able to fool an alert audience, although some tricks can be learned without too much trouble. Once proficiency is reached, however, it is surprising what can be done. Having read the book, I have watched conjurors on TV performing the exact tricks detailed in its pages, and yet have been unable to follow their movements.

This book is a fully-revised second edition containing a number of new chapters additional to the popular first edition, which was published in 1951. It contains a wealth of information, both for the would be amateur conjuror and for the man or boy whose curiosity prompts him to discover the mechanics behind the magician's illusions.—**C.J.**

* * * *

The title **The Picture Story of World Railways,** by Christopher Johns (World Distributors, London, 15/–), indicates exactly the nature of this book, but in addition to the numerous illustrations which form its principal feature, there is a certain amount of text—somewhat brief in some instances—mentioning salient points concerning the railway systems covered.

As the pioneer country in railroading Britain, naturally, receives plenty of notice and for the purpose of the book Britain is grouped in the section covering Europe, as also is Soviet Russia. Then come in turn the continents of Asia and Africa, followed by North and South America and finally Australasia.

The page size is generous, approximately eleven inches by eight and a quarter inches. The pictures are well varied, and are not confined to trains alone; they include engineering features and many views that convey the atmosphere of rail travel all over the world.

* * * *

Would you like to know how to make a Swanee whistle, or a string bass from a box and a piece of string, how to listen to the beat of your heart or how to make a model of sound waves? If you would, then **The Second Book of Experiments** (John Murray, 16/–) is just the book for you. This is the follow-up to *The Book of Experiments*, of which more than 45,000 copies have been sold in English language editions alone. There is an enormous amount of entertainment and instruction in this book for readers of almost any age, and the apparatus for the experiments described consists of articles which are found in every home. *The Second Book of Experiments* is translated by Eric G. Breeze from the original text by Leonard de Vries and the illustrations, many of them in humorous vein, are by Joost van de Woestijne.

* * * *

Tramcar enthusiasts—and they *are* enthusiasts—will revel in **Tramcar Treasury** (Allan and Unwin, 42/–). Dennis Gill, the author, has written a non-technical book about tramcars and the people who ran them, those who rode in them and those who loved them.

It is remarkable that as the number of tramcars in service has declined, so interest in them has mounted. It is difficult to describe exactly the attraction of the tramcar. The double-deckers familiar in this country were described by Arnold Bennett as enormous and beautiful, while Howard Spring has referred to them as stately caravels. Somehow tramcars in line ahead formation—they could hardly be otherwise—always reminded the writer of this review of tall Ships of the Line of the Nelson era. They were indeed splendid in their hey-day, whether careering along a reserved track in suburbia with full sail, as it were, with raking pole aloft and rope gracefully bowed rearward, or cautiously navigating the interwoven intricacies of street junctions.

Alas, the traditional British trams eventually began to look a little self-conscious in this age of traffic lights and traffic jams when, hemmed in by hordes of throbbing, thrusting, motor vehicles they no longer had the freedom of the tracks. And so they passed, with deep regrets in many places, to their diverse dooms.

Model trams, restored trams, preserved trams, in fact all kinds of trams and relics of trams and tramways find a place in Mr. Gill's very readable book.

* * * *

Entomology, the study of insects, is a most pleasant and instructive hobby that takes its devotees into more remote and beautiful parts of the country, and often leads to interest in other aspects of nature such as botany and geology. **Practical Entomology** by R. L. E. Ford (Warne, 17/6) is an ideal guide, and although primarily concerned with butterflies and moths it does not neglect other insects. The book opens with a section on the "perfect insect," describing in turn its catching, killing, setting and mounting. The various stages of breeding—egg, larva, caterpillar and chrysalis—are then dealt with, and later chapters cover such relative matters as preserving larvae; the labelling and care of collections; attracting butterflies and moths to your garden; insect cultures, and the identification of insects. There are three useful appendices, and the book is illustrated with 14 half-tone pictures and 36 line drawings.—**E.M.**

* * * *

Locomotives of the L.N.E.R. (Preliminary Survey, Part I, R.C.T.S., 25/–) forms the introduction to a series that will consist ultimately of ten Parts and cover the history of the 10,000 or so locomotives owned at one time or another by the former L.N.E.R. Part I consists of 120 pages of text, and 64 pages devoted to illustrations of which there are 171. Within this compass is an astonishing amount of information, giving the basis of the history of L.N.E.R. locomotive classes to be related in later Parts.

Brief details are given of the history of the Companies forming the L.N.E.R., the locomotive works involved and the "Chiefs" who ruled them. Locomotive classifications, numbering, painting, tender details, route restrictions and the locomotive diagrams issued for various official purposes and so on are covered in this introductory Part. They also provide a useful background for subsequent instalments, so avoiding repetition later. For various reasons the subsequent Parts will not necessarily appear in numerical order, and, in fact, the next anticipated is Part 5 due in the spring of this year.

Copies of Part I can be obtained from the Hon. Assistant Publication Officer, R.C.T.S., Mr. N. J. Claydon, 19 Dene Court Road, Olton, Solihull, Warwickshire, for 25/–, including postage.

From the days of the first Elizabeth

OLD CANAL BY THE RIVER EXE

NOT very long ago, Japan launched the biggest tanker in the world. She is *Nissho Maru*, of 131,000 tons, and will carry crude oil from the Persian Gulf to Japan.

Here, on the River Exe, we watch small tankers and ships sailing up stream en route for Exeter Basin via the Exeter Ship Canal. The canal is entered through the lock gates at Turf. The tonnage of these ships is of necessity small, as the canal accommodates only vessels drawing not more than 11 feet 6 inches, not exceeding a total length of 122 feet or a beam of 26 feet 6 inches.

By G. M. PAUL

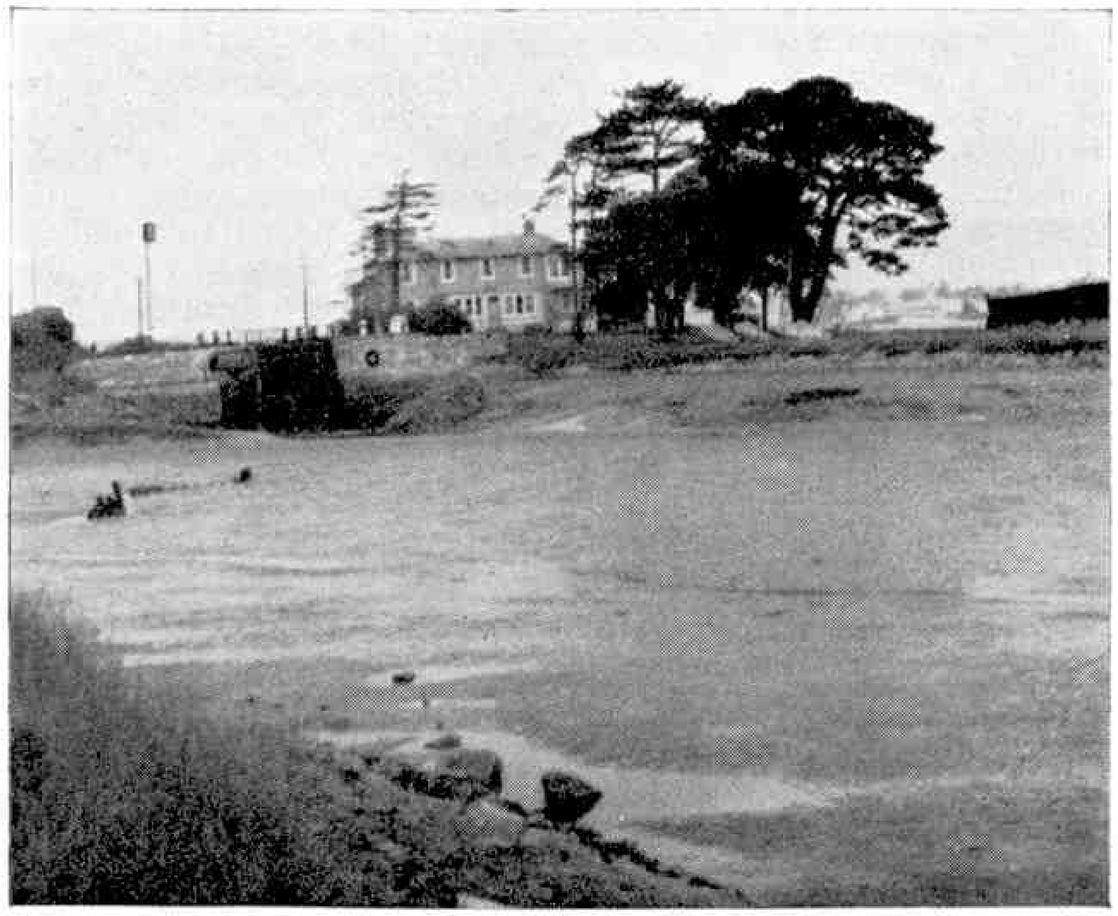
The *Nissho Maru* has an overall length of 954 feet 9 inches and a draught of 72 feet 10 inches, which certainly reduces our ships to pigmy dimensions. But the vessels sailing up and down the Exeter Ship Canal form a link with history, for this is the oldest canal in England. It was opened in 1566 during the reign of Elizabeth the First.

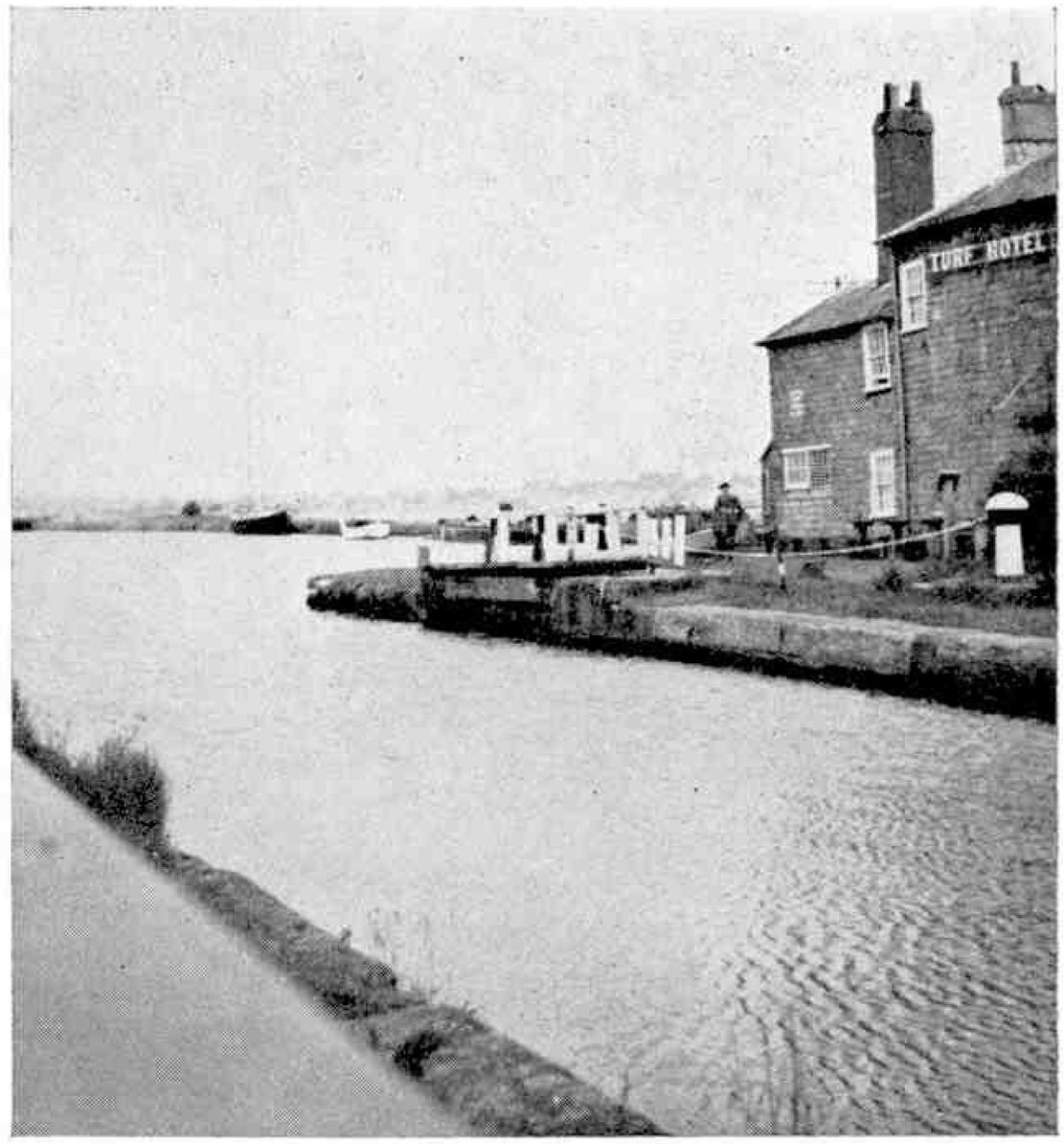
Before the canal was cut, ships sailed up the river, discharging their cargoes at the water-gate of the then walled city until the time of Henry III (1281). During this period Isabella de Fortibus, wife of one of the Earls of Devon living at Powderham Castle, built a weir across the river to spite the citizens of Exeter. It is still known as Countess Weir.

From 1284 successive Earls of Devon added further weirs and at last built a quay at Topsham where goods for Exeter had to be unloaded, the duty being exacted by the earls—a welcome addition to their revenue.

At last, in 1539, the Corporation of Exeter obtained an Act for removing these obstructions. Navigation of the river did not prove satisfactory so the canal was constructed at a cost of £5,000. This large sum (for those days) was met by the corporation and voluntary subscriptions. It is said nearly all the Exeter churches gave a portion of their plate, amounting to 900 oz. of silver.

A view of Turf from the western bank. Photographs by G. M. Paul.





The Exeter Ship Canal, showing the basin just beyond the Turf Hotel.

The man entrusted with the construction of the canal was John Trew of Glamorganshire. He was paid £225 plus a percentage of the tolls. The canal took about two and a half years to build, being opened in the autumn of 1566. It accommodated ships up to sixteen tons and began at the lock gates opposite Topsham, which are still there. Improvements were made after the Civil War when a stone quay was built at Exeter.

In 1827 the canal, with a proper entrance lock, was extended to Turf. The channel was deepened by raising the level of the banks and enabling bigger vessels to proceed to Exeter. The distance from Turf to Exeter Basin is five miles and there are two locks, one at Turf and the other at Double Locks, both worked by lock-keepers.

At the Turf Locks stands a small building, the "Turf Hotel", which is one of the most isolated inns in the country and is run by the lock-keeper and his cheery wife. To get necessary supplies of stocks, food and fuel the lock-cum-hotel keeper has to go by motor boat to the swing bridge at Countess Weir Bridge, on the A.30, where the brewers' lorries meet him. The swing bridge often causes serious delays during the crowded holiday season when cars crawl over this gateway to the West Country.

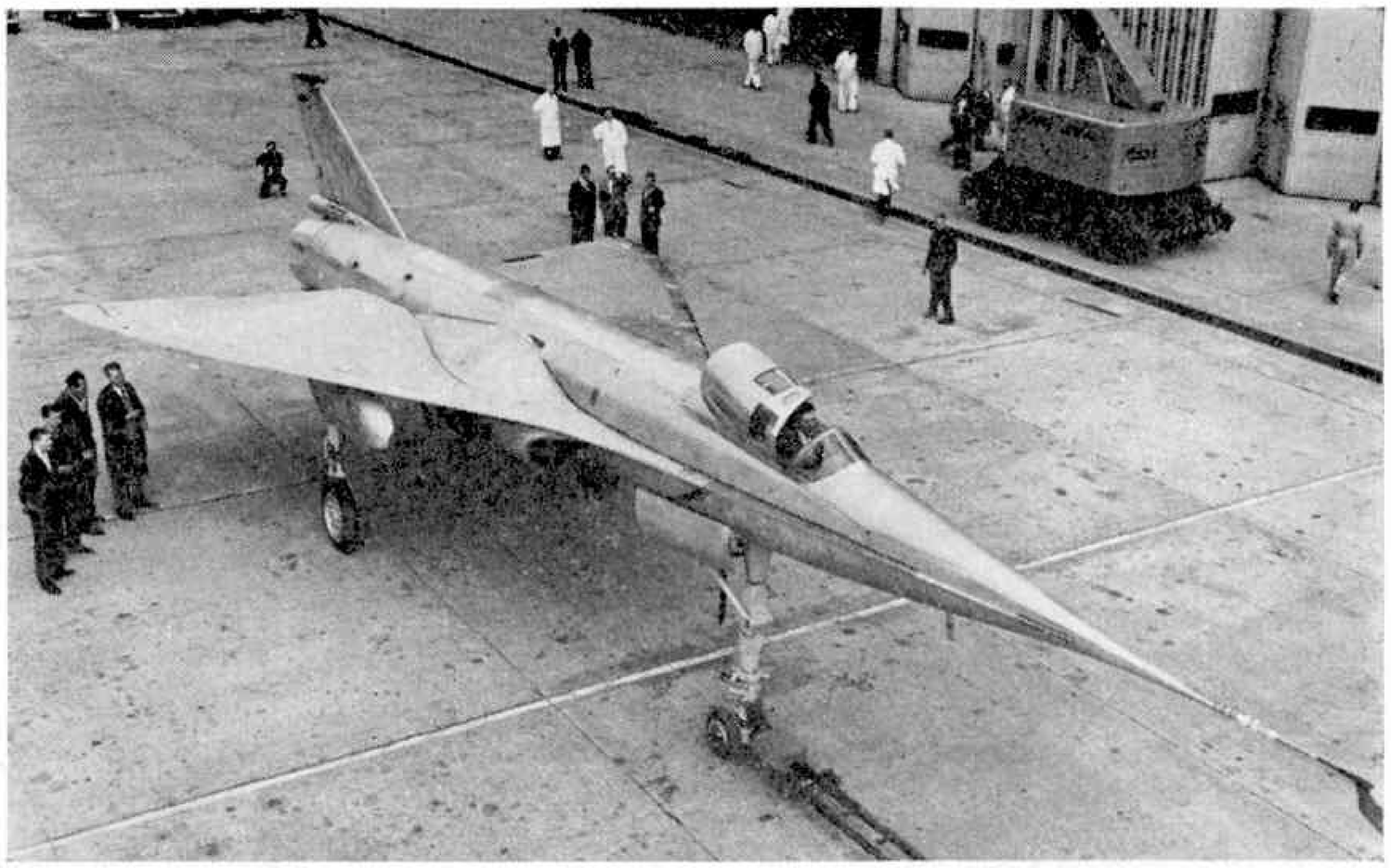
The Turf Hotel stands close to the lock gates, with the river (nearly two miles wide) on one side and the canal on the other. Beyond the canal swampy pasture land intersected by dykes leads to the Great Western Railway embankment.

Ships are only able to enter or leave the canal when the river is high enough. At low tide—except for a narrow passage marked by the buoys—miles of mud flats are uncovered. These are the feeding grounds of many kinds of water birds and others —innumerable seagulls, herons on stilt-like legs, sheldrakes which chase one another across the shimmering mud and peewits who utter their plaintive cry from the marshes.

I recently walked from Powderham to Turf by the river bank and, while enjoying some refreshment at the inn, chatted with

(*Continued on page 615*)

Record-breaker will test new wing



The BAC 221 single-seat research aircraft—first ever with wineglass-shape "ogee" wing.

THE BAC 221 single-seat research aircraft, illustrated at the top of this page, is the first aeroplane in the world with a wineglass-shape "ogee" wing. This type of wing will be used on the Anglo-French Concorde supersonic airliner, and the BAC 221 has been built to flight test it at both subsonic and supersonic speeds.

There could be no better aircraft for the job, as the BAC 221 began life as the Fairey Delta 2. Piloted by Peter Twiss, it set up a world speed record of 1,132 mph on March 10, 1956, so becoming the first

Air news

By John W. R. Taylor

aeroplane to achieve an officially-observed speed of over 1,000 mph.

Conversion into the BAC 221 was quite a big job, and was done at the British Aircraft Corporation's Filton (Bristol) works. In addition to replacement of the wings, it involved moving the engine air-intakes from the wing roots to a new position under the wing leading-edges and the installation of a new and much longer undercarriage. The original Rolls-Royce Avon turbojet is retained.

Ground testing of the BAC 221 began in the autumn of 1963 and it may have flown for the first time in its new form by the time you read this issue of the *M.M.*

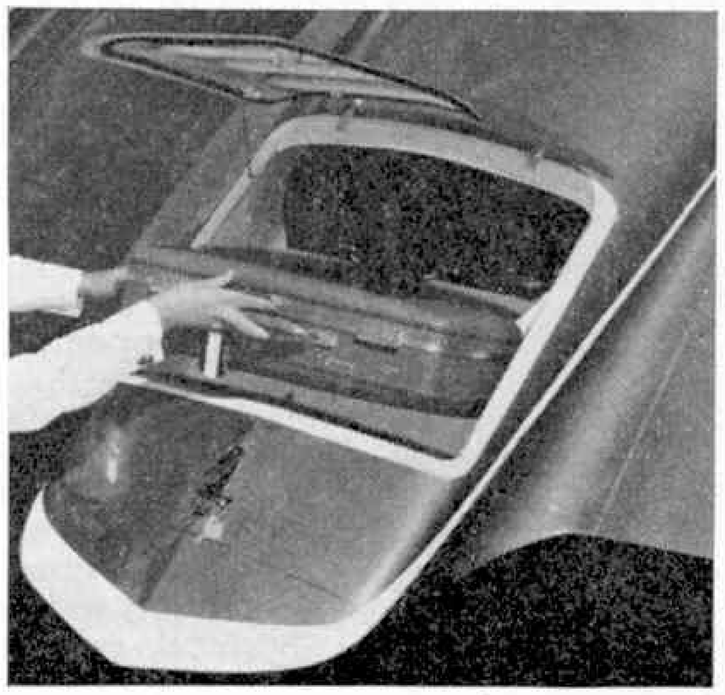
PALEFACES OUTWITTED

During floods in Alberta last year, the Royal Canadian Air Force was called in to evacuate an Indian settlement by helicopter. When the job was finished, the pilots were puzzled to discover that they had carried 30 per cent. more people than actually lived there. They learned eventually that the Redskins had been so impressed by their first helicopter flight that many of them had recrossed the river that caused the flooding to get another ride.

BAGS OF BAGGAGE

Cessna have devised a unique way of increasing the baggage space on the 1964 version of their six-seat Skyknight light aircraft. As shown in the picture below, they have extended the rear end of each engine nacelle to provide compartments big enough to hold a total of four small suitcases. With the normal baggage space in the rear of the cabin, the new wing lockers enable up to 600 lb. of baggage to be carried.

First introduced in 1962, the Skyknight has an airframe almost identical with that of the well-known Cessna Model 310, but is powered by two 260 hp Continental TSIO–470–C turbosupercharged engines. It cruises at 244 mph at 19,500 feet and has a fuel consumption of 8.6 mpg with a full load. All fuel is carried normally in two canted wingtip tanks, but additional tanks can be fitted inside the wings to give a maximum range of 1,405 miles with a reduced load of passengers and baggage.



Cessna Skyknight's engine nacelles extended at the rear to take baggage.

OVER 5,400 MPH

The second of the three prototypes of the North American X–15A research aircraft is being rebuilt in a form that should enable it to reach a speed of 5,450 mph—more than eight times the speed of sound—at a height of 100,000 feet.

Additional liquid oxygen and ammonia propellents for its rocket engine will be carried in two huge external tanks, each 20 feet long and 38 inches in diameter, slung under each side of the fuselage. The propellents in these tanks will be used first, after the aircraft has been released in mid-air from its Stratofortress "mother-plane", and the tanks will then be dropped by parachute. The extra fuel will enable the 57,000-pound-thrust rocket-engine to run for over 150 seconds, instead of the usual 83 seconds, accelerating the aircraft far beyond its present unofficial speed record of 4,159 mph.

In its new form, the X–15A will be used to test advanced types of ramjet engine that will power piloted space-planes of the future. The ramjets will be mounted under the rear fuselage, in place of the former ventral fin, and will be fed with liquid hydrogen fuel from a tank in the centre fuselage, which has been lengthened by 29 inches.

To prevent the aircraft from burning up, or melting, in the frictional heat caused by air flowing over its skin at high speeds, it will be coated all over with a special chemical "ablative" material, as used on missile nose-cones. The coating will vary in thickness from three-quarters of an inch on the nose and leading-edges of the wings and tail to less than one-tenth of an inch on the rear fuselage. When the temperature of the skin rises to about 530 degrees Fahrenheit, the coating will begin to burn away, keeping the metal skin underneath at a temperature far less

than the 1,200 degrees which the X–15A was designed to withstand.

THE SILVER LONGHOUSE

There is no word in the Dyak or Iban languages even remotely like "Belvedere", the name of the RAF's large twin-rotor helicopter that is used to transport troops and supplies in Sarawak. So the natives have given it their own name of "the Silver Longhouse". As a real longhouse, built of ironwood, is able to house 40 or 50 families, they must have been impressed by the Belvedere's carrying capabilities.

Another feature that the aircraft and longhouse have in common is that their floors are several feet above the ground. This enables the natives to keep pigs and boats under their houses, which are entered by swarming up a notched pole.

VETERAN REPAINTED

Hawker Siddeley's famous Hart biplane G–ABMR has been repainted in genuine RAF markings, as shown in the upper photograph. It was originally silver when it came off the assembly line in 1930, but was camouflaged during the war and then repainted in Hawker's blue and gold company colours when it was entered for post-war King's Cup races.

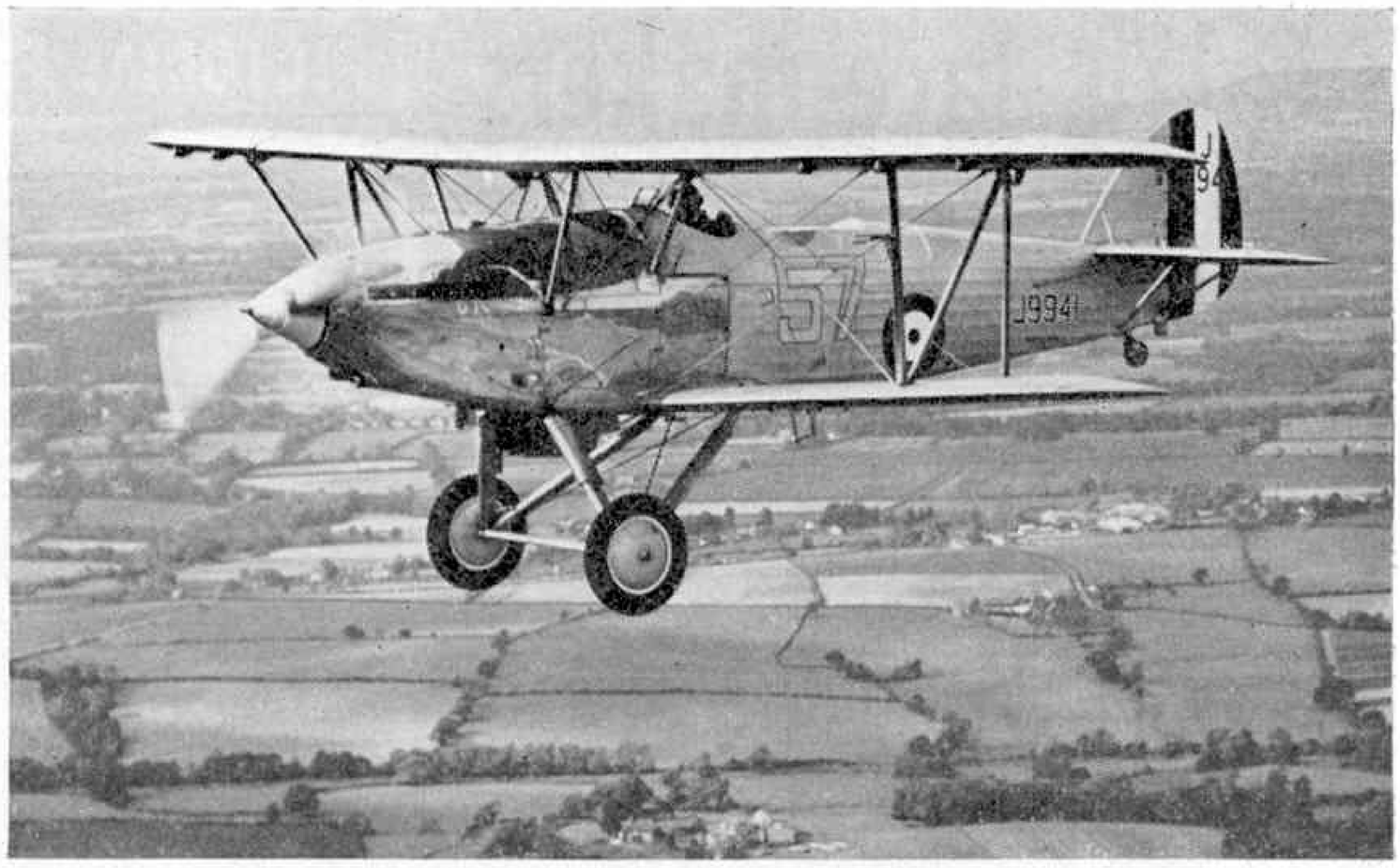
G–ABMR was grounded in 1956 while spare parts were sought for its Rolls-Royce Kestrel engine. When it flew again, in 1959, it carried temporary service markings. These were not very satisfactory; so, when photographs showing Hart J9941 on display at the 1932 Paris Air Show were discovered, it was decided to make G–ABMR representative of this aircraft, as the two machines were on the assembly line at the same time.

J9941 served with "B" Flight of No. 57 Squadron. Thus, the aircraft is now finished in overall silver, with the spinner, squadron number on the fuselage and wheel discs painted yellow—"B" Flight's colour. The figure "57" is outlined in a deeper yellow-orange, and there is a white trim-line round the wheel discs and around the fuselage serial numbers. All that is needed to make the Hart fully representative of a pre-war operational bomber is a Lewis gun on a ring to mount on the rear cockpit, and Hawker Siddeley are anxious to contact anyone who can help them to find one.

With a top speed of 184 mph, the Hart is very different from the mighty Victor bombers which 57 Squadron operates today from Honington in Suffolk. But during the 1930 air exercises, Harts outflew the fastest fighters in RAF service.

BEWARE OF THE CHOPPER

Until recently, helicopters were fairly docile creatures, used for ferrying troops and supplies in battle areas, and for carrying wounded men to safety, but unable even to defend themselves when attacked. All that has now changed, and helicopters have been used to strike at enemy guerrilla forces in many local wars, using machine-guns, light bombs and rockets.



The famous Hart biplane in genuine RAF colours.

The helicopters used for this work have been perfectly standard types, with the armament tacked on as an afterthought. Now, Bell Helicopter Company have designed and built the prototype of a light "chopper" intended specifically for front-line combat duties. Illustrated below, it is known as the Sioux Scout, and is developed from their well-known OH–13S Sioux light observation helicopter.

Powered by a 270 hp Lycoming TVO–435 engine, the Sioux Scout carries a crew of two, with the gunner seated forward and below the pilot. This gives both men an unusually good field of view. Armament consists of two machine-guns in a self-contained under-nose turret and there are attachments for other light weapons under the short stub-wings. The wings also house fuel tanks and help to give the aircraft a manœuvrability, rate of climb and speed far superior to those of the OH–13S.

The gunner has a set of dual controls and could take over control of the helicopter if the pilot was injured in combat.

The Bell Helicopter Company's Sioux Scout designed for front-line combat duty.

Aramoana—Path across the Sea—

(*Continued from page 579*)

restrained in a vertical position throughout these movements by the shore hinge and by sliding guides in the towers. Stringers, railway track, and decking are sufficiently flexible to allow for these movements.

The machinery for hoisting and lowering the link span at each terminal is electrically operated and is housed in a tower near the ship end of the span.

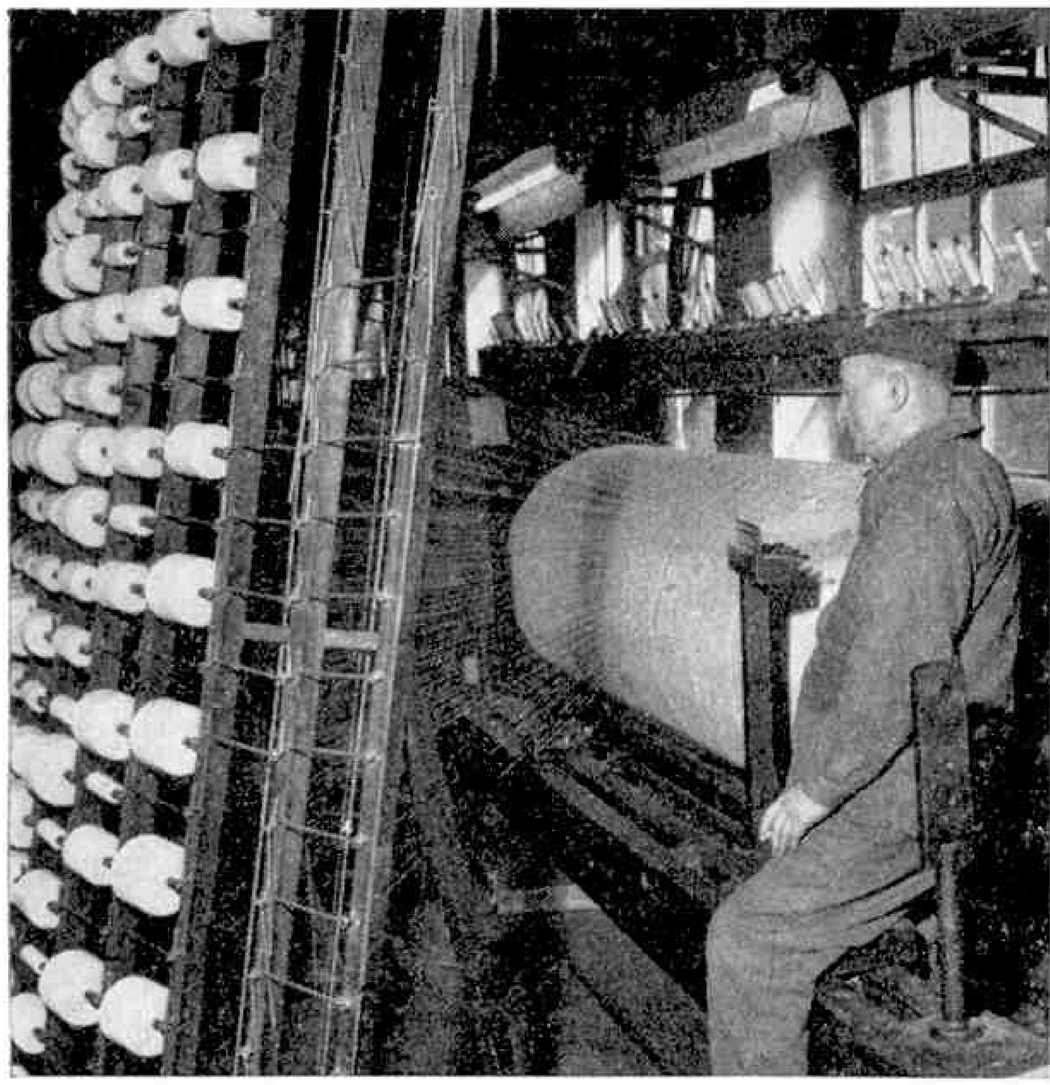
Soccer Skills—(*Continued from page 580*)

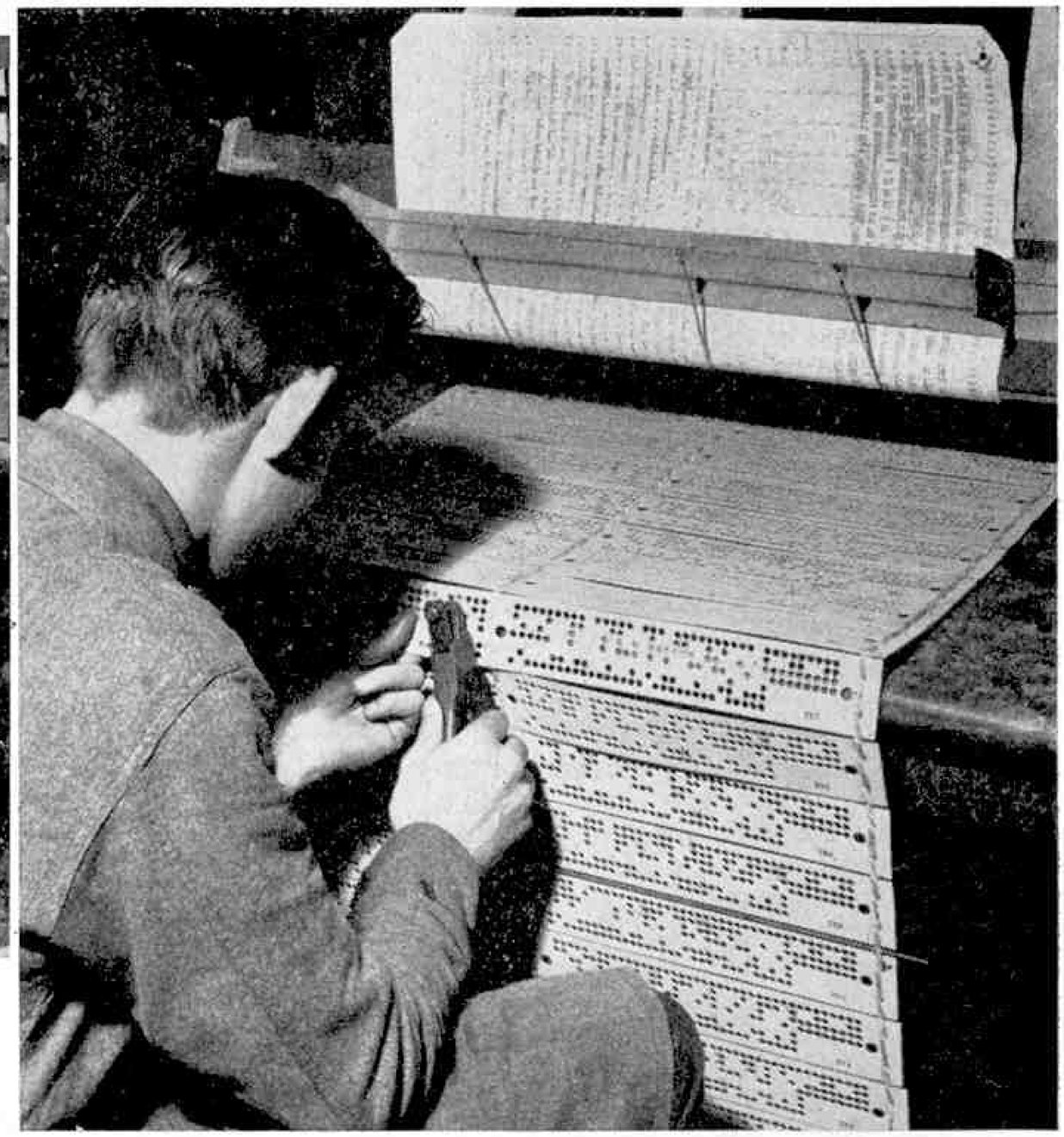
out to about chest height so as to steady myself as the ball strikes me while I am actually airborne, and, of course, the eyes as always are fixed firmly on the ball.

I have found this skill quite difficult and it is only in the past two or three years that I have mastered it. Why not get your pal to throw you a few balls chest high when you have a few spare minutes and see who can control the most out of ten? When you can manage eight, you are doing pretty well.

Calais lace-makers

PICTORIAL FEATURE By John Topham





CALAIS, described in the tourist brochures as the world centre for lace, has every reason to be proud of that title, for it produces one-third of the world's total output. The factory of Darquer-Bacquet, where our pictures were taken, is one of the most modern in Calais, with an annual output of lace of more than 1,000 tons. The pictures show (top left) Bobbins being wound for use on the lace-making machines; (top right) Punching holes in the "piano" cards which control the pattern of a lace machine. They look rather like the perforated rolls in a player-piano—hence the name; (bottom left) This machine was made, like many others in the factory, in Nottingham; (bottom right) This girl is engaged on fine quality embroidered lace. She works at a glass-topped table which is illuminated from below.

Overseas reader's fine Bayko model

SPLIT-LEVEL HOUSE FROM NEW ZEALAND

THE appeal of Bayko, like that of Meccano, is world wide, and I have departed from my usual type of article this month in order that readers may have the chance of seeing what a New Zealand enthusiast has been able to accomplish with the aid of Bayko.

He is Mr. Barry C. Palmer, of Palmerston North, a regular reader of the *M.M.*, from whose coloured photographs the black and white prints on this page have been produced. Unfortunately, I cannot provide the usual building plan for this model, but I have no doubt that accomplished Bayko builders who wish to copy it, or design something similar, will be able to follow the general pattern from the three views provided on this page.

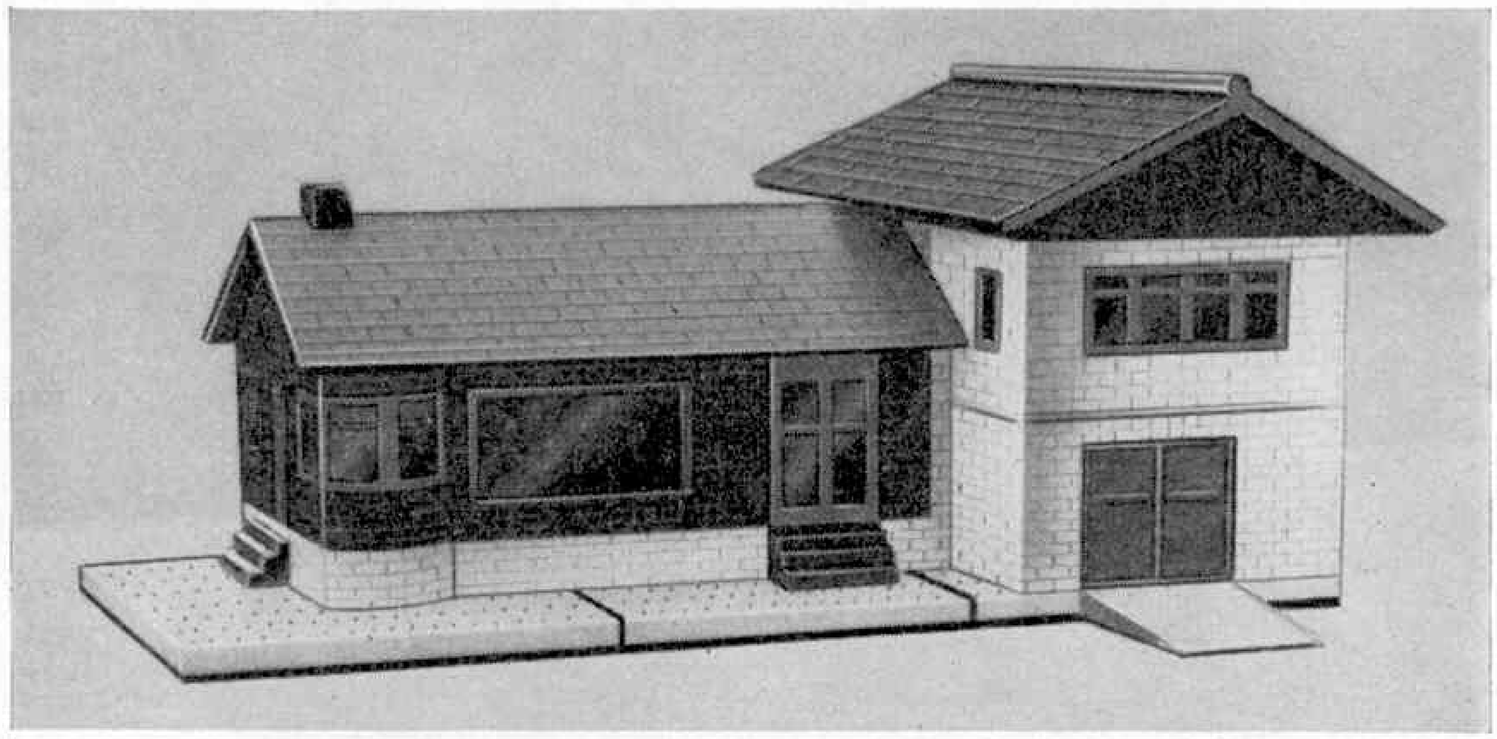
By "ARCHITECT"

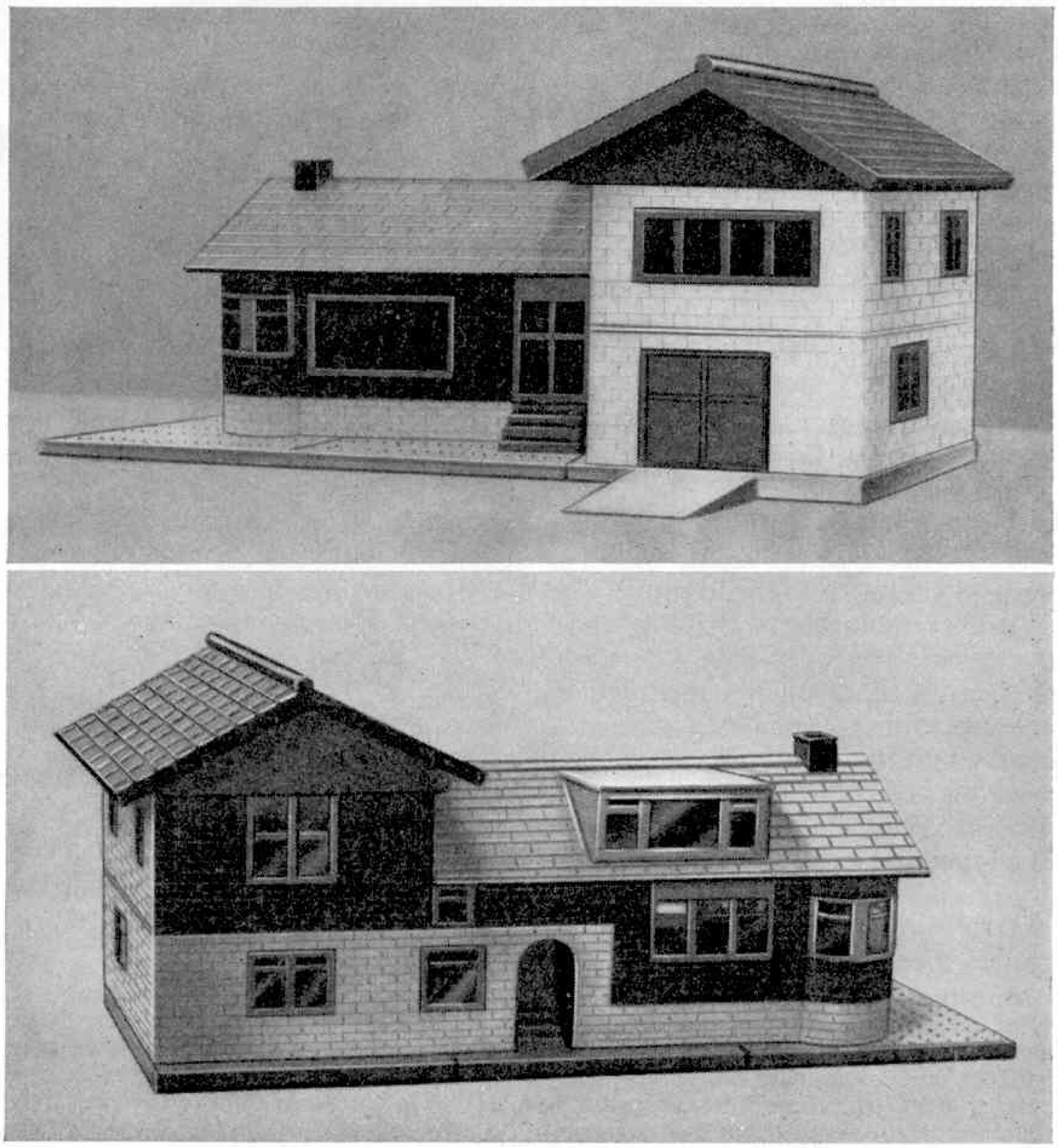
Indeed, in putting you on your metal in this way I am really only echoing a paragraph from Mr. Palmer's letter in which he says, "Frankly, there is no end to the free-lance models that can be constructed with Bayko". Of course, he is right: there must be some very fine models produced by builders in many countries with every month that goes by. I hope they will not all be allowed to rusticate in cheerless anonymity. To readers overseas I would say, if you have a free-lance design, and if you are useful with a camera, I should be glad to see pictures of your particular model, especially if it represents an edifice—house, shop, church, or whatever it may be—built in the traditional style of your country.

Now back to Mr. Palmer's letter. He explains that his model is that of a very popular type of house in New Zealand known as the "split-level" type, that is, a one and a half-storey building which has a connecting garage with two bedrooms built above it. The rest of the dwelling is of single-storey construction.

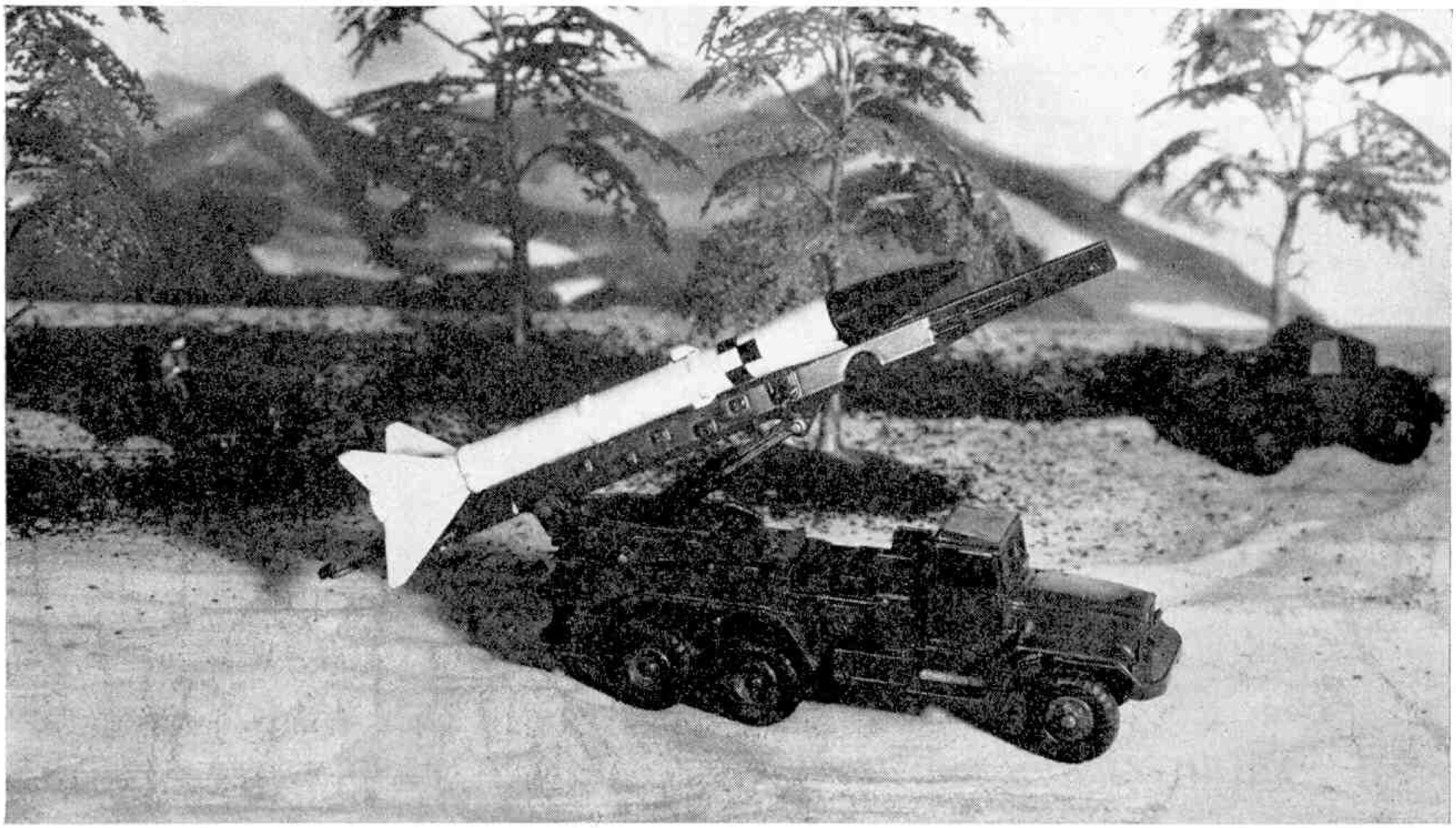
Of Bayko itself Mr. Palmer comments, "I can assure you that this very intriguing toy has taken the interest of many of our friends with very young children who have taken note of it, and when their children are old enough will no doubt be obtaining sets."

Finally, Mr. Palmer tells me that in addition to his children's love of Bayko he wants them to have the opportunity that he enjoyed as a boy of spending "hours of creative joy, made possible by Meccano." "Although they are a little young", he adds, "they already have a Number 4 Meccano Set which I managed to pick up in this country."





The three views provided by Mr. Barry C. Palmer of New Zealand of his very attractive model of a split-level house.



New missile launcher, and another up-to-the-minute car

DINKY TOYS NEWS

By THE TOYMAN

LAST December we were able to give you a preview of two Dinky Supertoys scheduled for release early in 1964. We announced the first of these models, the Vega Major Luxury Coach, in January and this month it is the turn of the Honest John Missile Launcher, which carries Supertoys No. 665.

Unfortunately, there is little technical information available concerning the real-life Honest John, which is in service with the Armed Forces of several countries throughout the World, including Britain and America. The only data I possess, in fact, is that which I included in the December 1963 Magazine—"a nuclear tactical missile, developed by America, but also used to equip British Forces, particularly those stationed in Germany. Range is anything up to twelve miles and it will destroy with deadly accuracy any target within that distance."

Our illustration on this page shows the Dinky Supertoys miniature, and is successful in capturing the authentic air of the model. When the model was in the design stage a great deal of attention was paid to detail, with the result that even tiny hand wheels are represented in the casting. The spring-loaded launching ramp can, of course, be raised and lowered at will by means of two imitation hydraulic rams. It will also traverse through about 20 degrees. The rocket itself is six inches long, is made of high-impact polystyrene, and has a soft rubber nose-cone for safety. Approximate overall dimensions of the launch vehicle are as follows: length $7\frac{3}{8}$ in., width $2\frac{1}{16}$ in, height $2\frac{3}{8}$ in., front track $1\frac{5}{16}$ in., rear track $1\frac{13}{16}$ in.

The launching vehicle is equipped with ten wheels, two on the front axle and four on each of the twin rear axles. These latter wheels are arranged in four pairs, two pairs to each axle.

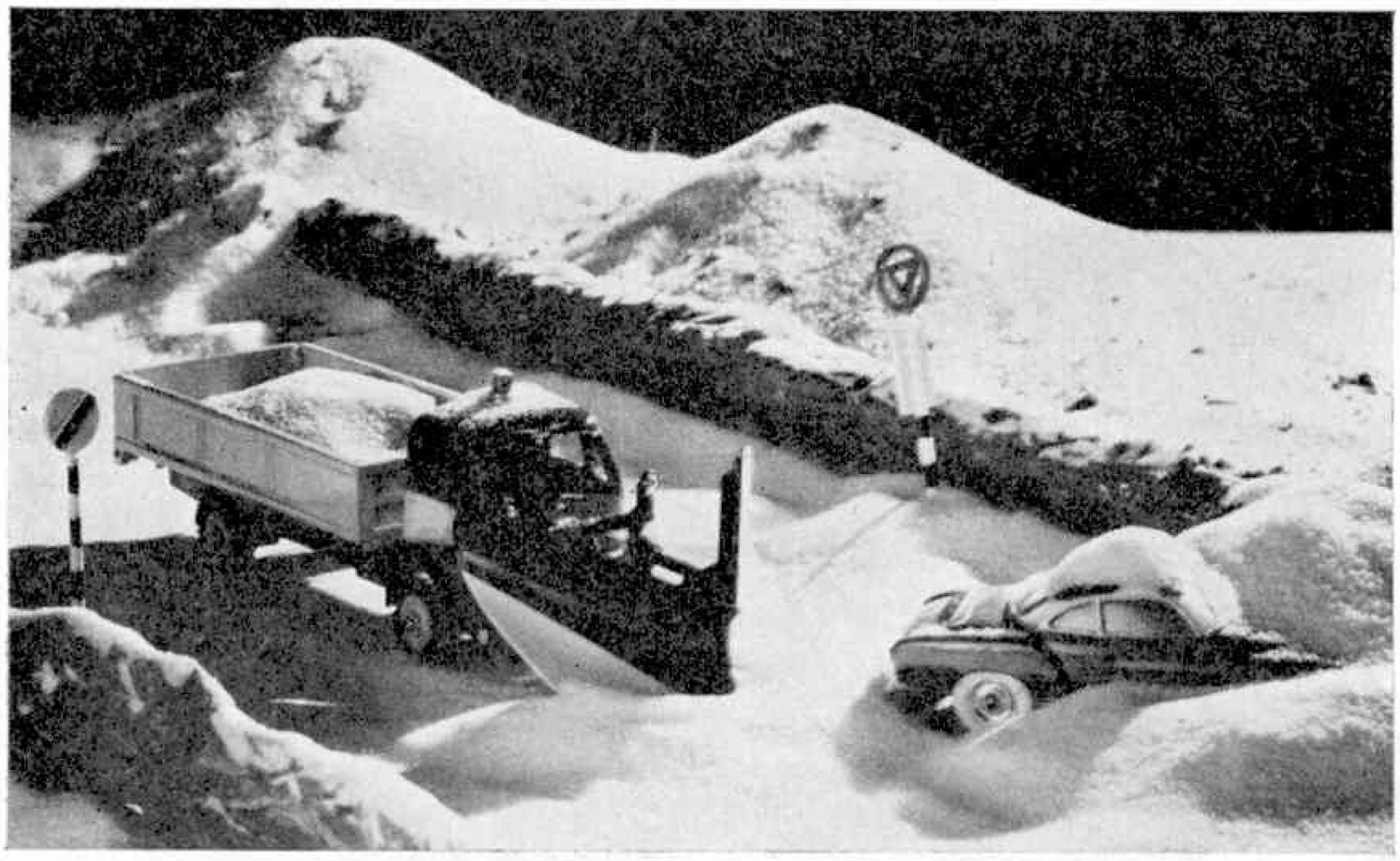
* * * *

So much for the Honest John Missile Launcher. Let me now move on to our second new release this month—the Triumph Vitesse, Dinky Toys No. 134. Many readers have been eagerly awaiting the arrival of this miniature which is really a natural follow-on to that extremely popular model, the Triumph Herald. You will remember that we produced the Herald in close liaison with the manufacturers of the actual car, both being announced on the same day. Indeed, we have always had complete co-operation from the Standard Triumph Company—witness the Herald and the 2000, for which fully-detailed plans and specification were entrusted to us in advance.

The real-life Vitesse is powered by a 6-cylinder, o.h.v. engine of 1,596 c.c. capacity, developing a power output of 70 b.h.p., which gives it a maximum speed

Our picture shows the Honest John Missile Launcher, Dinky Supertoys No. 665. News of this model was first given in the December 1963 "M.M."

This view of the new Triumph Vitesse (above) Dinky Toys No. 134, shows the clean lines and distinctive headlamp arrangement of the model. Below: An effective snow scene incorporating the Snow Plough, No. 958, and the Volkswagen Karmann Ghia, No. 187.



of 88 m.p.h. and allows it to cruise at 75 to 80 m.p.h. Fuel consumption varies between 28 and 35 m.p.h. Overall dimensions are: wheelbase 7 ft. 7½ in., length 12 ft. 9 in., width 5 ft., height 4 ft. 4½ in., front track 4 ft. 1 in., rear track 4 ft.

* * * *

Like its predecessor, the Vitesse is fitted with full independent suspension but, unlike the Herald, it also has twin pairs of headlamps. Highly efficient disc brakes are fitted to the front wheels while at the rear are the normal drum brakes. An extra safety precaution in the event of a crash is a collapsible steering column which "telescopes" if the driver is flung against it. All drivers will tell you that a very important feature of any car is easy access to the engine and you will not find many vehicles with better access than the Vitesse. The whole front of the car body —the bonnet and wings—tip forward thus exposing the entire engine to view. This, in fact, seems to be a special Triumph feature, as both their Herald and Spitfire have bonnets that open in a similar way.

Turning now to the Dinky Toys model, this, in my opinion, is truly superb. You see the new model portrayed in the top picture on this page. Detail is amazing: even the bonnet catches are represented! Features include 4-wheel suspension, windows, seats and steering wheel. It is an enchanting replica. Overall dimensions are: length 3 $\frac{7}{16}$ in., width 1¼ in., height 1 $\frac{3}{16}$ in., wheelbase 2 $\frac{1}{32}$ in., front and rear track $\frac{31}{32}$ in.

* * * *

At this point let me draw your attention to the winter scene depicted in the lower illustration here. This, I think, is a fine example of realistic indoor photography, a subject on which I touched last month. It shows an effective use to which common table salt can be put besides, of course, its main job—on food! True, it is rather expensive to obtain salt in a quantity sufficient for a scene, but it must be remembered that, provided the salt is stored in a dry place, it can be used time and time again.

One of the best things about a "snow" scene is that any blemishes in the baseboard or "props" are hidden. Hills can be made out of old pieces of cloth draped over boxes; the road can be a sheet of paper or a plain board; fields can also be of paper, or even the table-top on which the scene is being prepared. Nobody could tell what was underneath once everything had been covered with salt!

* * * *

Harking back to our picture, this certainly emphasises the fact that by far the finest results are obtained when Dinky scenes are photographed in a darkened room, the only source of light being the lamps used to illuminate the scene. Take the picture as an example. A scenic backdrop is not required as the rest of the room is in darkness, therefore, no unwanted objects will show up on the prints. Also, because there is no extraneous light, planned shadows can be used to full advantage. See how, in the illustration, shadows are used to give the scene depth and to show the unevenness of the "snow" drifts.

It is interesting to see how effective the scene is with only two models in sight. There is nothing to distract the viewer from the theme of the picture. Many enthusiasts, when photographing a layout, make the mistake of trying to fit as many miniatures and accessories into the picture as possible, with the result that the finished print seems to contain only a heap of junk and no realistic group on which to concentrate. This is a common error that should be avoided at all cost.

By following the above hints you will find that you can turn out some quite professional prints.

An Aid to Layout Realism—

(*Continued from page 605*)

drivers and shedmen by making use of a couple of platelayers' huts (No. 5040). These should be fitted against one wall of the shed with a path between the shed entrance and the huts.

Do not forget to fit buffer stops, either No. 2450 or, if you have a Lighting Kit, No. 2451, to each of your shed roads.

Scenically, the area around a locomotive shed does not require trees, and it is more in keeping to employ fencing rather than, say, hedges. But if you have a hill, which may form a part of a tunnel, then the depot can be located in front and so help to give more activity to the natural hill behind it. At the same time, this gives a real opportunity to introduce a cutting, on the assumption that a part of the hill has been removed to level the ground for the locomotive depot.

All the fun of the fair!

A GIANT ROUNDABOUT

FAIRGROUNDS, no doubt, seem a long way removed from reality just now, yet the model described here should bring back some memories—happy or otherwise—from the past. It is built mainly with standard Meccano parts, although there are a few Elektrikit parts used to complete the lighting circuit, which is arranged so that the lamps flash on and off as the giant roundabout revolves. You will see that 12 lamps are used and, as they are wired in series, their voltage should be 2.5 each. If you do not have any spare lamps, the four 12-volt ones contained in the Elektrikit can be used in Lamp Holders, but in that case they should be wired in parallel. If they were wired in series, their combined resistance to the current would probably be too great, as science or physics students will know.

The first illustration below may give the impression that the model is very intricate in construction, but it is really quite easy to build.

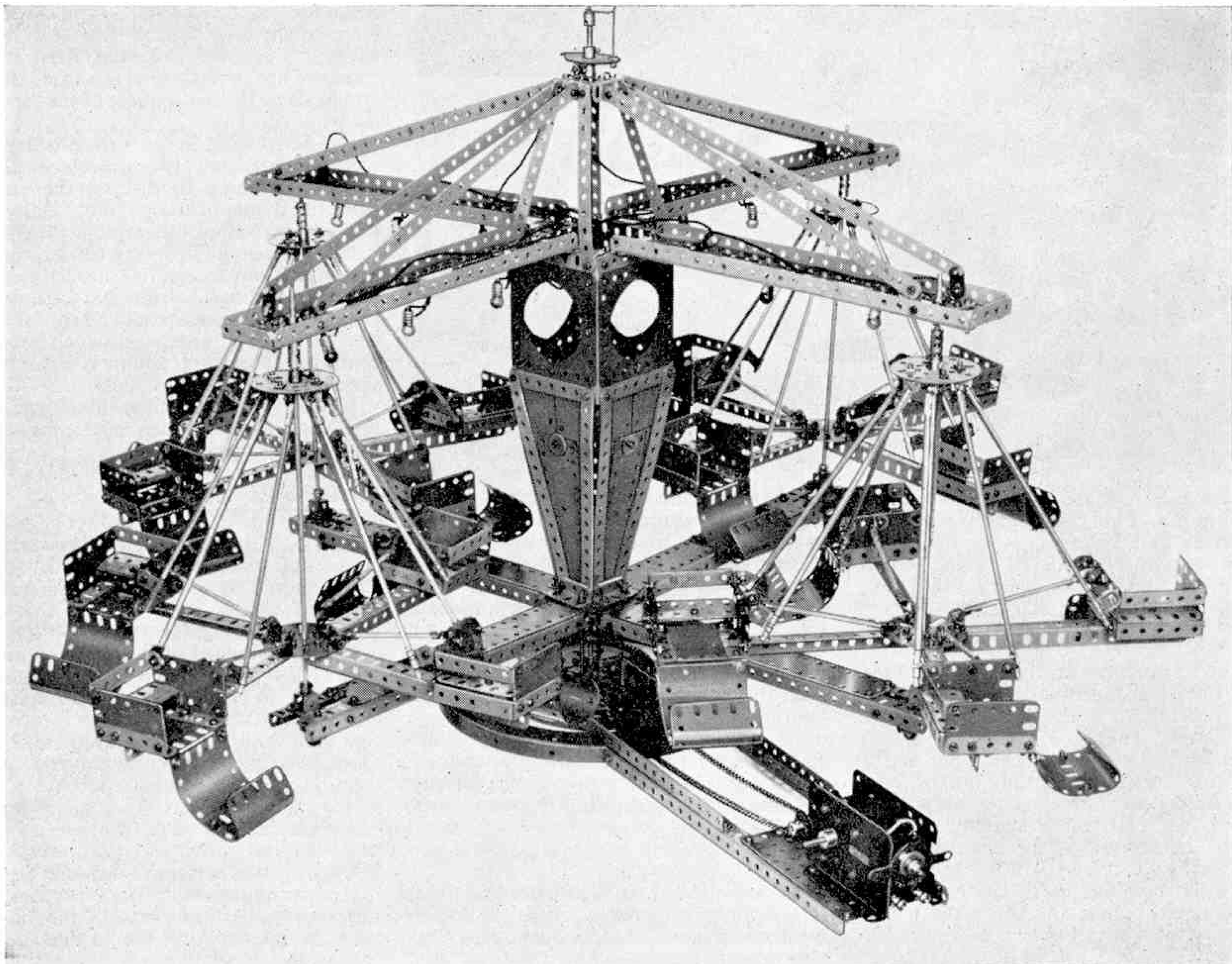
SUPERSTRUCTURE

Four upright 4½″ Angle Girders 1 are joined together at the top by four 3½″ Angle Girders 2, and at the bottom by 3½″ Strips 3. The 4½″ Angle Girders are extended with 7½″ Strips 4, which are joined together in pairs by 1½″ Angle Girders 5. Each side has four 2½″×2½″ Flexible Gusset Plates 6 bolted to the 4½″ Angle Girders 1. The space between each set of 7½″ Strips is filled in by two 2½″×1½″ Triangular Flexible Plates and a 5½″×1½″ Flexible Plate, a large Washer being placed on the centre bolt shank.

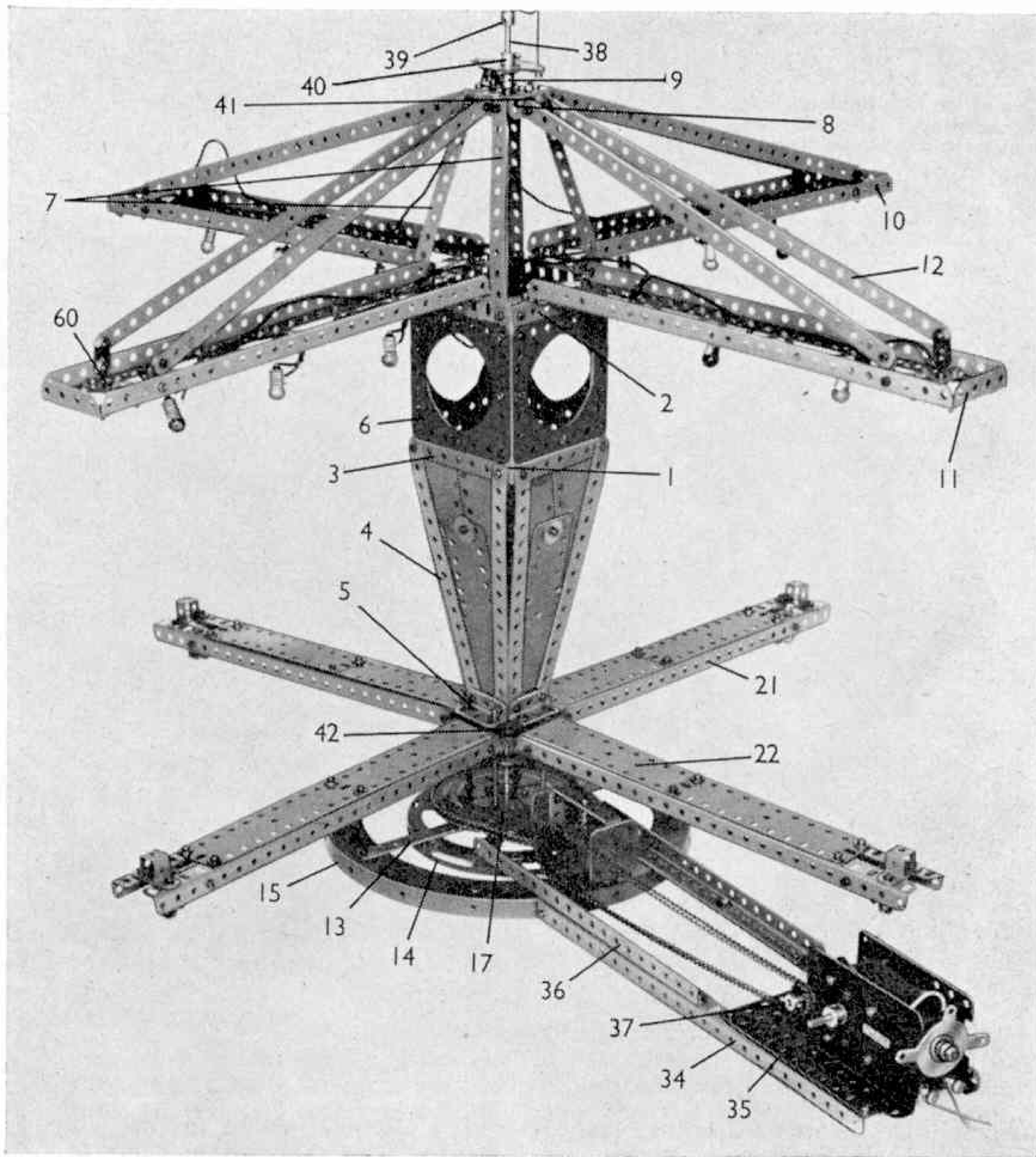
5½″ Strips 7 are bolted to the corners of the structure and are then secured as shown to four 1½″ Angle Girders 8, across which is bolted a Double Arm Crank 9. These Angle Girders also carry Double Brackets 41.

Two 12½″ Angle Girders 10 are fastened to each of the 3½″ Angle Girders 2 by

The huge Roundabout described in this article makes use of several Elektrikit parts.



A general view of the Roundabout with the rotating chairs removed, showing the main pillar and superstructure.



Fishplates, and a 9½″ Braced Girder is bolted between them. A 2″ Angle Girder 11 and a 2″ Strip with a 1″ Corner Bracket 60 attached are bolted to the Angle Girders 10. This whole arrangement is then supported by 12½″ Strips 12 attached to the Double Brackets 41 and to the 12½″ Angle Girders 10 by Fishplates.

The 1½″ Angle Girders 5 are secured to a 2½″ × 2½″ Flat Plate 42, one nut and bolt only being used with each Girder.

BASE AND DRIVE

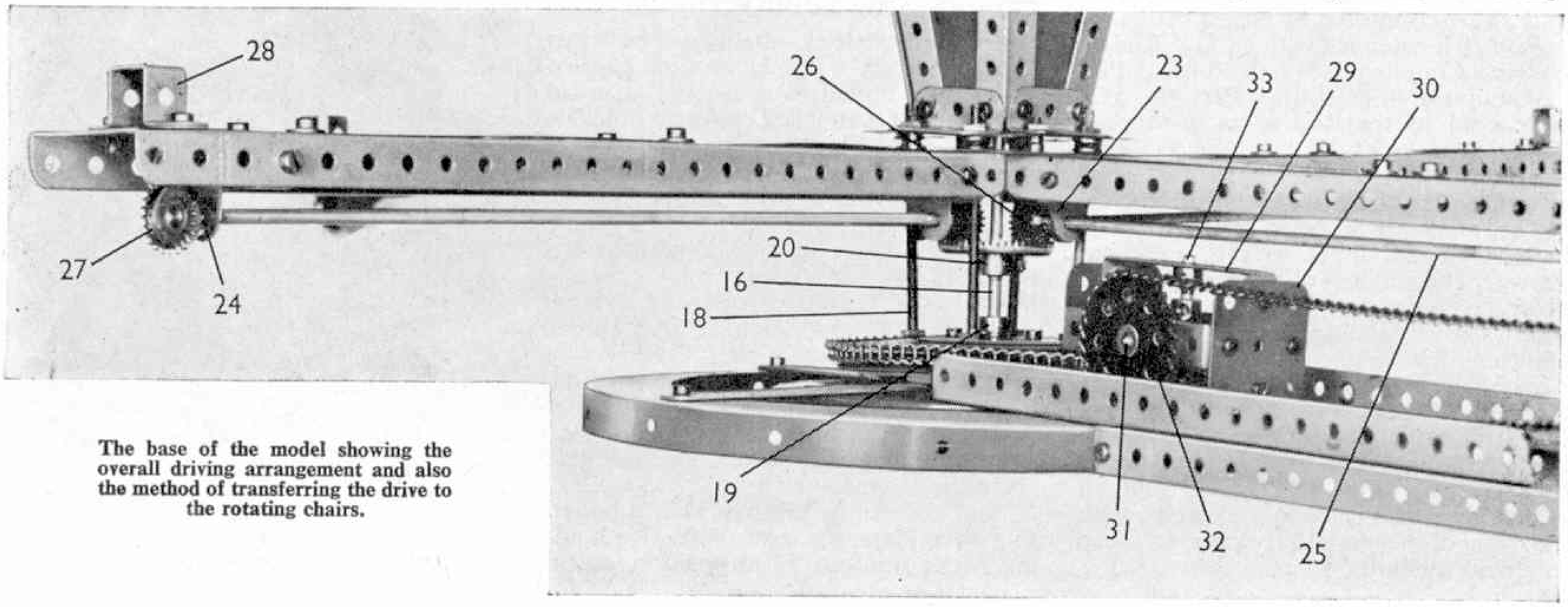
Two 9½″ Strips 13, to which a Hub Disc 14 is attached, are bolted at right angles across a Flanged Ring 15. In the centre a Ball Race Flanged Disc with a Bush Wheel underneath, is secured, and a 11½″ Rod 16 is fastened in the boss of the Bush Wheel. A Ball Thrust Race Toothed Disc 17 with a Bush Wheel in the centre and four 3½″ Screwed Rods 18 attached to it by two nuts on each Rod, is placed with

By "SPANNER"

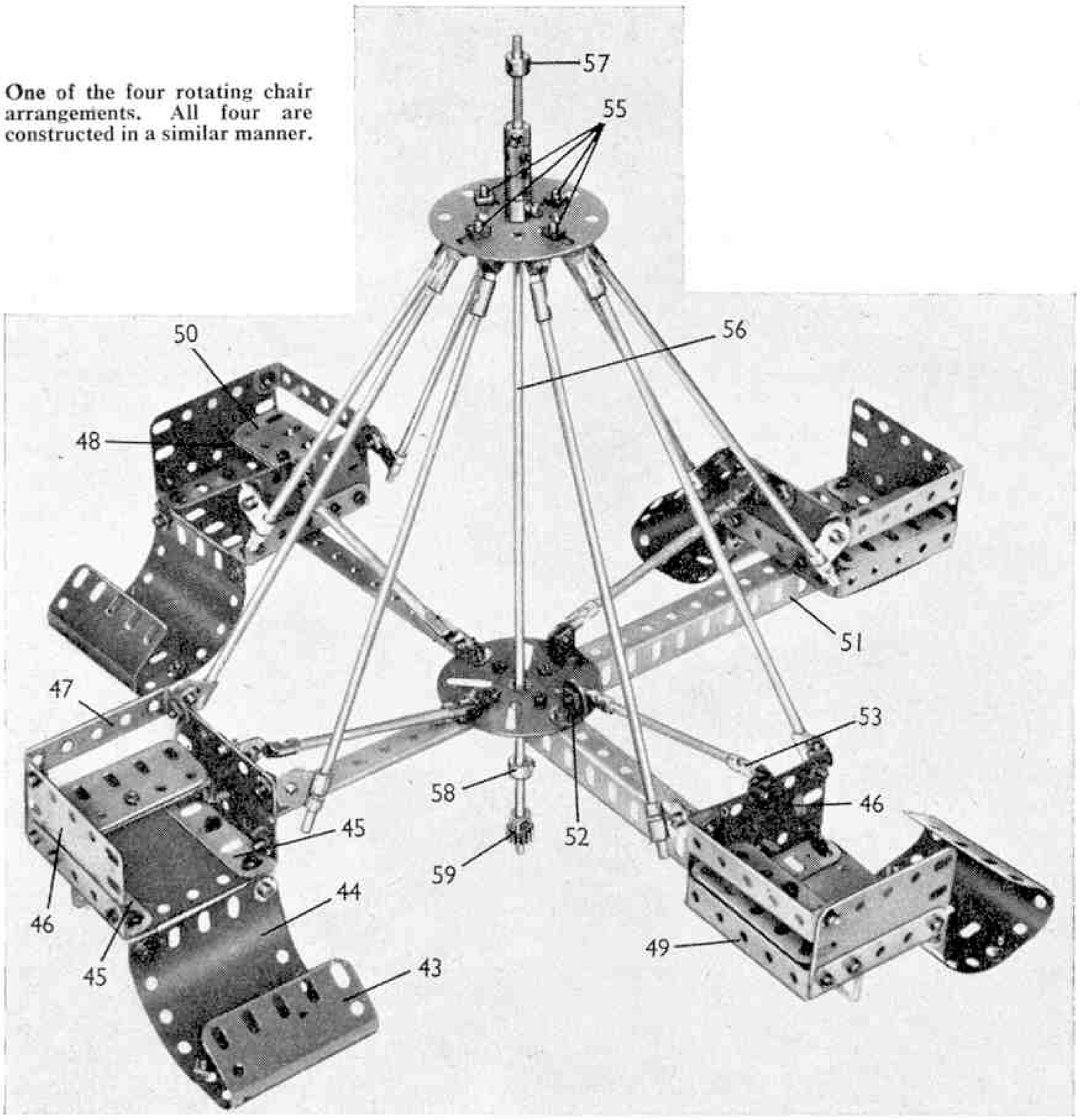
the Ball Cage in position on the 11½″ Rod, a Collar 19 holding the race together. A 1½″ Contrate Wheel 20 is secured to the 11½″ Rod by two Grub Screws.

Four pairs of 12½″ Angle Girders 21 are then bolted to a 2½″ × 2½″ Flat Plate, one secured by one of the Screwed Rods and two nuts, and the other by a nut and bolt. Two 5½″ × 1½″ Flexible Plates 22 are bolted to each pair of Angle Girders 21, and two 1½″ × ½″ Double Angle Strips supporting 1″ Corner Brackets 23 and 24 are secured to the Angle Girders 21 to form the bearings for an 11½″ Rod 25. This Rod carries a ½″ Pinion 26 and a ¾″ Contrate Wheel 27. A Double Bent Strip 28 overlying a 1½″ Strip is bolted to the Angle Girders 21. Washers and a nut are now placed on each of the Screwed Rods 18, and the 2½″ × 2½″ Flat Plate of the superstructure is lowered into position, and fastened down with another nut on each Screwed Rod.

Four 2½″ × ½″ Double Angle Strips 29 are bolted between two 1½″ × 1½″ Flat Plates 30, the lower one being secured to the 9½″ Strip 13. A 2½″ Rod 31, passed through two of the Double Angle Strips carries a 1½″ Sprocket Wheel 32 and a Worm Wheel that engages with a ½″ Pinion on a 2″ Rod 33. A ¾″ Sprocket on Rod 33 is secured in line with the Ball Thrust Race Toothed Disc, and the two are connected together by chain. Two 12½″



The base of the model showing the overall driving arrangement and also the method of transferring the drive to the rotating chairs.



One of the four rotating chair arrangements. All four are constructed in a similar manner.

Angle Girders 34 are fixed to the Flanged Ring by Angle Brackets, and they are joined at their other ends by a $5\frac{1}{2}'' \times 3\frac{1}{2}''$ Flat Plate 35. Angle Girders 36 are bolted to the Hub Disc and the $12\frac{1}{2}''$ Angle Girders 34, after which the E15R Motor is fixed in position as shown. A $\frac{7}{16}''$ Pinion is fitted on the Motor shaft to engage with a 60-tooth Gear Wheel on a $3\frac{1}{2}''$ Rod which has a $\frac{3}{4}''$ Sprocket Wheel 37 secured on it. The Sprocket Wheels 32 and 37 are connected by Chain.

Rod 16 is extended with an $11\frac{1}{2}''$ Rod 38 held in a Coupling fixed to Rod 16. A Flat Commutator 40 (Elektrikit Part No. 551) is secured to the Rod so as to touch a Wiper Arm (Elektrikit Part No. 533) that is bolted to a $2\frac{1}{2}''$ *Insulating Strip* attached to one corner of the Angle Girder 8.

The lamps are wired in series, the wire being soldered direct to the lamps, as shown. The stiffness of the wire serves to hold the lamps in position. One input wire is fixed to a Rod Socket 39 on Rod 38, and the other goes to one terminal of the Commutator. The Lamp Wire is taken from the Wiper Arm, care being taken that it is insulated from the metal of the model, through the various lamps, and then is "earthed". This means that an electrical contact is made somewhere with the metal of the model. It can be attached to any of the bolts.

The electrical circuit for the lamps is easy to follow. The current enters through the Commutator, is picked up by the Wiper Arm, passes along the Wire and through the lamps, from where it is "earthed", finally returning to the power source through the Wire attached to Rod Socket 39. The power source for the lamps, incidentally, does not need to be the same as that for the Motor.

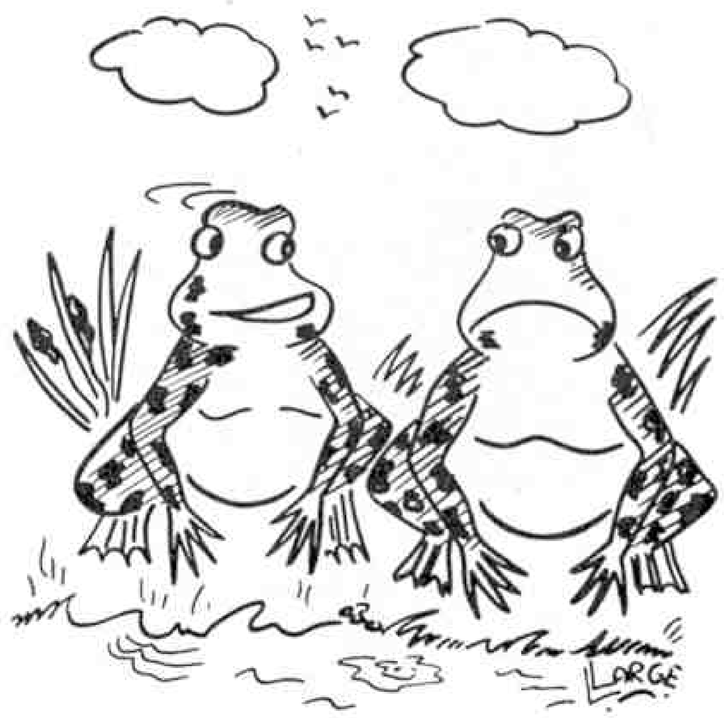
CHAIRS AND SUPPORTS

Each of sixteen chairs is built as follows: A $2\frac{1}{2}'' \times 2\frac{1}{2}''$ U section Curved Plate 43 is bolted to a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Curved Plate 44, and is attached by Angle Brackets to a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate that has $2\frac{1}{2}''$ Angle Girders 45 bolted to each side. Attached to the upright flanges of the Angle Girders are $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 46. Three $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 47, 48 and 49 are bolted between the $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates, and Double Angle Strip 48 supports a $2\frac{1}{2}''$ Flat Girder 50 which forms the seat. Three Angle Brackets are secured to the outside of the inside Flexible Plate, two having Right Angle Rod and Strip Connectors bolted to them, and the centre one carrying a Rod and Strip Connector 53.

Four $7\frac{1}{2}''$ Angle Girders 51 are bolted to a Face Plate, the outer bolts also holding Angle Brackets 52 in position, and a "chair" is then attached to the end of each Angle Girder. Rod and Strip Connectors are bolted to the Angle Brackets 52, and these are connected to the Rod and Strip Connectors 53 by $3\frac{1}{2}''$ Rods.

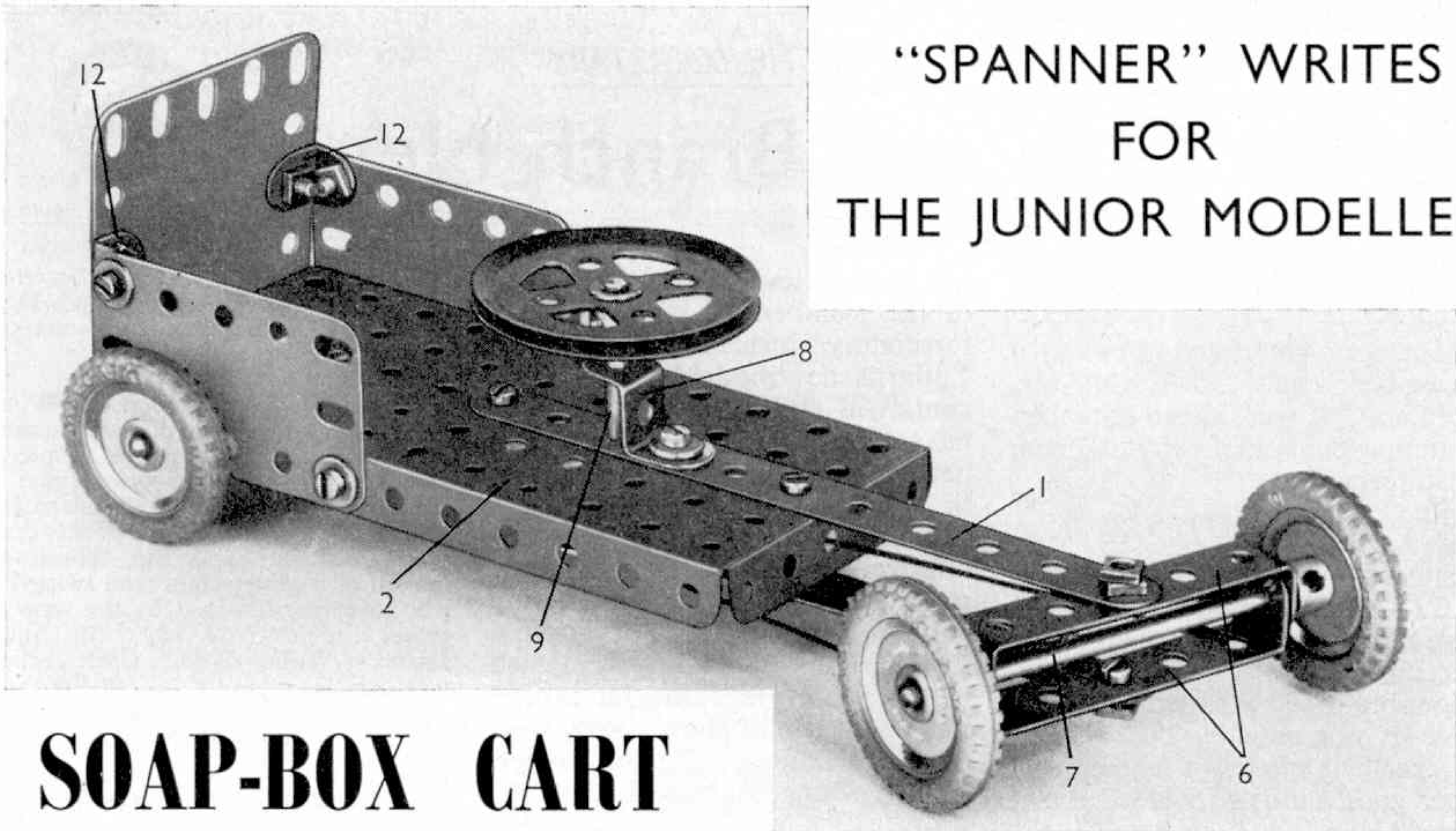
Eight Angle Brackets are fixed to another Face Plate by four Bolts 55, two Angle Brackets being held by each bolt, and a further Rod and Strip Connector is bolted to each Angle Bracket. 8″ Rods are fixed to these Rod and Strip Connectors and also the Right Angle Rod and Strip Connectors on the chairs. Both Face Plates are secured to an $11\frac{1}{2}''$ Rod 56 that is extended by a $1\frac{1}{2}''$ Rod in a Coupling. When the completed assembly is fitted in position in the main superstructure by journalling Rod 56 in Double Bent Strip 28 and the apex hole of 1″ Corner Bracket 60, the Collars 57 and 58 hold it in place so that a $\frac{1}{2}''$ Pinion 59 on the Rod meshes with the $\frac{3}{4}''$ Contrate Wheel 27.

Parts required to build the Roundabout; 8 of No. 1; 2 of No. 1a; 8 of No. 1b; 4 of No. 2; 8 of No. 3; 8 of No. 6; 4 of No. 6a; 18 of No. 8; 2 of No. 8a; 16 of No. 8b; 4 of No. 9a; 4 of No. 9b; 32 of No. 9d; 4 of No. 9e; 8 of No. 9f; 17 of No. 10; 20 of No. 11; 98 of No. 12; 10 of No. 13; 32 of No. 13a; 17 of No. 16; 1 of No. 16a; 5 of No. 17; 2 of No. 24; 5 of No. 26; 5 of No. 26c; 1 of No. 27d; 1 of No. 28; 4 of No. 29; 1 of No. 32; 738 of No. 37a; 714 of No. 37b; 96 of No. 38; 4 of No. 38d; 4 of No. 45; 1 of No. 47; 8 of No. 48; 51 of No. 48a; 1 of No. 52a; 13 of No. 59; 1 of No. 62b; 5 of No. 63; 2 of No. 72; 2 of No. 74; 4 of No. 77; 4 of No. 80a; 1 of No. 94; 1 of No. 95a; 2 of No. 96a; 4 of No. 99; 16 of No. 103f; 8 of No. 109; 6 of No. 111c; 1 of No. 118; 8 of No. 133a; 1 of No. 167a; 1 of No. 168; 1 of No. 179; 32 of No. 188; 12 of No. 189; 16 of No. 190; 16 of No. 199; 16 of No. 200; 16 of No. 201; 64 of No. 212; 32 of No. 212a; 8 of No. 225; 1 of No. 503; 1 of No. 533; 1 of No. 551; 1 EI5R Electric Motor; twelve 2.5v lamps if connected in series, or several 12v Lamps and a corresponding number of Lamp Holders if connected in parallel.



"Let's make it a leap year, hoppy!"

"SPANNER" WRITES FOR THE JUNIOR MODELLER



SOAP-BOX CART

MOST of us at some time in our lives either have owned, or will own, a soap-box cart. You may have a different name for it, such as a "push-cart" or even, simply, a "cart", but the idea is still the same. The majority of these vehicles are built up from one plank with a pair of old "pram" wheels at each end, the rear ones fixed, and the front ones pivoted through the centre axle. Steering is usually by means of rope reins tied to the front axle and held by the driver.

* * * *

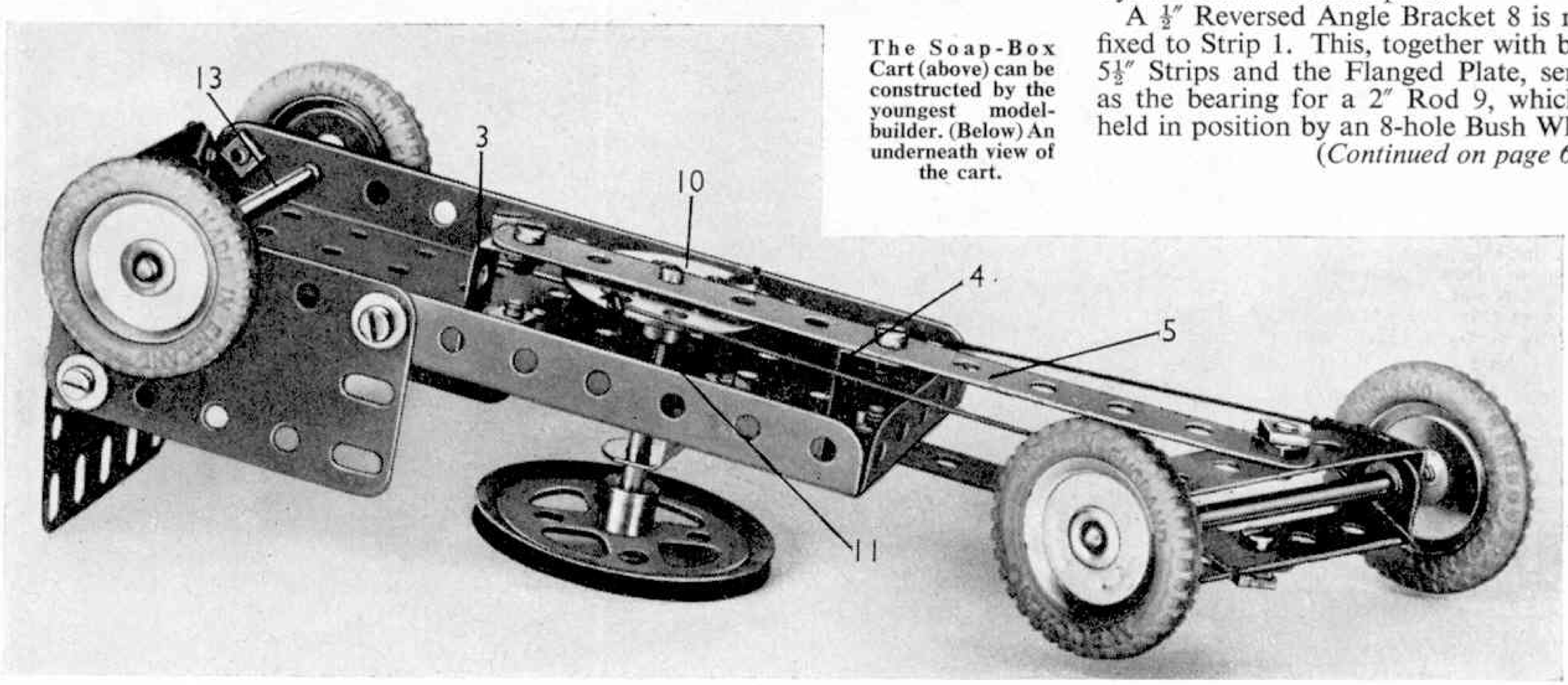
The model described here, however, is representative of a more luxurious version of a cart equipped with a simple steering arrangement. I received the basic design from Robert Wilson of Crawcrook, Co. Durham, but I have modified it myself to produce the Meccano Cart you see in both illustrations on this page. Outfit No. 2 contains all the parts necessary for its construction with the exception of one Double Bracket, the place of which could be taken by another part, such as an Angle Bracket.

The chassis is formed by a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate 2, to which a $5\frac{1}{2}''$ Strip 1, overlapping five holes, is bolted, the same bolts also holding two Double Brackets 3 and 4 to the underside of the Plate. A further $5\frac{1}{2}''$ Strip 5 is bolted to the other lugs of these Double Brackets and it also extends forward, as shown. $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 6 are *lock-nutted* through the end holes of Strips 1 and 5, and a $3\frac{1}{2}''$ Axle Rod 7 is journalled in their lugs. Two 1" fixed Pulleys with Tyres hold the Rod in place.

A $\frac{1}{2}''$ Reversed Angle Bracket 8 is now fixed to Strip 1. This, together with both $5\frac{1}{2}''$ Strips and the Flanged Plate, serves as the bearing for a 2" Rod 9, which is held in position by an 8-hole Bush Wheel

(*Continued on page 615*)

The Soap-Box Cart (above) can be constructed by the youngest model-builder. (Below) An underneath view of the cart.



WITH THE SECRETARY

Club and Branch News

HORNBY RAILWAY BRANCH RECENTLY INCORPORATED

No. 585—KIRKBY STEPHEN GRAMMAR SCHOOL. *Chairman:* Mr. Norman G. Fryer, Kirkby Stephen Grammar School, Kirkby Stephen, Westmorland.

CLUB NOTES

SHEBBEAR COLLEGE (BEAWORTHY) M.C.—After completion of the large model crane mentioned in the December 1963 *M.M.* report, a model-building competition was held. It was won by Tucker with his excellent model of a jeep, and other good models included a Big Wheel built by Tendell and the Secretary, a tractor by Lee, and a bus constructed by Colville. *Secretary:* Mr. M. R. J. Kent, Shebbear College, Beaworthy, N. Devon.

NEW ZEALAND

ST. JOHN'S (DUNEDIN) M.C.—It has been decided by a majority vote of the members to hold meetings fortnightly instead of monthly. Enthusiastic model-building has continued and many good models have been completed, including a heavy duty jib crane constructed by S. Harbour. At one meeting B. Collins gave an interesting and descriptive talk on his model motor car chassis. The model-building shield will be presented at the final meeting of the Club year which will probably take the form of a party and a film show. *Secretary:* Mr. R. Craigie, 67 Ann Street, Roslyn, Dunedin, New Zealand.

NORTHERN NIGERIA

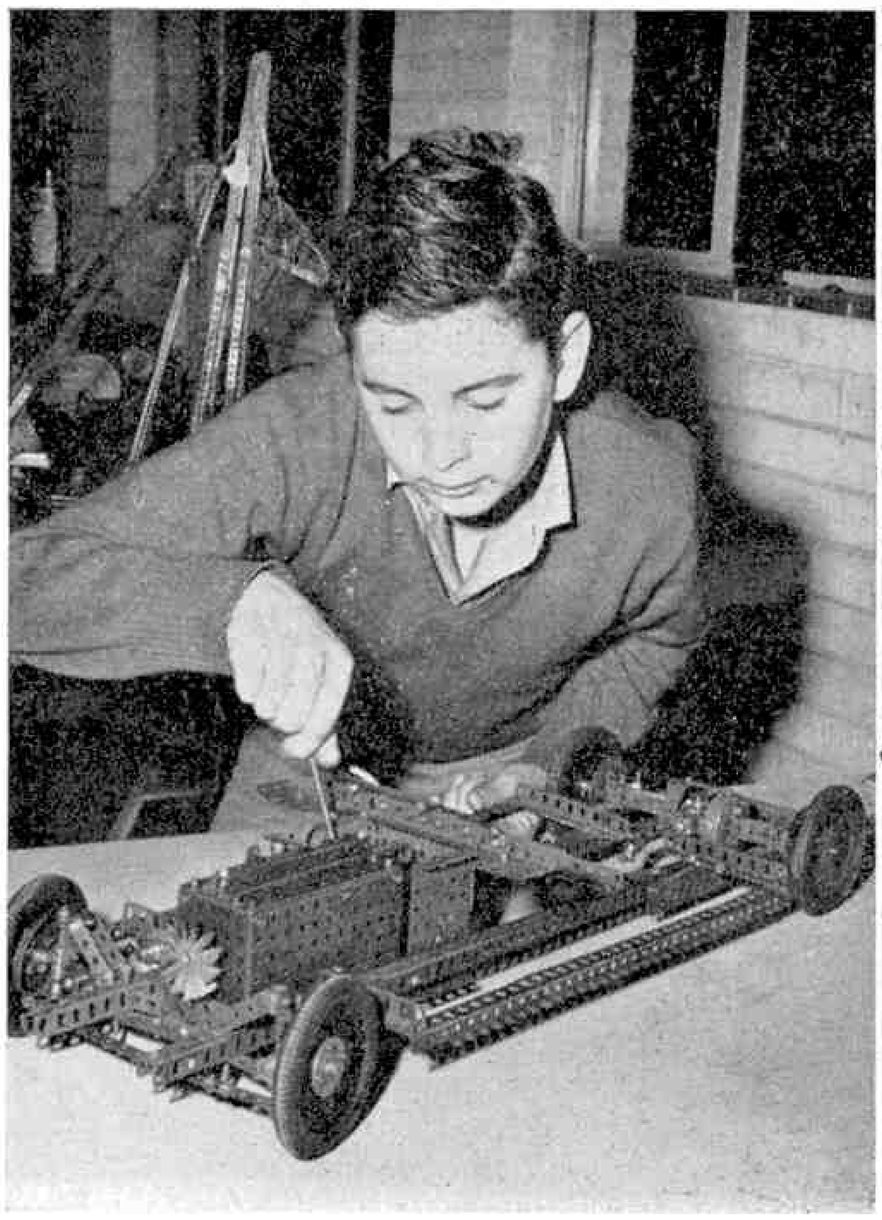
GINDIRI BOYS' SECONDARY SCHOOL M.C.—There has again been a switch of members from one group to another. At the time of writing the three groups are working on the model dockyard locomotive (Meccano model 5.7), cable railway (model 7.12), and the touring car (model 8.6) which is almost completed. *Secretary:* Mr. Stephen Bode Ajayi, H.S.C. Dept., Gindiri, P.O. Barakin Ladi, via Jos, Northern Nigeria.

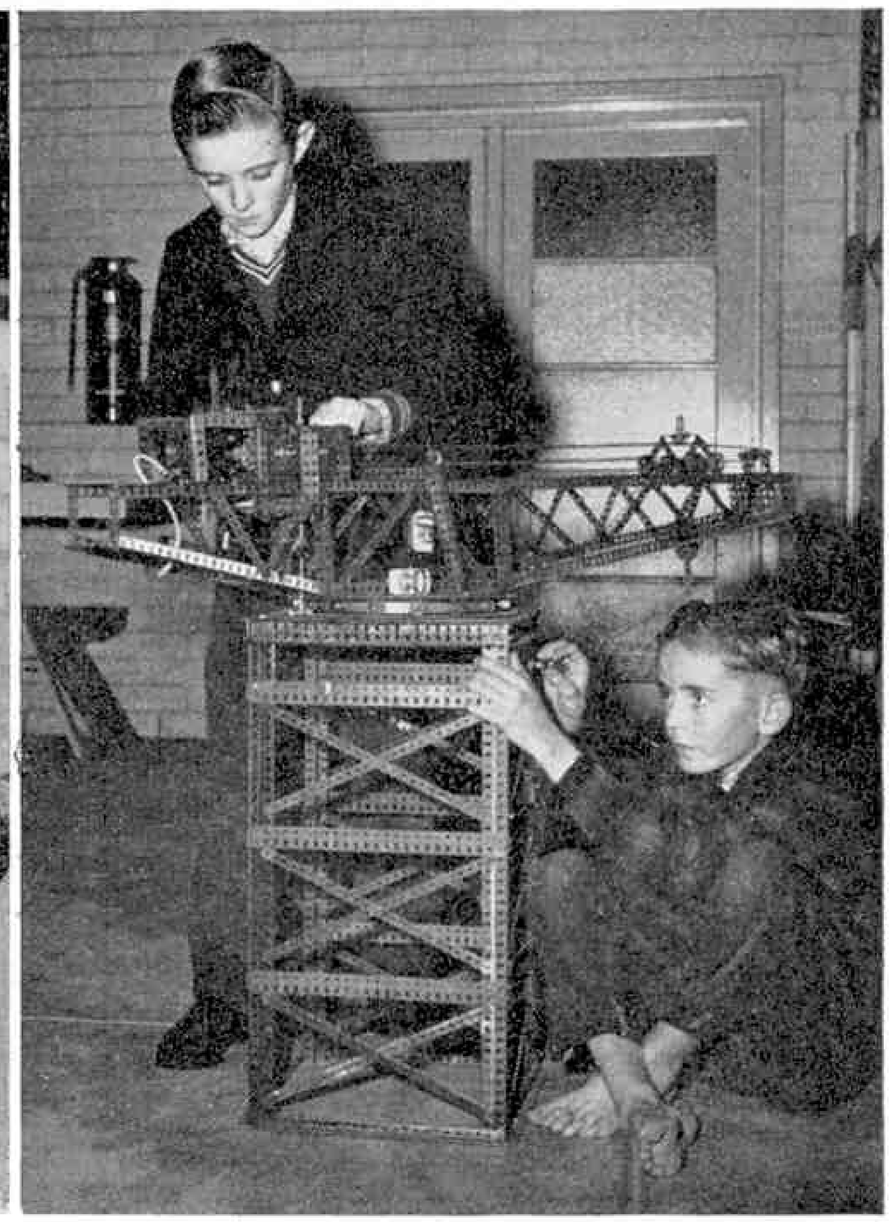
GOVERNMENT CRAFT SCHOOL (WUDIL) M.C.—The members of this recently-affiliated club are carrying out an interesting and enthusiastic programme of Meccano model-building. Models recently completed have included an electric crane, sewing machine and Big Wheel, and models of a gantry crane and swing boat will have been finished by the time this report is in print. *Secretary:* Mr. Ahmed Dawakin Tofa, Wudil Craft School, Northern Nigeria.

BRANCH NEWS

NORTHERN NIGERIA

GINDIRI BOYS' SECONDARY SCHOOL—Further revisions have been made to the track layout, which is now 14 ft. × 9 ft. in extent. Three locomotives are in service, and some very interesting train movements have been carried out. *Secretary:* Mr. Stephen Bode Ajayi, H.A.C. Dept., Gindiri, P.O. Barakin Ladi, via Jos, Northern Nigeria.

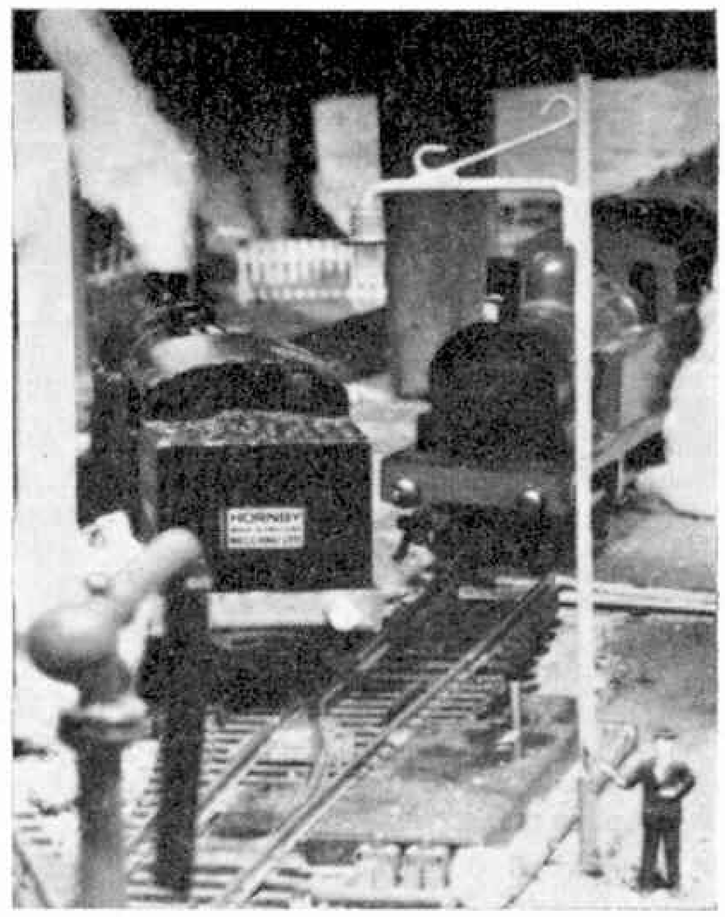




After-school hours and weekends find boys of all ages and from widely scattered suburbs at the headquarters of the Maylands (Western Australia) Meccano Club, building working models of a variety of machines and equipment. Our illustrations show three of these Meccano enthusiasts. In the left-hand picture Reg. England, aged 12 years, of Inglewood, is adjusting a screw on his fine model of a sports car chassis, which includes such working details as front suspension, cooling fan and a differential. On the extreme right Michael Thair, aged 12, of Meltham, and Graham Davey, aged 9, of Bayswater, are at work on their impressive model of a hammerhead crane. When finished the crane will be battery-operated and revolve on a turntable. Illustrations by courtesy of "The West Australian".

HORNBY-DUBLO ENGINE SHED KITS

An aid to layout realism



● *On pages 606-7 of this month's issue "Linesman" writes about the design of motive power depots on miniature railway layouts. Here, S. F. Page, owner of the "Longdon, Newborough and Easthyde Railway", shows you how to construct a similar sort of depot using the Hornby-Dublo Engine Shed, and Engine Shed Extension, Kits.*

ONE of the most impressive areas of any Hornby-Dublo layout can be the locomotive depot, the provision of which is well catered for in the Hornby range by the inclusion of No. 5005 Engine Shed Kit, and No. 5006 Engine Shed Extension Kit.

Once erected, the shed forms the central point for locomotives, whether you have steam or diesel types, since its very modern appearance is in keeping with many new diesel depots built on British Railways.

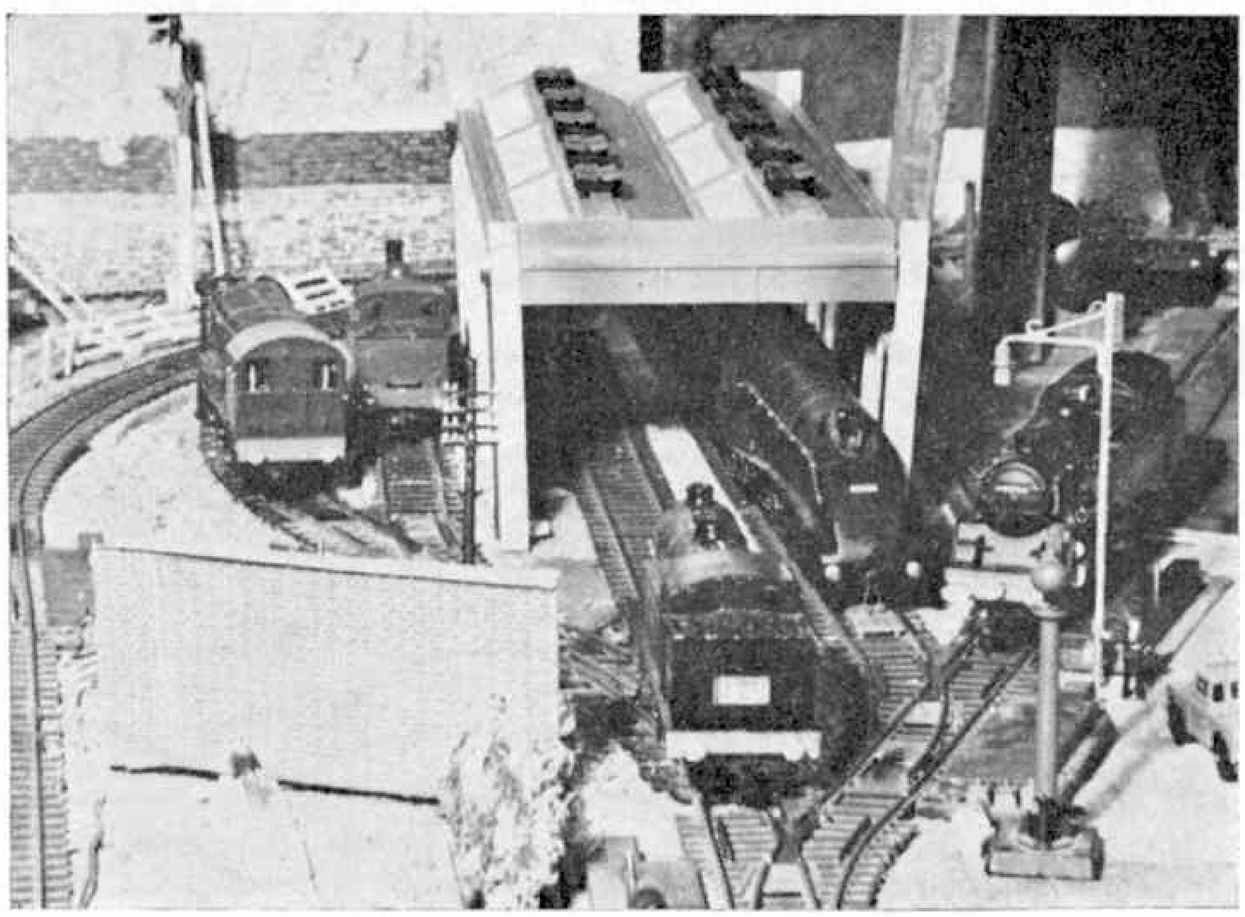
On a permanent layout, the use of this engine shed helps to keep dust from settling on locomotives when the layout is not being used. Have a look on the top of the shed after your layout has been out of action during holidays and you will be surprised at the layer of dust which has accumulated.

The track at a locomotive shed is usually sunk to enable railwaymen to move around without the need to keep walking along sleepers and over track, but if you do not want to sink your track into a plaster base, then provide walkways. These are easily made with match sticks, about four between rails, and then continued between tracks. Make sure that these do not come up close to the inside of the rail and so foul the flanges of the engine wheels.

At all engine sheds in actual practice watering points are provided and on your layout the Hornby-Dublo Water Crane (No. 5095), which needs to be fitted to each "road" from the shed, looks after this requirement.

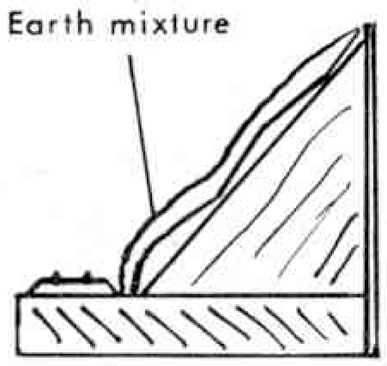
Canteen accommodation is often provided in the neighbourhood of sheds, and you can arrange similar facilities for your

(*Continued on page 599*)



Top: A regular morning scene outside the Longdon locomotive shed. Centre: A view of the main sidings on the author's layout, taken from Easthyde Hills. Right: A Hornby-Dublo locomotive shed forms the centre of this locomotive depot, catering for both steam and diesel type locomotives, seen in the centre picture.

SCENIC STRUCTURES



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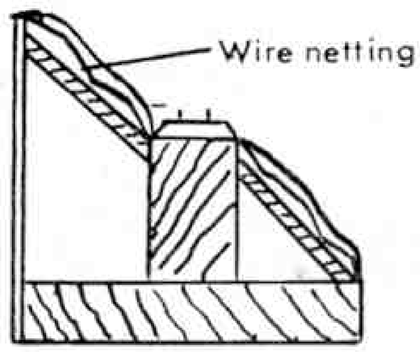

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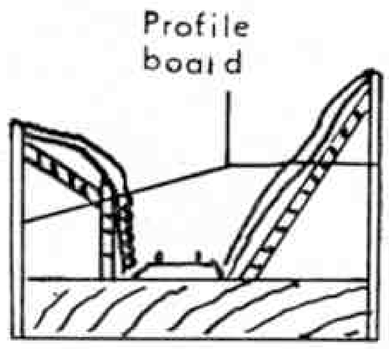
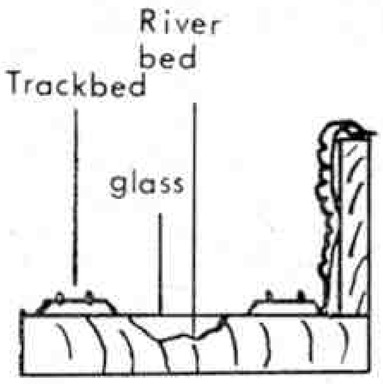


C

And plans for two motive power depots



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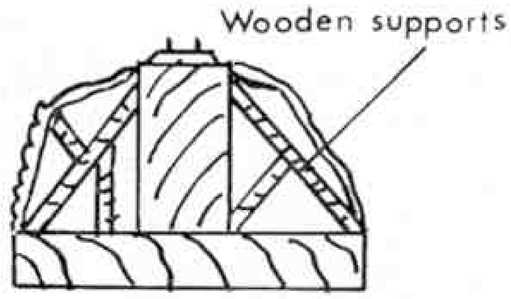


E

By "LINESMAN"

AS promised last month, I am continuing the series on baseboards in this issue, with particular reference to the methods involved in the construction of wooden bases for scenery. At the same time, as the "sandwich" feature I introduced last month was so popular, I will devote some of my comments to two rather unusual motive power depots which readers can assemble by using Hornby-Dublo Two-Rail track.

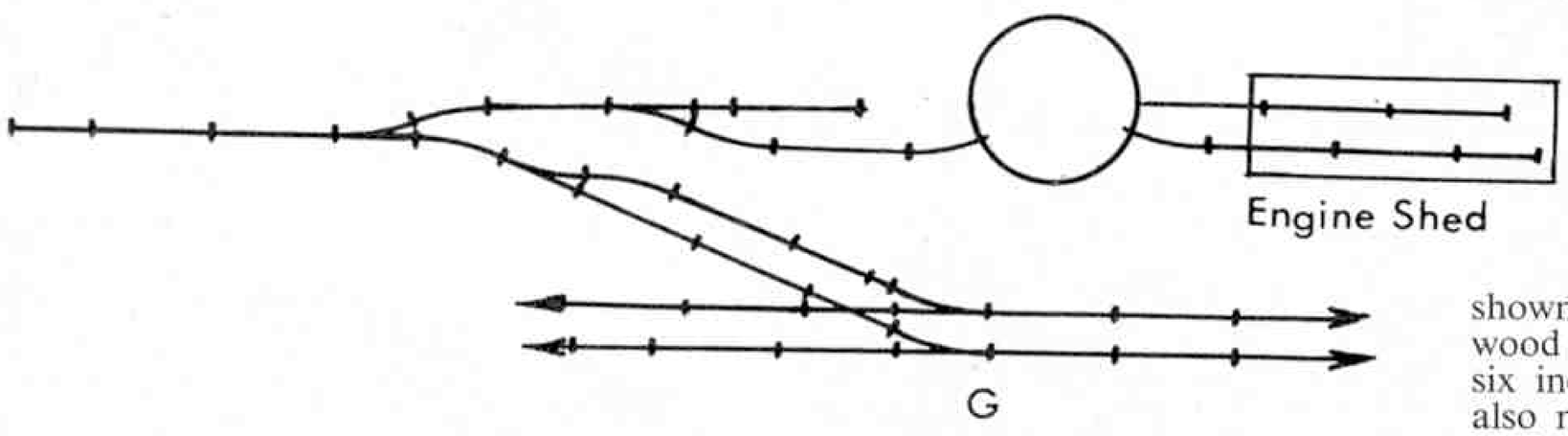
Scenery is usually one of the last things to be added to a model railway, and if the builder has been wise enough to plan for its inclusion no difficulty should be encountered in relating the two to each other. So great is the flexibility of scenery that even if the layout has not been planned it will be found relatively easy to fit scenery, with a few adaptations, into any number of awkward locations. Always remember that when the actual railways were built, the landscape was not modelled around them. But permanent way was laid across the landscape, and so, although your track will be the first permanent feature to be installed on your model railway, the scenery which is subsequently added should be made to justify the track.

For instance, where a curve is laid a hill or other natural obstacle should be made to account for it. Gradients should actually run to higher or lower levels, and tunnels should run through hills that would have made a cutting impossible to make. Most important before starting work on a layout is the planning of both the track and the scenery so that both exist in harmony, and heighten the overall effect.

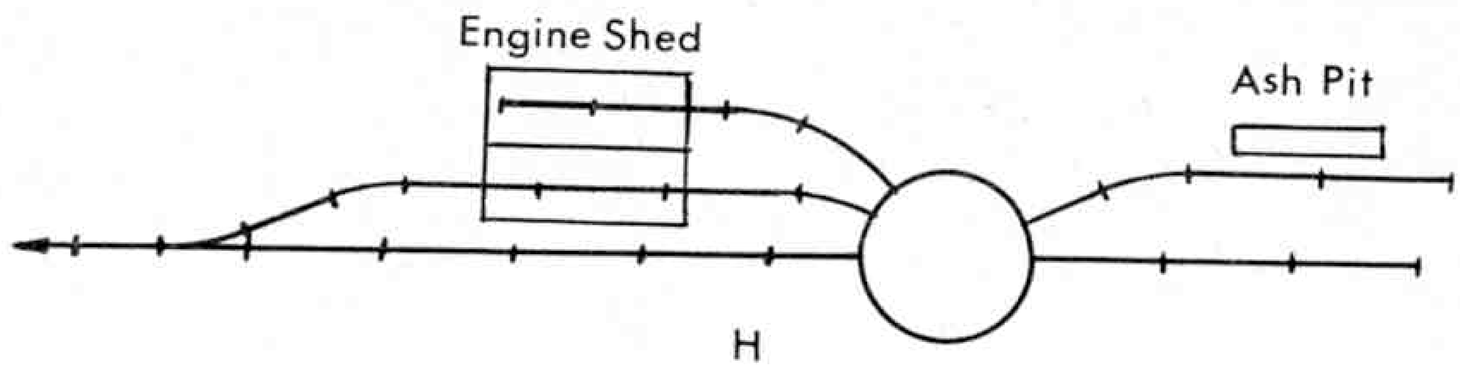
Hills, embankments, sheer rock faces, and other natural features have to be built up over a wooden substructure, which may be built from scrapwood and any other spare pieces of timber that may have been accumulated during the building of the baseboard. The principles involved in the building of baseboards need not be meticulously followed during construction of the substructure. It does not have to be a model of neatness because it will never be seen, nor does it have to be unduly strong, since, in most cases, the maximum weight it will have to carry will be a coat of plaster, or possibly papier-mache.

Included in this article are five sketches of the scenic combinations which, in my experience, are the most widely used on model railways. A single hill on one side of the baseboard is shown at "A", and illustrates in cross-section the type of construction used to build the contour shown. The wood on the end of the baseboard shown in the sketch is nailed, or screwed, into position, being first shaped to the contour required. It may, alternatively, be left quite flat, as shown in the drawing. A similar piece of wood should be nailed into position every six inches, with a longitudinal member, also nailed into position, on top of the upright formers. The whole hill may then be covered with chicken wire of medium or small mesh. I would suggest that wire with a mesh of half an inch be set as a maximum if plaster is to be applied on to the wire direct.

If the end contour board is quite straight, as shown in the drawing, the wire mesh will have to be relied upon to give an undulating surface, and to achieve this it should be twisted and bent into a suitable



G



H

Our photograph shows a typical cutting. The combination of rock and grass should be studied in order to get the best effect if you are adding scenery to your model railway. This picture of No. 92220 "Evening Star" passing over Masbury Summit with the last Up "Pines Express" to run over the Somerset and Dorset line is by Ivo Peters.

shape, then nailed into position on the contour board ends and the sides of the track base. The wire is then ready to receive its surface. The arrangement shown at "B" is one which many readers will have not seen. It is basically a raised trackbed with a hill at one side and a slope on the other. The raised trackbed is built up from blocks of wood cut to the required height and screwed into position at 9 inch intervals along the baseboard. The trackbed is then screwed on top of the blocks. The hills on either side should be built up as before, with pieces of scrapwood nailed to both the trackbase supports, and with the profile board at the rear of the baseboard. These boards should be cut out of either plywood or hardboard, to represent the shape of the terrain you require.

A typical profile board is shown at "F". A keyhole saw, obtainable from most tool shops, will be found useful for cutting out the undulations from wood sheet.

A very popular arrangement with railway modellers is that shown at "C", which is a trackbase with a hill on either side. The supports for the hills in this case have been tailored, or assembled, to suit the type of scenery required. Basically the same method of construction that has been used for the other types has been followed. Note that two profile boards are used in this particular diagram, one for each side of the layout.

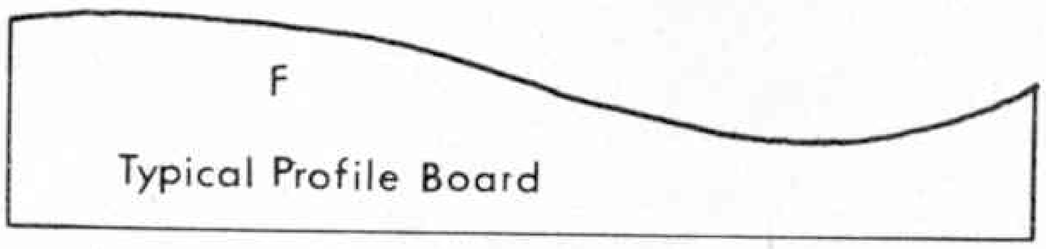


Diagram "D" shows the dual feature of a vertical rock face and a river. The construction is unusual, but simple. The rock face is a vertical piece of wood, screwed or nailed into the edge of the baseboard as before. The wood should be rather thicker than the ordinary profile material. The wire mesh is draped and pinned over as before, and material resembling a sheer rock face is applied over the wire mesh. I hope to deal with this facet in a later article.

The river bed should be gouged out of the baseboard timbers, and covered with an earth mixture to represent a river bed. It is then painted, and the whole river bed covered at water level height with a sheet of thin glass. There are however, many other ways to simulate a river, and I shall explain them fully in a future article.

The last of our five diagrams shows a high embankment. The supporting struts for this should be positioned according to the type of embankment required. As in the other drawings the construction for the substructure is not a very intricate affair, and is easily accomplished.

The two plans of motive power depots will be of interest to all readers who feel the need for something of this nature on their layout. Those who wish to make use of either plan will find that an excellent kit for a turntable such as the one shown is produced by Airfix. Not all motive power depots are attached to a particular station—indeed, most large depots are found outside station limits, and so it is with this in mind that I present these two designs.

Diagram "G" is intended for use off a double track main line, although it may also be used for a single track line simply by removing one of the tracks stretching from the backshunt to the main lines. The engine shed roads lead from the turntable, and are therefore dependent on it for accessibility to other parts of the system. The ashpit may be found on the line adjacent to that which runs to the turntable from the backshunt. If no turntable is required, points can easily be substituted.

The engine shed shown in the diagram is only suitable for two tender locomotives or three tank engines. Its capacity can easily be enlarged by additional locomotive sheds, which may be placed round the turntable as required, giving it an American roundhouse look. The American system will not find favour with everyone, for a large amount of space is required to accommodate a roundhouse. The total space needed for sheds forming a quarter of a circle round the turntable is approximately 2 feet 6 inches square, assuming that the turntable is 1 foot in diameter, and the locomotive shed is 1 foot long. A length of six inches should be left between the turntable and the shed.

It is possible that the average enthusiast will not be in a position to afford the space required for such a scheme as this, and so the depot shown in diagram "H" may be of interest. The advantage of this plan is that it requires less width then "G" although it is of slightly greater length. This is no real disadvantage, since it is usually easier to fit a long thin baseboard into a room than it is to accommodate a short, but wider, one.

The plan shows two locomotive sheds, one of which is of the run-through variety, and the other of the more usual type. An ash pit and coal road can be seen on the other side of the turntable, and if these are suitably dressed with flock of appropriate colours they will enhance the whole depot scene.

Next month, I will give readers details of several recognised methods of constructing scenic surfaces.

A Lucky Liverpool Boy—

(*Continued from page 588*)

of the British Railways Board. He was invited into the cab of the diesel locomotive *Accra*, which hauled the train, and introduced to Driver F. Lawson and Fireman D. Lindsay, both of Camden Sheds.

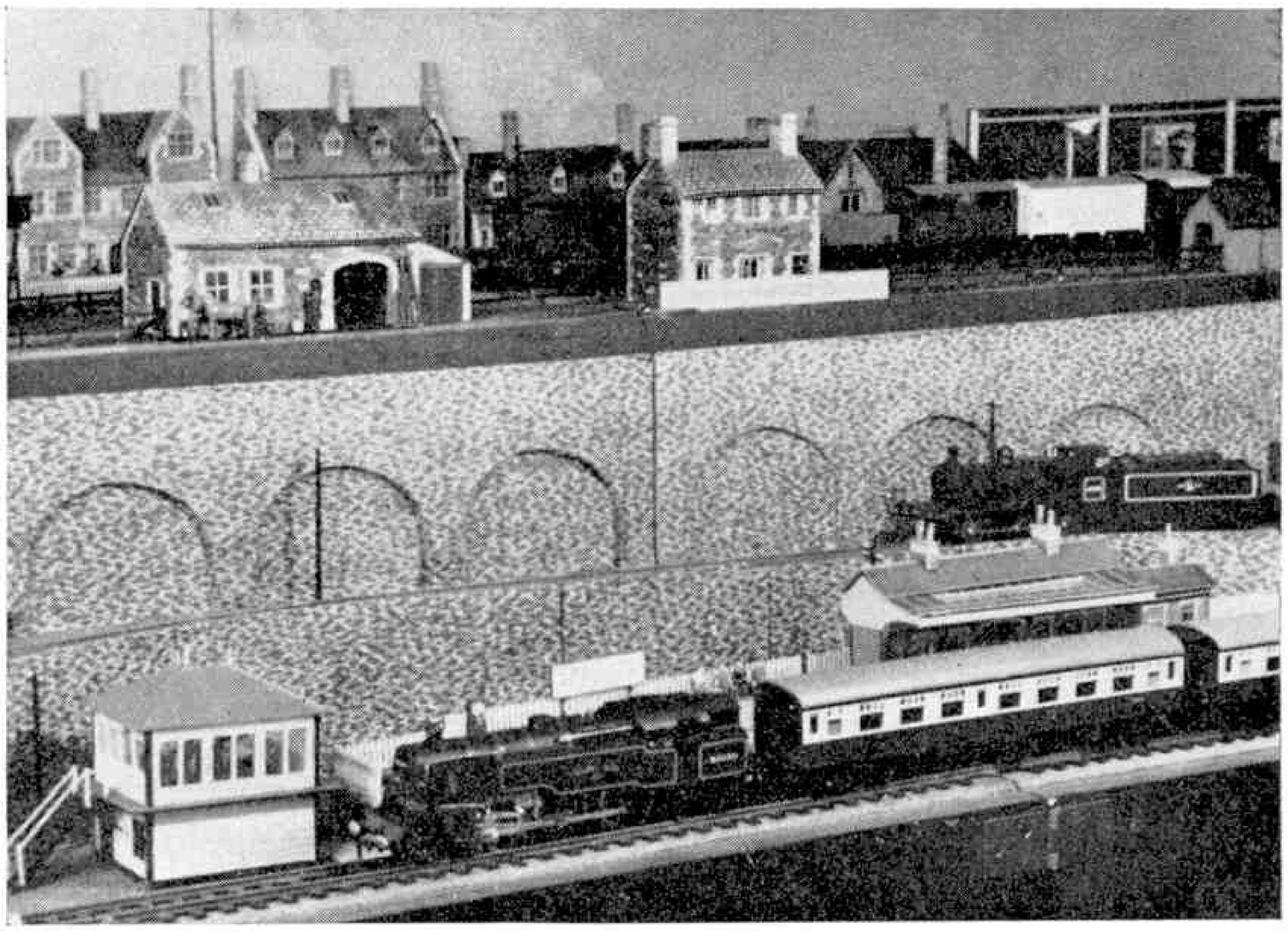
After being photographed at the controls of the *Accra* young Robert travelled on with the party, by Underground, to Clapham and spent a busy afternoon inspecting the interesting exhibits, which include engines from the days of Trevithick and Stephenson to the present day. He was helped on to footplates, shown into coaches that were part of the Royal Train in the days of Queen Victoria and King George V, and finally entertained to tea by Mr. L. Clay, Deputy Curator of the museum. In the party, too, were Mr. Frank Allen, P.R.O. of the Merseyside and North Wales Division of British Railways, who travelled with Mr. Rogers and his son from Liverpool, and Mr. T. Germaine, Assistant P.R.O., British Railways Board.

Then Robert, who is a pupil at Warbreck Primary School, Liverpool, set off on his journey back to Merseyside, with a wonderful story to tell to envious friends on his return to school. Both he and his father were already Hornby-Dublo enthusiasts before they won their prize.

A LAYOUT THAT IS DIFFERENT

THE ORTOGO RAILWAY

By
J. Dugdale, B.Sc.



LAST winter, I decided to make a railway layout which was different from others I have arranged in the past. They were all very much alike, and somehow seemed similar to everyone else's railway. Several ideas which had been reposing in the back of my mind were brought to the front, developed and expanded, and work started on what eventually came to be called the *Ortogo Railway*.

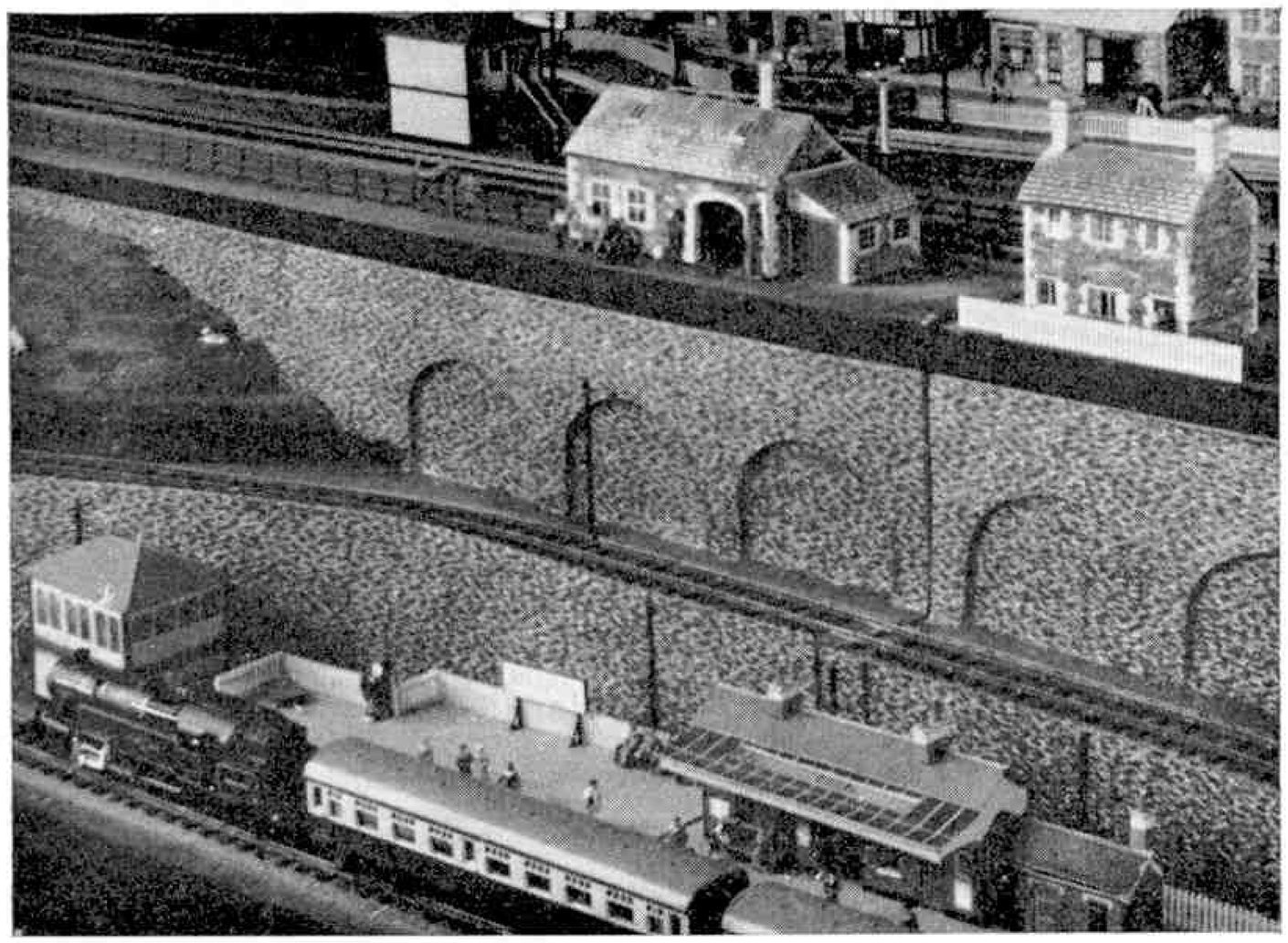
Let me tell you to begin with that it is an exhibition piece—some of my friends in the Merseyside Model Railway Society have said that it is an exhibition in itself—and does not pretend to imitate any railway location. It is small, only eight feet by three feet, because my workshop is not much bigger than that. The railway is built on two levels. The lower track is just a "looped eight", a continuous track without points. It is level at the station in the centre front, climbs to pass over the other track and then falls at 1 in 20, to datum level. The radii of the curves are necessarily very small, but as more than half of the thirty-six feet composing the lower track is covered by the upper baseboard this is not a great disadvantage. The lower track is divided into four block sections, each with its Hornby-Dublo Colour Light Signals.

The upper baseboard contains two features, independent of each other, each having a special task. The first of these, in the foreground, is a four-road marshalling yard with a shunting neck and there we see a Hornby 0–6–0 Diesel and about twenty wagons of various kinds assembled. The yard is completed scenically with various sheds and buildings, and behind are a few works attached to the town of *Oxhey-on-Sea*. The town and its station form the second main feature of the upper level.

Oxhey-on-Sea has become more important recently and is developing into a pleasant seaside resort. The railway authorities have just provided the line with a service of electric trains and this has made the town even more popular. At the back, we see the main street of *Oxhey* with its modern shops and cinema alongside the Alms House and other old stone buildings which show that the place has a history, too. Next to the road we have the railway, with the station at the left-hand end. A level crossing gives access to works at the side of the line.

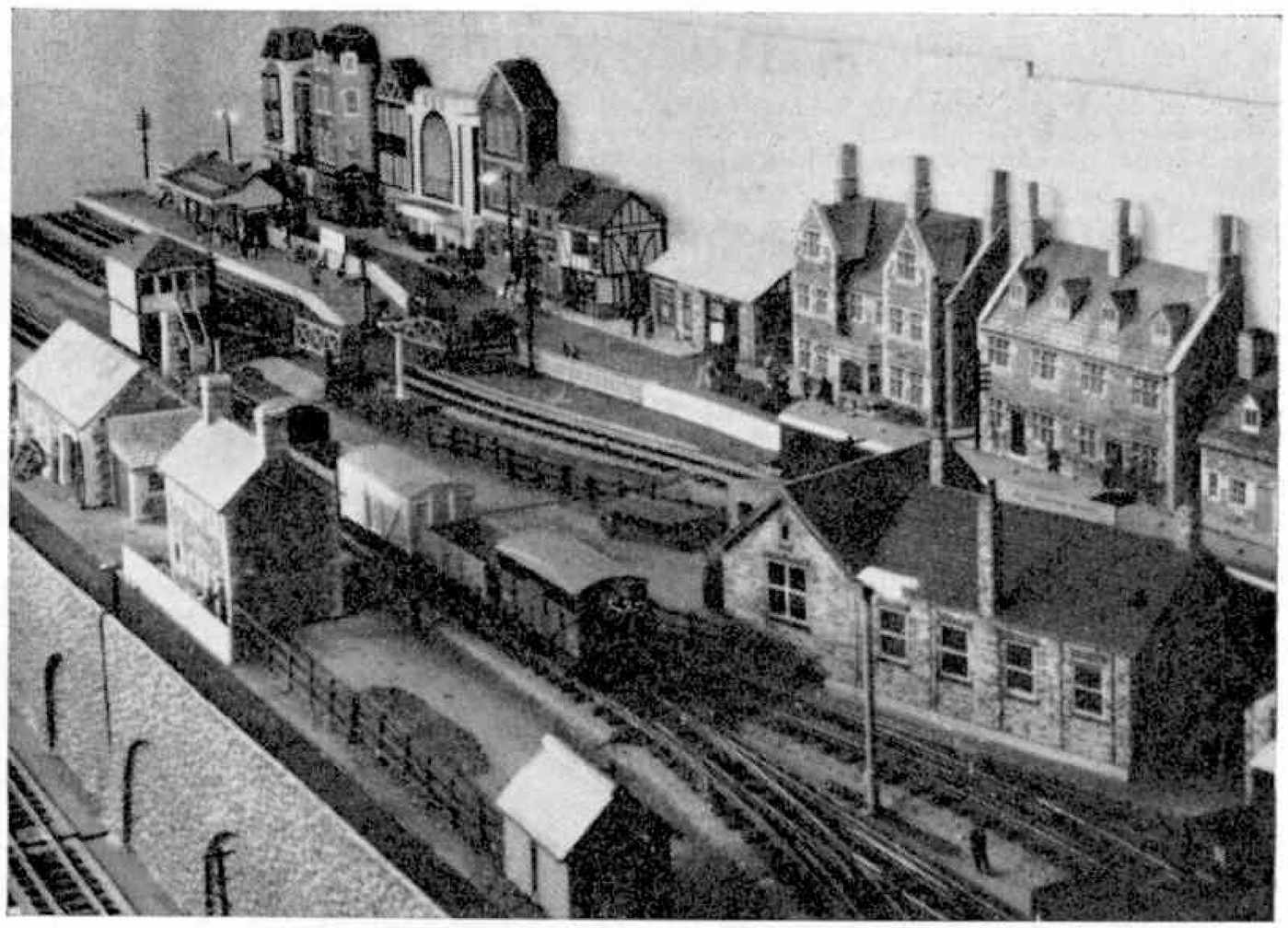
So much for the geography of the layout; with the aid of photographs let me describe the operation. The railway is entirely automatic so there is only need to switch on the main circuit and the whole model comes to life. As a description might be a little bewildering, let us assume that each circuit is put on separately, to give us time to take it all in.

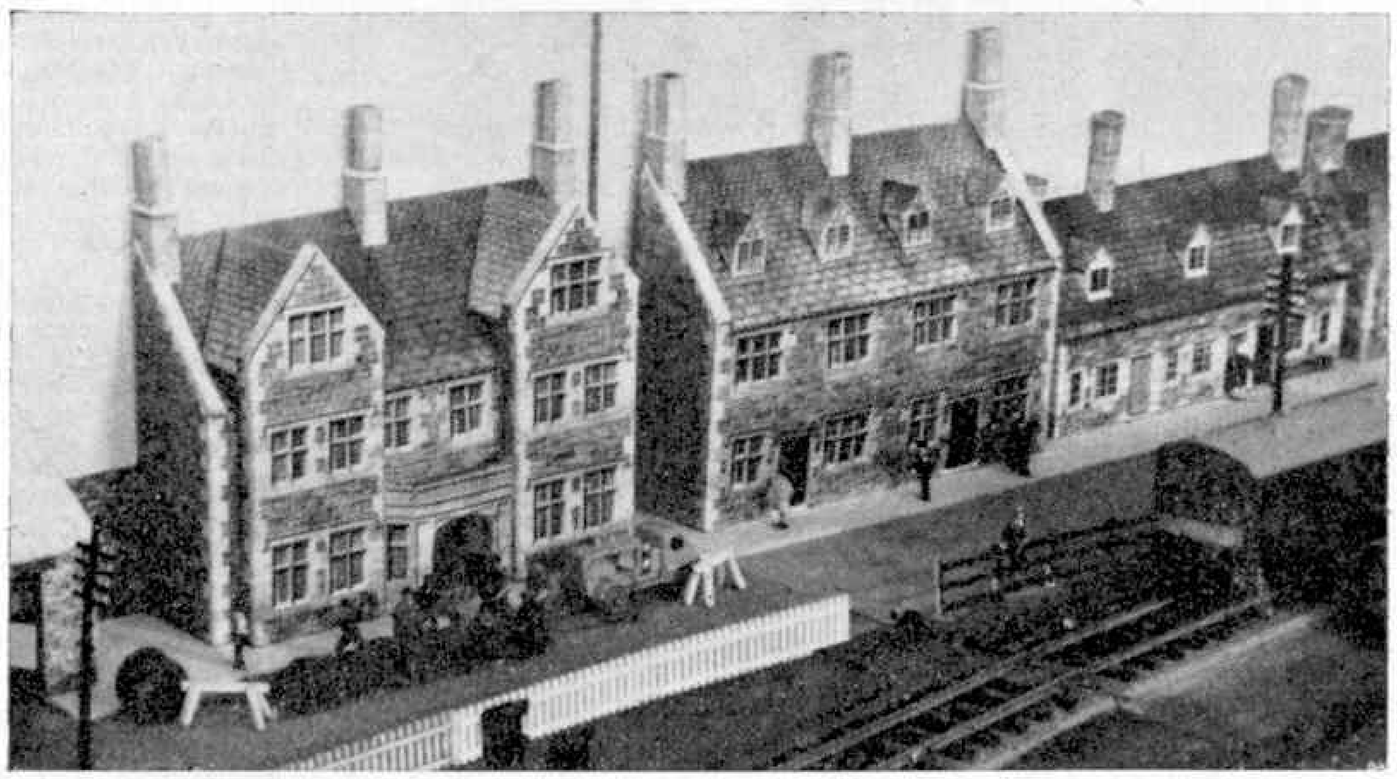
First we have a Hornby-Dublo 2–6–4 Tank and two coaches on the bottom loop and switch on. The starting signal shows green and away goes the train, disappearing into the tunnel on the left. As it does so the signal shows red behind it, and when it leaves the tunnel on the right it enters the second section, governed by its own signal. This shows a green light, but as soon as the train has passed, this, too, changes to red and at the same time the starting signal reverts to a green aspect because the section to which it belongs is



In the upper picture a Hornby-Dublo 2–6–4 Tank waits with its train at the station named "Pawsing", on the layout described in this article. After station work has been finished, the 2–6–4 Tank moves its train away from the platform.

Top right: Shunting operations in progress in the high-level yard. This picture shows how effectively the various lineside buildings fit in with the general scheme. Below: The railway passes a busy street scene. A point of interest is the road repair gang on the left of the picture.





cleared. This is repeated as the train enters a second tunnel, on the left.

As it emerges it faces the home signal for the station, where it slows down and then stops. It remains in the station for about twenty seconds before it carries on and repeats the performance.

While it is standing in the station we can place a second train on the same track. This will run round, and the signals will operate just as before until it approaches the red light. The train then slows and eventually stops just before the signal, remaining there until the signal gives a green aspect, showing that the section ahead is clear. So it goes on, whichever train is second having to wait for a given section to clear. The trains pause sometimes, but not every time, at the station. Hence the station is called *Pawsing*. Actually three trains can perform on the same track in the way described above.

* * * *

The marshalling yard is even more fascinating to the onlooker. The Diesel Locomotive moves from the shunting neck into one of the siding roads and couples up a number of wagons. It reverses and draws clear of the points with its load, then stops, waits about ten or fifteen seconds while the points are reset, and pushes the trucks back, leaving some of them in one of the sidings. It reverses again, draws out very slowly and realistically and waits again while the points are changed, and then shunts more wagons back in another siding. When it has sorted all these wagons, it can be moved to another line of vehicles and do the same with them. It will continue to perform similar operations unaided for fifty minutes without actual repetition.

In the meantime *Oxhey-on-Sea* has come to life. The passenger traffic is not yet sufficient to demand a very frequent service. Actually, a twenty-minute service is provided. In real practice this would be quite a good one, but by miniature railway standards it is certainly not very frequent. As we watch we get an indication that a train is coming, the clue being the opening of level crossing gates, operated from the adjoining signal box. They are single gates; one opens completely and then the other begins to move across slowly, just like real crossing gates. After a short delay, the home signal goes to green. Eventually the expected train appears from behind a retaining wall, lights in the coaches giving an occasional flicker. It stops at the platform and there is an interval for passengers to leave the train. The home signal is returned to red, the crossing gates are closed again and the train lights go out while we may suppose that the "crew" go for a quick cup of tea with the station staff.

It is not long before the train must leave again for the Metropolis. The lights come on in the coaches, the gates open again one at a time, the starting signal changes to clear and the train moves off. The signal returns to normal, and the gates close, each of the operations being performed at about half-minute intervals. Although the actual service is infrequent, there is no lack of activity on the lines around *Oxhey*. Meantime, work in the marshalling yard goes on, and our three trains circle the lower baseboard, halting when a signal shows red and pulling up occasionally at *Pawsing*.

* * * *

To add interest much attention has been given to lineside details. For instance, "people" on the layout are not just standing or sitting; they are depicted doing something—a billposter does his weekly rounds, the linesman repairs the telephone wires, and two old-timers watch the new electric trains go by.

To add to the reality of it all the light in the various buildings can be changed—the flood-lighting of the cinema changes from red to green and then to white, and, of course, if you put lights inside buildings you have to furnish the property. Finally, as each train enters the *Pawsing* section the bell code is heard in the signal box, and the figure of a signal man enthusiastically heaves on the lever to give a clear aspect from the starting signal.

* * * *

How it is done? A whole magazine could be written about this. Below the layout and between the trestles which support it is the "brain", a complicated set of relays, high-resistance, low resistance, quick-acting and slow-acting, thermal relays and selectors, which "choose" the successive operations. More switches are housed in the baseboards themselves and some of these are actually operated by magnets carried in some of the rolling stock.

The track is Wrenn and is laid on foam rubber ballast underlay. Most of the rolling stock is Hornby-Dublo, except for a few wagons which are Peco and of various other makes. The buildings include both hand-built and commercially-produced models.

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For Stamp Enthusiasts

Back on the map

By F. E. Metcalfe

RECENTLY, I referred to a new set of postage stamps that had been improvised from the revenue stamps available, so that Nyasaland, on obtaining independence, could promptly proclaim its new status to the world. Well, those overprinted stamps did not have a long life. Now the world has fresh evidence that Nyasaland is again doing business on its own, via the new definitive issue.

Stamp collectors at least are interested in all this philatelic publicity, and as the erstwhile popularity which this Southern African state enjoyed seems to be returning, and as there are always a number of collectors looking out for a new field in which to take an interest, I think we might take a look at Nyasaland both from a

philatelic angle and at the country itself. I have always found that it adds a good deal to the interest in stamps themselves if one learns something about the country which is issuing them, so here goes for a spot of geography. But don't shy away; I will make it all as brief as I can, and the stamps themselves will be my main theme.

Nyasaland has a population of around 2,000,000 and of these only about one per cent. are white. It is a mere strip of land of 48,000 square miles in extent and situated between the shore of Lake Nyasa and Northern Rhodesia. (Incidentally, that huge lake, which forms so much of the eastern boundary, is 360 miles long and anything from 20 to 50 miles wide. In places it is so deep that although it is located 1,500 feet above sea level, at one point it sinks to 700 feet below. What a place for a new Loch Ness monster!)

Industrially, tea and tobacco are important crops, and cotton, coffee and rubber are also products of growing importance. A good deal of fishing, too, is carried out.

It was the missionary David Livingstone who gave the country its name, for he was the first European (but not by any means

the first human being) to discover Lake Nyasa—which is the name he gave it. This was in 1859. After that, other missionaries moved in, but they had a pretty tough time to start with, as the climate was difficult, and in consequence sickness was rife. As for the first mail service, it was only these missionaries who wanted it, so they had to make their own postal arrangements, and native runners were engaged to take the letters through to Portuguese East Africa.

A great deal could be written from a political angle, but I will get down to the postal issues themselves. There were plenty of these, for later the territory was known as British Central Africa and the postage stamps, in use until as late as 1908, were titled thus. Most of these stamps are quite expensive, and I think it is only with the stamps actually bearing the name of Nyasaland Protectorate that we need concern ourselves. Indeed, even the stamps of that date bearing the portrait of King Edward VII are expensive, except for the lower values. The top stamp with a face value of £10 is actually catalogued at £250, but as it is really only used for revenue purposes that one need not worry us.

In 1913 the head of King George V replaced that of the late King Edward VII, and on some of these stamps (classified in the catalogue as Tanganyika) during the first world war the letters N.F. were overprinted, these stamps being used by the troops operating in that part of the world. In the Navy, where I was serving at that time, off the East African coast, I heard about these and other war issues, but, alas, away from where all these stamps were issued, there was nothing doing. I still remember how annoyed I was that the

Army had such opportunities all to themselves.

I have mentioned how popular Nyasaland stamps used to be and apparently are going to be again. But it was with the 1934 issue—the stamps (recess printed) bearing the symbol of the Protectorate (Leopard rampant, I suppose you would call it)—that Nyasaland's modern stamps really began. Then, in 1938, the same design was used but with the portrait of King George VI who was by then on the Throne, and it is here that we get the first set which we can all afford to buy, and where, I think, we could well start our collection of Nyasaland stamps.

This first KGVI issue, of 1938, supplemented with the changed colours of 1942, makes a really fine set, and as it can still be purchased for a few shillings (this is because it sold freely while current) I recommend it. Of course, I am referring only to the values up to 1/–. The higher values, which run from 2/– face to £1, are naturally much more expensive, but well worth buying. Next came the first real pictorial issue of Nyasaland, in 1945.

When the Queen came to the Throne the same designs were adopted, except for the 2½d. value, but, of course, with her portrait. Alas, this latter set complete costs around £5, but shorter sets are naturally cheaper.

Now, with Nyasaland going full blast with new issues, we can all afford to jump on to this country's "philatelic bandwagon", and I can assure you that very many are doing just that. This means that prices will rise, and while I do not like to suggest that stamps should be bought only as an investment it is nice to know that when we have spent precious pocket money it is not all going "down the hatch", such as with ice cream and lollypops. So, who is for Nyasaland stamps? You could do much worse. Did you buy even a short set of the last November provisionals? They are already doing quite nicely.

Stamp Gossip

South African Watermarks

A BELFAST reader wrote to me the other day to say that while he did not know a great deal about the technical side of the hobby, he was nevertheless very interested in stamps, especially those of South Africa, for—as he put it—he gets a lot of current stamps of that country from envelopes which come his way. But the real object of his letter, was to discuss the question of watermarks, which, working without a catalogue, had left him confused, as far as his favourites were

concerned. He commented "some of the stamps I get have varying watermarks, and some values do not seem to have a watermark at all. How can this be where only one set of stamps is concerned?"

Well, it is a fact that there is a watermark mix-up at the moment (there is even more than one type of perforation, for the latest ½c. is now 14×13¾). It is also true that some of the values have no watermark at all, and as changes are frequent, there is no point in detailing the various values, for by the time these lines appear in print further changes may have taken place. But there are actually three watermarks to look for. The first shows in outline a springbok's head; the second depicts the coat-of-arms of the Union, and the latest is a triangle with the letters R S A enclosed. I will leave it there, for used South African stamps are easily come by, and there can be lots of fun sorting out those which come your way, but do not overlook those with no watermark at all.

This Belfast reader's letter confirms something I have said here several times—you cannot collect intelligently without a catalogue; all you can do is to stick stamps into a book, in much the same way you would house cigarette cards, which is not philately.

CANADA'S 1964 PROGRAMME

It cannot be claimed that the new stamps of Canada are anything like as plentiful, as far as new designs are concerned, as are those of her neighbour, the United States. In fact, I have heard them described as on the dull side. But it is also a fact that few stamps are more popular, so the 1964 programme of new issues for that big sister country will interest many readers.

First of all, ten new stamps will appear during this year. The first will be a 7c. air-mail stamp due out on February 5. The second will be issued in March, the motif being *Unity in Canada*, and then will follow a set of four values in several colours bearing provincial floral emblems (the long-range programme is for a floral stamp for all of Canada's ten provinces). Who said Canadian stamps are dull? In June there will be a special issue for world peace; September will see the Charlottetown and Quebec conferences marked by two more stamps, and finally, to top off this interesting programme, for the first time Canada hopes to issue its first Christmas stamp. Who knows: our own Post Office may be doing just that, if rumours are anything to go by.

NEW ZEALAND CHANGES

Without a doubt postal administrations all over the world (yes, at long last we can include our own) take their postage stamps very seriously. They know that valuable publicity can be obtained from them, if the stamps are attractive. New Zealand is such a country, and when in 1960 a new set appeared there was a good deal of criticism about one or two of the values, particularly the 1/9d. The design itself was interesting enough, but the colour, a kind of dull bistre, was enough to deaden the appearance of any stamp, so that has been changed, and now we get a quite nice little stamp in three colours, and New Zealand's artistic reputation has been saved. Yes, stamps are pretty important these days.

THIS CHANGING WORLD

December 11 last year was the date when Kenya brought out an imposing set of stamps, right up to the top value of £1, to mark its new political status. It is a good thing that much correspondence passes between that now free African country and our own, for that means plenty of used stamps, so as time goes on most of the full set will be fairly easy to come by. But even if it is only a mint set to a shilling I would suggest that such attractive stamps, as these are, will be well worth buying. Of course, if funds run to some of the higher values as well, do not hesitate to buy, for although this "Independence" issue is supposed to be of a definitive character, it might not have a very long run and, as I have already indicated, the stamps are really handsome, and make a fine showing on a page by themselves. Isn't it still true that there is always something new coming out of Africa? It is certainly so as far as attractive stamps are concerned.

A GREAT EVENT

The completion of the cable between

(*Continued on page 615*)

By E. W. Argyle

Famous Bridges On Stamps

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THE LANCHID (Chain Bridge), the oldest of four fine bridges at Budapest, was designed by a celebrated English engineer, Mr. William Tiernay Clark. It was begun in 1839 and completed ten years later. This was the first permanent bridge to be built over the Danube below Vienna since the days of the Romans, when Trajan built his bridge, 17½ centuries earlier. Clark's bridge, 666 feet in span, stood until it was rebuilt, except for the towers and anchorages, in 1914.

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THE most perfect example of a fortified bridge is the fourteenth century (A.D. 1308) Pont Valentre, at Cahors, France. This bridge has six lofty arches, with the usual triangular cutwaters. At each end of the bridge is a gateway tower with battlements, and the central tower has portcullised gates. All the towers were pierced and had galleries for archers. The bridge was left unfinished at one point, a medieval practice to "cheat the devil of his due".

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To clear small stocks still in hand of all issues January 1962 to November 1963 the price per copy has been reduced to 1/–, including postage, etc.

Write to *Meccano Magazine*, Binns Rd., Liverpool 13, enclosing a postal order for the appropriate amount.

FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 610

MAILBAG . . .

Sir,

While ashore in Rio de Janeiro I sat aboard a street car behind two Brazilian youngsters who were talking excitedly and making complicated gestures.

I kept hearing what sounded like the word "Meccano", but at first I regarded it as a typical Brazilian word and certainly did not fully recognise it as our own famous British Meccano. However, the picture became clear as the boys' hands described the motion of an electric crane.

In my halting Spanish (which is not even the correct language in Rio!) I boasted to them that my home-town is also Meccano's home-town. And they got the message!

I went right past my stop through bragging about all my relations who have helped to make Meccano sets.—J. Shannon, Liverpool.

* * * *

Sir, I am sending you a photograph which shows the front of the Post Office at Seefeld, not far from Innsbruck, in the Austrian Tyrol. It is decorated in typical Tyrolean style, with its picture painted straight on to the wall. Many of the older buildings in the area are so decorated, and the paints remain fresh for centuries, thus giving the buildings a semblance of being new. The shutters of the windows and the large overhang of the roof are also characteristic of these buildings.—I. Murray, Enfield, Middlesex.

The front of the Post Office at Seefeld referred to by "M.M." reader I. Murray, of Enfield, in his letter.

* * * *

Sir, As a model builder of some 34 years, I have amassed Meccano parts worth approximately £250. As a family man, my time for building is limited, but my three sons have carried on the tradition. Recently, after many years of anticipation, I completed from instructions in 1929 magazines the giant blocksetting crane, super model No. 4 in those days. I find model-building very relaxing and hope to continue building for many years to come. Wishing the *M.M.* continued success.—W. H. Tardiff, Glengowrie, South Australia.

* * * *

Sir, The *Meccano Magazine* is always very interesting and must be appreciated in numerous countries by enthusiasts who, like me, knew Meccano before the second world war. I have had a Meccano from the age of eight and I am now 43. Unfortunately, most of the parts, the manuals and all the super-model leaflets were lost or destroyed during the war. Since then I have been able to build up quite a large assortment which has a current value of about Fr.3,500 . . . thanks to your small advertisements.—Dr. A. Grinnaert, 122 Rue Pasteur, Oignies (P.de C).

FRANKIE VAUGHAN AT BINNS ROAD

There was a tremendous reception for Liverpool-born pop singer Frankie Vaughan when, during a brief visit to Merseyside, not long before Christmas, he toured the works of Meccano Limited at Binns Road.

Like many famous people in various walks of life Frankie built with Meccano when he was a boy, and he was deeply interested in the production processes described to him during his visit. He also watched the assembly of Dinky Toys, Hornby-Dublo Electric Trains and the Circuit 24 road race game, and chatted to many of the people employed in the works. Members of the staff who were leaving the building for lunch at the time that Frankie was setting off for London by road queued for his autograph and gave him a rousing send-off. Our picture shows the famous singer watching Dinky Toys being prepared for assembly.

THE TOP THIRTY

Calling All Bus Spotters

By David Kaye

SOME bus spotters ask me what the difference is between the BTC and the BET operators. Generally speaking the British Transport Commission operators are made up of four groups, dating back to the nationalisation policy of the Labour administrations of 1945–51.

During the period 1948–50 the BTC purchased London Transport, the Tilling Group (e.g. Hants & Dorset, Eastern National, etc.), the Red & White Group (including Newbury & District, Venture, etc.) and some of the largest Scottish operators (e.g. SMT, Alexanders, etc.). Normally these BTC operators (with the exception of London Transport and the Scottish operators) always buy Bristol-chassised buses and coaches with Eastern Coachwork bodies, since both these manufacturers are owned by BTC. However, sometimes special requirements have to be met elsewhere, such as with the case of Southern Vectis and its lightweight excursion coaches built by Bedford and Duple. Recently the BTC became the Travel Holding Company, but BTC is retained in the following list.

British Electric Traction is a privately owned group, which largely patronises AEC, Leylands, Northern Counties, East Lancs, Harringtons and Weymanns, although recently their policy has switched to giving business to Marshalls of Cambridge for single-deck bodies. The third important group of buyers consists of the municipalities, varying in size from Birmingham with a fleet of 1,682 vehicles at one end of the scale down to Hartlepool with only four buses. Finally there are the so-called "independents", the largest of which are small in comparison with BTC, BET and certain municipalities. The top two appear to be Lancashire United Traction with a grand total of 416 and Bartons with 326.

The figures for the following table were taken from the 1963 issue of the *Little Red Book*, which is published by Passenger Transport, and these statistics are correct for October *1962*.

London Transport (BTC) 8,387 vehicles; Midland Red including Stratford Blue (BET) 1,975; Birmingham Corporation 1,682; Glasgow Corporation 1,557; Manchester Corporation 1,431; Bristol Omnibus Co. (and subsidiaries) (BTC) 1,274; Ribble (BET) 1,250; Liverpool Corporation 1,230; Crosville Motor Services (BTC) 1,219; United Automobile (and Durham District) (BTC) 1,130.

Western SMT (BTC) 1,058; Alexander (Midland) (BTC) and Southern/Western National (BTC) 981; Southdown Motor Services (BET) 962; Northern General (and subsidiaries) (BET) 884; Scottish Omnibuses (BTC) 881; Sheffield Corporation 829; Maidstone & District (BET) 794; Eastern National (BTC) 740; Edinburgh Corporation 708.

Eastern Counties (BTC) 703; Western Welsh (BET) 665; Leeds Corporation 655; Central SMT (BTC) 650; East Kent (BET) 628; North Western (BET) 590; Potteries (BET) 528; West Yorkshire (and subsidiaries) (BTC) 527; Alexanders (Fife) (BTC) 512; Hants & Dorset (BTC) 501.

This means that out of the top 30 operators on this island in 1962 the BTC controlled 18,563 buses and coaches, with BET a poor second on 8,282. Municipalities are just pipped into third place with 8,086. In other words, just under 24 per cent. of the biggest fleets are privately-owned, leaving the remaining 76 per cent. in public ownership.

From the Days of the First Elizabeth—

(*Continued from page 593*)

the lock-keeper's wife. She told me that except for visits from sailors from the ships passing through the locks they see few strangers. Occasionally agricultural labourers from the isolated farms make their way across the fields and dykes; a perilous journey on a dark night. Sometimes gangers working on the lines come across, or there may be a few visitors who walk or cycle along the tow path.

"How do you get to the mainland?" I inquired.

"I walk a mile along the tow path to opposite Topsham, a rough path full of stones and pot holes, where I take the ferry across to Topsham," she replied, "then I catch a bus to Exeter."

Sampling the Topsham ferry I found the boat up-to-date, driven by an outboard motor.

I asked if the Turf Hotel still served white bait teas for which they were once famous.

"No," I was told. "The fish have been driven away by the diesel-engined ships which use the canal. There has been much more traffic in the past ten years, and all sorts of cargo travels this way to Exeter."

The hotel snuggles behind a group of fir trees and a fine cedar which shelter it from the rough south-easterly winds as they sweep up the river. An ancient hulk close to the trees also acts as a wind break in spite of the gaping holes it contains.

The canal still belongs to the Corporation of Exeter who gave me some up-to-date details of its ships and cargoes. During 1961–62, motor spirit was the biggest and most important cargo, a total of 53,434 tons being carried. Other loads were: Oyster shell 1,502 tons; cement 525 tons; fertiliser 524 tons; timber 1,579 standards. The total number of vessels using the canal during this period was 262.

Soap-Box Cart—

(*Continued from page 603*)

10 and a Spring Clip 11. The steering wheel, a 2″ Pulley, is fixed to the top end of the Rod, then the steering arrangement is completed by tying Cord between opposite holes in the Bush Wheel and the end holes in the lower Double Angle Strip 6.

Finally, a "soap-box" effect is obtained by bolting a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ and two $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates to the flanges of Plate 2 with Angle Brackets 12 connecting them at the top.

The rear axle is another $3\frac{1}{2}''$ Rod 13 also held in place by two 1″ fixed Pulleys carrying Tyres.

Parts required to build the Soap-Box Cart: 2 of No. 2; 2 of No. 11; 2 of No. 12; 2 of No. 16; 2 of No. 17; 1 of No. 20a; 4 of No. 22; 1 of No. 24; 1 of No. 35; 19 of No. 37a; 17 of No. 37b; 9 of No. 38; 1 of No. 40; 2 of No. 48a; 1 of No. 52; 1 of No. 125; 1 of No. 142c; 2 of No. 188; 1 of No. 190.

Stamp Gossip—(*Continued from page 613*)

Canada and Australia across the Pacific, connecting our own country with Australia, New Zealand, Fiji, etc., was a great event. To mark the occasion these countries including, of course, Great Britain, have "said it with stamps", and a nice little quartette they make. Our stamp was for 1/6d., Australia's 2/3d., New Zealand's 8d. and the Fiji Islands' 1/–. For the last-named, the current stamp was overprinted for the purpose, and a neat job it is too, with a silhouette of the cable-laying ship *Retriever* depicted on it. Naturally, these stamps have been very popular, with that for Fiji Islands no doubt the most scarce.

THE TIP OF THE MONTH

I am not going to tip stamps themselves this month, but suggest that, if funds allow—and also, of course, if you have interest in the stamps of all countries—that you consider buying a copy of *Gibbons Simplified Catalogue*. It is true that a new one costs 30/– (a copy of last year's edition about half that sum) but what wonderful value for money it is. Armed with this huge book, the world of stamps is really open to you. Thousands of stamps are illustrated, and how this catalogue is sold for the money, in these days of high printing costs, I do not know. I mention this fine catalogue because I receive so many letters from puzzled collectors who are in a fog just because they have no catalogue to which to refer. What about a word with Uncle?

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Trackside News—

(*Continued from page 585*)

The peak of Pacific performance came on July 3, 1938, when *Mallard*, No 4468, attained a record speed of 126½ mph while hauling a test train of 240 tons down Stoke Bank. This was the world's record speed for a steam locomotive, a fact proudly proclaimed by bronze plaques mounted on its boiler.

* * * *

London Transport has withdrawn ex-District Railway 0–6–0 side tank locomotives Nos L30 and L31. These were the last two steam locomotives of those which were taken over from the former companies by the London Passenger Transport Board on its formation in 1933. London Transport has also acquired a further 0–6–0 pannier tank locomotive from the Western Region of British Railways, making a total of twelve 5700 class pannier tanks owned by London Transport, four were built by the GWR; one by Kerr Stuart; five by the North British Locomotive Company; and one by Armstrong Whitworth.

* * * *

Work is expected to start about the middle of 1964, on the reconstruction and modernisation of Chesterfield Station (Midland). The whole of the station will be reconstructed with the exception of the new block at the north end of the Down platform, which was rebuilt in 1960. The new station, which will be of modern design with glossy red brickwork and a flat roof, will comprise a booking hall with a mechanised ticket office equipped with Multiprinter and Flexiprinter ticket issuing machines, enquiry office, bookstall, tobacco kiosk and taxi office. On the Down platform, new buildings will include a general waiting room, ladies' waiting room, an enlarged parcels office with reception counter for left luggage and parcels, station master's office and staff accommodation. A new waiting room will be provided on the up platform.

Central heating and fluorescent lighting will be installed in the main buildings. New waiting room furniture will also be provided throughout.

Improvements to the platforms are already in hand. They are being raised and re-surfaced. Modern electric lighting has already been installed on the platforms and in the subway. The existing platform canopies will be retained, but will be re-glazed and refurnished.

This exciting 1964 Edition is now available in your bookshop.

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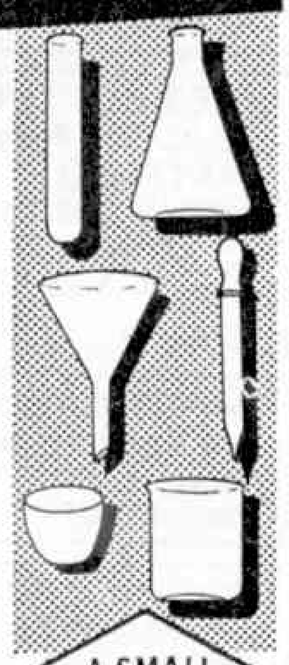

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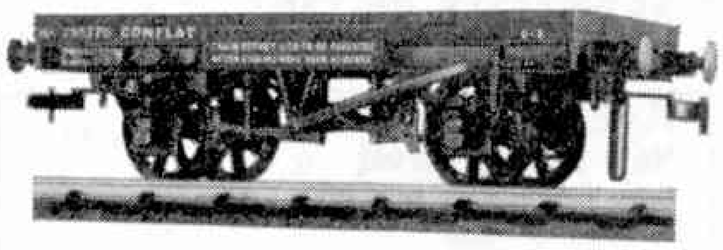

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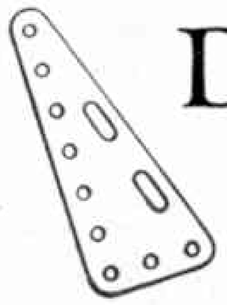

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Listed below are some of the dealers who sell Meccano accessories and spare parts. This is intended to aid enthusiasts—and there are many of them—who constantly require additional spare parts for their Sets. All dealers can, of course, order Meccano spare parts for their customers, but those listed here are among our spare part specialists.

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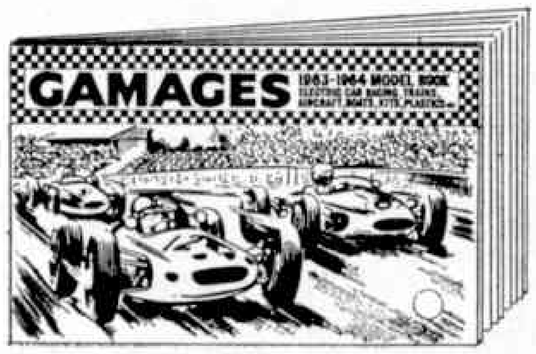

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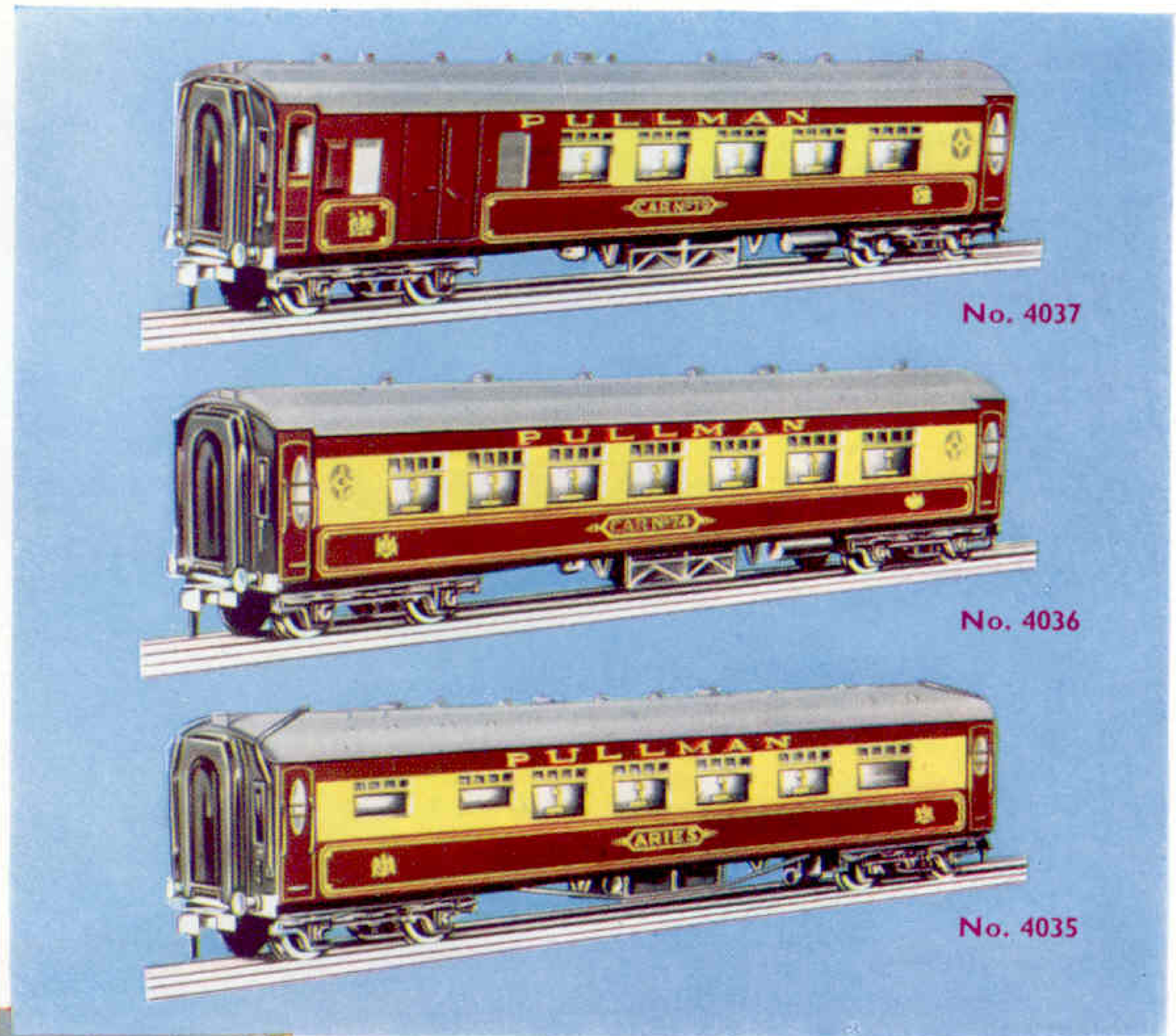

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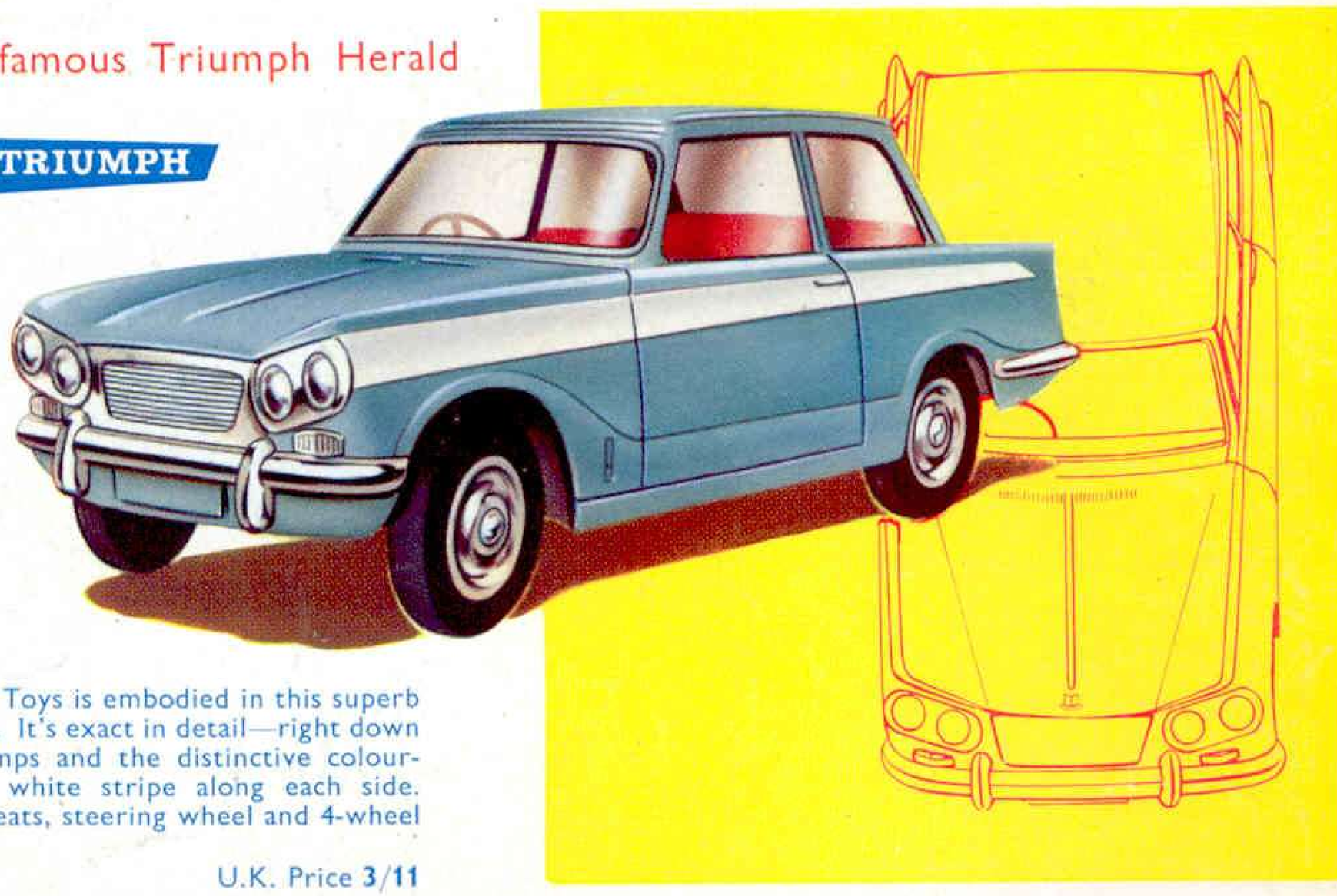

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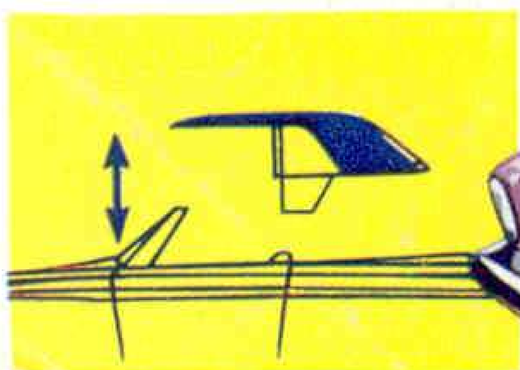

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