THE MODEL WORLD AT YOUR FINGERTIPS

MECCANO MAGAZINE

THE MODEL WORLD AT YOUR FINGERTIPS

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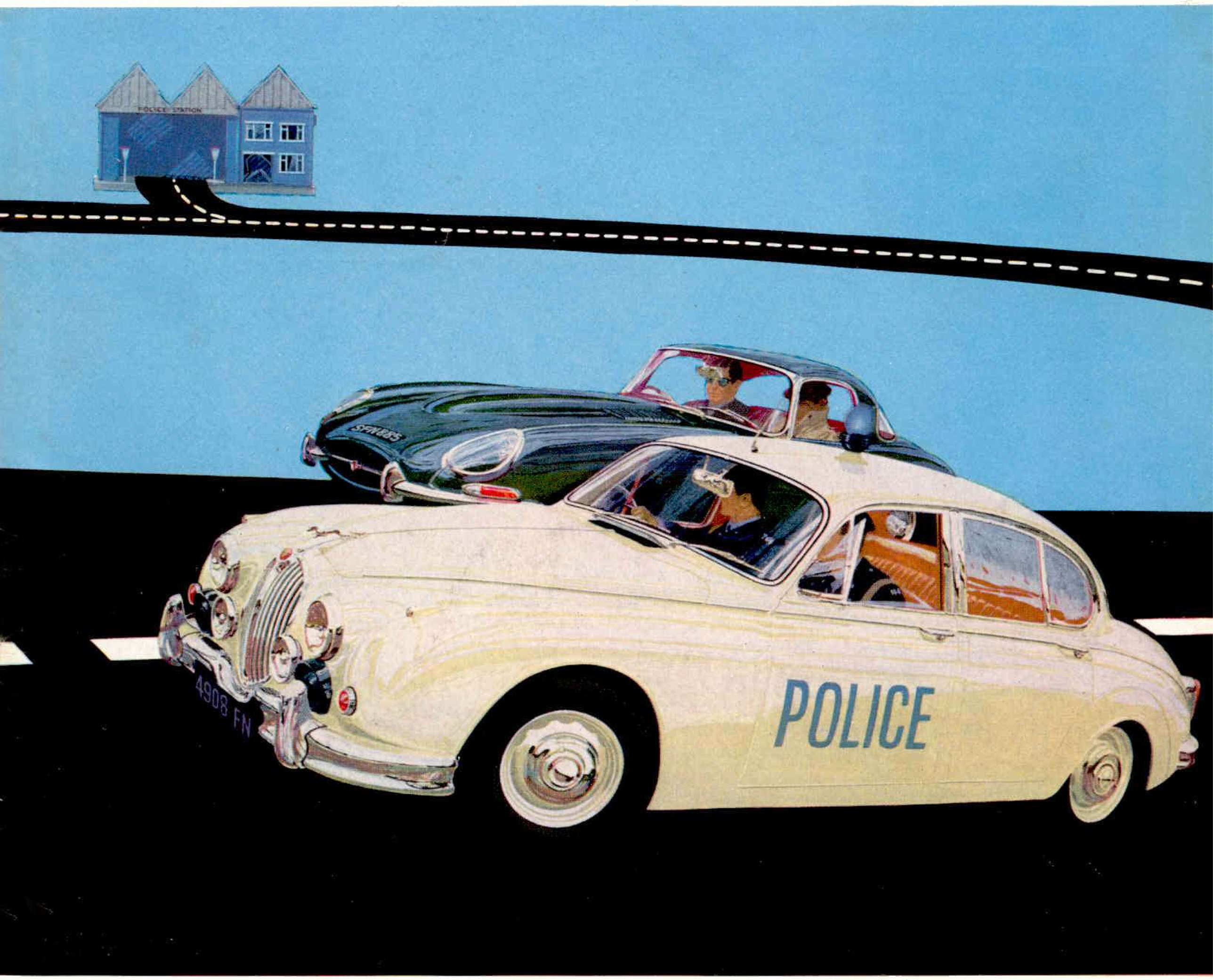

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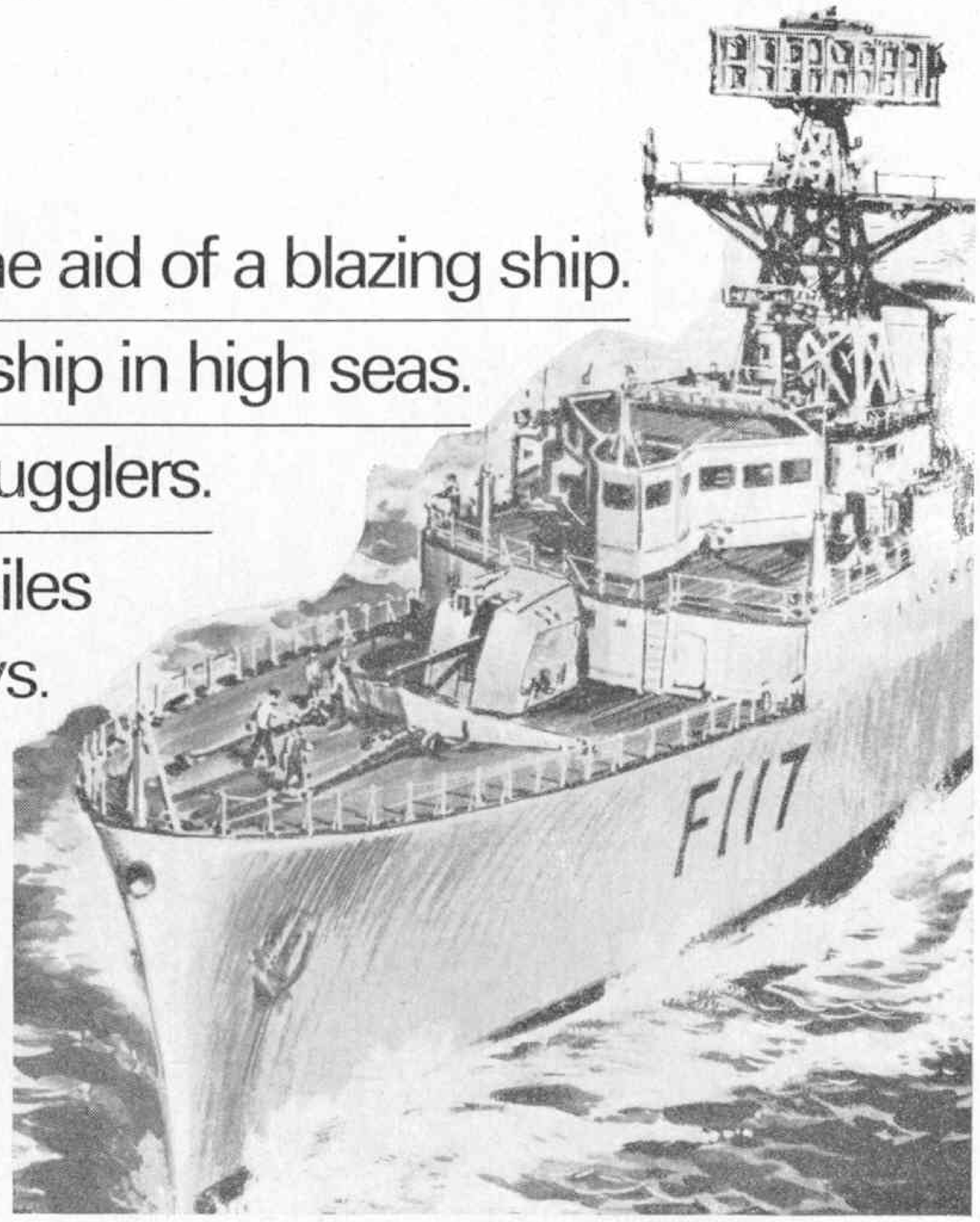

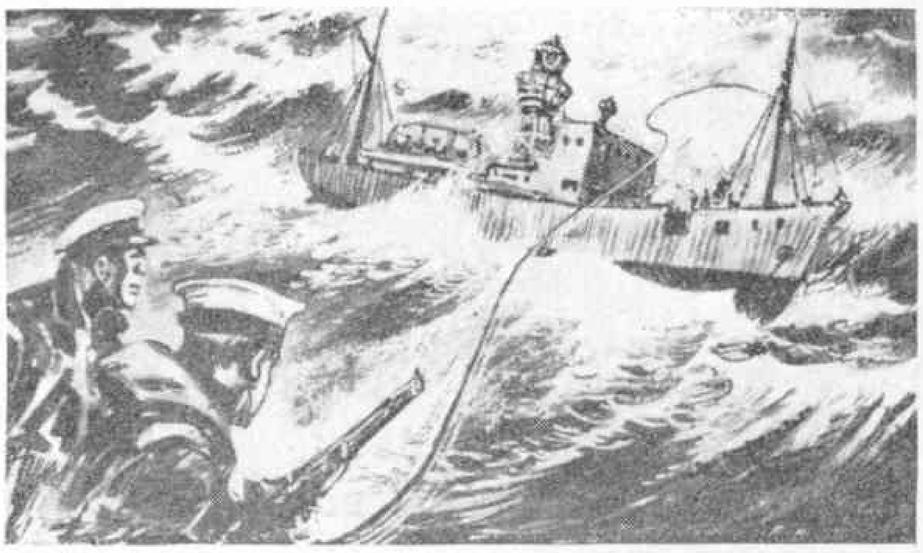

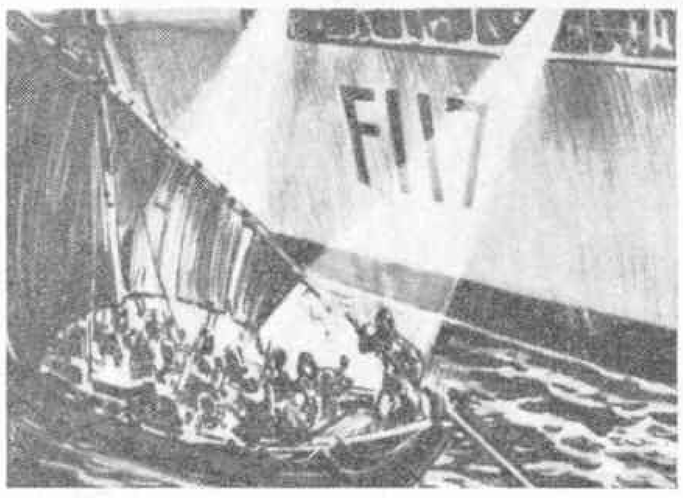

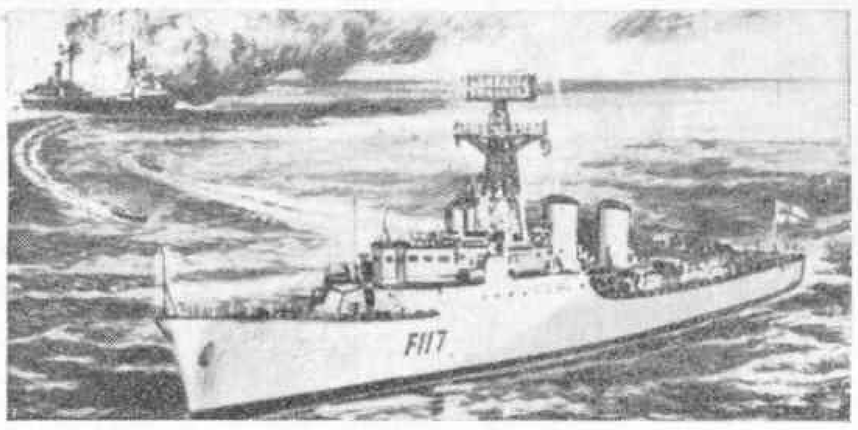

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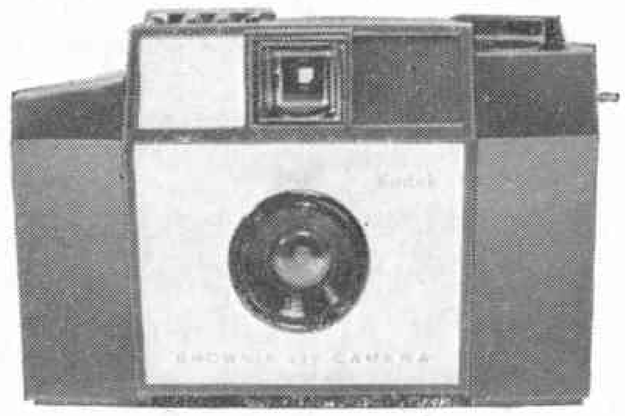

It's the new Kodak Brownie 127. A tough little camera. Easy to use, and it takes fine pictures.

2. Take the camera around with you. You never know when you'll see something worth snapping.

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Kodak know about photography

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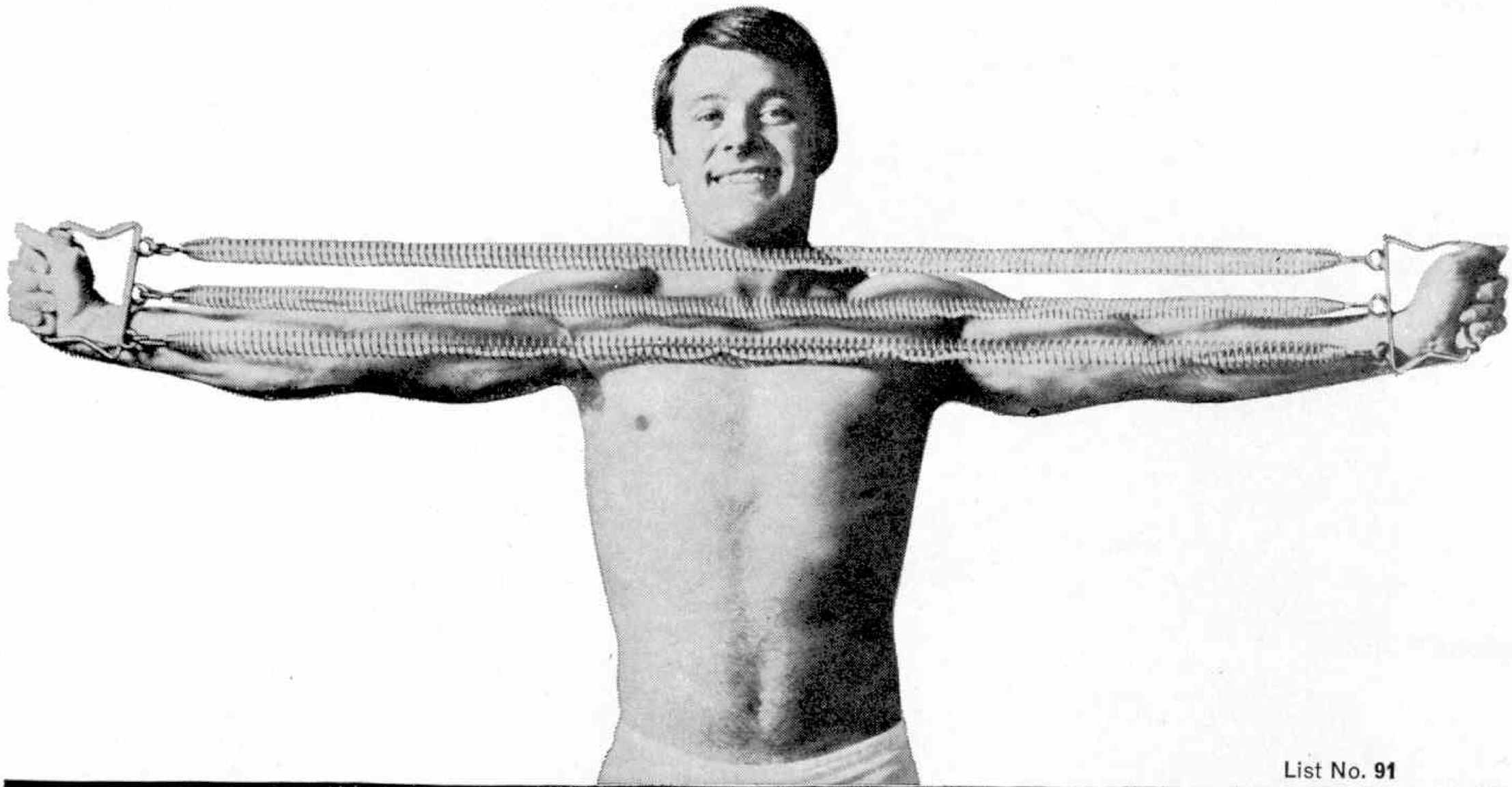

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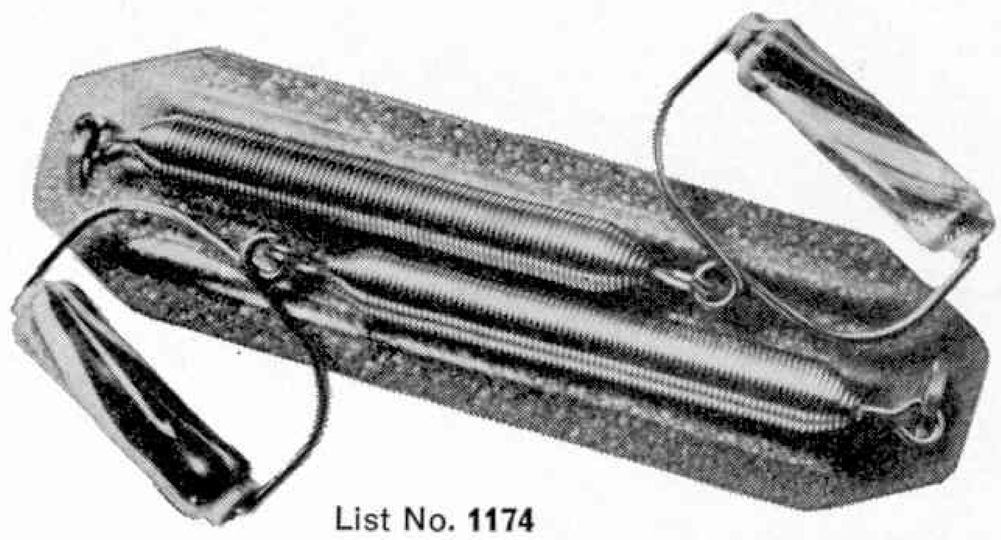

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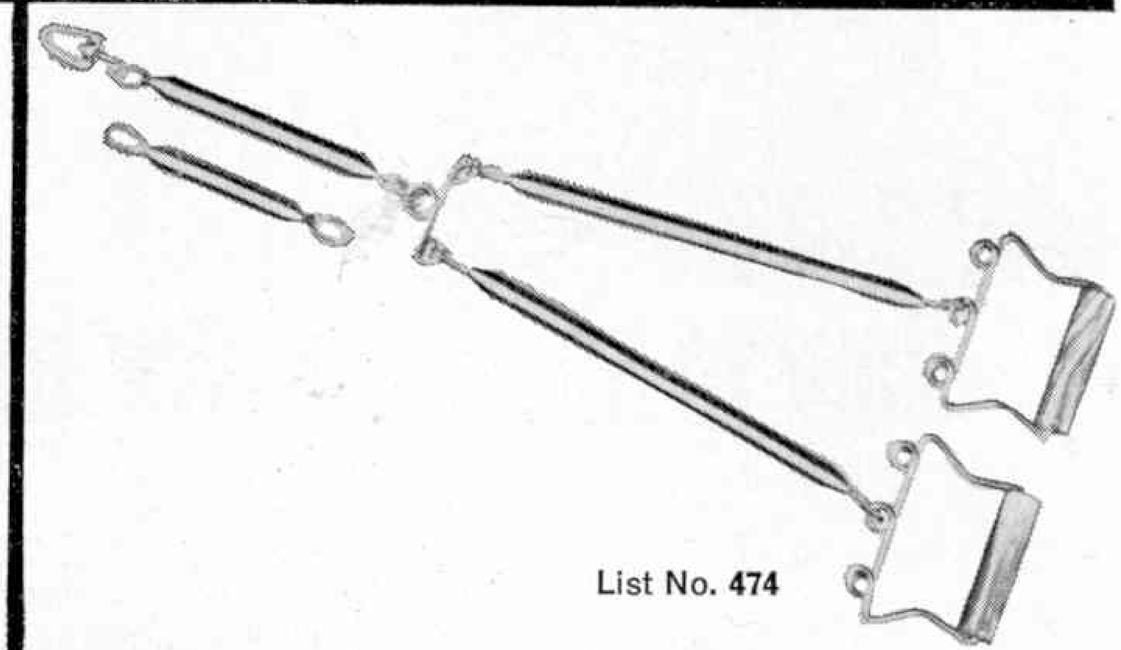

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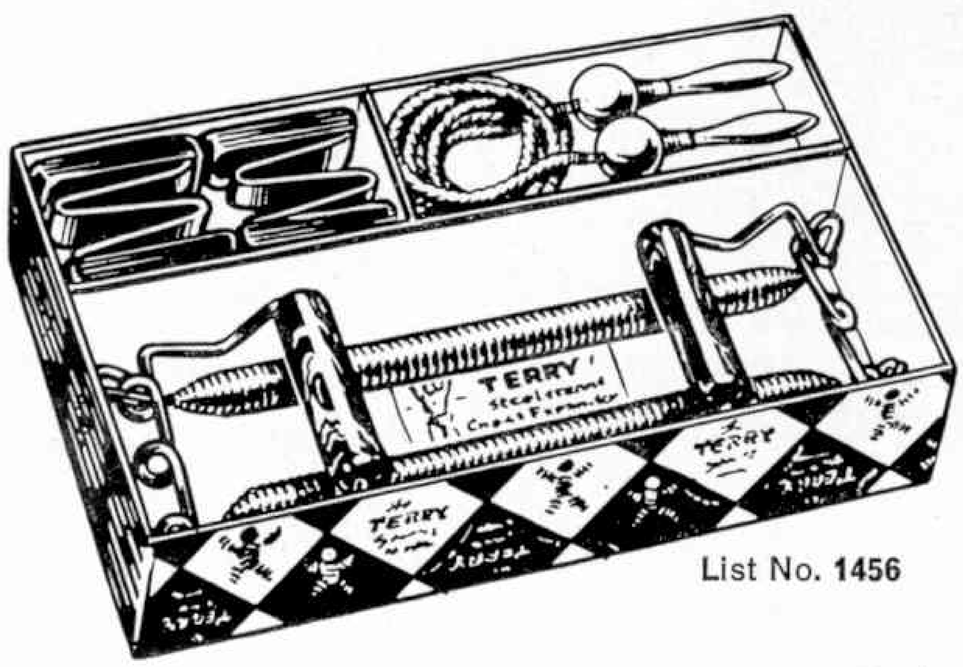

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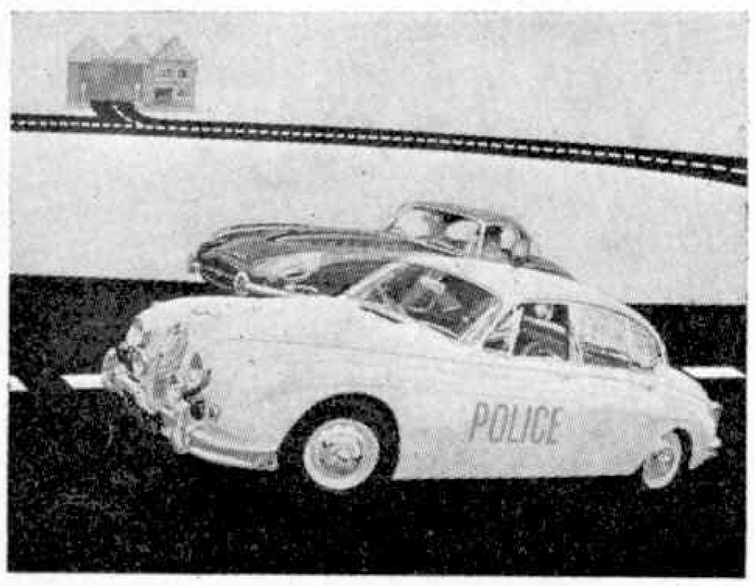
meccano magazine

the model world at your fingertips

June 1966
Volume 51 · No. 6 · Monthly



On the cover: the striking cover illustration which is reproduced by courtesy of Minic Ltd., shows the two exciting Jaguar cars that are included in the new Minic 'Crime Patrol' set that was fully described and illustrated in last month's issue of Meccano Magazine

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Next month: another big electronics series starts and there will be detailed plans for a modern pilot boat *plus* another big plastics building article and extra Meccano Model Building pages

As we go to press with this issue of Meccano Magazine, the first flood of completed Readership Questionnaires that were sent out with the May issue, has begun to submerge the editorial desk. It is encouraging to know that so many of you are sufficiently interested in our magazine to sit down and carefully answer a lot of sometimes obscure, but to us very important questions. Your enthusiastic help with this survey will help us to ensure that our new and bigger MM will continue to be the hobby magazine that gives you the kind of features that you want to read.

By the way, if you haven't yet returned your completed pre-paid questionnaire, it's still not too late, because before feeding the forms to our tame computer, we must await the arrival of the overseas returns. So this gives home readers about another week in which to post their forms—do it NOW!

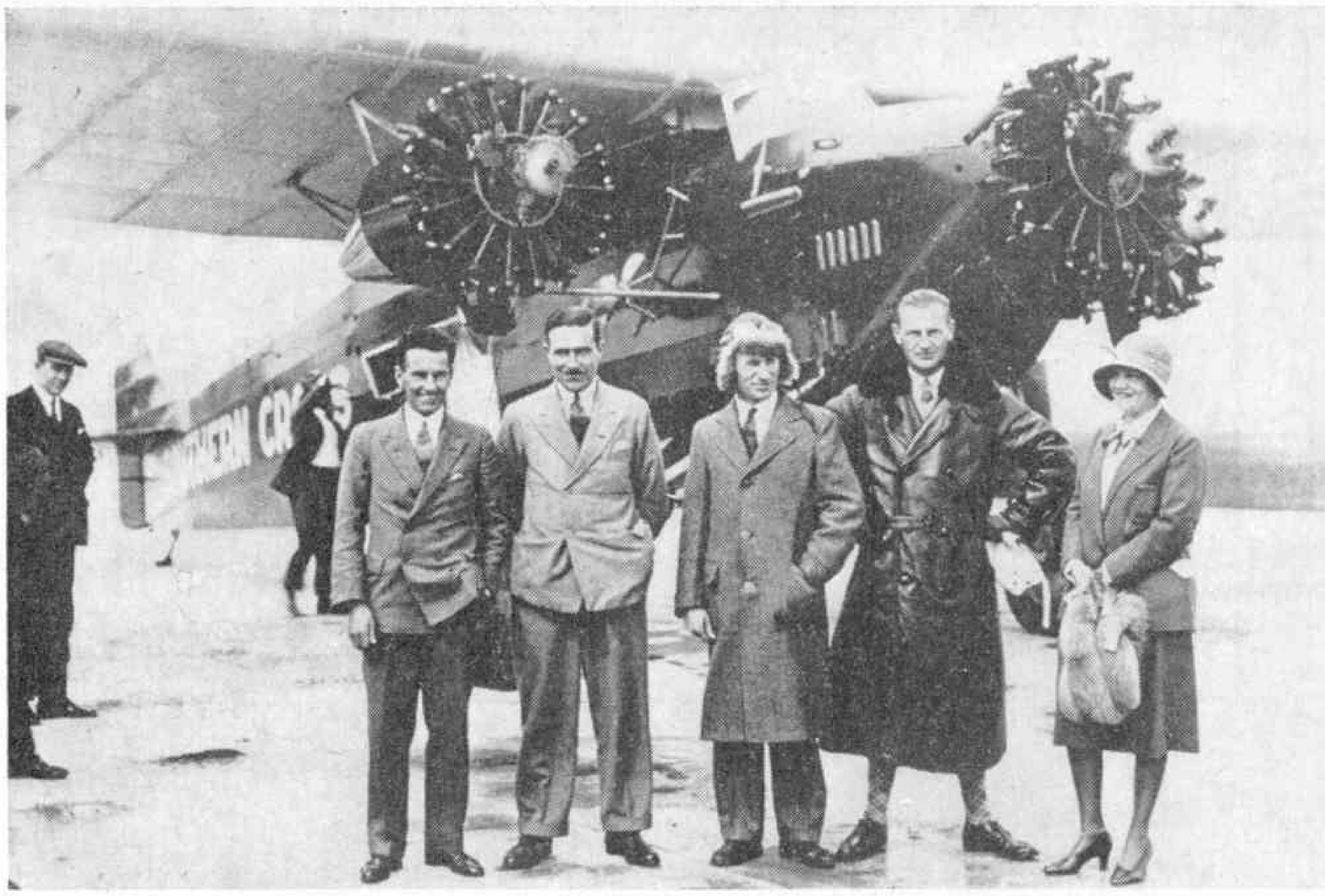
With the warmer weather already upon us, we can now devote more time to outdoor hobbies, and one of the most popular with MM readers is aeromodelling. Last month we wrote about the flying of simple, all-sheet, prefabricated rubber driven models, and this kind of plane successfully introduces lots of newcomers to the hobby every year.

Soon, however, something more ambitious is needed, and so I asked Ray Malmström to prepare a good 'follow-up' design. 'Magnum' is the result, and full size plans are printed in this issue.

Whenever such models have appeared in the past, I have always thought the building instructions rather inadequate for the newcomer—this time it's different! In fact, the instructions, which will be continued next month, are so comprehensive that they really comprise an aeromodelling course in miniature. So even if you don't wish to build this particular design, the useful information contained in this two-part series will quickly put you on the right runway, and you'll be airborne before you know it!

Important: No further orders can be accepted for the January and February 1966 issues of Meccano Magazine—stocks are now completely exhausted. If, however, you wish to obtain copies of a particular feature in either of these two issues, arrangements can be made to supply photo-copies to special order.

The Editor



Before the Transatlantic flight, left to right: J. W. Stannage—wireless operator (New Zealand), J. Patrick Saul—navigator (Ireland), Capt. Kingsford Smith—leader (Australia) Evert Van Dyk—pilot (Holland), Miss Mary Powell (Kingsford Smith's fiancée). Photograph from P. Jarrett

SMITHY'S OLD BUS

By John W. R. Taylor

BY 1935, the three-engined Fokker monoplane, *Southern Cross*, was a very old and very tired aeroplane. Since making the first-ever crossing of the Pacific Ocean, from America to Australia, in 1928, it had carried its pilot, Sir Charles Kingsford Smith, and his successive crews, on the first non-stop flights across Australia and the Tasman Sea. It had set up a record time between Australia and England, and had completed its journey round the earth by crossing the Atlantic and the United States to San Francisco, starting point of its Pacific flight.

When an Imperial Airways airliner, carrying the first all-the-way-by-air mail to Australia, had crash-landed in 1931, it was Smithy and the *Southern Cross* that had picked up the mail and carried it on the last leg to Darwin. Later, when times had been bad, they went barnstorming across Australia, giving joy-rides to people who could boast proudly afterwards of having made their first flight in one of the great aircraft of aviation history.

Four more times, in 1933-34, Smithy had flown the 'Old Bus' across the Tasman Sea, between Australia and New Zealand. So it was, perhaps, natural that he should choose her for one more special trans-Tasman flight, with freight and mail, to celebrate the Silver Jubilee of King George V's reign in 1935.

The original plan was to use both the *Southern Cross* and the very similar three-engined Avro 10, *Faith in Australia*. This, too, was a famous aircraft. It had set up many records in the capable hands of Charles Ulm, who had been co-pilot on the first flights across the Pacific and Tasman Sea. Following Ulm's death, it was to be flown by P. G. (now Sir Gordon) Taylor, who had accompanied Smithy on his later trans-Tasman flights.

In the event, there were sufficient letters and packages to fill only one aircraft; so Kingsford Smith invited Taylor to join him once more in the *Southern Cross*, as navigator. Taylor was none too keen on this. He considered that the veteran Fokker was not airworthy enough to tackle again a sea that was often made treacherous by bad weather.

Writing the story of the flight later, he recalled that he asked himself: 'Should I issue the ultimatum that I am ready to carry out the job but will not go in the *Cross*, or should I meet the situation by going as navigator with Smithy? . . . a strong conviction that if I went I should be as good as walking the plank into the Tasman Sea made my brain rebel against doing so crazy a thing.'

Despite his fears he knew he could not let Kingsford Smith and wireless operator John Stannage leave without him. The decision almost cost him his life.

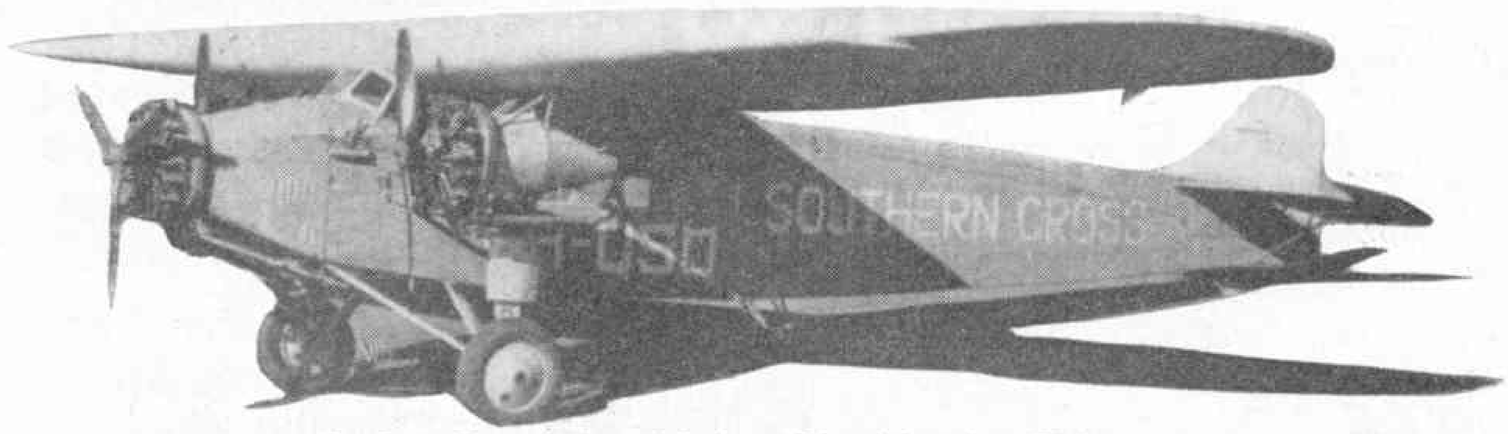
The *Southern Cross* took off from Richmond, New South Wales, at 25 minutes after midnight on May 15, 1935, carrying 34,000 letters and other freight. It headed for the coast at Long Reef, north of Sydney, and then set course for New Plymouth on New Zealand's North Island, 1,200 miles away.

A crack like gun-shot!

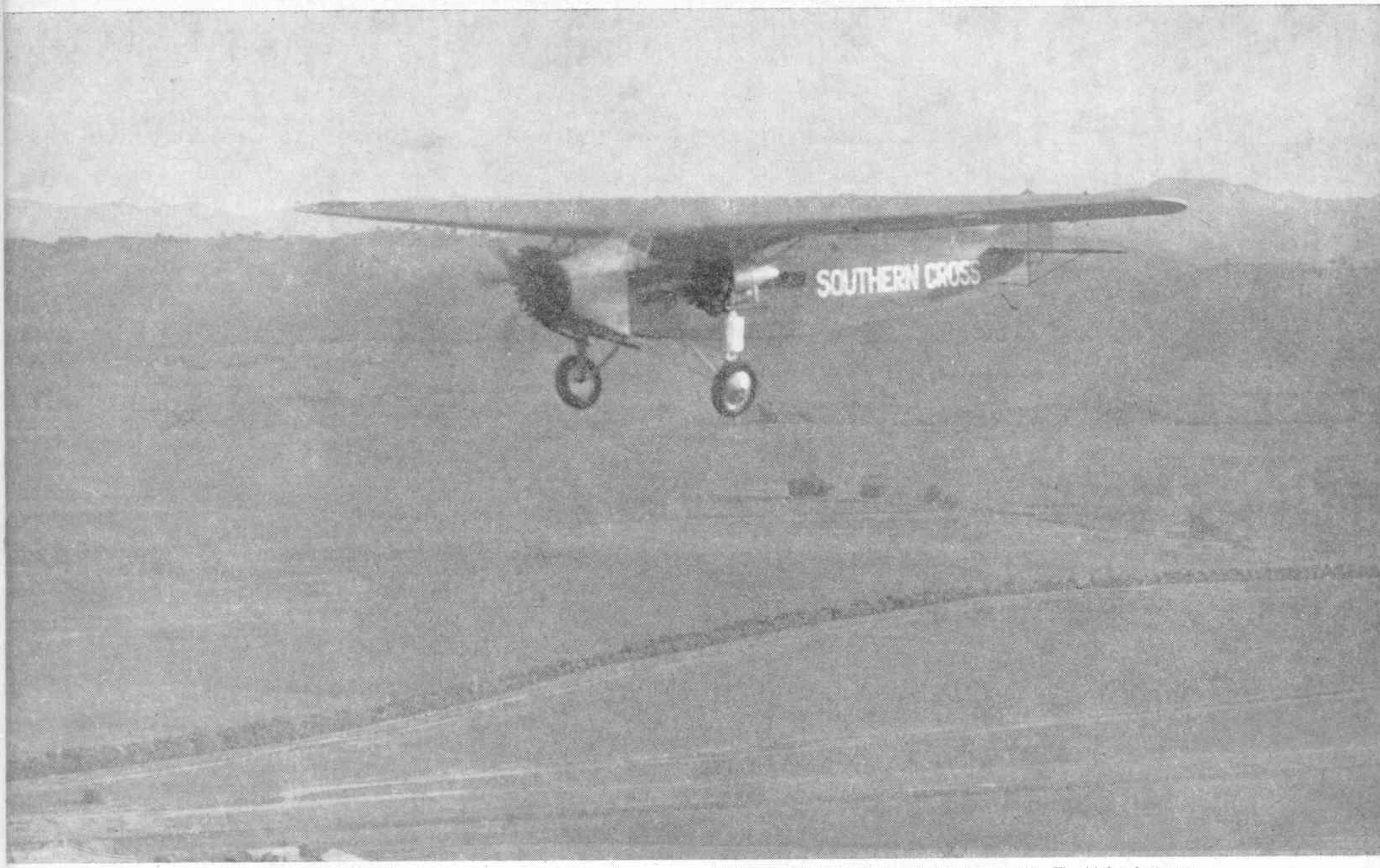
Apart from a few showers, all went well until seven o'clock. Then, Taylor noticed that part of the exhaust system on the starboard side of the centre engine was burning away. Suddenly, there was a crack like a gun-shot. A piece of the exhaust had broken off and smashed into the propeller on the starboard engine, causing the whole aircraft to vibrate alarmingly.

Smithy quickly stopped the starboard engine and opened up the other to full power in an effort to maintain height. With more than a foot of the propeller tip broken away, there was no hope of using the starboard engine again. So, as Australia was still nearer than New Zealand and bad weather had been forecast for the second half of the trip, they decided to turn back.

The rest of the flight was a nightmare. Kingsford Smith used every scrap of his strength and skill to keep the aircraft in the air, straight and level, against the drag of the dead engine. Even so, the *Southern Cross* lost height steadily until they were only 500 ft. above the sea. The only hope was to dump overboard all the freight, luggage, tools and spares—everything except the precious mail. Later, with the aircraft's wheels skimming a mere 50 ft. above the waves, even the mail sacks had to go.



Southern Cross in her original condition (above) and below as she is today—preserved in a glass case at Brisbane Airport



Southern Cross was in her element over the vast Australian landmass—well shown in this very atmospheric photograph. The high adventure recounted in this story, gained for the 'Cross' navigator, P. G. Taylor, the Empire Gallantry Medal (later changed to the George Cross)

Worse was to come, for the overworked port engine began to blow out a thin trail of blue smoke, showing that it was burning its oil. Before long, the oil pressure had dropped from 63 lb./sq. in. to 35 lb./sq. in. and Stannage told the anxious radio operators in Sydney that the port engine was expected to seize up in a quarter of an hour, after which nothing could prevent a ditching.

It seemed to Taylor that there might still be a chance if the port engine could be revived with oil from the useless starboard engine. So, after taking off his shoes, he tied one end of a thin cord round his waist and the other round a strut inside the fuselage. He then clambered out of the cockpit window and shuffled out along the tubular strut connecting the starboard engine nacelle to the fuselage.

He managed to remove the cover plate over the oil tank without much difficulty. Stannage then handed him a spanner with which to loosen the drain plug under the tank. Sitting astride the strut along which he had walked, and with one arm hooked round another strut, Taylor drew off some of the precious oil into an empty kerosene flask. He then passed it to Stannage, who emptied the oil into a small suitcase that had been used to carry tools and spare parts. Not until the case was full did Taylor re-enter the cockpit.

Forced back . . . .

He was almost exhausted by the physical and mental effort, for he knew that the thin lifeline would have snapped under his weight if he had lost his footing. Nevertheless, a glance at the oil pressure gauge's 15 lb./sq. in. was sufficient to show that the effort would be wasted if the oil were not transferred quickly into the dying port engine.

Once more he squeezed out of the cockpit; but the combined slipstream from the centre and port engines soon forced him back. By opening up both engines to the limit, Smithy coaxed the *Southern Cross* to a height of about 700 ft. and then switched off the port engine to give Taylor a second chance. The effort required was so great that the aircraft had again sunk almost to sea level before Taylor could get at the almost-empty oil tank.

Without trace

Desperately, he clung to the struts, against the full force of the slipsteam, as Smithy restarted the engine and climbed to a safer height. With the engine again stopped, Taylor then removed the cap on the tank and hastily poured in a flask full of oil passed to him by Stannage. Signals from the cockpit told him that the oil pressure was slowly rising, but his heart must have sunk when Kingsford Smith again had to start the port engine to stay in the air.

After what seemed an interminable time to the cold, lonely, exhausted man hunched over the engine cowling, the port motor again became silent. Flask after flask of oil was passed to him and poured into the thirsty tank. Before he could rejoin his friends in the comparative safety of the cockpit, Smithy again had to restart the engine to gain height. Only then could Taylor climb wearily back to his seat.

The time was 12.45 p.m. and they were about 200 miles from land. Simple arithmetic told them that the oil transferred to the port engine would be used up long before they reached land. Five more times Taylor had to go out to fetch oil from the starboard engine and use it to keep the port engine alive. It was not done in vain. Soon after 4 p.m. the *Southern Cross* flew slowly over Mascot aerodrome, Sydney, escorted by seven other aircraft that had flown out to meet it, and touched down after what was to be its last-but-one venture.

The last one was in 1946, when it re-enacted scenes from its famous career in a film about Sir Charles Kingsford Smith. It was flown this time by Taylor, who had been awarded the Empire Gallantry Medal (changed later to the George Cross) for his bravery on the Tasman flight.

Smithy disappeared without trace somewhere off the Burmese coast in November 1935, while attempting to set up a new England-Australia record in the Lockheed Altair *Lady Southern Cross*. His 'Old Bus' survives, in a glass-fronted memorial at Brisbane Airport. It was at this airfield (then known as Eagle Farm Aerodrome) that the Fokker had landed at 10.13 a.m. on June 9, 1928, at the end of the 7,389-mile trans-Pacific flight that had earned it its first headlines in the newspapers of the world.

The memorial cost £30,000—just ten times what Smithy paid for the *Southern Cross* when he bought her second-hand, without engines or instruments, from the polar explorer, Sir Hubert Wilkins!

Data: **Fokker F.VIIB-3M** *Southern Cross*, **VH-USU. Powered by three 220 h.p. Wright Whirlwind J5C engines. Span 71 ft. 8½ in. Length 47 ft. 6¾ in. Max. take-off weight 15,807 lb. Max. fuel (Pacific flight) 1,081 gallons. Max. speed 120 m.p.h. Cruising speed 94 m.p.h. Max. range 3,645 miles.**

DEEP SEA SEARCH

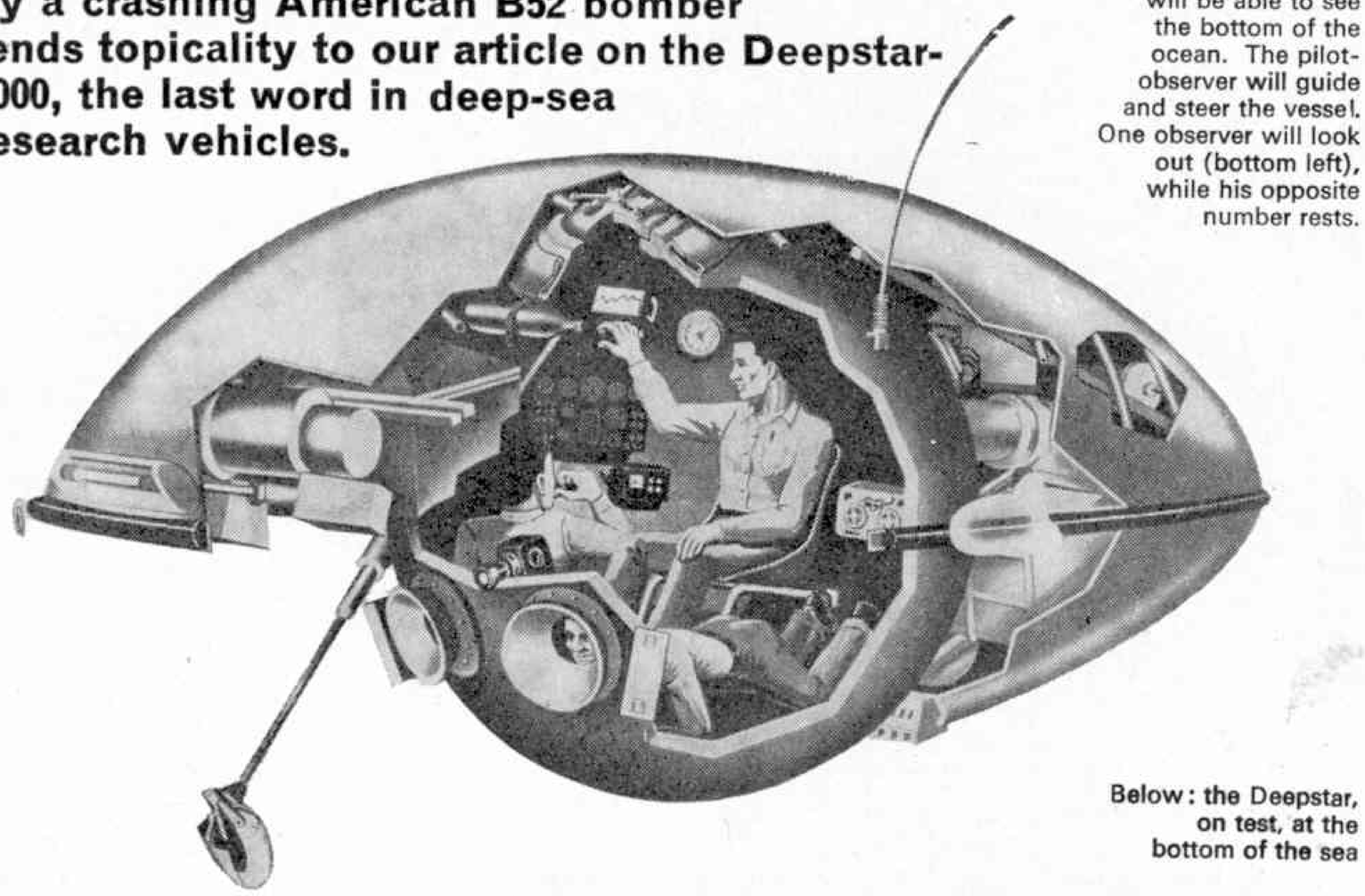
by F. C. Livingstone

The recent recovery from deep water of the hydrogen bomb lost off Palomares, Spain by a crashing American B52 bomber lends topicality to our article on the Deepstar-4000, the last word in deep-sea research vehicles.

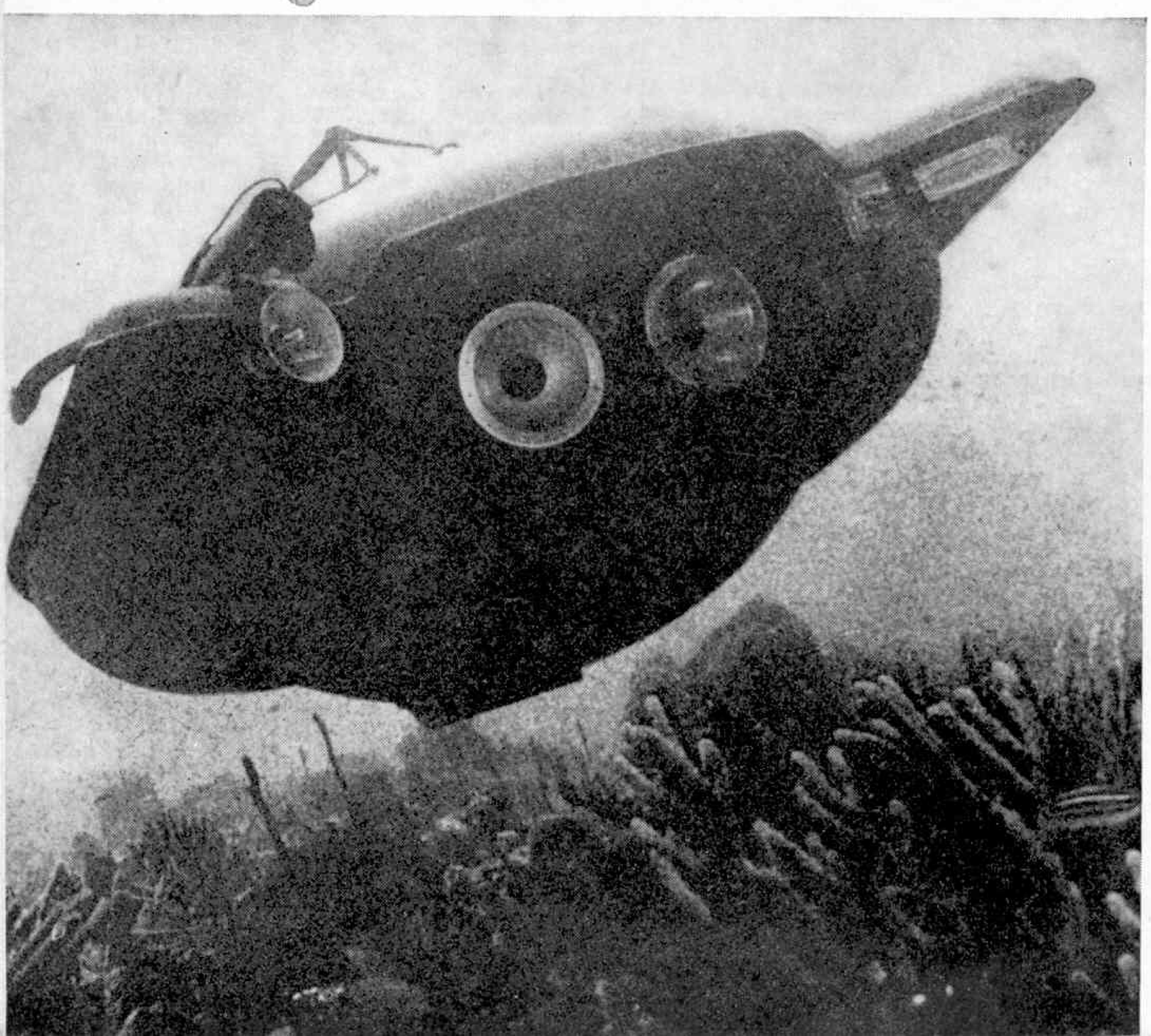
IT isn't a submarine, it's a new type of deep-sea research vessel. The Deepstar-4000, has just begun its series of diving tests in Chesapeake Bay, U.S.A. It has already had preliminary dockside tests, which have shown it has to withstand pressures as great as those found at a sea depth of over 5,000 ft.

In other words, it can look for things deeper in the ocean than man has ever seen before.

The design of this submersible is the joint effort of the French undersea pioneer, Captain Jacques-Yves Cousteau, in Marseilles, and the Underseas Division of the American Westinghouse Defence and Space Centre, in Baltimore.



How the three-man crew of the Deepstar will be able to see the bottom of the ocean. The pilot-observer will guide and steer the vessel. One observer will look out (bottom left), while his opposite number rests.



Below: the Deepstar, on test, at the bottom of the sea

Surrounding the pressure hull is a hydrodynamically shaped fairing 18 ft. long, 7 ft. high and 11·5 ft. wide. Contained within the fairing is equipment for propulsion, lighting, controls, photography, and sample collection. The pressure hull houses the crew, operational equipment and instruments.

The two electric motors, one on each side, used to drive the Deepstar will operate under high pressures while flooded with fresh or salt water.

'Diving Saucer'

The Deepstar design is based in part on that of the 'Diving Saucer', a submersible vehicle capable of working at 1,000 ft. depths, which was designed and built by Captain Cousteau. The 'Diving Saucer' has been operational since 1959 and has made over 350 dives, many of which were conducted in the waters of the Pacific, California.

The Deepstar is planned to do a variety of jobs. These include: placement, observation, and recovery of instruments and equipment in buoys; underwater photography; naval and commercial salvage operations; ocean-bottom exploration, sampling, and coring, and mapping the ocean floor.

Electrical power for the Deepstar-4000 is supplied by three separate standard lead-acid batteries with a capacity of 430 ampere hours at 125 volts output. Navigation and recording equipment located inside the pressure sphere includes a gyro-compass, high-resolution sonar, a two-way radio, tape recorder, and two echo sounders.

External accessories include a lamp-carrying arm with hydraulic remote control for use with movie camera, strobe flash and still camera mounts, a prosthetic arm with sample collecting tongs (also operated by hydraulic remote control), a sample basket, and a running light.

Observation from the vehicle will be from two large windows low in the front of the sphere. These windows give an overlapping horizontal view of approximately 150 degrees to the observer and pilot who lie prone in two couches. A tilting seat near the centre of the sphere accommodates the co-pilot-observer.

A mercury system controls the pitch of the vehicle. Two large, fast-acting hydraulic pistons in forward and aft tanks pump mercury back and forth rapidly shifting the vehicle's centre of gravity. This tilts the craft upward or downward.

Negative buoyancy

The submersible is propelled by two 14 in. diameter propellers, one on each side of the vehicle, which are driven by two free-flooded 4·5 horsepower a.c. induction motors. Reversing one propeller turns the vehicle about its vertical axis.

Descent by negative buoyancy is controlled by one large and several small descent weights located aft on the fairing. When the desired depth is attained, descent weights are dropped and the craft is neutrally buoyant.

For ascending, a large weight is dropped from the forward part of the fairing. Fine control of the vehicle's depth is either by a system of cylindrical ballast tanks, which can be flooded with sea-water for negative buoyancy, or by a system of small weights.

In other words, it's just like a gas balloon in reverse.

The life support system provides adequate air for the crew for 48 hours. It consists of a closed-circuit respiratory system with pressure-regulated-flow oxygen cylinders, a carbon dioxide absorber, a carbon dioxide concentration indicator, and humidity control equipment. Safety features include manual ballast and battery releases for emergency rapid ascent, an inflatable conning tower, an inflatable life raft, a radio set, and normal emergency breathing apparatus.

FUN & GAMES

TRICKY TEASERS

A Below is a series of towns. Replace each dot with one of the five vowels so as to build a chain of 12 place names. They are all situated in the British Isles.

S . L . SB . RYN . N . . T . NM . . DST . N .
L . . THSW . NS . . TR . R . GL . . C . ST .
RY . RM . . THSC . RB . R . . GHY . RKL .
ND . NS . . THS . .

B Search for the missing words in this paragraph. The first is a single-letter word and each succeeding missing word consists of the previous missing word plus one letter. (The letters may be rearranged, however.)

'Yes,' said the landlord at the inn. '——— man can have a game ——— this sport almost anywhere now: and I think it's an ——— to be able to handle a ——— with skill. Still, it's good for ——— despite the fact that we've had to listen to many a ——— from folks who think it's dangerous.'

C Here's a brain-teaser for you! A man made a collection of crowns (five-shilling pieces) which he kept with the rest of his savings in a cash-box. Of the 60 coins in his cash-box, all were either crowns or sixpences and the total value was £6 9s.
How many coins of each value did he have in the box?

D Look at these pairs of geographical names. Examine each closely, and try to discover what it is that the names in each pair have in common.

1. SWITZERLAND .....AUSTRIA
2. WINDERMERE .....CONSTANCE
3. CEYLON .....MADAGASCAR
4. DUBLIN .....CARDIFF
5. U.S.A. .....FRANCE

HOW MANY SHELLS?

"Well," said Freddie, "this is surprising. If I add one-quarter to one-third of the number of sea shells I've collected, I have ten more than half the total number."

How many sea shells has Freddie collected?

For your information, it's more than a hundred.

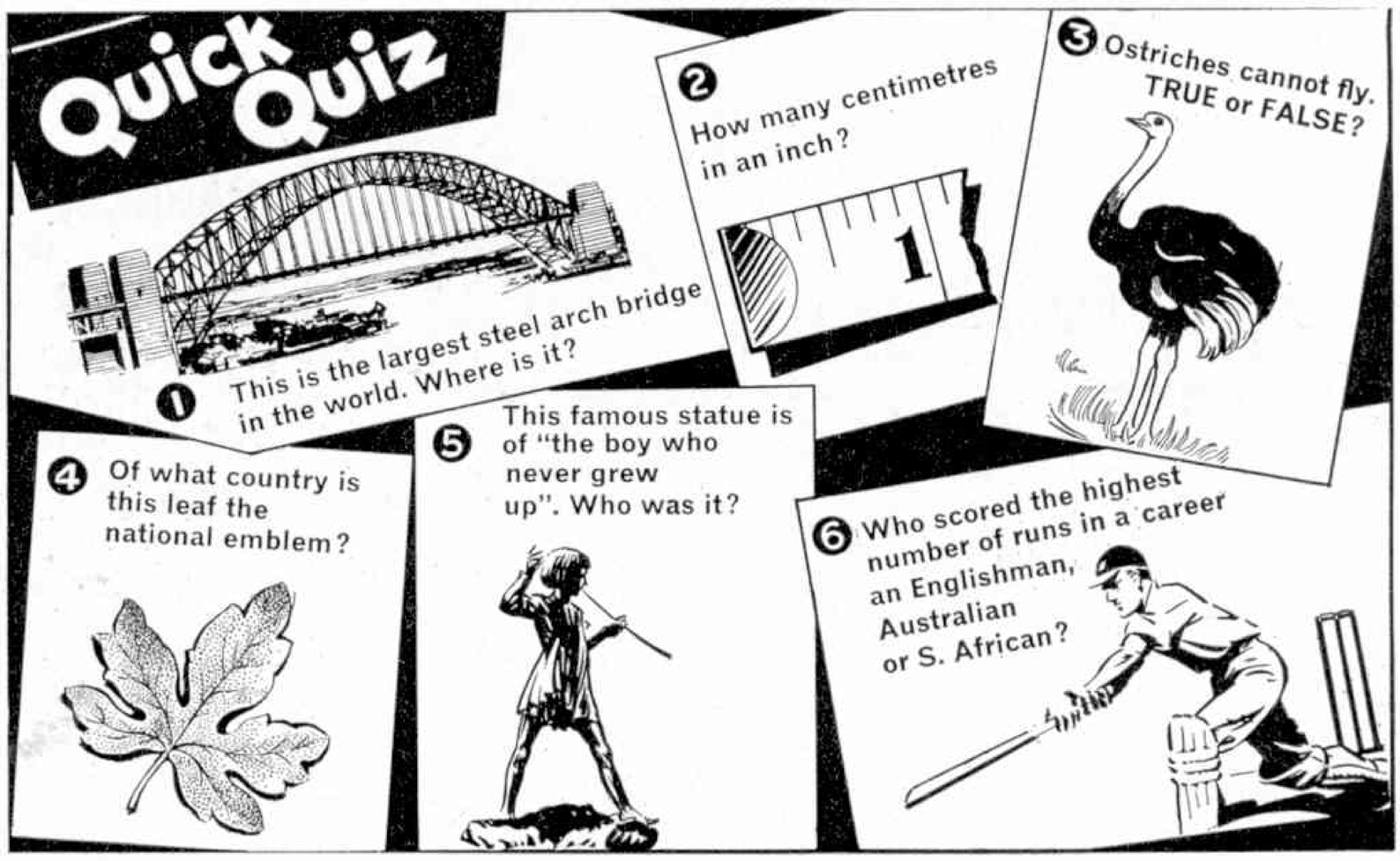
Answer: He has collected one hundred and twenty.

WHAT'S ALICE'S PHONE NO.

The last four digits of Alice's telephone number consist of four figures whose sum is her age, 24 years. The first figure is three times the third and the second is two less than the fourth which is one more than twice the third. What are the digits?

Answer: The last four digits are 9537.

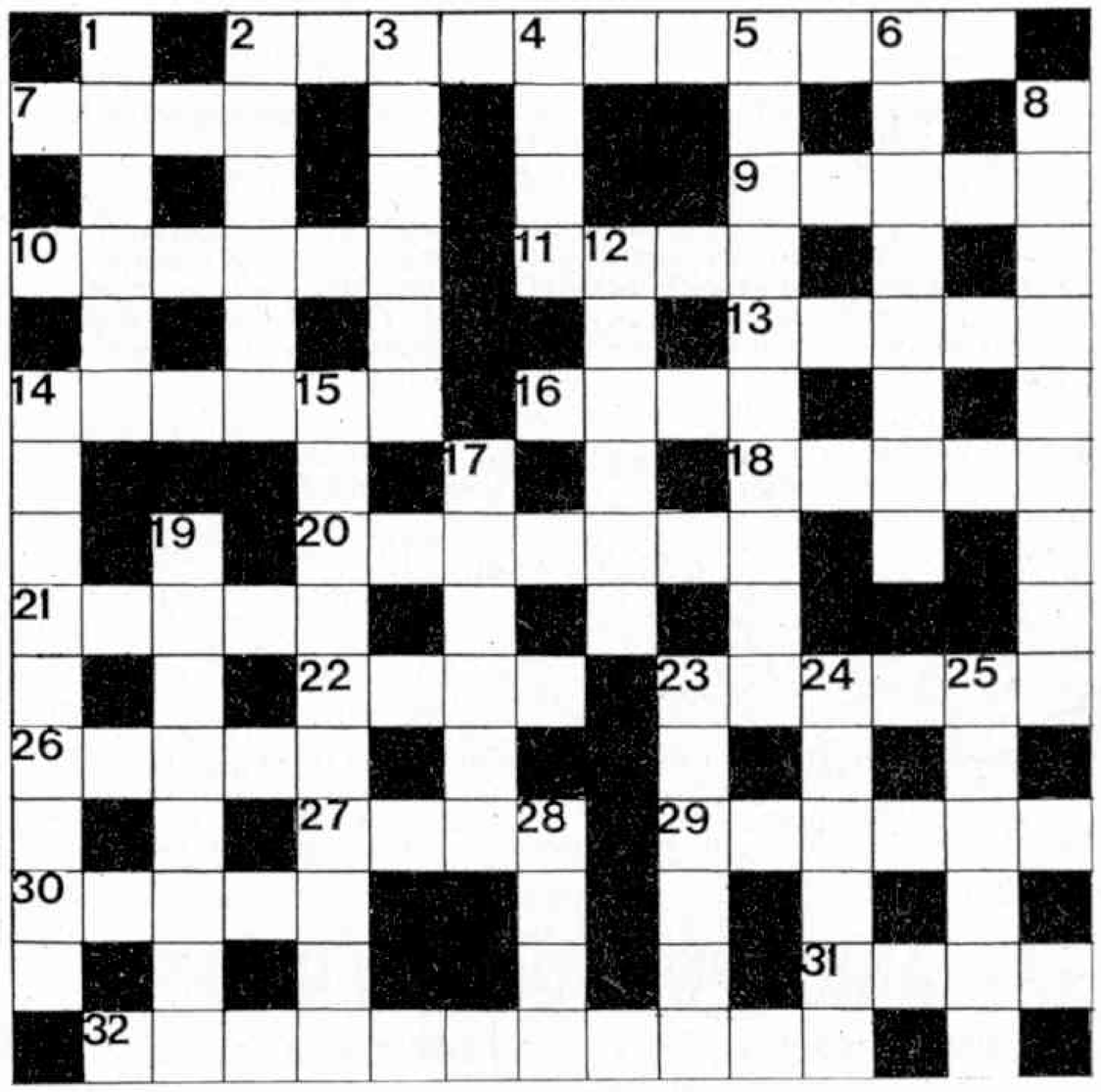
For answers to puzzles please see page 31



TONGUE TWISTEROOS

Sam's shoulder's sure sore.
Ben beached Bill's blue boat.
Terence twirled Tillie twice.

CROSSWORD PUZZLE NO 16



ACROSS
2 Told with pictures
7 Middle East country
9 Lacking interest
10 Not sensible people, these!
11 Brass wind instrument
13 Sharp point
14 German town on River Weser
16 Requests
18 Anything in Shakespearean
20 To be entertained, free!
21 After the fifth
22 Above
23 Where batsmen stand
26 Rodents with long ears
27 Notion
29 One in control
30 If prefixed with KA, you'd have a popular Russian girl's name
31 Current of water or air
32 Pertaining to design

DOWN
1 One who buys and sells
2 Encyclopaedias do this
3 To untighten
4 A stain
5 A country's representative
6 Oral adornments
8 To publicise
12 Disturbs
14 Military commanders are called this!
15 Joyful zest
17 To declare void
19 Good for the muscles
23 Scottish soccer team
24 A type of paint
25 Rapid
28 A long way off

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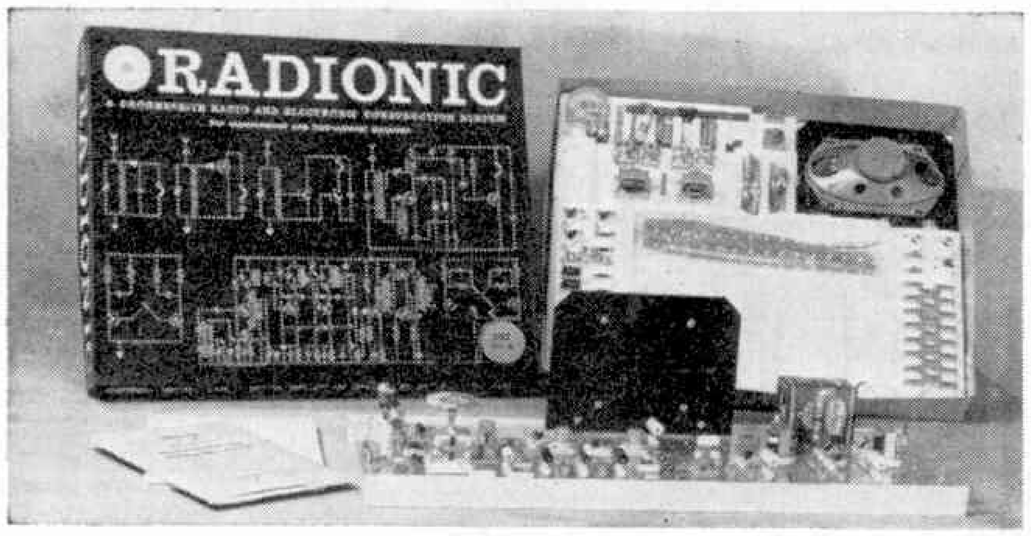

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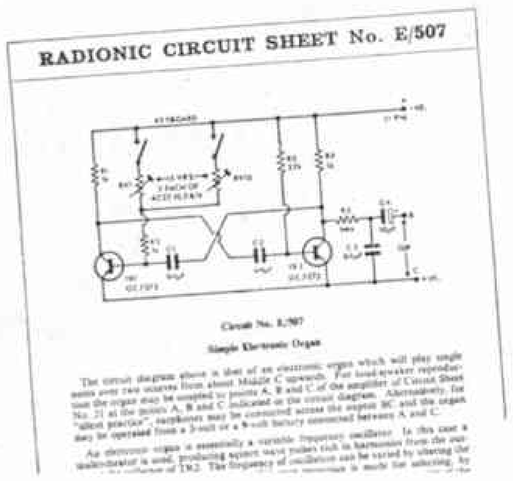
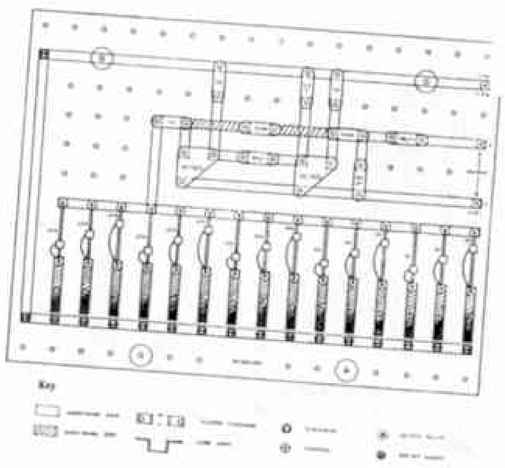


Theoretical Circuit



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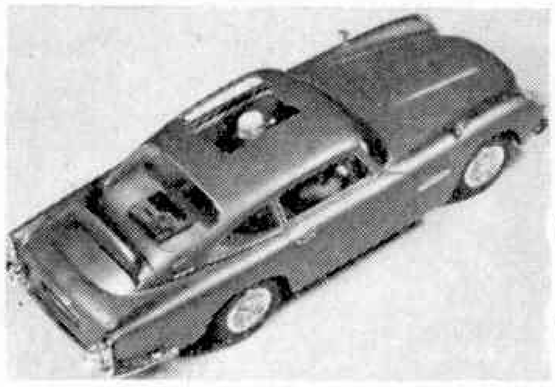

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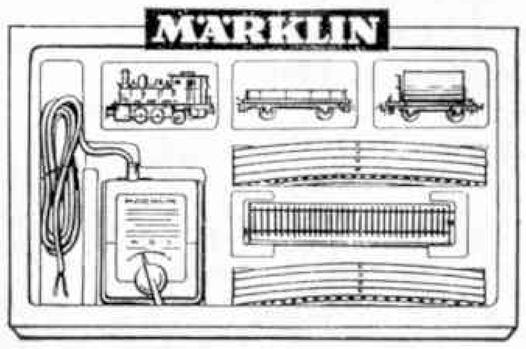

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TOM SHERIDAN*

Have you a problem—in science, history, literature or any other subject—to which you cannot find the answer?
Ask Tom Sheridan and he will do his best to answer it. Questions should be sent on postcards bearing your full name and address, but these will not be published if you put them in brackets and just add your initials. Address them to Tom Sheridan, Meccano Magazine, Thomas Skinner and Co. (Publishers) Ltd., St. Alphage House, Fore Street, London, E.C.2.

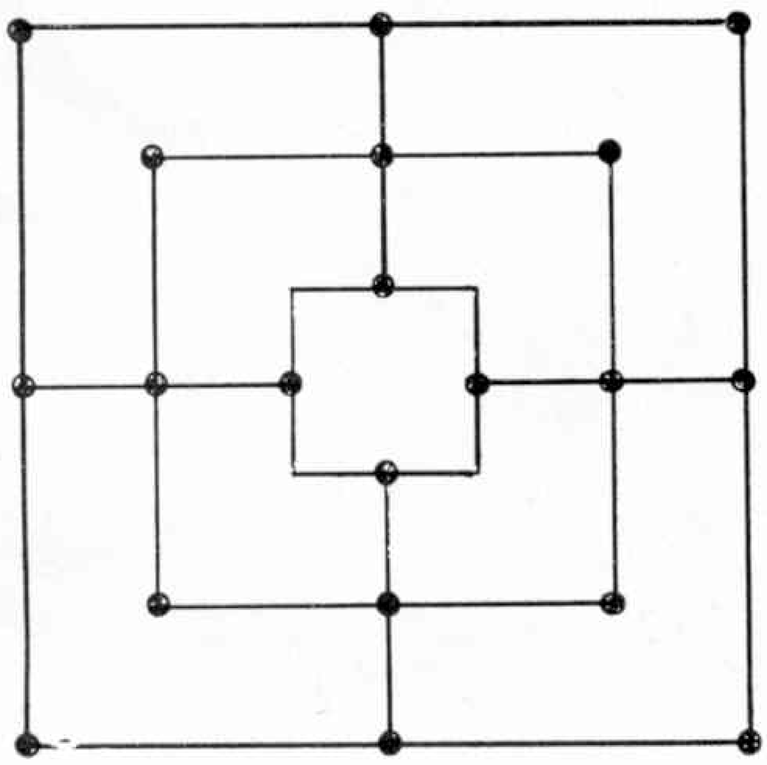
'In action' on a building site with a walkie-talkie. The man in the picture is giving instructions to a crane operator high above him

Q. Have you any information on a new kind of paper on which you can write or type without using ink of any sort?—'Two Fingers,' Beckenham, Kent.

A. Recently marketed in the U.S.A. is 'Action' paper, in which two colourless chemicals react under pressure to produce a dry image. The paper is impregnated with one chemical; the other is contained in microscopic synthetic capsules, mixed in during the pulping process, which break when the paper is used in a typewriter or teleprinter, or when written on with a ballpoint. The capsules are so tiny that 100 million are present in a standard sheet of typing paper, which can be used for making extra copies without inserting carbon paper.

Q. On the other side of a draughts board I bought in Denmark is another game which looks like this—(diagram below) Can you tell me what it is?—H. W., Great Glen, Nr. Leicester.

A. The game is Nine Men's Morris, which was popular in the 14th century. Two players have nine men each and enter them alternately, one at a time, on any vacant *point* where the lines join. Each time a player forms a row or 'mill' of three pieces along a line he takes one of his opponent's pieces from the board, but not one which is in a mill. When all the men have been entered the turns continue by moving a piece to an adjacent vacant point along a line, with the object of making a mill and capturing an enemy piece. A player blocking all his opponent's men so that they cannot move, or leaving him with only two pieces, wins the game.



Q. I have started collecting matchbox labels and would like to join a club to further my hobby. Can you help me to find one?—James Devlin, London, N.W.6.

A. For £1 a year—10s. if aged 16 or under—you can join the British Matchbox Label and Booklet Society, enabling you to get in touch with other hobbyists in this country and abroad. As well as issuing a bi-monthly news letter, it helps beginners to build up a collection cheaply, runs a library and an approval service, and organises rallies, exhibitions and auctions in London, Brighton, and elsewhere. Write to the secretary, J. H. Luker, 283 Worplesdon Road, Guildford, Surrey.

Q. What is the difference between a digital computer and an analogue computer?—J. L., Mauritius.

A. A digital computer is used for *counting*. Developed from the adding machine, it works by detecting the difference between square and round holes, or no hole at all, in a punched card or paper tape—or between an electric pulse and the absence of one. It can add, subtract, divide, multiply and compare at great speed, and can store information in the form of numbers which it can use in any future task of the same sort.

An analogue computer, or differential analyser, is used for *measuring*. It works much like a slide-rule or speedometer, dealing with values like shaft-rotation or the flow of electric current, and giving answers which must be estimated from meter readings or scale-distances. It is useful in industrial processing, but has a limited accuracy.

Q. Do I need a G.P.O. transmitting licence for a walkie-talkie set?—'Hopeful,' Norwich.

A. Yes—and normally these are issued only when such apparatus is used for scientific, medical, or industrial purposes; for instance, to direct operations on a building site (see picture). These sets operate on a special wavelength which is reserved for such users, and people who use them without a licence can be fined.

Q. What is the origin of the custom of putting candles on birthday cakes?—P. O., Brentford, Middlesex.

A. The ancient Greeks celebrated the birthday of the moon goddess Artemis, on the sixth day of each month, by placing lighted tapers on the cakes which they left on her altar. Centuries later, the Germans revived the custom for children's parties, and the idea spread to this country.

Q. What causes people of different races to have red, yellow or black skins?—A. Slacmeulder, St. Ghislain, Belgium.

A. Variations of colour between the natives of different parts of the world are due to a brown pigment, melanin, which is present in even the palest of skins. The only exceptions are albinos, whose rare inherited characteristics can occur in any racial group. A yellowish-red pigment, carotene, is also present in the skins of American Indians and Mongolians.

The theory is that the dark skins of tropical peoples are the result of natural selection, since they give protection against sunburn. But a negro's dark skin is not due to the direct effects of the sun; only to the skin's capacity to produce melanin, which varies between different groups. The colour variations between individuals are due to other inherited influences resulting from intermarriage.

HAVE YOU SEEN ?

ROUND THE WORLD ON THE NARROW GAUGE

By P. B. Whitehouse and P. C. Allen
Published by: Ian Allen Ltd., Terminal House, Shepperton, Middlesex. **Price 63s**
159 p.p. including 116 p.p. half-tone illustrations 11¼ in. by 9¾ in.

Although the narrow gauge railway exists only in preserved form in Britain, interest in it is increasing among railway enthusiasts and undoubtedly the charm and eccentricity do lend it a fascination all its own. Many narrow gauge railways are still operating in different countries of the world and although a number bear little resemblance to the British narrow gauge, a study of them can be most rewarding.

The narrow gauge in Britain was invariably built to serve a secondary function and was often used to feed a more important railway, or simply built as a minor railway to a narrow gauge because of difficult terrain. Only a few of the narrow gauge railways in this country were built purely as passenger carrying concerns, although in many other countries narrow gauge railways serve a more important role, occasionally to all intents and purposes, the standard gauge, with large and powerful locomotives and an impressive route mileage.

This book photographically records scenes from narrow gauge railways in many countries of the world and portrays the different forms that this often spectacular means of transport has taken. Almost without exception, the quality of the illustrations leaves little to be desired and some are truly outstanding examples of the photographer's art. Divided into seven sections, each including photographs and a short survey of different countries in that section, the book can be recommended to all students of the narrow gauge and also to those who simply enjoy looking at exceptional railway photographs.

BRITISH BUS FLEETS

No. 8 West of England
Published by: Ian Allen Ltd., Terminal House, Shepperton, Middlesex. **Price 4s 6d**
64 p.p. plus 14 p.p. half-tone illustrations

No. 8 in the series of British Bus Fleets, this booklet gives a comprehensive list of vehicles owned by both private operators, and also Municipal Transport Departments. The booklet is divided into sections, each dealing with a separate operator with a list of the buses owned under sub-headings of individual types. The booklet also gives details of liveries, ticket systems, depots and much other information.

FROM INVERNESS TO CREWE

By Martin Evans
Published by: Model Aeronautical Press Ltd., 13/35 Bridge Street, Hemel Hempstead, Herts. **Price 25s**
164 p.p. 122 half-tone illustrations. 8¾ in. by 5¾ in.

One very peculiar characteristic of Britain's railways is the large number of different wheel arrangements that have, at some time, been used. Among them, the 0-6-0 and 4-6-0 have been the largest in number, and the latter especially was almost universal in its application. For some reason it was always regarded as being exclusively British, and it may surprise many readers to learn that it originated in America in 1847 where the first 4-6-0 locomotive was built almost 47 years before the first design appeared on a British railway. Nearly every large company produced locomotives of this type in large numbers and many noteworthy examples come to mind, among them the 'Castles' 'Kings' and 'Halls' of the Great Western, the 'Scots' of the L.M.S., and many other types.

The author, well-known for his writings in 'Model Engineer', tells the history of the 4-6-0 locomotive from its introduction on the Highland railway, to the final designs produced under the auspices of British Railways. Although a few of the photographs in the book are of poor quality, this is compensated for by the excellence of the text which deals authoritatively with every class of 4-6-0 locomotive to have been built, both the successful, and the not so successful. The book gives an almost overwhelming amount of information, and includes a chapter on the Great Locomotive exchanges of 1948, and also the design, construction, and performance of locomotive types. The book includes many tables, and will be of undoubted interest to all locomotive enthusiasts.

---

1 Magnificent is the right word for this Rolls-Royce 'Silver Ghost'—the latest addition to the Corgi Classics catalogue. It's complete right through to the R.R. winged bonnet mascot and is mirror-finished in sparkling silver-grey. Length is 5 in., cost **12s 11d.**

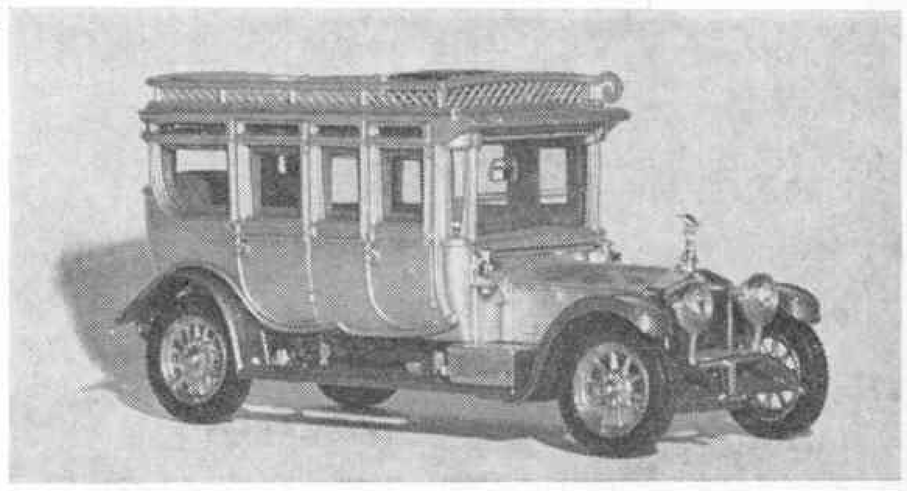
2 How can you follow the James Bond car success story? That must have been the question that Corgi asked themselves at the beginning of the year. The model they've done it with is the gleaming white Marcos 1800 GT which, besides the very well fitted opening bonnet and doors, possesses the most comprehensively appointed interior that we have yet seen on a die-cast miniature. There's even a glove compartment and a gear lever besides, of course, a 'full' driver. Price is **4s.**

3 Exquisitely finished 'Yesteryear' pair from Matchbox are the 1911 open Daimler (No. Y13) and behind it the 1910 Benz Limousine (No. Y3). How these extensively detailed miniatures can be produced for a mere **5s** each is something of a modern miracle. Spoked wheels, brass plated parts and finely simulated deep upholstery complete the picture.

4 The flat truck on the left of our little rural scene is the latest 'Matchbox' (No. 60) model, and it carries the building site office in front of which it is standing. On the right of the picture is the new (No. 37) Cattle Truck, complete with working drop-down back and two head of cattle as shown. These interesting little commercials cost **2s** each.

5 Trouble with locomotive smoke units is that they tend to run dry rather quickly and you then have to take a 20 (scale) ft. plastic capsule and unceremoniously inject a further charge of smoke oil. The German Zeuthe company have, however, come up with the complete answer; it's a modern-outline overhead signal box, which conceals a most ingenious smoke-oil dispenser. Every time a loco passes beneath, it gets a shot of fuel down the funnel—clever! British importers are King Charles Sports Centre, Railway House, 18 King Charles Street, Leeds, I. Price is **31s 6d.**

Yes! We know it's a Continental box, but its modern lines would not be at all out of place on a contemporary British system. This gives us an excuse to include the two latest Peco 'Wonderful Wagons', which are well up to the enviable standards set by their many predecessors in this series. 'Wonderful Wagons' are, of course, bought in the form of extensively prefabricated, fully coloured kits. You should not be put off by that word, because even a strictly non-practical type will have no trouble in achieving a truly professional assembly job first time. Working springs and buffers are standard with these wagons and they really work! The Lime Wagon costs **13s** and the Open Wagon **12s**, far less than you would expect to pay for finished models built to the same specification.

1


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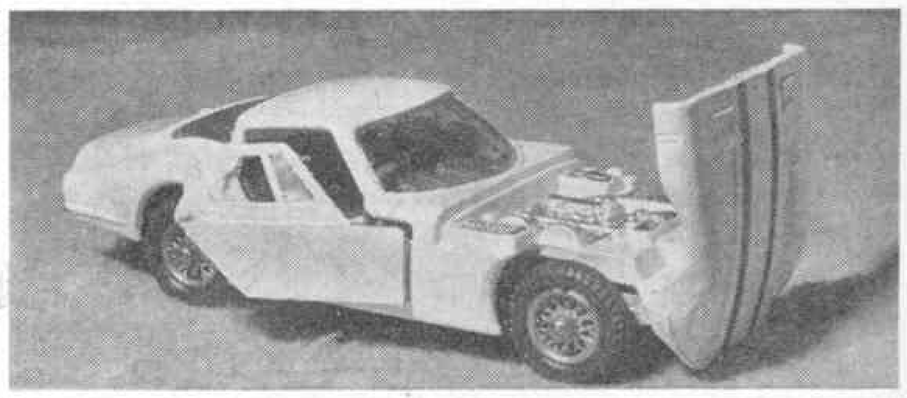

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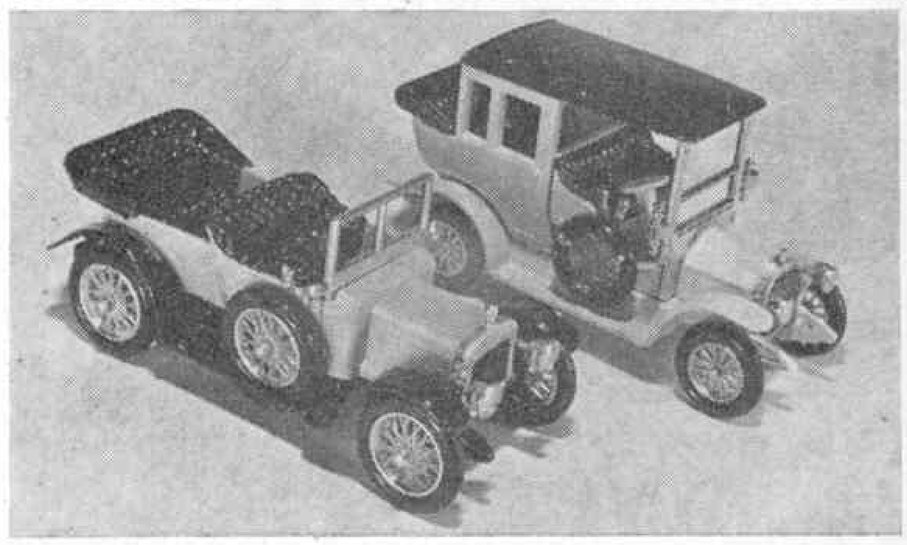

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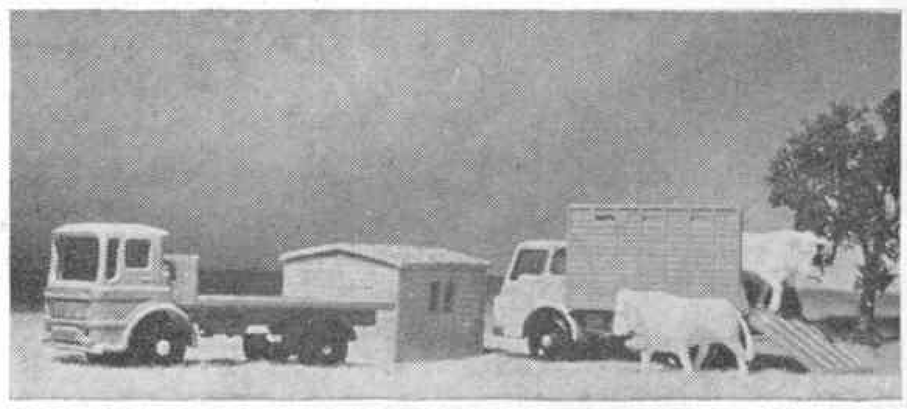

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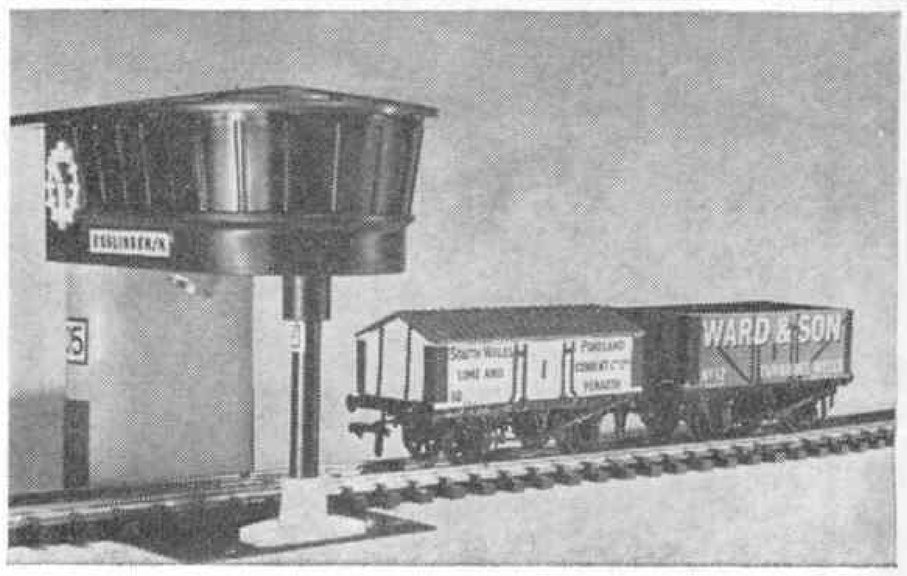
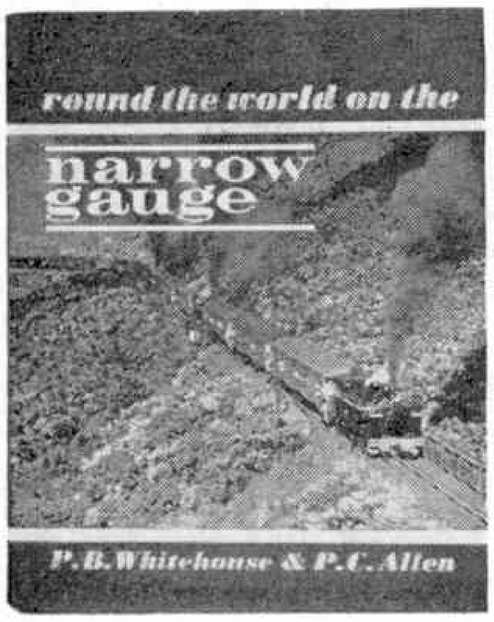
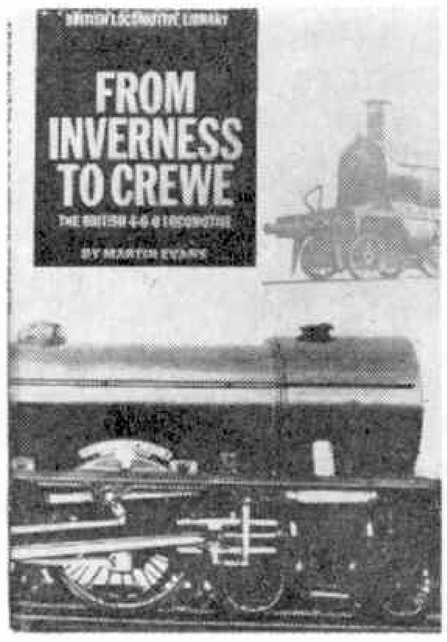






RAILWAY NOTES

● Ffestiniog Anniversary In 1954, after three years of negotiations, the Ffestiniog Railway Society finally emerged, and this year marks the 20th anniversary of its closure. As many readers will already know, the achievements of the Society culminated in the Railway Company passing into new hands, with the first mile of track being re-opened in July, 1955.

The achievements of the Society and the Company have been many since the first early beginnings, and at the present time they are promoting extensions to Dduallt and beyond, to Blaenau Ffestiniog itself. A brief but fascinating account of the achievements is now published in a new eight page folder issued by the Ffestiniog Railway Society to mark the progress to date, and there is also useful information concerning the present organisation.

A copy of this, 'An introduction to the Ffestiniog Railway Society Ltd.' may be obtained by simply writing your name and address on a postcard, addressed to Mr. P. J. G. Ransom, c/o Barclays Bank Ltd., 276/280 Kensington High Street, London, W.8.

● Summer train services The Summer Service of the Welshpool and Llanfair Light Railway will commence on the 9th July and will consist of trains leaving Llanfair Caereinion at 11.45, 1400 and 1530 hrs., departing from Castle Caereinion on the return journey at 12.30 1450 and 1600 hrs., on Saturdays, Sundays and Bank Holidays. Weekday services remain substantially the same but without the 11.45 and 12.30 trains.

The service will continue until the 9th September, when it will revert to 1400 hrs and 15.30 hrs. from Llanfair Caereinion on Saturdays, Sundays, and Bank Holidays until the 25th September.

● Track tamper The Scottish Region of British Railways have recently introduced a new Austrian built machine to automatically take the kinks out of track. The machine is capable of doing the work at vastly greater speeds than have hitherto been possible, and it has been estimated that the saving will ultimately amount to several hundred thousand pounds. Mr. Campbell, the Chief Civil Engineer, said 'this revolution in the method of track maintenance will involve the disappearance in a short time of the traditional length gang and its replacement by a mobile mechanised gang. The old length gang might cover about 120 yards of track maintenance in a day, whereas the modern tamper or mechanical track maintenance machine will cover the work at ten times the speed'.

● Signalling plan for Swindon The Western Region of British Rail is to spend nearly £1¼m. on the complete modernisation of signalling concentrated on Swindon.

One all-electric 'Master' signal box placed at this important junction will control 70 route miles of main line and will deal with the 100,000 passengers and 150,000 tons of freight to pass through Swindon every week. The new Freightliner services planned to run from Bristol, South Wales, and Gloucester to London and beyond, will also use the routes controlled by the new signal box.

Radiating from Swindon, the lines under the control of the new box will stretch towards London as far as Uffington; westwards to Holt Junction and Corsham; to Hullavington on the South Wales main line and to Kemble in the direction of Gloucester. The scheme also involves the reduction to single track of the line between Swindon and Kemble.

● New coaches for R. & E. R. The 15 in. gauge Ravenglass and Eskdale Railway has recently acquired three saloon bogie coaches, the first fully enclosed coaches to be used on the line for 28 years. The coaches, which were bought from the New Brighton Pier Railway, are to be painted in a new blue and white livery, rather similar to that used by the former Furness Railway. When fully restored and repainted, the coaches will be designated 'first class', and a supplementary fare charged for travel in them. The Company also intends building more saloon rolling stock within the next few years.

● Tinsley marshalling yard The new freight marshalling yard at Tinsley, opened by Lord Beeching on the 29th October, is the most modern installation of its kind in the world. The scheme, which cost £10,000,000, includes a new freight terminal depot at Sheffield, and a new diesel maintenance depot. Included in the new equipment to be installed is automatic route setting equipment to help speed up the flow of wagons. The new yard is over two miles long and up to a quarter of a mile wide. It contains nearly 60 miles of track in the form of 11 reception sidings, a main and secondary hump and a main and secondary yard. The main yard has 53 sorting sidings to hold 3,610 wagons and the secondary has 25 sidings and five express freight sidings. The yard is capable of handling up to 4,000 wagons a day.

The new freight terminal depot takes the place of four former goods depots in Sheffield and another five in nearby towns. During the excavation to level the site of Tinsley, 3 million cubic yards of material were removed, during which a seam of coal was exposed which ultimately produced 39,000 tons of good coal.

● New wagons for CNR The Canadian National Railways has ordered 400 cylindrical type steel hopper cars and 150 general service flat cars, at a cost of 8½ million dollars. This will increase Canadian National's flat car fleet to 3,903.

● Orders for 'English Electric' The English Electric Company recently won two export orders to the value of £4½ million. The first, worth £1 million, is for 12 2,025 h.p. diesel-electric locomotives which are to go to the East African Railways and Harbours. This order will bring the total number of locomotives of this type—designated the '90' class—to 36, and will be the third order to be received by 'English Electric' for these locomotives.

The second order, worth £3½ million, is for 50 diesel-electric locomotives for the Portuguese Railways, and is the largest order ever placed by them for diesel powered locomotives. Their design is basically similar to the type 1 Bo-Bo now in service on B.R. The locomotives will include a steeple cab for better visibility in both directions, and will be built to the Portuguese Railway gauge of 5 ft. 6 in.

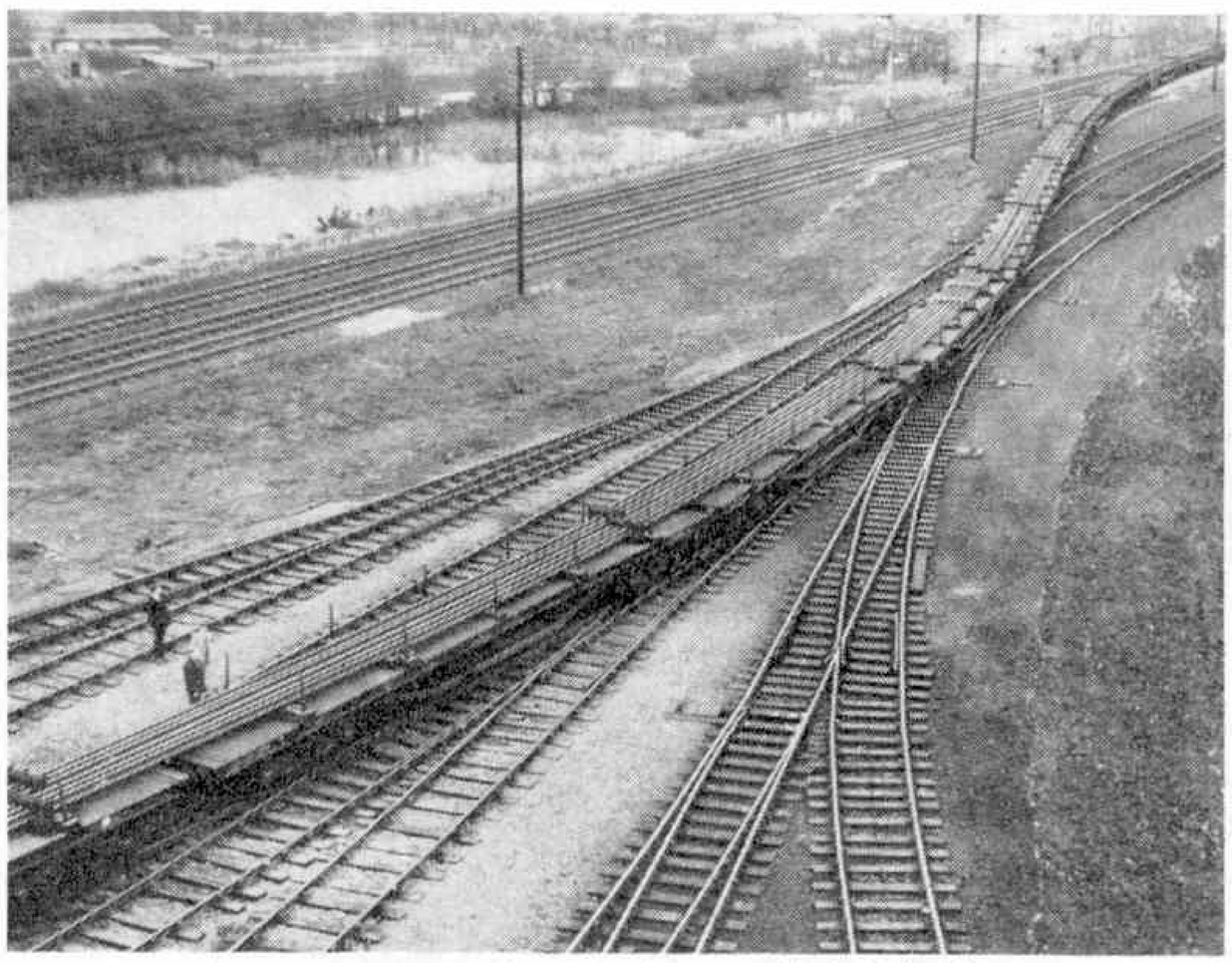
● Eastern Region produces longer rails Permanent way engineers are now producing for the Eastern Region continuous welded rails 1,200 feet in length—believed to be the longest in Europe. These are being assembled at the region's Central Materials Depot at Chesterton, near Cambridge.

The advantages of producing rails in such lengths are that less time is required for track possessions, installation costs are also reduced and less manpower is required on the relaying site. Using a rail changing device, designed by Eastern Region engineers, 1,000 yards of rail can be laid in about 1¼ hours. A special train over a quarter of a mile long consisting of 19 carrier wagons and a winch wagon is used to transport the rails from the depot, and is controlled during re-railing operations by means of a telephone between the engine driver and the supervisor at the other end of the train.

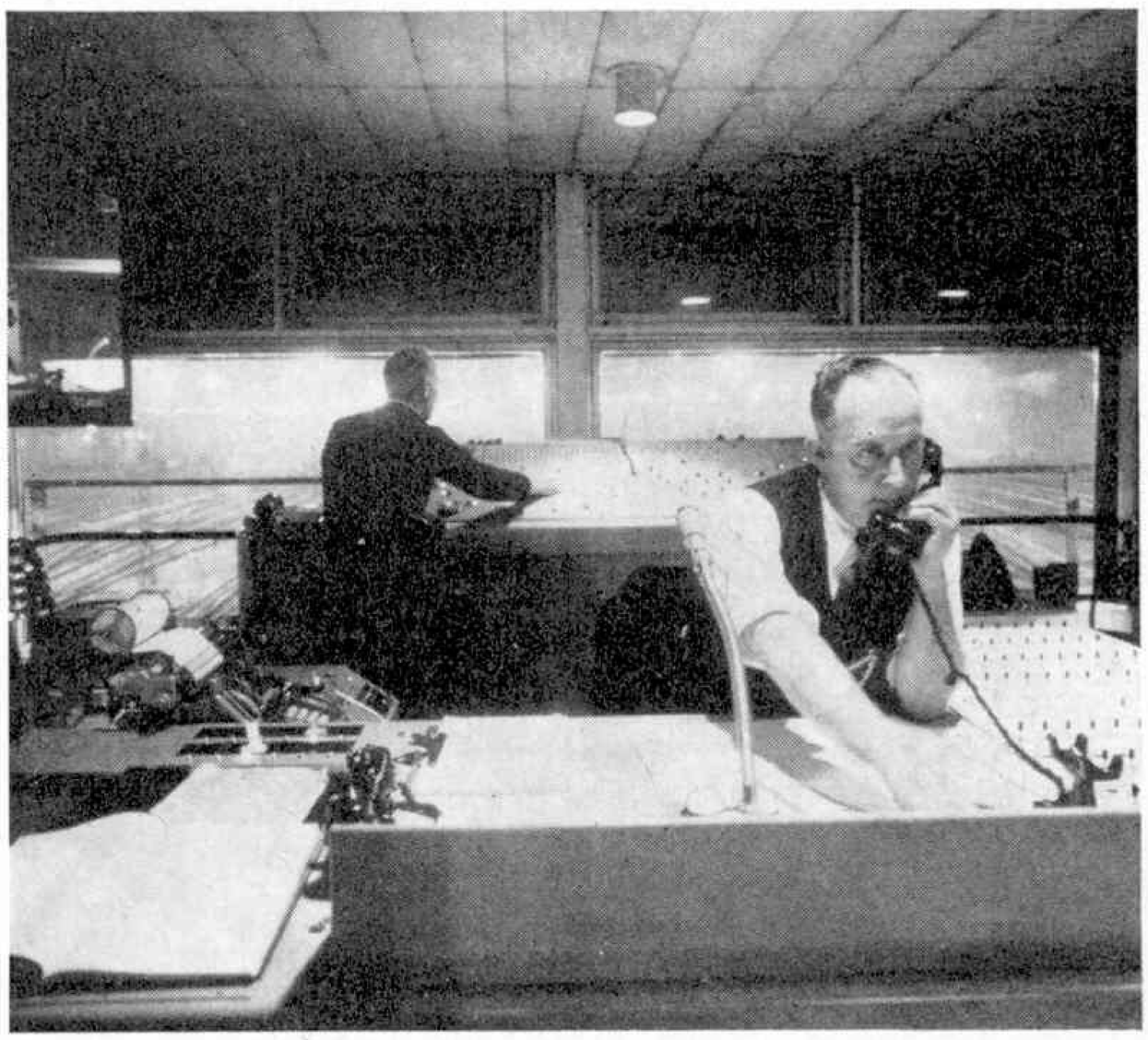
This year's programme of track renewal on the Eastern Region includes a further 64 route miles of continuous welded rails, on the East Coast route from King's Cross to Doncaster, where about 210 track miles have already been installed, and also on the line from Liverpool Street to Norwich, as part of a five year programme to install continuous welded rails on this route. To date, over 450 miles of long welded track have been laid in the Eastern Region.

● Czech Railways use Computer Three computers have been ordered by Czechoslovakia at a combined cost of one million pounds for use on the Czech Railway system, and also in the country's largest steel works. The first task of one of the computers will be to control the 20,000 foreign railway wagons that travel every day on the Czech State Railways by calculating routes to and from destinations, and further reduce payment of demurrage charges which have been hitherto paid on all wagons entering the country each day.

The computer will eventually calculate transport charges for all freight moved in the 100,000 wagons throughout the country, distributed throughout 400 goods yards and carrying cargoes for about 5,000 customers



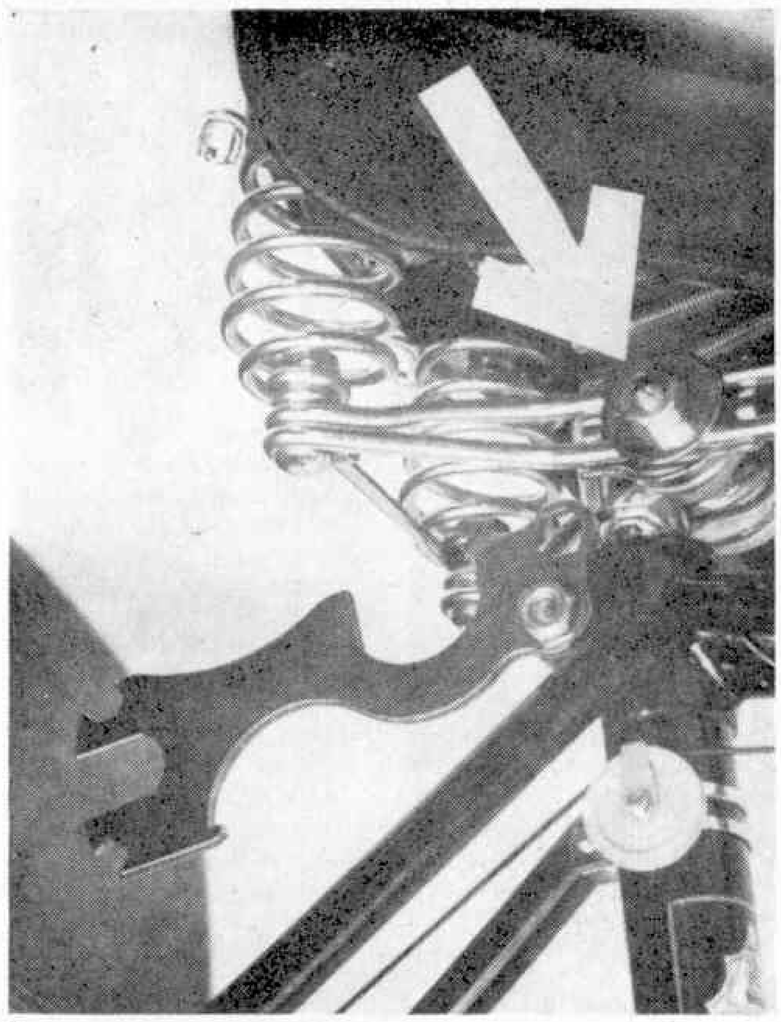
A trainload of nearly a mile of continuous welded rails leaving the Materials Depot at Chesterton



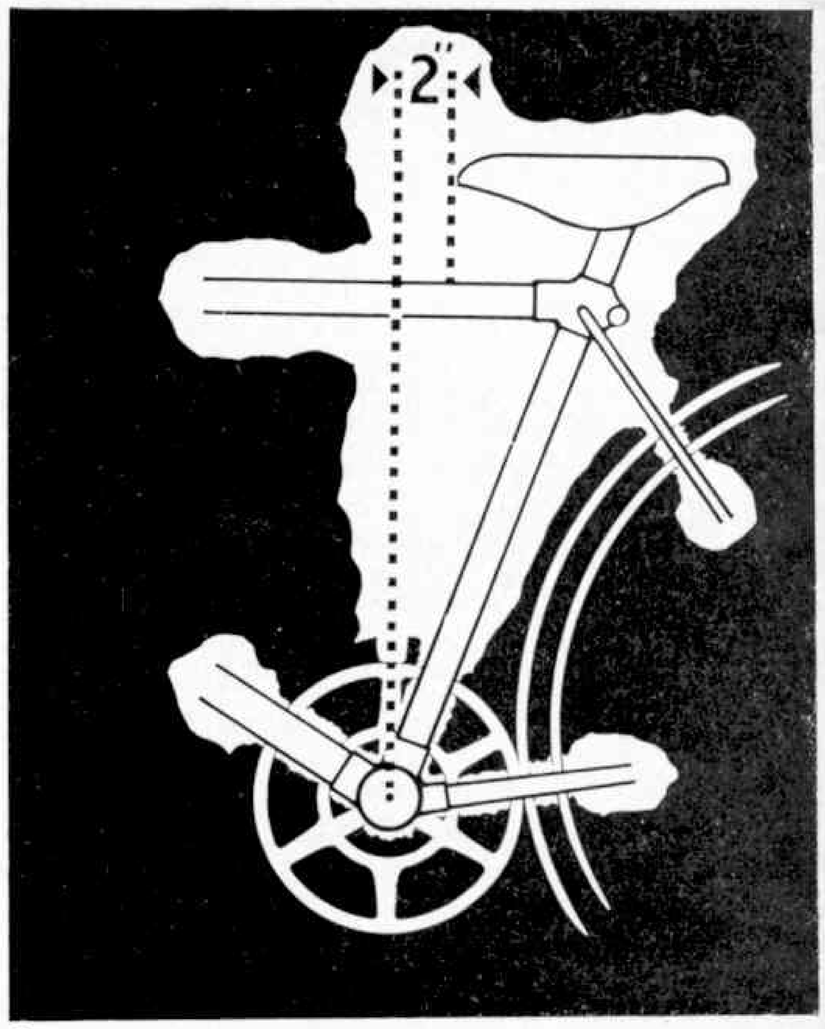
Night shift in the Tinsley marshalling yard control tower

ON A BICYCLE MADE FOR YOU

By Leslie B. Howard



1



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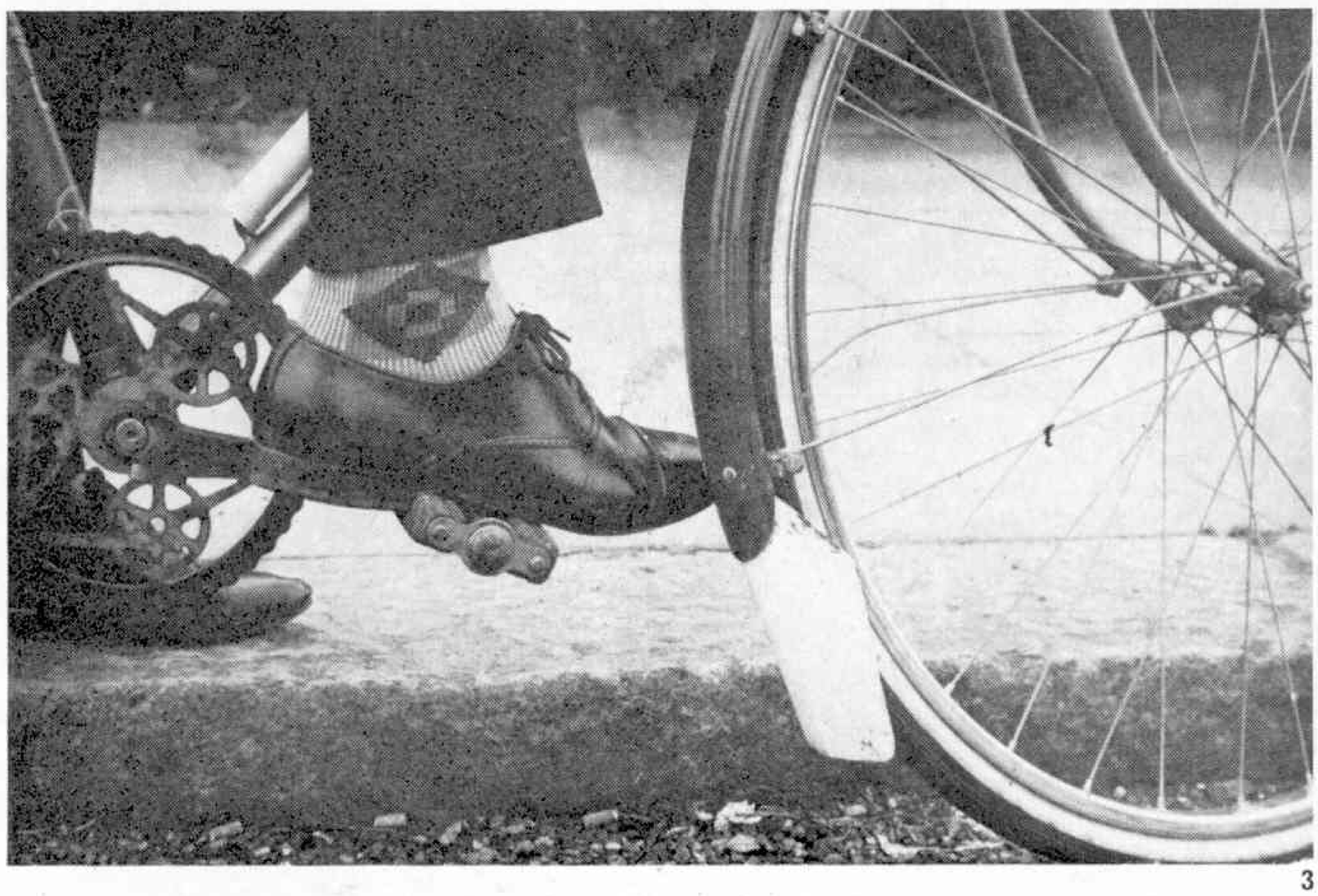
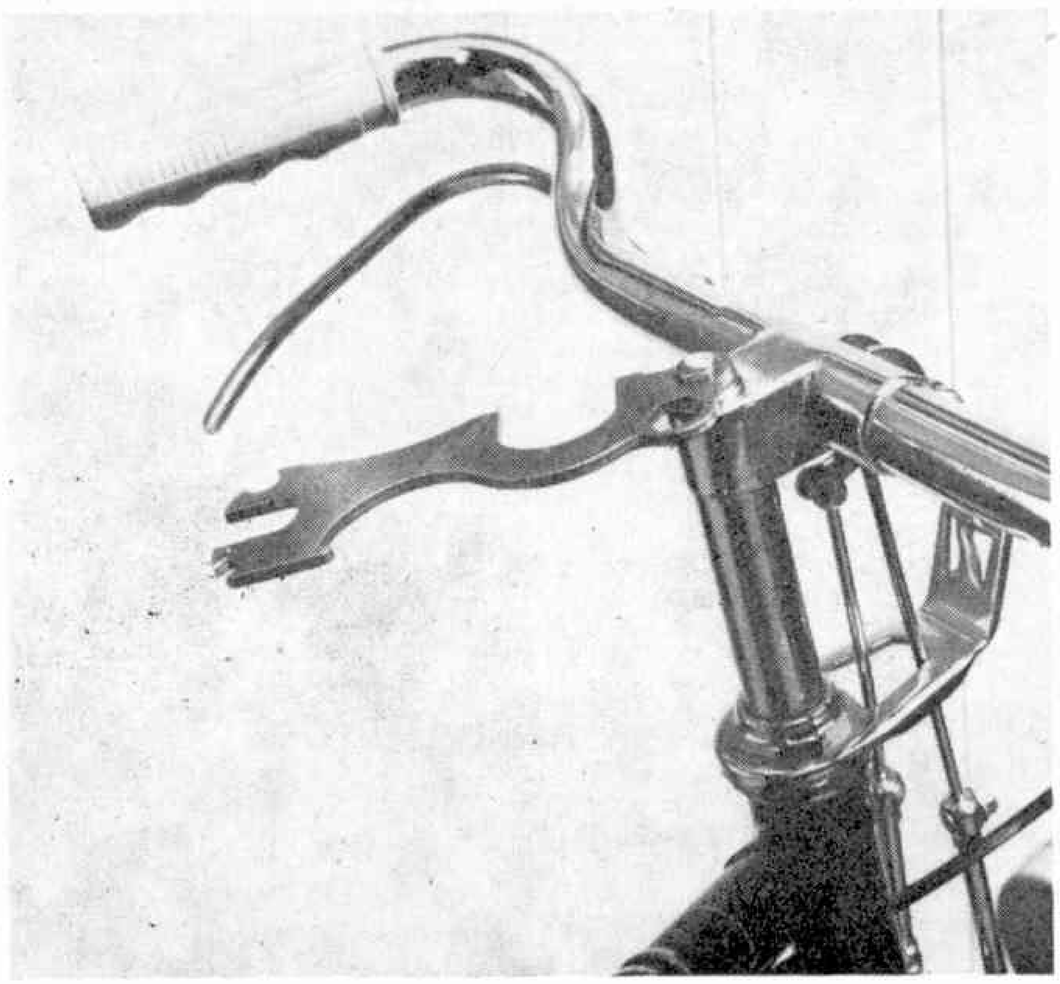


3

THIS BOY IS OBVIOUSLY 'AT HOME' ON HIS BIKE AND ADOPTS A NATURAL, RELAXED RIDING POSITION



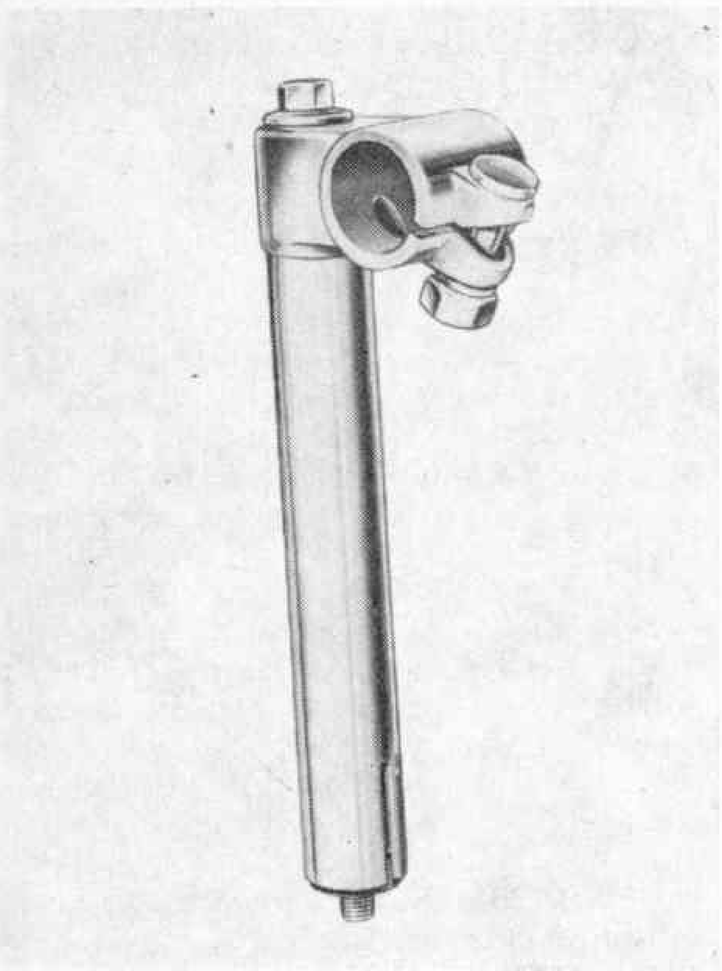
4

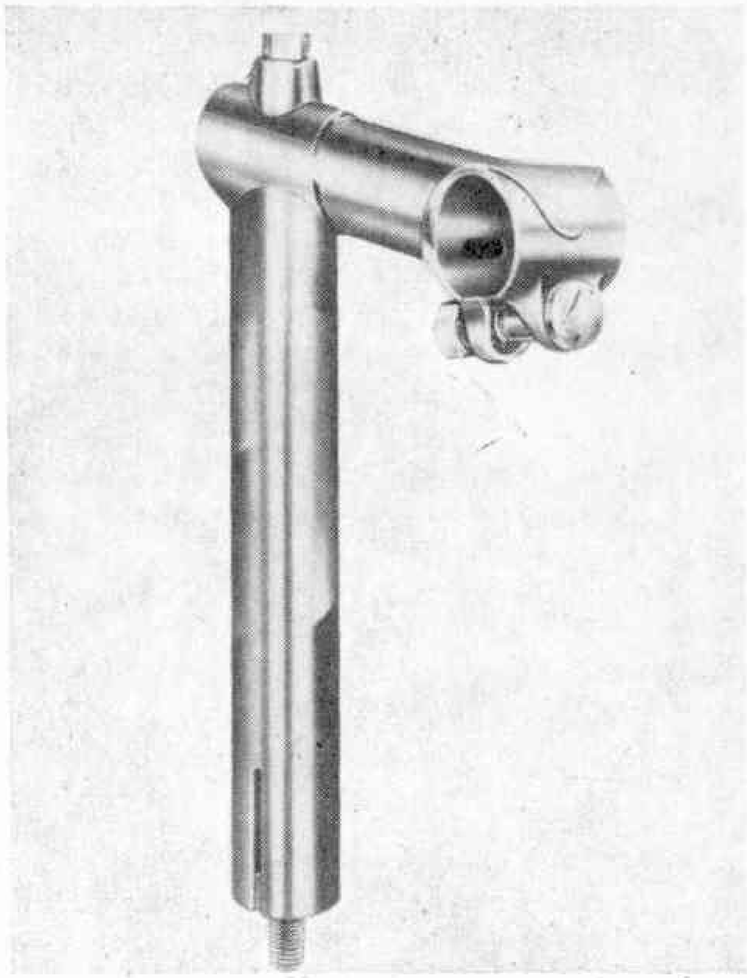
1 The saddle can be raised or lowered when the lower nut (spanner attached) is slackened off, and it may be moved backward or forward or tilted when the upper nut (arrowed) is loosened.

2 Best position for the saddle, say the purists, is about 2 inches behind a vertical line passing through the centre of the chain wheel.

3 The danger of riding with the insteps on the pedals, especially if the rider is big for his machine, is that a foot can be trapped by the front wheel, as demonstrated here by a National Cycling Proficiency pupil.

4 This bolt (spanner attached) must be loosened before adjusting the height of the handlebars —don't forget to tighten it afterwards!





These stems—the one on the right with an extension—allow the handlebar to be swivelled to the best position. In some cases, the extension of itself is adjustable

YOU may be inspired by the spring sunshine to try your luck on two wheels—and then stand bewildered when you see the variety of cycles offered by the dealer.

But no matter how complex the selection, a choice will emerge if you find straightforward answers to the following three questions: How much can you afford? To what purpose will the cycle be put? Which of the cycles that now qualify gives you the most comfortable ride? You alone know the answer to the first question so let us begin with the second.

The person who frequently makes long journeys will never be happy with a traditional roadster; and the cyclist who needs a machine only to visit the shops or to ride a short distance to work or school will be wasting money on a high-grade tourer and unquestionably he will find a sports machine a disadvantage if these short trips take him through congested traffic.

So the choice is really decided by the amount and the class of work to which the cycle will be put. In general there are three categories: shopping or short trips, for which a roadster or inexpensive tourer is adequate; longer runs, say of about five to ten miles a day, where the rider would appreciate the benefit of a lightweight tourer with three or four gears; and long journeys, mostly undertaken for the sheer joy of cycling, for which the sports model, with its ultra-lightweight frame and drop handlebar, is expressly designed.

Brakes

There are, of course, compromises which one can make. Roadsters and inexpensive tourers can be given a more flexible performance with the addition of a gearing system. And the better class tourer can be made to approach the character of the sports machine with the adoption of half-drop handlebar, lightweight wheels, racing saddle and high-ratio gears. But in principle it is best to decide the category in which your cycling places you, purchase the machine which suits it, and let compromises emerge as a natural consequence of your cycling evolution.

You can now approach the dealer with a reasonable idea of the type of cycle you need and with some knowledge of what it will cost, so let us now consider the other important consideration—comfort and riding position.

The roadster—you will remember from my previous article—offers a comfortable ride because of its large tyres and substantial saddle, but it has the disadvantage of a rod-and-lever braking system operating stirrups on the inside of Westwood wheel rims. Such a system introduces problems when the handlebar has to be raised or lowered for the brake controls have to be altered as well. Moreover, the roadster's handlebar cannot be changed to another style so its range of adjustment—and therefore the comfort it can offer—is limited.

Tourers and sports models do not suffer from these limitations. They have cable-controlled brakes operating on the sides of Endrick wheels and consequently the handlebar can be adjusted without affecting brake linkage. A young person would undoubtedly prefer a tourer, not only for its better braking system but because it will accept an almost unlimited range of handlebar shapes and sizes and can therefore be tailored to personal comfort. Some young riders misuse this licence by fitting handlebars which resemble antlers and thereby jeopardise riding position and cycle control.

Riding position

It is as well to understand what a good riding position is, because in buying a new cycle at a showroom you will be able to judge whether, having regard to its full range of adjustments and modifications, it will provide a perfect ride.

When the rider is seated on the stationary machine the ball of his right foot should be on the pedal in the 'two o'clock' position, and the ball of the left foot should be firmly on the ground. The pedal is in the two o'clock position when it is alongside the 'down tube', which is the one running down at an angle immediately behind the front wheel.

When a pedal is pushed to its farthest it should be a slight strain to reach it with the heel. (One, of course, should never cycle with the heels—or with the instep.) If the farthest position can be reached easily with the heel the probability is that the saddle is too far forward.

The saddle can be raised or lowered after releasing the nut right at the top of the cycle *frame*; and it can be moved backwards or forwards when the nut on the *saddle* itself is eased a bit.

Adjustments

By moving the saddle up or down and backward or forward a position will be found to satisfy the above condition. As a confirmatory test put both feet to the ground. You should be able to touch the ground with the ball of either foot, or the toes of both, but if you can touch the ground easily with the balls of both feet simultaneously then the saddle may be too low.

Purists argue that the best position for the saddle is about two inches behind a line passing vertically through the centre of the chain wheel. If you want to test this, tie your keys to the end of a piece of cotton and let this represent the vertical line.

Handlebar position affects a rider's control much more than is generally appreciated. Correct adjustment allows the cyclist to pull up on the hand grips and thus improve his thrust at the pedals, a system of riding which reduces fatigue and strain.

Long arms?

The ideal position is when the body is leaning slightly forward so that the weight is distributed between saddle and handlebar. If the weight is too far back it is not possible to deliver the full power of the back muscles to the pedals; and if the body is too far forward the action of the legs (unless the cycle is specially designed for a forward style, as sports machines are) will be restricted.

These considerations explain the popularity of the flat handlebar fitted to so many tourers, for it gives the greatest degree of comfort for ordinary cycling.

The person who cannot find a comfortable handlebar position may be handicapped with short or long arms. There is a device to help in this situation. It is a small horizontal extension piece which allows fore and aft adjustment. To fit it may mean swopping the handlebar, or the handlebar stem, but no doubt the shopkeeper will be glad to explain.

One other adjustment—a tiny one—sometimes improves riding position beyond expectation. When saddle and handlebar are in their best positions, try tilting the saddle up or down a trifle. Occasionally, this just makes the cycle 'fit'.

If these adjustments have been made with care there will be scarcely any further alteraation needed when the machine is tried on the road. The most likely thing is that you may want to alter the brake lever positions so that they can be reached easily. Bell and gear lever may need changing as well.

Ask someone to observe you while you ride to see if you take up this position. Your back should be straight, but inclined slightly forward, balls of the feet should be on the pedals and hands should rest comfortably on the grips and within easy reach of the brakes.

What I have said about riding position and adjustment applies to all cycles, but there are some machines like the Moulton, the Royal Enfield Revelation and the Raleigh RSW16, which offer wider ranges of adjustment and are therefore a good buy for a young person.

In this respect, it is a dangerous policy to buy a machine which is too small or two large—particularly for a child. The safest method with children is to purchase a cycle which provides maximum comfort when the saddle and handlebar are at their lowest positions, so that the cycle can 'grow' with the child.

Penny plain . . .

Two final points. Do not be taken in by a machine which is brightly coloured and glittering with chrome. It may be no better—yet may cost more—than an ordinary-looking cycle. On the other hand, there is no need to choose a heavy machine because it looks sturdy; a lighter cycle may be just as strong, and it will certainly be less fatiguing to ride.

Next time I will write about the faults to look for in buying a second-hand machine.

Even the simplest Scalextric two-lane circuit can be easily developed into six or eight lanes providing more realistic and competitive racing and calling for greater skill on the part of the drivers.

MODIFYING SCALEXTRIC CIRCUITS

by Walkden Fisher

SCX 1127 8 LANE DEVELOPMENT

8	Straight 'B' PT/58.
28	Straight 'C' PT/59.
68	Straight 'D' PT/60.
4	Starting Line PT/63.
4	Inner Curve PT/52.
4	Double Inner Curve P/T56.
24	Large Radius Curve PT/84.
4	Hump Back Bridge A/248.

SCX 1170 6 LANE DEVELOPMENT

3	Straight 'A' PT/57.
3	Straight 'B' PT/58.
27	Straight 'C' PT/59.
18	Straight 'D' PT/60.
3	Starting Line PT/63.
2	Inner Curve PT/52.
28	Outer Curve PT/53.
3	Double Inner Curve PT/56.
12	Large Radius Curve PT/84.
3	Hump Back Bridge A/248.

ONE of the most attractive features of the Scalextric model track system is the adaptability of the track sections, and the ease in which a layout can be modified when required. Even the simplest 2 lane circuit can be extended or enlarged, and its design elaborated if desired; there is practically no limit to the number of layouts that can be designed, and by using Scalextric components track building is simplified considerably.

The new Scalextric booklet, in which plan drawings of 101 miniature racing circuits are featured, is full of ideas to suit all tastes and, most important, the area occupied by each layout is also stated in connection with the respective plan, together with a list of the necessary track sections. All the prospective builder has to decide, therefore, is on a choice of layout to meet his specific requirements, both in design and size to fit the space available. Alternatively, the individual may prefer to design his own layout. In which case the Scalextric track construction components offer tremendous scope, and their use is likely to overcome many problems that could otherwise arise in the development of such a project.

There are countless enthusiasts who gain an introduction to the thrilling, competitive hobby of electric model car racing with a simple Scalextric 2 lane circuit, and the desire to modify and enlarge this will eventually probably arise, particularly if more space is at their disposal. Racing miniature cars on a 2 lane circuit is an exciting pastime, but if extra lanes can be added the enjoyment is even further increased, and if six, or eight lanes are possible the sport becomes really enthralling both for competitors and spectators alike as obviously, the more lanes, the greater number of participants are accommodated which consequently introduces keener competition.

Added realism

The spectacle of six, or eight model cars streaming round a circuit, jockeying for position and sliding on the corners as each fights for the lead is a stirring sight, and one that has to be experienced to be fully realised. Such racing requires extra skill and co-ordination on the part of the drivers, which in turn brings added realism and excitement to the sport.

There is a large range of Scalextric track sections available and new ones are always being added. Each section incorporates two lanes and there are a variety of straight lengths as well as curves. Because of their ingenious design, sections can be added to existing layouts with ease and precision—all parts fitting and interlocking securely to form a pliable, flexible and virtually indestructible track.

Examples of two very simple standard layouts are illustrated in the accompanying diagrams; both have been developed from original 4 lane designs. Fig. A is the SCX 1127 figure-eight circuit which has been developed to accommodate 8 lanes. The original 4 lane layout is shown shaded, and on each side of it additional track sections have been fitted to provide 4 extra lanes—the simplicity of this modification will be very apparent. In Fig. B (SCX 1170) the shaded portion indicates the original 4 lane layout with additional 2 lane sections shown unshaded—a development that transforms the design into a 6 lane circuit. Again the simplicity of the development is clear, and both layouts have gained considerably in competitive interest. The scale reproduced in connection with each diagram will enable the areas occupied by the layouts to be easily calculated.

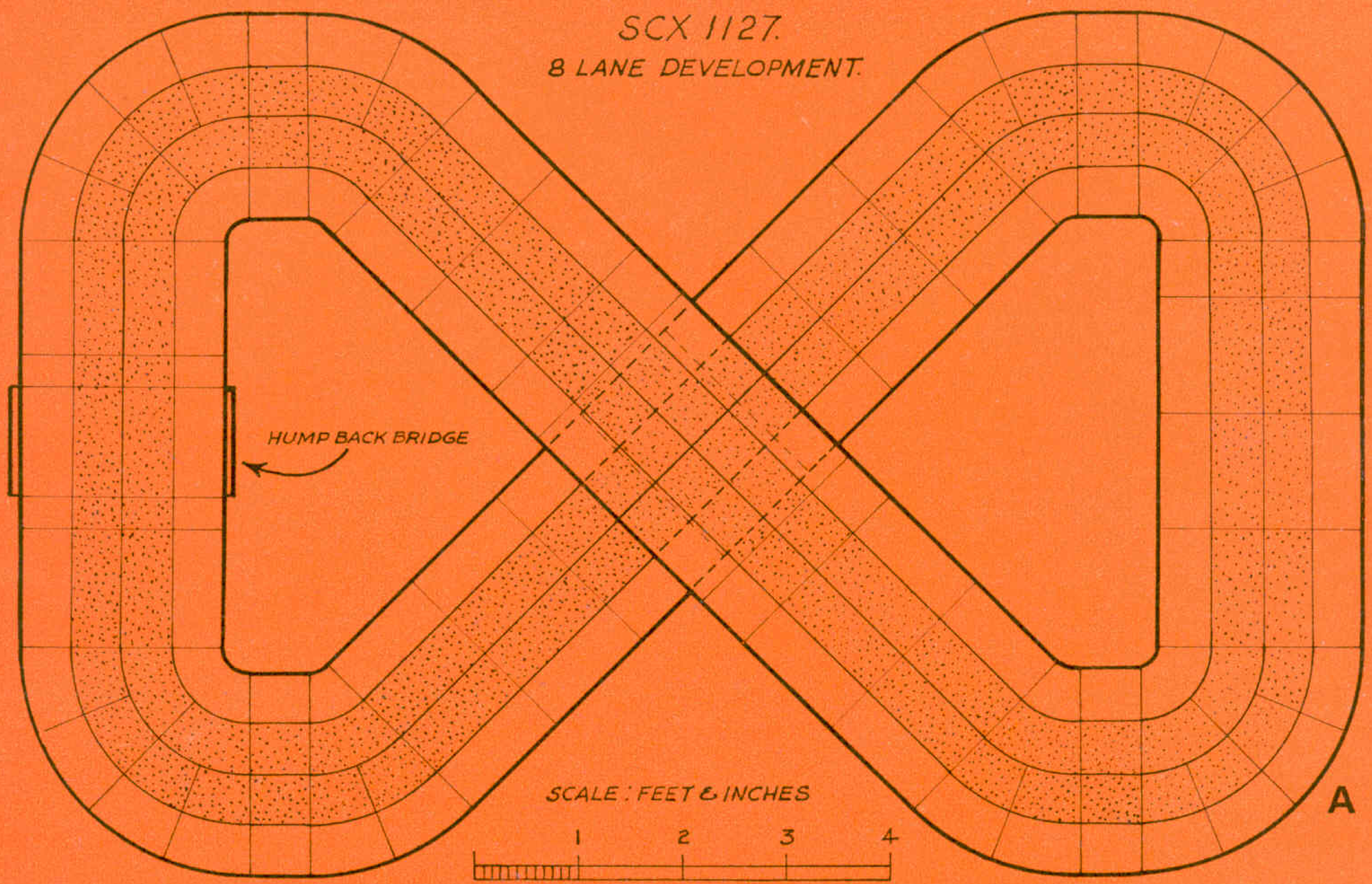
These examples are of two of the simplest fly-over layouts featured in the booklet 'Scalextric 101 Circuits', and they serve to illustrate how easily developments can be made. In a similar manner modifications can be carried out on the majority of designs presented in this useful booklet, and others achieved by simply extending or shortening straights on the layouts. To extend a circuit, an equal number of straights added into any two parallel track joints is all that is necessary. Similarly, the removal of an equal number of straight track sections from both sides of a layout on parallel straights will reduce the overall lap length. It is also possible to incorporate such items as a Straight or Curved Chicane, the Blow-out Unit, Pit Stops or perhaps a Lap Counter by substituting the chosen items in place of an equal length of the standard track sections. In this manner the character of the simplest circuit can be altered. In regard to corners, it is recommended that these should be well banked and on 2 lane circuits the Banking Wedge component is suitable for this purpose. However, on 4, 6 and 8 lane circuits Banking Units and Trusses can be used. By banking the corners lap times are considerably reduced because the cars can negotiate the turns much faster with less likelihood of spinning off than otherwise is the case on flat and level corners.

For groups contemplating the formation of a model car racing club the Scalextric system is particularly suited, and with the expense spread evenly among the members a really elaborate layout can be planned. Furthermore, the construction of such a layout, using Scalextric track sections, would be a fairly speedy undertaking in comparison to the intricate and time-devouring process of cutting slots and laying the necessary tapes. A Scalextric track is soon operational and if at any time the club decided to change the design of their layout, modifications would be an easy matter, because of the adaptability of these excellent proprietary components.

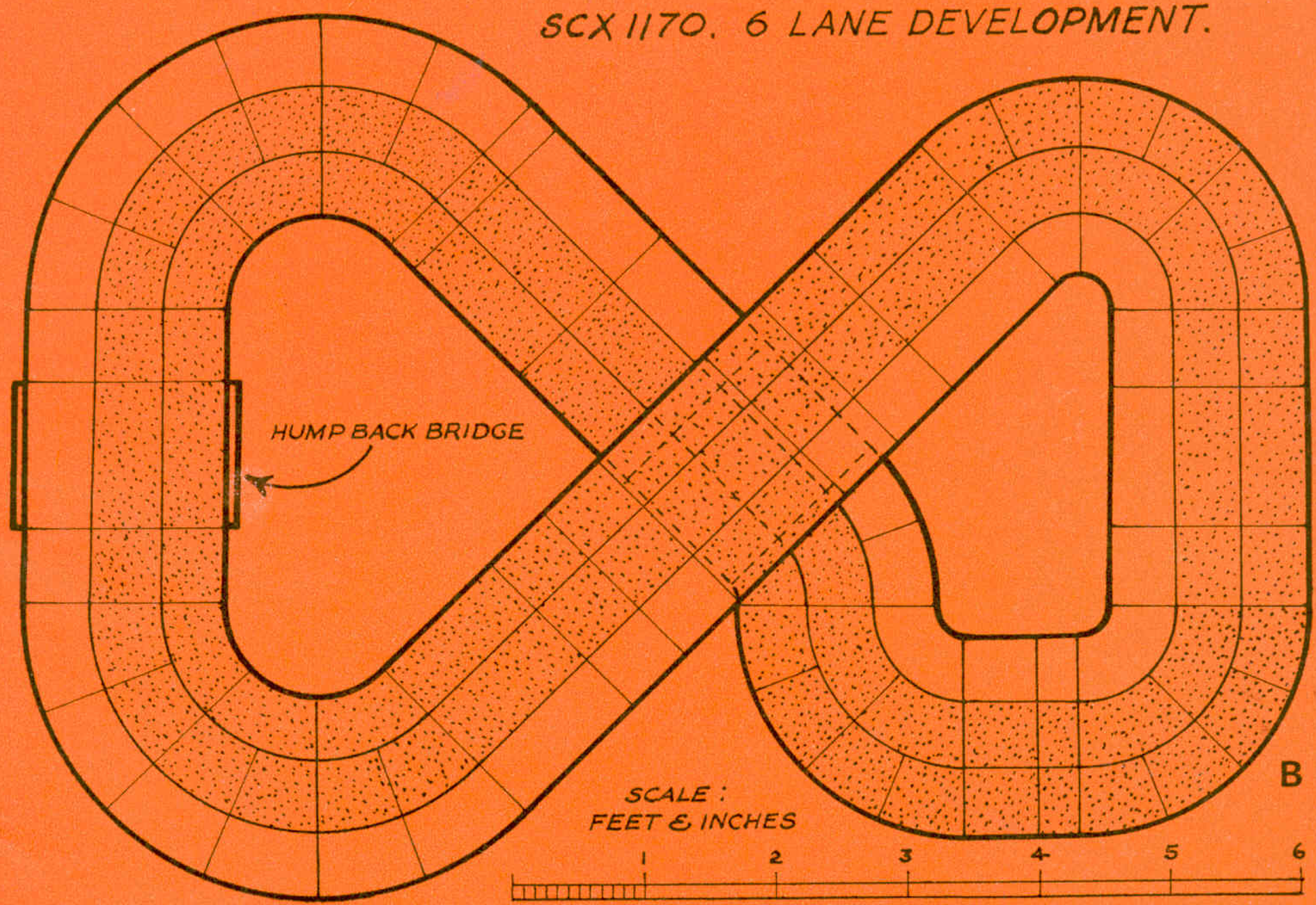
Gradual development

In designing a model car track there are two types of layout to be considered, both with their particular appeal. Firstly, there is the table-top or 'island' type with accessibility all round, and secondly, the shelf-type, usually constructed along a wall with accessibility from one side. Accommodation and available space naturally influence a decision regarding choice and if it is at all possible a permanent circuit is the goal to be aimed at because this provides more scope and greater opportunities for gradual development.

Apart from the excellent range of track sections and components the Scalextric system includes a variety of track accessories, buildings and equipment to enable the constructor to capture the realism of a full size racing circuit in every detail. Authenticity is a keynote, and one of the paramount features in this, the world's most comprehensive model car racing system which brings all the thrills and excitement of the real thing within reach—an enthralling sporting pastime that can be enjoyed by children and adults alike.



SCX 1170. 6 LANE DEVELOPMENT.



THE GOLDEN 500

ALTHOUGH the emphasis in the Minic range is now Rallying and GT racing, sets of this sort are not by any means the only kind available, as indeed we showed last month when we described the new 'Crime Patrol' set. This month, however, Minic have introduced yet another set which has many exciting possibilities *and* two new cars.

One of the more interesting features of the set is the automatic starting gate, which is a working model intended to be used for controlling races. The gate is supplied as an easily assembled kit, fully covered by instructions that give step-by-step constructional notes and exploded drawings.

With this accessory, three operatives are desirable, one acting as race marshall to operate the starting gate and event and heat recorder on the competitor's board. The starting gate is fitted with three levers situated at the back of the building, controlling three flags, one red, a Union Jack and a chequered flag. The red flag switches off the current to the track and the Union Jack switches the current on. The race marshall would therefore, when starting a race, press the red flag lever, to switch off the current until all cars are in line at the starting gate.

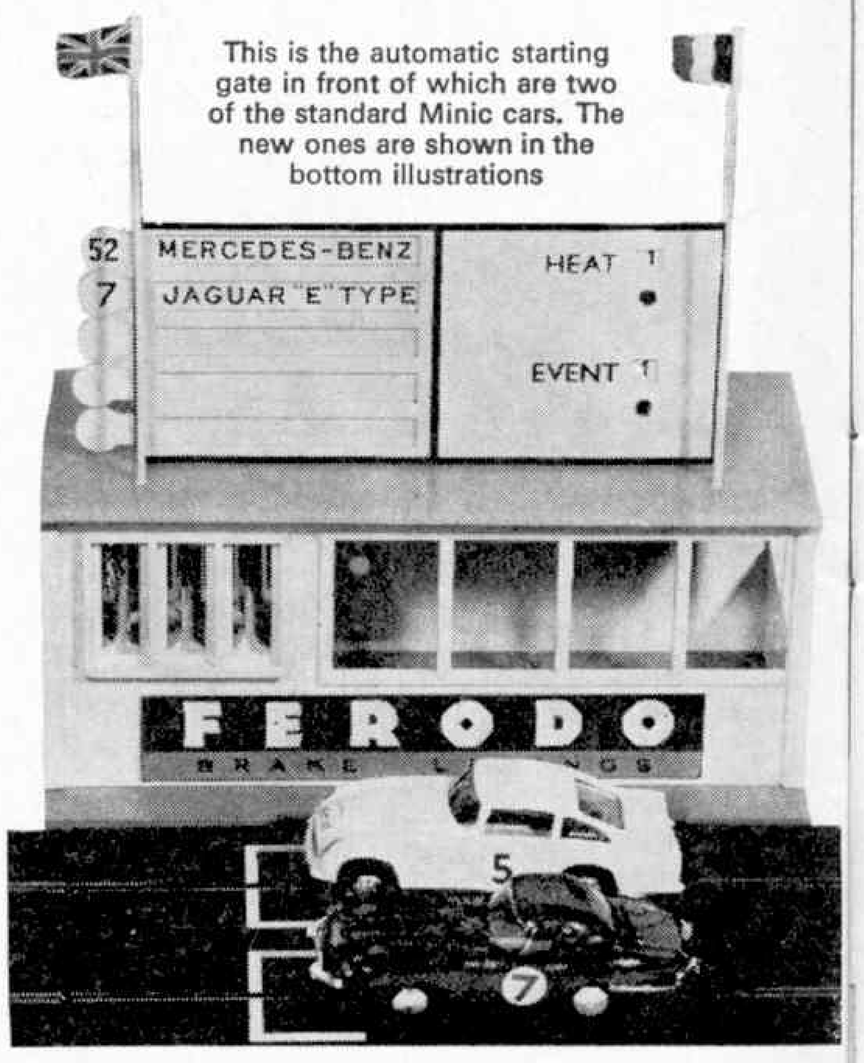
When both operators are satisfied that their cars are correctly mounted on the track the Union Jack could be lowered, switching on the current and starting the race. The race marshall is then responsible for operating the heat recorder on the competitors' board. If a crash occurs during the race he would lower the red flag, switching off current until things are sorted out, and the race ready for re-starting. When the winner approaches his last lap, the chequered flag is waved, again by pressing down the appropriate lever.

Called the 'International Golden 500 Cup Race', the set includes two cars, both new to the Minic range. The first of these is the Ferrari 500 Superfast which is finished in an attractive red with the number '21' on both sides. The most coveted of all cars, the Ferrari 'Superfast', is based on an original prototype which had retractable headlights and remotely controlled radiator air-intake.

The second car is the spectacular Chevrolet Corvette Stingray finished in white with the number '35' on the sides. The unusual point about the original car is that it was the first relatively large-scale production model to have a body of glass reinforced polyester. It also had a tuned six-cylinder engine of 5·8 litres, with independent suspension.

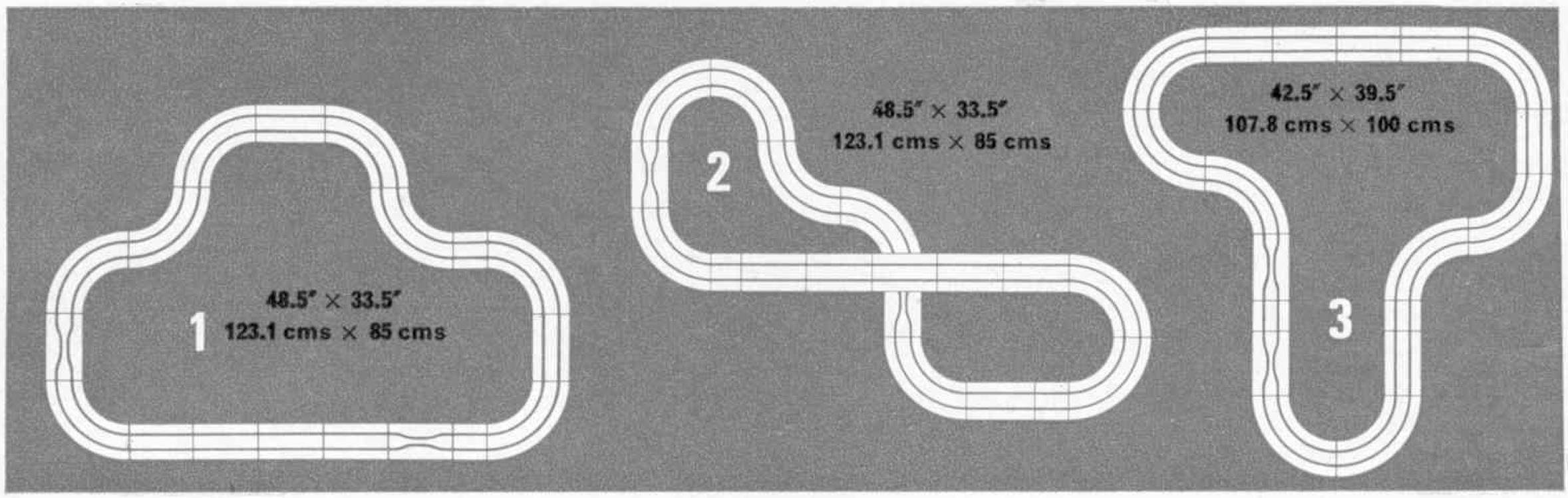
In addition to the two cars, the set contains two speed and direction controllers, two chicanes, the starting gate (already described) and 18 pieces of track, sufficient to build up no less than five different circuits, a selection of which is shown on this page. These can be fitted into an average space of only 123 cms. by 80 cms., or about 4 ft. by 2 ft. 8 in., quite a small area for such an interesting selection of circuits. The two chicanes supplied with the set can also be used in locations that would make the race even more exciting.

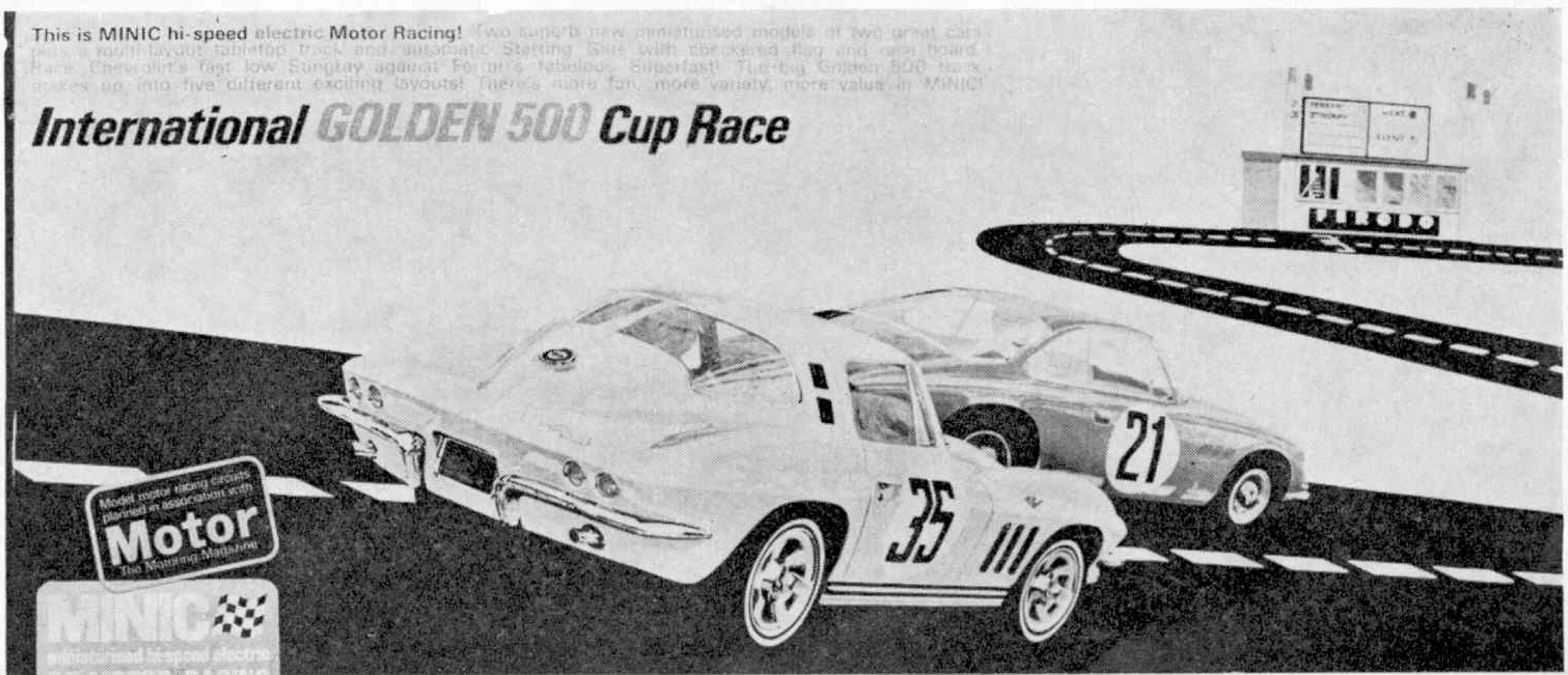
The set also contains piers to introduce a fly-over into the layout, so that a figure of eight formation can be produced if desired.



This is the automatic starting gate in front of which are two of the standard Minic cars. The new ones are shown in the bottom illustrations

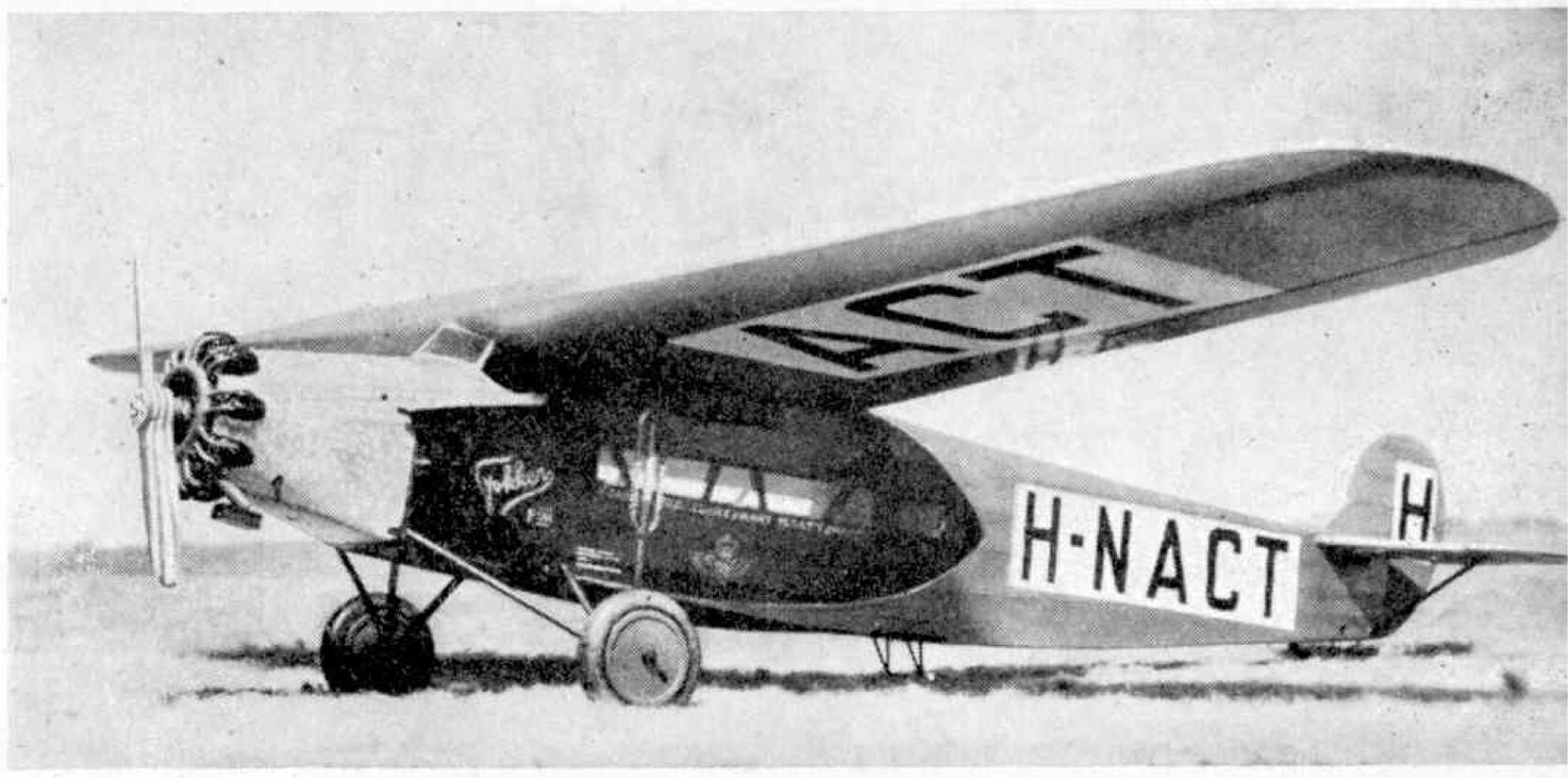
Three track formations that can be produced with the Golden 500 set





Here's another much-requested plastic kit conversion. From the "Southern Cross" emerges a Fokker F VIIa with

JUST ONE JUPITER



IN the pioneer days of air travel, back in the 1920s, one of the most reliable planes in the sky was the eight-seater, 120 m.p.h. Fokker F VIIa, built in Holland and usually powered with a British Bristol Jupiter engine of a mere 400 h.p. Today's 300 m.p.h. Fokker Friendship is its direct descendant, carrying up to 52 passengers and using two British Rolls Royce Dart 'turbo props, each developing over 2,000 h.p.

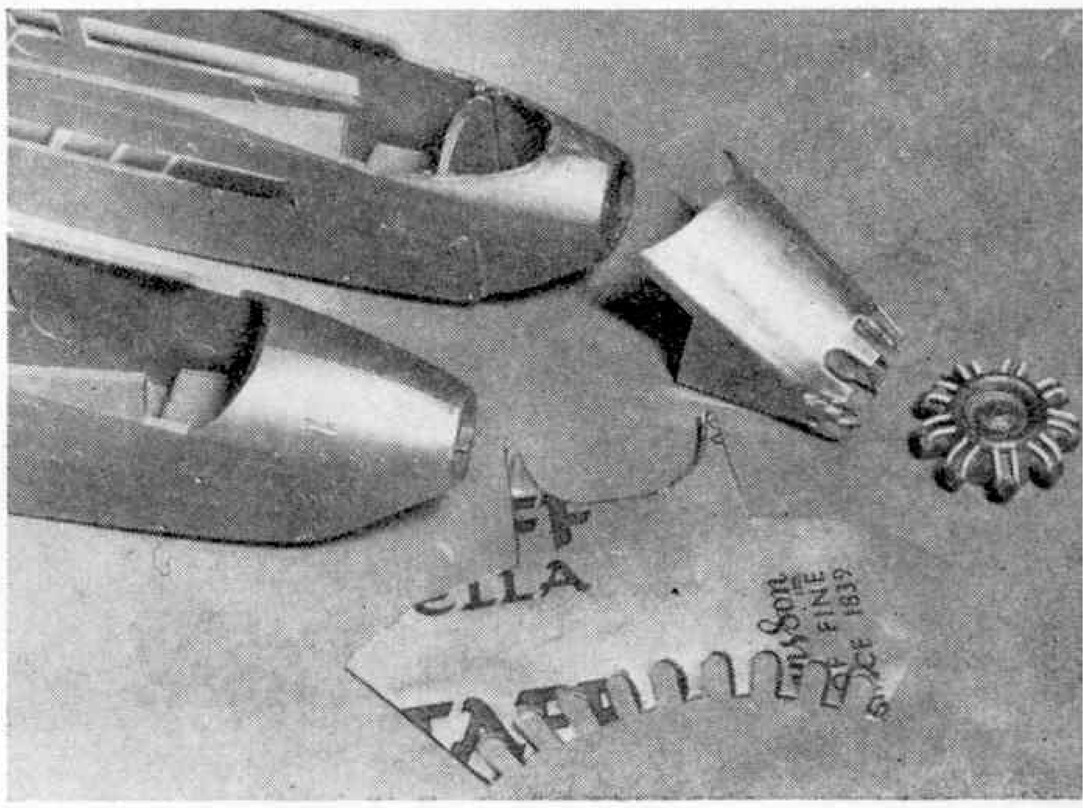
The Frog Trailblazers kit of the three-engined Fokker 'Southern Cross' can, with care, be successfully converted to represent the earlier F VIIa, and these photos show how Doug McHard set about it.

Ian Stair presents another fine drawing and, from it, you can make your own F VIIa conversion just as detailed or as basic as you wish.

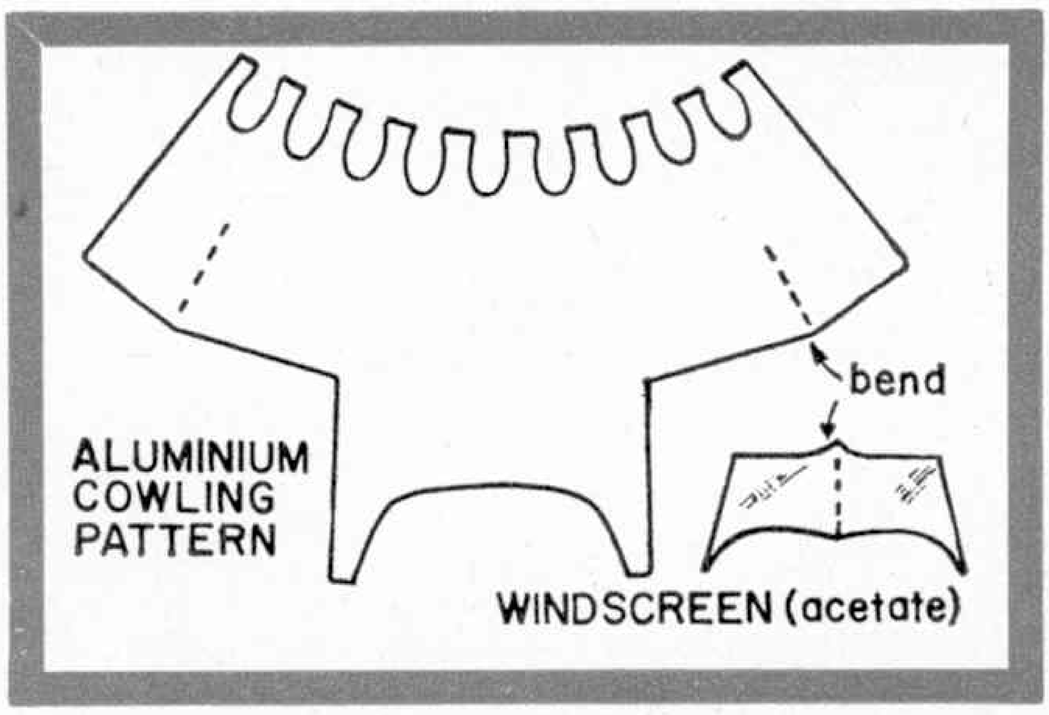
The blue, black, white, orange, gold and silver colour scheme makes this particular machine one of the most colourful of all airliners. It was one of the first F VIIa's operated by K.L.M. (Royal Dutch Airlines) and after years of faithful service it was retired and preserved at Schipol airport, only to be destroyed by bombing during the last war. Another F VIIa was afterwards painted up to look like the original, and can be seen at Schipol to this day, but many details differ from the older machine, including the style of the lettering which is smaller and less well formed.

For a really basic model conversion all you need to do is shorten the wing and omit two engines from the Southern Cross Kit, but the experts can have a field day and a study of these photo pages will reveal hints of use to *any* plastic modeller!

These unretouched photographs of the real Fokker FVIIa and our model show you just *how* realistic your conversion can be. Trying to simulate an exact 'full size' angle like this, is the most cruel test to which any model can be subjected and it will show up several discrepancies particularly, as in this case, when the model originally set out to be an entirely different aeroplane! Nevertheless, we were modestly pleased with our efforts and with a little patience and the aid of these detailed plans and pictures you can do just as well! Thin tubular members not included in the original Southern Cross Kit, were made from stretched plastic sprues as described last month.

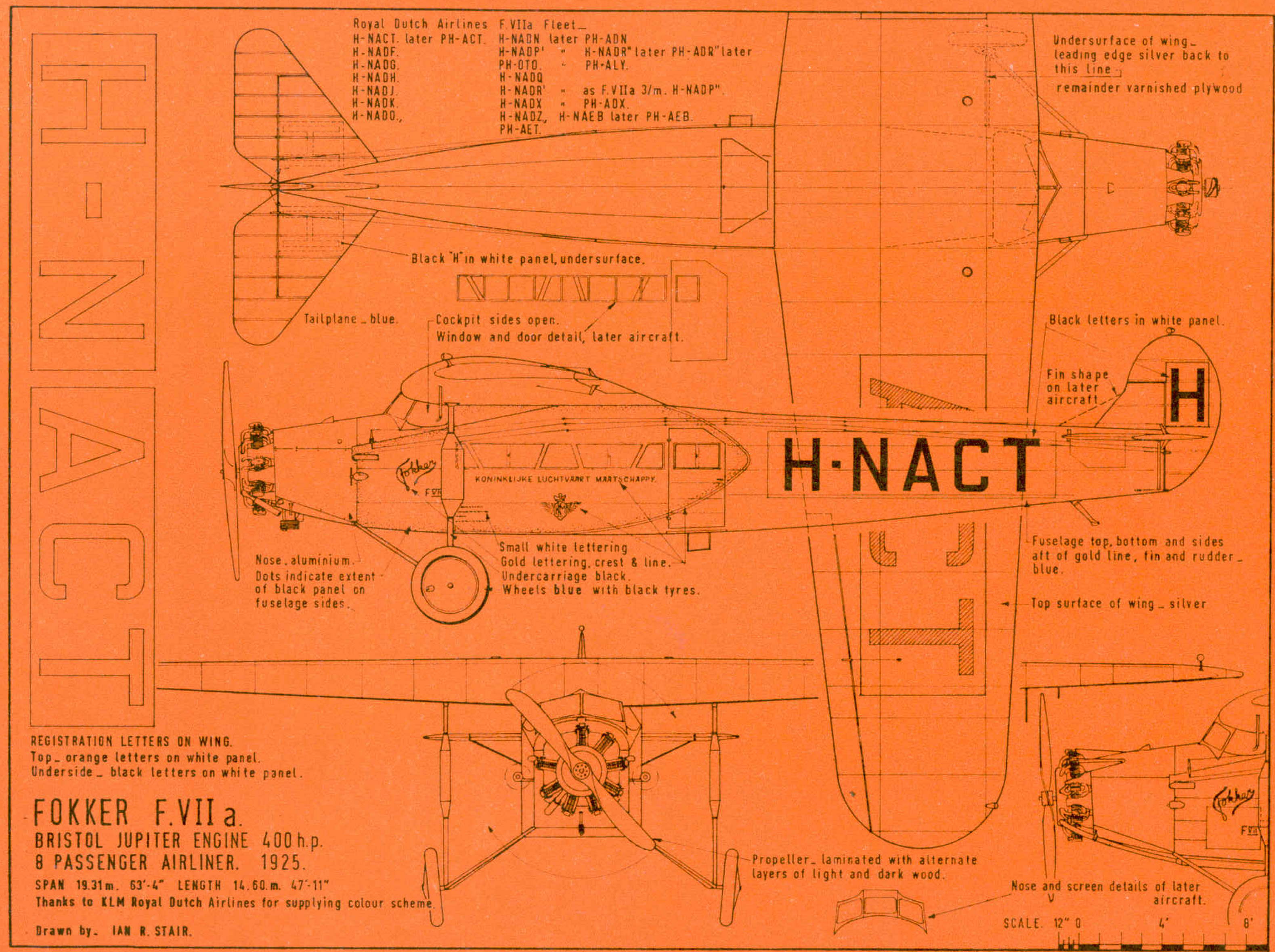


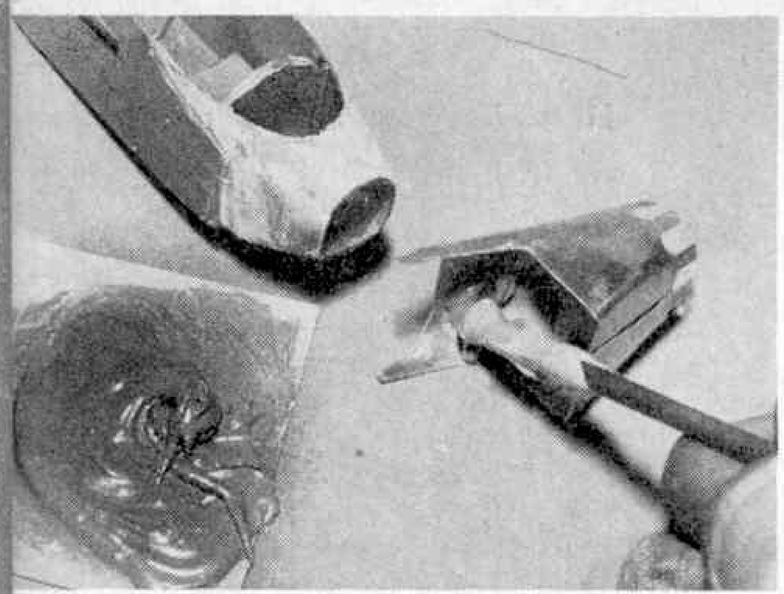
Plans overleaf



The Fuselage

1 The nose requires considerable alteration to accept the larger engine but this provides an opportunity to introduce *real* aluminium panelling! First of all shorten the nose by ⅛ in. then cut away the top surface ahead of the cockpit and file to a rounded contour. Open out an aluminium cigar tube and mark on it the outline of the nose cowling (shown full size here). This can be cut roughly to shape with nail scissors and then finished off with sandpaper or needle files. Polish off the printing with Duraglit metal polish and bend to the shape shown to fit neatly round the fuselage nose. If you wish, the plastic underneath the aluminium sheet can be slightly filed away to produce a flush joint.


Royal Dutch Airlines F.VIIa Fleet_
H-NACT. later PH-ACT.
H-NADF.
H-NADG.
H-NADH.
H-NADJ.
H-NADK.
H-NADO.,
H-NADN later PH-ADN
H-NADP' " H-NADR" later PH-ADR" later
PH-OTO. " PH-ALY.
H-NADQ
H-NADR' " as F.VIIa 3/m. H-NADP".
H-NADX " PH-ADX.
H-NADZ., H-NAEB later PH-AEB.
PH-AET.
Undersurface of wing_ leading edge silver back to this line
remainder varnished plywood
Black "H" in white panel, undersurface.
Tailplane _ blue.
Cockpit sides open.
Window and door detail, later aircraft.
Black letters in white panel.
Fin shape on later aircraft
H
H-NACT
KONINKLIJKE LUCHTVAART MAATSCHAPPY.
Nose. aluminium.
Dots indicate extent of black panel on fuselage sides.
Small white lettering
Gold lettering, crest & line.
Undercarriage black.
Wheels blue with black tyres.
Fuselage top, bottom and sides aft of gold line, fin and rudder _ blue.
Top surface of wing _ silver
Propeller_ laminated with alternate layers of light and dark wood.
Nose and screen details of later aircraft.
SCALE. 12" 0 4' 8'
REGISTRATION LETTERS ON WING.
Top_ orange letters on white panel.
Underside _ black letters on white panel.
FOKKER F.VIIa.
BRISTOL JUPITER ENGINE 400 h.p.
8 PASSENGER AIRLINER. 1925.
SPAN 19.31m. 63'-4" LENGTH 14.60.m. 47'-11"
Thanks to KLM Royal Dutch Airlines for supplying colour scheme.
Drawn by_ IAN R. STAIR.



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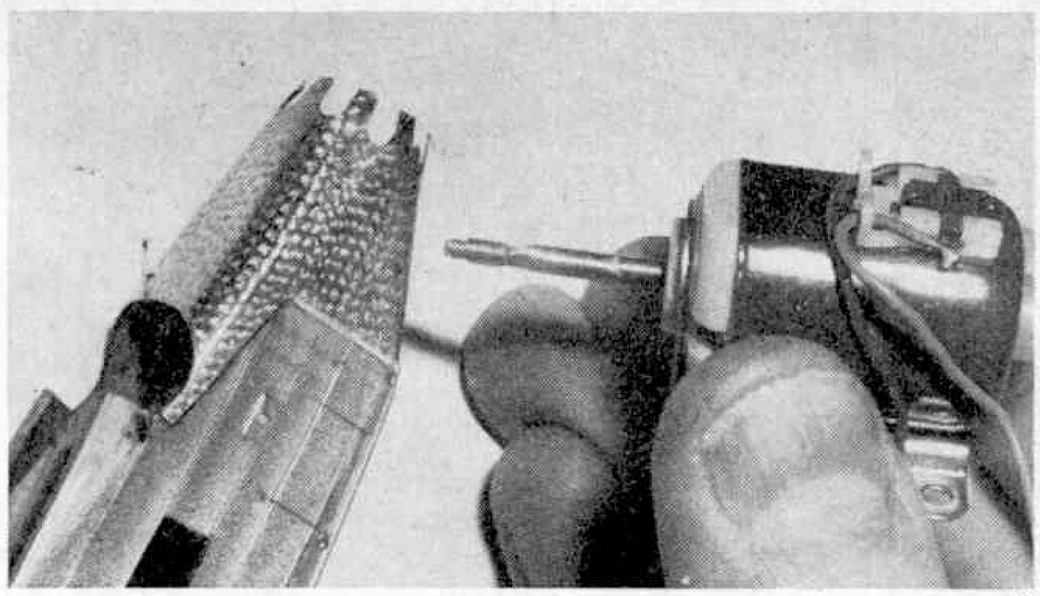

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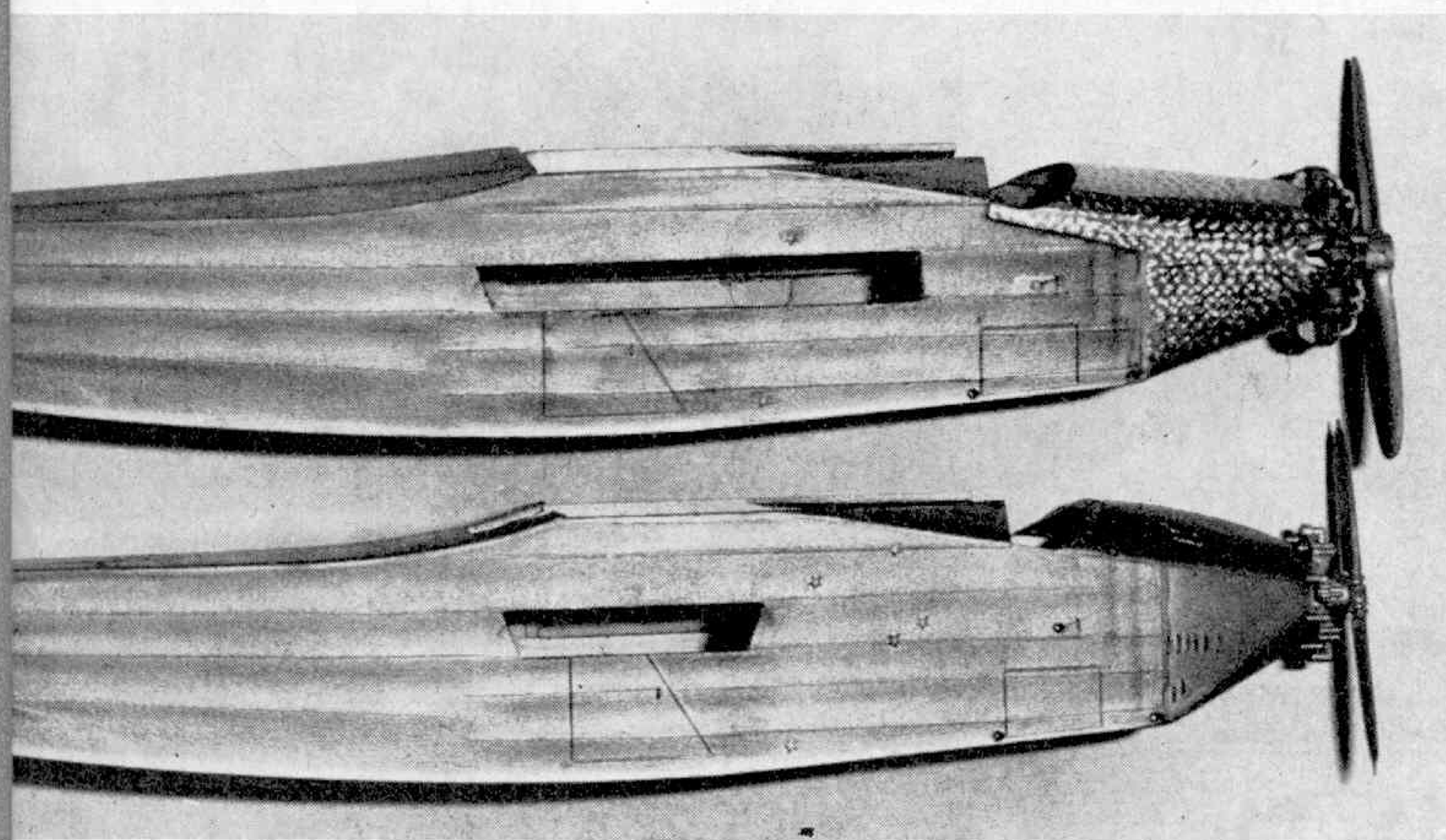


4

2 Mix up a small quantity of Plastic Padding and spread it liberally inside the aluminium cowling. To form a good 'key' to which the padding will stick, the nose is first smeared with Humbrol Body Putty—*this is important*. Now press the cowling over the nose (wiping off any adhesive that happens to escape onto the fuselage) and hold it in place with Sellotape until the Plastic Padding is dry—it will only take about ten minutes so work quickly!

3 A scale 'engine turned' finish may be applied to the nose by using a piece of thin plastic-covered radio hook-up wire fixed to an electric motor shaft in a piece of brass tube.

Stick the tube to the shaft with Plastic Padding or 'nip' it with pliers. Practice on a spare piece of aluminium before ruining your model!

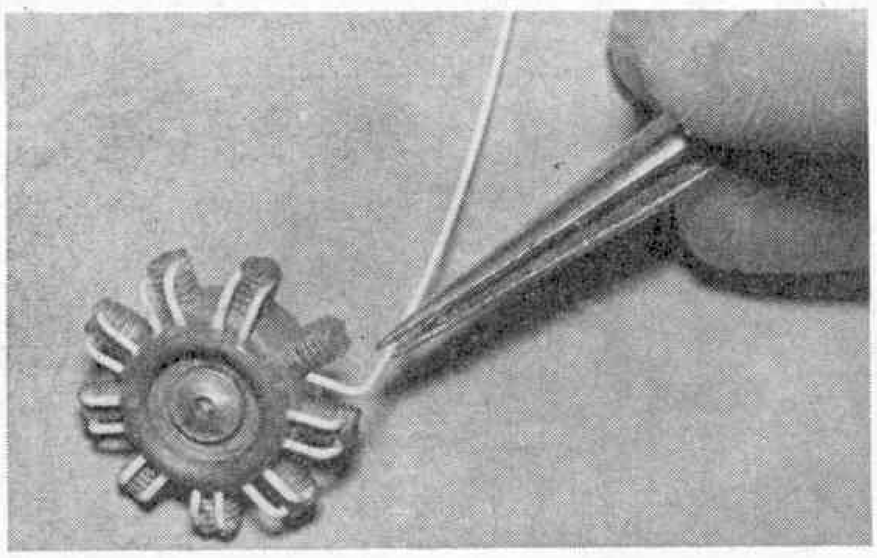
4 Here's the finished nose compared with that of the standard 'Southern Cross.'

Note that the side windows have been enlarged and the top of the rear-fuselage has been built up with Plastic Padding filed to shape.

5 The 'Jupiter' engine was adapted from the one in the Frog 'Wallace' kit in the manner shown last month. The main difference is in the shape of the exhaust pipes (from heated and stretched sprues) which should be curved as shown, and the front collector ring is also cut back (see drawing).

6 If you have no spare 'Jupiters' around you can build up your own, making the cylinders from throw-out sprues, down which a 5 B.A. die is run to simulate finning. The cowling automatically provides correct cylinder spacing and a crankcase can be fabricated from a discarded plastic wheel.

5



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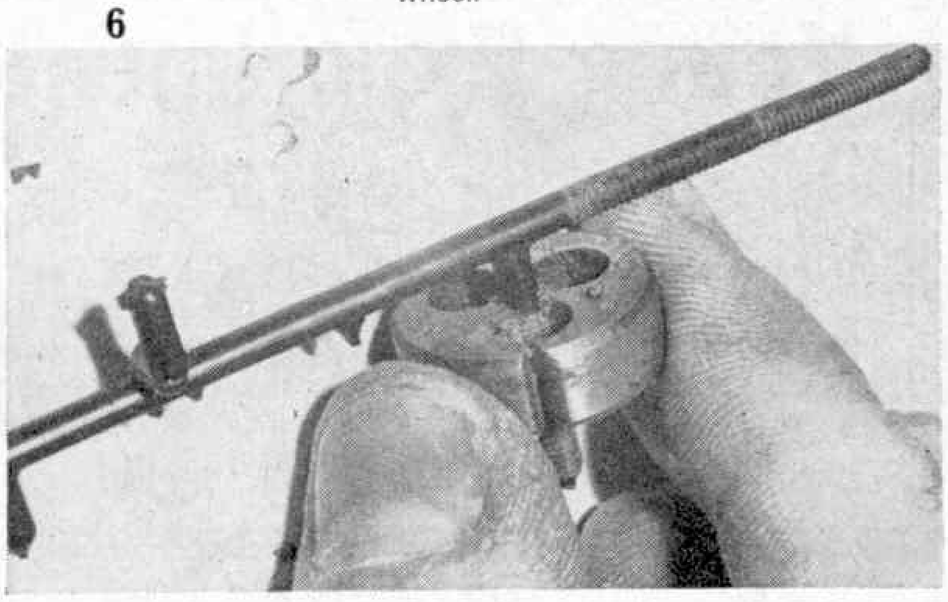
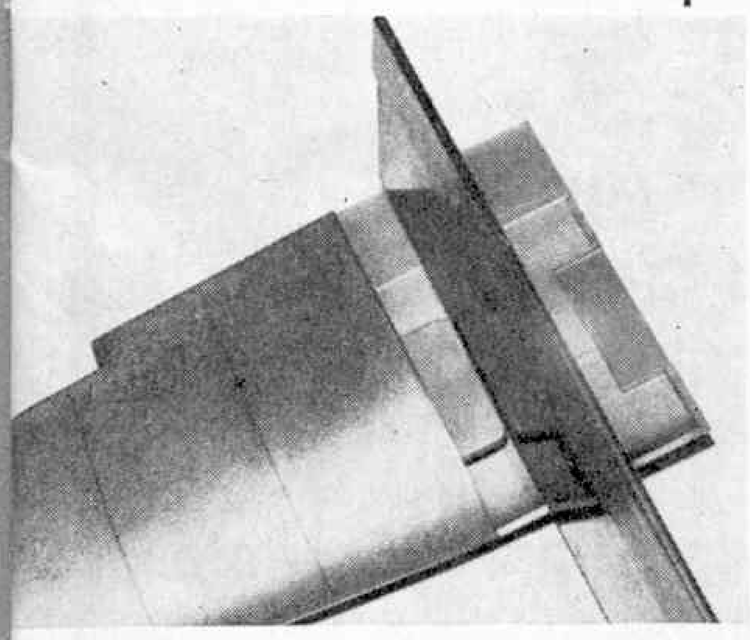


WING AND TAIL
(see photos below)

The FVIIA wing is considerably shorter than that of the Southern Cross but the tapered main panels are similar except for smaller ailerons. It is, therefore, only necessary to shorten the wing centre section. These photographs show how it is done.

1



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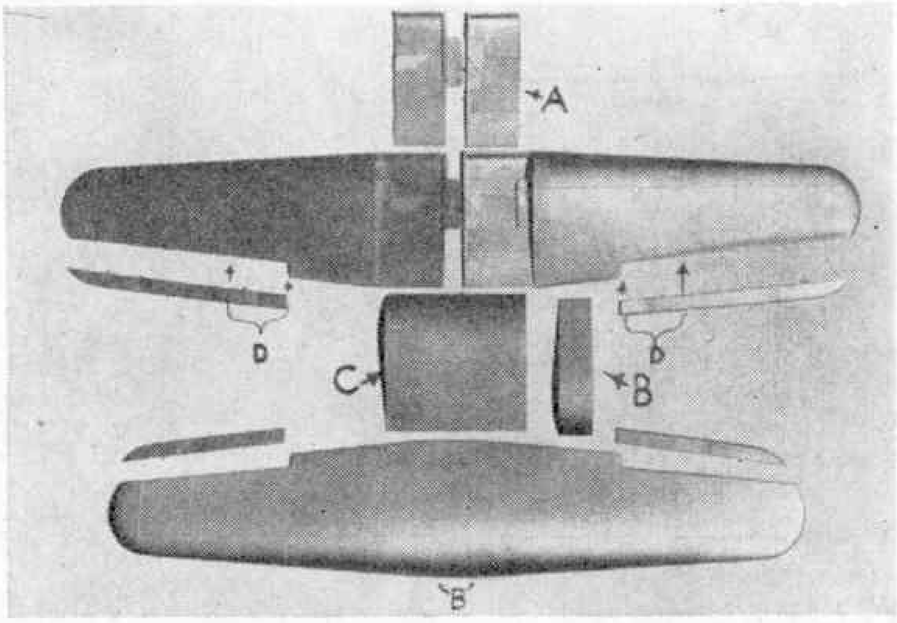

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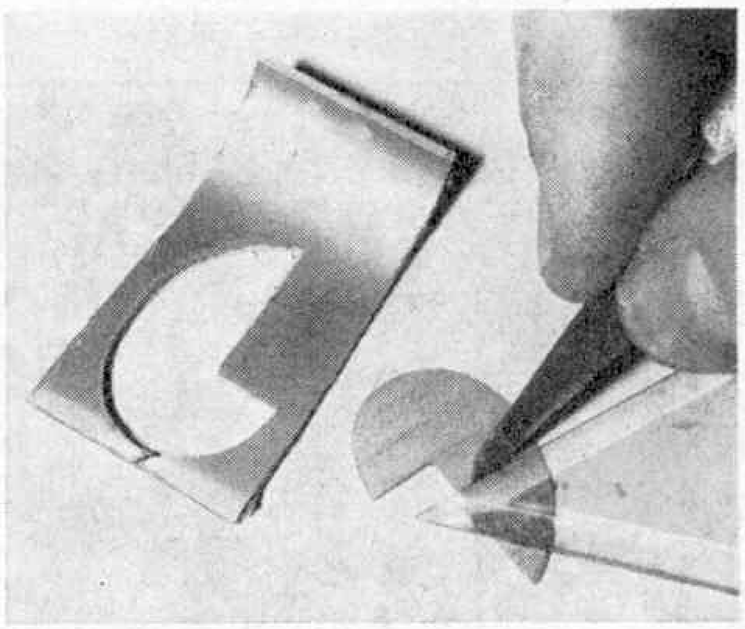


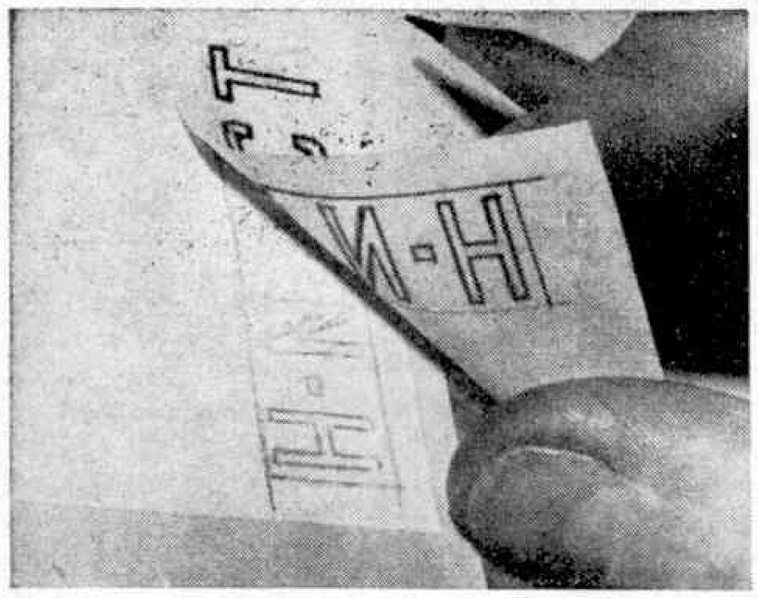
1 The upper and lower surfaces of the outer panels are cemented together and allowed to dry and the projecting inner ends of the lower surface are then sawn off at the end of the upper surface tongues (photo 1).

2 Photo 2 shows these sawn-off pieces as 'A'. Centre section 'C' is cut down so that it just fills the gap between the inner ends of the upper wing surfaces when the shortened lower surfaces are joined together. Make sure the upper wing surface has no dihedral, when the assembly is cemented together.

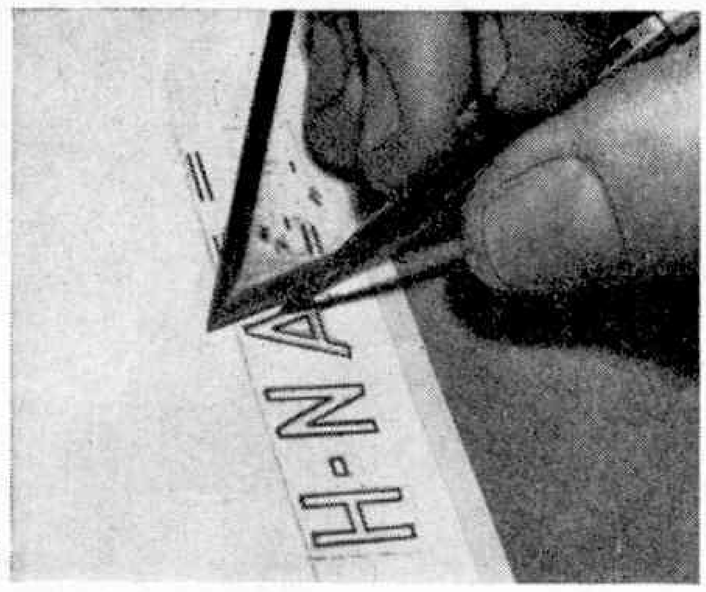
The inner section of the ailerons 'D' are cut off and cemented to the wing, filling in any cracks with body putty.

3 The new, larger and more rounded rudder is cut from the discarded upper centre section using a fretsaw or piercing saw. It is filed and sanded to a streamline section, and the rib lines scored on with a sharp knife. 'Fabric sag' can be simulated by sanding between the ribs with No. 360 wet-or-dry paper wrapped round a pencil. MORE→

JUST ONE JUPITER



1



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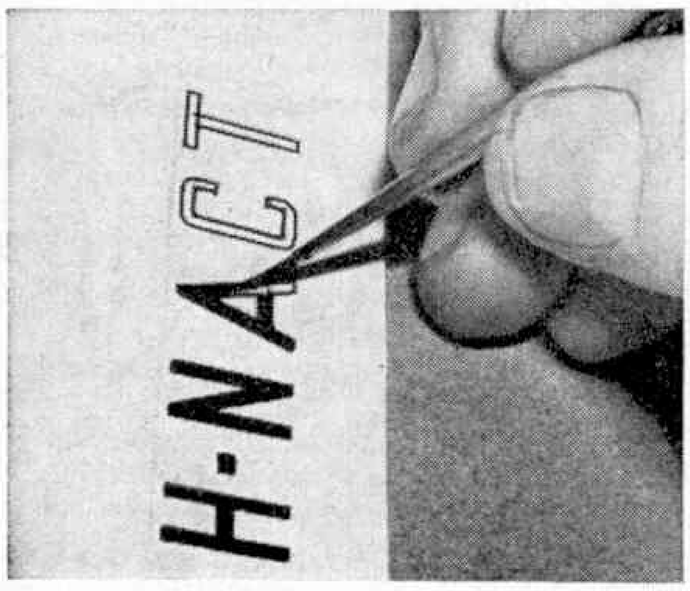

3

4

Making the Transfers

1 Trace the outline of the registration letters from the full size plan and rub them onto a piece of 'Yeoman' white transfer strip.

2 Using a draughtsman's ruling pen charged with black enamel (orange for the upper wing lettering) outline each letter. Do all the horizontal lines first, then the verticals and diagonals.

3 It is now a comparatively easy matter to 'fill in' the letters, using a No. OO brush.

4 Allow the transfers to dry *completely* and then soak in water and apply in the normal way, gently pressing them in place with a clean handkerchief.

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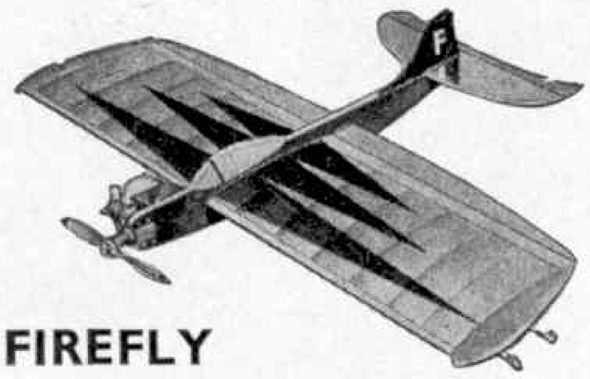

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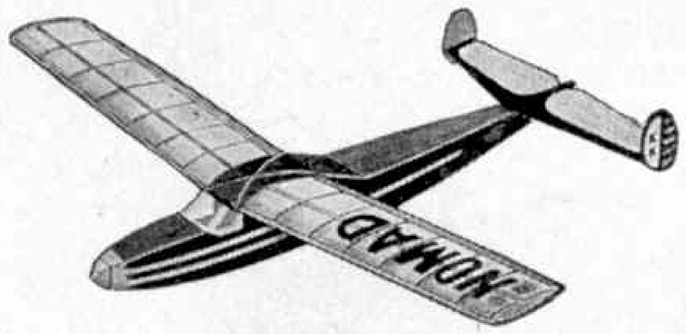
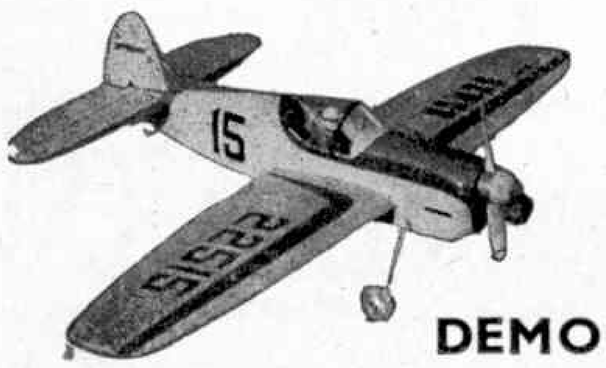


NOMAD

Beginner's model with fuselage parts, tailplane and fins in pre-cut, decorated sheet balsa. 20 in. span. **5/11**



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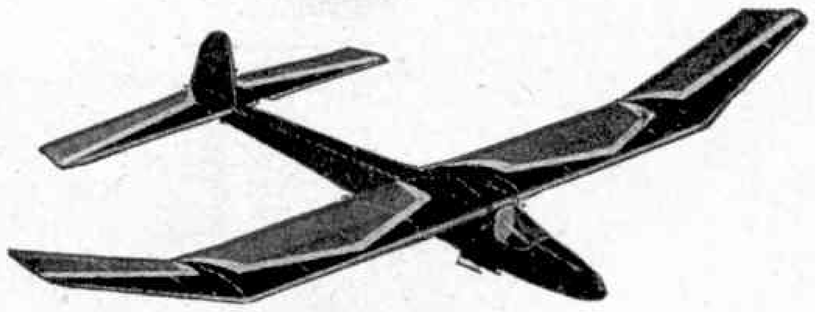

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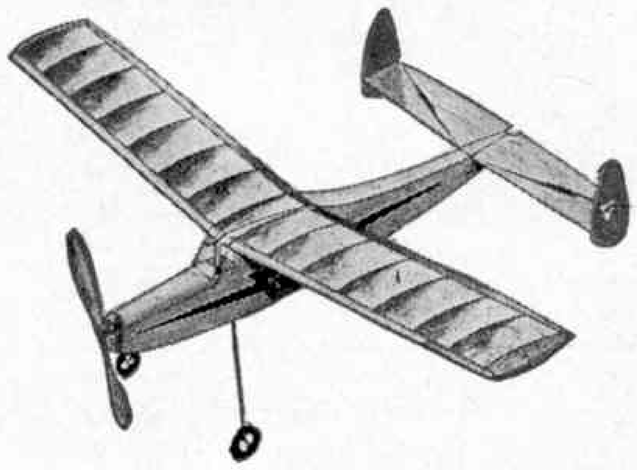

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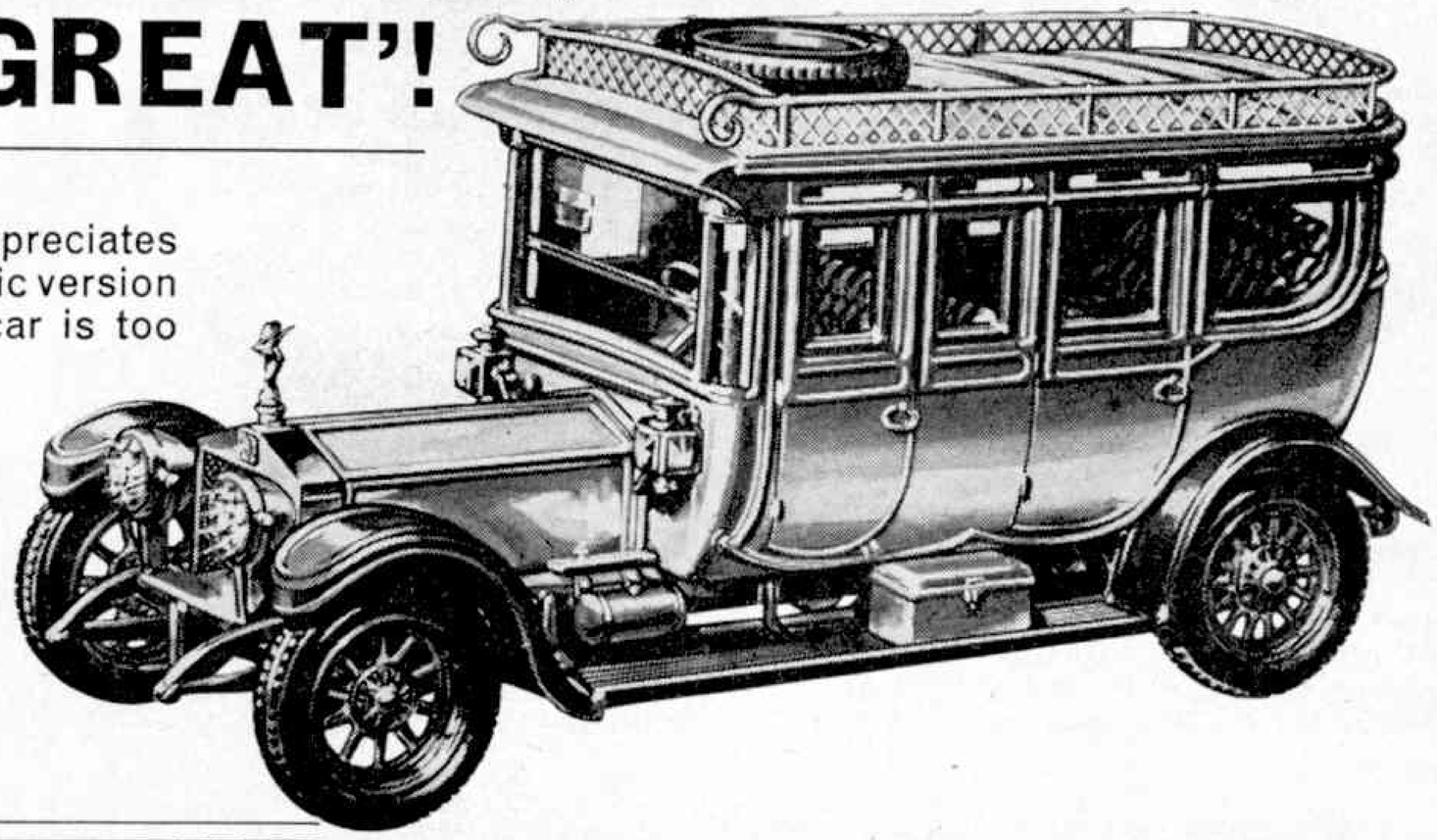

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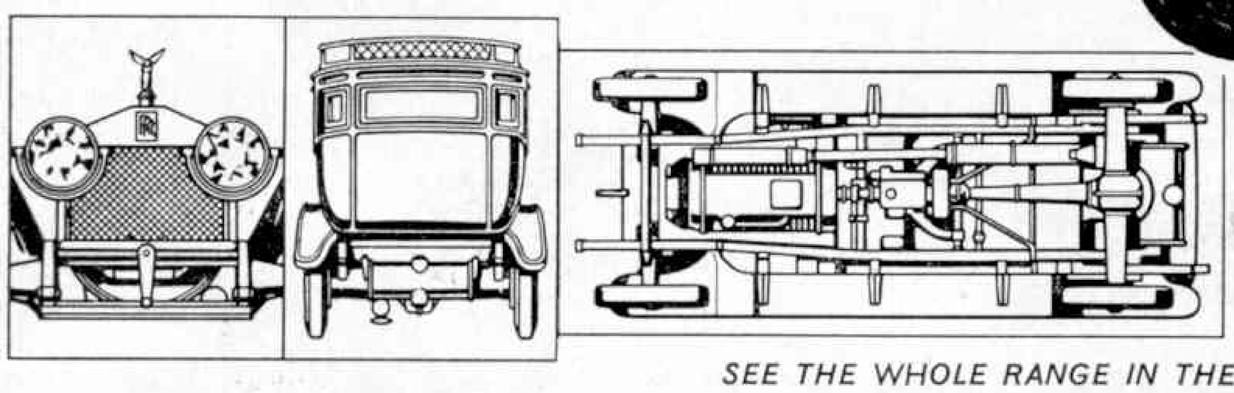

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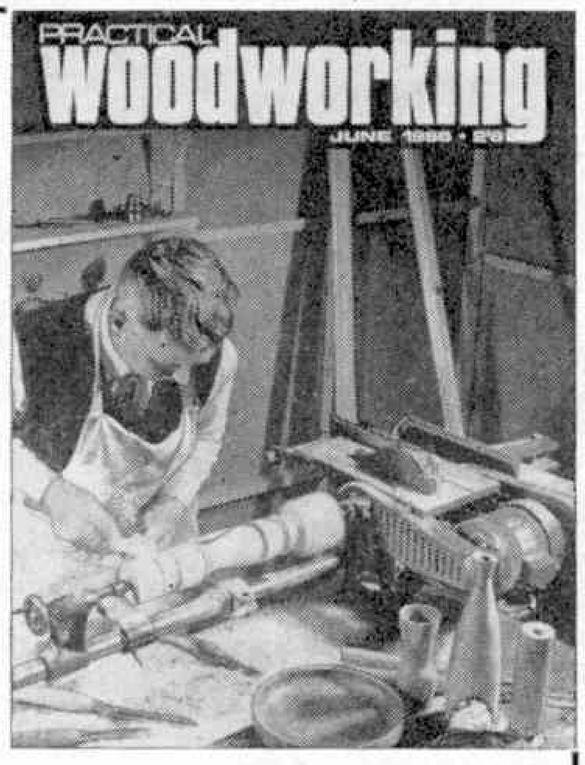

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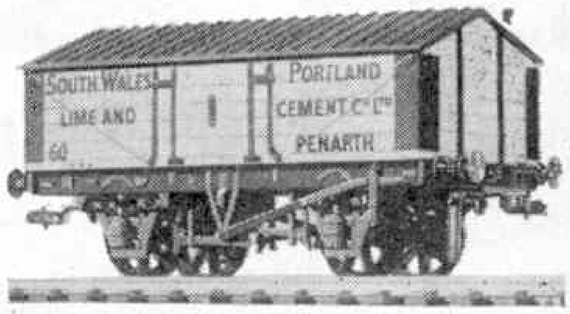

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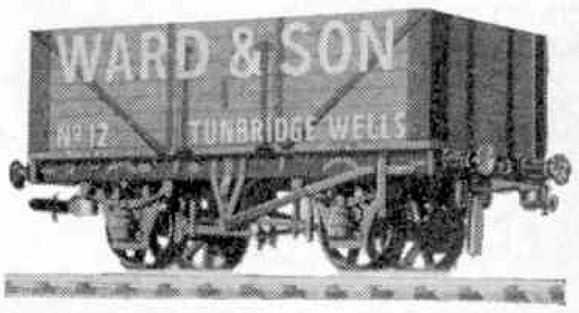

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Brown body with black strapping and corner plates. Lettering white, shaded black.

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FLIGHT PLAN'66 BY RAY MALMSTRÖM

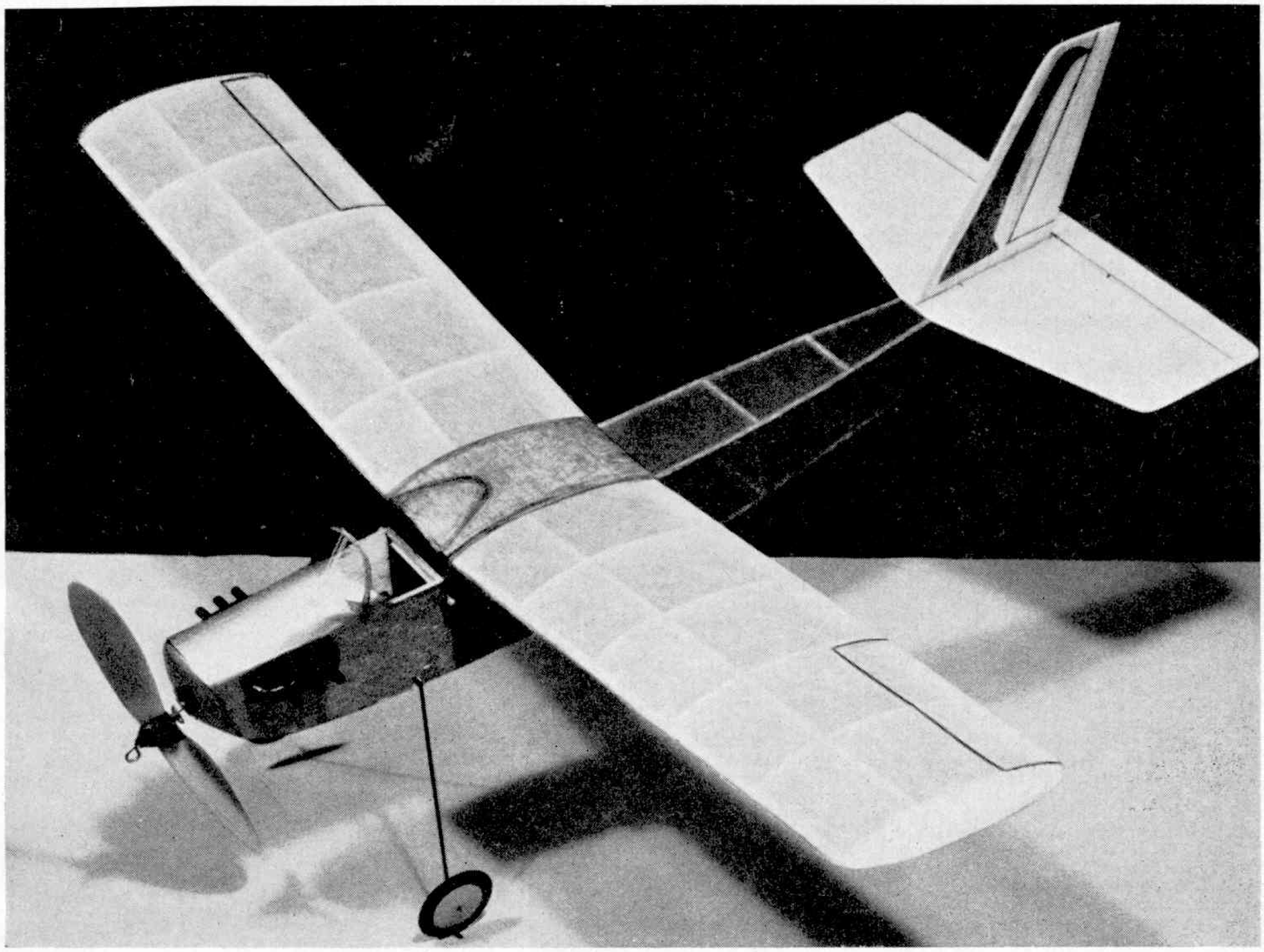
FLIGHT PLAN 66 has been devised to really help you successfully to build and fly a model aircraft. This month we present the plan, building instructions and sketches for THE MAGNUM—an attractive, easy-to-build semi-scale model. Next month we shall describe in detail with photos and sketches, the trimming and flying of this perky full-of-go model. If you are an absolute beginner to the thrilling hobby of aeromodelling then Flight Plan 66 is for you. Even if you are an aeromodeller already, we feel sure that you will find some useful tips in these articles—and anyway, you'll want to build and fly MAGNUM. So if you feel ready, let's roll out on to the runway and take off for a lot of building and flying fun.

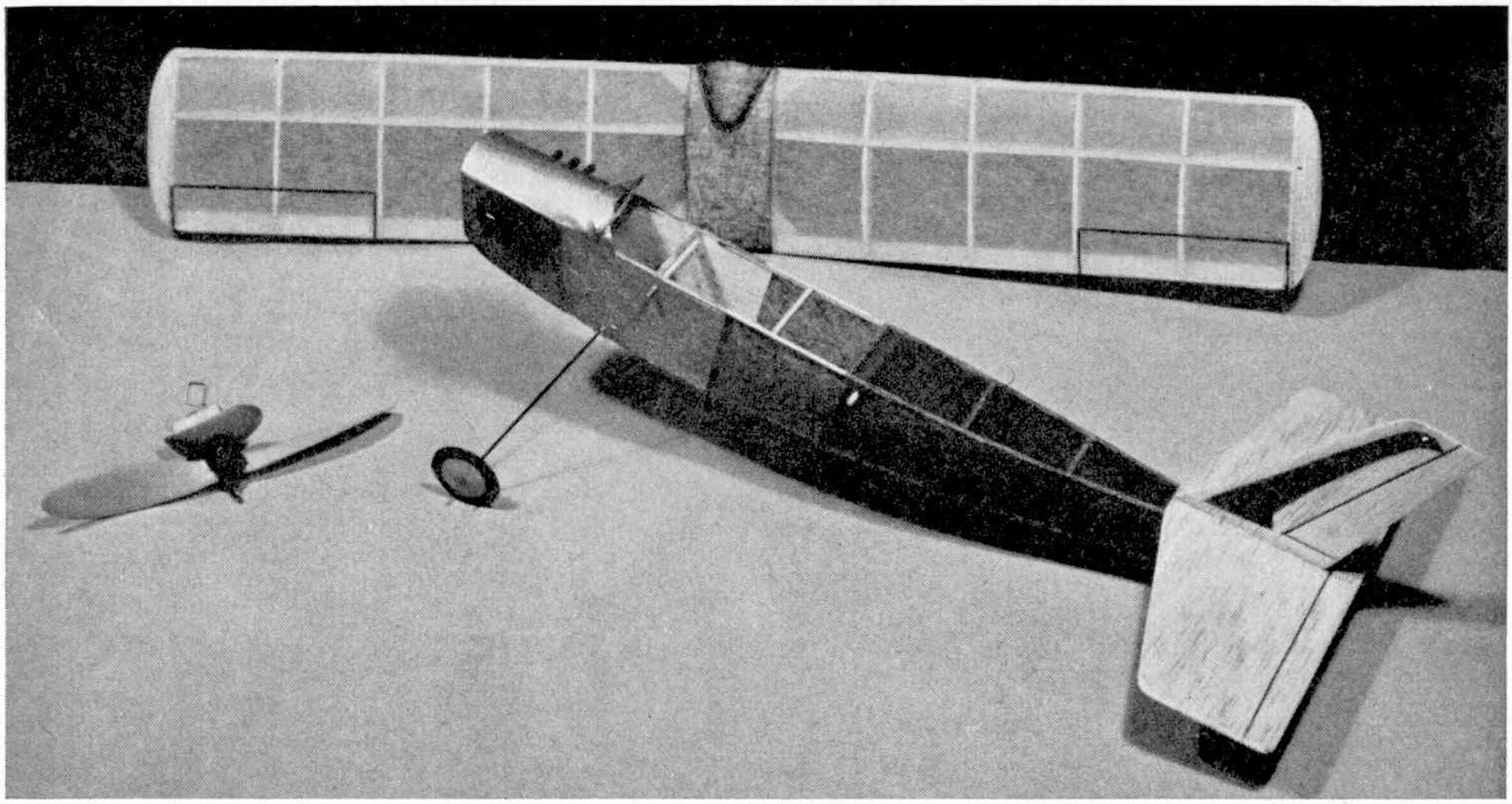
Building the fuselage

Before starting, check the materials list and have a flat board, pencil, tracing paper (or greaseproof), a couple of new single-edge razor blades, a steel rule, some modelling pins, fine sandpaper and a couple of soft brushes ready to hand. Trace the fuselage nose pieces from the plan, turn the tracing over and transfer it to $\frac{1}{16}$ sheet medium grade balsa. Use medium grade balsa (often marked by having the ends of the sheet and strip coloured green) for the entire structure of MAGNUM. Put two pieces of $\frac{1}{16}$ sheet together, hold at the corners with a spot of cement, and cut out two nose pieces together —you get two identical shapes this way. Remove the plan from your M.M. and pin to the board. Rub some candlewax over the outlines of fuselage and wings. This stops the cemented frameworks from sticking to the plan. Build one of the fuselage sides over the plan, using a nose piece and $\frac{1}{16}$ sq. balsa strip. Hold in place with modelling pins. (Packets from your hobby shop 6d. approx.) When dry lay a piece of tracing or greaseproof paper over the framework, having removed the pins. Over this framework build a second. The greaseproof paper will prevent the two sides sticking together. Cut the $\frac{1}{16}$ sq. cross pieces from the plan top view of fuselage. Start joining the fuselage with the six pieces marked Z on the constructional sketches. With a set square check that your fuselage sides really are square. This is important. Cut out former F1 ($\frac{3}{32}$ sheet) and the rear dowel peg pieces ($\frac{1}{16}$ sheet). When cross pieces Z are dry, pull the fuselage together, cement firmly and pin, until cement is dry. Then cement former F1 into the nose, holding with pins. Cement the rear dowel peg pieces in, and add the remaining cross pieces and formers Fla, F2. Add the triangular shaped gussets and drill a small ($\frac{1}{16}$ diameter) hole in the gussets and the sheet nose pieces to take the $\frac{1}{16}$ diameter wing retaining dowels. Bend the wire tail skid (20 gauge wire) and bind and cement to rear fuselage upright. Bend the undercarriage to shape from 20 gauge wire. Bind the under-

PART I 'THE MAGNUM'

A semi-scale rubber powered shoulder wing monoplane





carriage wire to the undercarriage former ($\frac{1}{16}$ sheet) and smear cement over the thread, binding as for the skid. Then cement the undercarriage former into the slot in the fuselage nose pieces. Sheet-in under the nose with a piece of $\frac{1}{16}$ sheet tightly, rub down the entire fuselage framework with a piece of very fine sandpaper. Take care over this as it will help to ensure a good tissue covering. Cut the fin and tailplane from $\frac{1}{16}$ sheet. Round-off the edges and give one coat of clear dope. Remember to dope only one side at a time, pinning the fin and tailplane to the building board while dope is drying. This is important to avoid warps. Warps are often the cause of a model failing to fly well or, indeed, at all! Cut the cowling from a piece of thin notepaper, curve and cement to nose pieces, over Fla and F2. Cut the dashboard from the plan and cement to F2.

Covering and Finishing

Now cut four pieces of lightweight Modelspan tissue paper, making each piece about $\frac{1}{2}$ in. bigger all round than the fuselage sides, top and bottom. Smear tissue paste on the framework and then lay on the first piece of tissue paper, smoothing out the wrinkles towards the edges. Allow tissue paste to dry and then with a sharp razor blade carefully, trim off the excess tissue paper. Repeat this procedure for the other three sides. Leave the last section of the underneath of the fuselage open for access to the rubber motor. With a very soft brush paint water all over the covering and allow to dry. Finally, again using a soft brush, put on a thin coat of clear dope (small bottle of dope 9d. from hobby shop), give the sheet nose pieces a coat of clear dope as well. The nose and cowling can then be painted silver or bronze using a small tin (9d.) of Humbrol paint. You can now add the wheels (streamlined plastic 1 in. diameter 2d. or 3d. a pair). A quick and neat way of retaining the wheels is to get a piece of plastic electrical tubing, remove the centre wire, and then push a $\frac{1}{8}$ in. length on to the axle. It must be a tight fit. When the dope and paint are dry you can cement the tailplane and fin in position. Make sure they are at right angles to fuselage and each other. They can be accurately pinned while the cement dries. Make the cylinder blocks from $\frac{1}{4}$ in. sheet balsa, and the cylinders are pieces cut from an old biro refill tube. Make holes in the cylinder pieces and push in the tubes. The cylinders and pipes can be painted black before assembling to the fuselage nose. Cut the windscreen from thin acetate sheet (obtainable from your model shop) and cement firmly in place. Cut a length of dowel ($\frac{1}{8}$ in. diameter) and insert through dowel pieces in end of fuselage. Add the $\frac{1}{16}$ in. diameter wing dowels, cementing in place.

The Noseblock

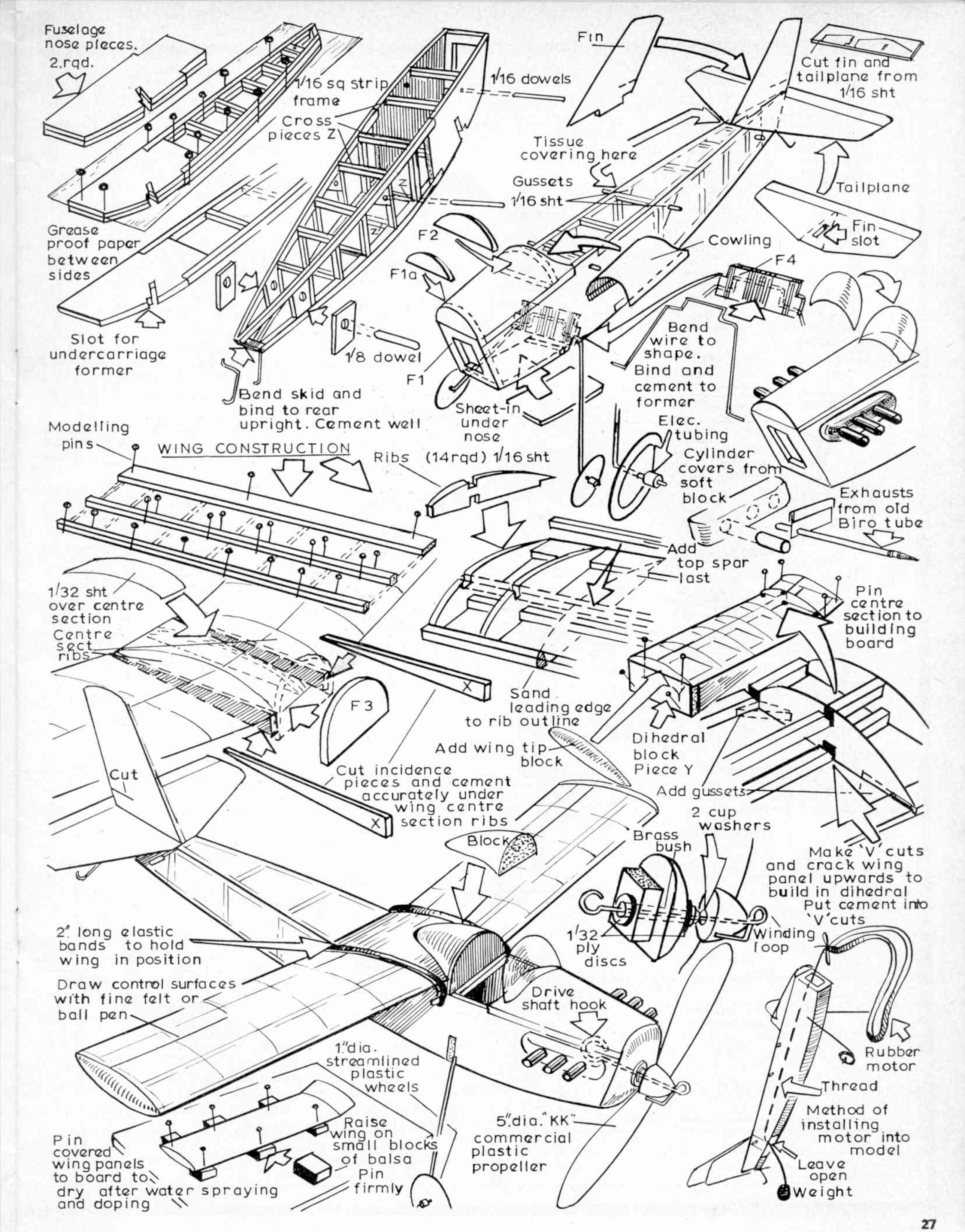
Build up the noseblock from $\frac{1}{4}$ in. sheet. Please remember the noseblock is a very important part of your model, so do make it accurately. It is not difficult if you take your time. Cement the spigot to the rear of the noseblock, and use a drill to accurately drill the hole for the 20 gauge brass bush. The two small discs of $\frac{1}{32}$ plywood hold this brass bush firmly in place. You can obtain a small piece of scrap $\frac{1}{16}$ ply from your hobby shop. See the spigot of the noseblock fits firmly into the opening in F1. Bend a winding loop (use a pair of sharp-nosed pliers) in a length of 20 gauge wire. Insert the wire through the 5 in. diameter K.K. plastic propeller (obtainable from your model dealer), slip a couple of cup washers on the shaft through the brass bush. Finally, bend a hook for the rubber motor on the end of the shaft. A spot of thin oil on the shaft will ensure the propeller revolves freely. Give the noseblock two coats of clear dope.

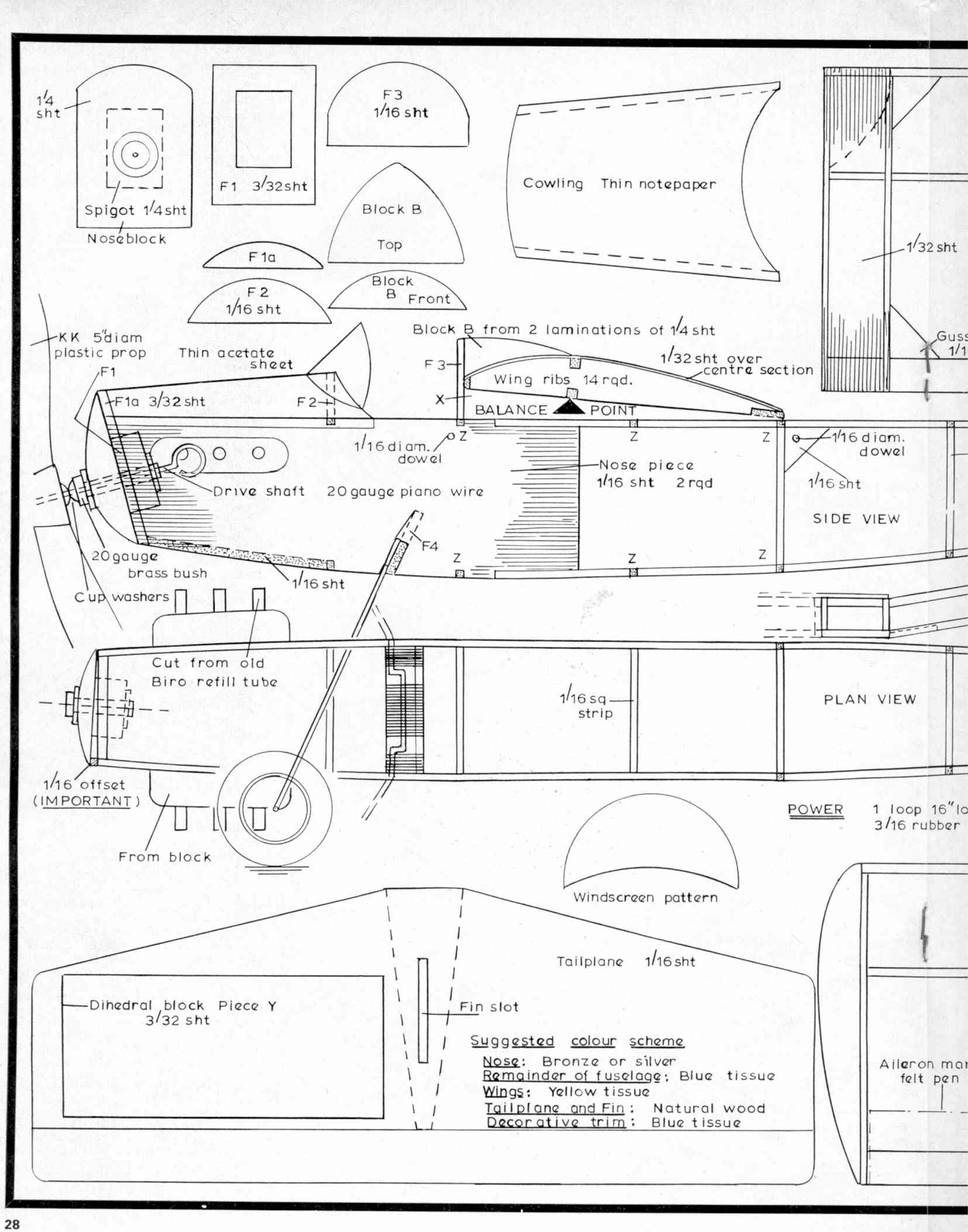
The Wing

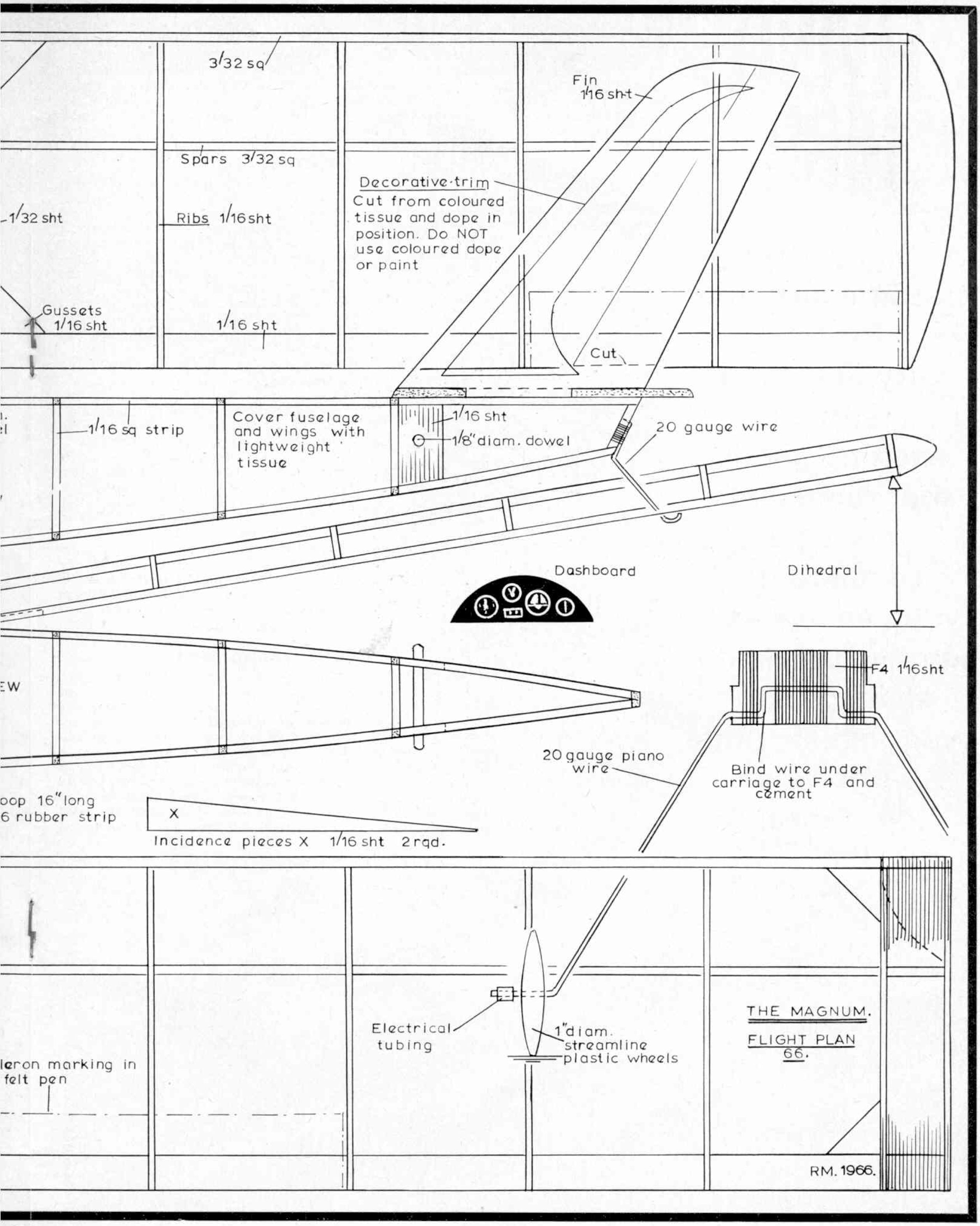
And now to the wing. The wing is built in two halves, and then cemented together at the centre ribs to complete. Pin the leading edge, lower mainspar, and trailing edge over the plan. Cut out 14 ribs from $\frac{1}{16}$ sheet, slot them into position over the centre spar, cementing each firmly to it, and to the leading and trailing edges. Add the top centre spar last. When dry remove from plan. Make a left and right hand wing panel. Now very carefully make 'V' cuts (see building sketches) in the sparts. Do not cut right through. Pin the centre section half to the board and raise the wing tip upwards (to give dihedral angle to the wing). Place under the wing tip dihedral block piece Y. Pin piece Y to board, and tip rib to piece Y. Put cement into and around the 'V' cuts and allow to dry. Add the gusset pieces (see sketches and plan). Both wing panels are then joined together to form the completed wing frame. Sandpaper the leading edge to a rounded shape. Lightly sandpaper the whole frame and cover with four pieces of tissue, water shrinkage and doping as for the fuselage, but remembering to pin the wing panels to the building board, using little balsa blocks as shown in the construction sketches. Cement the two incidence pieces X under the ribs as the wing centre section. These are very important. Cover the top of the centre section with $\frac{1}{32}$ sheet. Add former F3 and the fairing block. Give the centre section one coat of clear dope. The building of your MAGNUM is now complete. Hold the wing in place with two 2 in. rubber bands, and install the rubber motor as shown in the last construction sketch. The second article in Flight Plan 66 will deal with balancing, trimming and flying your MAGNUM—so, see you in a month's time!

Materials List

2 lengths $\frac{3}{32}$ in. by $\frac{3}{32}$ in. by 36 in. balsa strip
2 lengths $\frac{1}{16}$ in. by $\frac{1}{16}$ in. by 36 in. balsa strip
1 sheet $\frac{1}{16}$ in. by 3 in. by 36 in. balsa
1 piece $\frac{3}{32}$ in. by 3 in. by 3 in. balsa sheet
1 piece $\frac{1}{4}$ in. by 3 in. by 6 in. balsa sheet
1 piece $\frac{1}{32}$ in. by 3 in. by 4 in. balsa sheet
36 in. length 20 gauge piano wire
1 20 gauge brass bearing bush
2 20 gauge cup washers
1 small piece of $\frac{1}{32}$ in. plywood
1 KeilKraft (KK) 5 in. diameter two blade plastic propeller
1 biro refill tube (used)
1 (or 2 if a two-colour model is desired) sheets lightweight Modelspan tissue
Small piece of notepaper
Small piece of thin acetate sheet
6 in. length $\frac{1}{16}$ in. diameter dowel rod
1 in. length $\frac{1}{8}$ in. diameter dowel rod
Linen thread
1 pair 1 in. diameter streamlined plastic wheels
Length of electrical tubing
1 tube Balsa cement
1 tube tissue paste
1 tube rubber lubricant
1 36 in. length of $\frac{3}{16}$ in. wide rubber strip
2 2 in. rubber bands
1 small bottle of clear dope


Fuselage nose pieces. 2.rqd.
1/16 sq strip frame
Cross pieces Z
1/16 dowels
Fin
Cut fin and tailplane from 1/16 sht
Tissue covering here
Gussets 1/16 sht
Tailplane
Fin slot
Grease proof paper between sides
F2
F1a
Cowling
F4
Slot for undercarriage former
1/8 dowel
F1
Bend wire to shape. Bind and cement to former
Bend skid and bind to rear upright. Cement well
Sheet-in under nose
Elec. tubing
Cylinder covers from soft block
Exhausts from old Biro tube
Modelling pins
WING CONSTRUCTION
Ribs (14rqd) 1/16 sht
Add top spar last
1/32 sht over centre section
Centre sect ribs
Pin centre section to building board
F3
Sand leading edge to rib outline
Dihedral block Piece Y
Add wing tip block
Cut
Cut incidence pieces and cement accurately under wing centre section ribs
Add gussets
2 cup washers
Block
Brass bush
Make 'V' cuts and crack wing panel upwards to build in dihedral
Put cement into 'V' cuts
2" long elastic bands to hold wing in position
1/32 ply discs
Winding loop
Draw control surfaces with fine felt or ball pen
Drive shaft hook
Rubber motor
1" dia. streamlined plastic wheels
Thread
Method of installing motor into model
Raise wing on small blocks of balsa
5" dia. "KK" commercial plastic propeller
Pin covered wing panels to board to dry after water spraying and doping
Pin firmly
Leave open
Weight


1/4 sht
Spigot 1/4 sht
Noseblock
F1 3/32 sht
F3 1/16 sht
Block B Top
Cowling Thin notepaper
F1a
F2 1/16 sht
Block B Front
1/32 sht
Gus
1/1
KK 5" diam plastic prop
Thin acetate sheet
F1
F1a 3/32 sht
F2
Block B from 2 laminations of 1/4 sht
F3
1/32 sht over centre section
Wing ribs 14 rqd.
X
BALANCE POINT
1/16 diam. dowel
Z
Nose piece 1/16 sht 2 rqd
1/16 diam. dowel
1/16 sht
SIDE VIEW
Drive shaft
20 gauge piano wire
F4
20 gauge brass bush
1/16 sht
Cup washers
Cut from old Biro refill tube
1/16 sq strip
PLAN VIEW
1/16 offset (IMPORTANT)
From block
POWER
1 loop 16" lo
3/16 rubber
Windscreen pattern
Tailplane 1/16 sht
Dihedral block Piece Y 3/32 sht
Fin slot
Suggested colour scheme
Nose: Bronze or silver
Remainder of fuselage: Blue tissue
Wings: Yellow tissue
Tailplane and Fin: Natural wood
Decorative trim: Blue tissue
Aileron ma
felt pen


3/32 sq
Fin
1/16 sht
Spars 3/32 sq
Decorative trim
Cut from coloured tissue and dope in position. Do NOT use coloured dope or paint
1/32 sht
Ribs 1/16 sht
Gussets
1/16 sht
1/16 sht
Cut
1/16 sq strip
Cover fuselage and wings with lightweight tissue
1/16 sht
1/8" diam. dowel
20 gauge wire
Dashboard
Dihedral
F4 1/16 sht
20 gauge piano wire
Bind wire under carriage to F4 and cement
X
Incidence pieces X 1/16 sht 2 rqd.
Electrical tubing
1" diam. streamline plastic wheels
THE MAGNUM.
FLIGHT PLAN
66.
RM. 1966.

FLYING HIGH

Dinky Toys become airborne for the very first time with an exciting glider that represents the type of machine you can see any summer weekend, soaring high over a windy ridge —effortless as a bird.

'YOU must be joking,' I said when I heard that Meccano Limited planned to introduce a revolutionary new item into their Dinky Toy range—a glider that would really fly! I must admit that I was sceptical. Knowing how particular Meccano is about producing Dinky Toys as close to scale as possible, I thought it would be impossible for them to make a glider small enough to appear realistic beside an ordinary Dinky Toy and yet large enough to fly properly. 'No,' I said. 'It'll either be far too big, or else it'll fly like a stone.'

All this was quite some time ago. Since then I have seen the glider and I don't mind stating that I was completely wrong. Not only does it fly extremely well, but it does not look the least bit out of place with any ordinary Dinky model, as is proved by the fact that it is marketed as part of a self-contained set complete with transporter towed by an 'ordinary' Dinky model. The Set is numbered 118 and is officially titled Tow-Away Glider Set. Moulded in high-impact polystyrene, the Glider itself is in four component parts—fuselage, two wing sections and a tailplane—which fit together to produce the finished model. No glue is required and the operation is quite straightforward. Tabs at the root of each wing section simply fit into corresponding slots in the fuselage and they are so designed as to ensure that the correct wings are in the correct positions. The only thing to watch is the tailplane. This has two tiny 'Vs' cut into each edge, those in one edge being slightly further apart than those in the other. The front or leading edge should carry the more widely spaced ones.

When dismantled, the Glider is carried in the earlier-mentioned Transporter. Six inches long, this, too, is moulded in polystyrene, being fitted with a lift-off transparent plastic cover and drop-down tailboard. The Glider parts slot neatly into special racks inside. Finish is in off-white with 'Southdown Gliding Club' in large red letters on each side. On the tailboard the warning 'Caution 22 ft. Long Trailer' appears, together with a band of diagonal red stripes, half leaning to the right and half to the left. To complete the colourful picture, the glider fuselage is red and the wings and tailplane yellow.

Loaded and ready for travel, the Transporter is hitched to the towing vehicle by a swivelling tow-bar. The towing vehicle contained in the Set is a Triumph 2000, finished in ivory with a blue roof and red interior. Features include opening bonnet, covering a detailed engine, opening boot, containing 'luggage', windows, seats and steering wheel, plus Prestomatic steering and four-wheel suspension. The luggage comes in the form of two little suitcases which themselves are pretty well detailed.

Airborne!

In flying trim, the Glider has a wing span of 9¼ in. It can be launched either by hand or with the special catapult included in the Set. If the latter method is used, however, it is essential that the Glider be held beneath the wings, otherwise results will be rather disappointing. In my first attempts I made the mistake of holding it by the fin, only to find that it didn't work at all. It was not until I had studied the flying instructions (as I should have done in the first place) that I discovered where the trouble lay.

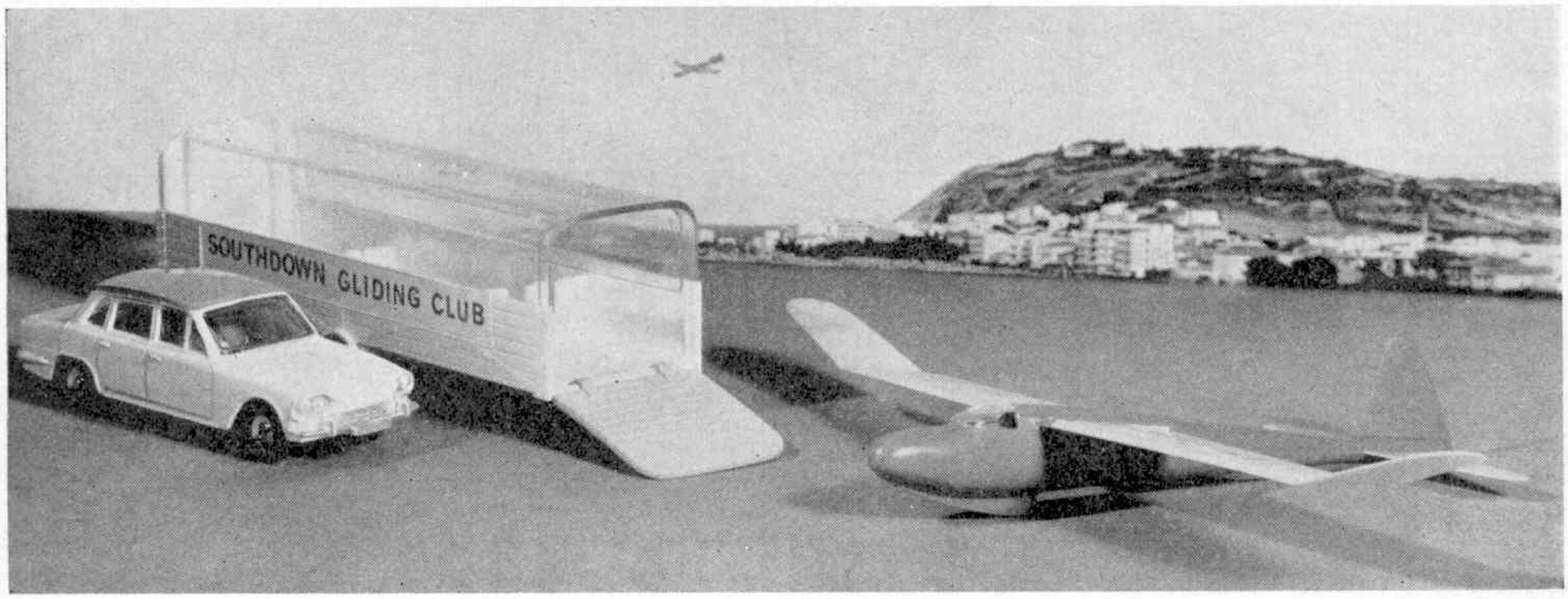
Wind speed and direction play an important part in flying the aircraft, so much so, in fact, that a special leaflet is included in the Set. This shows the recommended directions in which to launch the model in relation to the wind. For example, it is not advisable to launch directly into wind, but rather, slightly across wind. Remember, too, that the Glider should not be flown in *very* windy weather, although *some* wind is desirable. You will, of course, be able to discover the ways of obtaining the best results by carrying out your own test flights.

One last and very important point—the Glider is designed to come apart if it should crash. This is to reduce the danger of damage so, if it should happen to your model, don't think it's faulty. It's not!

Have you seen one?

Turning now to a totally different subject, ask yourself what is the most common type of car seen on the roads of Britain today. The chances are that you, like me, will opt for the B.M.C. Mini. I don't know if this is statistically correct, but I do know that there are an enormous number of Minis, of one type or another, in evidence all over the country. In spite of this, however, there is one particular version of the Mini which could be classed almost as a rarity, especially in towns and

Dinky Toys Tow-Away Glider Set. This revolutionary set contains a little glider which really flies



Solutions to puzzles on page 9

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I	R	A	N		O		P			M		A		A
	A		F		O		O			B	O	R	E	D
I	D	I	O	T	S		T	U	B	A		R		V
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S	I	X	T	H		V		S		O				S
S		E		U	P	O	N		C	R	E	A	S	E
H	A	R	E	S		K			E		N		P	
A		C		I	D	E	A		L	E	A	D	E	R
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Quick Quiz

1. Sydney, N.S.W., Australia.
2. 2.54.
3. True.
4. Canada (Maple leaf).
5. Peter Pan.
6. An Englishman—Sir Jack Hobbs, who scored 61,237 runs during his career with Surrey and England.

Tricky Teasers

A. Salisbury, Nuneaton, Maidstone, Leith or Louth, Swansea, Truro, Gloucester, Yarmouth, Scarborough, York, London, Southsea.
B. A, at, art, dart, trade, tirade.
C. 22 crowns and 38 sixpences.
D. (1) Both contain The Alps. (2) Both are lakes. (3) Both islands. (4) Capital cities of Eire and Wales, respectively. (5) Both countries are republics.

cities. I, at least, have only ever seen one of them in real life and yet I find this version to be most fascinating of all. As you will have guessed, I am referring to the Mini Moke—that rugged 'cross-country cousin' of the ordinary Mini saloon.

The full-size vehicle may be rare, but I have no doubt that a certain miniature Mini Moke will be one of the most common sights of all before very long. The Moke in question?—the latest Dinky Toy release, number 342.

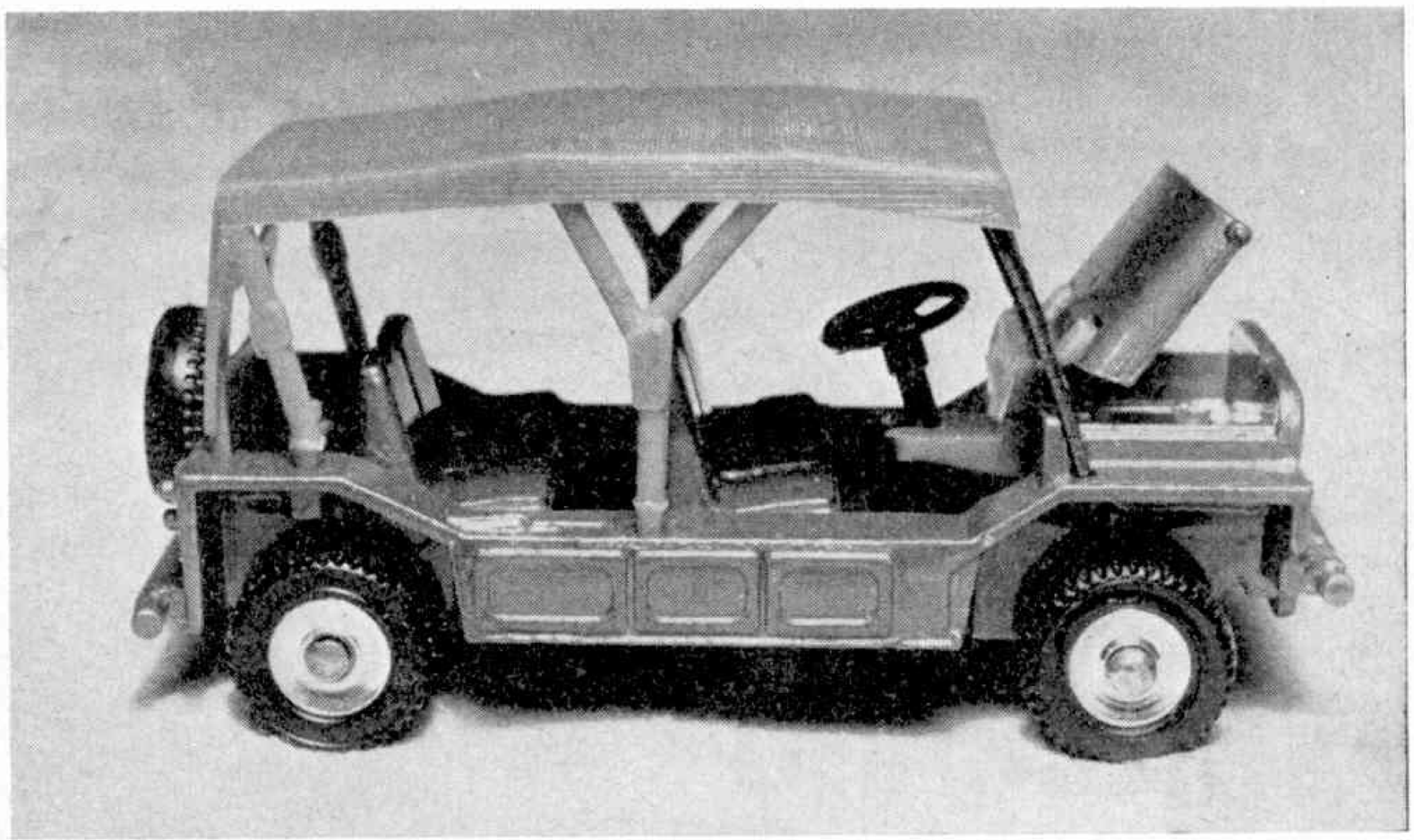
I must stress that the new Dinky Moke is not meant to be a luxury model, just as the real-life vehicle is not meant to be a luxury car. Rather, it is designed as an inexpensive replica which will fall within the resources of all collectors (it only costs 4s. 11d.). Inexpensive it may be, however, but it's still a top-quality job and an excellent reproduction of the original, from the distinctive radiator grille right down to the ribbed floor and 'storage lockers' along the sides. In addition, it is equipped with an opening bonnet, engine, windscreen, steering wheel and spare wheel at the back, PLUS, of all things, a detachable hood! The hood-stays and imitation 'canvas' cover are moulded as one unit which can easily be fitted in place simply by inserting the stays into special slots in the body casting.

Transverse engine

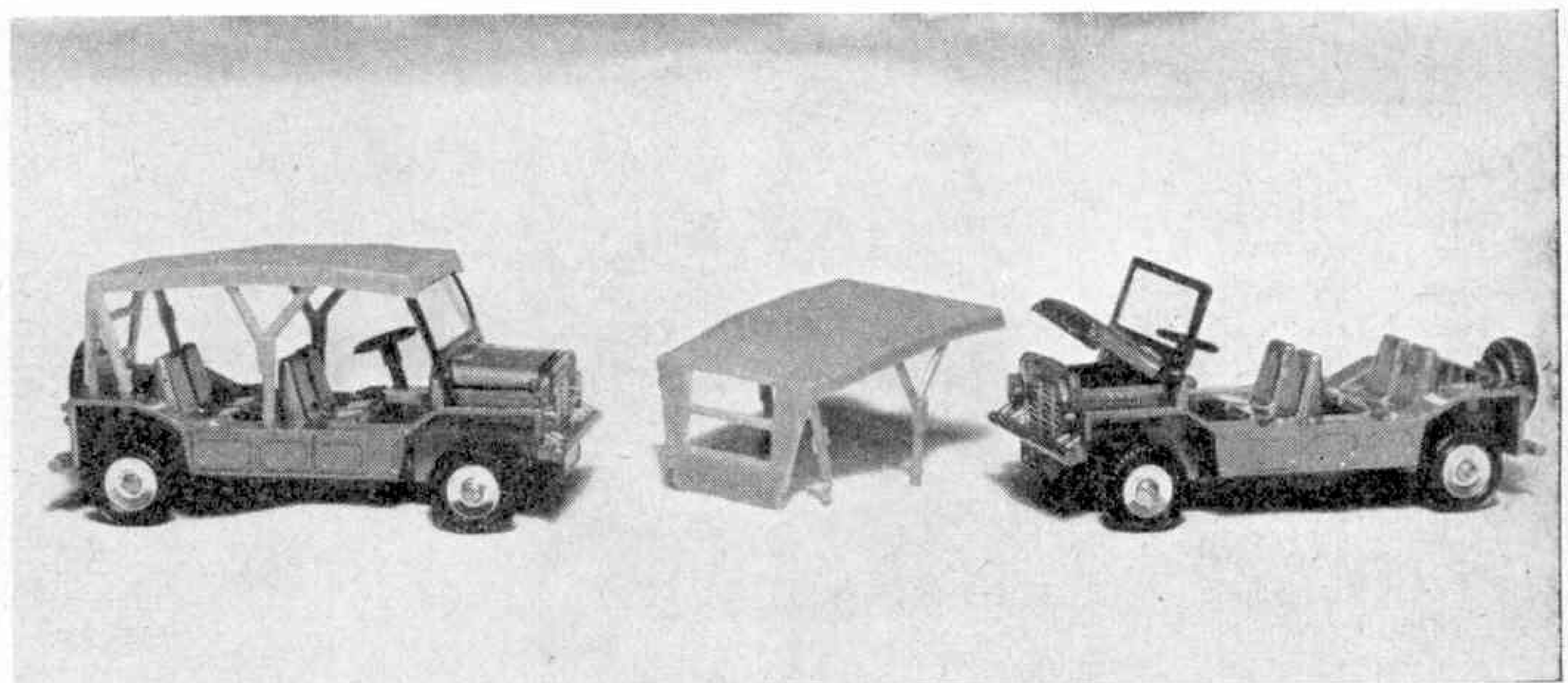
The full-size Moke is powered by the standard Mini power unit—a 4-cylinder engine of 848 c.c. capacity, developing 34 b.h.p., that gives the vehicle a maximum speed of 70 m.p.h. As with all Minis, it is mounted transversely and drives the front wheels. The 'engine' fitted to the model is a well-detailed representation of this power unit.

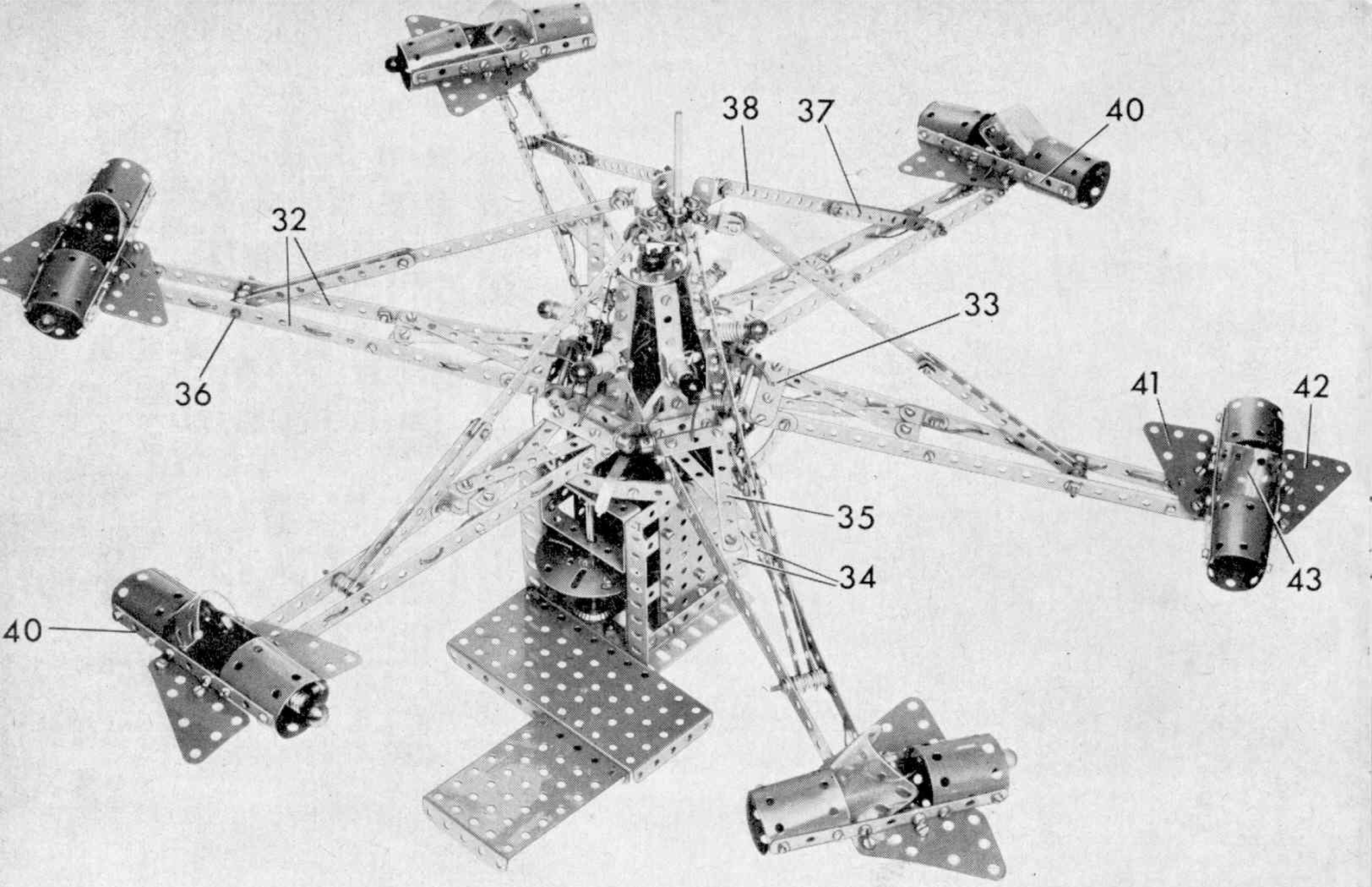
Finally, the approximate overall dimensions of the model are: length $2\frac{7}{8}$ in.; width $1\frac{1}{4}$ in.; height (with cover) $1\frac{7}{16}$ in.; height (without cover) $1\frac{3}{8}$ in.; wheelbase $1\frac{7}{8}$ in.

Chris Jelley



Finished in metallic green with khaki cover, the Dinky Toy Mini-Moke is a fascinating model. The hood is removable. The Mini-Moke in real life is shown in the top photo



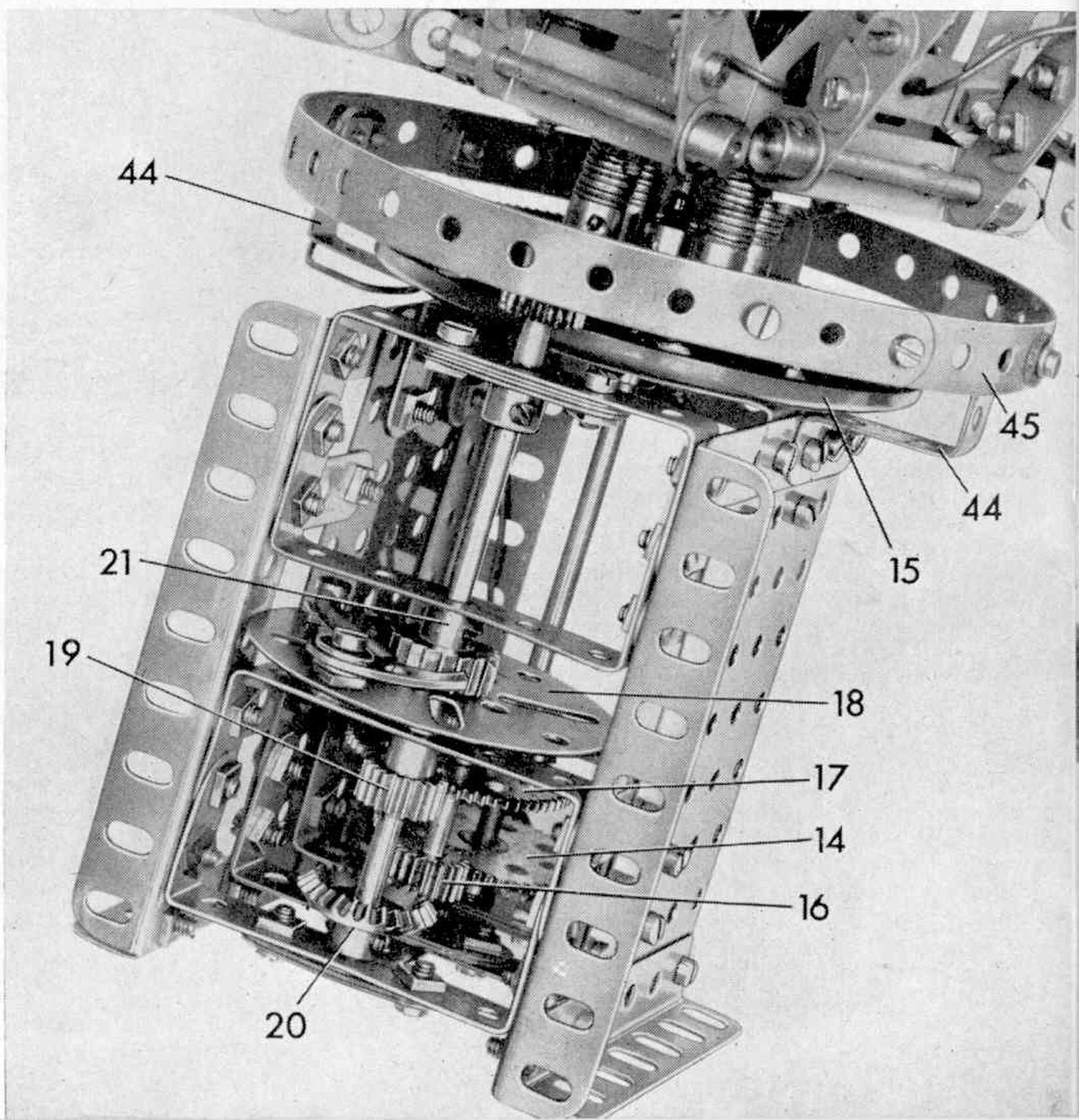


FAIRGROUND OCTOPUS IN MECCANO

BY SPANNER

MECCANO LIMITED'S stand at last year's National Model Show in London featured an attraction that drew and captivated visitors of all ages. On show was a striking miniature fairground, consisting of three specially-designed, large display models —a Dive-bomber, an Octopus Roundabout and a Big Wheel. Since the exhibition, Meccano Magazine has been inundated with requests from readers, asking for building instructions for these models, and in response to these requests we described the Big Wheel in last December's issue. This month it's the turn of the Octopus Roundabout.

It must be stressed that the Roundabout is a special model, designed for display at exhibitions or in shop windows, where it is required to operate continuously for several



hours at a time. Because of this, a special low-speed, fractional-horse-power motor was incorporated, rather than one of the standard Meccano power units, none of which should be run for extended periods. Both the motor and the model were mounted on a wooden baseboard, but I have removed this and added a couple of Flanged Plates to provide an anchoring point for any suitable motor that you might possess. The drive, incidentally, is transferred to the model via the $\frac{7}{8}$ in. Bevel Gear, numbered 20 in the illustrations.

Looking at the illustrations, you will notice that the model incorporates some rather unusual lamp holders. This is because it was designed before the introduction of the Elektrikit, when the standard Meccano Lamp Holders were not in production. The standard Holders can easily be fitted, however, perhaps with a few minor modifications in the construction of the aeroplanes, but the following building instructions apply to the Roundabout, as illustrated.

Base and Gear Box

A box framework is built up from four $4\frac{1}{2}$ in. Angle Girders 1 joined along three sides at the bottom by one $2\frac{1}{2}$ in. and two $3\frac{1}{2}$ in. Angle Girders. On the fourth side Girders 1 are joined by a $5\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flanged Plate, extended by a $3\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flanged Plate, and a $2\frac{1}{2}$ in. by 1 in. Double Angle Strip 2, a similar Double Angle Strip 3 being bolted in position at the top. A further two $2\frac{1}{2}$ in. by 1 in. Double Angle Strips 4 and 5 are added as shown. These Flanged Plates, incidentally, provide the base for the motor.

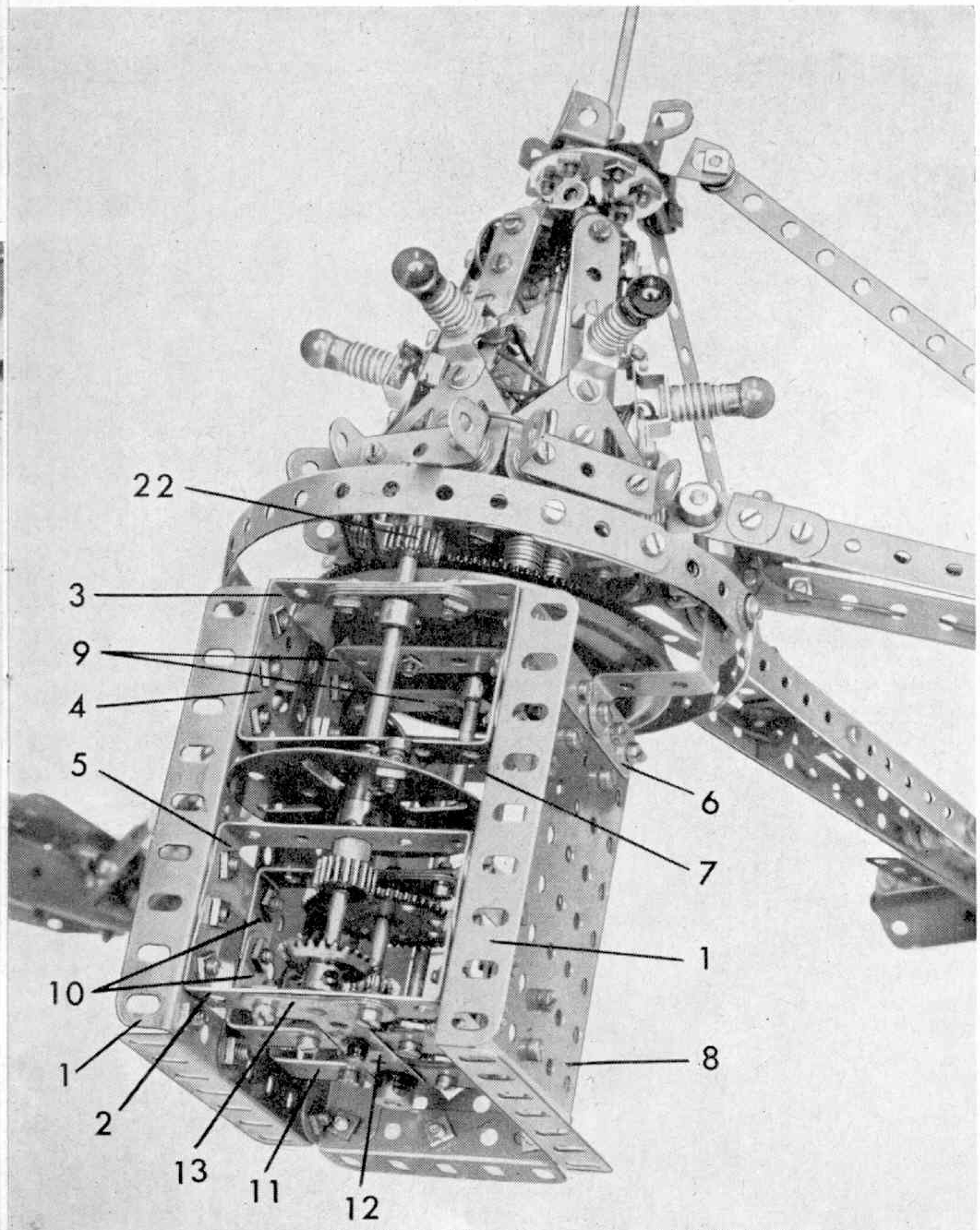
At the top, Girders 1 are connected on two opposite sides by $3\frac{1}{2}$ in. Strips 6, and on the third side by $2\frac{1}{2}$ in. Angle Girders 7. Bolted between each Strip 6 and the corresponding $3\frac{1}{2}$ in. Angle Girder is a $4\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flat Plate 8, which is also connected to the front Angle Girder 1 by two $1\frac{1}{2}$ in. Strips. Two $2\frac{1}{2}$ in. by 1 in. Double Angle Strips 9 are then bolted between the Flat Plates at the top, while another two $2\frac{1}{2}$ in. by 1 in. Double Angle Strips 10, arranged to form a square, are bolted between the Plates at the bottom.

Yet another Double Angle Strip 11 is added and this is connected to Double Angle Strip 2 by a $2\frac{1}{2}$ in. Strip 12. This is not, itself, bolted in position, but is trapped against Double Angle Strip 2 by two $1\frac{1}{2}$ in. Strips 13, which are bolted in place. Another two $1\frac{1}{2}$ in. Strips are bolted to Double Angle Strip 10 to provide extended bearings for a $10\frac{1}{4}$ in. Rod that carries a 57-teeth Gear Wheel 14 above the $1\frac{1}{2}$ in. Strips and a Collar below the Double Angle Strip. It is this Collar which fixes Strip 12 to Double Angle Strip 11. The $10\frac{1}{4}$ in. Rod, incidentally, is obtained by sawing down a $11\frac{1}{2}$ in. Rod. The Rod is also journalled in a Ball Thrust Race Flanged Disc 15, bolted to Double Angle Strips 9 and carrying a Ball Cage, and is held in place by a Collar beneath the Flanged Disc.

Another four $1\frac{1}{2}$ in. Strips are fixed, two to each Double Angle Strip 10, to provide extended bearings for a 2 in. Rod, carrying a $\frac{1}{2}$ in. Pinion 16 and a 57-teeth Gear 17. Pinion 16 is in constant mesh with Gear Wheel 14. A $2\frac{1}{2}$ in. Rod, carrying a Face Plate 18, a $\frac{1}{2}$ in. Pinion 19 and a $\frac{7}{8}$ in. Bevel Gear 20 is then journalled in Double Angle Strips 2 and 5. A small part of the Rod must project above the Face Plate, and this is slipped part way into a Ratchet Wheel 21. Three $1\frac{1}{2}$ in. Strips are bolted to the underside of Double Angle Strip 3 to provide extended bearings for a $2\frac{1}{2}$ in. Rod journalled in this Double Angle Strip and Double Angle Strip 4. The lower end of the Rod is fixed in the remaining part of Ratchet Wheel 21. A Collar and a $\frac{1}{2}$ in. Pinion 22 are mounted on the Rod, the former beneath the $1\frac{1}{2}$ in. Strips and the latter at the very top of the Rod.

A $\frac{3}{8}$ in. Bolt, carrying a Pawl, is fixed in Face Plate 18, a short length of Spring Cord attached to another $\frac{3}{8}$ in. Bolt being used to hold the Pawl against the Ratchet Wheel.

Designed by Mr. Bob Moy, Head of Meccano Limited's Model-building Department, this large Octopus Roundabout was built specially for display purposes. Top left: A close-up view of the model showing the sturdy construction of the base. In the views below, the compact gear arrangement is clearly shown



Revolving Pillar

The central revolving pillar to which the arms or 'tentacles' will later be attached is built up from a 6-hole Wheel Disc to which eight 1 in. by 1 in. Angle Brackets are bolted. The horizontal lugs of these Angle Brackets are then joined and braced by six $1\frac{1}{2}$ in. Strips. It is important to note that two adjacent 1 in. by 1 in. Angle Brackets and two opposite adjacent Angle Brackets are fixed to the Bush Wheel by $\frac{3}{4}$ in. Bolts. Nine Washers are placed on the shank of each $\frac{3}{4}$ in. Bolt, beneath the Bush Wheel, the Bolt then being screwed tightly into a Threaded Boss. A $3\frac{1}{2}$ in. Gear Wheel 23 is secured to the other ends of two of the Threaded Bosses by Bolts passed through the Gear and into the corresponding Bosses. The other two Threaded Bosses are 'trapped' against the Gear.

A $3\frac{1}{2}$ in. Strip 24 is attached to the free vertical lug of each 1 in. by 1 in. Angle Bracket, at the same time bolting a Flat Trunnion 25 and a lamp holder 26 in place. One terminal of each lamp holder must be insulated from the rest of the model. If Elektrikit Lamp Holders are used, this can be done by securing one terminal with thin (6 B.A.) bolts, insulating the terminal and securing nut from the model with fibre washers. Strips 24 are attached at the top to another 6-hole Wheel Disc 27, three by $\frac{1}{2}$ in. by $\frac{1}{2}$ in. Angle Brackets and three by 1 in. by $\frac{1}{2}$ in. Angle Brackets.

The complete arrangement is now mounted, free, on the long $10\frac{1}{4}$ in. Rod, Gear Wheel 23 meshing with Pinion 22. Five Washers are placed on the rod above Wheel Disc 27, after which a Coupling 28 is fixed in place. Note that the Rod is secured in one end transverse smooth bore of this Coupling. In the other end transverse smooth bore of the Coupling, a $3\frac{1}{2}$ in. Rod 29 is fixed. A 6-hole Bush Wheel is loosely mounted on this Rod, being held in place by a Collar 30. Loosely

mounted on ⅜ in. Bolts held by Nuts in the holes of the Bush Wheel are six left-hand Corner Angle Brackets 31, which will later be used as one of the arm anchoring points.

Revolving Arms

Six arms are similarly built, each being constructed from two 9½ in. Strips 32, extended one hole by a 1½ in. Strip, at the same time bolting a 1½ in. by ½ in. Double Angle Strip 33 between the 9½ in. Strips. At their other ends the Strips are joined by a 1 in. by ½ in. Double Bracket at the same time bolting one right-hand Corner Angle Bracket and one left-hand Corner Angle Bracket, respectively, in place. The aeroplane will later be fixed to these Corner Angle Brackets.

Another two Corner Angle Brackets 34, one right-hand and one left-hand, connected by a Fishplate, are bolted through the eighth holes of Strips 32. These are then joined to Double Angle Strip 33 by two crossed-over 3½ in. Narrow Strips 35. Fixed by Nuts between Strips 32 is a 1⅛ in. Bolt 36, passed through the fourteenth holes of the Strips. Between the Strips, this Bolt carries, in order, a Nut, three Washers, a 4½ in. Narrow Strip, four Washers, another 4½ in. Narrow Strip, another three Washers and, finally, another Nut. The two Narrow Strips, numbered 37 in the illustrations, are lock-nutted by a ⅜ in. Bolt to a 5½ in. Narrow Strip 38.

At this stage, a 1½ in. by ½ in. Double Angle Strip 39, is fixed by ½ in. Bolts to each Flat Trunnion 25, but is separated from it by five Washers on the shank of each Bolt. The arms are then pivotally joined to these Double Angle Strips by 2 in. Rods held in place by Collars, while Narrow Strips 38 are lock-nutted by ⅜ in. Bolts to the corresponding Corner Angle Brackets 31.

Aeroplanes

Each of the six aeroplanes fixed to the arms are similar in design. The fuselage consists of one 2½ in. by 2½ in. and four 2½ in. by 1½ in. Flexible Plates arranged as shown and connected by two 4½ in. Narrow Strips 40. The right-hand Strip is bolted direct to the two Corner Angle Brackets at the end of the arm, as also is a 2½ in. by 1½ in. Triangular Flexible Plate 41, serving as the starboard wing. Another 2½ in. by 1½ in. Triangular Flexible Plate 42, fixed to left-hand Strip 40 by Angle Brackets, represents the port wing, while the windscreen is obtained from a 2½ in. by 1½ in. Transparent Plastic Plate 43.

A lamp holder is mounted on Angle Brackets inside the rear part of the fuselage. If an Elektrikit Lamp Holder is used, however, this cannot be mounted actually inside the fuselage, but it can be fixed to the rear of the fuselage by Angle Brackets, again remembering to insulate one of the terminals from the rest of the model.

Electrical System

The electrical circuit of the Octopus works on the 'live chassis' principle, which means that only one terminal of the lamp holders needs to be connected to the power source by wire. Current is carried to the other terminal by passing through the model itself. In other words, this terminal is 'earthed' by connecting it direct to the metal of the model.

You will remember that the model illustrated was designed before the introduction of the Elektrikit, therefore, it incorporates a built-up commutator, as opposed to the ready-made Elektrikit Commutator. Three 1 in. by 1 in. by ½ in. Reversed Angle Brackets 44 are obtained by bending 2½ in. Strips, and these are bolted, one each, to Strips 6 and the third to Angle Girder 7. Two 9½ in. Strips 45 are then curved and bolted together to form a circle with a circumference of 32 holes. This is then fixed to Reversed Angle Brackets 44, but is insulated from them by fibre washers on 6 B.A. bolts. In turn, a Wiper 46 is secured to Gear Wheel 23, but is also insulated from it by fibre washers on 6 B.A. bolts. The wiper is placed in contact with built-up Commutator 45, from the upper edge of which the enamel must be removed so that current can pass from one to the other.

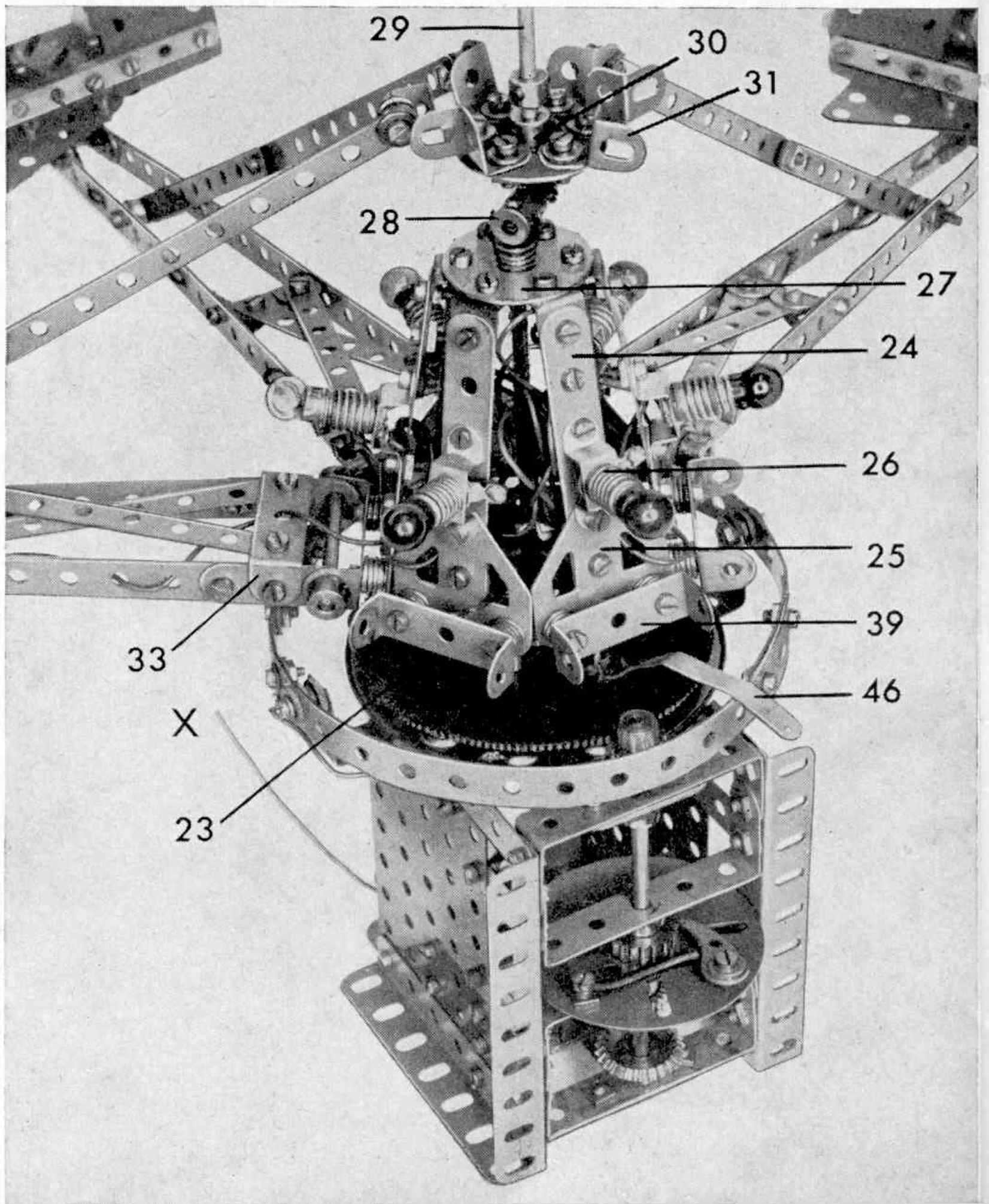
We now come to the actual wiring, which is really not as complicated as it looks. Theoretically, lengths of insulated wire are taken from Wiper 46 to the insulated terminal of each of the lamp holders fixed to the revolving pillar. Having been connected, the wire is continued along the appropriate 'tentacle' and is finally connected to the insulated terminal of the lamp holder in the aeroplane. This can be done, but, in practice, results in too many wires being attached to the wiper, thus increasing the danger of a short circuit. The difficulty is overcome, therefore, by taking only one wire from the wiper to a small terminal block, to which the lamp holder wires are also connected.

Another length of insulated wire X is connected to the commutator, while a final length is taken to any part of the base framework, making certain that a good electrical contact results. These two wires are connected to the terminals of the power source.

Parts Required

14 of No. 1a	1 of No. 30	12 of No. 154a
8 of No. 3	387 of No. 37a	18 of No. 154b
4 of No. 5	313 of No. 37b	1 of No. 168a
2 of No. 6	209 of No. 38	1 of No. 168c
33 of No. 6a	9 of No. 46	24 of No. 188
4 of No. 9a	12 of No. 48	6 of No. 190
2 of No. 9b	1 of No. 52	6 of No. 193
2 of No. 9d	1 of No. 53	12 of No. 221
6 of No. 10	2 of No. 53a	12 of No. 235b
6 of No. 11a	1 of No. 58	24 of No. 235d
27 of No. 12	17 of No. 59	6 of No. 235f
6 of No. 12a	1 of No. 63	1 rod 10¼ in. long
3 of No. 12b	4 of No. 64	12 lamps
1 of No. 16	1 of No. 109	12 lamp holders
1 of No. 16b	4 of No. 111	1 wiper
8 of No. 17	12 of No. 111a	14 fibre washers
1 of No. 24b	20 of No. 111c	6 bolts (6 B.A.)
2 of No. 24c	6 of No. 111d	8 nuts (6 B.A.)
3 of No. 26	6 of No. 126a	
2 of No. 27a	1 of No. 147a	
1 of No. 27b	1 of No. 148	

Below: The central revolving pillar. It looks complicated, but is simply a question of building six identical assemblies



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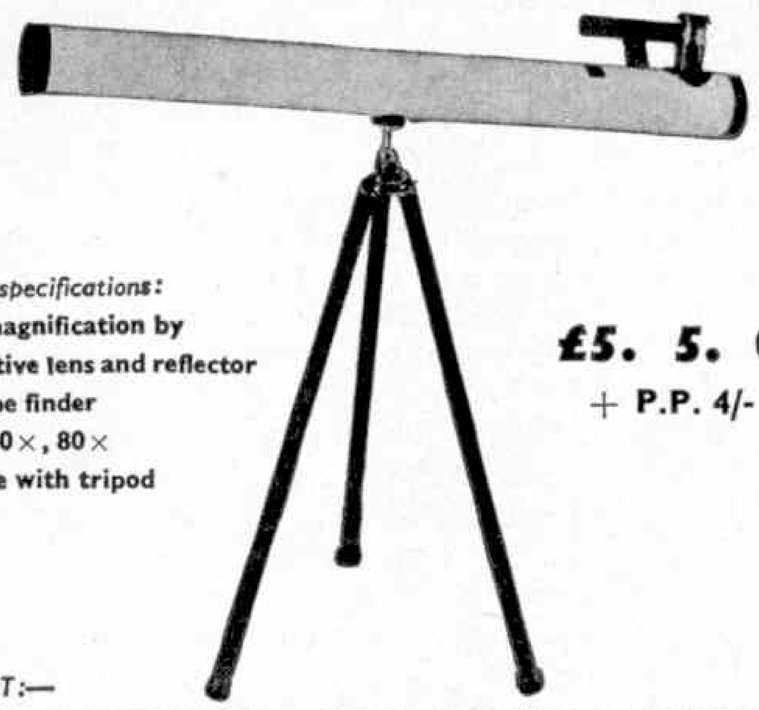

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TAKE TO THE WATER

by John Brewer

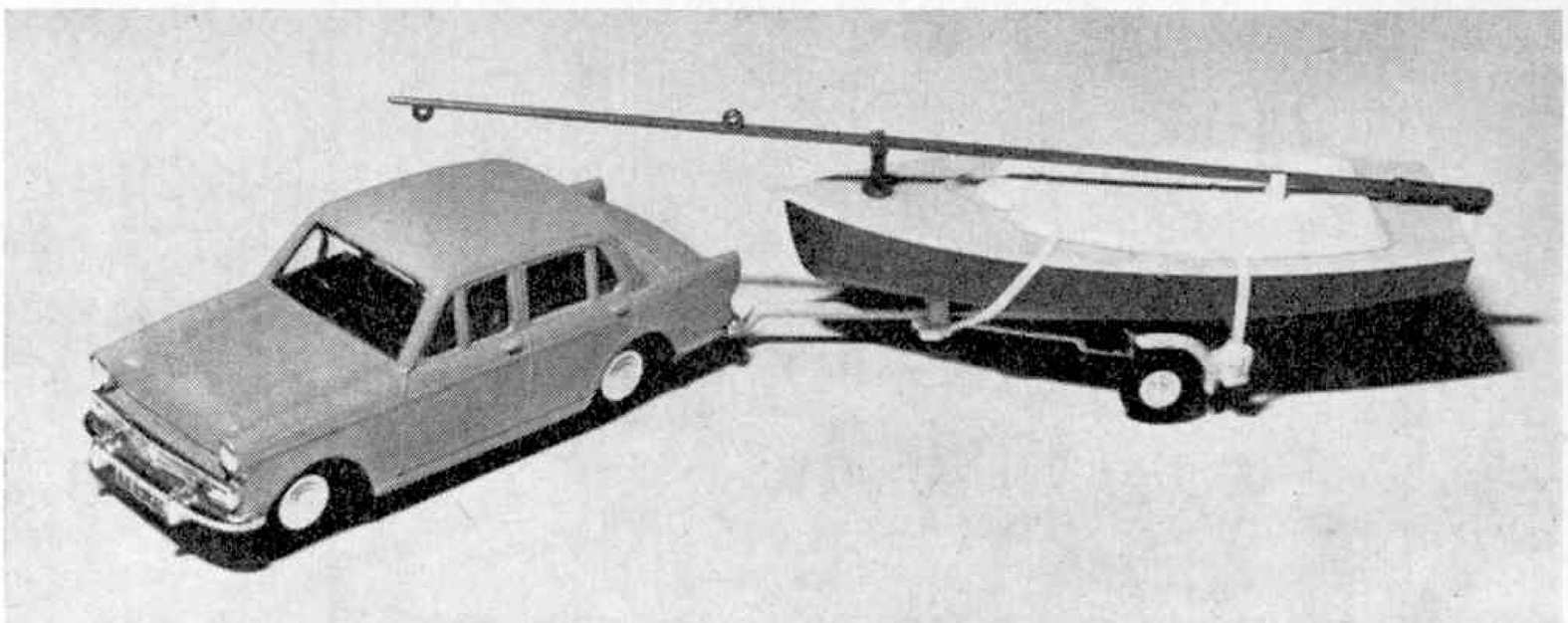
THE British people, like most island races, love the sea and ships of every description. Although the days of Drake, Nelson and the great Naval battles are gone, many thousands of people today spend their holidays 'going down to the sea in ships' just for the fun of it.

Many picturesque fishing harbours around our coast, which lost their existence years ago when their fleets became uneconomic, have found new lives as havens for small boats. These harbours and old fishing villages have a great appeal to the scenic modeller, and form a very attractive addition to a model roadway or railway layout. When Tri-ang introduced a sailing dinghy and trailer to their range of Spot-On models, the possibilities for building a realistic 'waterside' model were increased. The Spot-On dinghy is moulded in polystyrene and represents a typical light sailing craft of about fourteen feet. The mast and boom are detachable, and the tiller and centre-board can be removed and stowed away inside the craft under a waterproof cover. The boat is not rigged, but holes are provided in the hull for this purpose. The dinghy simply 'plugs' on to its neat rubber-tyred trailer, using the centre-board slot to locate it firmly. The boat and trailer are built to the same scale as the Spot-On range of cars, and will couple to any of them.

Our photograph shows the dinghy in 'towing' condition arriving at the quay of a little west country resort behind a new Hillman Minx 1600. The whole model harbour, complete with quayside and houses, measures only 2 ft. by 2 ft., but includes a great deal of interesting modelling and a feature seldom seen in scenic models—real water!

On the quayside in the foreground can be seen the 'Revenue Man', a 17th century inn which was once the haunt of smugglers. Next door a ships' supplies does a roaring trade with small boat enthusiasts. On the water, a dinghy in full rig dips gently in the breeze.

The base of our model is a square of hardboard 2 ft. by 2 ft. to which a 'wall' of 2 in. by ½ in. wood battening has been glued and pinned round the edges, forming an open topped box (see sketch). Another batten, running across the box, forms the quay wall. This should be about 9 in. from the front wall of the box, but not quite parallel to it, as this would give the finished model a 'formal' and somewhat unnatural appearance.



You are probably wondering how we stop the water from leaking out of the harbour section, but this is quite simple. The harbour 'floor' is covered with a sheet of transparent polythene which is drawn up over the walls and fixed along the top with 'sellotape'. A large polythene bag is ideal for this purpose, and can be quite easily obtained. Great care must be taken not to tear the polythene when fitting. Don't attempt to stick the polythene to the harbour floor, or to cut it to fit the corners. It is merely turned over the edges of the walls, secured with 'sellotape' and very gently 'prodded' into the corners of the harbour. This method provides a perfectly watertight basin, and has been used successfully in the construction of outdoor ornamental ponds and emergency reservoirs.

The next stage is to fit the 'dry land' which is just another piece of hardboard cut to size and glued and pinned into position. If the board is used with the face side downwards, the reverse side will give a realistic cobbled effect to the quayside. This is painted a dark, flat grey. The wooden slipway is best constructed of balsa and painted flat black. Fix it to the quayside *above* the water-line with Evo-stik.

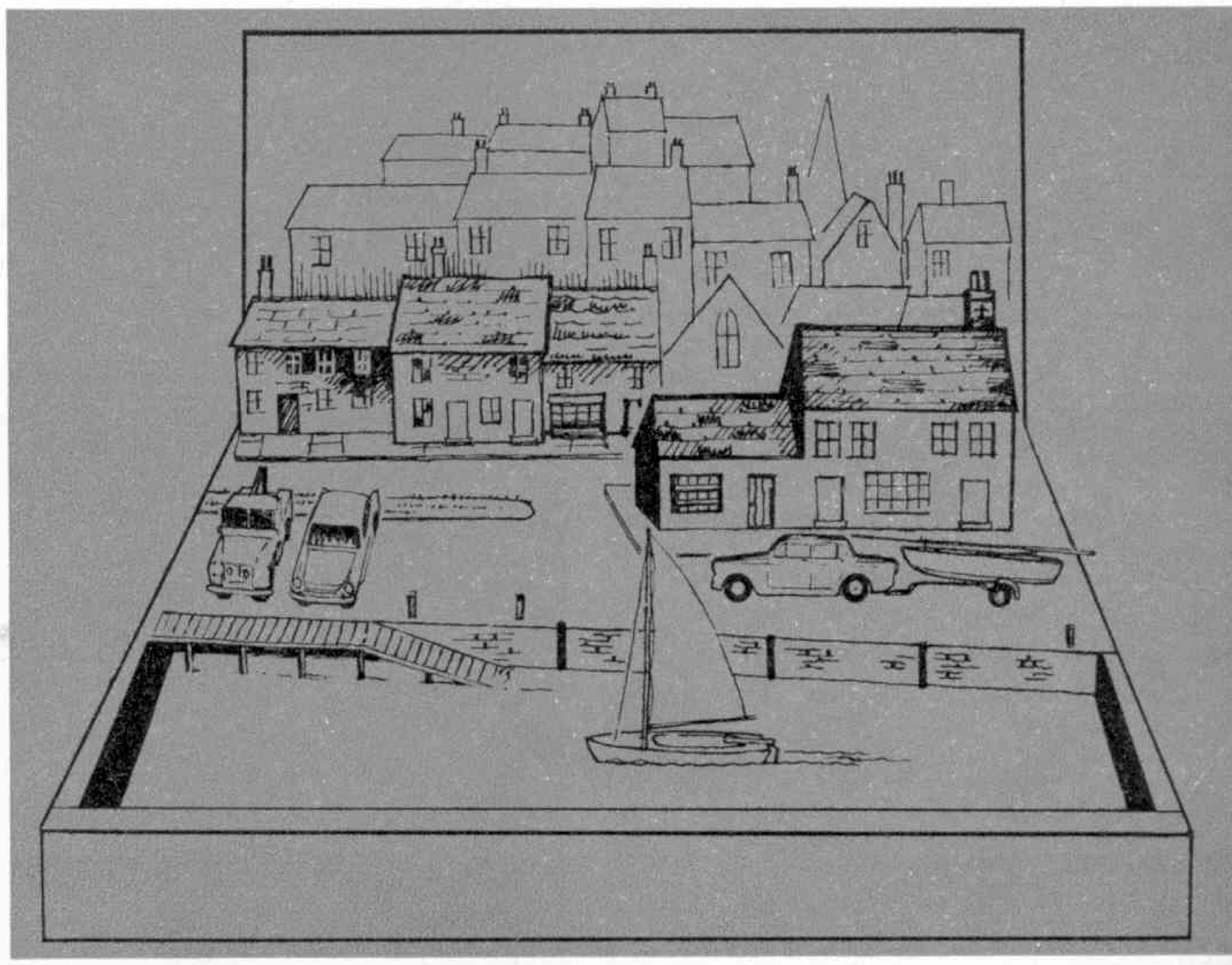
The buildings are of very conventional construction using mainly plasticard. Although commercial brick-papers can be used, we produced our own brick effect by painting the walls with artists' oil colours and then ruling on the bricks with Indian ink. This is great fun to do, and not nearly so laborious as it sounds, although it is easier to do before the model is assembled. Remember that on an old building the brickwork has mellowed with age, and the individual bricks vary a lot in colour and texture. This also applies to slate roofs, which are basically grey, but with little touches of blue and even purple. A little trouble taken with a paint brush at this stage will be repaid in full when the model is completed. The 'Revenue Man' is 300 years old, and its foundations have slipped slightly, so do not cut the windows too square—the crookedness of old buildings is part of their charm. However, if this effect is overdone the building will look like a Crazy House at a fun fair!

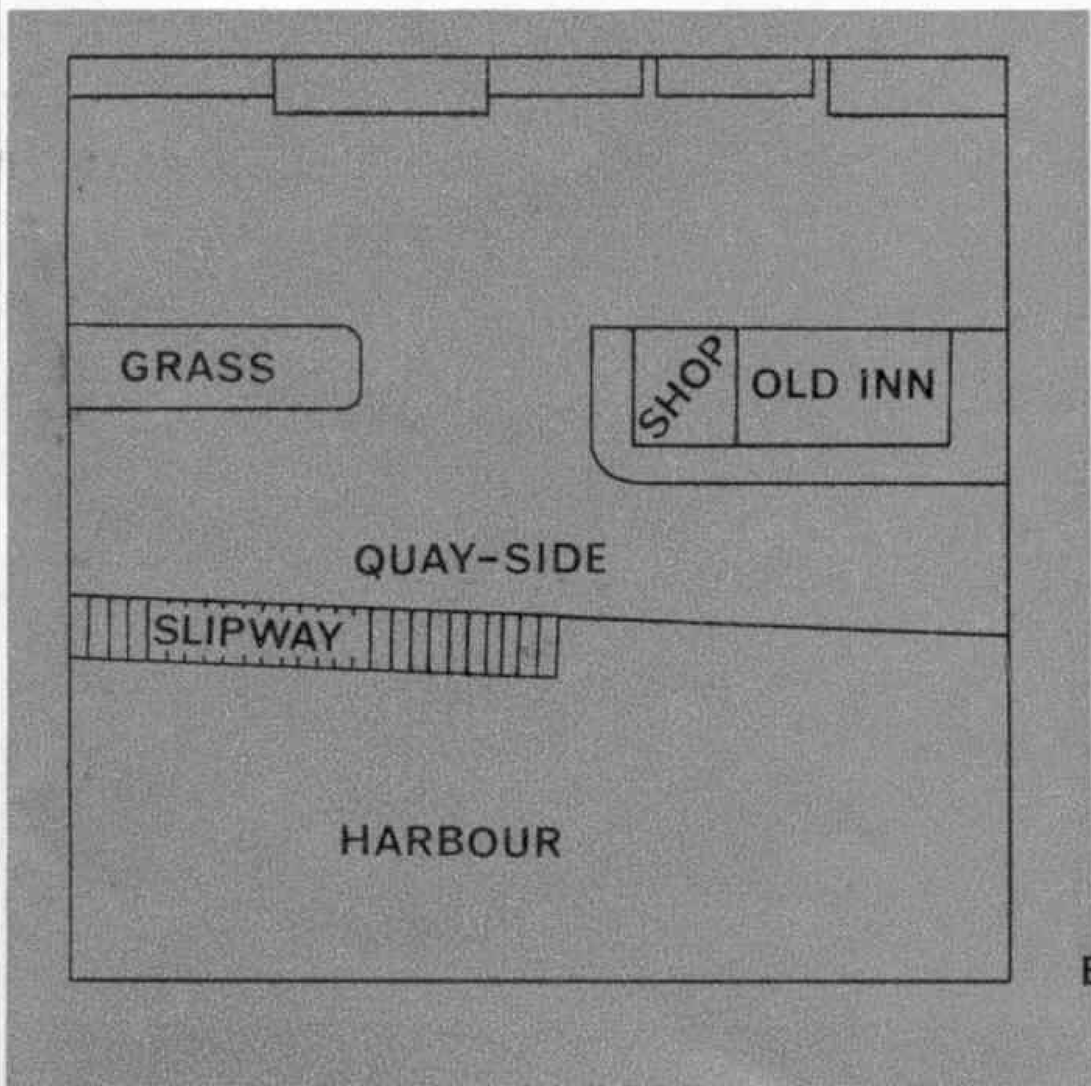
Windows are celluloid sheet with the glazing-bars scribed on with a knife and filled with Indian ink. Excellent chimney pots can be made from old Biro refills.

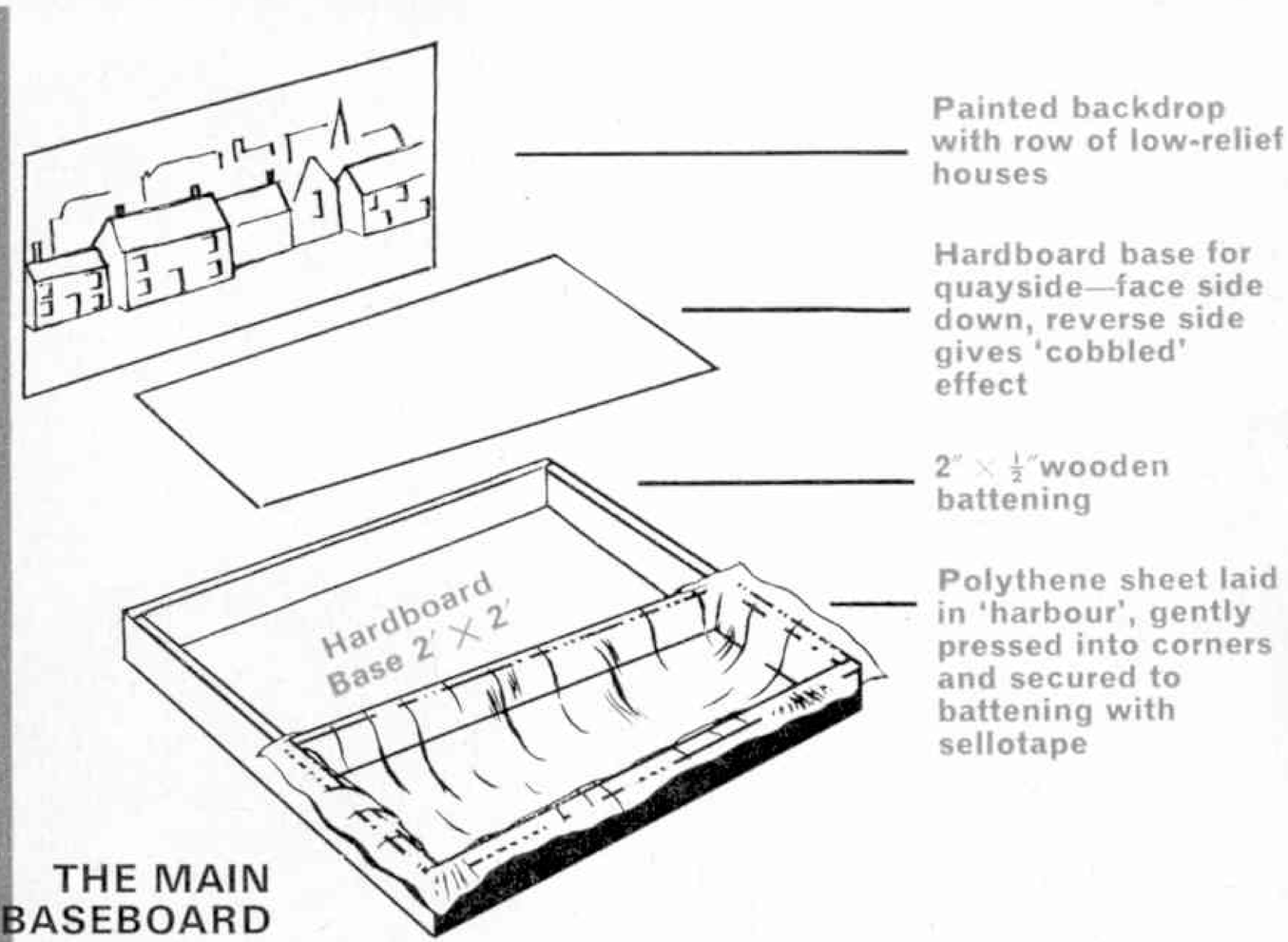
The houses in the background, which form the village itself, are built on the side of a hill, and rise up in tiers, one behind the other, a common feature in West Country fishing villages. The effect is easily obtained by using the 'low relief' principle. The lower row of houses are modelled in plasticard in the same way as the inn, but are only about ½ in. deep, and glued to the hardboard backscene. The upper rows of houses are simply painted straight on to the hardboard which has first been painted a very light blue to represent the sky. Remember that all this is background, and do not attempt to include too much detail. The 'low relief' row of houses are built to a slightly smaller scale than the 'Revenue Man' (in our model they are about 2½ in. high) to give an illusion of distance and perspective. The upper buildings which are painted on to the backscene should also reduce in size, and paler colours should be used as they recede into the 'distance'.

When the model is complete, the harbour can be filled with water to a depth of about an inch. The dinghy will float very realistically, and will even 'answer' to the tiller.

Our model is small and very straightforward, but despite this we feel that it is not only attractive, but *different*. The possibilities of using real water on a larger scale are enormous, even a miniature regatta could be held. We hope that our suggestions may give you some ideas and encourage you to build your own waterside model.







THE MAIN BASEBOARD

OVER THE TRACKS

The recent completion of British Railways' Euston-Manchester Electrification programme has created quite a stir in railway circles. The Tri-ang Hornby catenary system enables the modeller to represent this scheme, and allows two locomotives to operate independently upon the same track.

THE modernisation that Britain's railway system is now undergoing has resulted in many new types of locomotive, coaching stock and other equipment, some of which, like the computer controlling the marshalling yard at Tyneside, is very sophisticated. Of all this new equipment, however, the most fascinating are the various electrification schemes and their masts and catenaries now erected and in regular use in several countries.

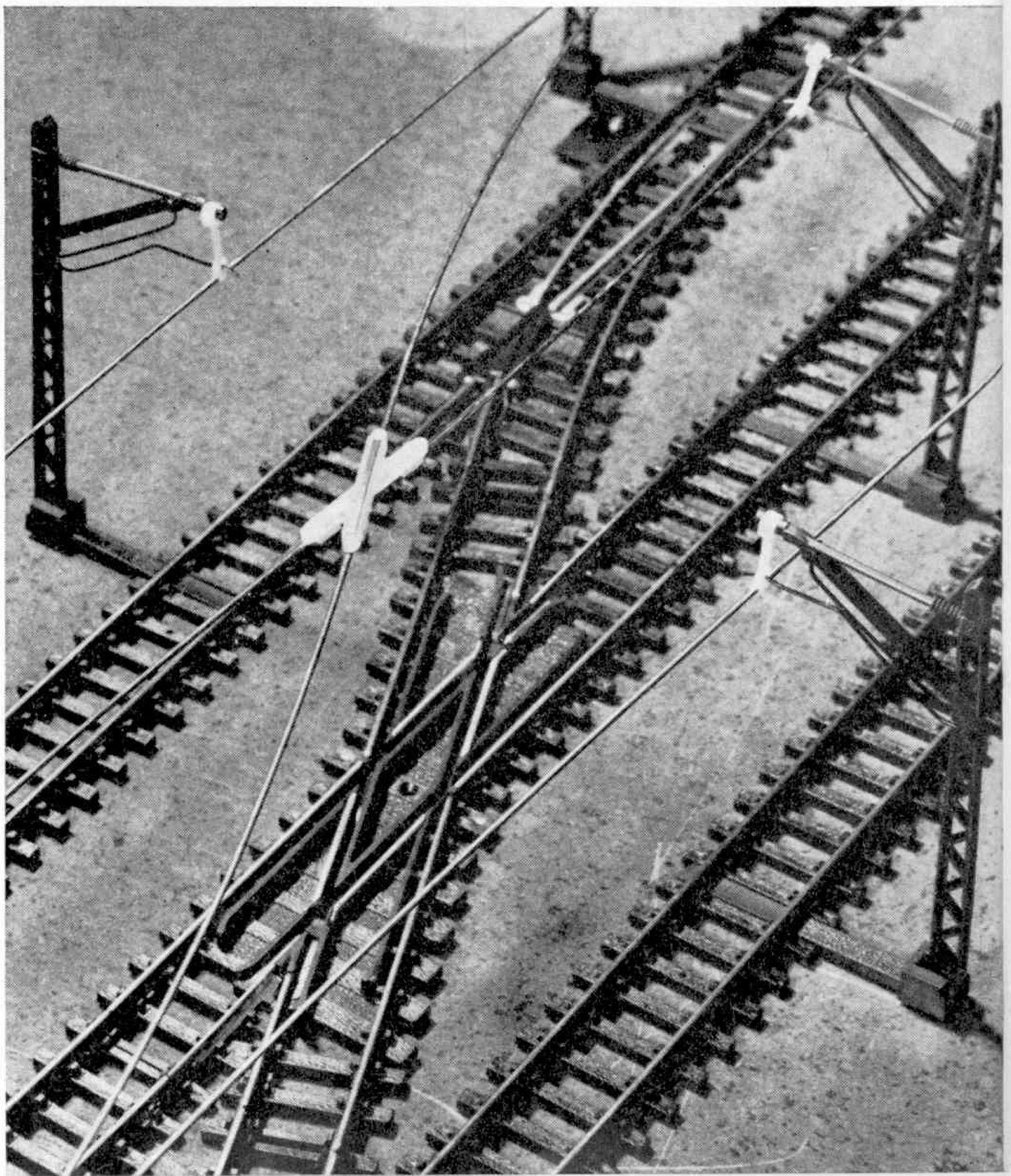
An electrified railway in model form can look very spectacular and this is undoubtedly why so many railway enthusiasts are now adding a catenary system to their layouts. In this range, sufficient items are now available to allow a complete catenary system to be built irrespective of the type of layout, and extending even to models of the new pantograph locomotives to be seen on the Euston-Manchester-Liverpool route.

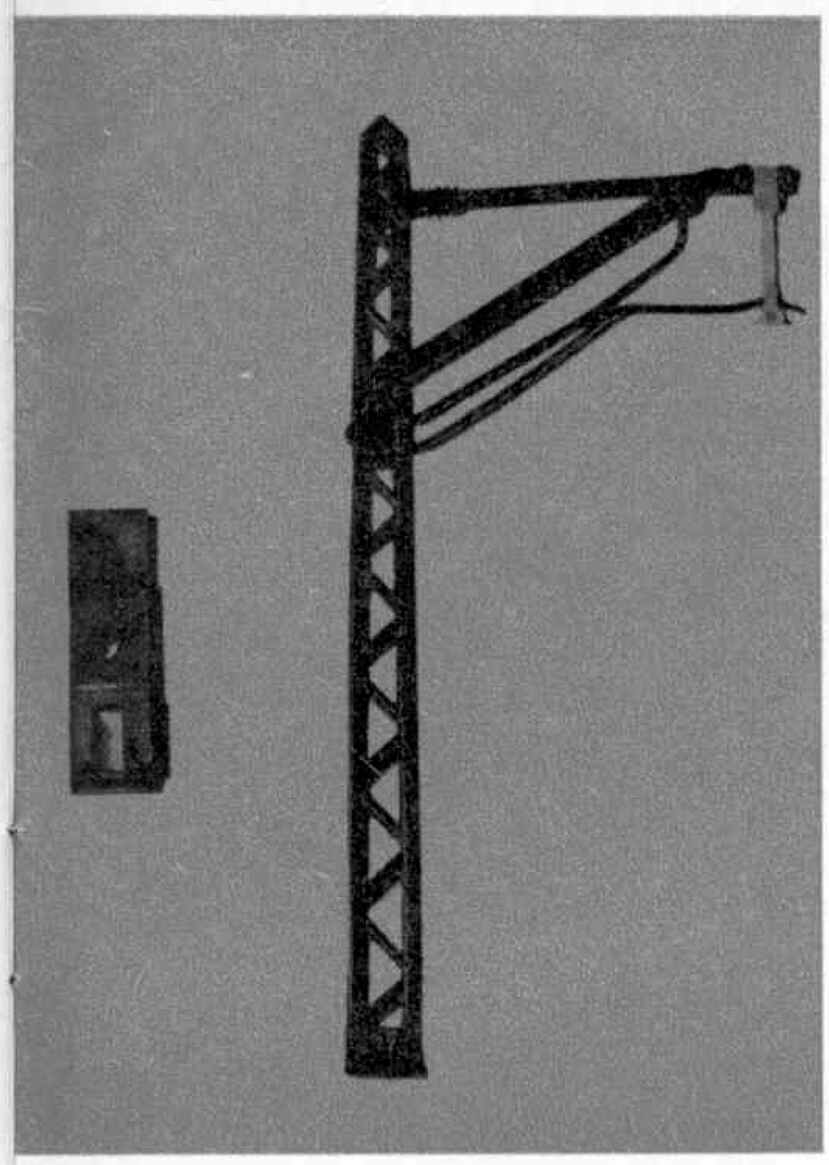
The Tri-ang Hornby catenary system is available in three different sets, two (R416 and R417) consisting of sufficient catenary equipment for 15 ft. and 10 ft. of straight and curved track respectively, with an additional set (R418) for extensions of 5 ft. of straight and curved track. All the component parts are available separately, and additional items are also made for special situations.

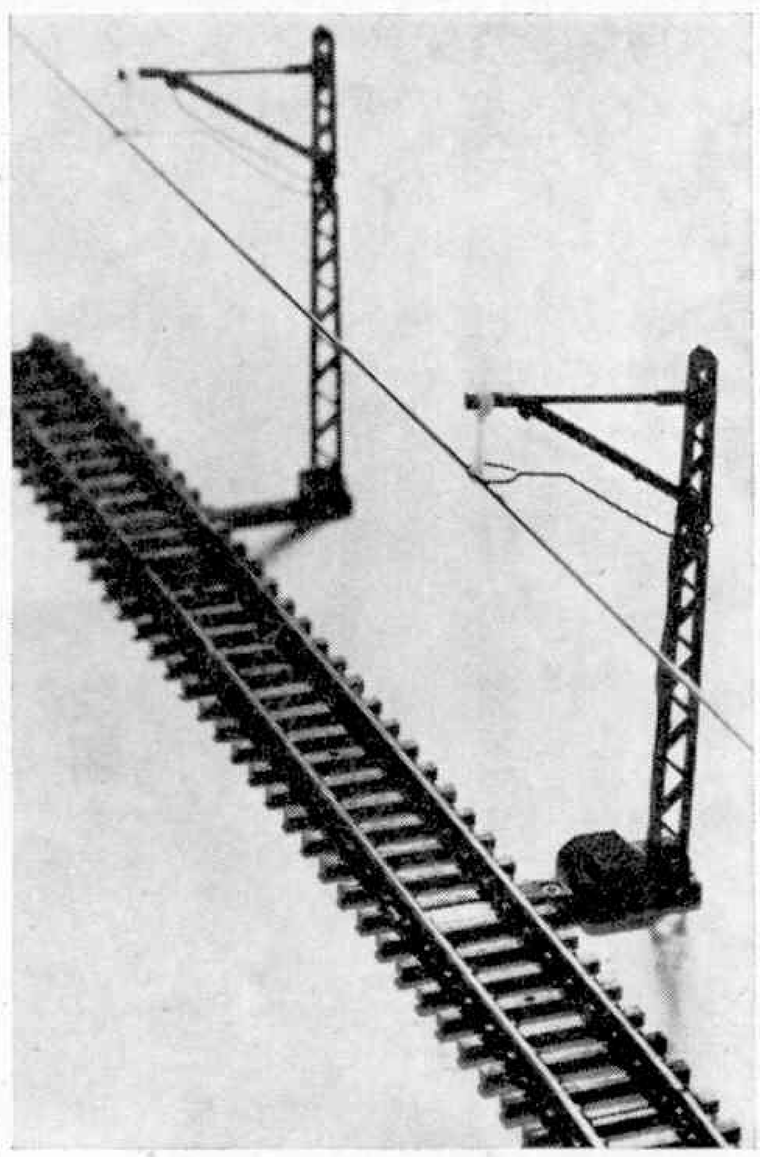
Single track mast

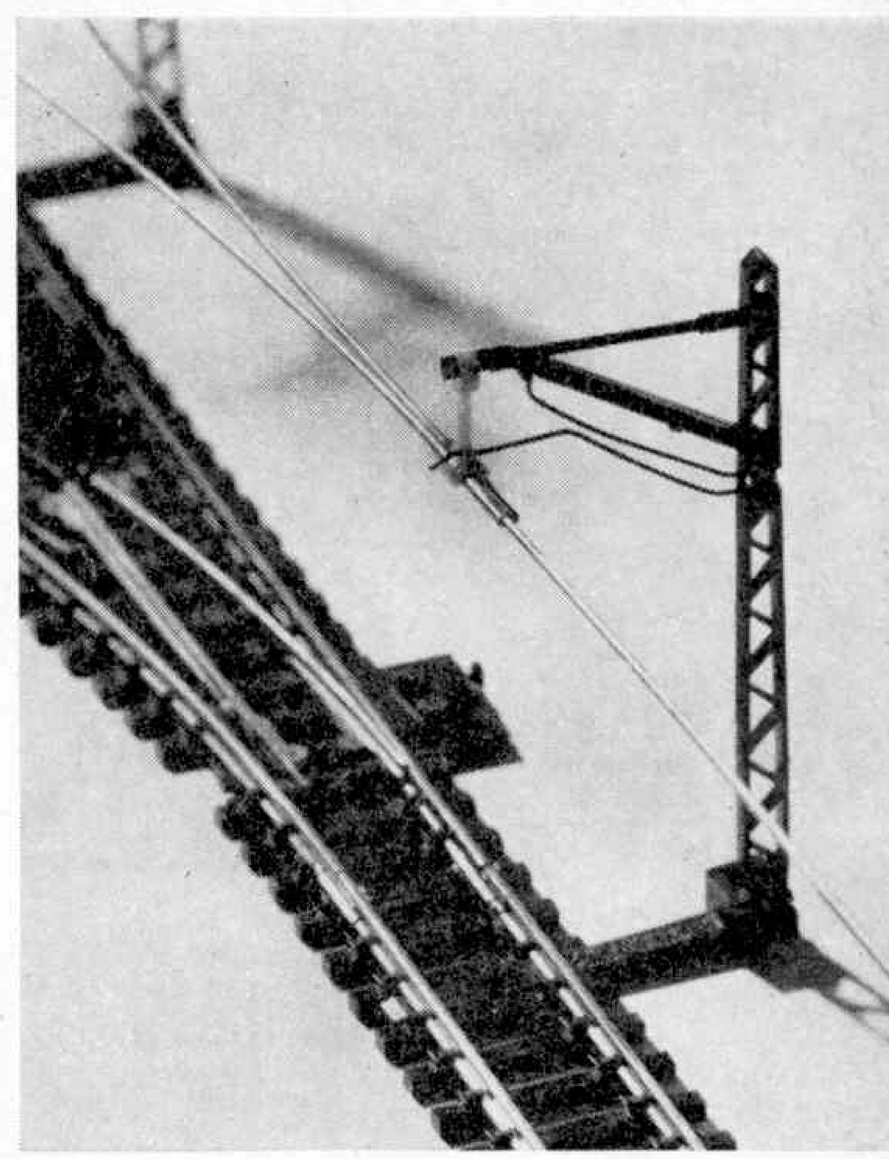
Basically, the system consists of a Single Track Mast (R419) from which the catenary wire is suspended by a white plastic link (S5866) which clips on to the catenary wire and the mast arm. The mast is attached to the track by a special mast base clip (R455) which plugs in very neatly to Super 4 track, automatically ensuring that the catenary is at the right height and position. An alternative form of base (R314) is available for situations where it is not possible to use a Mast Base Clip or where a different track system is in use. This should be positioned at the sleeper ends of the Super 4 track and screwed into the base board with No. 2 countersunk wood screws. Where other track systems are concerned it may be necessary to position the

Below: An electrified Crossover formation showing the Overhead Diamond









base partly between the sleepers, depending on their length. A simple jig can, however, be made according to the track system in use, and need only consist of a piece of metal the correct width from the rail edge to the end of the mast base. This can then be used for positioning bases before screwing them in. The masts themselves slide easily into slots provided on both types of bases and no further fixing is required.

One of the biggest attractions, however, of this system is its use as a means of operating two locomotives quite independently on the same section of track. It can, of course, be used purely as a scenic effect, with locomotives collecting current from the track in the normal way, but it is really designed as an alternative means of supplying power to pantograph locomotives, just like the real one!

There is something particularly pleasing in having a *working* catenary system, although if it is to be used simply to give the layout that authentic look, it will not be necessary for any power masts to be included. If, however, the catenary system is to be electrified, the special Power Masts (X353) should be fitted at suitable points on the layout. Normally, one ordinary mast will be required for each section of standard Tri-ang Hornby track, although this should be varied according to the design of the layout. Where a long, straight track is included, for instance, the spacing between the masts can be greater, but where there is a curve the masts should be situated closer together.

Power mast

On a normal oval of track only one Power Mast will be needed, and this may be positioned at any convenient point. The Power Mast is similar in appearance to the single track mast, and has the same white plastic mast link for suspending the catenary. But it also includes a wire spring which rests on top of the catenary wire, transferring the power from the base. The Power Mast Base (X354) clips into the Tri-ang Hornby track in a similar way to the mast base clip and includes two sockets for power leads from the control unit. For normal operation, the current is supplied to the catenary and returned via the rail furthest away from the catenary. This rail is therefore common to both track and catenary electrification systems and so two locomotives can be operated over any one section of track provided the catenary has its own independent power control unit. When operating two locomotives it is also necessary for the overhead pantograph locomotive to be placed on the track with the insulated side —marked '1'—nearest the power mast. This is a very simple requirement, and providing the instructions are followed, nothing very much can go wrong. Where more complicated layouts are concerned, involving points or crossings, for instance, special components will be necessary to allow the catenary to be added.

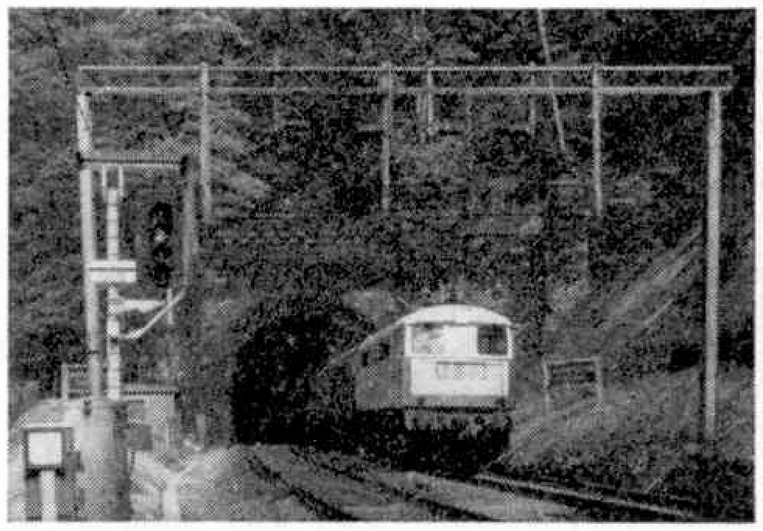
Overhead diamond

One of these items is a Junction Link (X352) and includes a special clip to attach to a normal single track mast. The catenary wires are fitted side by side in the Junction Link, thus ensuring electrical continuity and allowing one of the catenaries to branch off right or left. On most layouts no extra power masts will be needed and in nearly every layout, the catenary as a whole will be live unless you find it necessary to introduce sections by isolating parts of the catenary. Although the instances where this will be necessary are very rare, a suitable insulator can be made from the overhead diamond (X351), which should have the two arms not bonded by the strip of copper removed. The copper bonding piece can also be taken out of the two holes at either end of the diamond.

For all normal purposes, however, one power mast will be quite adequate for each oval of track. Catenary over crossover points is easily fitted by using two Junction Links, one above each point, although if each oval of track has its own controller for the catenary, you may find it necessary to fit an insulator. The Catenary Wire (R415), which is supplied in 15 in. lengths, will occasionally require to be cut to the appropriate lengths for point formations such as crossovers and sidings, and this is easily done with a strong pair of wire cutters. Similarly, lengths of catenary can be joined together with the overhead Wire Connector Clip (S3361), available separately.

The Overhead Diamond (X351), which is used above diamond crossings, allows one catenary wire to pass right through with the ends of two other wires clipped to the other two arms. The copper bonding wire automatically ensures that current is continued across the gap caused by the break in catenary. Using the Overhead Diamond and Junction Link, any point formation that can be built from Super 4 track can be electrified and it is even possible, using additional power masts and insulation, to form a system of cab control for the catenary.

Two other useful items in the range of equipment available are the pair of Gantries (R580) which carry catenary wires over straight sections of double track. The second is a Mast Clip (R310) for Tri-ang Hornby track side walls R80, R90 and R179, and this has a socket for normal single track masts, also fitting the viaduct No. R180 and River Bridge No. R188.



Speeding north on the newly electrified Euston-Manchester line of British Railways. The catenary overhead can be clearly seen

Above left: the single Track Mast and its screw-in base

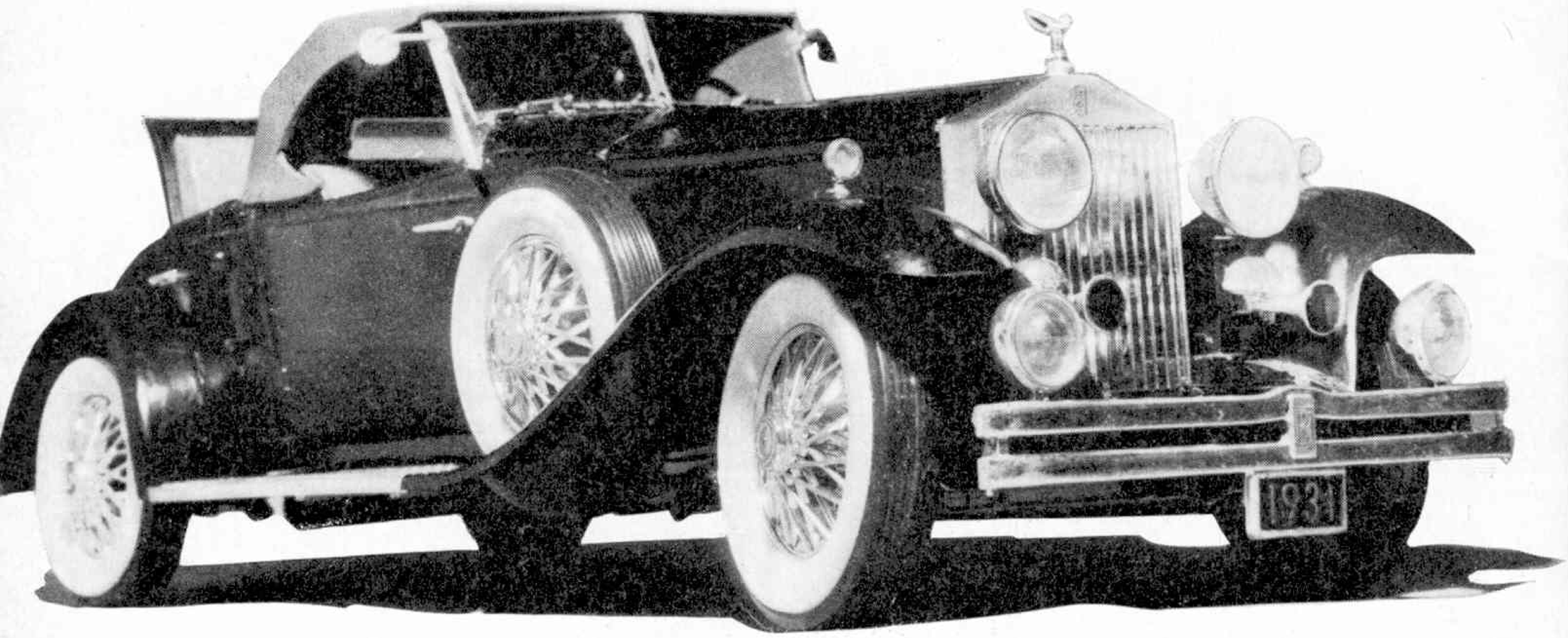
Centre: the Power Mast in position with the special Power Mast Base

Right: for electrifying points, the junction link and clip is attached to an ordinary Single Track Mast, as shown here

Beauty in Black

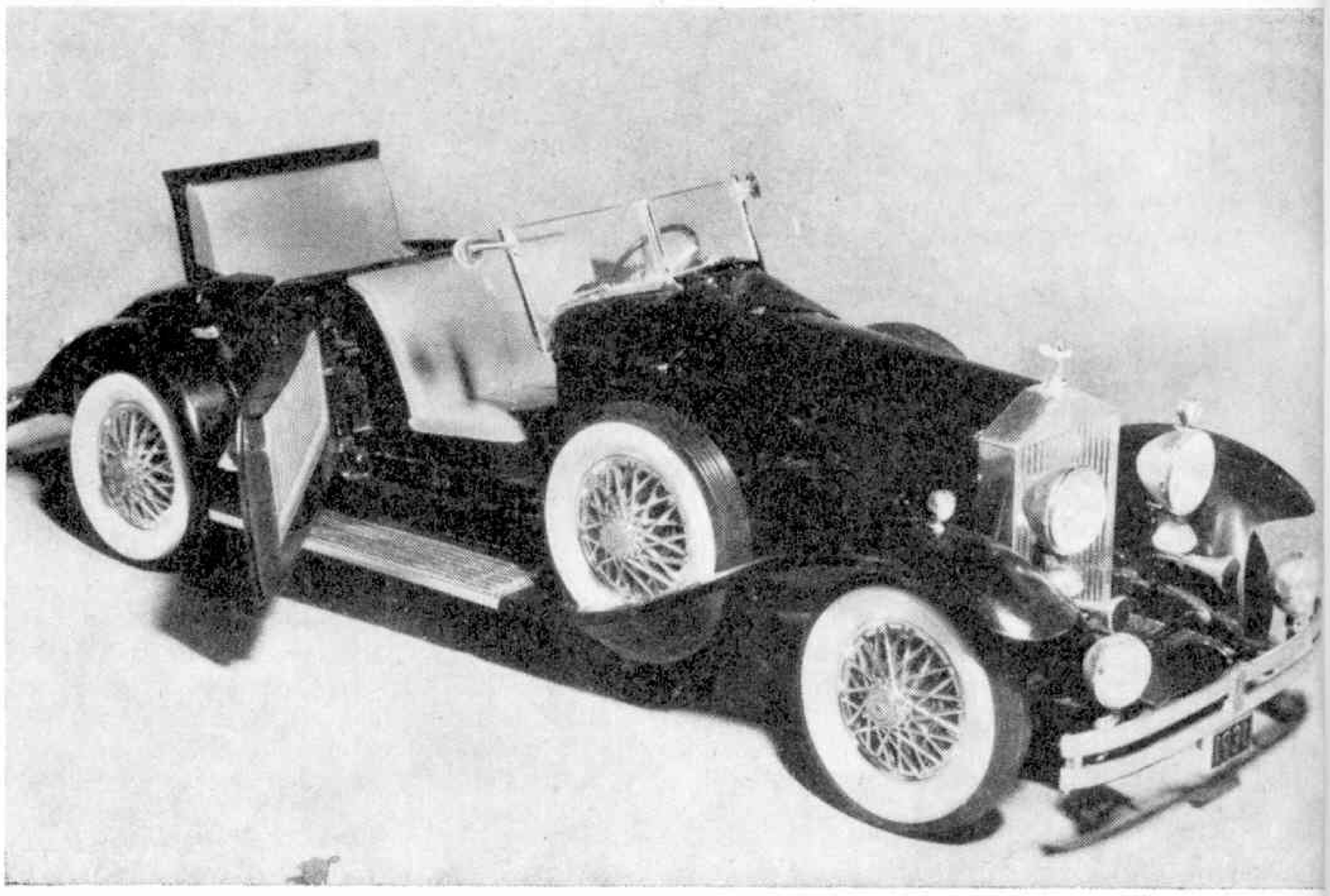
A classic car built from a classic kit, and the beauty is not only skin deep—it goes right through to the scale chassis and the detailed six cylinder engine

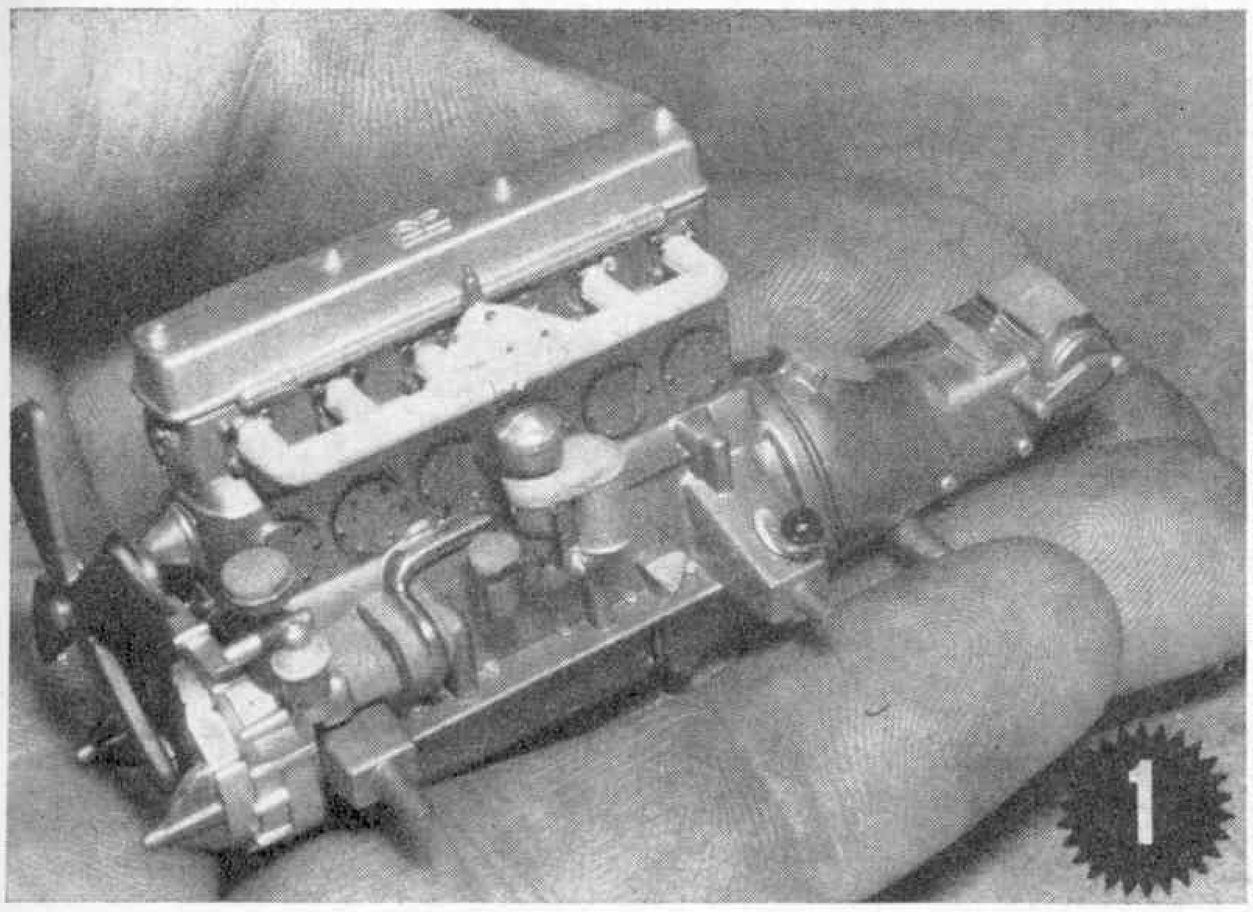
This 1931 Rolls-Royce Phantom II must surely be one of the most outstanding 1/24 th scale car kits of all time—just feast

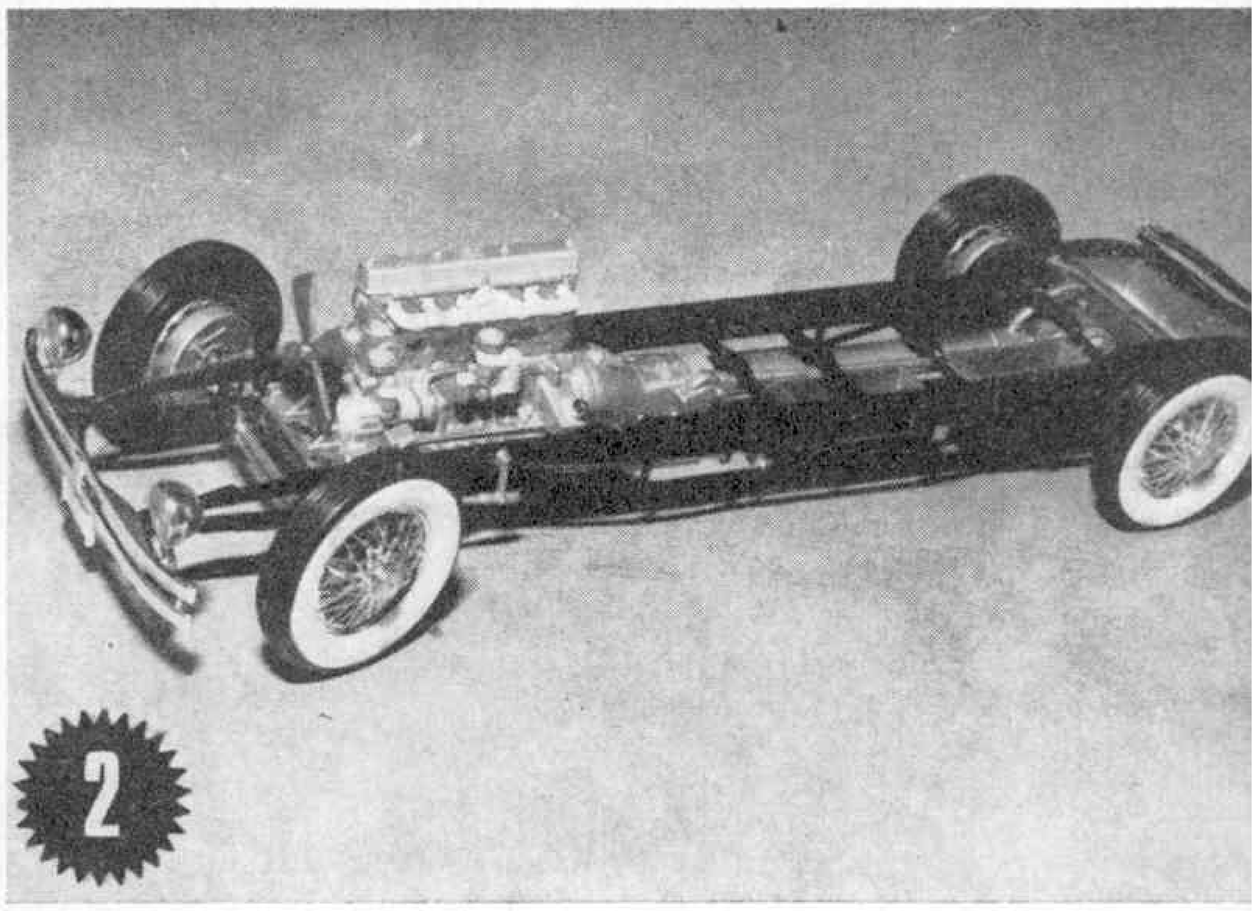


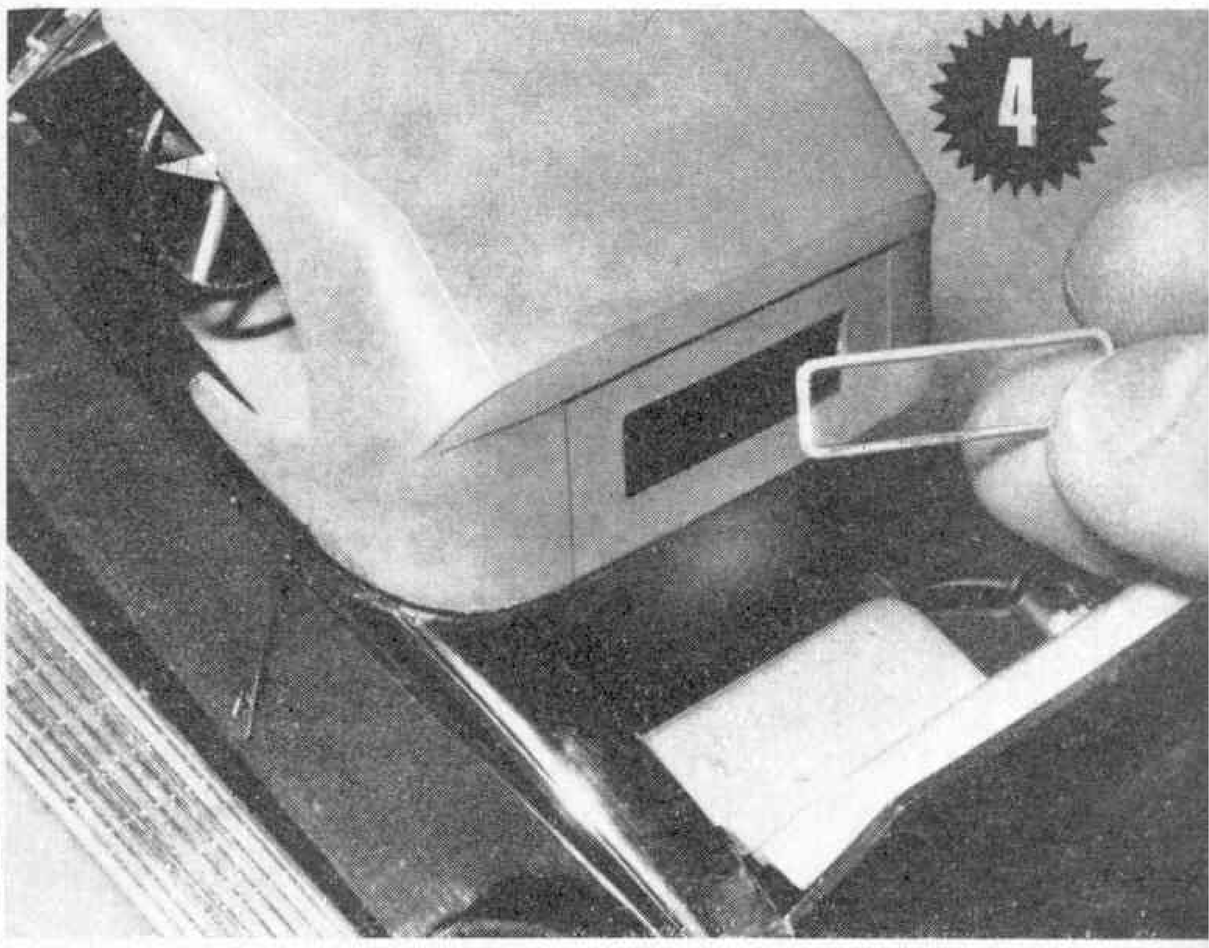
your eyes on the plated wire wheels, the whitewall tyres, the opening doors and rumble seat, the removable hood.

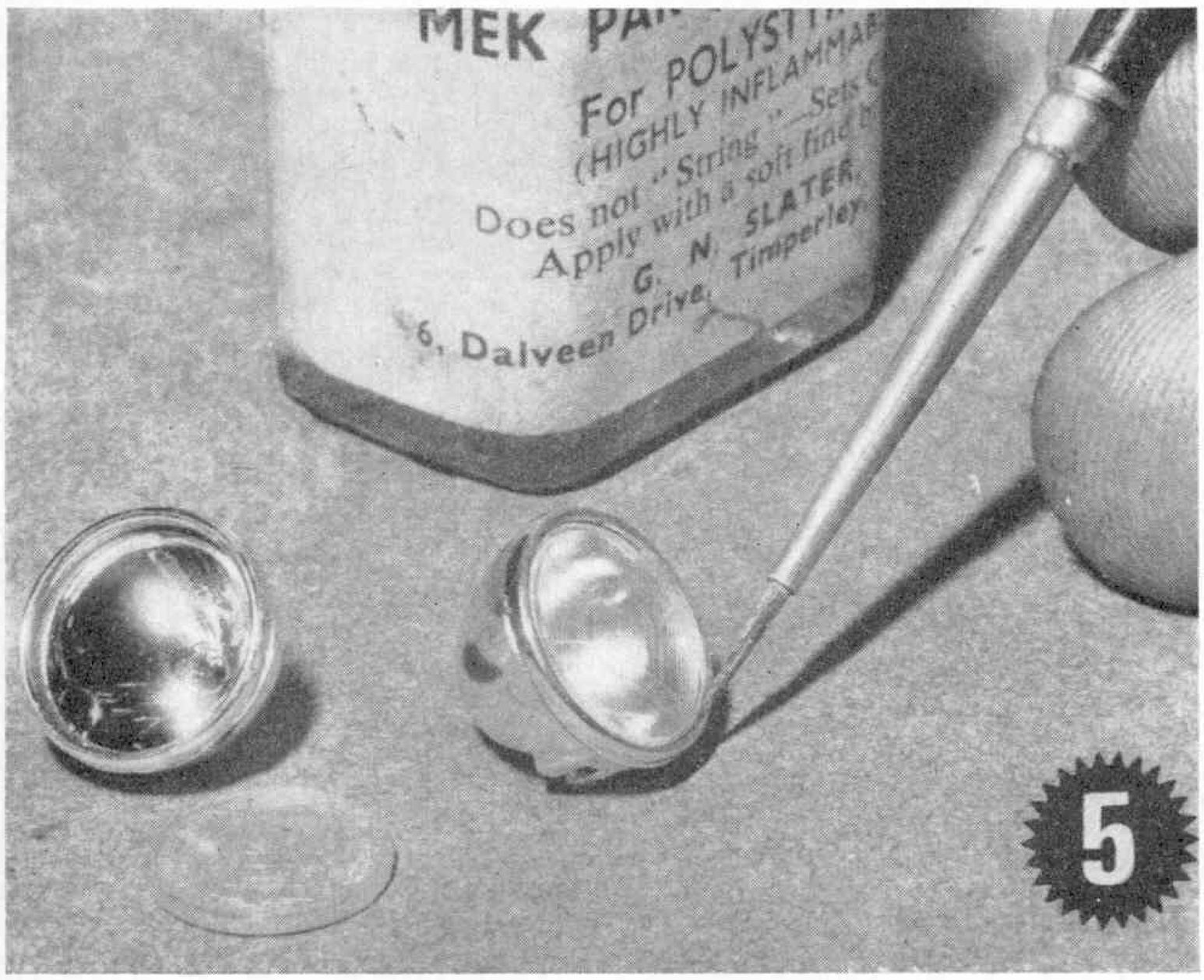
Assembly is not at all difficult despite the wealth of small parts—there are 174 in all! The construction is greatly simplified by the extensively illustrated instruction sheet and the accuracy of the mouldings which almost fall together!











1 & 2 Complete right down to the Rolls-Royce emblem is this power unit—a masterpiece in its own right. The second photo shows it fitted in place on the detailed chassis which carries a full transmission system, mufflers, steering and fuel tank.

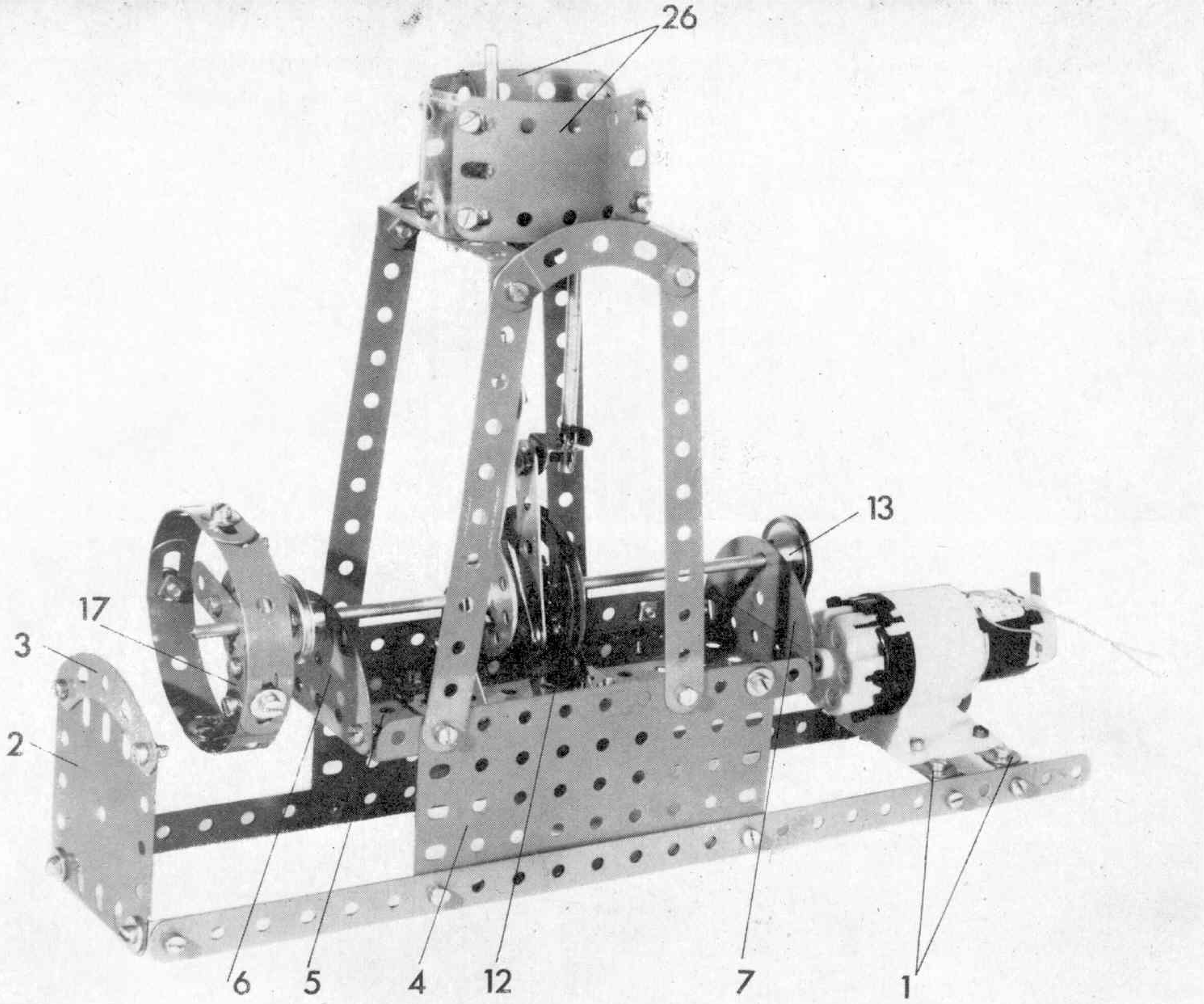
Building hints

3 Painting the tan-coloured upholstery needs two coats—allow the first to dry before applying the second.

4 The silver window frame is best painted before fitting it in place.

5 Transparencies like the headlamp glasses and the windscreens are often ruined by surplus cement and the best way to fix them is with a fluid 'solvent' such as Mek Pak. The parts are fitted together 'dry' and then a tiny drop of fluid is applied to the joint, when capillary attraction will make it flow right along the joint line.

This is one of a series of four Monogram Classic car kits (all to 1/24th scale). They cost 39s. 11d., each and further details of these and dozens of other Monogram kits are contained in the 1966 catalogue obtainable from your local model shop for one shilling or direct from A. A. Hales Ltd., 26 Station Close, Potters Bar, Herts. Price 1s. 6d., post paid.



A single-cylinder Marine Engine that can be built with the Meccano Power Drive Set plus a few extra parts

SMALL and SIMPLE

a marine engine and a flat-bed lorry

WHEN designing fairly easy models for our less-advanced readers, I often choose road vehicles as the building subject. The reason for this, of course, is that road vehicles are perhaps the most popular of all the types of constructions produced in Meccano and, consequently, I can be certain of pleasing almost everybody. A spot of variety is always advisable, however, and as I had room for two 'junior' models this month, I thought that one of them should be different from the usual run of things. My first example, therefore, is based on a single-cylinder Marine Engine of a type used to power large, sea-going vessels. It can be built with parts contained in the Power Drive Set plus one 1½ in. Strip, one Angle Bracket and one Trunnion. The second example is a flat-bed Lorry built with Outfit No. 2.

Marine engine

An engine bed is built up from two 12½ in. Strips joined at one end by two 2½ in. Strips 1, attached by Angle Brackets, and at the other end by a 2½ in. by 2½ in. Flexible Plate 2, also attached by Angle Brackets. A 2½ in. Stepped Curved Strip 3 is bolted to the upper edge of this Plate.

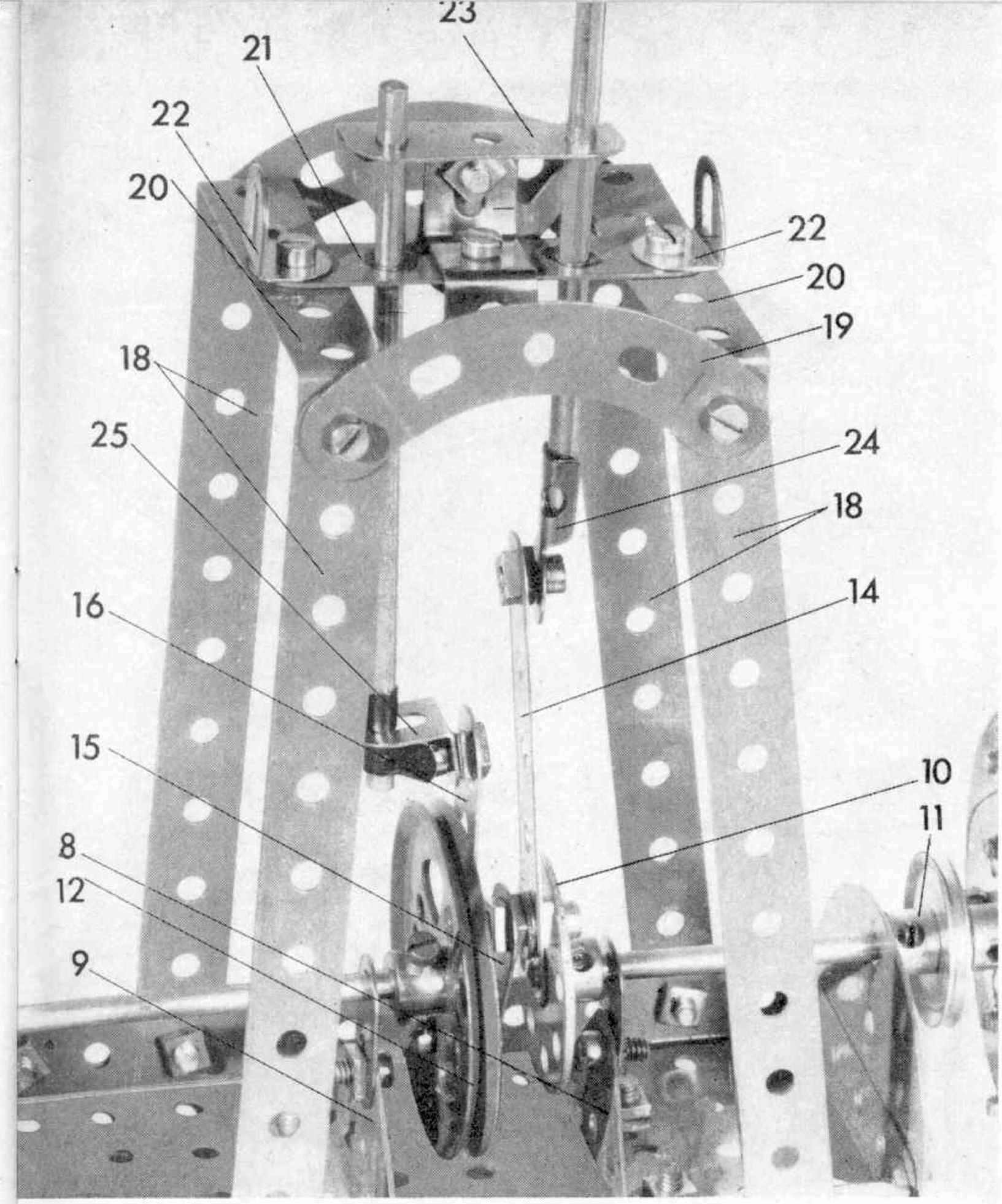
Two 4½ in. by 2½ in. Flat Plates 4, to which a 5½ in. by 2½ in. Flanged Plate 5 is bolted, are fixed, one each, to the 12½ in. Strips. Bolted to the end flanges of Plates 5 are two Semi-Circular Plates 6 and 7, while two Trunnions 8 and 9 are bolted to the top of the Plate. A Fishplate is bolted through the apex hole of each of these Trunnions.

Crankshaft

A 3½ in. Rod is journalled in Semi-Circular Plate 6 and the Fishplate fixed to Trunnion 8, being held in place by an eight-hole Bush Wheel 10 and a 1 in. fixed Pulley 11. Another 3½ in. Rod is journalled in Semi-Circular Plate 7 and the Fishplate fixed to Trunnion 9, being held in place by a 2 in. Pulley 12 and a 1 in. fixed Pulley 13. Lock-nutted to Bush Wheel 10 by a ⅜ in. Bolt are a 2½ in. Strip 14 and a 1½ in. Strip 15, the other end of which is also lock-nutted, along with another 2½ in. Strip 16, to Pulley 12. A fly wheel is built up from four Formed Slotted Strips, bolted together and braced by a 2½ in. Strip 17, attached by Angle Brackets. This Strip is then bolted to an eight-hole Bush Wheel, mounted on the Rod carrying Pulley 11. A second 2½ in. Strip is bolted to the Bush Wheel at right angles to Strip 17.

Four 5½ in. Strips 18 are secured, two to each Flat Plate 4. At the top, the Strips at each side are joined by a 2½ in. Stepped Curved Strip 19, then the two sides are connected by two 2½ in. by 1½ in. Double Angle Strips 20. In turn, the Double Angle Strips are connected by a 2½ in. Strip 21, at the same time bolting two Angle Brackets 22 in position. A ½ in. Reversed Angle Bracket, to which a Trunnion 23 is attached, is bolted to the centre of the 2½ in. Strip.

A 3½ in. Rod, carrying a Rod and Strip Connector 24, is mounted in Strip 21 and Trunnion 23, and the Rod and Strip Connector is then lock-nutted to Strip 14. Also mounted in Strip 21 and Trunnion 23 is a



A close-up view of the crankshaft and connecting rod arrangement

4 in. Rod, to the lower end of which an Angle Bracket 25 is fixed by Spring Clips. This Angle Bracket is lock-nutted to $2\frac{1}{2}$ in. Strip 16. The cylinder consists of two $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Plastic Plates 26 connected by two $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Transparent Plastic Plates. The completed unit is shaped to form an oval and bolted to Angle Brackets 22.

Finally, a Power Drive Unit carrying a $\frac{1}{2}$ in. fixed Pulley on its output shaft is secured to Strips 1. The $\frac{1}{2}$ in. Pulley is connected to Pulley 13 by a $2\frac{1}{2}$ in. Driving Band.

Parts required

2 of No. 1	2 of No. 24	3 of No. 126
4 of No. 2	2 of No. 35	1 of No. 186
7 of No. 5	76 of No. 37a	1 of No. 190
1 of No. 6a	68 of No. 37b	2 of No. 193
2 of No. 10	18 of No. 38	2 of No. 194
11 of No. 12	2 of No. 48a	1 of No. 212
1 of No. 15b	1 of No. 52	2 of No. 214
3 of No. 16	2 of No. 53a	4 of No. 215
1 of No. 20a	3 of No. 90a	1 Power Drive Unit
2 of No. 22	2 of No. 111c	
1 of No. 23a	1 of No. 125	

Flat-bed lorry

Turning to the smaller of the two models, the Lorry, this is particularly easy to build. The load platform is represented by a $5\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flanged Plate, each side flange of which is extended six holes by a $5\frac{1}{2}$ in. Strip 1. A $2\frac{1}{2}$ in. Strip 2 is bolted to each Strip 1 at the same time fixing a $2\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flexible Plate 3 in place. Another $2\frac{1}{2}$ in. Strip 4 is bolted to the end of Strip 1, in turn securing a Flat Trunnion 5 and an Angle Bracket in position. A second Angle Bracket 6 is bolted to the lower side of Flat Trunnion 5. The front of the model, obtained from two $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Flexible Plates 7, is bolted to these Angle Brackets.

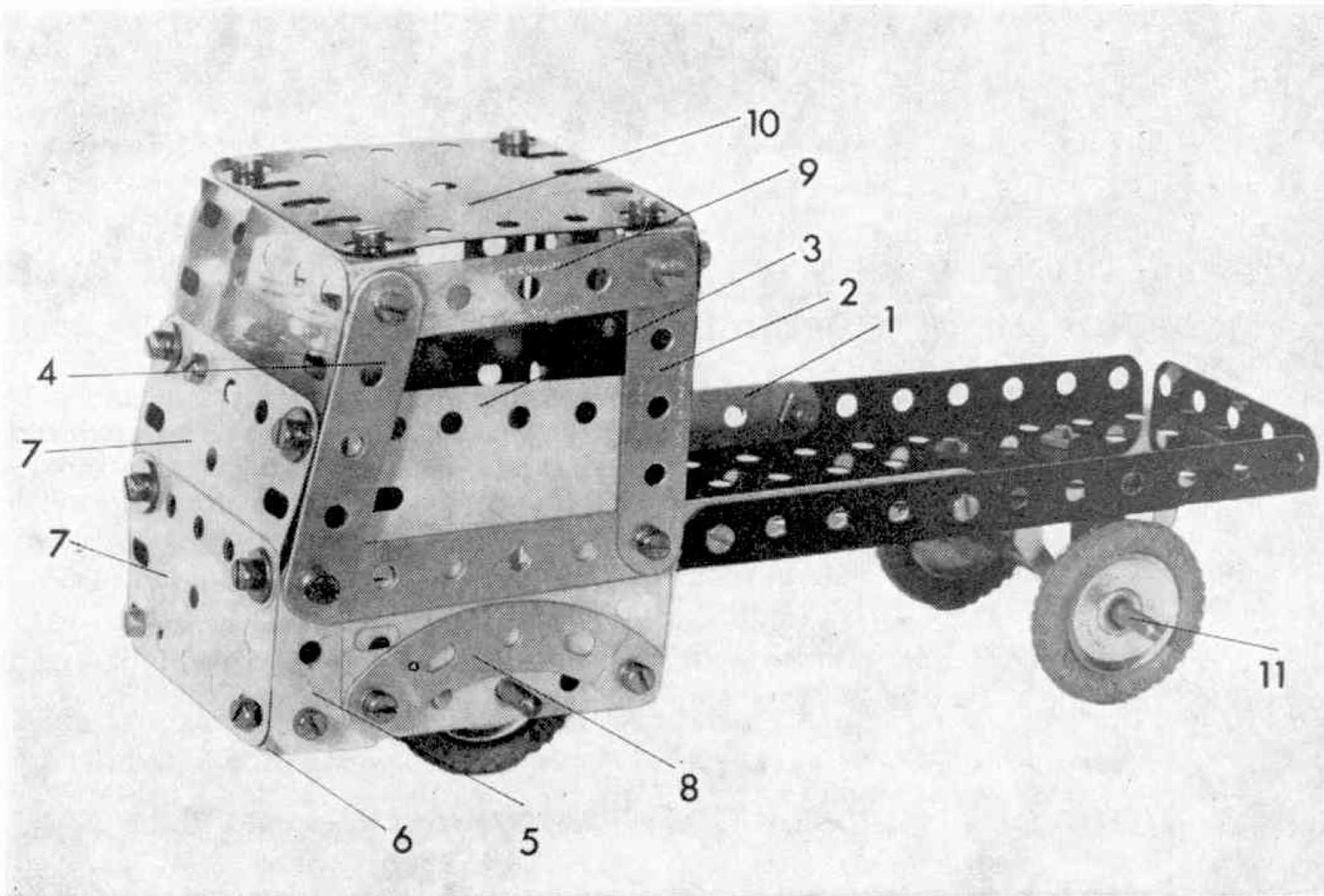
At each side of the model a $2\frac{1}{2}$ in. Stepped Curved Strip 8 is bolted in place, then Strips 2 and 4 are connected by a $2\frac{1}{2}$ in. Strip 9 at the same time fixing two $2\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strips between the sides, the rear bolts also holding two Angle Brackets in place. A $2\frac{1}{2}$ in by $2\frac{1}{2}$ in. Plastic Plate forming the back of the cab is bolted to these Angle Brackets and to the end of the Flanged Plate. Another $2\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Plastic Plate 10, representing the cab roof, is bolted to the Double Angle Strips, while a $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Transparent Plastic Plate, attached to upper Plate 7, serves as the windscreen.

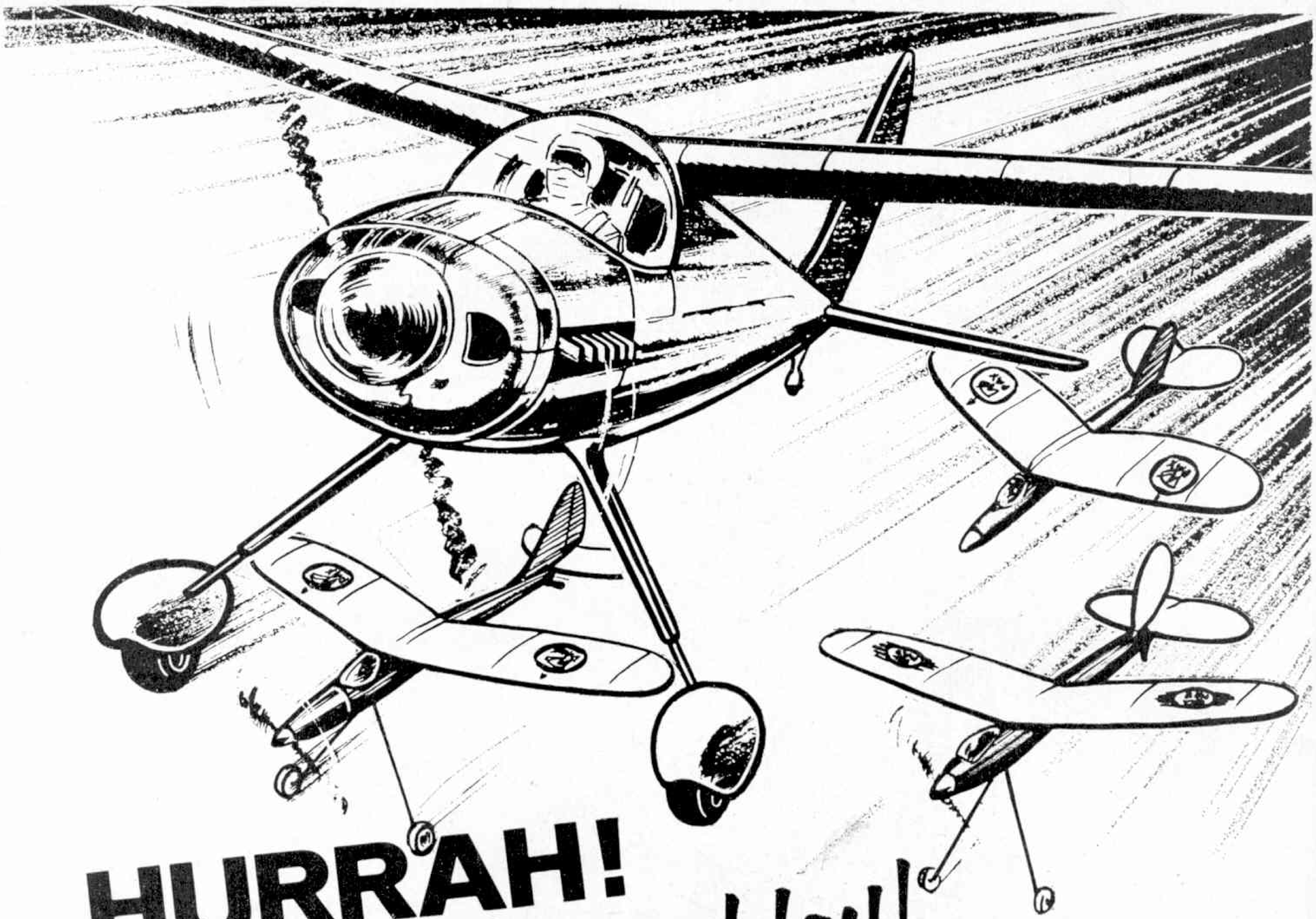
Two Flat Trunnions are fixed to the underside of the $5\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flanged Plate, but are spaced from it by a Washer on the shank of each Bolt. A $3\frac{1}{2}$ in. Rod 11, carrying two 1 in. fixed Pulleys with Motor Tyre, is journalled in the apex hole of these Trunnions. Another $3\frac{1}{2}$ in. Rod, also carrying two 1 in. fixed Pulleys with Tyre is journalled in Plates 3 of the cab. The steering wheel is represented by an eight-hole Bush Wheel mounted on a $\frac{3}{8}$ in. Bolt fixed in a Fishplate. This Fishplate is attached to the front of the model by an Angle Bracket.

Parts required

2 of No. 2	38 of No. 37a	2 of No. 126
6 of No. 5	38 of No. 37b	2 of No. 126a
1 of No. 10	10 of No. 38	4 of No. 142c
7 of No. 12	2 of No. 48a	2 of No. 188
2 of No. 16	1 of No. 52	2 of No. 190
4 of No. 22	2 of No. 90a	1 of No. 193
1 of No. 24	1 of No. 111c	2 of No. 194a

Meccano No. 2 Super Junior Set contains all the parts required to build this simple flat-bed lorry





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FIVE MODELS will be reserved for OVERSEAS READERS. These will be selected one month after publication date

To:—Meccano Magazine: Competition M, St. Alphage House, Fore Street, London, E.C.2.

The vehicle illustrated is:—

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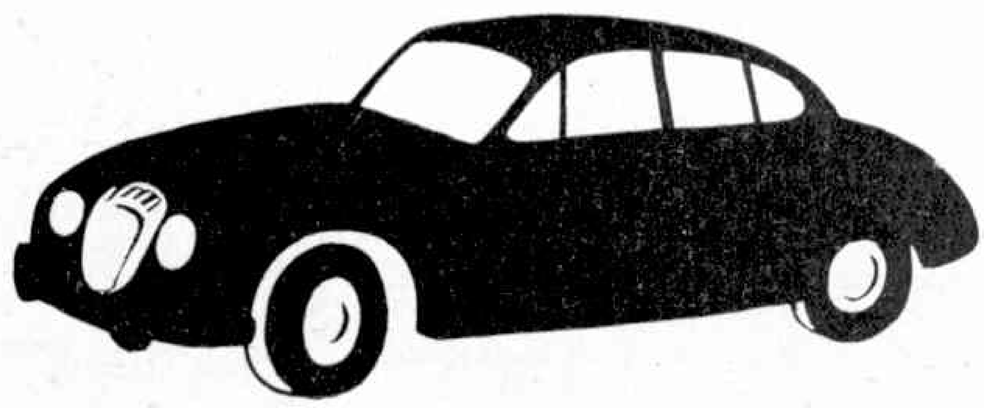

NAME .....

ADDRESS .....

.....

LAST MONTH'S DINKY TOY WINNERS

BELOW is a list of fifty names of readers whose entries for last month's 'Silhouette' competition were the first correct answers to be selected by the Editor. If your name appears in this list, then write on a postcard to: *Silhouette Prize, Meccano Magazine, Thomas Skinner & Co. Ltd., St. Alphage House, Fore Street, London, E.C.2*, and claim your FREE Dinky Model M.G.B. Sports Car. If your name does not appear in this list, even though you entered for the competition, don't be disappointed—try again!

P. Ayris, Liscombe Park, Nr. Leighton Buzzard, Beds. *S. Baker,* Birchfield Road, Northampton. *J. G. Bewes,* Southwood Gardens, Ramsgate, Kent. *A. Bergolla,* Cresford Road, Fulham, London, S.W.6. *M. Bolam,* Pickhurst Rise, West Wickham, Kent. *D. Butler,* Lodway, Easton-in-Gordano, Nr. Bristol. *S. Chappell,* Elmer Gardens, Isleworth, Middx. *D. Crofton,* Irbyside Road, Frankby, Wirral, Cheshire. *B. Curchin,* Balne Lane, Wakefield, Yorks. *J. Dalgleish,* Wilberfoss, Yorks. *A. Desrousseaux,* Dugdale Hill Lane, Potters Bar, Herts. *M. Duncon,* King Edward Close, Rainhill, Lancs. *A. Egner,* Victoria Terrace, Jarrow, Co. Durham. *J. Ellis,* Albert Road, Horley, Surrey. *L. Fowler,* Bigbury, Nr. Kingsbridge, S. Devon. *P. Fry,* Elm Crescent, Upham, Southampton, Hants. *P. Goodman,* Westbury Lane, Buckhurst Hill, Essex. *A. Greenwood,* Rochester Road, Lodge Moor, Sheffield 10. *Peter Gregory,* Ravenscourt Park Mansions, Dalling Road, London, W.6. *S. Harris,* Little Bookham Street, Bookham, Surrey. *Simon Howers,* Ross Road, South Norwood, London, S.E.25. *E. Howie,* Haughs Turriff, Aberdeenshire, Scotland. *N. A. Johnson,* Station Road, Watlington, Kings Lynn, Norfolk. *M. Jones,* Little Bookham Street, Great Bookham, Surrey. *D. Kendrick,* Woodgreen Road, Liverpool 13. *A. Lockwood,* Middleton Drive, Pinner, Middx. *D. Marsh,* Cornflower Terrace, East Dulwich, London, S.E.22. *A Mathews,* Shakespeare Road, Iford, Bournemouth, Hants. *C. Meade,* Larkshall Road, Chingford, E.4. *K. Milne,* Batts Hill, Redhill, Surrey. *D. Moran,* Grove Lane, Chalfont St. Peter, Bucks. *S. Morris,* Lenmaur Newton Green, Llanfaes Brecon, South Wales. *R. Morton,* Church Street, Kidlington, Oxon. *Peter Onley,* Harford Walk, E. Finchley, London, N.2. *M. Penny,* Seaton Road, Yeovil, Somerset. *M. Phelan,* Masefield Road, Harpenden, Herts. *Martin Phillips,* Wimbledon Park Road, London, S.W.19. *V. Purkiss,* Lucas Avenue, Harrow, Middx. *T. Roadnight,* Green Lane, Hillington, Middx. *A. Sliney,* Vernon Avenue, Clontarf, Dublin 3, Eire. *Andrew Smith,* Rosslyn Avenue, East Barnet, Herts. *Ronald Treen,* Bowrings Road, Moreton Hampstead, Devon. *A. White,* Lyne Grove Avenue, Ashford, Middx. *A. Williams,* Longdale Road, Leyland, Preston, Lancs. *C. M. York,* Orchard Road, Farnborough, Hants.

Competition 'K' Overseas Winners

J. Hackett, Luton Road, Richmond, British Columbia, Canada. *P. Symul,* rue Bonry, Rotheux, Prov. de Liege, Belgium. *Bourgeois,* Avenue Louis Plana, 31 Toulouse, France. *J. Juilhaume,* Boulevard des Castors, 69 Lyon 5e, France. *Yves Fleuriot,* Place Sully, 78 Maisons Laffite, France.

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• Quantity Hornby gauge 0 clockwork, including bogy stock; also Meccano Set, seven motors and extras, cheap. Andrews, 14 Walnut Close, Epsom, Surrey.

• Scalextric Plexitrack, equipment. Good condition, cost £13, new, £9, plus postage. Smith, 81 Norman Crescent, Pinner, Middx.

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• M.M.'s, 1947-1956, 37 copies 1957-1965, 10 missing, £4. Gray, 101 Askham Lane, Acomb, York.

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• Spare red and green Meccano parts. Send s.a.e. for list to R. Litchfield, 5 Graylands, Bilborough, Nottingham.

• .92 c.c. Aero Diesel, propspinner, tank £2 o.n.o. Chance, 11 Oaklands Rd., Dartford, Kent.

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• Two bound volumes Meccano Magazines, January to December 1950; January to December 1951; January, February, March 1955; March 1960. Offers to Durrant, 12 Marine Terrace, Waterloo, Liverpool 22.

• 34 Obsolete pre/post-war Dinkies, Dinky Supertoys, etc., reasonable prices. S.a.e. to: D. J. Marsden, 24 Franklin Rd., Witton, Blackburn, Lancs.

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• Meccano Magazines 1946-64, 212 issues. Modern Railways, January-June 1965. Trains Illustrated 1957-58. S.a.e. list. Green, 27 Hyde Rd., Kenilworth, Warwickshire.

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• Pre-war Meccano Standard Mechanisms Manuals, U.S.A. edition, unused. Collectors' literature. Packed with useful mechanisms, 10s. 6d. per copy or equivalent local currency. C. Jackson, 4 The Quadrant, Hoylake, Cheshire.

• Stamps. 40 Commonwealth Commems., 5s.; foreign ditto, 2s. 6d. for 30. Also singles and others. J. L. Fulford, 39 Kings Rd., Bournemouth, Hants.

• New Meccano Spares. Tri-ang Hornby items, M.M.'s, bargain prices; s.a.e. list. Wanted Dublo Castle. Pitts, 18 Beckett Rd., Worcester.

WANTS

• "M.M.s" 1924-29 inclusive, good condition. All replies answered promptly. Jorge B. Zalazar: Teatinos 56, Santiago, Chile, South America.

• Dinky Toys pavement sets. Parkin, 5 Lord St., St. Annes, Lancs.

May 1964 M.M. wanted. McLellan, 22 Turakina St., New Plymouth, New Zealand.

• Tandem (or antique bike) wanted in reasonable condition at a reasonable price: Elston, 3 Marine Parade, Hoylake, Wirral, Cheshire.

• Information or plans for a home-built one-man Hovercraft. 46 School Loaning, South Shields, Co. Durham.

• Large quantity Meccano Gears wanted. 25 Burnbreck Gdns., Wollaton, Nottingham. Tel. 283676.

• Number 10 Meccano. Condition and price to: Perkins, 163 Ashlawn Rd., Rugby.

• M.M.s 1928, 1929, 1941, 1942, April 1927; No. 7 or L outfit Manual, old super model leaflets, obsolete parts, especially 119, 173, 174, 177, Aero parts, Marklin parts, old motor with long side plates. K. Bartholomew, 10 Bentley St., Cleethorpes, Lincs.

• Meccano Instruction Manuals, 7/8 and 9, 1961 type. State price and condition. 46 Cycle Rd., Lenton, Nottingham.

• Cabinet, suitable 10 or larger. Evans, Hatherley, Watts Mead, Tadworth, Surrey.

• Wanted, pre-war Meccano Magazines, and most hobbies, scientific, sports. E. Jones, 43 Dundonald Rd., Colwyn Bay.

• Long Straight 3-rail Hornby 00 Track, also left-hand electrically operated points. Age, condition and price to: Atherton, King-cott Farm, Abbots Leigh, Bristol 8.

• Geared roller bearing, complete. State price and condition. P. Berry, 42 Broom Ave., Manchester 19.

• Pre-war Meccano Literature—Magazine (bound or loose) manuals, price lists, catalogues, etc. Also obsolete parts. Hearn, 50 Blundell Ave., Horley, Surrey. Horley 4897.

• Obsolete Dinky Toys, etc. Highest prices single or collections. D. Pinnock, 1a Hereford Rd., Southsea, Hants.

SWOPS

• Meccano Lighting Set with old pieces 201-210 and Motor Car Lighting Set, all unused. I will exchange for all pieces 63a, 66, 67, 149, 158a, 158b, 172, 174, 181. Jorge B. Zalazar: Teatinos 56, Santiago, Chile, South America.

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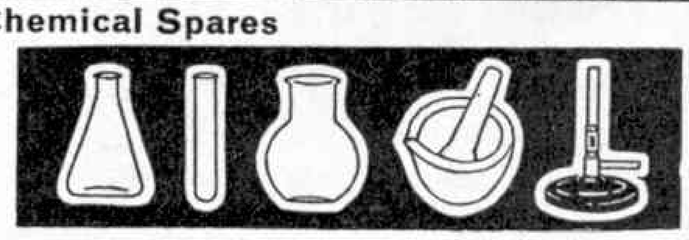

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STAMPS NEWS

BY F. E. METCALFE

Sunshine

I suppose by the time these lines appear in print many will be getting ready for their trips to the Costa del Sol, etc. Indeed, many will no doubt be there already, and postcards, etc., bearing colourful stamps of the type illustrated, will be arriving home to tantalise their less fortunate friends and relations. But what about those collectors looking around for a new country to take up, one which issues plenty of attractive stamps to keep them busy without too big a strain on their pockets? Well, in my opinion, Spain is just one of those countries. I recently saw a collection of modern Spanish stamps, which had not cost the owner more than a pound or two; one which had already produced three years of fun, and through new, attractive, inexpensive stamps coming out all the time, more years of fun are assured.

Scenery

When it was announced that at long last our own country was to issue stamps showing some of the beauty spots to be found in the British Isles, those who have agitated for such to be taken (and there have been many doing just that. I was once told that the Post Office received hundreds of letters every year urging such a step) must have been really delighted. What some of them will think of the stamps, now they have got them, is another matter. But at least the P.O. has shown willing. It has also shown that its stock objection in the past that to show views on stamps would lead to protests from those parts of the country not depicted, had very little substance. Anyhow, I have suggested that modern Spanish stamps are worth taking up, and so they are, but even if our own are not as colourful they are simply asking to be collected. My own preference is for used. But the greatest care should be taken to see that the postmarks are light, particularly with view stamps.

And then what?

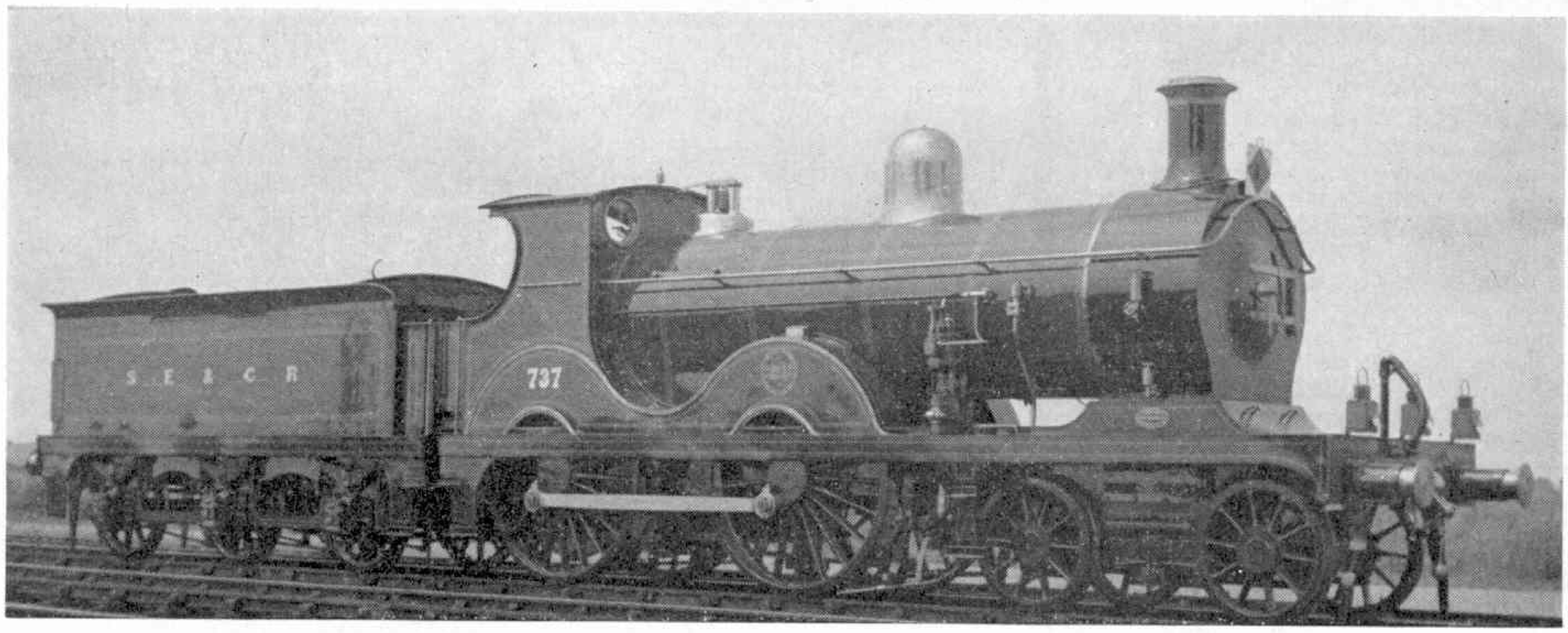
It is quite obvious that our Post Office (unless of course another P.M.G. has other ideas, which would no doubt receive an official backing, if they were against so many new stamps) intends to go on issuing one set of special stamps after another, and if they would confine these to those of a low face value, leaving out stamps above 6d., then I think they would be very welcome. It is understood that there are to be four issues of four values each, all showing British beauty spots (as does France for instance). Fine, but how about a set showing British wild flowers; to be followed by wild birds, and then wild animals. Oh, I can hear some city dwelling readers remarking, wild animals indeed, what have we got in this urbanised country? I remember once on a holiday in North Wales, sitting on a seat chatting to a man who lived and worked in London. We were idly gazing at a little stream, in spate, a few yards in front of us. Suddenly, I touched his arm, and pointed to a lovely little animal, which was actually looking at us, from less than a dozen yards distance. My companion jumped up and, of course, the animal was out of sight in a flash. 'What on earth was that, was it something which has escaped from the Colwyn Bay Zoo?' 'No, it was only a little stoat', I answered. 'But surely there aren't such things still running wild in Britain?' was all I got in reply. Now just think what a lovely little wild animal set could be produced. Count up, for fun, how many wild animals still roam Great Britain. The number will surprise the city dwellers at least. And wouldn't such an issue be an education to many? As for flowers, wild orchids (yes orchids, but not like the one illustrated) alone, would make a fine show, if the stamps were up to foreign stamp standards. And wouldn't some people be surprised to see some of the beautiful birds to actually be found in Britain.

Football

As these lines appear Great Britain will be issuing the set of stamps to commemorate the holding in Great Britain of another World Football Competition, and one or two scores of other countries will be following suit, including a number of Commonwealth countries, who have about as much connection with this sporting event as if it was being played on Mars (for all we know to the contrary, they may have their own football tournaments up there), but I think such stamps will still be popular, for there are thousands of collectors who go in for stamps depicting sporting subjects, and naturally football is tops in popularity, so don't just laugh when you see that countries like, say, Bermuda, issue a football set. Maybe it will be worth buying.

The Tip of the Month

So popular are our own stamps becoming, through the publicity they are receiving from the special issues which the Post Office are releasing, that I am almost tempted to refer to these stamps again, but instead I must reserve my remaining space for some other stamps which are becoming increasingly popular. I refer to British Commonwealth issues of the K.G. VI reign. In March a new and extensively revised edition of the Commonwealth Catalogue was released (most dealers can supply at 12s. 6d. post paid). This new edition has really given a great push to the stamps it deals with, and with fairly good stocks available at most dealers, quite a tidy collection can be easily got together, without breaking one's bank. So I think I could not do better this month than to suggest that you give these issues a once over. There are still lots of bargains to pick up in this field.



Transport Museum

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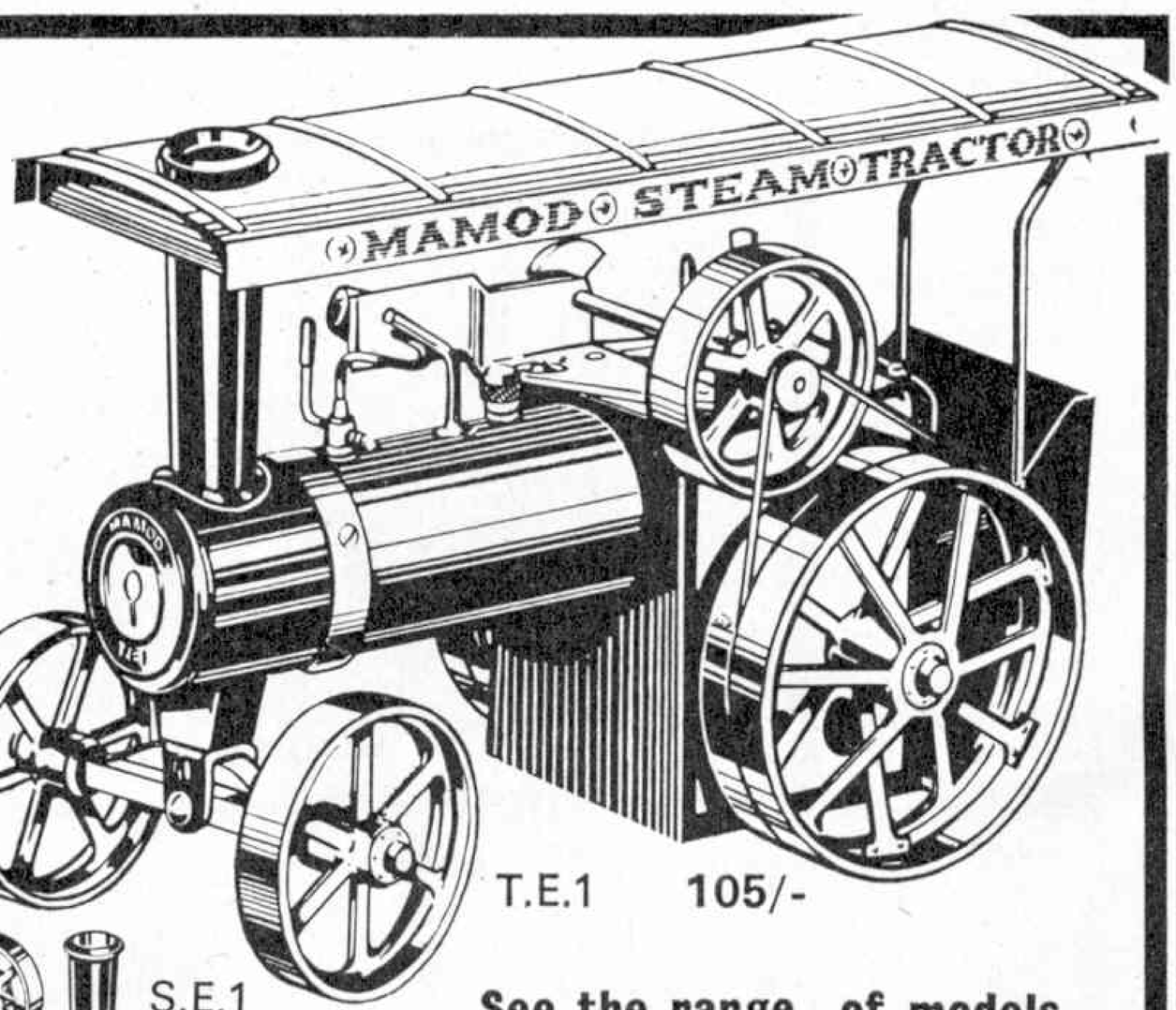
Be your own Boss



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These solidly constructed models will give you years of power, outdoors and indoors, and all you need are water and meths.

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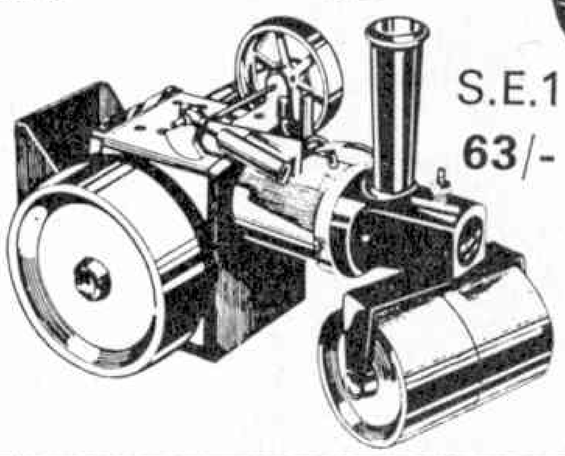

Mamod

See the range of models in your local toy and sports shops, or write for details to:

MALINS (Engineers) LIMITED
Thorns Works, 206 Thorns Road, Quarry Bank, Brierley Hill, Staffs.

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These young men are getting some of the finest training in the country—it can lead to O.N.C. and full Union recognition. They are Royal Air Force apprentices.

If you want to qualify as a technician, either on the electronic or on the aircraft side, this Technician Apprentice scheme in the R.A.F. is something to find out about. It offers technical training in an advanced modern trade, to the highest standards obtainable anywhere in this country.

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These are the qualifications you need. Age on joining, 16–17½; exceptionally 15½–17¾. (Next entry is October—closing date for applications is 1st September.) Minimum educational qualifications: 4 'O' levels, one in mathematics, one in an acceptable science subject; or equivalent Grade 1 C.S.E. passes. (If you do not have these qualifications, but are between 15½ and 17½, you may be eligible for training as a Craft or Administrative Apprentice.)

Send for this book. It gives you the facts.

R.A.F. Careers Information Service
(703 FBI), Victory House, Kingsway, London, WC2

Please send me, without obligation, the free book 'Life as an R.A.F. apprentice'.
(Enquiries from U.K. residents only.)

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Please list on a separate piece of paper the 'O' levels or Grade 1 C.S.E. passes that you hold or expect to gain.

The Royal Air Force

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SAIL . . . . POWER

414S DERWENT
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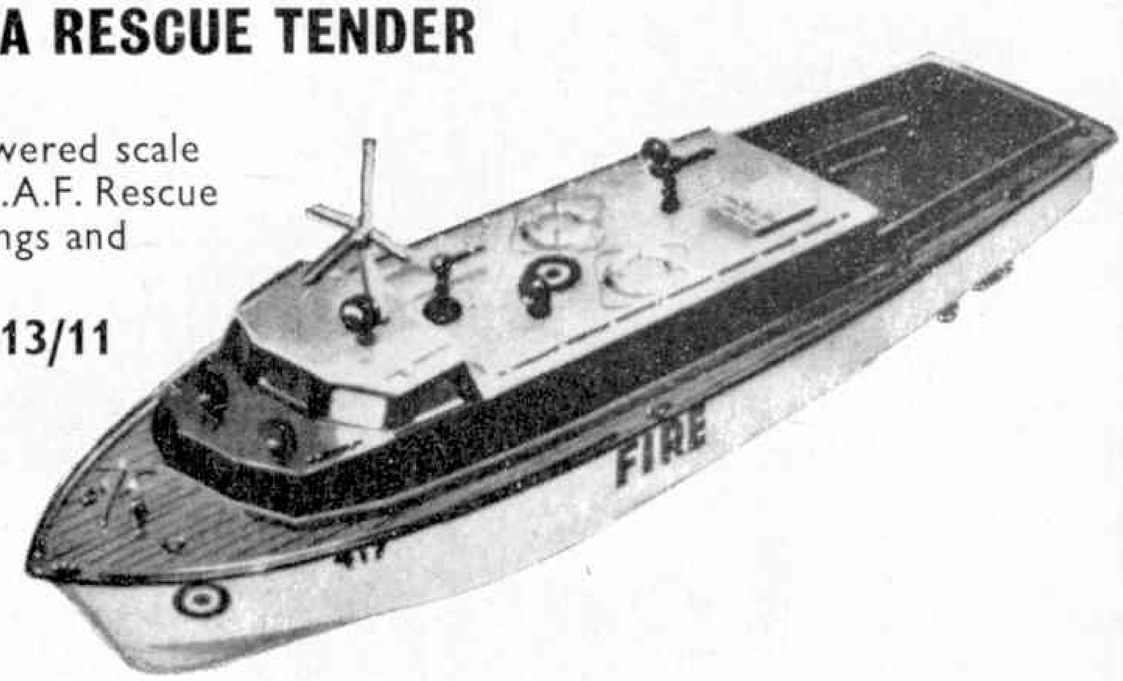

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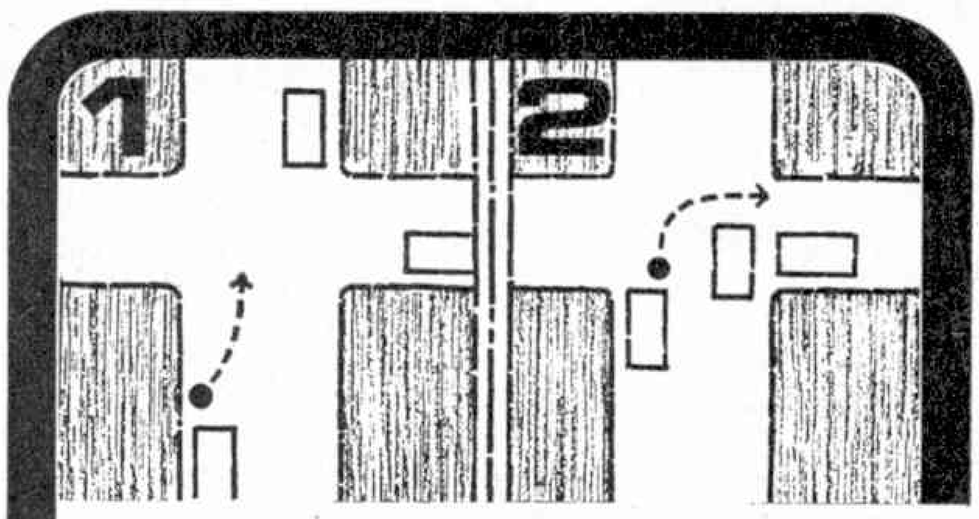

1 If you intend to turn right at a road junction, **prepare in advance!** When you are about 20 yards short of the turn, look behind you. If all is clear, signal your intention, and draw out to take up your position just to the left of the centre line.

2 Do not cut the corner. See that the road is clear to the right and left, wait until oncoming traffic has passed you, then take the corner in a wide arc. Gain the inside lane straight away, so as to let faster vehicles, which may be turning with you, overtake.

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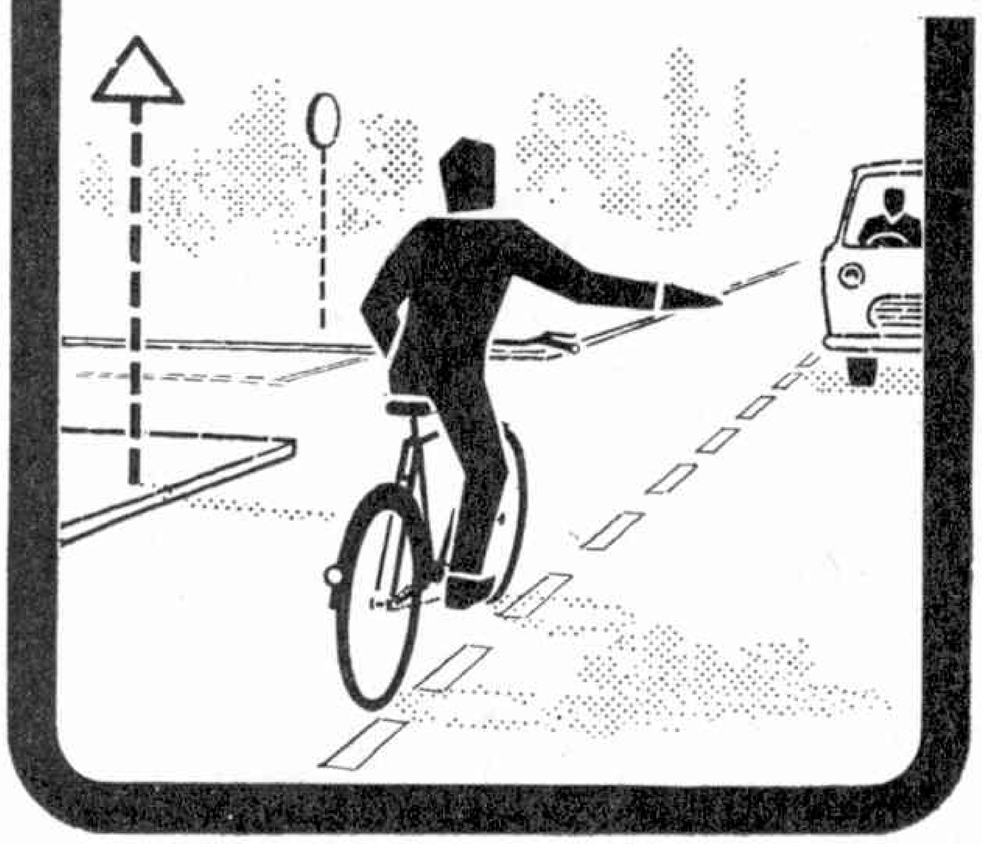

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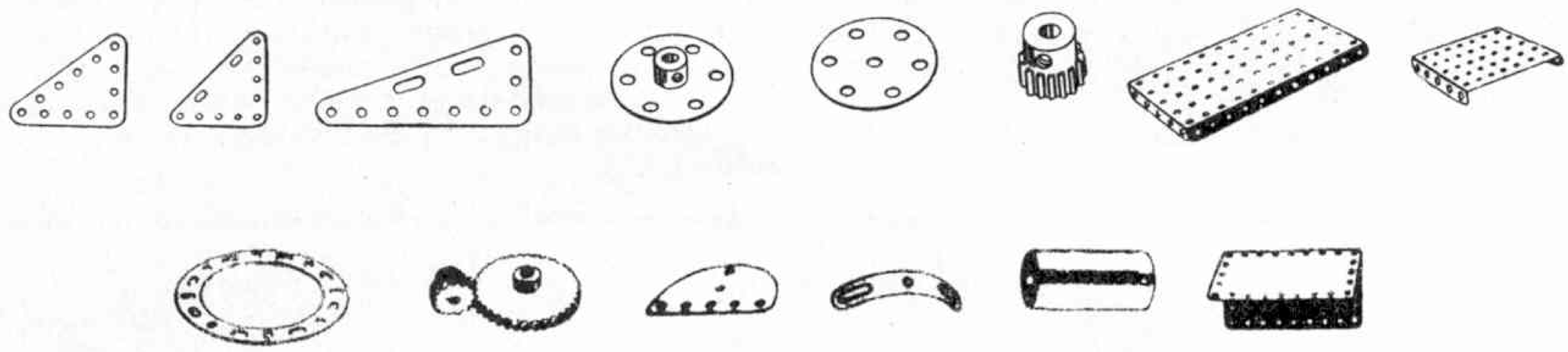
DUNLOP



Dealers who specialise in Meccano spare parts

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.

C. G. MARSHALL
Maxwell Road
BEACONSFIELD
Telephone: 4092

H. SALANSON & CO. LTD.
83-85 Fairfax Street
BRISTOL 1
Telephone: 2-6185

BARRETT'S LTD.
2 St. George's Street
CANTERBURY
Telephone: 66161

Cheltenham Motor & Cycle Co. Ltd.
31 High Street
CHELTENHAM
Telephone: 53099

W. PAINE & CO. LTD.
168 High Street
CHATHAM, Also at Strood and Grays
Telephone: 45215

DOLL'S HOSPITAL (YOUNGSTERS)
55 Hallgate
DONCASTER
Telephone: 2831

THE GUILDFORD
DOLL'S HOSPITAL LTD.
13 Swan Lane, GUILDFORD
Telephone: 61331

LUCAS'S (Hobbies) LTD.
7 Tarleton Street
LIVERPOOL 1
Telephone: Royal 7562

H. A. BLUNT & SONS LTD.
133 The Broadway, Mill Hill
London N.W.7
Telephone: Mill Hill 2877

JEREMY
16 Princes Arcade, Piccadilly
LONDON, S.W.1
Telephone: Regent 1846

F. T. B. LAWSON LTD.
New George Street
City Centre, PLYMOUTH
Telephone: 65363

LANE'S TOY SHOP
75 High Street
ROCHESTER
Telephone: Chatham 41870

WILTONS SPORTS AND GAMES
Corner Canal and Queen Street
SALISBURY
Telephone: 2984

JOHN W. BAGNALL LTD.
18 Salter Street
STAFFORD
Telephone: 3420

LESLIE BROWN
Super Toy and Model Store
95 High Street, Stockton-on-Tees
Telephone: 67616

OVERSEAS DEALERS

AUSTRALIA

NORTH SHORE HOBBIES PTY. LTD.
(Mail Order, Parts and Sets)
8 Post Office Street
Pymble (SYDNEY) N.S.W.

Walter & Stevenson Pty. Ltd.
395 George Street
SYDNEY
Telephone: 29 3566

NEW ZEALAND

BUNKERS LTD.
P.O. Box 58
HASTINGS
Telephone: 84-283 (Mail orders welcomed)

look

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to find out more about the many interesting products advertised in the pages of Meccano Magazine. Just tick the squares against the name of the advertiser from whom you would like to receive more product information and post it to:- Meccano Magazine, St. Alphage House, Fore Street, London E.C.2.

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- ☐ Ashford
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- ☐ Beatties of London
- ☐ Camera Craft
- ☐ Castrol
- ☐ Cemay
- ☐ Corgi Classics
- ☐ Dunlop
- ☐ Frog
- ☐ Garside
- ☐ Gibbon
- ☐ H.A.C.
- ☐ Hinton
- ☐ Hales
- ☐ Honourable Leong Fu
- ☐ I Spy Books
- ☐ Johnsons of Hendon
- ☐ Jones
- ☐ KeilKraft
- ☐ King Charles
- ☐ Kodak
- ☐ Lang
- ☐ Meccano
- ☐ Newnes
- ☐ Pax
- ☐ Peco
- ☐ Practical Woodworking
- ☐ Railway Modeller
- ☐ R.A.F.
- ☐ Rearden Smith
- ☐ Royal Navy
- ☐ Radionic
- ☐ Scalextric
- ☐ Scalextric Boats
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- ☐ Camera Craft
- ☐ Castrol
- ☐ Cemay
- ☐ Corgi Classics
- ☐ Dunlop
- ☐ Frog
- ☐ Garside
- ☐ Gibbon
- ☐ H.A.C.
- ☐ Hinton
- ☐ Hales
- ☐ Honourable Leong Fu
- ☐ I Spy Books
- ☐ Johnsons of Hendon
- ☐ Jones
- ☐ KeilKraft
- ☐ King Charles
- ☐ Kodak
- ☐ Lang
- ☐ Meccano
- ☐ Newnes
- ☐ Pax
- ☐ Peco
- ☐ Practical Woodworking
- ☐ Railway Modeller
- ☐ R.A.F.
- ☐ Rearden Smith
- ☐ Royal Navy
- ☐ Radionic
- ☐ Scalextric
- ☐ Scalextric Boats
- ☐ Seccotine
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- ☐ Herbert Terry
- ☐ Warne

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- ☐ Ashford
- ☐ Archer
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- ☐ Beck
- ☐ Black
- ☐ British Rail Museums
- ☐ Beatties of London
- ☐ Camera Craft
- ☐ Castrol
- ☐ Cemay
- ☐ Corgi Classics
- ☐ Dunlop
- ☐ Frog
- ☐ Garside
- ☐ Gibbon
- ☐ H.A.C.
- ☐ Hinton
- ☐ Hales
- ☐ Honourable Leong Fu
- ☐ I Spy Books
- ☐ Johnsons of Hendon
- ☐ Jones
- ☐ KeilKraft
- ☐ King Charles
- ☐ Kodak
- ☐ Lang
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Classified Columns for your Sales/Wants/Swops

MECCANO MAGAZINE is the best medium for selling your old train set, stamp collection or any other item which is no longer of use to you but of possible use to others. Also, if you are short of an item for your collection, why not search for it by advertising in Meccano Magazine?

The cost is 4d. per word. (minimum 4s. 0d.) No box numbers. No trade ads.

Simply write each word of your advertisement in the spaces below (capital letters), cut out this quarter page and send it with your remittance to:— Classified Advertisement Dept., Meccano Magazine, St. Alphage House, Fore Street, London, E.C.2.

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WHY BE PUSHED AROUND! . . . SURPRISE ANY WHO DARES ASSAULT YOU!

You Too Can Become a Fearless Exponent of

CHINESE KUNG-FU KARATO

. . . the authentic Chinese Self-Defence Art that

DISABLES INSTANTANEOUSLY ON CONTACT

LEONG FU
梁富

BECAUSE OF RELIGIOUS BELIEF FORBIDDING THE ANCIENT CHINESE MONKS FROM CARRYING WEAPONS, THIS WEAPONLESS SYSTEM OF SUPER-HUMAN FIGHTING WAS FOUNDED AND DEVELOPED BY THEM TO SUCH AN EXTENT THAT THEY COULD SUCCESSFULLY RESIST AND DEFEAT BLOODTHIRSTY ROBBERS WHO ATTACKED AND SLAYED THEM JUST FOR THE ROBES AND TRINKETS THEY WORE. TAUGHT EXCLUSIVELY AND HANDED DOWN ONLY TO SELECTED DISCIPLES, WHO WERE SWORN TO COMPLETE SECRECY, THIS DEVASTATING ART WITH ITS AMAZING POWER TO MULTIPLY FIGHTING STRENGTH TENFOLD AND TO DISABLE INSTANTANEOUSLY ON CONTACT EVEN THE STRONGEST MAN ON EARTH WITHOUT THE USE OF BRUTE STRENGTH, IS NOW COMPLETELY REVEALED AND BROUGHT UP TO DATE FOR THE FIRST TIME IN THE ENGLISH LANGUAGE BY LEONG FU, THE ACKNOWLEDGED GREATEST LIVING MASTER OF KUNG-FU KARATO TODAY.

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Ask any high-ranking blackbelt Karate or Judo expert who has made the mistake of fighting a Kung-Fu master and he will tell you why he would rather fight any 5 armed persons trained in any other forms of combat rather than meet just one unarmed KUNG-FU MASTER. That is because what they learned from Karate, Jiu-Jitsu, Judo, Aikido, the so-called Westernised Kung-Fu and all other martial arts combined, actually consist of only a small part of authentic Chinese KUNG-FU fighting which leaked out of China to Japan in ancient days to found their combat systems.

AGE, BODILY SIZE, SEX AND SUPERIOR STRENGTH DON'T COUNT!

Because KUNG-FU disables ON CONTACT and because KUNG-FU uses amazingly simple secret anatomical movements and steps instead of brute strength to overcome attackers, sex, size and age does not matter very much. In fact, the greatest KUNG-FU master of all time, the Honourable Lee Hua-Tsein (Sheng Dynasty) was a slender scholarly looking man. Yet this man developed this superhuman skill to such an extent that his name was feared throughout the Orient in his time. When he was finally invited by the Emperor of China to demonstrate his skill, the Emperor was astonished to find the man whose very name was enough to put to flight the most ferocious ruffian, was not a fierce giant, but a simple, gentle, quiet scholarly man who stood barely 5 feet and weighed less than 100 lb. fully clothed. Not much of a person to look at, but nonetheless a man who put out of action within a few minutes, 20 hand-picked members of the famed IMPERIAL GUARD.

YOU LEARN techniques that can OUT-WIT, OUT-FIGHT, OUT-MANOEUVRE NOT JUST ONE OR TWO, BUT THREE, FOUR, FIVE OR EVEN A SMALL MOB OF ARMED HOODLUMS. And in order to safeguard yourself, many of these techniques are delivered with a minimum of close body contact. With your new power, NOTHING CAN SCARE YOU, and you can live with full confidence in the knowledge that you can defend yourself, protect the weak and deal successfully with ANY MAN, ANY ASSAILANT, ANY TIME, ANY SITUATION AND ANY WHERE. With KUNG-FU KARATO, I guarantee you the ability to live, to work and to walk without fear.

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(Dept. OB/1)
119 Anderson Road, Ipoh, Malaysia

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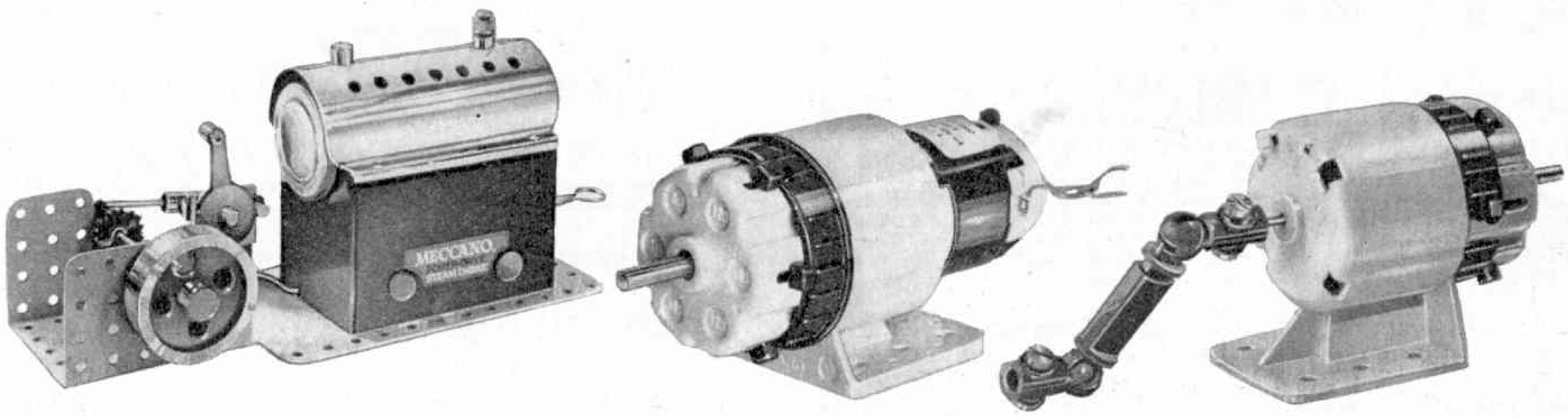
make your MECCANO models move with these New Power Units



MECCANO STEAM ENGINE

What a fabulous idea for Meccano engineers to catch on to—super-efficient *steam power* to drive off gears, chains and pulleys! Working on methylated spirits and water, the Meccano Steam Engine has a single lever that operates the fly-wheel in forward *and* reverse directions, and also controls the running speed. Clean, safe, simple to operate.

ONLY **68/6**

MECCANO 6-RATIO GEARBOX WITH ELECTRIC MOTOR

Now put 6-speed *electric* power into your Meccano models! Really powerful, sturdy and light, the motor works by 6-volt battery or 3-12 volt DC power supply. Speed range 115 r.p.m. to 2300 r.p.m. off-load at 6 volts. Forward/off/reverse switch. *The direct drive* gearbox transmission ratios are 3:1, 6:1, 12:1, 16:1, 32:1, 60:1. Gears may be changed while motor is running. Foolproof. Simple to operate. No maintenance required.

ONLY **49/6**

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It's that terrific 6-speed gearbox again—this time with superbly designed universal coupling that enables you to drive it from any power source, using a standard Meccano $\frac{5}{32}$" diameter spindle. Ideal power units —Meccano EMEBO and E15R Electric Motors.

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MECCANO® POWER DRIVE SERIES

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Dealers who stock MECCANO spare parts

This is the second part of a list of dealers who handle the full range of Meccano Spare Parts. It is supplementary to the page of Spare Parts Specialists appearing elsewhere in this issue. Names are arranged by Counties with entries in alphabetical order of town. This list is a fully revised and amended version of the list published in the February edition of Meccano Magazine and it will be continued next month.

Leicester

BETTINSON (IRONMONGERS) LTD., 210/212 Saffron Lane, Leicester.
THE LEICESTER CO-OP. SOC. LTD., High St., Leicester.
MIDLAND EDUCATIONAL CO. LTD., 17/21 Market St., Leicester.
MARTIN ELGOOD LTD., 160 Evington Rd., Leicester.
NORTH'S TOY & MODEL STORES, 2 Cranmer St., Hinckley Rd., Leicester.
S. C. HORSLEY, 6/10 Park Rd., Melton Mowbray.
F. A. WATTS, 39 Sherrard St., Melton Mowbray.

Lincolnshire

DEWEY BROS. LTD., 17 George St., Barton-on-Humber.
E. TAYLOR, 57 Wrawby St., Brigg.
J. ARBON & SON, 38 Watergate, Grantham.
E. H. BRADLEY, 168 Yarborough Rd., Grimsby.
C. A. GREGORY, 51 Hainton Ave., Grimsby.
BYCROFTS EMPORIUM, 366 High St., Lincoln.
S. A. NOBBS & SONS LTD., 2 Norman St., Lincoln.
H. H. B. SUGG LTD., High St., Scunthorpe.
C. PARKER & CO., Market Place, Louth.

London

J. & J. LIBRARIES, 7/8 Broadway Parade, Highams Park, London, E.4.
J. MILES, 166 Station Rd., Chingford, London, E.4.
D. S. DAVEY LTD., Dolls Hospital, 528 Kingsland Rd., Dalston, London, E.8.
BEARMANS LTD., 865/873 High Rd., London, E.11.
CRAFTEX, 277/283 High Rd., Leytonstone, London, E.11.
W. E. NORRIS & SON, 149 Barking Rd., Canning Town, London, E.16.
G. AMES, 377/9 Hoe St., Leyton, London, E.17.
A. E. SEDGWICK, 424/6 Forest Rd., Walthamstow, London, E.17.
J. E. TELFORD, 4/5 Golden Parade, Wood St., Walthamstow, London, E.17.
MODEL LTD., The Arcade, Liverpool St., London, E.C.2.
PETERS & KNIGHT, 10 Royal Exchange, Cornhill, London, E.C.3.
H. J. NICHOLLS LTD., 308 Holloway Rd., London, N.7.
WHEATLEYS LTD., 91a, 91b Hertford Rd., Edmonton, London N.9.
LULLABY, 299 Muswell Hill, London, N.10.
J. P. LYONS, Rodwins Toy Stores, 90 Crown Lane, Southgate, N.14.
MURRAY & BRAND'S LIBRARIES LTD., 25 The Broadway, Southgate, N.14.
E. J. HERAUD LTD., 54 Fore St., Edmonton, N.18.
P. W. HUDSON, 737 Green Lanes, Winchmore Hill, N.21.
MELCOMBE TOYS, 23 Melcombe St., London, N.W.1.
RIPMAX LTD., 39 Parkway, Camden Town, N.W.1.
FREDERICK REED, 13a Walm Lane, London, N.W.2.
MORGAN RICHARDS, 10/11 Northway's Parade, Swiss Cottage, N.W.3.
JOHN BARNES & CO. LTD., 191/217 Finchley Rd., London, N.W.1.
THE MUSIC BOX, 64 High St., Hampstead, N.W.3.
YOUNG'S, 36 Rosslyn Hill, Hampstead, N.W.3.
WHITTAKER'S LTD., 7 Queens Parade, Queens Rd., Hendon, N.W.4.
LODER & CO. LTD., 118 Fortune Green Rd., London, N.W.5.
B. B. EVAN & CO. LTD., 148/162 Kilburn High Rd., London, N.W.6.
H. A. BLUNT & SONS LTD., 133 The Broadway, Mill Hill, N.W.7.
HALL ROBERTSON & CO. LTD., 56 Church St., Edgware Rd., N.W.8.
A. W. SOMMER, 356/8 Kingsbury Rd., Kingsbury, N.W.9.
KENDRICKS, 1045 Finchley Rd., Temple Fortune, N.W.11.
ALLAN BRETT CANNON LTD., 32 Railway Approach, London Bridge Station, S.E.1.
TOY TOWN, 91/94 London Rd., London, S.E.1.
RAGGITY ANN'S, 26 Tranquil Vale, Blackheath, S.E.3.
MOHASP SUPPLIES, 8 Camberwell Rd., London, S.E.5.
EDMUNDS & BELL, 111a Rushey Green, Catford, S.E.6.
L. E. PEARSE, 25 Catford Hill, London, S.E.6.
G. SWADDLING LTD., 21/23 Rusney Green, Catford, S.E.6.
GAY'S CYCLES, 284 Court Rd., London, S.E.9.
F. MEIKLEJOHN, 189 Lambeth Walk, London, S.E.11.
JUNIOR SHOP, 130 Burnt Ash Rd., Lee, S.E.12.
CHIESMANS LTD., 33 High Street, Lewisham, S.E.13.
STEMP BROS., New Cross Rd., London, S.E.14.
F. H. BAILEY, 168 Lower Rd., Rotherhithe, London, S.E.15.
JONES & HIGGINS LTD., Rye Lane, 68/72 High St., Peckham, S.E.15.
CUFF & CO. LTD., 87/104 Powis St., Woolwich, S.E.18.
PALACE MODEL SHOP, 13 Central Hill, Upper Norwood, S.E.18.
SIDNEY ROSS & CO. LTD., 9/13 Powis St., London, S.E.18.
L. GREEN, 89 Dulwich Village, London, S.E.21.
TOWNS TOYTOWN, 15a Whitehorse Lane, South Norwood, S.E.25.
JARMAN'S, 24 Knights Hill, West Norwood, S.E.27.
HARRODS LTD., 87/135 Brompton Rd., London, S.W.1.
JEREMY (D. M. KIRBY), 16 Princes Arcade, Piccadilly, S.W.1.
PETER JONES, Sloane Sq., London, S.W.1.
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CALLING ALL READERS

AMONG THE MODEL-BUILDERS

Regular readers of the 'M.M.' may remember the monthly Meccano section we ran for very many years entitled 'Among the Model-Builders'. This, as the name suggests, was devoted mainly to you, the reader. It featured your gadgets and mechanisms; it included photographs of your models; it gave specific hints on particular types of construction; it gave general hints on the Meccano hobby as a whole—in short, it contained anything of interest to the Meccano enthusiast.

When the format of the Magazine was changed in 1964, shortage of space made it necessary for us to close down the section, but, thanks to the additional eight pages introduced last month, we now have space to spare. Spanner would like to put some of this to good use by re-introducing the feature. He cannot do so, however, without your co-operation, so if you have any material or photographs you feel would be of interest to other readers, particularly a useful mechanism, please write to: 'Among the Model-Builders', Meccano Magazine, Binns Road, Liverpool, 13.

Any photographs should be good, clear, black-and-white prints, as large in size as possible. If they show a mechanism, written building instructions should be included, but do not mark any numbers on them. If numbers are required to tie-up with the text, then these should be marked either on a second, identical print or on a piece of tracing paper fixed over the print. We can promise that all material submitted will be carefully considered for publication and payment, probably in the form of a Meccano Outfit, will be made for everything used.

MODEL-BUILDING CONTEST '66

Entries in the current Meccano Competition are pouring into our Liverpool office, but there's still plenty of time left for late starters to submit their models with an equal chance of success. The competition is open to every owner of a Meccano Set living anywhere in the world and no limit is set either on the number of parts which may be used or the number of entries which may be submitted. Any kind of model is eligible, other than one taken direct from a Meccano Instruction Manual, but remember that originality counts. Also, the judges will give special consideration to models in which the more unusual parts are put to good use.

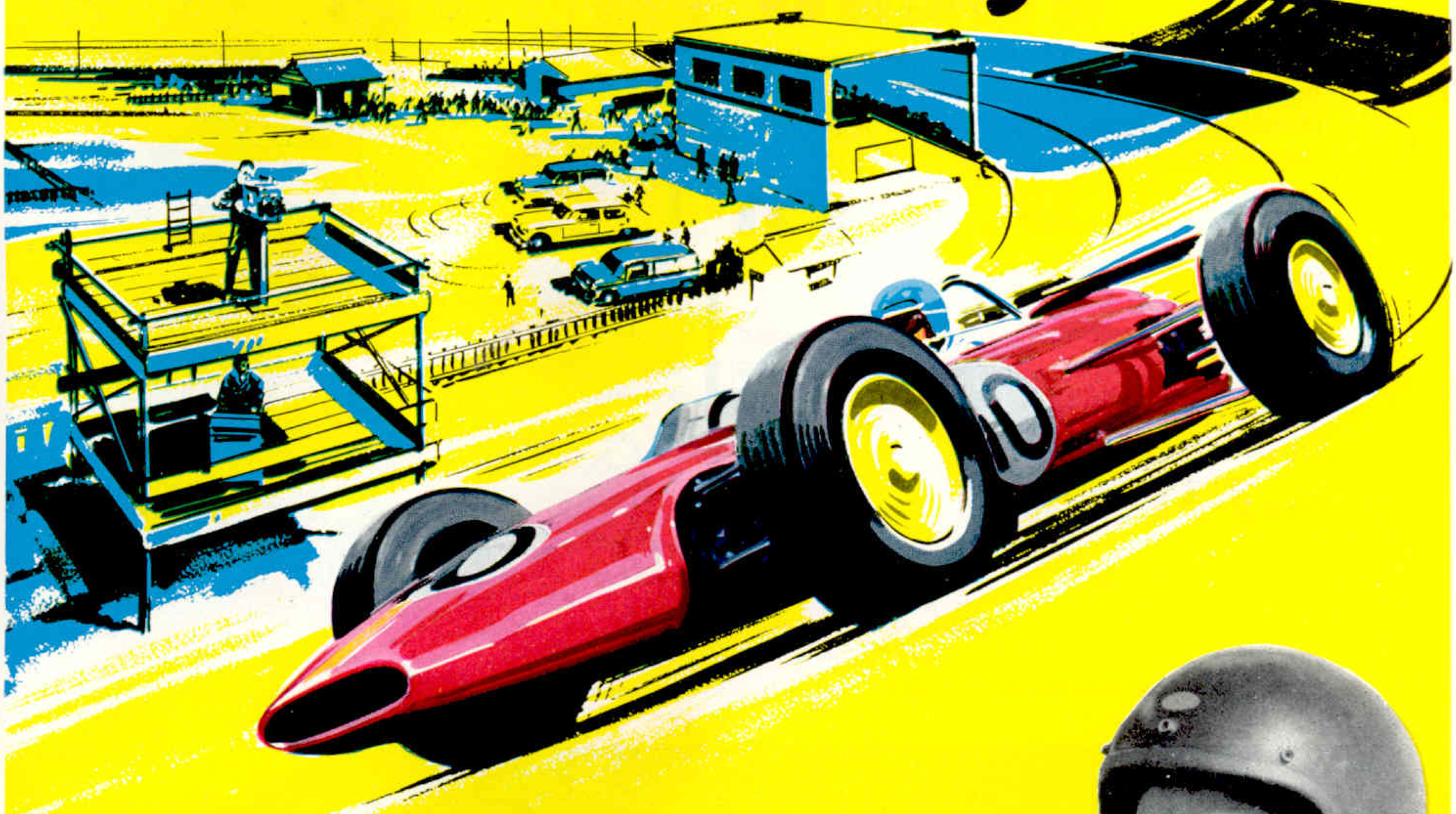
The Contest closes on June 30 for competitors in the U.K., and on July 14 for those living overseas. Entries will be divided into two sections, A and B. Section A is for competitors under 14 years of age on the closing date and Section B is for competitors aged 14 or over on that date. A separate set of valuable cash prizes will be awarded to the winners in each section.

To enter, obtain a photograph or sketch of the model you have built and write your name and address on the back, together with the letters A or B (according to your section), and forward to: Model-Building Contest '66, Meccano Ltd., Binns Road, Liverpool, 13. Prize-winning entries become the property of Meccano Ltd., but unsuccessful attempts will be returned if accompanied by a suitable stamped addressed envelope. With overseas entries, a self-addressed envelope and the appropriate International Reply Coupons would be required.

SCALEXTRIC

REGD.

Model *Motor Racing*



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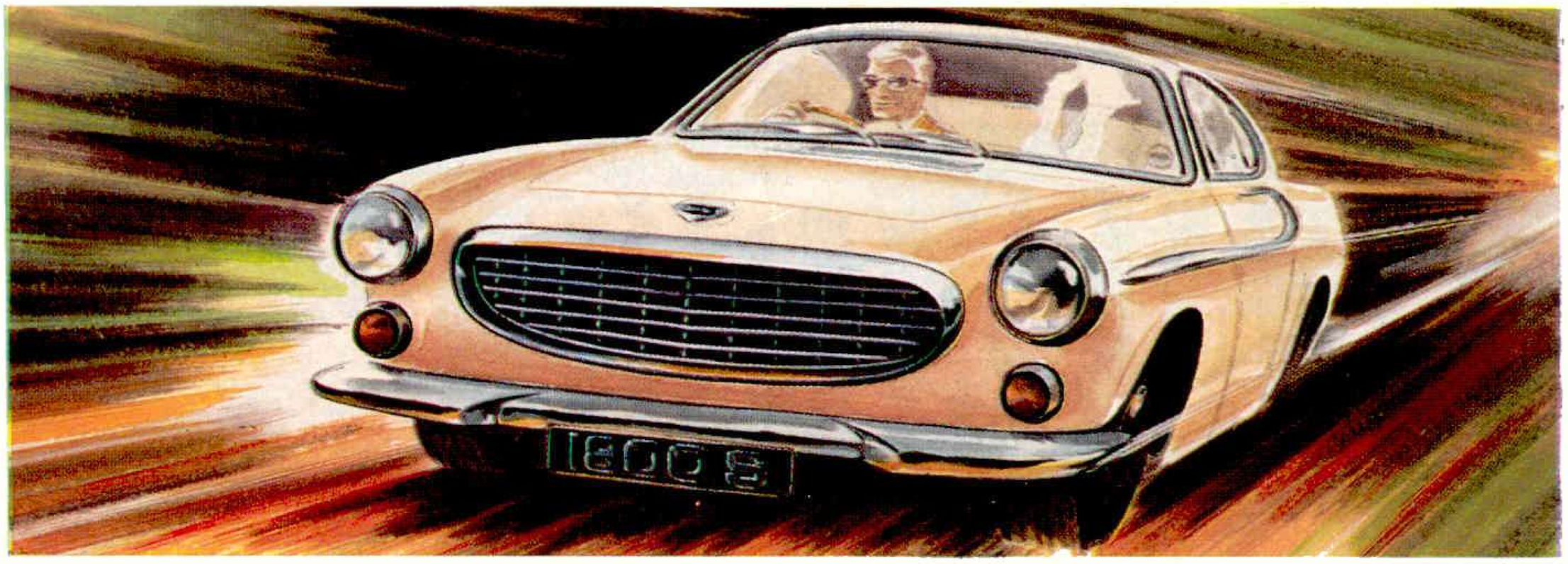

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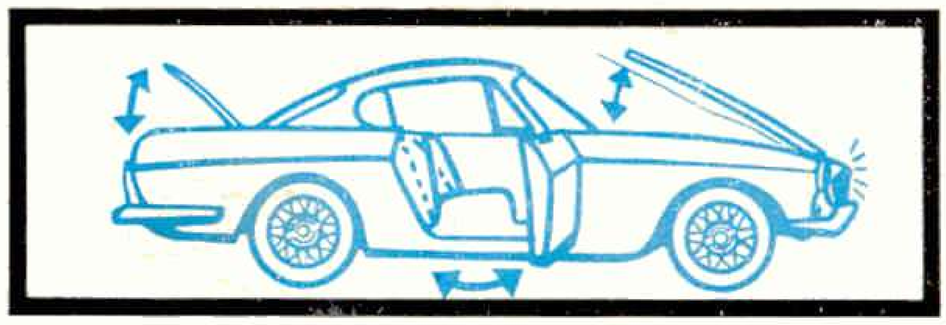

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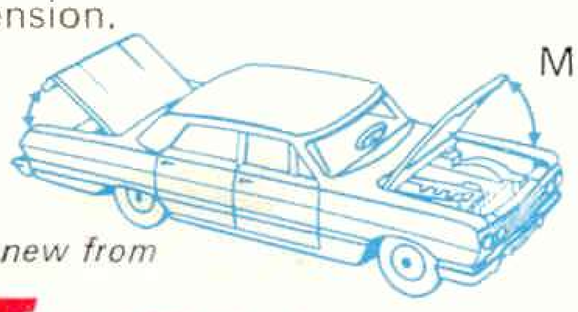

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