VOL. XLVIII. No. 13 JANUARY 1964

MECCANO MAGAZINE

1/3

MECCANO

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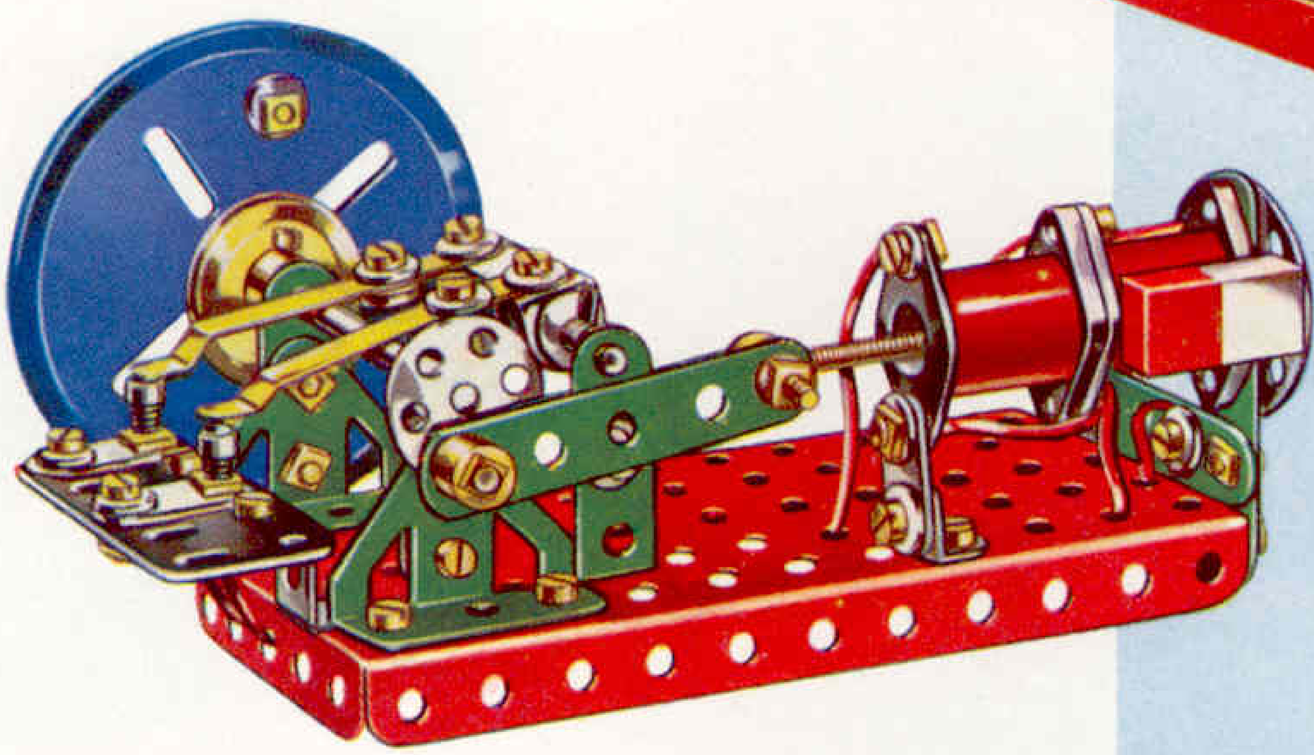

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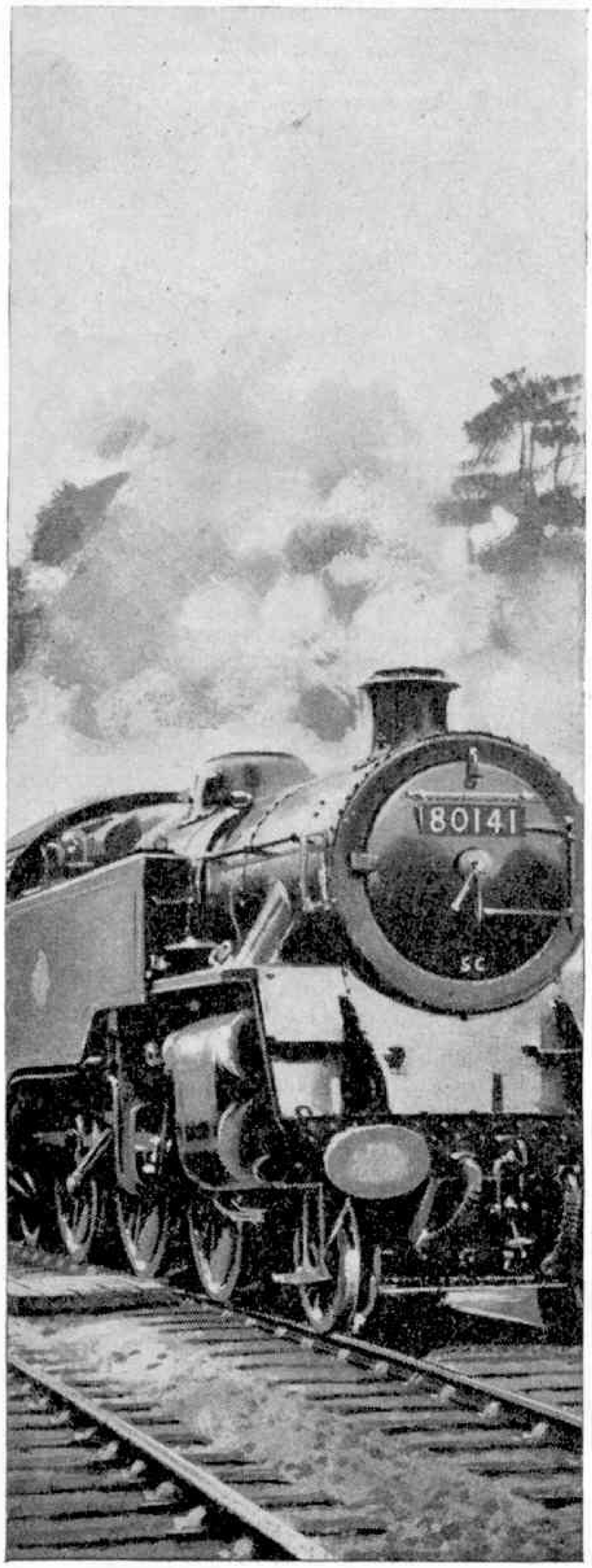

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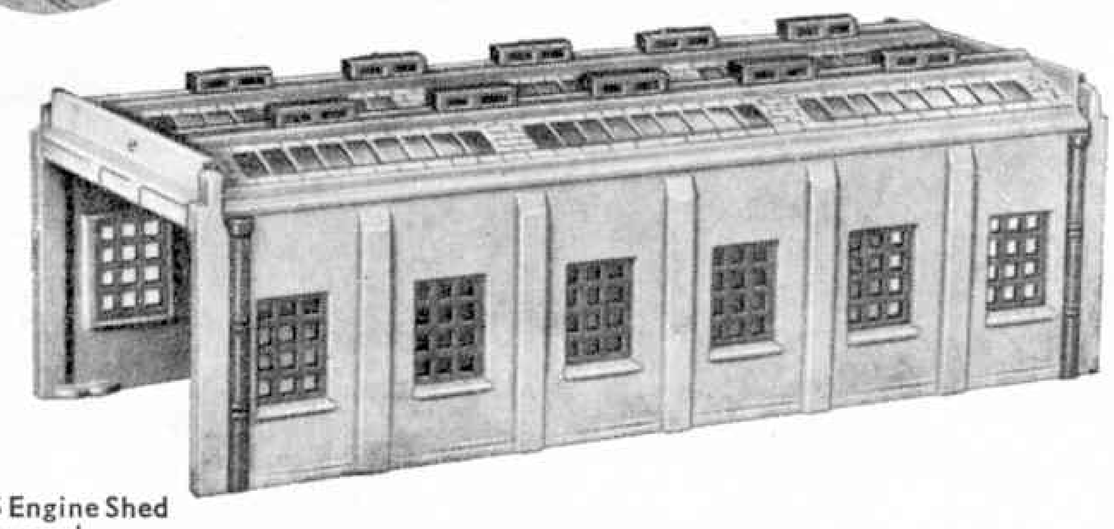

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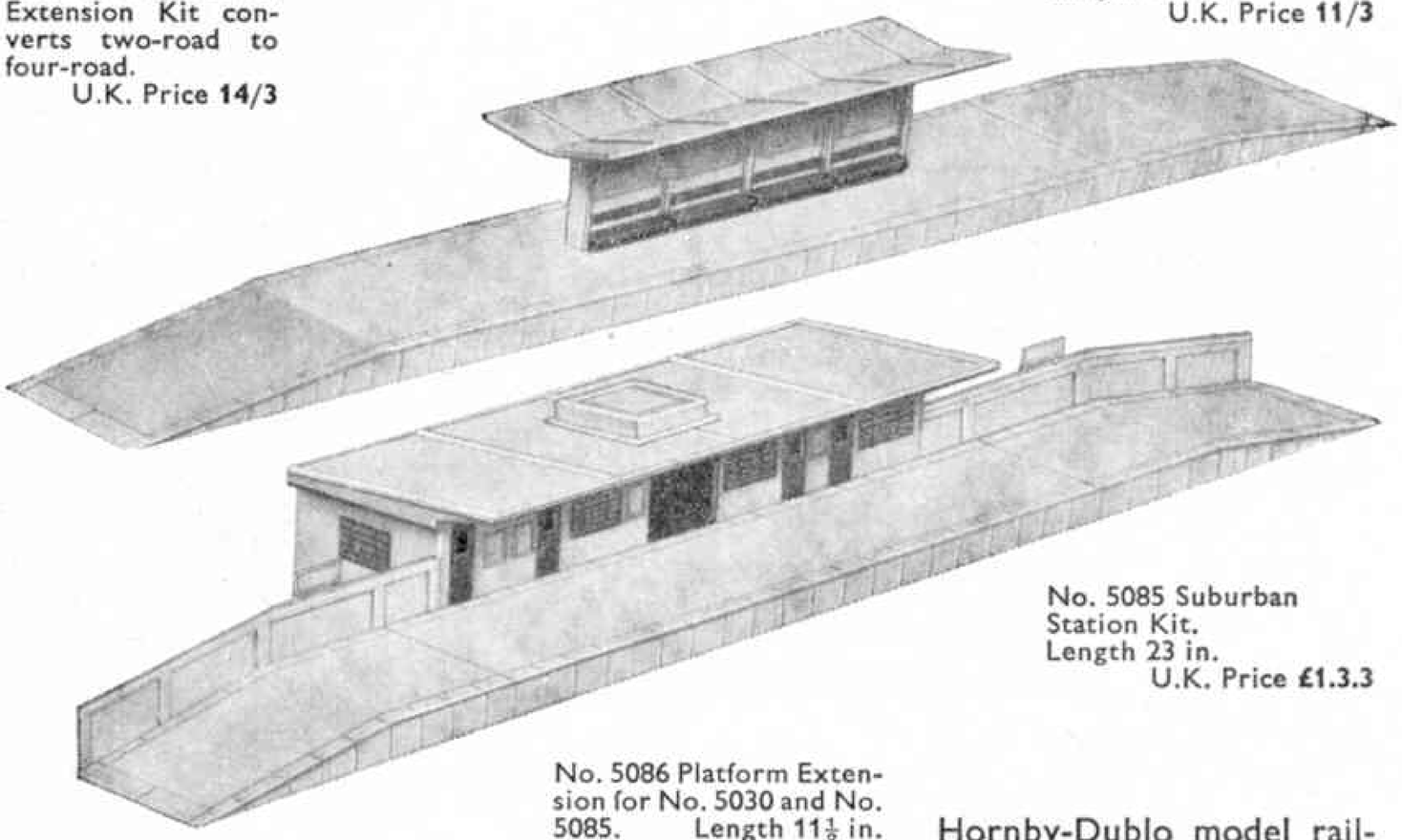

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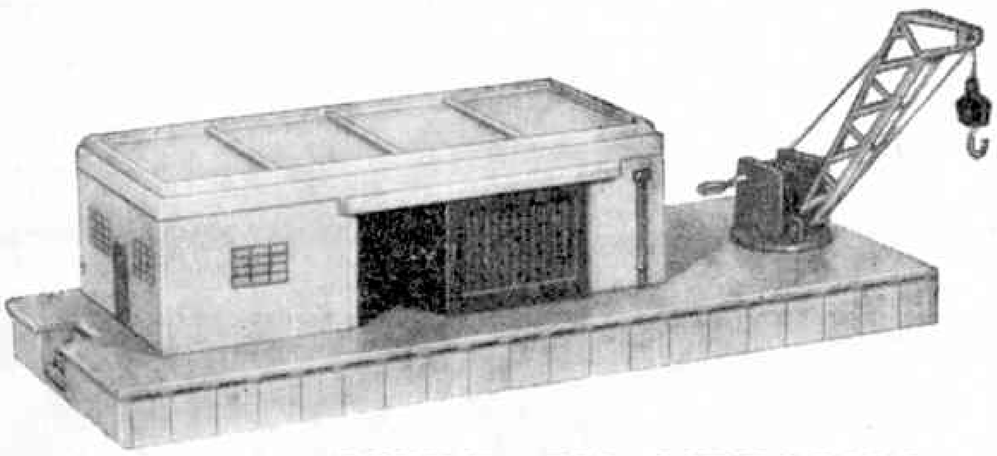

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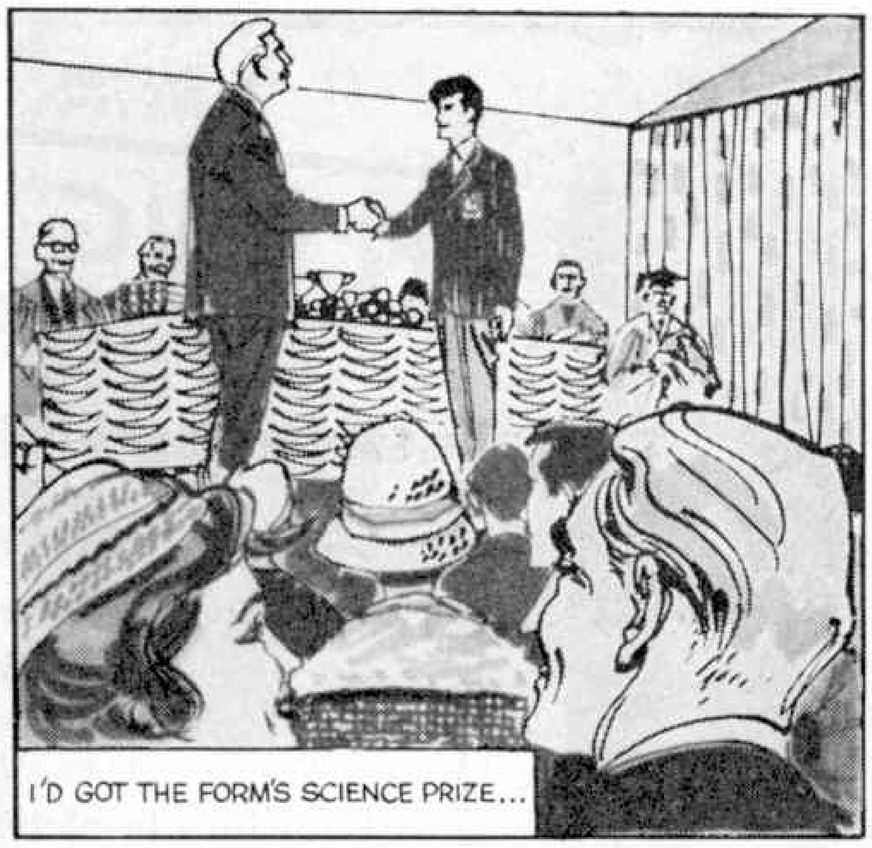

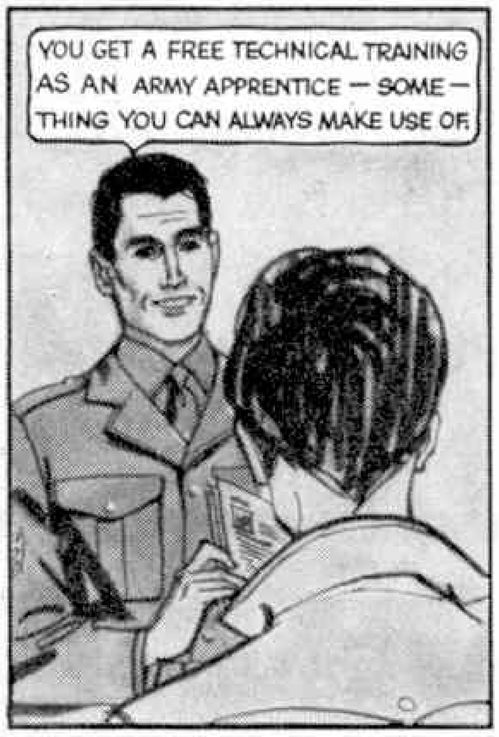

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QP/23/C

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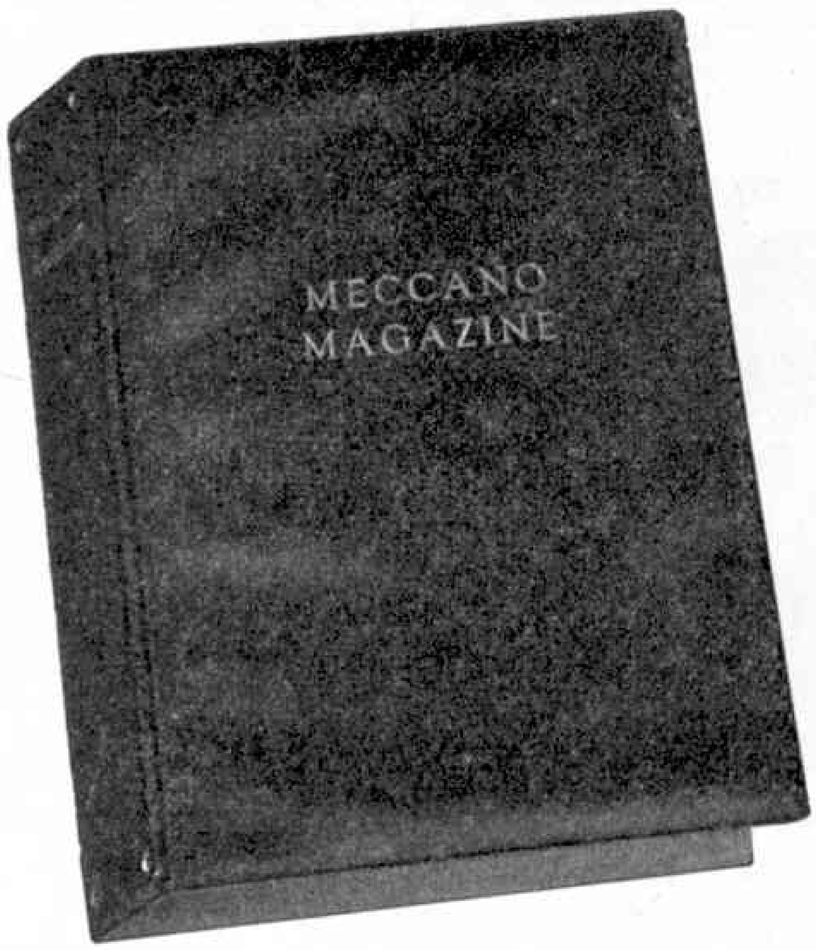

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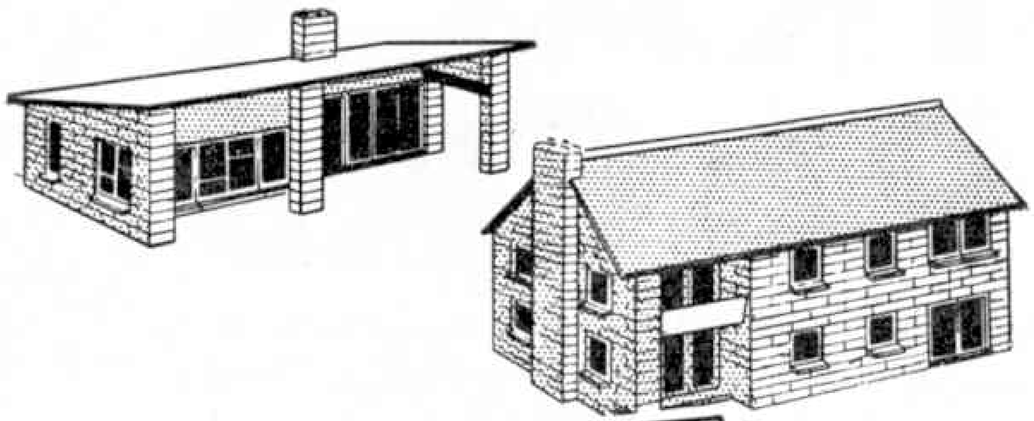

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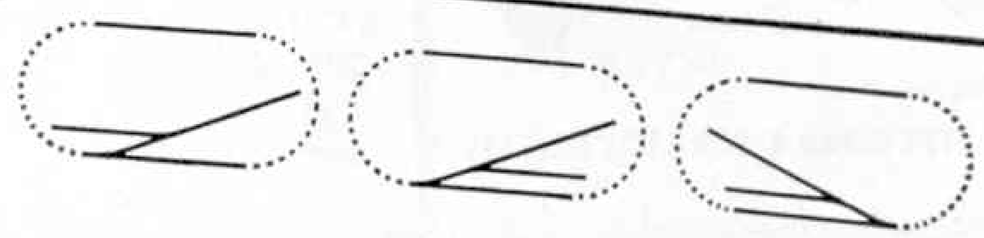

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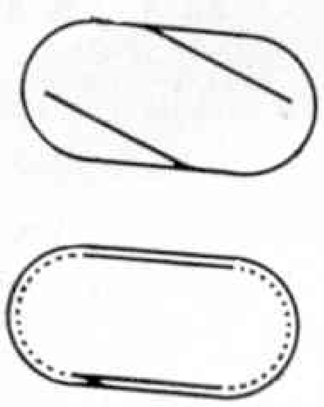

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January 1964

MECCANO MAGAZINE

Volume XLVIII No. 13

A new look for your magazine

A new year—and a new magazine. We can now tell you more about our plans for the new, bigger *Meccano Magazine*, which will soon appear on the bookstalls.

Out in mid-February, the March issue will contain the regular articles on hobbies, road and track, railways, shipping, aircraft, space travel, which you have always enjoyed. In addition there will be news from all the model manufacturers month by month and also features about your favourite pop artists and TV personalities. Young men today are more interested than ever before in matters of style and taste, so we will present regular articles about clothes for the modern man. The first thing you will notice about the larger size *Meccano Magazine* will be the brighter and livelier presentation. We have done this because we know that young people rightly demand the best in modern design and because we think your own magazine should be just as smart as any published for older people. We hope you like it. No, the price is not being increased. It remains at only 1s. 3d.

You will see that this month we have already introduced a mailbag section in which we publish your letters to your magazine. We want you to write and tell us your views about what we are trying to do and about any topic that interests you. Happy new year!

IN THIS ISSUE

Where Pirates Strode 536
H. G. Forsythe takes readers back to the days of Captain Morgan and the Spanish Main.

Target . . . Earth 538
The Story of the International Upper Mantle Project, told by Donald S. Fraser.

Around The Societies 548
A review of the activities of railway clubs throughout Great Britain.

Product Review 550
New models, etc., for the do-it-yourself enthusiast.

Meccano Vintage Car 556
Spanner shows young builders how to make a fascinating model.

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This month's front cover shows one of the diesel railcars now operating on the Isle of Man railway between Douglas and Peel and Douglas and Port Erin. Two railcars were purchased in June 1961 from the County Donegal Railways and they run back to back with a parcels van in between, handling all the island's winter traffic. Our illustration was taken at Port Erin Station.

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Next Month: PATH ACROSS THE SEA
THE ESKIMOS OF CANADA

WHERE PIRATES STRODE

By H. G. FORSYTHE

THE place was teeming with pirates; big, bearded fellows they were, bronzed, scarred and weather-beaten. Decked out in the finest silks, and priceless jewellery, they swaggered along Port Royal's narrow streets, jingling pieces of eight in their pockets like so many pennies.

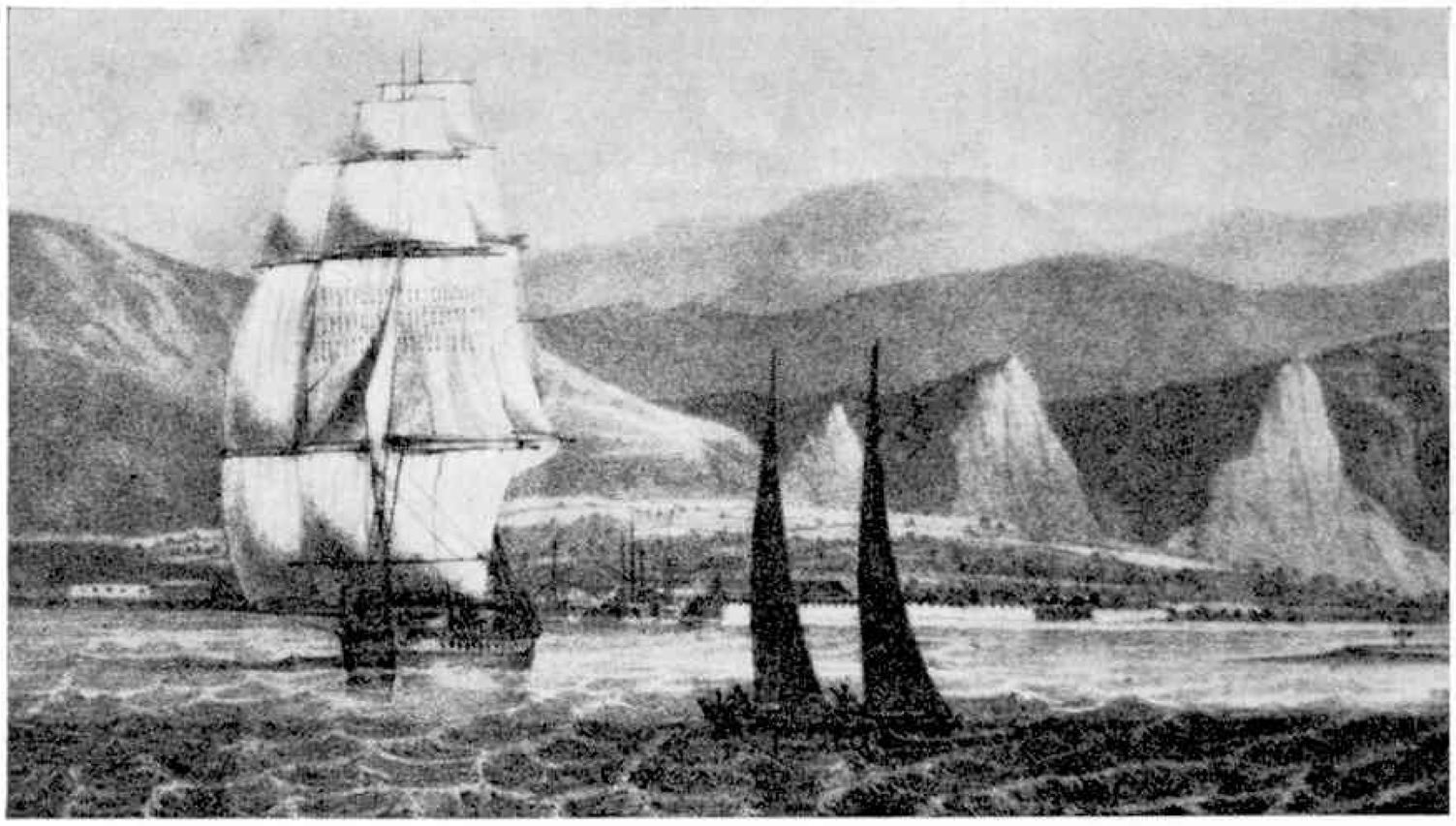
The time was 300 years ago. Charles II was on the Throne of England and Captain Henry Morgan's unholy Brethren of the Coast were based on Jamaica. Ostensibly sailing as authorised privateers, the Brethren preyed on treasure-laden galleons of the old Spanish Main and looted and sacked Spanish towns from one end of the Caribbean to the other.

Captain Henry Morgan standing before Panama while his men sack the city. This illustration, and that at the foot of the page, appear by courtesy of the "Radio Times" Hulton Picture Library.

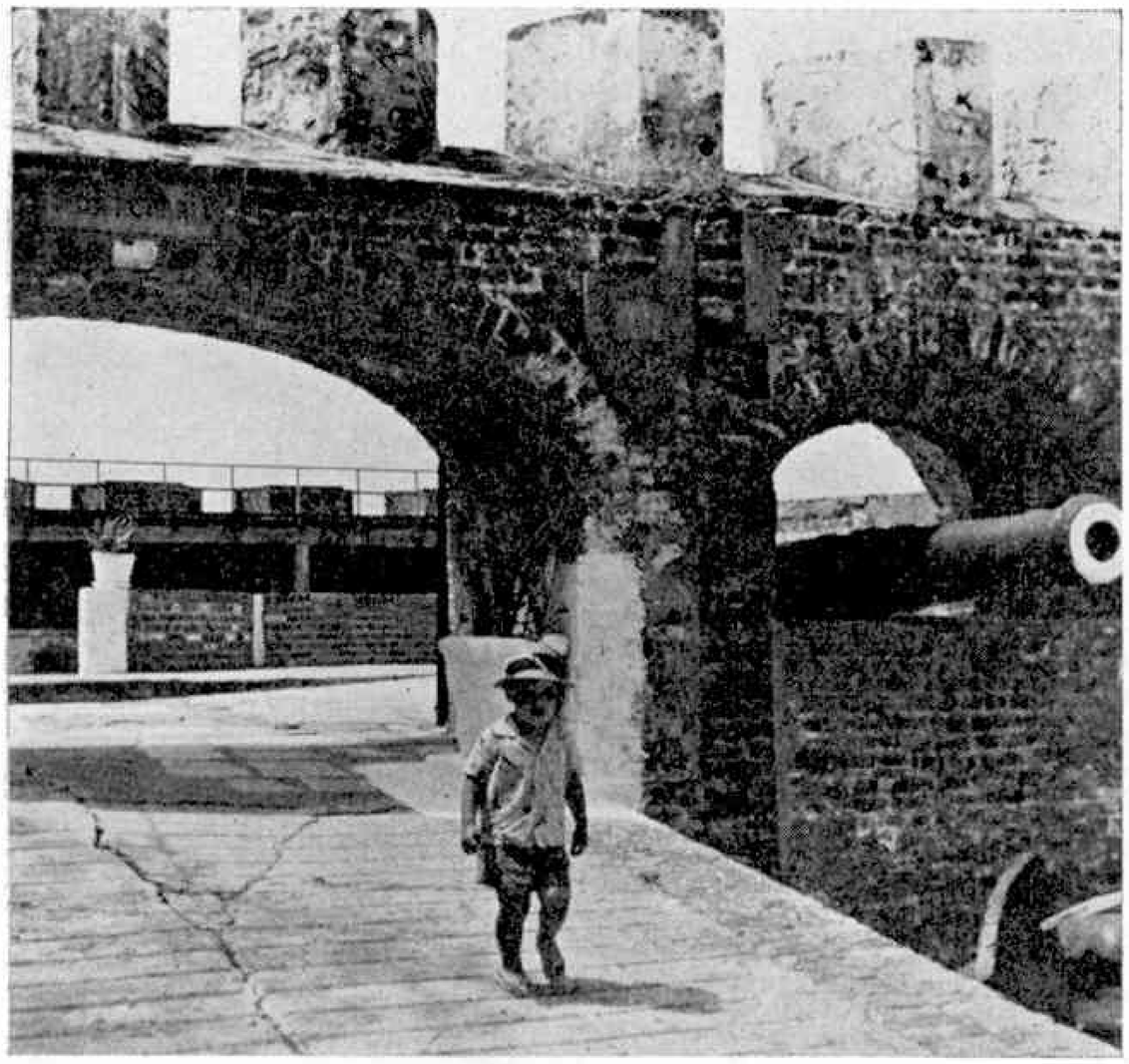
The buccaneers—so called because of a method they used of preserving meat, by curing it in the sun and smoking it, known as *boucanning* — brought fantastic wealth to Jamaica. Their headquarters, Port Royal, was on the end of an eight-mile long sandspit called the Palisadoes which forms the south side of land-locked Kingston Harbour. Fort Charles, at the tip, bristled with guns and stood guard over the pirate ships at anchor in the harbour.

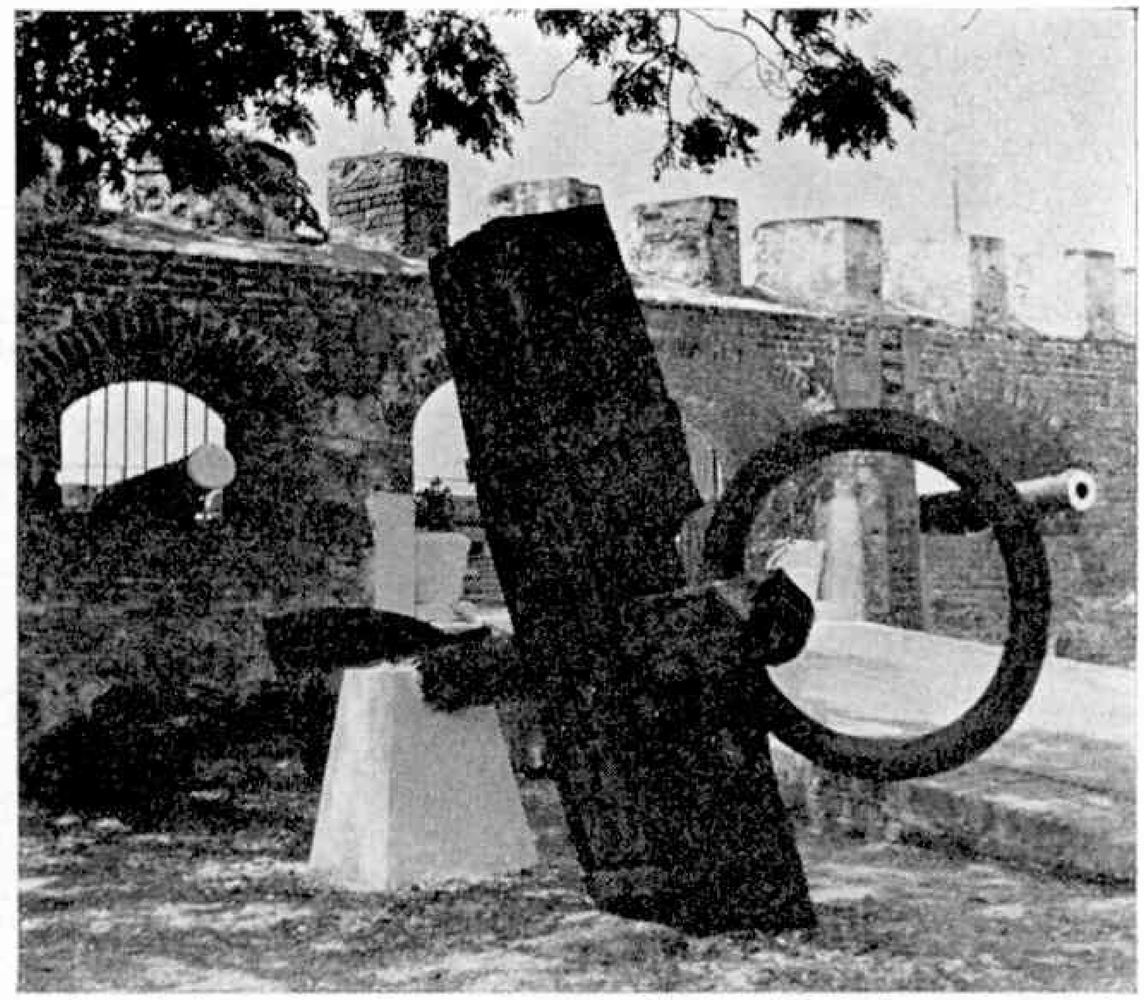
Port Royal in those days was reputed to be one of the richest towns on earth; certainly the richest in the Western Hemisphere. It was known variously as "The Babylon of the West", "The City of Gold" or "The Wickedest Place in Christendom". Pirates returning from a successful cruise thought nothing of spending three or four thousand pieces of eight in a single night's celebration. A traveller called Henderson described it thus: "The place was a gilded Hades, and Mammon held sovereign sway over its people. The drinking shops were filled with cups of gold and silver, embellished with flashing gems torn from half a hundred cathedrals. Each house was a treasure store. Dagger thrusts were as common as brawls and the body of a murdered man would remain in a dancing room until the dancing was over. Gold and precious stones were cheap, but life was cheaper. And every man in that crowd of pirates lived beneath the shadow of the gallows. Ships fitted out for home defence began to assume the role of privateers, and the step from authorised privateer to unauthorised buccaneer was so easy that when the habit of plundering got established in the blood there was no check for it."

A sketch of Port Royal in buccaneering days.



Buccaneering was a profitable business, not only for those taking an active part in it. There was a war on with Spain and the king was only too pleased to encourage excursions against his enemies, provided, of course, that he, and the Governor of Jamaica, received their proper share of the loot. Between 1665 and 1670 Morgan's ships ranged throughout the West Indies and ever more audacious exploits were planned and executed against Spanish possessions.





Left: A tiny tourist at the entrance to Fort Charles. The timber structure in the background is known as "Nelson's Quarterdeck". Here the young captain once paced, anxiously scanning the Caribbean for a sign of the French fleet. Above: Old Fort Charles sleeping in twentieth-century sunshine. The massive anchor once belonged to a ship of Nelson's time. Both these illustrations are by the author.

Then, in 1670, a cloud appeared on the buccaneer's horizon—the possibility of peace with Spain. At the time, Morgan and the Governor, Sir Thomas Modyford, were planning their greatest strike of all—an attack on the fabulous city of Panama. Dismayed by the news concerning the prospect of peace they nevertheless went ahead with their plans, hoping the worst would not happen. But it did, and just before Morgan's fleet of 36 ships was due to set sail the "dreadful" news arrived that a peace treaty had been signed by England and Spain. Morgan and Governor Modyford hurriedly met and it was arranged that the messenger carrying the order to the fleet to call off the expedition would never arrive. And so, in all "innocence", Morgan sailed.

The loot from Panama was enormous. There were at least 400,000 pieces of eight, "beside an immense quantity of silks, linen, gold and silver lace, plate, jewels and other valuable commodities, which probably amounted to near as much more".

When news of the Panama affair reached Europe it almost caused the war to start up all over again. Secretly, the king highly approved, but he had to yield to pressure from Spain and eventually had both Modyford and Morgan arrested and brought to England for trial. The outcome was a foregone conclusion, for public opinion firmly held that "such an action has not been done since the famous Drake".

After acquittal, Morgan was knighted and returned to Jamaica as Lieutenant-Governor. How the Brethren of the Coast rubbed their hands. Now indeed "one of the boys" was really in charge. They looked forward to a new golden era; but they were in for a sad disappointment. Sir Henry was a new man. Respected and respectable, busy with administration and public duties, he turned against his old comrades. Soon he was talking of "ravenous vermin of the seas". The Brethren were offered the choice of a grant of land or the gallows-tree. Those who refused the land were ruthlessly hunted down and summarily strung up at Gallows Point off Port Royal.

So ended an era in the life of that colourful port. Nevertheless, it remained a rich and wicked town, still a centre of illicit trade until one June morning in 1692, four years after Sir Henry Morgan's death, "the earth heaved and swelled like rolling billows" and Port Royal was struck by a violent earthquake. In two minutes, threequarters of the town was swallowed up by the sea and 2,000 people died, but stout Fort Charles withstood the shocks.

Later, Port Royal became an important naval base. The buccaneers may have been driven out of Jamaica, but many years were to pass before they disappeared from the Caribbean. Many a warship left Port Royal in search of pirates like Captain Teach, better known as Blackbeard, Major Stede Bonnet or Captain Kidd. Buccaneering was still a profitable, if more hazardous, business. When Captain Kidd was arrested, the treasure he had with him at the time was in excess of £6,000, a very large sum in those days. The captain was hanged at Wapping, but it is interesting to note that a major part of his confiscated plunder was used to purchase the beautiful Inigo Jones Queen's House, at Greenwich, from a Colonel Sidney. This building is now the centre of the National Maritime Museum, surely a strange memorial to a buccaneer.

Port Royal today is the sleepiest of sleepy little fishing villages with only occasional reminders of the romantic days. Morgan's name at Port Royal is perpetuated incongruously at *Morgan's Harbour*, a delightfully elegant Beach Club.

Fort Charles stands intact, but there it is Nelson's name that is remembered for, in 1779, Nelson—at 21 already a captain—was in command of the battery there when an attack by an armada commanded by the victorious French admiral, the Compte D'Estaing, was thought to be imminent. The attack never materialised and Nelson soon sailed away, his later glory imprinting his name forever on old Fort Charles, in whose shadow long ago the pirates strode.

LOCOMOTIVE STOCK BOOK 1963

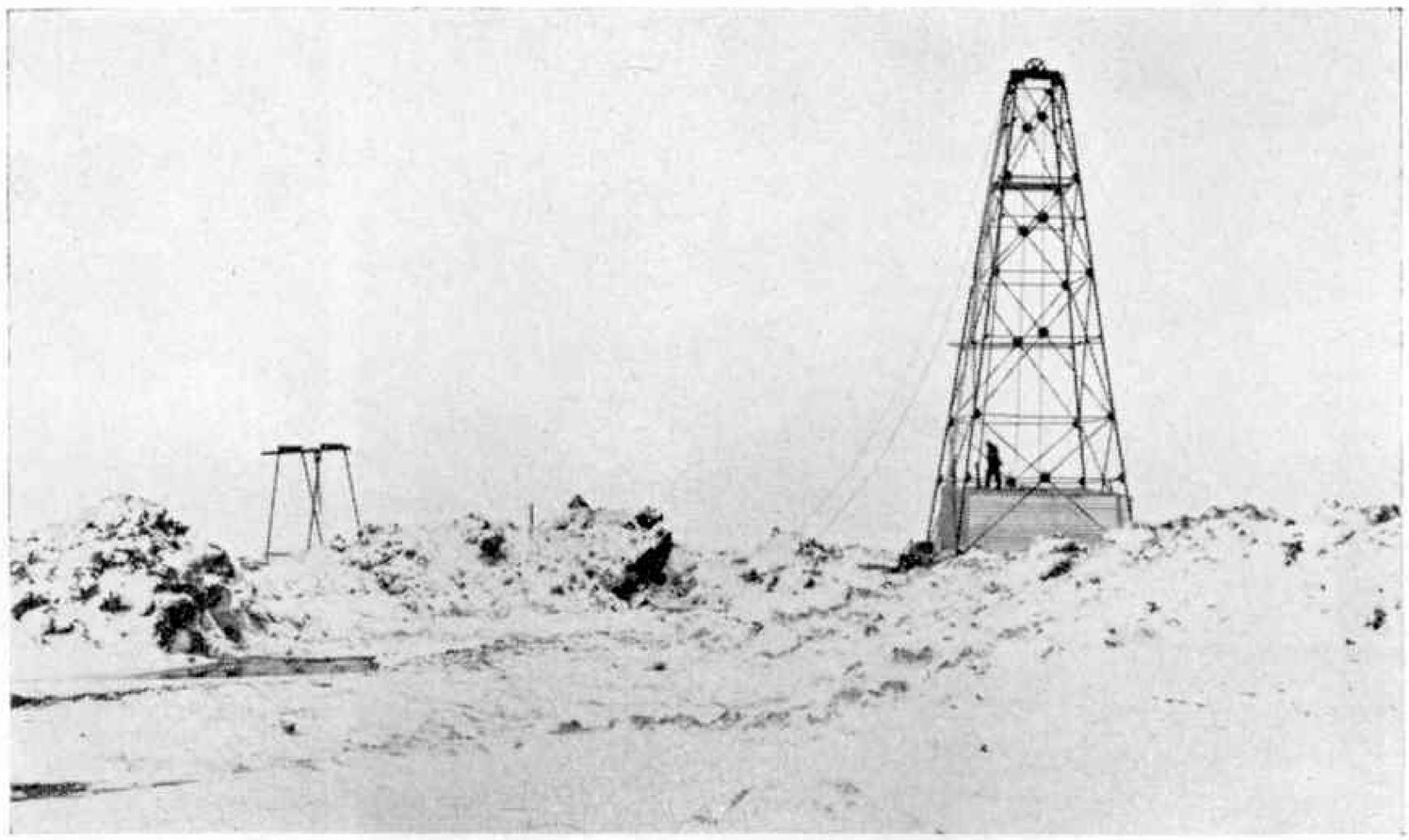
In view of the rapidly-changing motive power situation on the railways in these islands, this 67-page Railway Correspondence and Travel Society publication is timely. It details developments from the previous issue of the **Locomotive Stock Book,** in 1960, to the end of 1962, records the numerous diesel and electric locomotives put into service and tells the melancholy tale of steam locomotives withdrawn during the same period.

There are lists of engines, an analysis of locomotive stock, a table of locomotives preserved, and many illustrations. Locomotives in the Irish Republic and Northern Ireland are also included, together with those of various systems of narrow-gauge or other special character on which a public service is provided.

Copies are obtainable, at 17/6 including postage, from the Honorary Assistant Publications Officer of the R.C.T.S., Mr. N. J. Claydon, 19 Dene Court Road, Olton, Solihull, Warwickshire.

TARGET... EARTH

Story Of The Upper Mantle Project



This drilling rig is one of two probing a mile into the earth to obtain Upper Mantle material which rose into the crust 1,200 million years ago and cooled slowly beneath the surface.

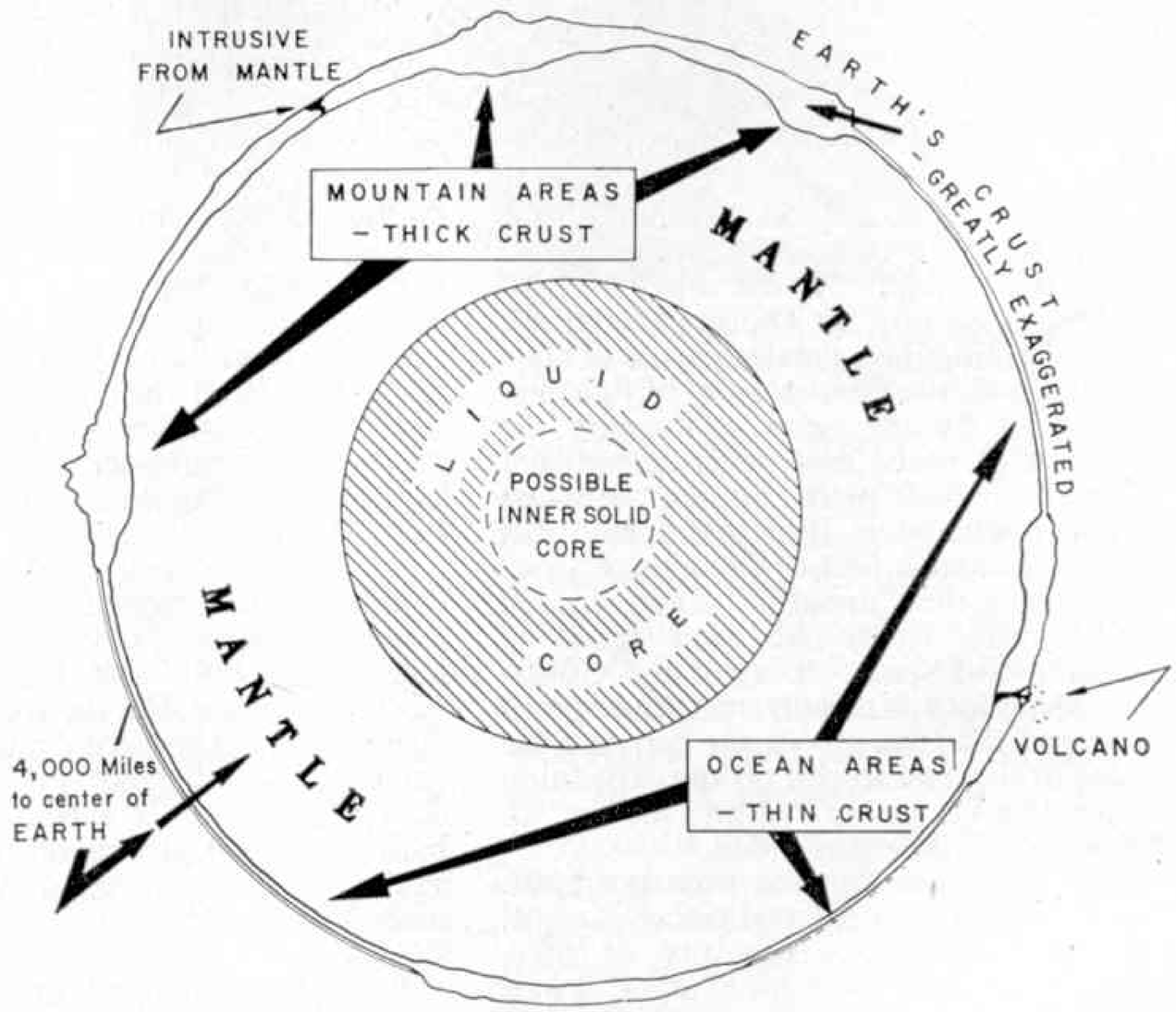


Diagram shows a cross-section of the Earth — third planet from the Sun. At present the inner earth is under study by the International Upper Mantle Project.

AS most earthly eyes look upwards to follow the exploits aimed at reaching distant planets in the solar system, many scientists, all around the world, are investigating the nearest planet of all—our own earth.

A Commonwealth participation in the International Upper Mantle Project—a three-year study into the earth's interior—is under way in Canada. It consists of penetrating geological and geophysical studies from Newfoundland, in the Atlantic Ocean, to British Columbia, on the Pacific Ocean, and reaching as far north as the Canadian Arctic.

By

Donald S. Fraser

Often likened to a soft-boiled egg in structure, the planet we live on has a thin, brittle shell or crust, a thick plastic or solid mantle, and a liquid, metallic core. Of special interest to mankind, which lives on the crust and uses its minerals for nourishment and for manufacturing the requirements of life, is the upper part of the mantle. Valuable minerals found in the crust are thought to have come from this part of the inner earth.

Increased knowledge of the materials, conditions and processes in the upper mantle will permit geologists to determine ore-bodies more accurately. Geophysical studies by seismology, gravity and other investigations will increase scientific knowledge of our world, provide astronauts with more accurate predictions of the planets they will soon be visiting, and enable astronomers to probe deeper into the mystery of creation.

One example of Canada's part in this world-wide project is taking place in the barrens of the North-West Territories. Here, a team of Geological Survey of Canada geologists, and a drilling crew, are boring two holes 5,000 feet down into ancient mantle material forced near the surface eons ago. The cores they procure should provide a sectional picture of this intrusion from the mantle.

Altogether, Canada's scientists are playing a full part in this international programme that developed from a Soviet suggestion back in 1960. The three-year plan, which is the aim of the International Upper Mantle Project is, as far as Canada is concerned, taking place on land where the depth of the earth's crust varies considerably.

The United States, on the other hand, are concentrating their efforts on the crust below the sea where, it is understood, it is very much thinner. The name of the American programme is "Project Mohole". It is named Mohole because the hole to be eventually drilled must penetrate the Moho, or boundary layer, between the earth's crust and the mantle. Moho is an abbreviation for Mohorovicic Discontinuity, named after a Yugoslav scientist who identified it as the area where a sudden change occurs in the structure of the earth.

The international project, which has been described as one of the most important scientific undertakings of modern times, will definitely tell us more about the earth we live on—its formation, construction and physical properties, and how man can better employ scientific knowledge to gather more valuable minerals upon which the modern world depends.

Following the highly-successful International Geophysical Year (I.G.Y. 1957–58), which probed the fluid envelope around the earth, the Upper Mantle Project is an example of how scientific co-operation is producing world-wide goodwill between nations. Since January 1962, and until December 1964, scientists around the world will be making these observations and obtaining results which will be discussed at international meetings and freely published.

Canada's effort, through Government departments and universities, is making use of gravity studies (the amount of earthly pull), seismology (the behaviour of shock waves from earthquakes and man-made explosions), magnetism, heat flow, and geodesy (measurement of the earth's surface) and other techniques which indirectly uncover the earth's secrets. In addition, geologists are making probes into the earth to obtain samples of sub-surface material for laboratory analysis.

In the coppermine region of the North-West Territories, scientists are drilling down to an area where 1,200 million years ago material from inside the earth was forced up into the crust—forming an intrusive from the upper part of the earth's mantle. Because this material cooled slowly just below the surface (instead of rapidly hardening as volcano lava does), the material being recovered by diamond-drill coring is in excellent condition for laboratory examination and scientific analysis.

"Operation Muskok"—the Canadian drilling programme at this unique site—started early in the spring of 1963. Landing strips were cleared on the ice of a frozen lake and freighter aircraft flew in tracked vehicles, drilling equipment, tents and prefab. buildings. By the autumn of 1963, the staff of Operation Moskok had already flown out many drill cores for laboratory examination in Ottawa, and work has steadily progressed to reach the 5,000-foot level which will provide the layered information to complete their studies.

One of the aims of science is to drill right through the earth's crust; not to gather information on the crust itself, but to reach the underlying rock known as the mantle. Here, life-debris which has rested undisturbed for millions of years will reveal the type of organisms that existed when the earth was new. A study of this material, which has accumulated since the beginning of time, may provide a complete history of biological, geological and climatic developments as the planet cooled and the climate changed.

Scientists for a long time have wondered why an earthquake or explosion shock causes no echo to bounce back from the earth's crust. One theory is that the echo is stopped by a layer of loose meteoric material which fell from the skies when the solar system was formed or while it was still young. Proof that this occurred might indicate that Planet Earth underwent the same bombardment that gave the moon its pockmarked appearance.

Actually, little is known about the true composition of the earth's crust, the Moho and the mantle. The crust is believed to be a form of basalt; the Moho is thought of as a hard boundary layer above a semi-plastic, highly-compressed rock that forms the mantle, which comprises 80 per cent. of the earth's mass. The unearthing of samples from these mysterious areas is expected to result in important discoveries that will answer many questions about the composition of the earth.

Questions that scientists want answered include: how does the crust differ from the mantle beneath it? Is the crust comparable to slag that rises to the surface of molten metal in a smelter, or is the rock below the Moho similar to the crust except that immense pressure has altered its molecular state? At great depths, will radioactivity or heatflow from below indicate the source of heat in the earth's core? These and many other questions may be answered. In addition, unpredicted discoveries may be made that will upset long-accepted theories regarding the origin and composition of the earth.

Undoubtedly our Commonwealth contribution, with Canada's Operation Muskok, and other phases of the Upper Mantle Project, will add considerably to this wonderful international programme of scientific goodwill among all nations.

Driller Bill Hamel of North Bay, Ontario, is seen here at work on a diamond-drill rig during Upper Mantle investigations.

Geological survey men behind the Upper Mantle operations are, from left: Mr. J. Harrison (Director), Mr. S. C. Robinson (Petrology Chief), Mr. Charles Smith and Mr. Fritz Agterberg. All the illustrations to this article appear by courtesy of the National Film Board of Canada.

BOOK REVIEW

A basic guide and introduction to the hobby, **Model Car Collecting** by F. Brian Jewell (Temple Press Books, 15s.) shows how the purchase of a model or a kit can be the first step towards assembling a collection as varied or as specialised as interest and pocket dictate. The emphasis throughout is on mass-produced miniatures and the methods by which they can be converted into authentic replicas of individual cars by an average enthusiast.

The author shows how replicas of cars which have never been featured in the catalogues of model manufacturers can be produced by combining parts from two or more die-cast models or plastic kits.

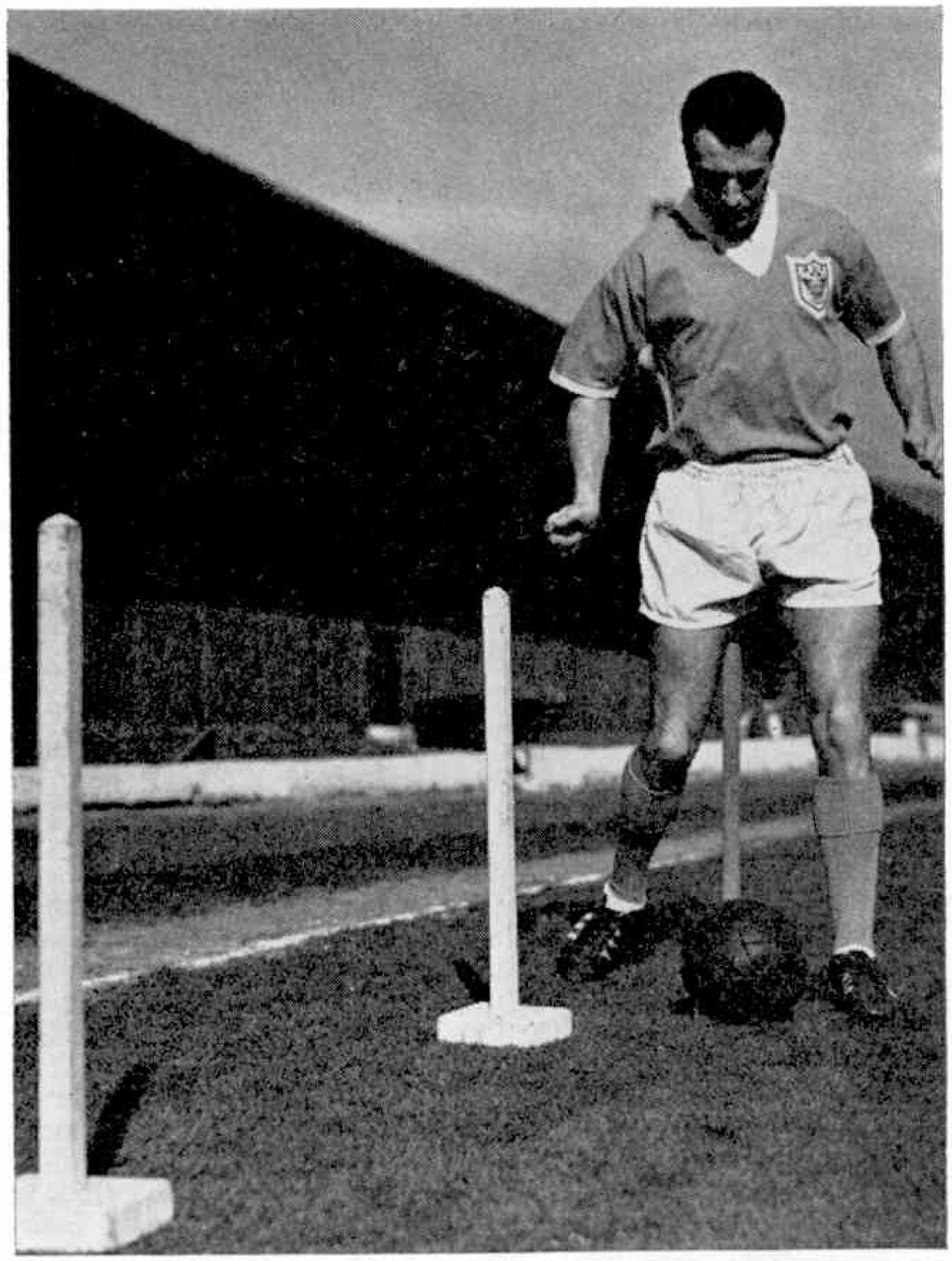
As a guide to newcomers to the hobby, **Model Car Collecting** lists the available production models of veteran and vintage machines and military vehicles used since the Second World War. It also includes a register of makes and enthusiasts' societies.

SOCCER SKILLS

Lesson No. 3—Running With The Ball

PROBABLY one of the things we do most of all with a football is simply to run with it. From our earliest days as youngsters we are quite often found with a ball at our feet, followed by an inevitable kick and chase. Yet, funnily enough, it is one of the things that young players cannot do properly when they play in matches.

By *JIMMY ARMFIELD,*
England International Full-Back



Whenever I have watched schoolboys or youth teams there have nearly always been occasions when players have overrun the ball or have lost possession of it simply because they could not control it while running. And yet this should not be so. In fact, this should be one of the football skills in which we should not really have to be coached. But the way to develop this "sense" of running with the ball is very simple. First of all, learn to trot with the ball, passing it from one foot to the other while you are progressing. This enables you to "feel" your balance with a ball at your feet and in the early stages this is very important. Remember too (as in the previous lesson) it is necessary for you to keep your eye fixed on the ball all the time.

Gradually, as you feel more confident, build up your speed but try whenever possible to keep the ball fairly close to you. This makes sure that you are not trying to run with the hare before you can run with the hounds.

Of course, it is this learning to run with the ball that enables you to acquire another skill in the game, and that is dribbling. Those of you who play will know that there is always one occasion in a match when you could do a lot of good to your team if you could beat a man yourself by dribbling round him. To swerve a ball to either side of an opponent may often look quite easy when you are watching two first division teams in action. The professional players always seem to make this look simple—but in point of fact it takes quite a lot of hard work and practice to be able to do it well.

One of the best ways I know to improve your dribbling is shown in this month's illustrations. This exercise of running in and out of a row of posts does teach you to swerve with a ball and at the same time to keep your balance while you are on the move. In the first picture you will notice that I have just come round the first post with my body practically upright and everything under control. In the lower picture I have made a definite swerve to the right, taking the ball with the outside of my right foot to avoid the second post. The thing I have to do now is to try to bring the ball back round the (*Continued on page 575*)

ROAD AND TRACK

B.R.M. Have Hopes Of A Flying Start To 1964

The 1963 Chrysler gas turbine coupé seen during a visit to Paris. Note the air intakes around the headlamps. Fifty of these cars are being built for test purposes by ordinary drivers.

AFTER a disappointing season, B.R.M. are not letting the grass grow under their feet and are busy constructing a completely new Formula One car for 1964. Its power unit is expected to be a brand new V–12 engine. Further development of the 1963 semi-monocoque machine has been abandoned, because of its tricky handling through corners, attributed to flexing of the monocoque section.

No details have yet been announced about the new car, but I do not expect B.R.M. to abandon monocoque ideas entirely, for the lightweight single-seater raced once or twice last season could wind up to speeds approaching 170 m.p.h. along very fast straights, but it gave Graham Hill one or two hair-raising moments through corners, where it lost vital seconds, sometimes reducing its lap speed to below even that of the heavier 1962 car. B.R.M. may come out with new methods of construction.

By
Jerry Ames

Everybody is hoping the new B.R.M. V–12 engine will give about 10 per cent. more power than last season's V–8 and provided that it pushes out enough power low down it may well give the B.R.M. a flying start to 1964.

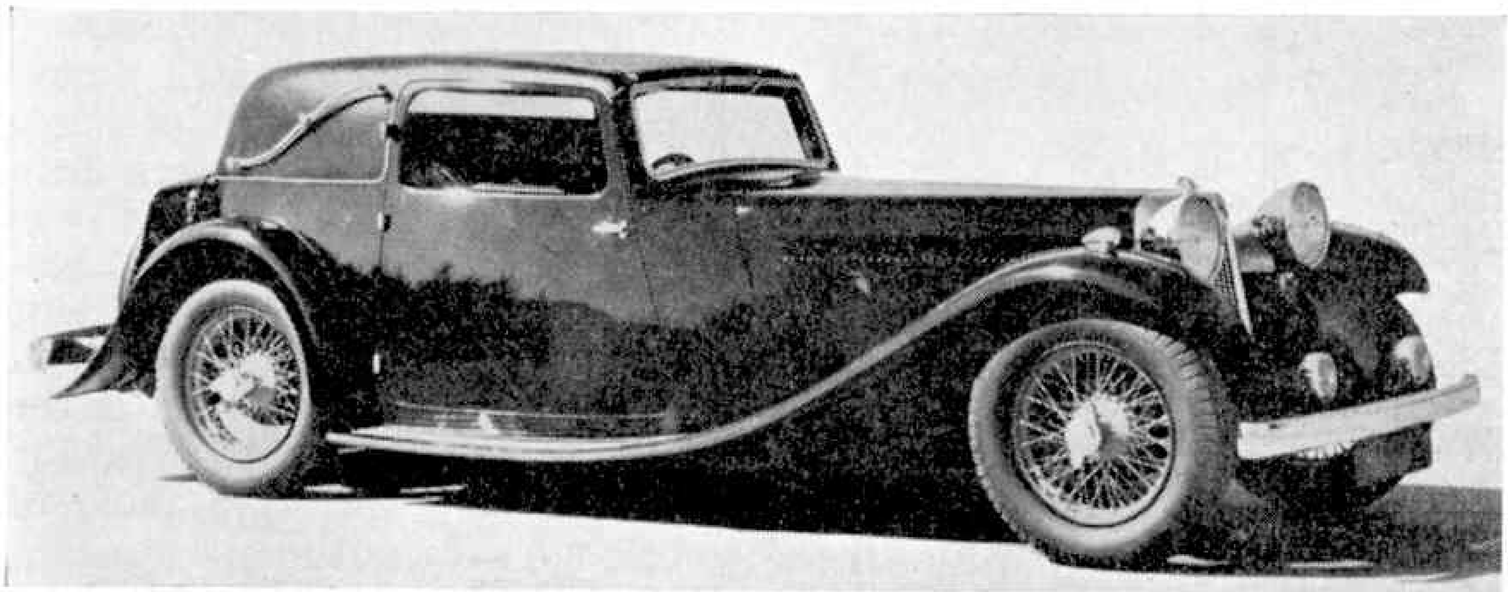
The Japanese firm of Honda is another firm worried about the handling and road-holding of its Formula One machine. The V–12 engine mounted across the chassis behind the driver, is said to be giving 230 b.h.p. on the test bench—far more than the chassis can handle satisfactorily. Honda has recently approached British Formula One constructors offering them the use of these engines; at the time of writing no one has accepted.

Recently, I have been driving the latest Rolls-Royce Silver Cloud III and a very delightful car it is with a comfortable maximum of 114 m.p.h. and effortless 100 m.p.h. cruising. I stepped straight out of the Rolls-Royce into Chrysler's latest gas turbine car with attractive coupé body by Ghia. How did they compare?

The most noticeable difference was the wonderful smoothness of the gas turbine car. I thought the Rolls-Royce engine was smooth, but it does not match the vibrationless running of a gas turbine engine; unfortunately, the Chrysler engine had been de-tuned. Although engineers told me that it was supposed to be giving 130 shaft horsepower, it certainly lacked the fascinating punch of the British car, which seemed to have double the power.

Standing close beside the Chrysler, with the turbo engine idling at 18,000 r.p.m., (this one would go to 44,600 r.p.m. maximum—modest for a turbine) there was a by no means unpleasant whine. Inside all was quiet, and at speed conversation was easy. The Chrysler had fully automatic Torque-Flite transmission, with neat floor lever to select "idle", "drive", "low" or "reverse". One could kick-down to pick up more power for overtaking. This transmission is an advance over anything I have tried on Rover gas turbine cars and, like the engine, was delightfully smooth in operation.

I consider gas turbine cars the easiest and most enjoyable cars to drive and wish they were in production, as do most people who have driven them. What would a Rolls-Royce gas turbine car with say, 250 shaft horsepower be like? I would say it could be the most perfect car in the world. Such a possibility is not as far fetched as some people might believe, for many good ideas are continually being tried by Rolls-Royce and with their unrivalled gas turbine experience, they could create a prestige car *par excellence*.



The 1932 S.S. I, based on a 16 h.p. Standard. The S.S. was Sir William Lyons' first complete car and paved the way for the Jaguar.

Know Your Cars—Jaguar

The rise to fame of Sir William Lyons and his Jaguars is one of the great romances of the motor industry. It began in 1921 when William Lyons, then barely 21, went into partnership with William Walmersley at Blackpool and founded

(*Continued on page 575*)

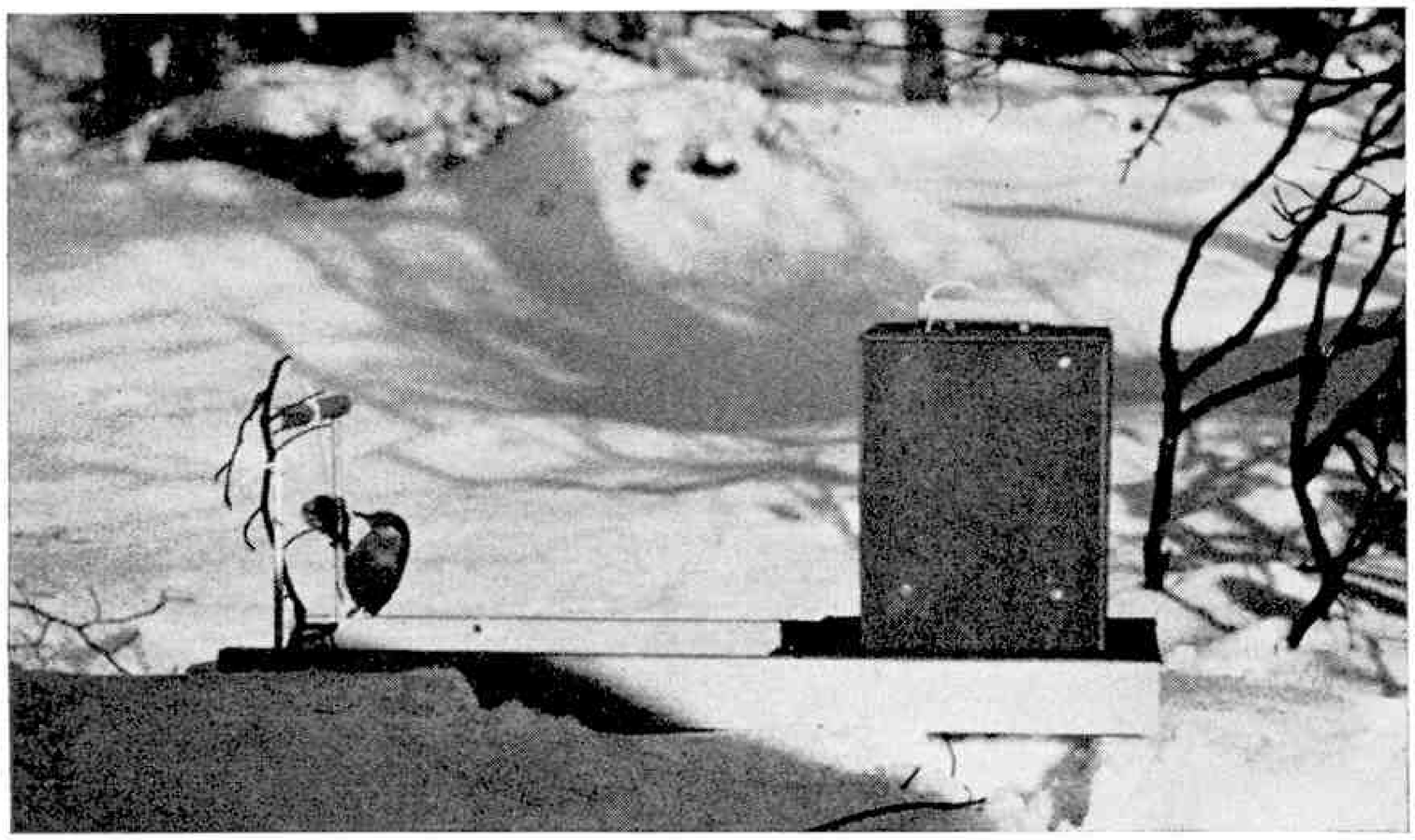
Edward G. Hodgkins Tells You . . .

HOW TO PHOTOGRAPH GARDEN BIRDS

THE small wild birds in our gardens are beautiful little creatures and are very tempting subjects for photographers interested in nature. These birds are so small, however, that unless a really close up picture can be taken, the results are most disappointing, as the subject is merely a dot in the middle of the photograph. Also, although tits and robins seem quite tame as they eat scraps from the lawn or window-sill, they will soon disappear if you try to get near them with your camera. It therefore seems impossible to take satisfactory photographs of our feathered friends without going to the expense of purchasing a camera with a telephoto lens.

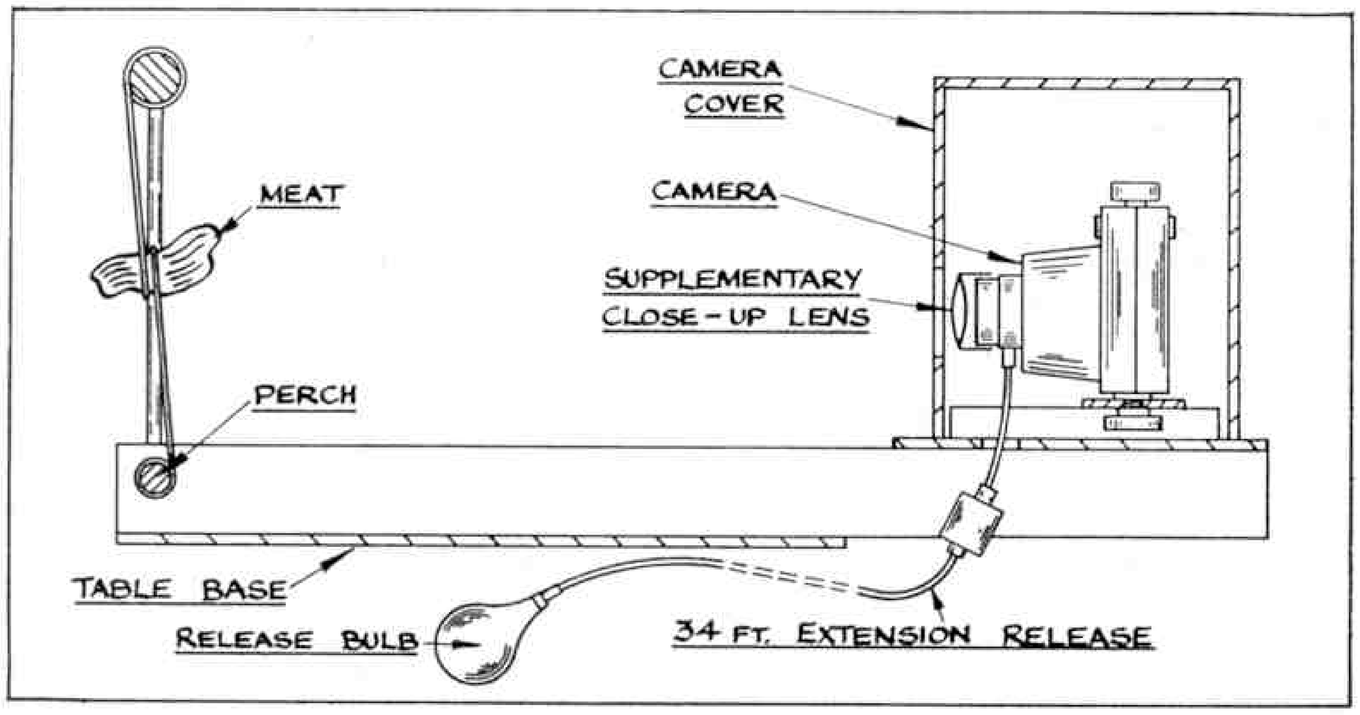
I thought about this problem for some considerable time and I watched the birds on the lawn for hours, studying their eating habits. Then I decided to make a sort of bird-table with the camera built into it with a long shutter-release cable leading into the house. The cable required was a pneumatically-operated device, being of plastic (34 feet long) and costing £2.18.6d. This is the only expensive item required to operate the camera, whereas a telephoto lens would cost over £20.

A blue-tit considers a piece of bread impaled on a twig.



The only other requirements are a camera which focuses down to three feet or less and has a reasonably fast shutter speed—1/100 sec. or faster—and a supplementary close-up lens to focus down to 15 inches or so. The latter will fit into a standard filter mount and costs only a few shillings.

The table itself I made from two pieces of 1 inch by 2 inch timber 2 feet long with a sheet of hardboard 10 inches wide between them for the base. The camera was mounted at one end with a hardboard box resting over it to hide it and to keep the birds off. A 1-inch diameter hole had to be cut in the box in front of the lens. With the supplementary lens is a table of



Above: A shot of the table taken through the window Here, a nuthatch tries a lump of fat meat. Left: Diagram of bird-table.

In the picture on the right, the camera (for variation) has been turned round to point away from the table and an earthenware dish of seeds placed 16 inches away, on the ground. A great-tit has found his dinner here. Illustrations by the author.

distances for various camera settings. I bought a lens having a 2D rating for which a camera setting of 6 feet gives a focusing distance of 16 inches from the front of the lens. Using this figure, I drilled a $\frac{1}{4}$ inch hole in each side member 16 inches from the front of the camera and pushed an 8 inch long piece of $\frac{1}{4}$ inch dowel into each hole. I then attached a 12 inch length of $\frac{5}{8}$ inch dowel, similarly drilled, across the top of these uprights. I now knew that any bird inside this arch would be nicely in focus.

Finally, some "bait" was required to attract the birds. For this I tried crusts of bread, bacon-rind, fat meat, peanuts (in shells) and a mixture of wild-bird seed obtained from a pet shop. All of these things were successful to varying degrees. By attaching the bait to the table in a variety of ways, different pictures may be obtained—e.g. the bread can be impaled on a twig which is, in turn, tied to the uprights; the meat or peanuts can be suspended below the arch on a piece of string and the seeds should be placed in a small dish.

The whole contraption may then be taken outside and placed in a suitable spot where the birds will go to it frequently without fear of being attacked by cats. The choice of position took me some time. First I placed the whole thing on top of a pole in the middle of the lawn. Several hours later I was still waiting—the little darlings just weren't interested! I noticed, however, that they still fed happily from the lawn, so I took the pole away and tried again with the table on the ground. This was better, and soon a robin decided to investigate and perched right on top of the camera cover. He did not think much of it and flew off, but several blue-tits obliged by swinging from the overhead perch and the uprights. Even now, though, they were not altogether happy because the table was a long way from cover. Complete success was obtained when I placed the apparatus within a yard of a bush where the birds could hop straight from a twig on to the perch and back again.

Now my "models" were happy, I could concentrate on the photographic details. Using a medium fast film, I set my shutter at its fastest speed and closed down my aperture as far as the exposure meter would allow. It is important to use a small aperture (f.11 or less) to give a reasonable depth of focus. Remember that close-up lenses give a depth of focus of only a fraction of an inch, so accuracy in focusing is important. I then covered the camera and fed the 34 ft. lead across the garden to the nearest window, which was to be my "hide". Finally, I checked that the background was not spoiled by buildings, dustbins, etc., and then retired indoors to wait.

The birds, you will find, have not been far away while you have been working. They know there is food about and will soon be clustered in the bush to investigate. The tits will be among the first, together with your resident robin. At first they will devour any other scraps which happen to be around the table and then, before very long, they will go for the bait. Here the fast shutter speed comes in useful because these little creatures move extremely fast, so quickly, in fact, that the instant one is in the required spot the release bulb must be pressed, or you will miss your chance. The "click" of the shutter will probably frighten the visitor. In any case you must now go outside and wind on the film and re-set the shutter for your next picture.

Patience is the most important commodity here. Many hours of sitting, waiting for opportunities, will be required but the results will be very rewarding and a great deal will be learned about the birds and their habits by watching them continually.

FIGHTER PLANES OF WORLD WAR II

Revell's **History of Flight,** Fighters of World War II, Vol. 1, described and introduced by Bruce Robertson has now been released. This is a beautifully produced booklet with a superb coloured illustration of the first nine of Revell's 1/72nd scale World War II planes. It may be obtained by members of the public by sending in six box ends from any of Revell's 2/11d. aircraft, together with the form enclosed in the box and sixpence to cover handling charges.

FOR THE RAILWAY ENTHUSIAST

In **British Railways In Transition** (Nelson, 30/–), the author, Mr. O. S. Nock, B.Sc., a former *M.M.* contributor, considers the engineering and operational effects so far realised in the application of the B.R. Modernisation Plan that has been in progress during the past few years. The change in motive power from the well-tried steam locomotive to diesel on many routes and to electric traction on others is probably the feature of the Plan most noticed by the ordinary traveller. And, deservedly, it takes several chapters to cover this aspect.

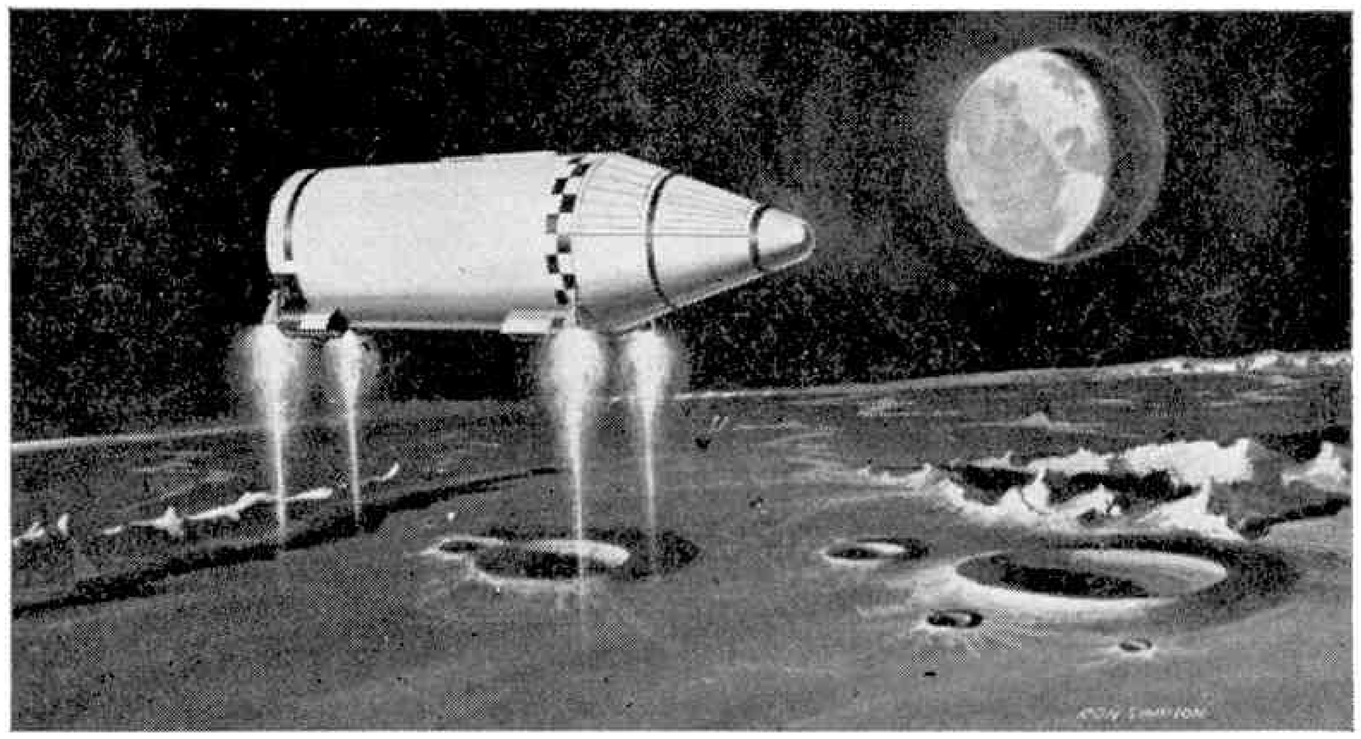
The Plan, however, includes much more than this. The opening of vast new mechanised marshalling yards in different centres concentrates the work formerly carried out in numerous smaller yards. Re-routing of certain traffic has taken place in consequence, and the application of modern signalling schemes has involved a tremendous amount of work in the civil engineering, signalling and telecommunications fields. New plant and installations, new bulk-loading developments, altered traffic flows due to the establishment of new industries and so on continue to add to the intricate pattern of railway operation today. Mr. Nock, as Chief Mechanical Engineer of the Signal and Colliery Division of a well-known contracting firm, has been intimately connected with many of these developments, especially with regard to signalling schemes, and his enthusiasm for railways is evident throughout his book.

The illustrations are of high quality, and have a pleasing freshness not always evident in books on railway subjects. Four of the pictures are in colour, and in addition to many half-tone illustrations, there are various diagrams relating to the text. There is, too, a useful index.

Our railways nowadays suffer from a great deal of ill-informed criticism, so Mr. Nock's authoritative book should help to put matters into better perspective.

SPACE NOTES

VEHICLES STILL IN SPACE



THE last time I surveyed space vehicles that were still orbiting was in the issue of May 1962. At that time there were 30 Earth satellites in orbit and four other vehicles travelling around the Sun. Now there are 67 Earth satellites and nine solar satellites.

The Earth satellites are so numerous that it is impractical to list them all, and so the table you see here only gives those that have been

By

J. Humphries, B.Sc. (Eng.), A.M.I.Mech.E., A.F.R.Ae.S.

launched since April 1 1962. Other space vehicles will be surveyed in the next issue of Space Notes.

Of the satellites listed in May 1962 only two have sinced returned to Earth; these are Sputnik 4 and Discoverer 34. Sputnik 4 was a preliminary to the later Russian manned satellites and was used unsuccessfully to test cabin ejection. Weighing 10,000 lb., it was the largest satellite to date at its launching on March 11 1960. Most satellites burn up as they return through the atmosphere, but this one was notable as it broke up on re-entry on September 5 1962, and a fragment was recovered in Wisconsin, U.S.A.

Discoverer 34, which was launched on November 5 1961 (a most appropriate date!) returned on December 7 1962. The orbital periods and altitudes of the remainder of the early satellites have all been affected to some extent by air drag, but the only really important change from the last issued table is in the number of satellites still transmitting radio signals. In the last table there were eleven, but

Fig. 1. Top picture—Hovering and landing rockets lowering a lunar housing unit towards a horizontal touch-down on the Moon.

SATELLITES STILL IN ORBIT

Name	*Date launched*	*Date due down*	*Weight (lb.)*	*Period (Min.)*	*Orbit height (Min. miles)*	*Orbit height (Max. miles)*	*Transmitting Radio Signals*
Midas 5?	9 Apr., '62	100,000	?	153	1,783	2,142	?
Ariel (U.K.1)	26 Apr., '62	1977	53	101	244	763	Yes
Tiros 5	19 June, '62	2060	284	100	372	617	Yes
Telstar 1	10 July, '62	12,000	170	158	603	3,570	Yes
None	23 Aug., '62	1977	?	100	393	542	?
None	1 Sept., '62	March '64	?	94	177	406	?
Tiros 6	18 Sept., '62	2010	280	99	434	451	Yes
Alouette	29 Sept., '62	4000	319	106	631	654	Yes
Explorer 14	2 Oct., '62	1972	88	2,185	340	62,250	No
Cosmos 11	20 Oct., '62	Apr., '64	?	96	148	571	?
Star-rad	26 Oct., '62	end '66	?	146	125	3,444	No
Explorer 15	27 Oct., '62	1987	100	315	204	11,165	Yes
Anna 1B	31 Oct., '62	7000	355	108	683	749	Yes
None	13 Dec., '62	end '65	?	116	146	1,743	?
Injun 3	13 Dec., '62	end '67	106	116	149	1,758	Yes
None	13 Dec., '62	end '64	?	116	143	1,732	?
None	13 Dec., '62	end '65	?	116	145	1,742	?
Relay 1	13 Dec., '62	100,000	172	185	838	4,715	Yes
Explorer 16	16 Dec., '62	3000	222	104	475	749	Yes
Transit 5A	18 Dec., '62	1977	134	99	442	460	Yes
None	16 Jan., '63	1978	?	95	291	338	?
Syncom 1	14 Feb., '63	Indefinite	86	1,426	21,790	23,290	No
None	19 Feb., '63	1993	?	98	320	501	?
Telstar 2	7 May, '63	600,000	175	225	617	6,846	Yes
Midas 6	9 May, '63	100,000	?	166	2,284	2,333	?
TRS 2	9 May, '63	50,000	1.8	167	2,284	2,335	Yes
TRS 3	9 May, '63	50,000	1.8	166	2,284	2,331	?
Cosmos 17	22 May, '63	mid '65	?	95	156	491	?
None	16 June, '63	2010	?	100	459	480	?
Tiros 7	19 June, '63	2010	293	97	393	411	Yes
Hitchhiker 1	27 June, '63	1983	176	133	211	2,618	?
GRS	28 June, '63	1978	219	102	260	832	?
None	29 June, '63	1973	?	95	303	336	?
Midas 7	19 July, '63	100,000	?	158	2,326	2,362	?
TRS 4?	19 July, '63	50,000	1.8	158	2,322	2,366	Yes
TRS 5?	19 July, '63	50,000	?	168	2,290	2,354	?
Syncom 2	26 July, '63	Indefinite	86	1,454	22,550	23,260	Yes
Cosmos 19	6 Aug., '63	March, '64	?	92	164	328	?

FIGURES CORRECT AS AT 1 DECEMBER, 1963.

nine of these are now silent. The two remaining active satellites are Vanguard 1, which derives its power from solar cells and transmits when the satellite is in sunlight, and OSO 1. Incidentally, Vanguard 1 was the second successful American satellite, launched on March 17 1958, and measurements of its orbit proved that the Earth is pear-shaped.

The total number of attempted satellite launchings up to December 1 1963 is 230 and, of these, 184 have been successful. Splitting up the total number of attempts, we find there were three in 1957, fourteen in 1958, seventeen in 1959, 29 in 1960, 45 in 1961, 68 in 1962, and going on the figures available to date, about 60 for 1963. The fall in numbers for 1963 does not indicate a fall in astronautical activity —far from it. The percentage of successes is continually improving, and equipment is becoming both smaller and more reliable so that more experiments can be crammed into one satellite.

In the table, it will be noted some of the satellites are not named—these are military satellites and their weights and purposes have not been released. A trend nowadays is to launch several satellites with a single booster and these cases are bracketed together in the table. Several of the more recent satellites are worthy of comment. Ariel (U.K.1) was the first N.A.S.A. international satellite to be launched. The launching vehicle was a Thor-Agena and the satellite itself was designed and built in Great Britain. It has proved itself one of the most successful of satellites scientifically, and although it was supposed to have switched itself off after twelve months' operation, it is still transmitting data.

The second international satellite, Alouette, built in Canada, is also still operating. The first active communications satellite, Telstar 1, although still in orbit, is not now operational and its function has been taken over by Telstar 2. A further development of the communications satellite is the "synchronous" satellite which orbits at a height which is such that the time taken for it to complete one orbit of the Earth is 24 hours, and hence it appears to be stationary above one point on the Earth. The first, Syncom 1, is in orbit but has never been used since communication was lost when it was injected into orbit. However, Syncom 2 was successful and is now in an almost stationary position over Brazil and in use for long-range communications.

Lunar base

Protection from extremes of temperature, radiation and meteorites will be essential for lunar explorers. Our three pictures this month show a proposal by the Douglas Aircraft Company for preparing shelters by remote control from Earth. A cylindrical shelter containing a robot vehicle would be launched from Earth in the nose of a multi-stage rocket and soft-landed on the Moon. Once safely on the Moon the robot would emerge from a door in the nose of the shelter. The first task of the robot would be to place a portable nuclear reactor on the site, to be used for life support and communications. Then the robot would scoop up lunar dust and spray it over the shelter, thus burying it. All this would be directed from Earth and monitored with television and telemetry.

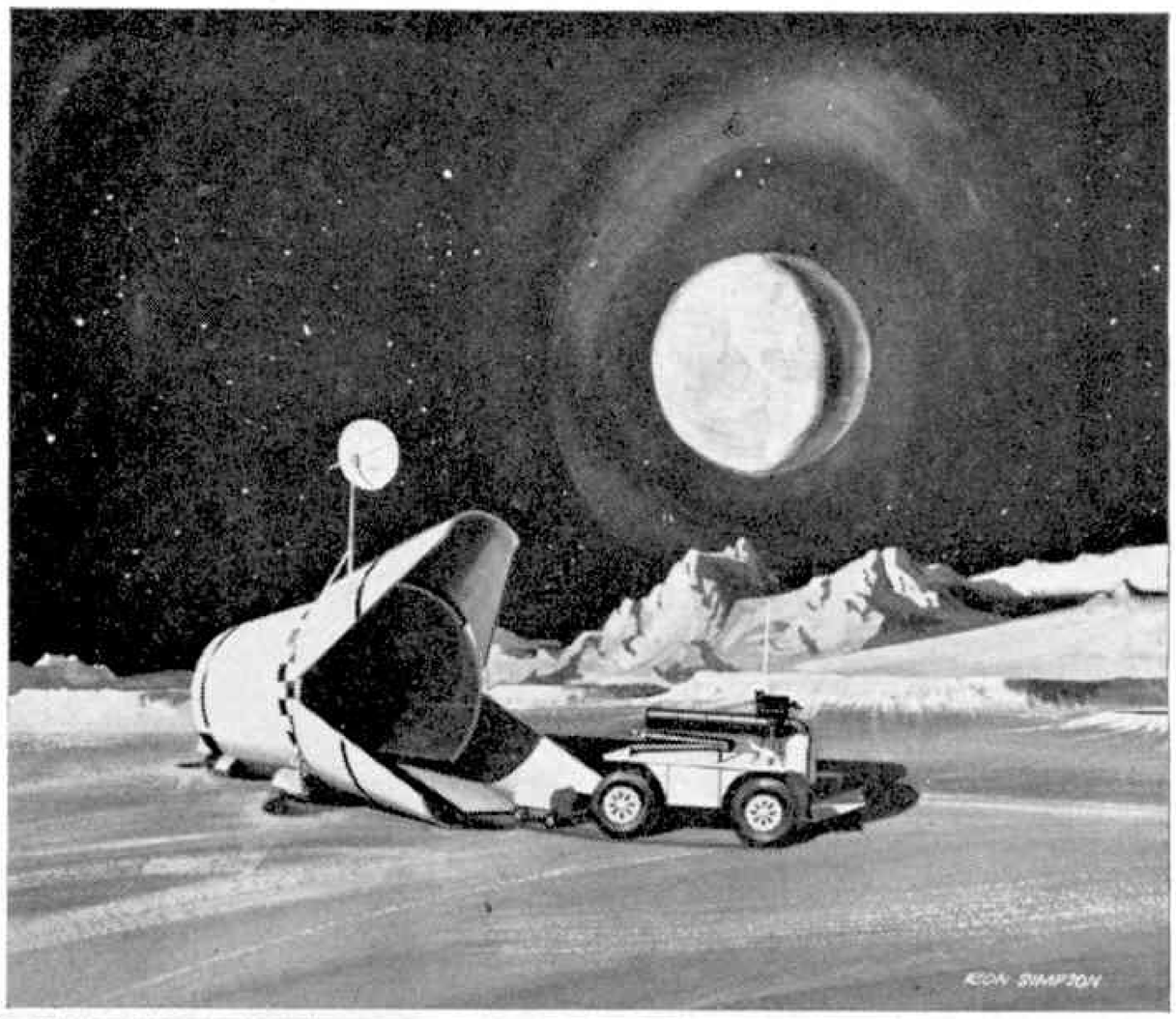


Fig. 2. Right: A robot tractor emerges on to the lunar surface, towing a nuclear power plant.

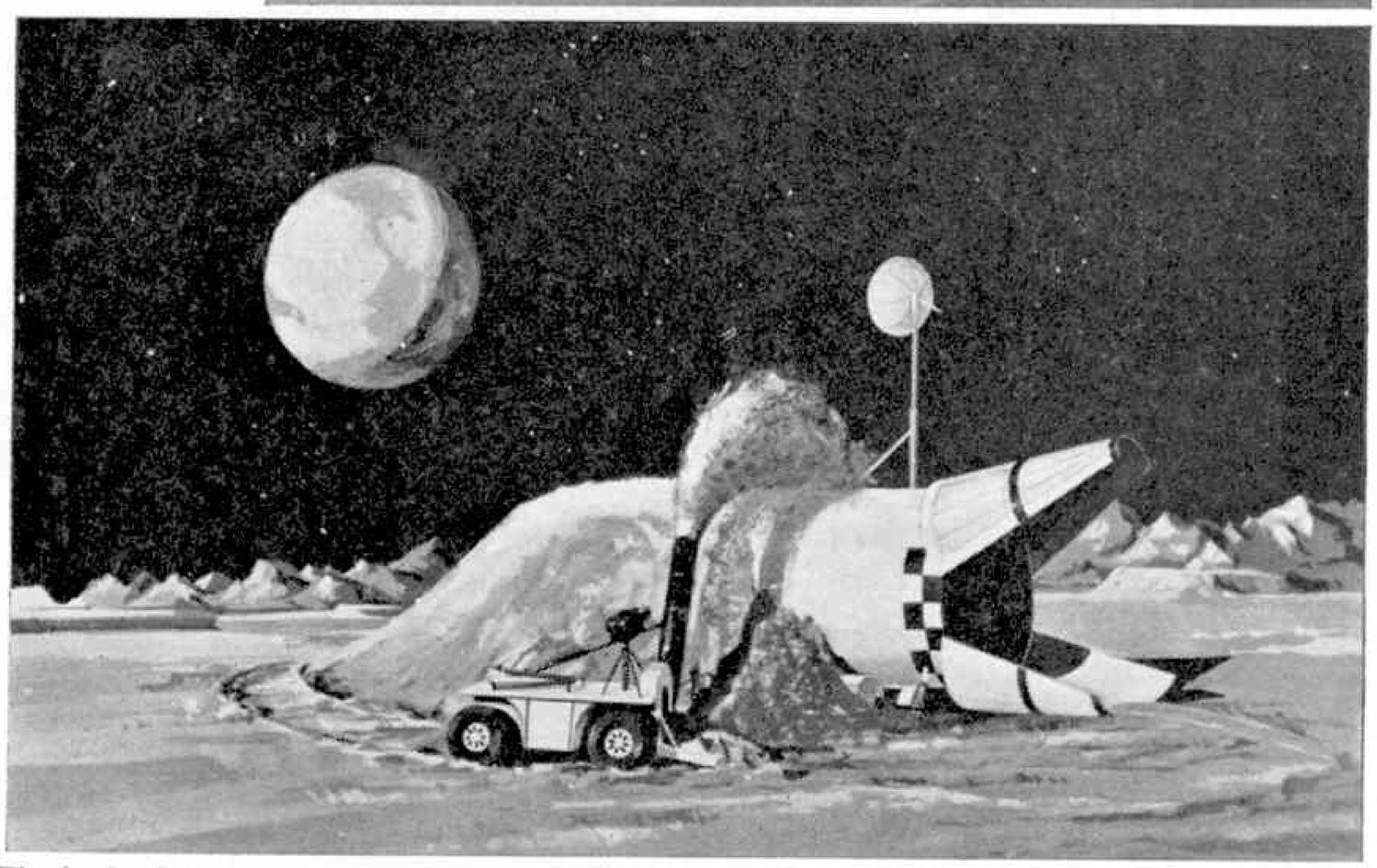


Fig. 3. A robot covers a shelter with dust to provide protection for its occupants. All illustrations appear by courtesy of the Douglas Aircraft Company.

The table of satellites given on the previous page is, unfortunately, not complete. When it was first set up in type, spaces were left at the end for more recent firings. However, so many satellites have since been launched that it was impossible to include them all. The 'left-overs' will be listed at a subsequent date.

Book Review

Locospotters' Annual (Ian Allan, 7/6d.). This provides its usual varied fare for the younger locomotive and railway enthusiast. Diesel, steam and electrically-operated services maintain the interest in their own specialised chapters. There are also separate sections dealing with the main line of the one-time Great Central Railway, and with the 2–8–0 Great Central locomotives adopted as a standard for military operation during World War One, some of which again rendered service overseas in World War Two. By no means least in importance among the many subjects covered is the German Federal Railways *Rheingold Express*, described as Europe's latest in luxury travel. The book is illustrated by 125 half-tones, with eight pages in colour.

TRACKSIDE NEWS

By "PLATELAYER"

New Training Centre

A NEW training centre for London Transport's railwaymen has been opened at the White City. It was designed by London Transport's own architects and occupies a two-acre site on which once stood the locomotive and car sheds of the "Twopenny Tube", the Central London Railway.

The new building replaces a former railway training centre which was housed in a building over Lambeth North Station. This training centre, which had been established in 1920, had become entirely inadequate as a result of the Underground Railway system having more than doubled its size since that date, and because equipment on which training must be given had increased in quantity and become more complex. The new training centre at White City is built round three sides of a rectangular plot, and provides 32,000 square feet of floor area.

One room contains an imitation Tube tunnel, tracks, station platform and various ancillary equipment, the tunnel being blacked out at one end. Other equipment includes a microphone and loudspeaker for platform use to enable the trainees to practice making announcements to passengers. A 600 volt D.C. supply will be available for demonstration purposes, and a device has been introduced to show the effects of traction current arcing.

A model railway was used at Lambeth North for training purposes, and so the new training centre has had installed in it, a rather larger model railway so that a wider range of incidents can be simulated. This railway has 175 feet of track, ten miniature "Silver" underground cars and full signalling equipment, including illuminated signal box diagrams showing the position of the trains. The speed of the trains can be varied at will to suit the instructions that are being given. The equipment in use on the model railway was built by the apprentices in various departments, each department building a specific part of the railway. The Chief Mechanical Engineer's Department Acton constructed the trains, and the track, signals and power frames were installed and wired by the Signal Engineering Department.

The 0-6-0T "Waddon" is shown (above) after it had been repainted by the British Railway Works at Eastleigh. Photograph by L. S. Vass.

Right: The northbound tunnel on the new Victoria Line. The wagons used for moving excavated earth can be seen in the foreground. London Transport photograph.

* * * *

One of the famous Stroudley Terrier class locomotives that belonged to the former London, Brighton and South Coast Railway was shipped off to Canada late last August to feature in a new Canadian Railroad Museum. The Southern Region of British Railways sent with the locomotive 21 feet of original rail belonging to the London, Brighton and South Coast Railway.

The locomotive, which is exactly 87 years old, was originally named *Waddon*, and was known in its last working years simply as DS680. It will be the latest locomotive to be included in the Canadian Railroad Transportation Museum, at Delson, Quebec. In May last year a token presentation of *Waddon* (the name was taken from a station in Surrey on the Victoria–Epsom line) was made by British Railways at a ceremony at the Pullman Car Company's Works at Preston Park, Brighton. Since then *Waddon* has been restored to all her former glory in the Stroudley livery of yellow. The restoration was done at the British Railways works at Eastleigh and

the cost, £500, was met by a group of enthusiasts from Montreal.

William Stroudley, the Locomotive Superintendent of the L.B.S.C. Railway designed ten classes of locomotives. One of these classes was the "Terrier" which got its nickname from the rapid acceleration, smart appearance and versatility of the locomotives. The Cunard Steam Ship Company provided passage for the locomotive, which was loaded aboard the freighter m.v. *Tautra* at King George V Dock, London, on Friday, August 23. *Waddon* was covered with a plastic sheet and clamped to the rail which came from a disused siding at Lancing, Sussex. The locomotive arrived in Montreal on September 3.

* * * *

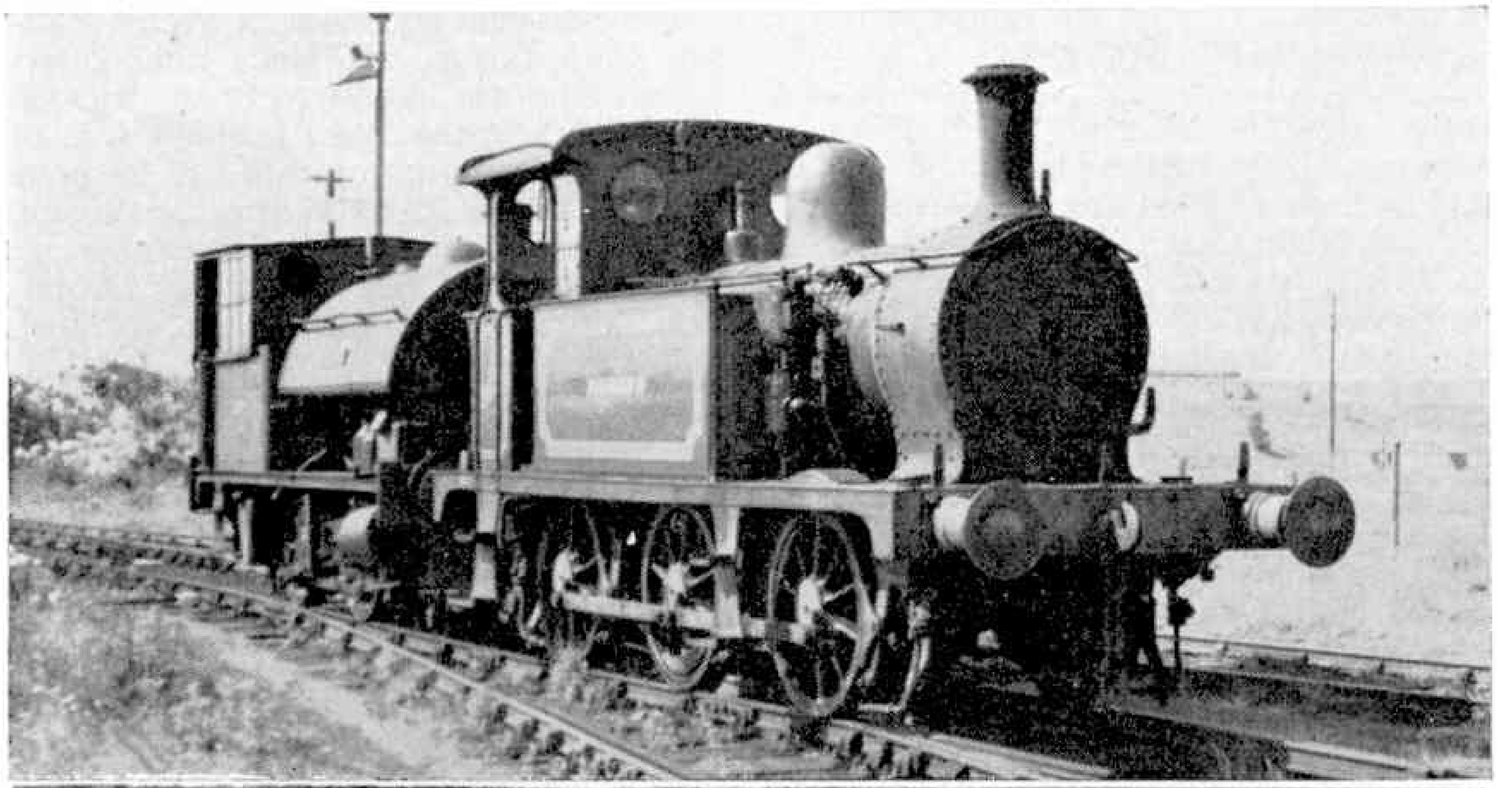
A reader calls my attention to the fact that in November's "Trackside News" I said there was only one standard gauge locomotive at Bowater's Paper Mills. There are, in fact, two. The locomotives in question are a "P" class 0–6–0 tank locomotive from the former South Eastern & Chatham Railway, which is currently named *Pioneer II*. The other locomotive is an 0–4–0 saddle tank locomotive named *Jubilee*. I am afraid the source of reference from which I took my information let me down!

* * * *

A civil engineering contract worth over £2,000,000 was won by John Mowlem & Co. Ltd. on October 28. It is for tunnelling the south end of the new Victoria Line from Victoria to Oxford Circus. The two miles of twin-running tunnels involved in the contract will, at one point, pass under the end of The Mall, opposite the Queen Victoria Memorial; further north they will be driven under the heart of Mayfair. The contract also includes the enlargement of the two running tunnels at the Victoria terminus of the line, and two at Green Park Station into four 21 ft. diameter station tunnels complete with cross passages, platforms, and cross-over junction tunnels at both ends of the new Victoria Underground station. Four train sidings at Gillingham Street are also to be built.

* * * *

"Pioneer II" and "Jubilee" on the standard gauge part of the Bowater's Paper Mills railway at Sittingbourne. Photograph by Derek Taylor.



Seen here is the tractor digger unit, specially adapted for railway maintenance duties.

Two agricultural engineering firms have collaborated with British Railways engineers in evolving a new method of scarifying consolidated track ballast as part of the operation of track re-laying and improvement—a vital factor in the modernisation of Britain's main line network. The two firms concerned are David Brown Tractors Ltd., of Huddersfield, and Evers and Wall Ltd., of Lambourn, Berkshire, who have co-operated in the testing of a tractor digging outfit which has proved particularly successful in relation to the scarifying of consolidated ballast under areas covered by points and crossings. As a result, British Railways (North-Eastern Region) have ordered five outfits which will be located at key points throughout the region. Other regions are also showing interest in the new equipment.

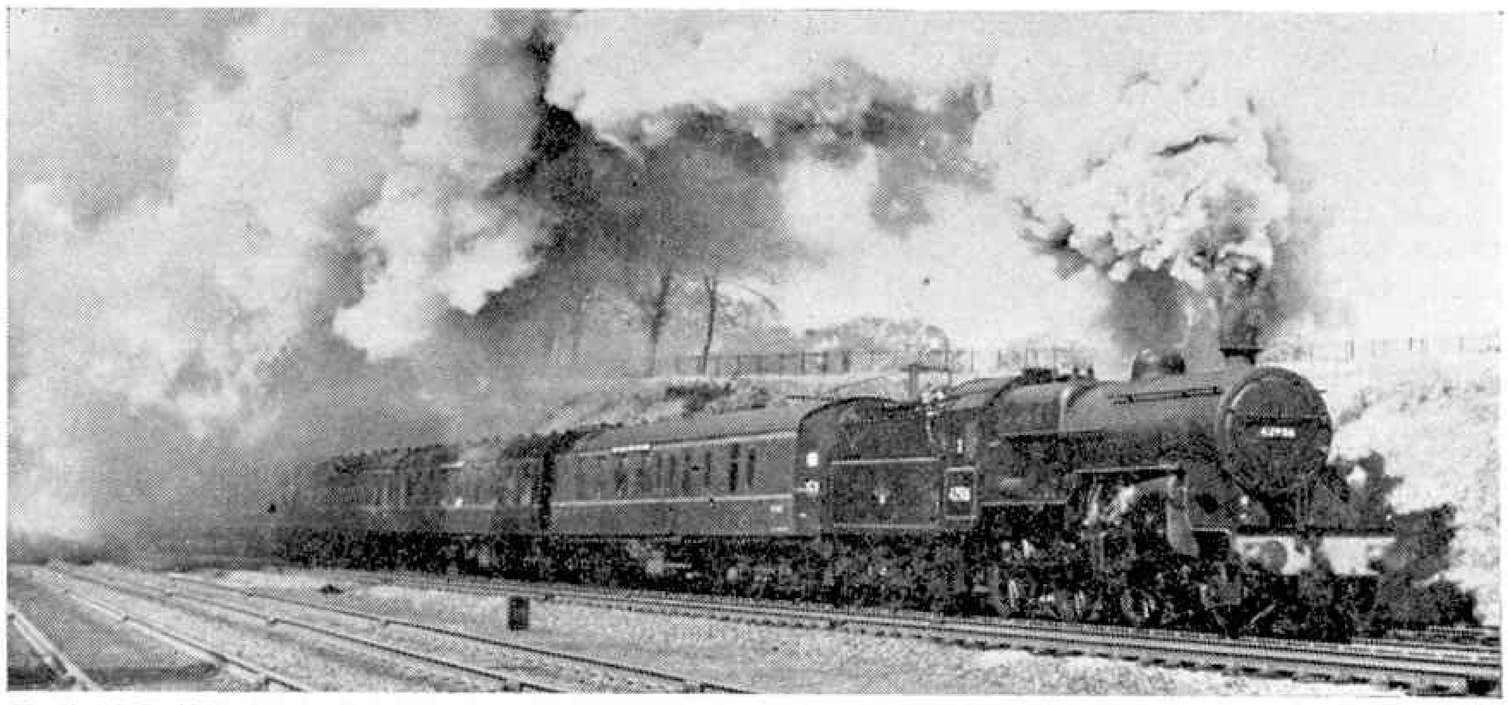
Each outfit consists of a 42.5 h.p. David Brown 880 Implematic tractor with 12-speed gearbox, and a modified Evers and Wall Helical Digger, fitted with special skids to control depth of working and a scraper attachment to ensure a smooth finish. The digger units are driven through individual Radicon worm gear units designed and built by another branch of the David Brown organisation. The development of this equipment is regarded as an important break-through in railway maintenance work in that it solves a problem which has been present for some time. Old ballast becomes hard-packed after a certain time—depending on the kind of traffic carried—and the problem has been to find a quick and thorough method of scarifying it before re-laying new stretches of line. Various other methods have been tried.

The first test of the David Brown tractor with Evers and Wall Helical Digger took place at Mirfield, in the West Riding of Yorkshire, and was watched by British Railways' officials as well as by engineers from the two manufacturers concerned. A normal off-peak period track re-laying operation was carried out using the following system:

1. Sixty-foot sections of track were lifted as complete panels by a special crane operating on an adjacent track;
2. The lifted sections were placed on a wagon and new sections taken from a second wagon;
3. The ballast under the lifted sections was broken down and scarified successfully by the tractor-digger outfit, the availability of a 12-speed gearbox enabling the tractor to travel at the most efficient working speed;
4. The new section of track was laid on the freshly-loosened ballast.

The full operation was carried out quickly and efficiently to the satisfaction of the railway officials, who suggested two minor modifications. These were soon effected and a further series of tests, carried out on disused track at Holmfield Station, near Halifax, and at Meltham Station, near the David Brown tractor factory, proved completely satisfactory.

ROUND THE SOCIETIES



Ex-L.M.S. "Crab" 2-6-0 No. 42936 passes on its way through Bebington Station, Wirral, after re-starting the 2.40 p.m. Birkenhead–London train from Rock Ferry. Mr. T. F. Lane, of the Merseyside Model Railway Society, was out and about to take this fine picture.

READERS who wish to join any of the organisations whose activities are outlined below should contact the Secretary concerned and not the *Meccano Magazine* offices.

MERSEYSIDE MODEL RAILWAY SOCIETY

The last exhibition held by the society at its usual venue at Bluecoat Chambers was a great success, and the society wishes to acknowledge the support it has received from many organisations, both local and national.

Since the exhibition a great many new members have joined, making the society's total membership well over 120. Plans now include the re-decoration of the four-storey clubhouse at 102 Chester Street, Birkenhead and the building of a large new TT layout. The existing TT layout is to be left erected in a different room for the use of junior members. The society is also negotiating for an additional clubhouse to house the 0 gauge layout, which is to be greatly extended to form a large exhibition layout.

The annual dinner will be held on February 1 when Mr. C. J. Freezer, Editor of the *Railway Modeller*, will be the guest speaker. The Christmas party was held just before Christmas, when all members had a most enjoyable evening.

The society has a working layout in nearly every scale, and invites prospective members to visit the clubhouse any Friday evening from 7.30 p.m., where they should ask for Mr. M. Rickett, the society's Public Relations Officer, who will act as guide round the headquarters. Prospective members should write to the Membership Secretary, Mr. M. S. Adams, of 120 Waterpark Road, Prenton, Birkenhead.

THE MONMOUTHSHIRE RAILWAY SOCIETY

The annual general meeting of the Monmouthshire Railway Society will be held at 7.30 p.m. in the Central Y.M.C.A., Commercial Street, Newport, on Saturday, January 4. New members will be especially welcome. An itinerary giving details of all meetings and outings in 1964 is available from the assistant Secretary, Mr. M. J. Eagleton, of 11 Canberra Crescent, Newport, Monmouthshire.

THE MODEL RAILWAY CLUB

The meetings of the above club to be held in January 1964 are as follows: Jan. 2, Track Night (S.R.); Jan. 9, Track Night (G.W.R.); Jan. 16, Talks by members on various aspects of models, arranged by Mr. J. N. P. Rowe; Jan. 23, Track Night (L.M.S.); Jan. 30, Track Night (L.N.E.R.) On this evening the judging of the Chairman's Trophy Competition will take place. For further details of the club write to the Hon. Secretary, Mr. D. A. Boreham, of 135 Mandeville Road, Northolt, Middlesex.

THE TRANSPORT TICKET SOCIETY

The Ticket and Fare Collection Society and the International Society of Transport Ticket Collectors announce that on and from January 1, 1964 they are amalgamating under the above title.

The object of the Transport Ticket Society is to integrate the work now being done by the two societies, and to offer the best possible service to those people throughout the world who collect transport tickets of any form. The basic services of the society will include the publication of a monthly journal containing society news, news of current transport developments which have any bearing on ticket practice, and articles and notes of historical interest; distribution of British and overseas road, rail, water and air tickets to members, and the providing of facilities for the exchange of tickets. The society also aims to co-ordinate research into transport ticket history and to publish works on this subject from time to time.

Collectors from any country are invited to write for further details and an application form for membership, these being available from the Membership Secretary, Mr. D. G. Geldard of 38 Albert Road, St. Mary Cray, Orpington, Kent.

BATHGATE AND DIST. MODEL RAILWAY CLUB

The Bathgate and District Model Railway Club, formed in March 1960, caters for all who are interested in model railways living in the West Lothian area of Scotland. Recently the club had to move out of its premises at Mid Street, Bathgate, because of dampness, but meetings are being held at 121 Lower Bathville, Armadale, which is the home of Mr. J. Baird, their President.

Many of the members are very interested in the pre-grouping railways. Mr. J. Baird is modelling the Caledonian Railway locomotives, and another member, Mr. W. Bishop, is modelling the Highland Railway locomotives. The annual general meeting will be held on Tuesday, January 14 at Mr. J. Baird's house, 121 Lower Bathville, Armadale, at 7.30 p.m. All members, including those interested in joining the club, are requested to attend. Hon. Secretary, Mr. A. Glen, of 12 Boghead Crescent, Falside, Bathgate, West Lothian.

THE GRESLEY SOCIETY

The Gresley Society was formed in early 1963 and caters for all enthusiasts interested in the work of the late Sir Nigel Gresley, with the aim of preserving as many of his items as funds will allow. The first item to be purchased was the last remaining N2 locomotive, 69523. All interested parties are urged to contact the Honorary Secretary, The Gresley Society, Mr. P. Holmes, of 9 Broadmead, Willow Wong, Burton Joyce, Nottingham.

EAST HAM AND DIST. MODEL RAILWAY CLUB

In the eyes of the treasurer January is always a good month for the club. It is found that a sudden increase in member-

ship takes place, mainly, it is believed, because of the mass purchase of train sets over Christmas. Many a proud father who has just bought a train set for his children comes along to the club to find out how to operate it, and how to repair items that may go wrong. While at the club he usually realises the advantage of club membership and stays to become a member.

If you are over sixteen, now is the time to join the club to learn more of this fascinating hobby and generally gain more pleasure and enjoyment from it. To give you an idea of its activities, the programme for January is as follows: 6th: Practical Night, all groups; 13th: Practical Night, wiring demonstration; 20th: Track Night (00); 27th: Track Night (EM/TT), and to give you a foretaste of what is to come next month a visit has been arranged to Eastleigh Motive Power Depot, where, as modellers, members will view the prototype for comparison.

Further details of the club's activities may be had from the Secretary on Monday club nights, over a cup of tea, at St. Gabriel's Church Hall, Aldersbrook Road, Wanstead, E.11 (101 bus to the door) or in advance from Mr. G. R. Lloyd, of 32a Goldsmith Road, London E.10.

THE LONDON RAILWAY PRESERVATION SOCIETY

The London Railway Preservation Society, which is a member of the Railway Preservation Society, hopes to create a working railway museum, open for the enjoyment of connoisseur and layman alike on a rural line discarded by British Railways, although at present so much change is taking place that the selection of any particular line would be premature.

Our first efforts are, therefore, being devoted to preservation of pre-grouping locomotives and rolling stock, and a private siding in Bishops Stortford is being used as a depot for storage and restoration work. Generous loans and donations from members have enabled us to buy London Transport 0-4-4T No. L44. This locomotive is one of the last to be owned by London Transport, and will be maintained in working order at our depot. An appeal is being made to repay loans, and donations should therefore be marked "Met. Tank Appeal". Others that the society has succeeded in saving are a London Chatham and Dover four-wheel coach, circa 1885 and a Great Northern Railway six-wheel brake/third coach, circa 1895. Restoration work is now in progress on both vehicles.

The three Beattie well tanks from the former London and South-Western Railway are now scheduled for scrapping and so the London Preservation Society has decided to launch an appeal to save No. 30585 which, on the advice of the Southern Region of British Railways, is the best proposition for future use. Donations for these items should be sent to Mr. R. A. Castle, Hon Secretary, L.R.P.S., of 8 High Stile, Dunmow, Essex. All cheques and postal orders should be crossed, and made out to "Beattie Locomotive Fund".

LAUNCESTON RAILWAY CIRCLE

This club was formed recently, and invites all enthusiasts living in the area to join. The club intends holding indoor meetings every month throughout the year. A programme of outdoor visits is also being planned for the summer months. Full details may be obtained from the Hon. Secretary, Mr. R. L. Goodman of Trekemletts, Launceston.

CRAWLEY MODEL RAILWAY SOCIETY

January 1964 programme: Friday (3), Talk on modelling the L.N.W.R. (Part Two) by Mr. T. Wilkinson and Mr. J. Slinn; Wednesday (15), Talk on the L.B.S.C.R. and L.S.W.R. electrics by Mr. F. J. Briggs; Wednesday (29), Members' photographs; Wednesday (1), Friday (10), and Friday (17), Working Nights; Wednesday (8), Wednesday (22), and Friday (31), Track Nights: Friday (24), Timetable operating session.

All meetings are held at 7.30 p.m., in Hut 30, Tilgate Forest Recreational Centre, which is open every Wednesday and Friday at 7.00 p.m. Further details may be obtained from the Hon. Secretary, Mr. B. E. Champion, of 175 The Birches, Three Bridges, Crawley.

WEST FIELD RAILWAY CLUB

West Field Railway Club, York will be holding its second annual exhibition in the Church Hall, Front Street, Acomb, York from January 2 to January 4 inclusive. The exhibition will be open from 10.0 a.m. to 9.00 p.m. each day, except Saturday when it closes at 8.00 p.m. Admission will be 1/- for adults and 6d. for children. Exhibits will include the following: Mr. D. A. Naylor's "Aire Valley Railway", Alan Smith's "Lydney Branch", the "South Wessex Railway" of the Britannia Railway Society, Knaresborough, an American 000 layout, to be loaned by Mr. R. Cox (Leeds M.R.S.), the TT3 layout of the Sheffield M.R.E., the TT3 layout and working breakdown crane of the Silvermills (Otley) M.R.S., the Railway in a TV set, from the Wakefield R.M.S., the working goods yard of the York M.R.S. and models from the permanent layout of R. G. M. Quarrie. The West Field club will exhibit their "Lyme Bay Railway", which is based on Dawlish, Devon, and also their "Fizzwell and Little Popping Railway". There will also be an 0 gauge layout, and many static models in all gauges.

All the major railway preservation societies will be represented. Refreshments will be available at moderate charges and all visitors will be most welcome to what was termed last year the "friendly show". Acomb is the major suburb of York, and the hall is centrally situated, being accessible from York Railway Station by three bus services, all of which stop at the door.

TWICKENHAM AND DIST. MODEL RAILWAY CLUB

The club regrets that it has had to change the date of its exhibition from January 9 to January 25, 1964. The Hon. Secretary is Mr. P. L. E. Finch, of 83 Spring Grove Crescent, Hounslow, Middlesex.

R. & E.R. PRESERVATION SOCIETY LTD.

The Ravenglass & Eskdale Railway Preservation Society Ltd., is launching an appeal to collect funds, a total of £7,500, in fact, to build a new locomotive which is to be named *River Mite*. This will be in appearance rather similar to *River Esk*. The order is to be placed with Messrs. H. Clarkson, of York. The engine is needed because *River Esk* and *River Irt* will occasionally need overhauls, and at present there is no substitute steam locomotive. It is increasingly urgent that the locomotive be built as soon as possible, as the number of firms capable of undertaking the work of building a new locomotive is diminishing annually.

Recent visitors to the railway will have noticed that an expanse of ground has been cleared in readiness for the surveyors. It is intended that a cutting twelve feet deep and of 300 feet radius be cut so that the railway can travel through the bluff, around which the present line makes such a severe curve.

Opposite the locomotive sheds at Ravenglass developments are taking place in the laying of the new carriage sidings which it is hoped will be completed before very long. An interesting feature of the sidings is the three-way point that has been reconditioned and is being used again.

Prospective members should write to Mr. A. G. Langley, of Parkside, Rueberry Drive, Seascale, Cumberland.

THE NORTHERN RAILFANS' CLUB

The club is divided into the Lancashire and Yorkshire Division and the Midlands Division. The same newsheet is however supplied to all members, in both divisions, and an equal opportunity is afforded to participate in visits. At least one visit to motive power depots or locomotive works is made every week-end. Mid-week visits are held during the Holiday periods To assist the club's 1,500 members meeting points for visits are at Leeds, Manchester, Darlington, Crewe, and Derby.

Coach tours are run from time to time, over various areas. Members are asked to travel by rail to a starting point, and meet the coach there. The minimum age for membership is 12 years to comply with British Railways conditions.

(*Continued on page 575*)

FOR THE BUILD-IT-YOURSELF ENTHUSIAST

● *The* Meccano Magazine *this month presents a survey of products which we think will interest our readers. We shall remember parents as well as the younger members of the family in offering this review which, we hope, will become a regular feature of the Magazine.*

Latest addition to the Airfix range of model merchant ships—the s.s. "France".

THE world's mightiest liner, the s.s. *France*, is the latest and biggest addition to the model merchant fleet made by Airfix in their 1:600 scale. The 148-part kit, made of polystyrene, has been produced in great detail and includes twenty miniature lifeboats, each complete with rudder, two motor launches and two tiny dinghies. The model actually scales down from 1,035 feet for the real thing to 21 inches overall.

The kit is supplied with polystyrene fixing cement and assembly instructions with paint scheme and transfers. It is packed in a strong cardboard box, with full colour illustration of the s.s. *France*, and retails at 10s. 6d. Like all Airfix products it is obtainable from all good toy and model shops.

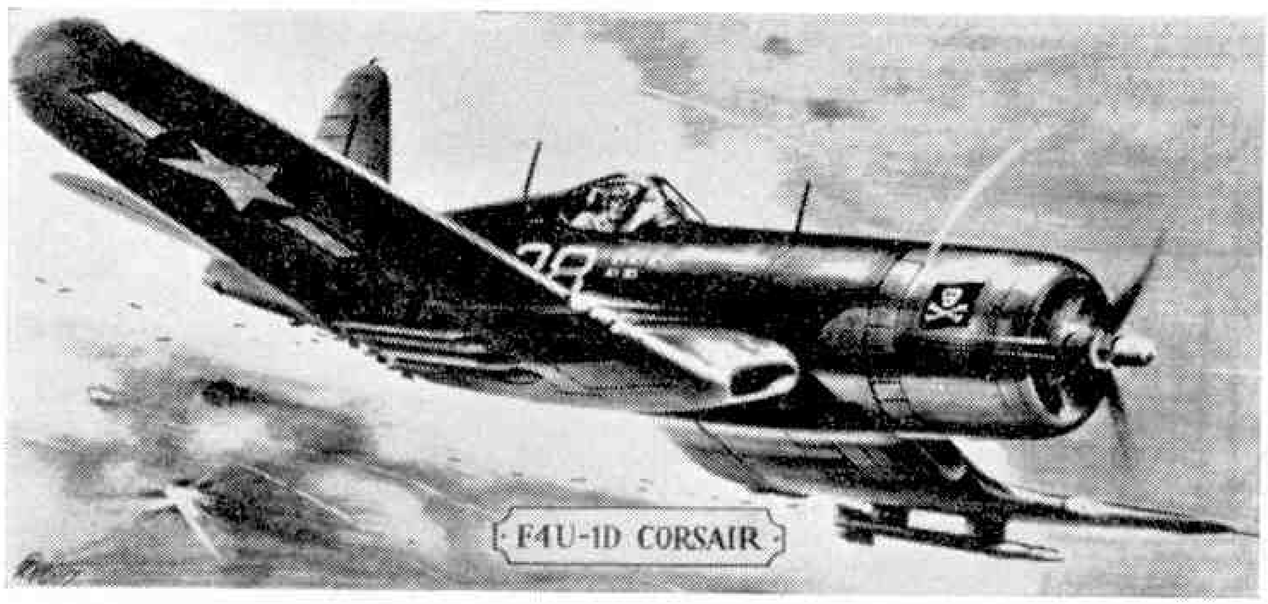
Airfix have also recently added to their series of plastic construction kits of historical figures. Subject of the latest model is the famous soldier-politician Julius Cæsar. The kit, with 45 component parts, stands seven inches high when made up and is authentic in every detail, from helmet plume to sandals. Hours of historical research went into the collection of details.

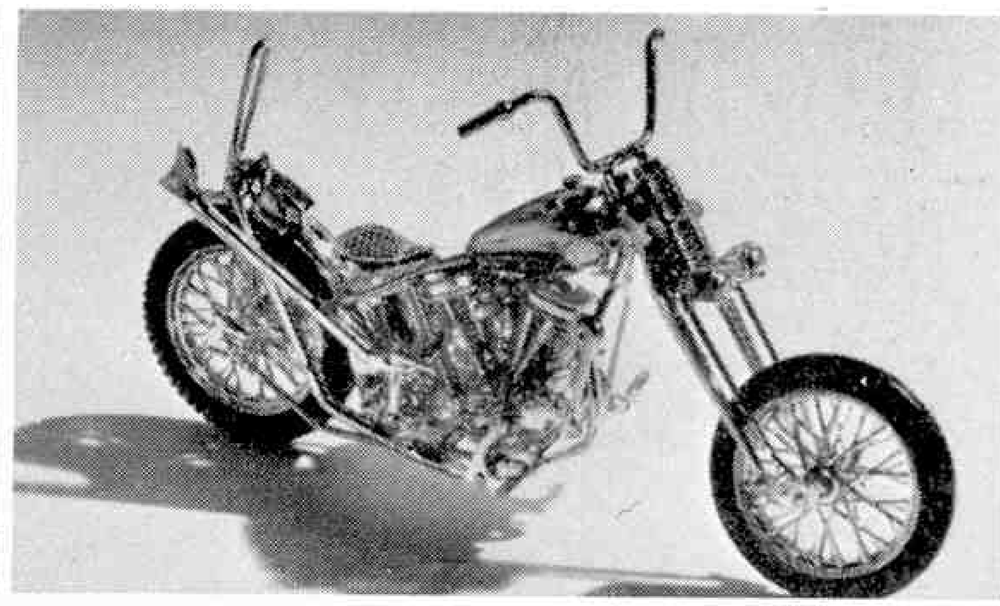
* * * *

Now for something to interest parents who enjoy brightening up the home. The Reliant Tooling Company announce the launching of the Reliant Venetian Pelmet —in an easy-to-make kit form. It is an entirely new concept in window decor,

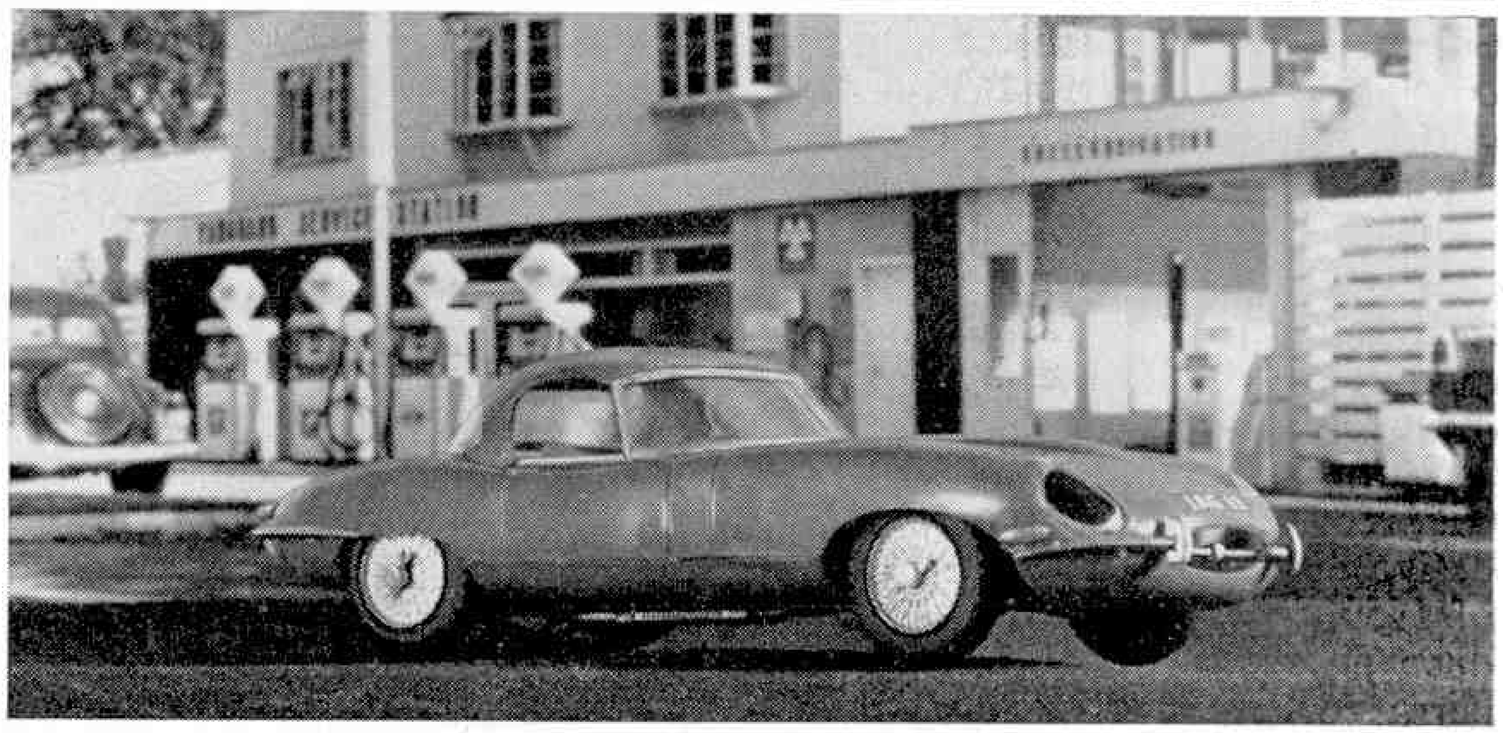
This model figure of Julius Cæsar displays a decorative tunic and cloak. Arms include sword and dagger, and the figure carries a baton in its right hand.

Striking a new note in home decor is the Reliant Venetian Pelmet, seen below in an appropriate setting.





Two recent models from Revell are (above) the Chance Vought Corsair and (right) the striking Harley Davidson Showbike.



Capturing the appealing design of the E-type Jaguar is this neat model—another recent release by Airfix.

consisting of venetian blind slatting clipped vertically to spring steel strips which form the pelmet rail and which, in turn, are fixed to either the window frame or ceiling by plated brackets. The beautifully presented box, measuring only 12 inches × 1½ inches × 3½ inches contains all the necessary slats, rail, brackets and screws to make one or more pelmets up to a length of eight feet for 29s. 6d. The only tool needed is a screwdriver with which the pelmets can be fixed in a matter of minutes. Two or more kits may be used together to cover any continuous length. The slatting is of aluminium curved section with a baked enamel finish giving a hard durable gloss for easy cleaning, and is available in twelve colours, including some delightful pastel shades. It comes already cut to size and slotted for simple clipping on to the rail. A supply of longer lengths is included for trimming the ends of the pelmet or for making a pattern in the centre.

The rail, being made of plated spring steel, will bend to suit any shape of window or bay and can be curved at the ends to form a sharp radius for finishing the end of a pelmet. The rail is supplied in 12 inch strips to be screwed together for the length required.

The three-dimensional effect of the Venetian Pelmet strikes a new note in home decoration, looking extremely well with either curtaining or venetian blinds. Besides its obvious use as a pelmet it has many other uses such as providing a gay finish to a cooker canopy, being used with murals to create mock windows, above door awnings or as shelving for special effects.

The Reliant Venetian Pelmet is obtainable from most D.I.Y. shops, ironmongers and stores. In case of difficulty, contact the manufacturers, Reliant Tooling Company Ltd., Industrial Estate, Maple Cross, Rickmansworth, Herts.

* * * *

From Revell come a further three 1:72 scale World War II aircraft, bringing the total of this series up to twelve, all priced at 2s. 11d. each.

This further set has the same high standard of authenticity as the previous items in the series. All the models have rotating wheels, undercarriages which can be adjusted in the up or down position, clear cockpits and pilot figures. The three latest 'planes are the Curtis P–40–E Kittyhawk 1A, with sliding canopy (H.623), the Messerschmitt ME–262, with hinged canopy (H.624) and the Chance Vought Corsair F4U-1D with sliding canopy (H.625). One of these fine models is illustrated on this page.

Road and track enthusiasts who like to build their own models will be interested to know that Revell have also added a further three motor-cycles to their range which started with the appearance of the Triumph (H.1290). The models are packed two in a box, one in plastic and one completely chromed, and the features include rotating wheels and steering which works. Each of the sets of two retails at 5s. 6d. The models are: B.S.A. 650 c.c. Rocket Gold Star (H.1291), Harley Davidson Showbike (illustrated) (H.1292) and the 250 c.c Honda Super Sports motor-cycle (H.1293).

* * * *

Returning to Airfix, another interesting release is the E–type Jaguar, modelled on a car which has become famous in the international market. The Airfix version is in the 1:32 constant scale series with alternative hard-top or open body. It has 47 parts and costs 2s. 0d. With the kit is a comprehensive instruction leaflet and a characteristic colour scheme. The kit is moulded in red polystyrene and includes headlamp and sidelight tranparencies and a choice of three number plates. Detail has been carefully followed down to window winders and door catches. The independent rear axle is particularly authentic and the universal joints of the swing axles are clearly visible.

* * * *

"Peco" have introduced two new products to the model railway market. The first is a very welcome addition to their range of Wonderful Wagon Kits, and is a model of the Conflat wagon. Readers who have already built one of the Wonderful Wagons will know that both the buffers and axleboxes are individually sprung, and that each kit is supplied with both wheels and couplings, so no extra cost is entailed once the kit has been bought, provided you have the usual glue and craft knife. The kit is very easy to assemble, and the only work that has to be done is the cutting of the cardboard sides, which must be glued on to the cast metal ones, supplied with the kit. The wagon sides and ends are coloured red bauxite, in accordance with British Railways' practice. A new departure for Peco is the container kit, which is intended to fit into the Conflat wagon. It is printed on quality card, and is sold in four different colour schemes, representing different manufacturers' own liveries. The price of the model Conflat wagon is 9/6d., and the price of the container is 1/3d. They are available at most model shops, or direct from the Pritchard Product Co. Ltd., Seaton, Devon.

BRITAIN'S NEW BOMBER FLIES ITSELF

By far the most formidable supersonic military aircraft yet built is the British Aircraft Corporation TSR–2 bomber, illustrated here.

AIR NEWS

By John W. R. Taylor, Editor of "Jane's All The World's Aircraft"

PEOPLE often ask me how Britain's aircraft industry compares with its American and Russian counterparts. The new British Aircraft Corporation TSR–2 bomber, illustrated at the top of this page, gives the best possible answer to that question. It is not only the neatest-looking supersonic military aircraft yet built, but by far the most formidable.

When Vickers and English Electric received a joint contract to design the TSR–2, at the beginning of 1959, the intention was to produce a replacement for the Canberra, for tactical strike and reconnaissance (TSR) duties. It had to fly at twice the speed of sound at great heights, yet be able to operate from runways no more than 600 yards long, or from grass where there are no runways. Even more important, it had to be strong enough to race to the target at supersonic speed just above the ground, in order to escape detection by enemy radar if its target were well defended by anti-aircraft missiles.

Nor was this all. It had to have a range of several thousand miles for subsonic ferrying flights to overseas bases. It had to be able to operate from dispersed airfields without any of the usual ground equipment, except for refuelling vehicles, and it had to be able to do all these things by day and night in all weathers.

This was asking a great deal, but the designers have done their job so well that the TSR–2 will exceed the original requirements. It will be suitable for every kind of attack mission from tank-busting in the battlefield to strategic bombing of targets over ranges of several hundred miles, using specially-developed rocket-powered nuclear missiles.

In many respects, the TSR–2 is itself more like a missile than a manned bomber, but it has the immense advantage that its two-man crew can switch targets or even turn back after the attack has been launched and can deal with any unexpected complications encountered in flight. It has missile-type controls, consisting of a one-piece, all-moving vertical tail-fin and all-moving "tailerons" which do the job of the usual ailerons, elevators and tailplane. This leaves the wing trailing-edges free for large flaps which have air blown over them to increase lift and so reduce landing and take-off runs. The turned-down wingtips avoid the necessity of setting the whole wings at an anhedral angle to ensure stability.

The fuselage is probably every inch of 90 feet in length, but is crammed full of fuel and equipment, with two afterburning Bristol Siddeley Olympus turbojets at the rear, each giving up to 33,000 lb. of thrust. The bombing-navigation system is the most advanced in the world and is capable

Out on a limb—a dramatic demonstration of the Lockheed Company's new XH–51A Aerogyro helicopter designed to show, in a most effective manner, how the aircraft can be subjected to varied loading without danger of upset.

of flying the aircraft to its target, making the attack and flying home again without the pilot touching the controls. It does this by a complicated mixture of radar sets and missile-type inertial guidance system. One radar keeps the aircraft at a constant height above the ground throughout its flight, sniffing out hills and other obstructions and passing messages to the controls so that the 'plane climbs over them.

For reconnaissance missions, the usual weapons are replaced by batteries of cameras, a TV system that is able to transmit pictures continuously to a ground station, and radar that can be adjusted to give a picture of everything that moves on the ground, ignoring all stationary objects.

This, then, is Britain's new TSR–2, a bomber so accurate that it could be sent to destroy a particular span of a particular bridge hundreds of miles from its base and be back home within the hour. Present contracts cover the production of twenty development models and 30 production models, and these will form the most potent bomber force in the world in the mid-sixties.

BEWARE OF THE SWANS!

On November 8 last year, America's Federal Aviation Agency issued a warning to pilots to be on the alert for the annual migration of whistling swans from the Great Lakes to Chesapeake Bay. The object was not merely to protect the birds, because any lightplane pilot who suddenly encountered between 50 and 100 of the large all-white swans flying in V formation at his altitude might be in very real trouble.

The F.A.A. advised that the heaviest flights would occur in the cool clear air behind a cold front, especially during the first 30 hours after the passage of the front, and that the cruising height of the swans would normally be below 10,000 feet. A final warning told pilots not to try to fly under any swans encountered, as the birds tend to go into a dive whenever an aeroplane passes close to them.

DEFINITELY NOT UPSET

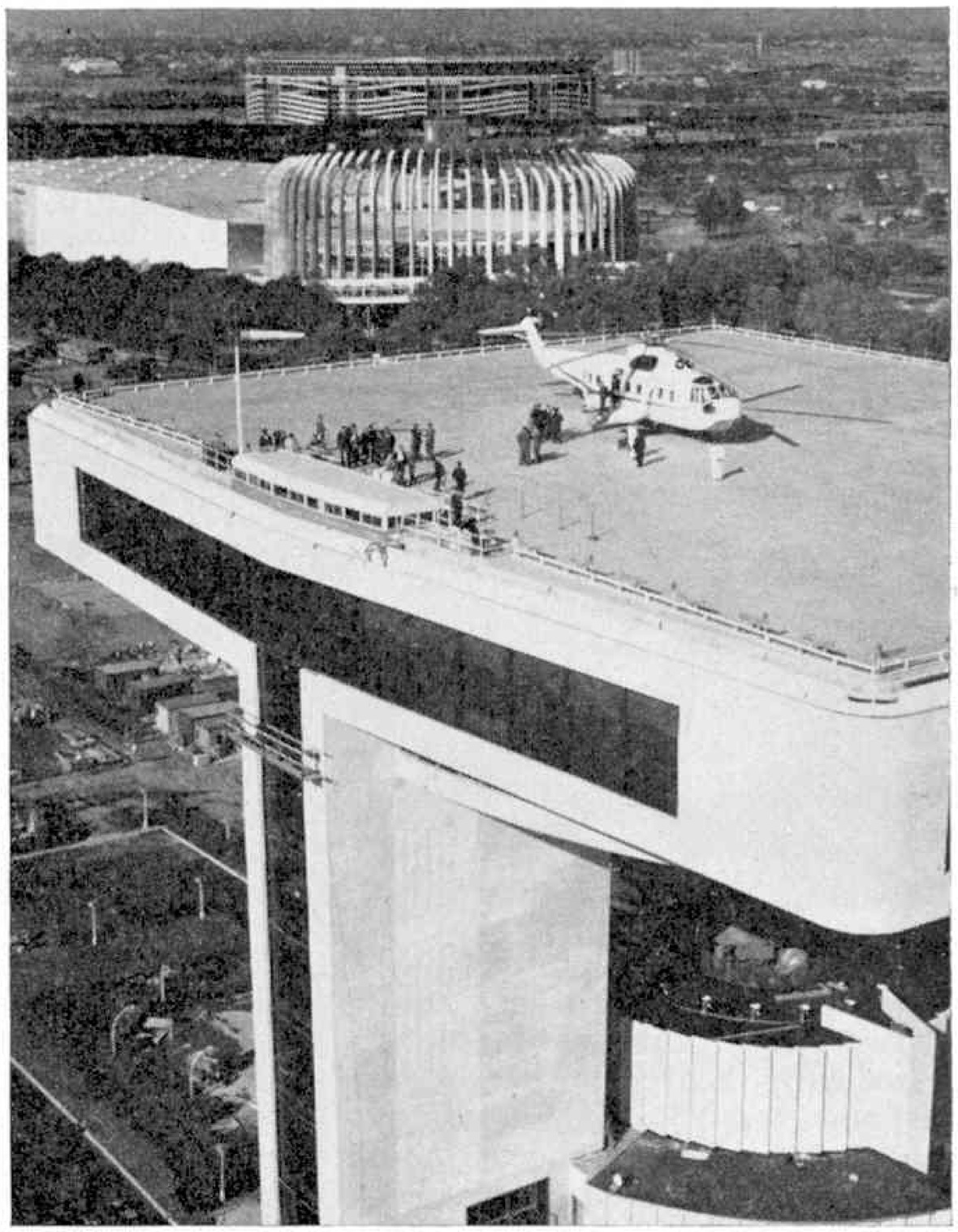
The gentleman sitting at the end of the boom in the picture at the foot of page 552 has not had an argument with the pilot and gone outside to sulk; nor is he practising for a trapeze act at the local circus. It *is* a stunt, but a very impressive one, designed to show that even a heavy side load such as this cannot upset Lockheed's new XH–51A Aerogyro helicopter.

The Aerogyro has a new-type rigid rotor with a mechanical stabilising gyroscope which keeps it on an even keel under conditions that would be highly dangerous to other helicopters. This not only adds to its usefulness, but makes it much safer and more easy to fly. It is also one of the most streamlined helicopters yet built, with retractable undercarriage skids, and has attained speeds as high as 160 m.p.h. during early flight tests. It is powered by a 500 h.p. United Aircraft of Canada T74 shaft-turbine engine and has been built under a joint U.S. Army–Navy research contract.

FLYING FIRE ENGINES

One of the most imaginative structures at this year's World's Fair in New York is the Port of New York Authority building, shown in the illustration on this page. Shaped like a letter T, for "Transportation", it has a heliport on top from which visitors will be carried on sight-seeing tours of the Fair by 24-passenger Sikorsky S–61N helicopters.

Many fire brigade officers throughout the world believe that all buildings of this height ought to have a heliport on top, and their suggestion should carry more weight following a fire in a skyscraper in Rio de Janeiro, Brazil. Fifteen people were trapped on the roof of the burning building, with no possibility of getting down. The lift had crashed to the bottom, killing all the people crowded inside it, and the firemen had no ladders long enough to reach the roof. Fortunately, a helicopter was available and its crew lifted all the trapped people to safety.



A striking picture of the heliport at the top of the Port of New York Authority exhibition building at the World's Fair. Each side of the building is in the form of a letter "T".

THIS 'PLANE WON'T FLY

An aeroplane that refuses to leave the ground may sound rather useless, but the Lerho Terraplane is, in fact, a most promising new idea. Its wings develop just enough lift to raise it a foot off the ground at a forward speed of 40 m.p.h. Even then, part of the weight of the Terraplane is supported by a spring-loaded wheel mounted under the centre of gravity, and it would not become airborne at all without this aid; so it cannot climb any higher.

However, it feels as if the machine is really flying and it can be made to bank, take off and land like a real aeroplane without ever getting high enough to hurt the pilot if he makes a mistake. As a result, it is a very useful device on which to give pupil pilots practice in taking off and landing.

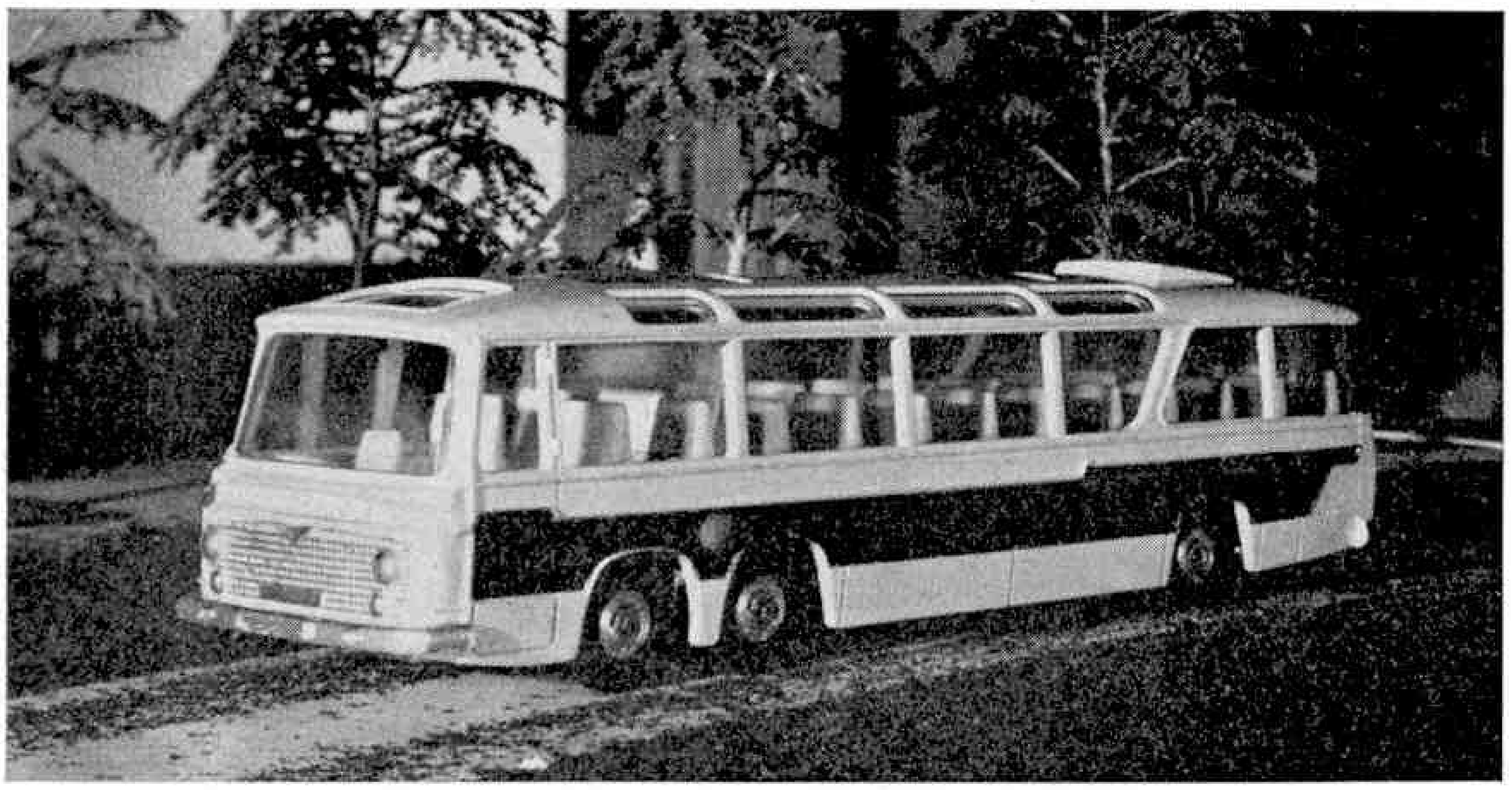
Instead of a normal wing, the Terraplane has a "Sailwing" made of Dacron fabric stretched between a tubular aluminium leading-edge and wire trailing-edge. It is powered by a 15 h.p. Yamaha 250 engine, driving a pusher propeller. Span is 23 ft. 3½ in. and loaded weight 460 lb.

FLYING FISH

Braving winds of up to 60 m.p.h. and freezing temperatures at 13,000 feet, Pat Patterson of Arizona Helicopters carried no fewer than 99,000 passengers to high lakes at the headwaters of the Pecos River, New Mexico, last Autumn. As the operation required only six flights in a small Bell 47G–3B helicopter, the passengers were clearly small. They were, in fact, tiny trout needed to re-stock the lakes.

Experience has shown that small fish can be dropped into water from a moving aeroplane without harm and "fish planting" has been done successfully in many parts of the world. But it has not often been done from a helicopter, nor at such high altitudes. The job was not made any easier by rugged rock cliffs and tall trees surrounding some of the lakes, but the little Bell took all the problems in its stride and was soon busy ferrying another 56,000 flying fish to lakes in the Wheeler Peak wilderness area.

FLASHING INDICATORS, LIFTING BOOT, ON A COACH WITH LUXURY LINES



DINKY TOYS NEWS

By The Toyman

LAST month, for the first time ever, I gave you advance news of two Dinky Supertoys to be released early this year. Now, in my first notes for 1964, I am pleased to report that, already, one of these fine new models has been released. A glance at the illustration above will show which one it is—the Vega Major Luxury Coach, numbered 952 in our lists.

Like its real-life counterpart it is without doubt a luxury model. It is fitted with three innovations never before seen on a Supertoy—indeed, two of them have never been seen on any model in the whole field of die-cast miniatures, to the best of my knowledge! The most novel of these, in my opinion, are the independently flashing direction indicators, which are actuated when you press down on one side or other of the model, to turn the coach, by means of its Prestomatic steering, to the right or the left. Working in conjunction with the indicators are twin steering axles, and since both of these are fitted with Prestomatic steering the final effect is first class. Let us assume, for example, that you are driving along and wish to turn left. Press down on the left-hand side of the model; the left-hand indicator flashes, and it turns in that direction. I must admit I spent a long time "testing" this manœuvre which is truly fascinating.

Power for the indicators is obtained from an "Ever Ready U12" or equivalent battery, which can be changed without any trouble. There is a shaped cavity in the base of the model and the battery is simply pressed into this, where it is held by a spring clip. As the cavity is in the underside of the base, there is no need to remove the latter before the battery is fitted. The whole operation, in practice, takes only a few seconds to complete. An instruction leaflet, packed with each

The Dinky Supertoys Vega Major Luxury Coach (top) has three brand new features, described in these pages. Left: A close-up view showing one of the direction indicators and the twin-front wheel arrangement incorporated in the model.

C. J. Jenkins of Kenilworth, Warwickshire, winner of a recent Road Safety Contest featured in the "M.M.".

Both illustrations on this page are fine examples of the excellent results that can be obtained from indoor photography. Our highly realistic scene (left) gives the strong impression of being taken in a quarry but, in fact, it was set up on a studio table. The effect was obtained by placing a suitably enlarged photograph, depicting an appropriate scene, behind the layout. The background in the busy garage scene below was similarly obtained.

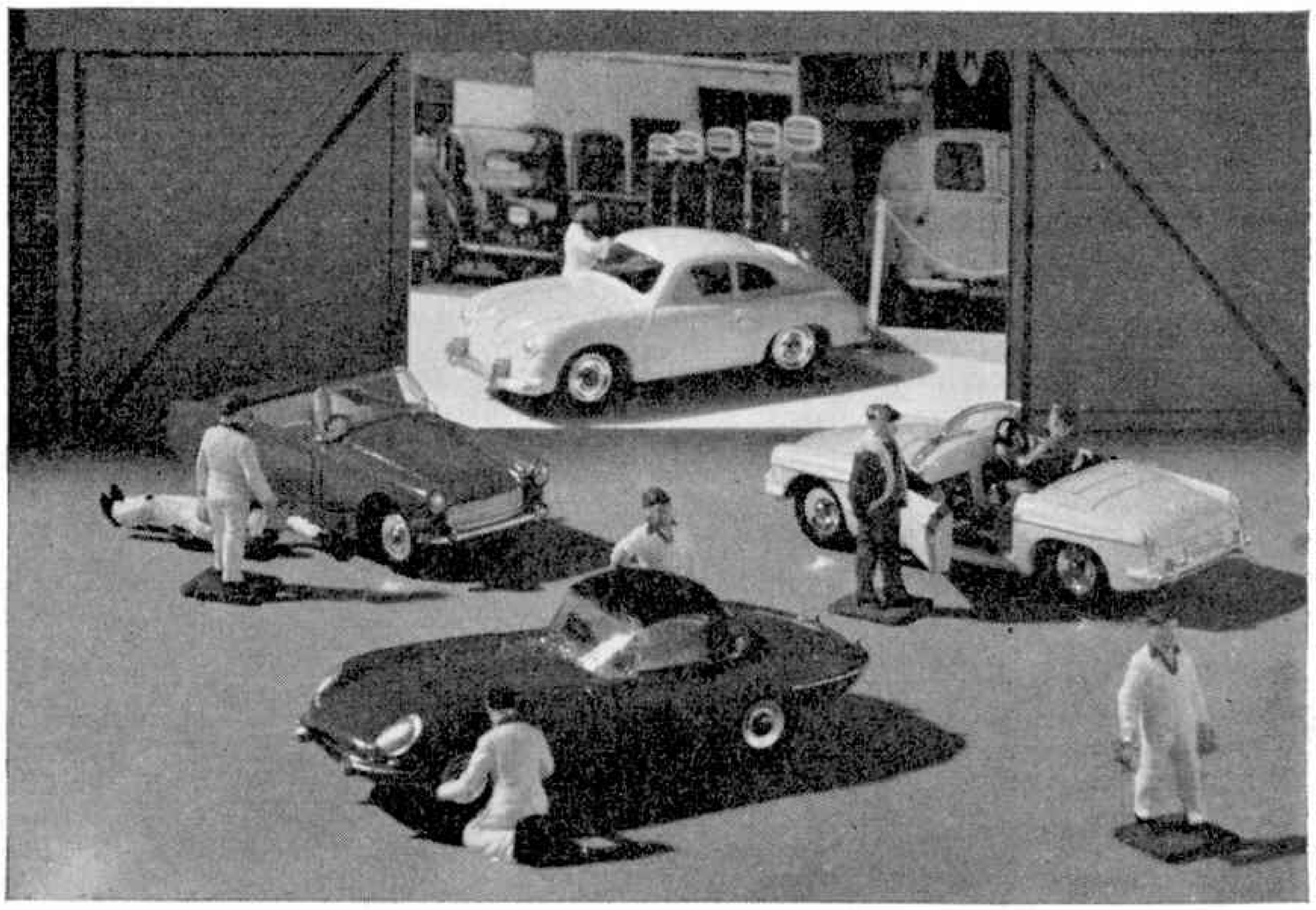
model, also shows how to replace the indicator lamps.

The last, but certainly not the least, new feature is an opening boot. This is, of course, becoming fairly common on Dinky Toys but has not, until now, been incorporated in a Supertoy. Additional aspects include the customary extras—windows, seats, steering wheel and suspension, the last-named covering all the vehicle's six wheels. A tasteful colour scheme of lilac and crimson. with silver fittings, gives the final touch to a superb miniature.

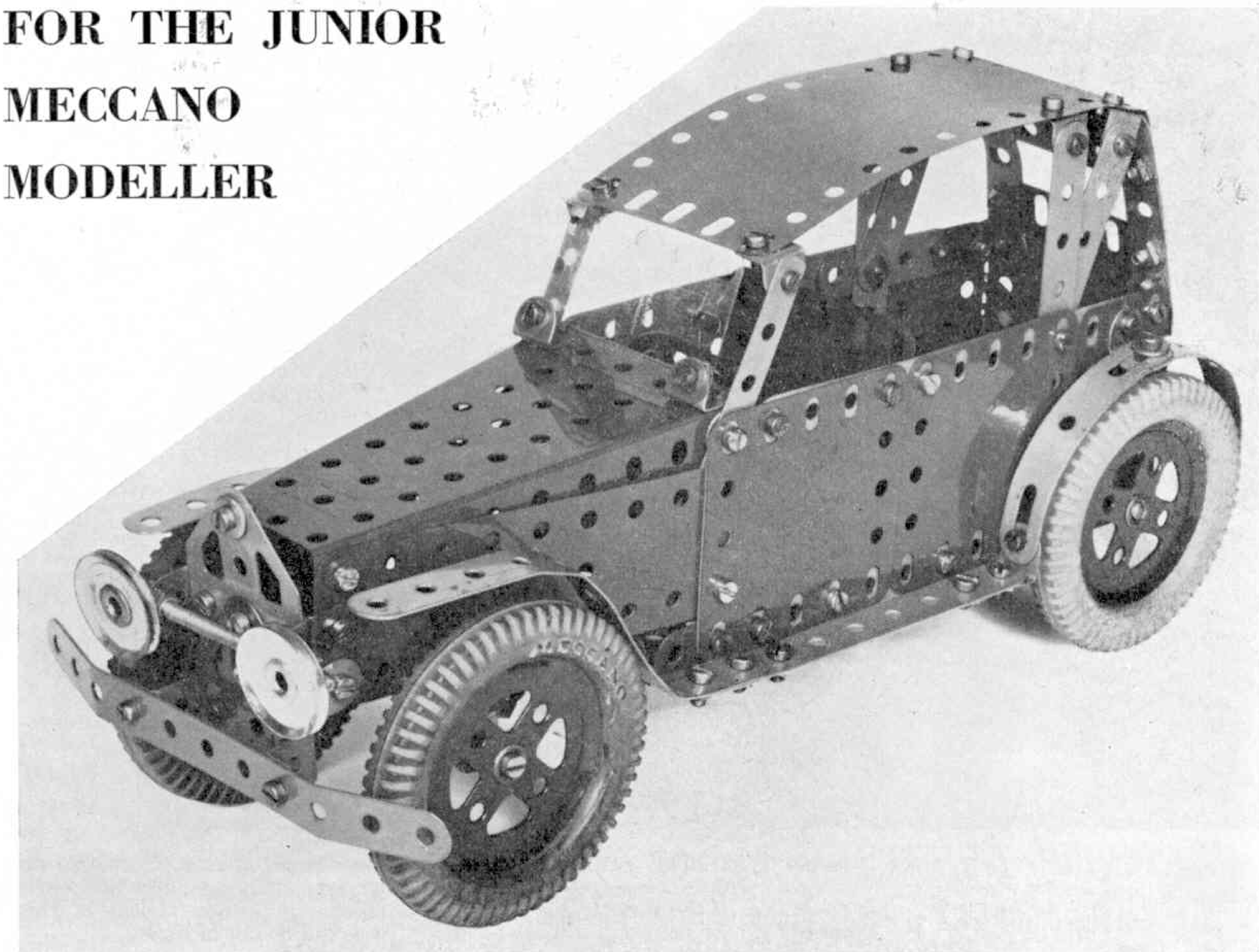
At this point I usually provide readers with details of the parent vehicle but, as all the technical information concerning the prototype was given in these pages last month, I will not repeat it here. Instead, I should like to move on to a different subject, and one about which I have received many enquiries—photographing Dinky Toys. Photography of any description holds most people's interest, yet it is surprising how many budding amateurs have not tried this particular branch of the hobby, perhaps because they imagine it to be too difficult.

Dinky Toys photography, however, is really quite easy. Indeed, an ordinary box camera can be used quite successfully to photograph a large layout, but for a single model or a small group of models a camera with focusing adjustments is preferable. If this is not available the box camera can be used, but it must be fitted with a supplementary lens, known as a portrait attachment, obtainable from any photographic dealer. The reason is that the lens of a fixed focus camera is designed to bring objects into focus at a distance of several feet from the camera, and with these lenses it is impossible to obtain a large image of a small object on the film unless it is close to the lens, in which case it would be out of focus.

Generally it is best to photograph models indoors by artificial light, although a satisfactory photograph of a complete layout can be taken outdoors in suitable conditions. For indoor photography, if only (*Continued on page 559*)



FOR THE JUNIOR MECCANO MODELLER



A VINTAGE CAR

WHEN building this model, which is presented on the opposite page in a manner similar to that used in the current Meccano Manuals, there are several points about which special care should be taken. In the steering mechanism, the parts numbered 6a and 11 are lock-nutted to Part No. 5 after being secured to each other by a Nut as shown. In addition, Part No. 212a is loosely fixed to the Coupling on the steering column by Bolt No. 111.

The small diagram beneath the main drawing shows the headlights and steering mechanism viewed from below. The headlamps are fitted by holding the nuts flush against the bosses of the Pulleys and then screwing Rod 80c into them. Trouble will be encountered if this is not done.

Ideas for this model came from what we would now call a drop-head coupe, but which was known years ago as a tourer, i.e. a car which had a folding hood. Although the hood on the Meccano model does not fold, the look of a tourer with its hood raised has been well captured.

All parts used in the construction of this interesting old car are listed below:

PARTS REQUIRED

7—2, 6—2a, 9—5, 2—6a, 1—10, 2—11, 22—12, 1—15, 1—16, 1—18a, 4—20a, 2—22.

114—37a, 98—37b, 6—38, 1—46, 1—48, 2—48a, 1—51, 1—52, 1—54, 1—59, 1—63, 1—80c.

1—111a, 2—111c, 2—111d, 2—125, 2—126a, 2—142a, 1—185, 3—188, 2—189, 5—190, 1—191, 1—192, 2—193, 2—212, 1—212a, 2—215, 2—235.

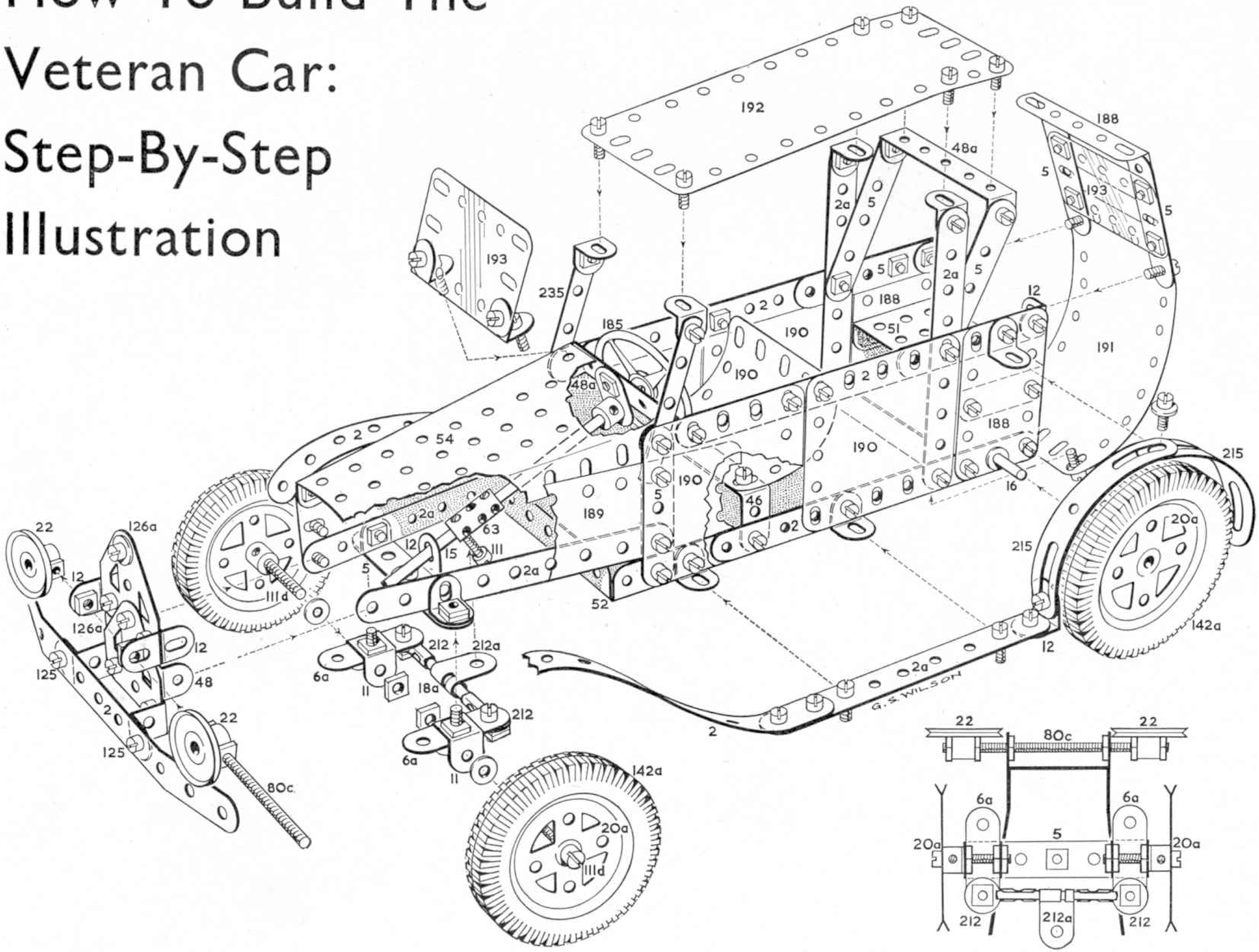
FINAL REMINDER

Readers who intend to enter for the current Winter Model-Building Competition and have not yet done so should remember that time is fast running out. The closing date is the 31st of this month, and entries reaching us after that date will be automatically disqualified.

The competition will be split into two sections, A for competitors under 14 years of age on the day of closing and B for competitors age 14 or over on that date. If you have a model you wish to enter, submit either a photograph or a good drawing of it to: Winter Model-Building Competition No. 1, Meccano Ltd., Binns Road, Liverpool 13. Make sure you write your name and address, clearly, on the back of each photograph or drawing, and the letter A or B, signifying the section in which you are entering. Under no circumstances must the actual model be sent.

Full details of the cash prizes to be won were given in last month's M.M. *Prize-winning entries are not returnable.*

How To Build The Veteran Car: Step-By-Step Illustration



MECHANISMS FOR A MOTOR CHASSIS

Concluding The Special Article By "Spanner"

LAST month, I gave details of several useful mechanisms that could be incorporated in a motor chassis. These were a steering arrangement with independent suspension, a leaf spring suspension unit, a differential, and a 3-speed and reverse gear-box, in that order. A car gear-box, however, is virtually useless without a clutch, which is a mechanism designed to disconnect the drive between the engine and the gear-box so that the gears can be changed.

HEAVY DUTY CLUTCH

The clutch illustrated in Figure 1 is particularly unique in that it can be fitted with from two to eight Compression Springs to vary the pressure between the driving plates to suit almost any model. The heavier the model, the more Compression Springs used.

The driving member is a 1″ Pulley fitted with a Rubber Ring, and it is fixed on the input shaft 1. The shaft extends beyond the Pulley, and it passes through a Wheel Disc 2 and into part of the boss of a Bush Wheel 3. The Bush Wheel is fixed on the output shaft 4.

Wheel Disc 2 is connected to Bush Wheel 3 by two Pivot Bolts. Each of these is first passed through the round hole of an Obtuse Angle Bracket 5, and through a hole in the Bush Wheel. A Compression Spring is slipped over the Pivot Bolt, which is then attached to the Wheel Disc by two nuts, one on each side of the Disc.

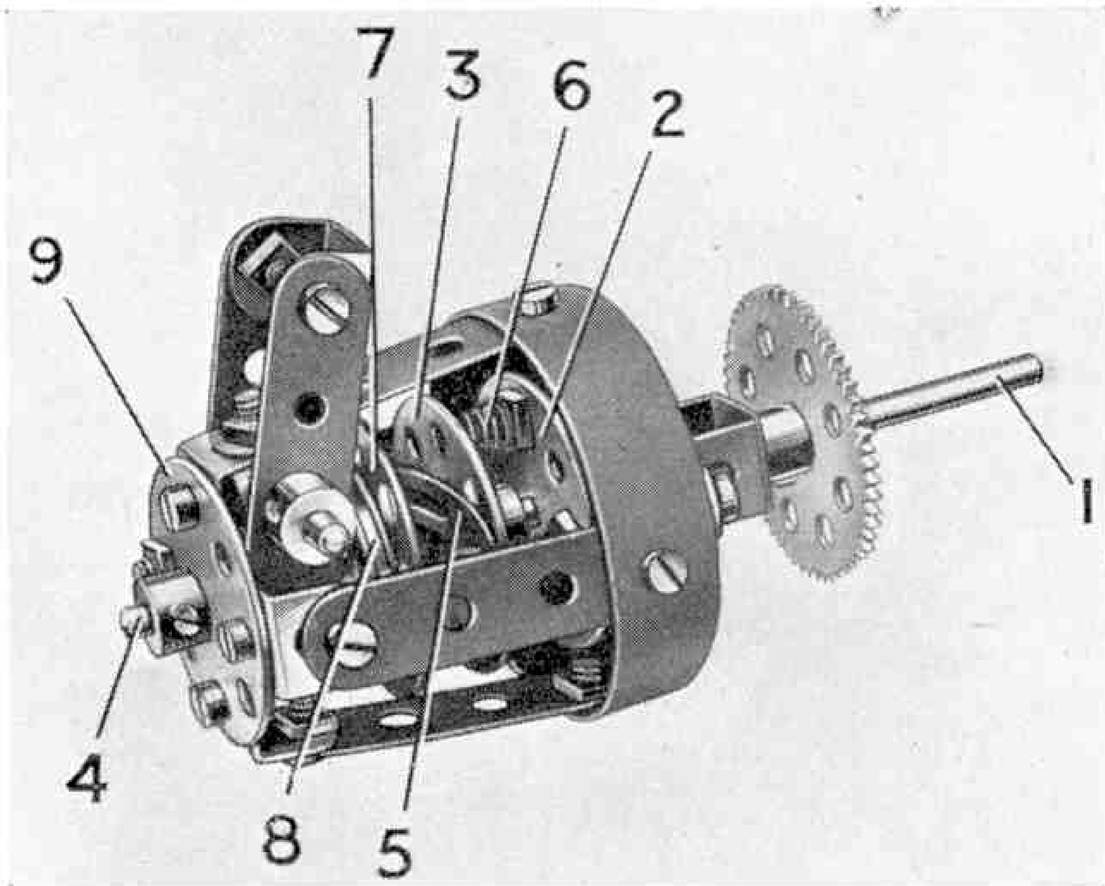


Fig. 1. A compact but very efficient clutch, which can be easily modified by fitting or removing Compression Springs, according to the weight of the model of which it is part.

The Obtuse Angle Brackets are arranged pointing in opposite directions, and they are linked by a short length of Cord that prevents them from flying outward as they rotate with the Bush Wheel. Further Compression Springs 6 can be placed between the Bush Wheel and the Wheel Disc, and they are slipped over the shanks of bolts held by nuts in the Wheel Disc.

The clutch withdrawal race consists of a Wheel Disc 7, and a 1″ loose Pulley 8 separated from the Wheel Disc by a Washer.

The clutch housing is assembled from a Boiler End fitted with four 2″ Strips connected by Angle Brackets to a Wheel Disc 9. The input and output shafts are prevented from sliding in the housing by a Collar on each side of the Wheel Disc 9.

Operating levers are formed from two 2″ Strips pivoted as shown on a short Rod mounted in a Double Bracket fixed to the housing. The levers are linked at their outer ends by a Double Bracket and a lock-nutted ¾″ Bolt. The inner ends of the levers bear against the face of the Pulley 8. Adjustment is obtained by sliding the Bush Wheel 3 on its shaft until the Springs are compressed slightly. When the levers are moved to the left, their action is transmitted through the withdrawal race to the Pivot Bolts, which slide to the left through the holes in the Bush Wheel and carry with them the Wheel Disc 2.

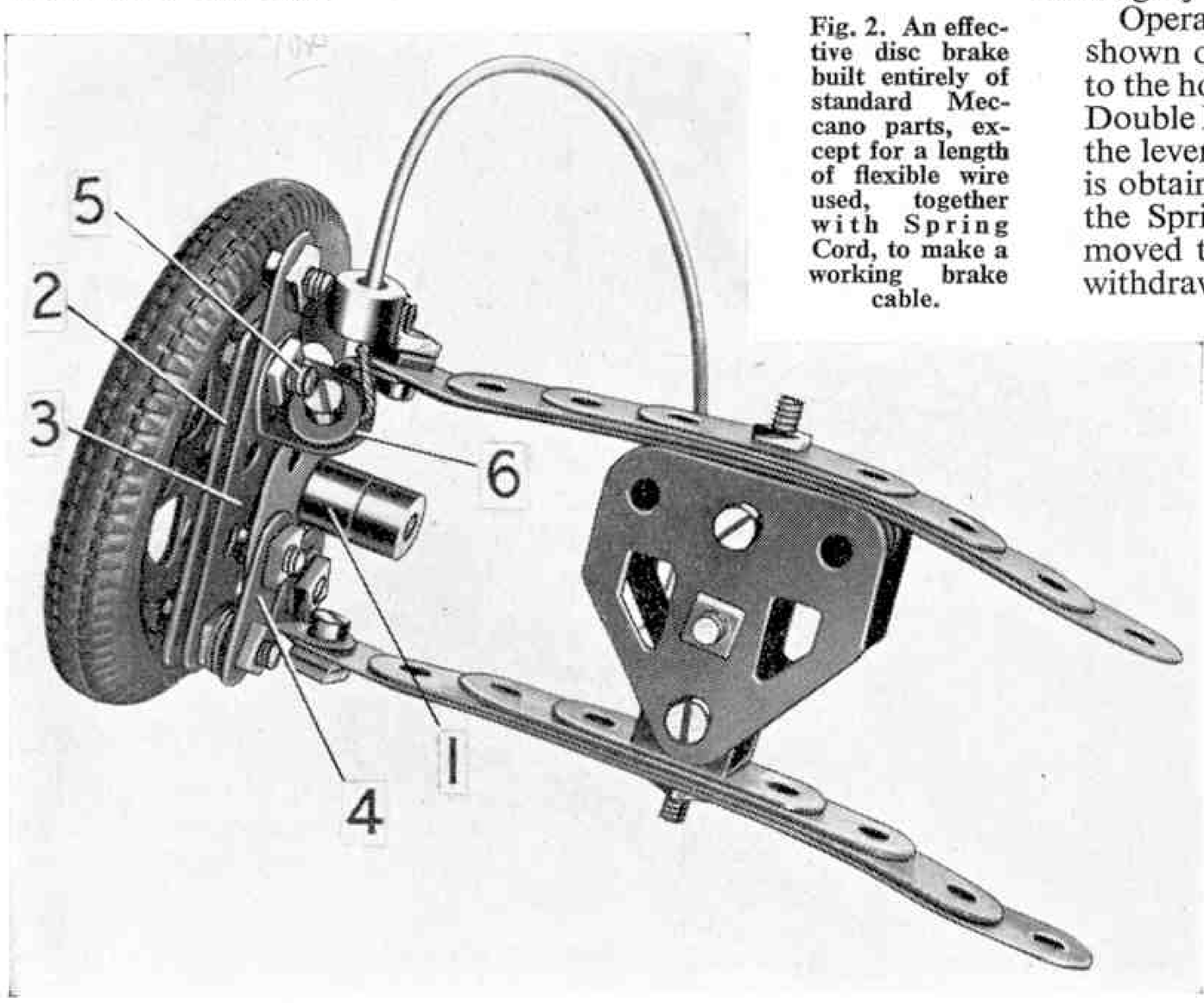


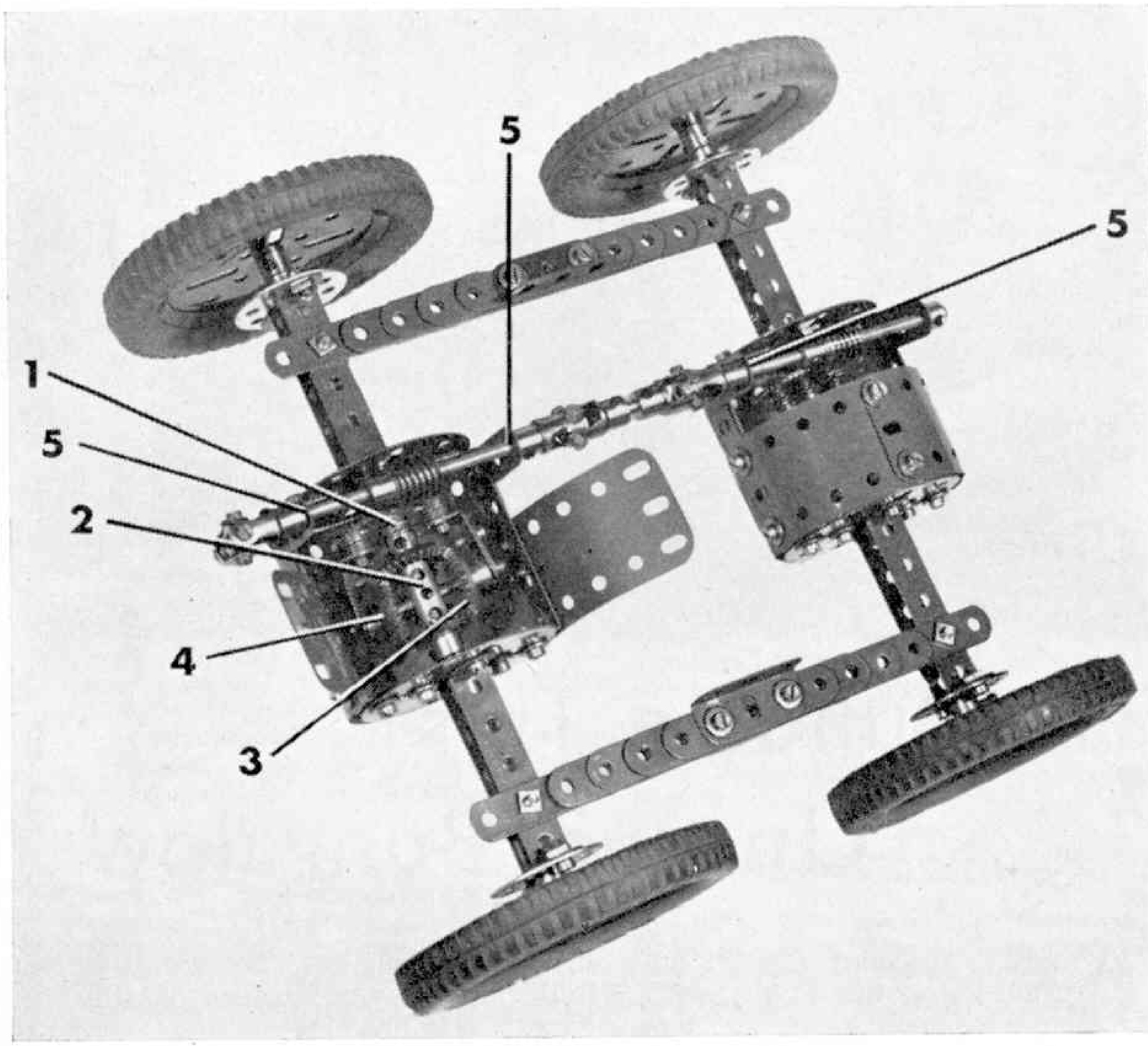
Fig. 2. An effective disc brake built entirely of standard Meccano parts, except for a length of flexible wire used, together with Spring Cord, to make a working brake cable.

A MODERN BRAKE

A chassis must have some effective way of being stopped and the most efficient brake in common use today is the disc brake which far surpasses the old drum brake fitted to most existing cars. An illustration of a Meccano disc brake can be seen in Figure 2, attached, as you will see, to a different form of front suspension to that described in these pages, last month.

The mechanism is mounted on a back plate provided by a six hole Bush Wheel 1. This is fitted with two Angle Brackets lock-nutted to the ends of twin transverse leaf springs that form the front suspension members. The Bush Wheel 1 forms a bearing for a 1½″ Rod used as a stub axle. This Rod is free to turn in the boss of the Bush Wheel and carries a Collar at its inner end.

Fig. 3. This twin rear axle drive unit contains two similarly constructed differentials and includes simple leaf springing.



The brake shoes are formed by a 2″ Strip 2 and a 2½″ Strip 3. They are clamped together at their lower ends on a ½″ Bolt, but are spaced apart by a nut placed between the two Strips. A 1″ Triangular Plate 4 is bolted to the Bush Wheel 1 after which the ½″ Bolt carrying Strips 2 and 3 is fitted with a nut and three Washers, then passed through the Triangular Plate and fixed tightly in place by a nut. A ⅜″ Bolt 5 is passed through Strips 2 and 3, and an Angle Bracket 6 is placed on it before a nut is screwed in position. The angle of Strips 2 and 3 is adjusted until the lower face of the Angle Bracket 6 bears against the edge of Bush Wheel 1.

The brake disc is an eight hole Bush Wheel fixed on the stub axle and arranged so that it is free to turn between the Strips 2 and 3. The brake is operated by a length of flexible wire passed through a sheath formed by Spring Cord. At each end, the Spring Cord is gripped in Collars, one of which is screwed on to a ⅜″ Bolt fixed by a nut on Strip 3. One end of the wire is bolted to Angle Bracket 6 and the other end is attached to a suitable brake lever. The brake is adjusted by tightening or slackening the nut on the Bolt 5.

A TWIN REAR AXLE DRIVE

Many heavy vehicles today are equipped with two rear axles, both of which are driven by the engine, as these give much better traction and enable heavier loads to be carried. Figure 3 on this page shows such a mechanism constructed in Meccano.

The twin axles are carried by a single leaf spring on each side of the vehicle both of which are made up of one 7½″, two 5½″, one 4½″, two 3½″ and two 2½″ Strips bolted, at their centres, to a 1½″ Angle Girder, which when used in an actual model can be lock-nutted to the chassis.

Each of the axle units is identical in construction. The axle casing consists of halves, formed by two 2½″ × ½″ Double Angle Strips bolted between a Face Plate and a Bush Wheel. The halves are joined by two 2½″ × 1″ Double Angle Strips, and a 4½″ × 2½″ Red Plastic Plate is curved to shape and bolted in position to form part of the differential casing.

The differential crown wheel is a 57-teeth Gear 1, which is free to turn on a Rod mounted in one half of the axle casing. The Rod projects into a Coupling 2, and a ⅞″ Bevel Gear is fixed between the Gear 1 and the Coupling. A second Bevel 3 is fixed on a Rod that is mounted in the other half of the axle casing and also projects into the Coupling 2.

Two 1″ × ½″ Angle Brackets are attached by ⅜″ Bolts to the Gear 1, but they are spaced from it by four Washers on each Bolt. A 2″ Rod 4 is passed through the 1″ × ½″ Angle Brackets and is *fixed* in the centre transverse hole of Coupling 2. A ⅞″ Bevel Gear is placed on the Rod 4 on each side of the Coupling and both these Gears are free to turn on the Rod. Fishplates are used to centre the Rod in the slotted holes of the 1″ × ½″ Angle Brackets.

The drive to the crown wheel is taken through a Worm fixed on a 3½″ Rod that is mounted in 1½″ Strips 5. These Strips are bolted to the 2½″ × 1″ Double Angle Strips fixed between the Face Plates. The driving rod of the trailing axle is linked to that of the leading axle by two Universal Couplings and a 1″ Rod.

The differential casings are completed by 2½″ × 1½″ Flexible Plates curved to shape and bolted together, as shown. Note particularly that position of the Worm in relation to the crown wheel is adjusted by means of the 1½″ Strips 5 which should be leaning slightly towards the centre.

* * * *

This, then, completes the series but, before finishing, I should like to point out that all the above mechanisms are taken from past issues and publications so it will probably be necessary for you to modify them slightly to suit your own specific requirements. However, you should find them most successful in operation.

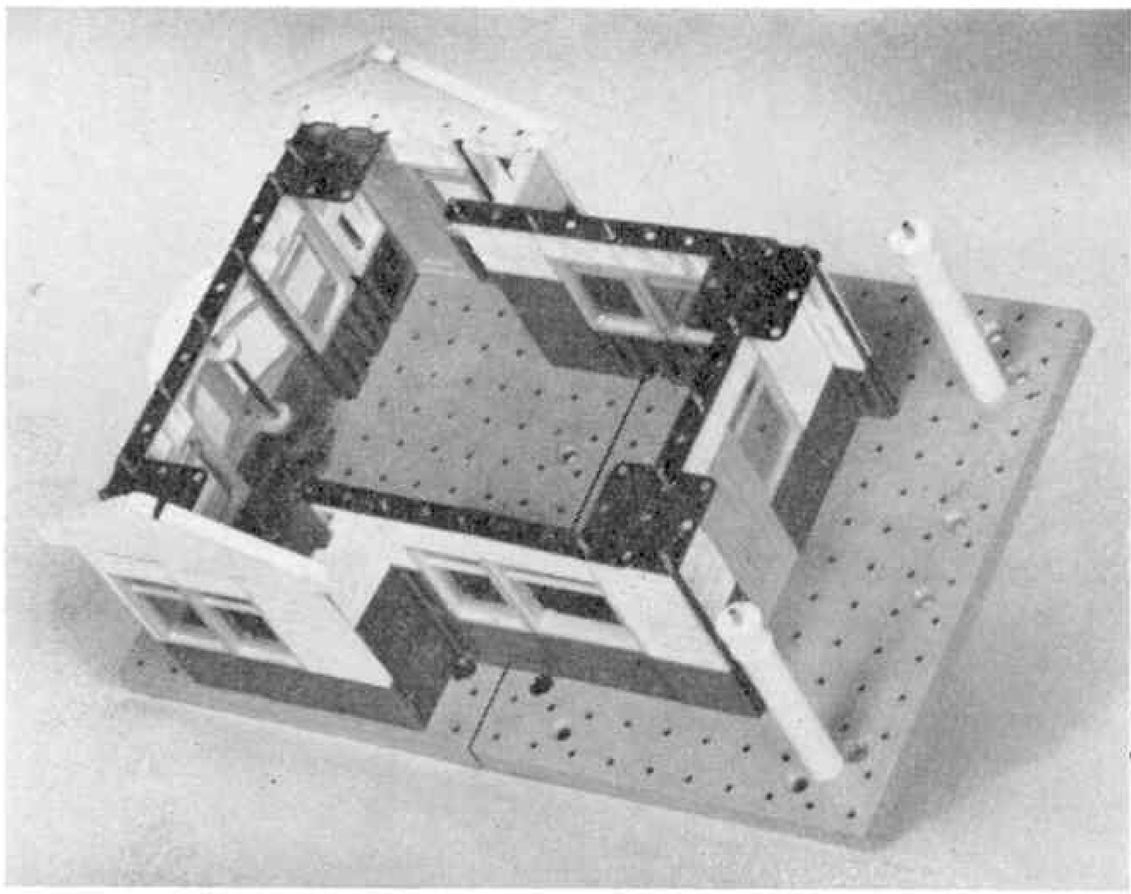
Dinky Toy News—

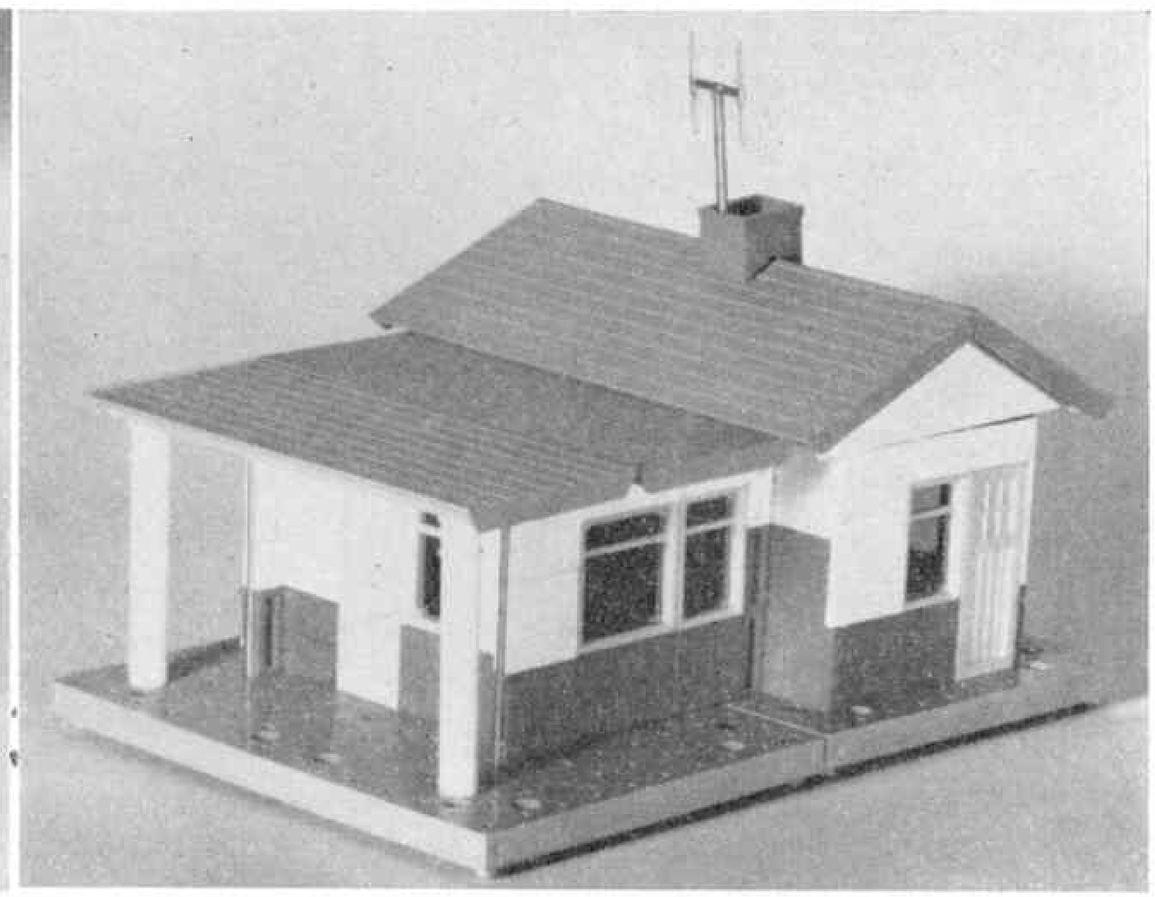
(*Continued from page 555*)

one overhead light is available, the model should be placed so that the light falls on it at an angle of about 45 degrees. If a second light, such as a table lamp, is available it should be placed a little to one side and slightly in front of the model, and about 3 ft. away from it.

A plain background should always be provided, to avoid confusion with foliage, brickwork, etc. outdoors, and furniture indoors. For small models a sheet of plain white or brown paper can be used, while for layouts or large groups of models, a white cloth such as a bed sheet is more convenient.

Dark shadows behind and underneath the model can be avoided by arranging sheets of white paper to reflect light on to the dark portion. Lighting conditions vary so greatly it is impossible to be definite about the exposure time required. If one is available, an exposure meter should be used to determine the correct exposure, otherwise trial and error is the only way. Of course, time and experience will probably enable you to judge roughly what exposure to give a specific scene. When this happens, you are well on the way to being proficient in the art of photographing your miniatures.





Try Building This Unusual Bungalow

"WHAT", you may ask, "is unusual about this bungalow?" At first glance it certainly does appear to be an ordinary, run-of-the-mill model, but, because it is built almost wholly from Outfit No. 12, it *is* unusual.

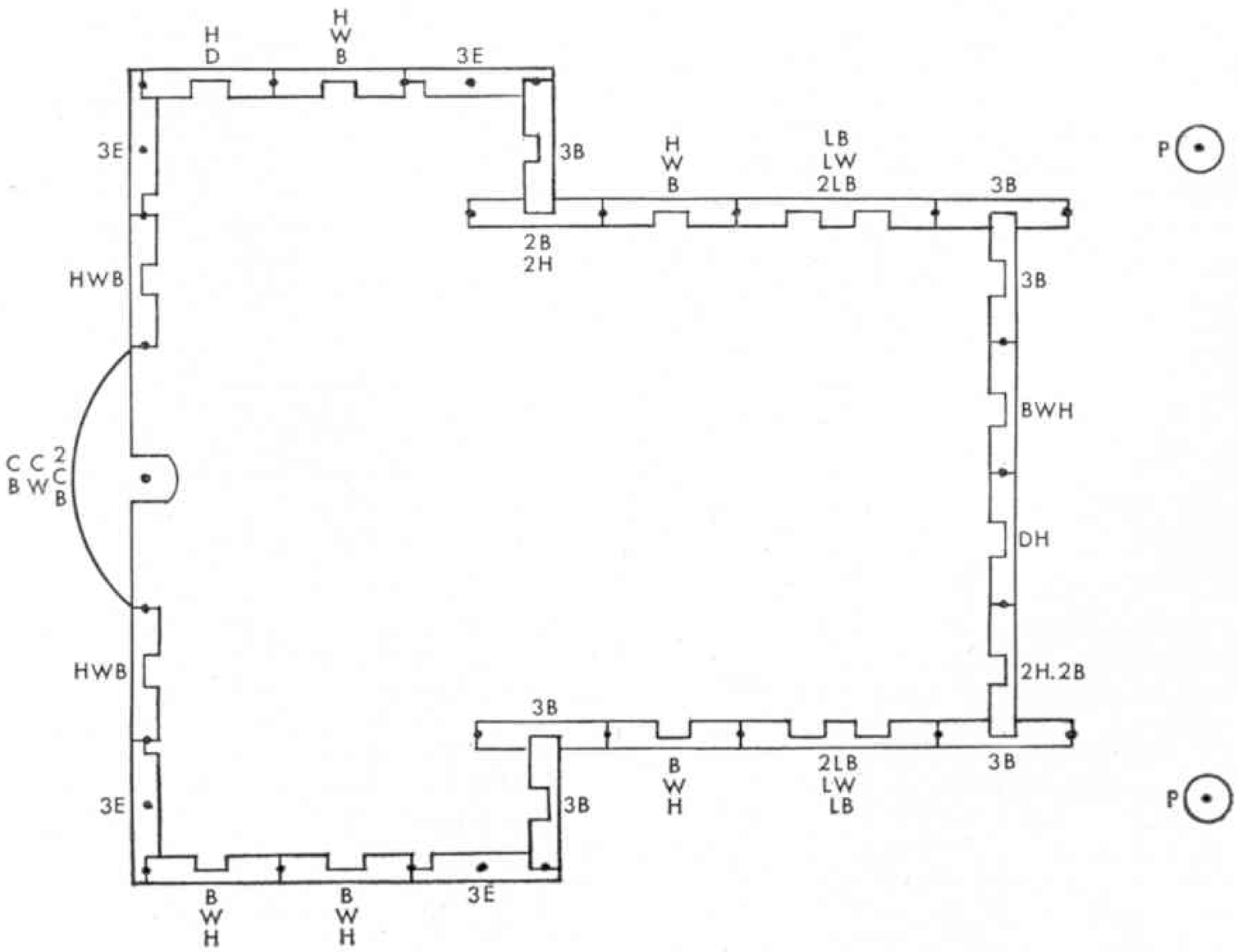
The number of End Bricks in this Outfit tends to limit the model, either to a simple four-cornered building or to one shaped roughly like an "L". Also, owing to the length of the Brick Rods in Set 12, any edifice must be single-storeyed. Nobody, I feel, has grounds for complaint at this. After all, you cannot expect to build huge models with small Outfits, but many people, understandably, are tired of following designs which do not have much variation. Consequently, I have included this "T"-shaped bungalow, not only because it is different in design but also because it shows how to overcome the difficulty caused by the number of End Bricks in the Outfit.

It is really quite easy to deal with the latter, and both illustrations above show the way this is done. Instead of endeavouring to fit End Bricks, simply use ordinary Bricks and build the end wall, making use of the slots on the inside of the Bricks. Of course, the holding Bricks protrude forward slightly, but this adds to, rather than detracts from, the model. In fact, extended walls are becoming increasingly popular in real life and I myself have seen several houses incorporating such features.

As stated earlier, the model is constructed almost entirely from Set 12.

(*Continued on page 575*)

The top illustrations show the bungalow in course of erection and the completed building. The building plan is given below.



PARTS REQUIRED TO BUILD THE BUNGALOW

1 TV Aerial; 2 Bases, 2 Base Links with Screws; 1 Chimney; 19 Red Bricks; 11 White Bricks; 2 Red Curved Bricks; 1 White Curved Brick; 4 Red End Bricks; 8 White End Bricks; 2 Red Half Bricks; 12 White Half Bricks; 4 Red Long Bricks; 2 White Long Bricks; 32 No. 3 Brick Rods; 2 Doors; 8 Glazing Materials (Window); 1 Glazing Material (Curved Window); 2 Glazing Materials (Large Window); 2 Pillars; 2 Roofs, type A; 2 Roofs, type B; 2 Roof Ends, type B; 4 Corner Ties; 7 Straight Tie Bars; 8 Windows; 1 Curved Window; 2 Large Windows.

WITH THE SECRETARY

Club and Branch News

CLUB NOTES

UNDENOMINATIONAL SCHOOL (WORCESTER) M.C.—Two models, a gravity crane and a roundabout, were on display in a Worcester shop during National Education Week in November last, together with the club affiliation certificate and a November 1963 *Meccano Magazine* showing the photograph of the club group. *Secretary:* Mr. Andrew Turberfield, "Oddfellows Arms", Carden Street, Worcester.

NEW ZEALAND

ST. JOHN'S (DUNEDIN) M.C.—Under the stimulus of a new and energetic committee the club is making steady progress, and the regular monthly meetings are well attended. The club meets on the first Friday of the month, 4.15–5.45 p.m., and the club committee meet a week earlier to draw up the programme. Meccano model-building competitions are held, and the entries assessed by a neutral judge. Up to twenty marks can be awarded, including five for good presentation. The club shield is awarded annually, together with a prize of a 21/– token for Meccano, and presented to the winner at the final meeting of the club year. Games ranging from badminton to rugby league football have been played at the end of some meetings, and greatly enjoyed. *Secretary:* R. Craigie, 67 Ann Street, Rosslyn, Dunedin, New Zealand.

CHRISTCHURCH M.C.—All meetings have been well attended, and an excellent standard of model-building maintained. The club again staged a very attractive display of models at the New Zealand Industries Fair, and, as always, it was a great success. The Fair authorities appointed Mr. Jack Ancell, a founder member of the club, to judge the Meccano section of the models display. The winner in the under-12 years class was a non-member, with Graham Duck second; and in the 12–16 years class Garry Duncan, with Martin Steel in second place. The Open section was won by Barry Allen, with Peter Satterthwaite and John Curtis jointly in second place—they lost points by including non-Meccano parts. Mr. Saunders won an Award of Merit. The models on display included a bulldozer; excavator; large wharf crane; travelling crane and track; merry-go-round; two fire engines, large battleship with turrets automatically turning backwards and forwards across the deck; revolving aeroplane, double big-wheel, and a flashing sign *Meccano Miniature Engineering*.

As last year the club also organised a display at the Christchurch South Intermediate School Fair. Here their display was challenged by plenty of models and keen competition from pupils of the school, in a hobbies competition for which Mr. Saunders acted as judge. *Secretary:* Peter Satterthwaite, 9 Huia Street, Riccarton, Christchurch 4.

NEW YEAR WISHES

I wish every member of the Meccano Guild and of the Hornby Railway Company a happy and prosperous year in 1964. The year just ended has seen the formation of several Clubs and Branches which, I know from my correspondence with them, are making excellent progress. A feature of this page during last year was the exceptionally good photographs I was able to reproduce of Club and Branch members enjoying Meccano and Hornby-Dublo activities, and these illustrations testified eloquently to members' enthusiasm for these fine hobbies.

NORTHERN NIGERIA

GINDIRI BOYS' SECONDARY SCHOOL M.C.—Model-building has continued enthusiastically, and good results have been achieved. One boy has built the drilling machine (Outfit model 2.4) and other members have been busy constructing two larger models, a locomotive coaling plant and a single-deck bus. *Secretary:* Stephen Bode Ajayi, H.S.C. Section, Gindiri, P.O. Barakin Ladi, via Jos, N. Region, Nigeria.

BRANCH NEWS

GINDIRI BOYS' SECONDARY SCHOOL.—At the beginning of the term some of the club members transferred to this associated Branch of the Gindiri organisation, and they have been busy with an extensive layout of their own design. There has been considerable train operation, mostly freight in character. *Secretary:* Stephen Bode Ajayi, H.S.C. Section, Gindiri, P.O. Barakin Ladi, via Jos, N. Region, Nigeria.

Members of the Woodley Church of England (Controlled) Primary School Meccano Club, under the guidance of Mr. J. Calderbank, their Leader, enthusiastically get down to the job of constructing the Meccano Polariscope described in the September 1963 "M.M."

PROGRESS REPORT:

"LUNDISTAN GOVERNMENT RAILWAYS"

NOTES on the Hornby-Dublo layout known as the *Lundistan Government Railways* have appeared previously in the *M.M.*, in December 1959, and in December 1960, respectively. For the benefit of those who have not read these earlier descriptions, I should explain that the system in question provides rail transport in the imaginary State of *Lundistan*, the origin of which is to be found in the name of a keen enthusiast and correspondent, S. G. P. Lundy, of Lisburn, Northern Ireland. Each of the members of a group formed by his brothers, and friends, is responsible for a certain section of the organisation.

By
"LAYOUT MAN"

A general view of the "Lundistan Government Railways" system, showing Three-Rail and Two-Rail sections in use. Eventually the whole will consist of Two-Rail track, as forecast in this article. The branch to the high-level section can be seen on the left.

As with all railways, changes have taken place from time to time since the earlier notes appeared, with the result that the system retains a good deal of its original character, but not necessarily all of its earlier equipment. The first layout was a Three-Rail affair, but as recorded at the time this was replaced by a similar formation using Two-Rail track and locomotives. At the time of this change-over the opportunity was taken of revising certain features in the layout design in order to make operations more convenient.

Subsequently, a change of location owing to a household removal made it possible to lay down a more extensive railway. In order to take advantage of this, the Three-Rail equipment that had been laid up was again put into use. The track so formed constituted a complete self-contained circuit known as the *Midland* section of the Lundistan system, this title distinguishing it from the Two-Rail *Great Northern* section. There was also another Two-Rail division, of overseas character, known as the *Santa Fe*. Connections were arranged between the Two-Rail and the Three-Rail divisions to allow of the interchange of rolling stock (with moulded wheels) between them. Nylon fishplates were used at the rail joints where the different systems met, in order to separate the two circuits electrically.

The Great Northern main line has altered little since it was installed. It has a rectangular track, with something of a bulge at one corner. The main line is double throughout, so that regular running of trains in both directions is readily possible. In fact, for some considerable time running to timetable has been the rule. As there is plenty of straight and level track on the Great Northern main line the various locomotives have a splendid course over which they can be operated to advantage. Among recent additions to the motive power on the line is a Hornby-Dublo Co–Co Diesel. Its remarkable acceleration and load-hauling powers are of considerable advantage in the handling of heavy traffic.

The Great Northern section includes two large yards or systems of sidings, one for goods traffic and the other for the accommodation of passenger train rolling stock. The lead from the main line into the coaching stock sidings is prolonged to form a spur, where diesel locomotives can stand for "refuelling" and attention. Crossover points connect the two main tracks in such a manner that trains in either direction have ready access to both sets of sidings.

On the opposite side of the main track to the carriage sidings is a small terminal station used for local passenger trains and as a depot for T.P.O. Mail services. The Great Northern section does not have a locomotive shed as such, but there is a branch track that diverges from the outer main line, climbing steeply to a high-level section where locomotives can stand while they are cleaned and lubricated. For attention that requires the removal of the locomotive housings from the motor units, the engines are run to this elevated section and there removed from the track to the work bench where the necessary operations are carried out.

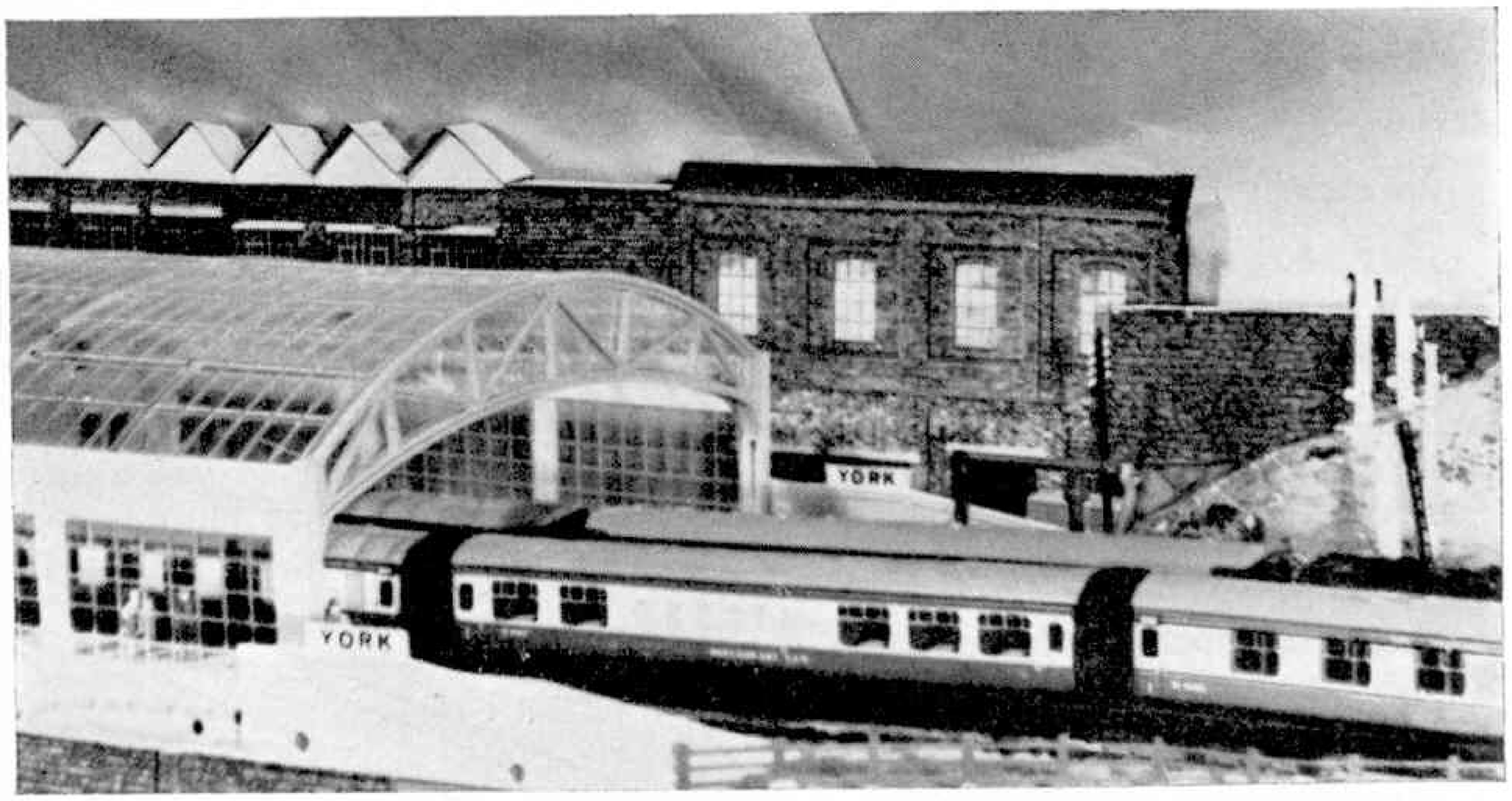
* * * *

Locomotive maintenance is organised on a combined basis of time and "mileage", a careful record being kept of the duties worked by each individual engine. So, L.G.R. locomotives have a well-ordered existence, even if they do have to work pretty hard. In spite of this they appear to last long in service, which is a tribute to their design as well as to the standard of their maintenance. With the thinning out of Three-Rail train services, at least one Three-Rail locomotive, 4–6–2 *Silver King*, has been withdrawn from service for some time and now it occupies an honoured place in the "Museum Section" maintained by the L.G.R. Not many miniature railways, one imagines, can claim a museum in which retired

(*Continued on page 575*)

FOR THE TWO-RAIL ENTHUSIAST

Making Good Use Of Stations



The Hornby-Dublo Terminal Station, with empty passenger stock for the morning "Talisman" being shunted into No. 1 Platform.

PRACTICALLY every railway enthusiast agrees that there is nothing more impressive than to see a train draw easily into a main-line station, or watch the mighty power of a locomotive as it moves away from a platform.

Stations are almost an essential as soon as a train set has been acquired, and can be considered as one of the major accessories of any miniature railway. Yet, it must be admitted that there is little which

By S. F. PAGE

looks less realistic than a station merely standing forlornly on a baseboard.

Let us then take a close look at just a few of the possibilities surrounding the Hornby-Dublo Main Line Station Kit (No. 5083) built up as a terminus. Since no terminus of this nature will ever be seen in the countryside, surrounded by nothing but green fields, we need scenery to ensure a busy atmosphere. But beware of being fussy.

This station, shown in our top illustration, is sited at the end of three tracks and the reason for its use is to provide two main line tracks and a single local train track.

The backcloth is a sheet of printed "sky paper" pasted on to a thin sheet of plywood and allowed to come right down to the baseboard. Sky paper can be obtained from many model shops.

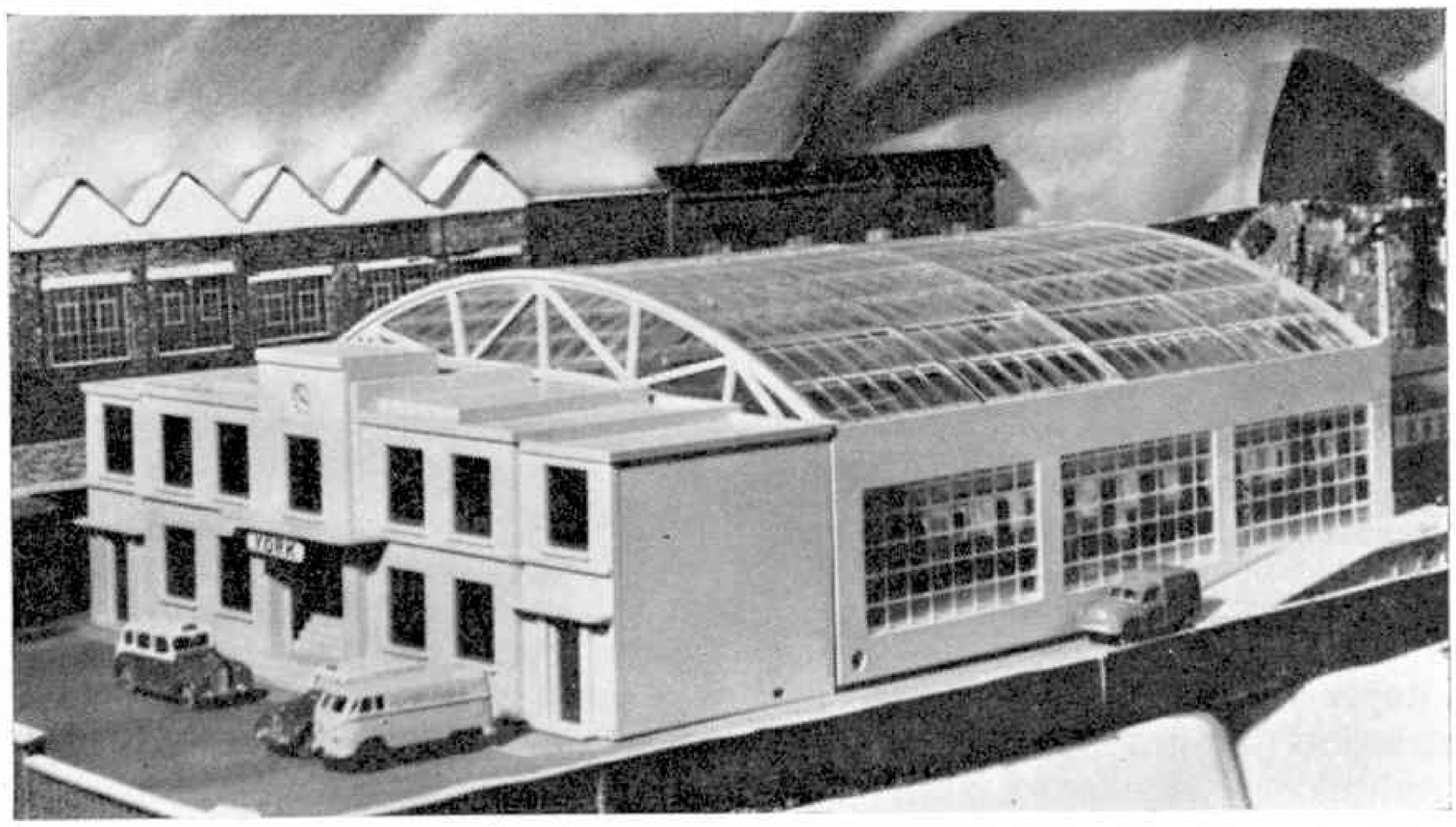
In front of the backcloth, and rather higher than the level of the baseboard, is a series of low-relief buildings—factories, or houses or a mixture such as that likely to be found close to any mainline terminus. Low-relief buildings are particularly useful if you are short of width, otherwise a series of 00 gauge scale buildings can be used. Fitted between the buildings can be a Hornby hoarding complete with posters.

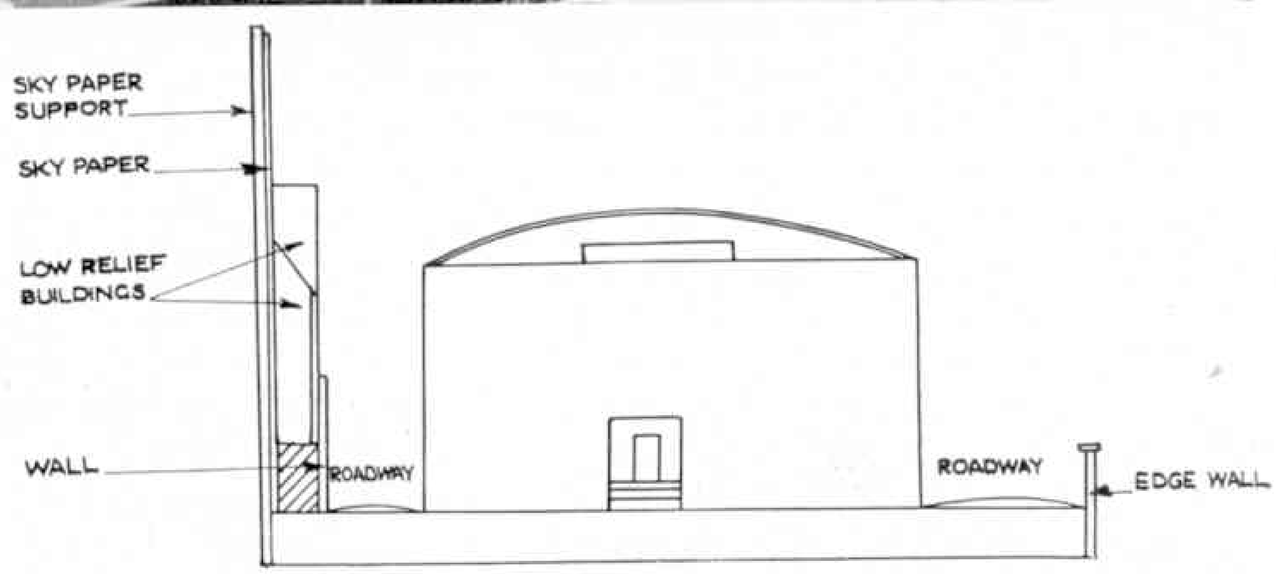
Low-relief buildings are just sufficient to provide a realistic three-dimensional effect without taking up an excessive amount of space, and in front of these is a length of wall, the general construction being shown in the cross-section drawing.

Along the edge of the baseboard a wall is erected to provide a finish and, at the same time, edge the roadway. One variation in the build-up of the station kit is seen in the photograph where two of the platform end ramps which are spare when the kit is built as a terminus have been added to provide access to the station platform for G.P.O. mail vans delivering and collecting mail.

(*Continued on page 575*)

The main terminus on the author's Longdon, Newborough and Easthyde Railway during a quiet spell. Note the low-relief buildings behind the station.





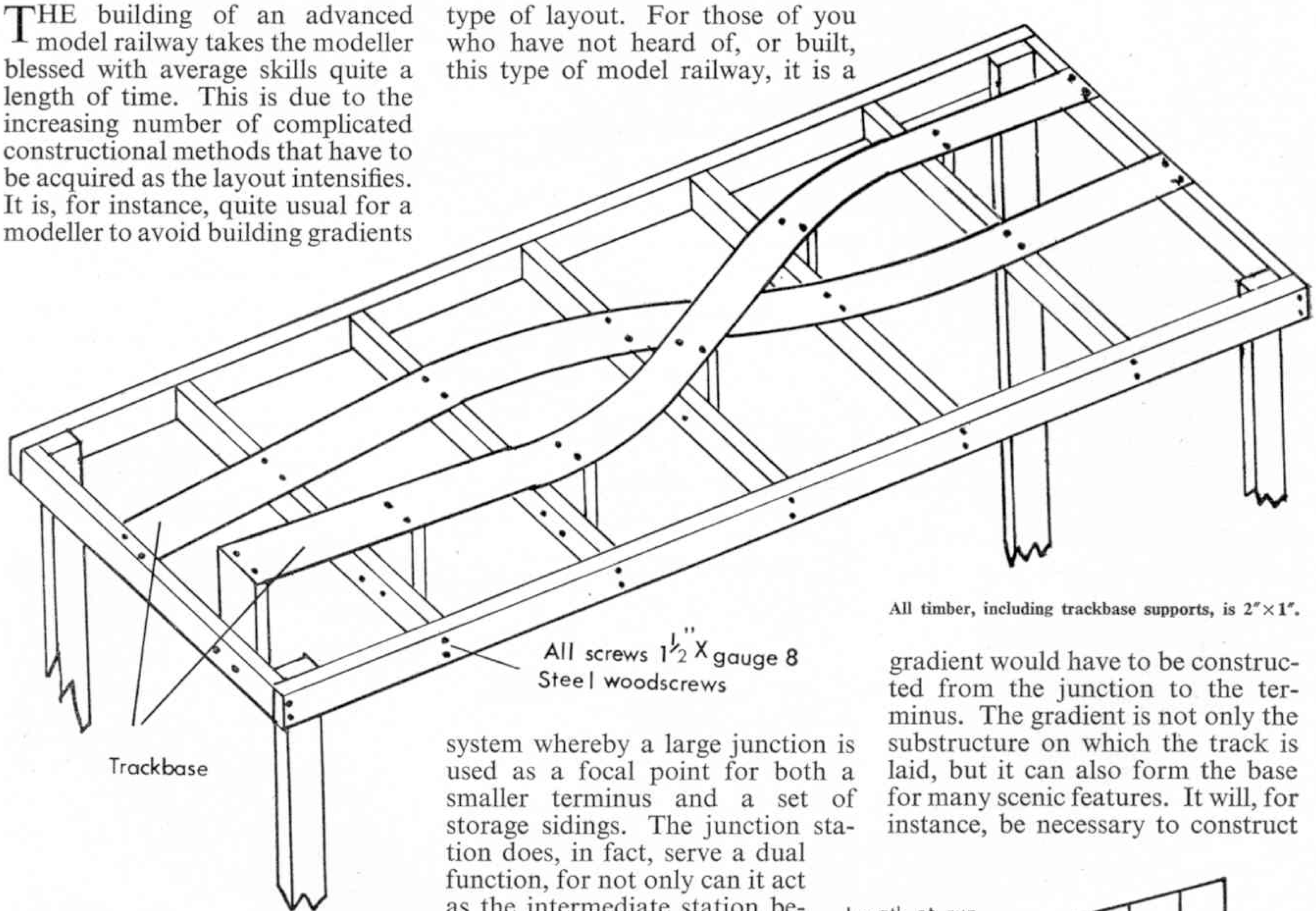
A cross-section showing the construction of the area around the Hornby Main Station Kit made up as a terminus. Illustrations by the author.

GRADIENTS AND THE SWITCHBACK LAYOUT

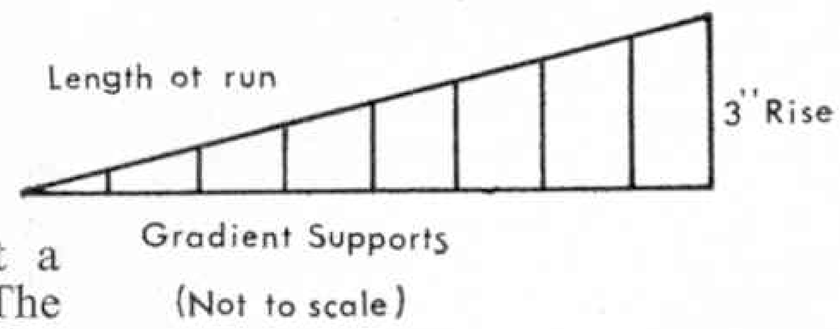
Baseboard Work From The Start: A New Series By "LINESMAN"

THE building of an advanced model railway takes the modeller blessed with average skills quite a length of time. This is due to the increasing number of complicated constructional methods that have to be acquired as the layout intensifies. It is, for instance, quite usual for a modeller to avoid building gradients of any description on his layout, simply because he is under the impression that gradients involve very complicated woodwork. This is, of course, quite untrue, and results very often in a flat, featureless layout, which is only relieved by a few houses, or lineside accessories. I hope that, in this article, I can convince all readers that gradient construction is, in fact, simpler than building a baseboard.

I have decided to make this article a "sandwich" feature—in other words I will describe both gradients and the "switchback" type of layout. For those of you who have not heard of, or built, this type of model railway, it is a system whereby a large junction is used as a focal point for both a smaller terminus and a set of storage sidings. The junction station does, in fact, serve a dual function, for not only can it act as the intermediate station between the storage sidings and the small terminal station, but it can serve as a large terminal station in addition; making it a fascinating one to operate. The greatest asset of this arrangement is that it has valuable space-saving qualities. This is because the small terminus can be placed over the storage sidings, provided, of course, that suitable access space is left between the two baseboards. An appropriate height for the small terminus to be built above the storage sidings would be three or four inches. This would mean that a gradient would have to be constructed from the junction to the terminus. The gradient is not only the substructure on which the track is laid, but it can also form the base for many scenic features. It will, for instance, be necessary to construct an embankment, or stone wall up to the top of the gradient edge.



All timber, including trackbase supports, is 2"×1".



Let me, first of all, describe the baseboards proper before I deal with gradients. It is a common fallacy that baseboards may be thrown together haphazardly, without any ill effects taking place. Enough emphasis cannot be laid on the need for building baseboards

strongly; only unsatisfactory operation and running will result if weak baseboards are constructed. As shown in my first sketch, the baseboard should be constructed of 2″×1″ timber, preferably planed, with a cross bracing also of 2″×1″ timber, every 9 inches. Steel wood screws, 1½″ long (gauge 8) should be used to screw the pieces together. If you do not feel yourself capable of cutting joints accurately, a very rigid baseboard can be made by simply screwing and glueing the wood together, chiselled joints being unnecessary.

The diagram illustrating the baseboard is not drawn to any scale, but simply shows the arrangement of the various timbers and the gradient supports. You will notice that the baseboard is not covered with one large sheet of either softboard or fibreboard, as is the usual practice, but is left devoid of any covering because the scenery would, in this instance, be built by the "open-top" method of construction. This type of assembly is very economical, and lends itself to the sort of baseboard we are discussing. If a sufficient number of you are interested I may describe this method of building scenery more fully in a future article.

The minimum advisable gradient for Hornby-Dublo locomotives is 1 in 30, which means that for every inch of rise a length of run of two feet, six inches will be required. If the recommended three inches of height is adopted, the required. run will be seven feet, six inches. To discover the height of the intermediate supports I would suggest you draw a graph similar to that shown on page 564.

Before starting, a scale should be decided on, and adhered to. A different scale may be used for the vertical and the horizontal ordinates. The maximum amount of rise should be drawn on the right-hand ordinate, and the length of run (30 inch minimum) should be drawn on the base line. The height of the intermediate supports can then be calculated by taking the measurement for the appropriate support from the vertical lines within the graph. The wooden gradient supports are then measured off and cut to length, and finally screwed to the cross members as shown in the diagram. The trackbed, when cut out of either plywood, softboard or fibreboard is screwed into position on top of the supports.

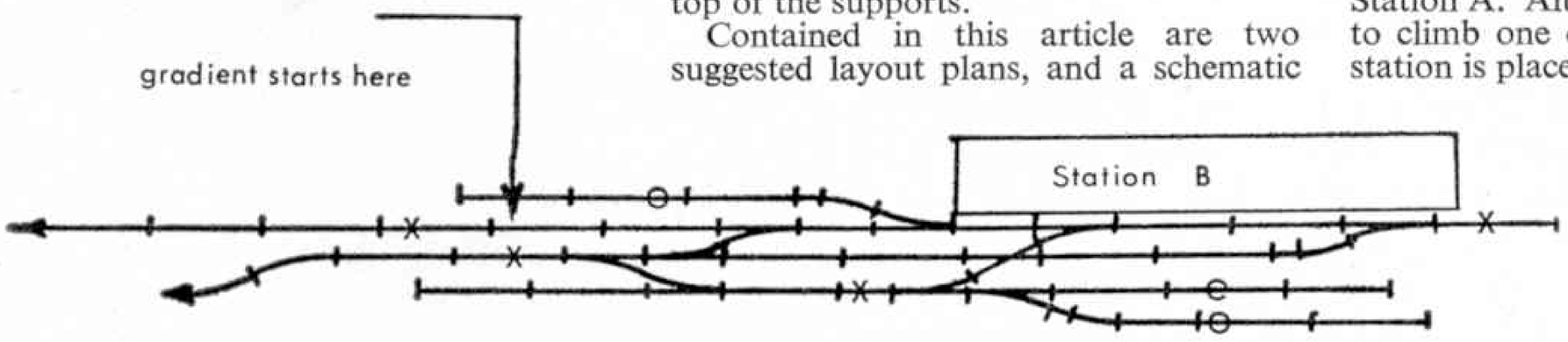
Contained in this article are two suggested layout plans, and a schematic diagram for the arrangement of the stations and the storage sidings. The operating sequence of the layout would start from the storage sidings into Station B, where trains would either be marshalled for Station A or be sent back to the storage sidings. This is why I have designed Station B as a fairly complex junction. I would suggest, once the substructure has been completed, that the portion of track running over the line to the storage sidings be fitted with a girder bridge or, possibly, a stone bridge. A tunnel mouth should also be built a short distance behind the bridge in the position indicated on my schematic diagram. This would be constructed with a high cutting on either side. The great advantage of this type of layout is that it is ideally suited to timetable running, with either one, or two operators.

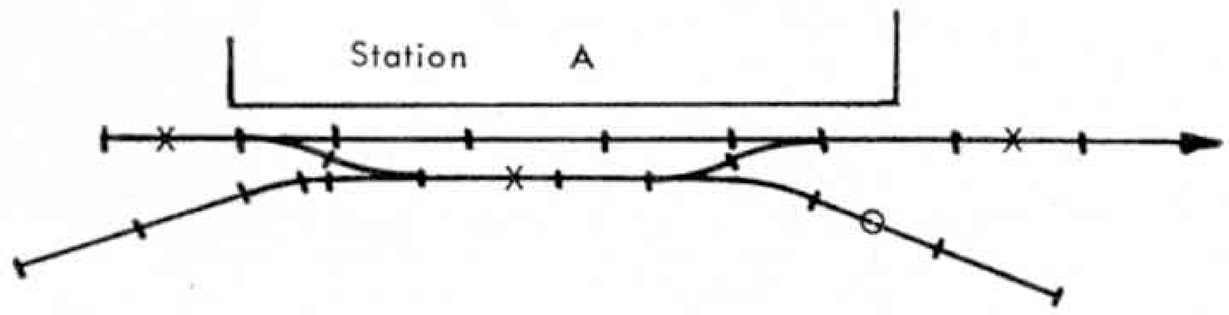
The two station plans are schematically wired for Simplec Points, and not for cab control. The plans can easily be adapted for cab control by simply isolating each section. This may be done by placing nylon fishplates or Double Isolating Rails between opposing sections. Only two symbols are shown on the plan—a cross and a circle. The cross represents a feed, or Terminal Rail; the circle represents a Single Isolating Rail which is worked in conjunction with a No. 1616 Switch.

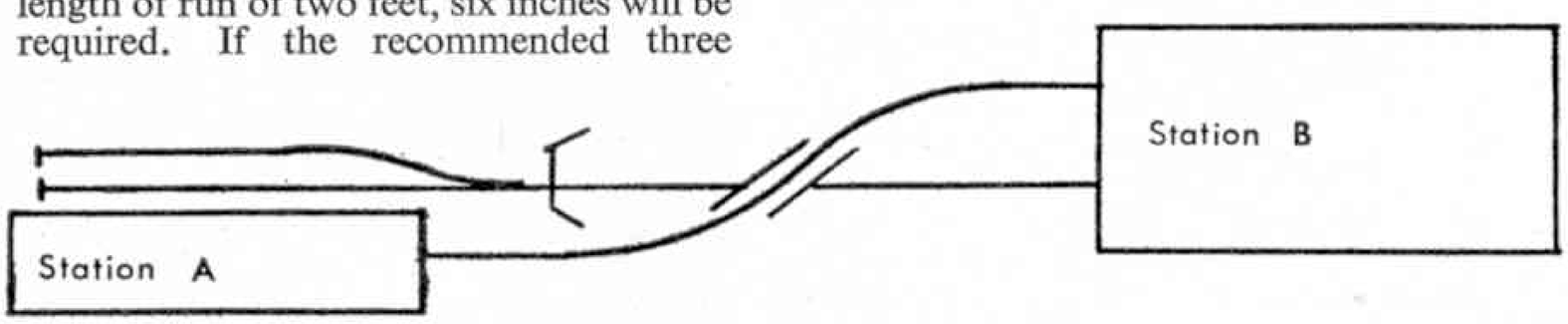
With a little ingenuity the entire layout could be formed in the shape of an L, which may be preferable to those of you who are short of space. Another possibility for saving space is to dispense with the line that crosses over the track that leads to the storage sidings, and instead lay both tracks parallel to each other, leaving one to climb its way to Station A. The track now built on a gradient need no longer have to rise three inches before it reaches Station A. Alternatively, it will only have to climb one or two inches if the upper station is placed slightly to one side of the lower storage sidings. The full three inches will no longer be necessary if this is done, as the rolling stock is no longer affected by the height of Station A.

The builder may, if he wishes, have both stations quite flat on the baseboard. This, however, does not give the same scenic effect as having Station A raised a little. The advantage of building Station A above the storage sidings is the reduction in the width of the baseboard, which would otherwise occupy at least two feet, if Station A and the storage sidings were placed side by side.

A parts list to cover the various diagrams is not included because I feel that the diagrams, taken individually, do not constitute a complete layout, and are in any case only intended to give the reader the basic idea. All plans given in this series of articles can be modified, changed, or even replaced without affecting, to a very marked degree, the basic scheme. Should any reader feel, however, that he would like to build any of the plans, I will gladly supply a parts list on receipt of a stamped addressed envelope. Please send your letters to "Linesman", c/o *Meccano Magazine*, Binns Road, Liverpool 13.





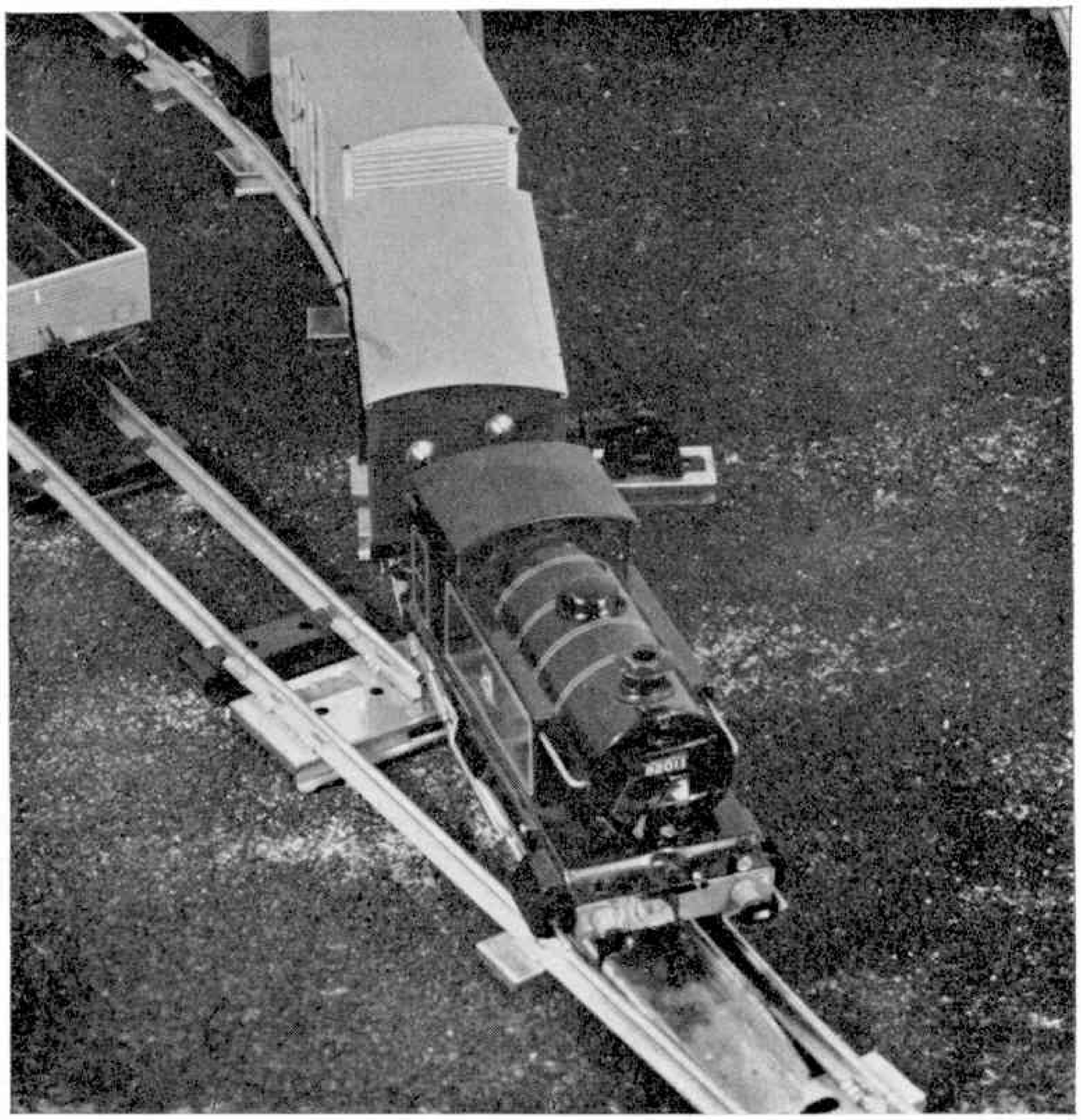


Schematic Plan of Layout (not to scale)

MIDDLETON RAILWAY

The National Trust has accepted deeds of covenant for 3½ miles of the world's oldest existing railway, the 1758 Middleton Railway, Leeds. This news, which will be welcomed by all enthusiasts, means that the railway is now protected against all destruction, alteration or building unless permission is given by the National Trust, the owners of the railway, and the 1758 Middleton Railway Trust, which operates the section protected. Needless to say, permission from all these three bodies to alter the railway will only be given under very exceptional circumstances.

ALONG THE LINE



The No. 40 Tank Locomotive in this photograph is busy shunting in the sidings on a Hornby Gauge '0' Clockwork layout.

"TOMMY DODD"
Writes For The Young
Gauge 0 Enthusiast

LAST month, we had a brief chat mainly introducing the beginner to the basic Train Sets of the Hornby Gauge 0 System. Since then, many young Hornby railway owners have become more familiar with the running of their locomotives and trains and will have found out how adaptable the various rails, points and crossings can be in building up different layout arrangements.

Whatever the layout, large or small, the Hornby Train owner soon finds out that the best running is obtained—with engine and stock in good order, of course—when the rails are properly laid on a firm level foundation. Sometimes the rails can be attached to a baseboard, by screws through the holes in the sleepers, which is fine so long as the board is properly strengthened with a framework of two-inch by one-inch timbers fixed along the edges, and across the board at intervals. Without such a framework the board will not stay level and this will affect the track and the running of the train.

For many, on the other hand, the floor is the only place where the rails can be laid. A suitable area of linoleum, or not-too-deep carpet, makes a nice site. Separate rugs or mats may involve problems of level, so try to lay your rails to go round, rather than to go over, such obstacles. Remember, the early railway engineers faced similar difficulties, but on a much larger scale! It is true that they could drive tunnels, raise embankments and dig cuttings to carry their lines from point to point, but sometimes rather roundabout routes had to be followed and you may well have to adopt a similar course.

Your track can perhaps run under a chair or two—which become "tunnels"—but you cannot always move things as you might wish, at least not without asking, or you may run into trouble. Anyway, let us go round the track together, or "walk the length" as it were, like the permanent way ganger does in real life and see some of the things we have to see to if we want to keep our "road" in order.

* * * *

First steps in layout development usually include the addition of more Straight Rails to make the layout longer, and perhaps wider, too. There is always a special attraction about a long length of straight—certainly the engines like it—and the miniature railway engineer is always seeking ways and means to provide a good long main line. So let us see that it really is straight, without any slack joints. Where it is possible for such extensions to be carried out it usually follows that there will be ample room for longer sidings as well. This means that there will be more room for rolling stock or trains that are standing by, which adds to the convenience of the operator. It is possible to have too much stock for a given layout, a point to watch when making additions to the equipment already in use on the line.

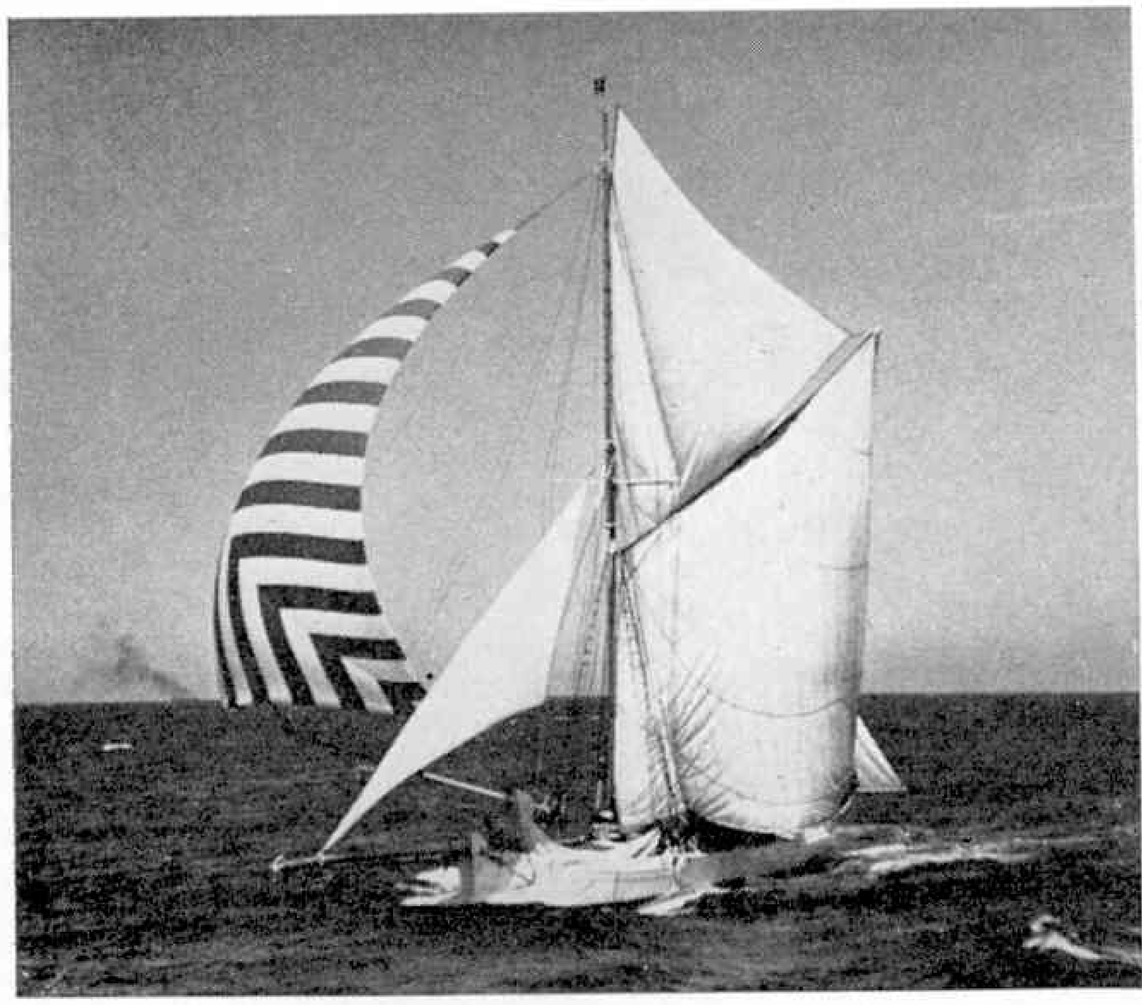
Speaking of sidings reminds us that each dead-end siding should be completed by a Buffer Stop. This is often the first accessory that is bought. Buffer stops in general, especially the big ones at real terminal stations, seem to have a remarkable attraction for the young railway enthusiast. Why this should be so is not too easy to explain. Perhaps without realising it one tends to wonder what might happen if a real train *did* actually run into a real buffer stop. Fortunately this rarely happens, at least with passenger trains, but if it does then someone has some explaining to do!

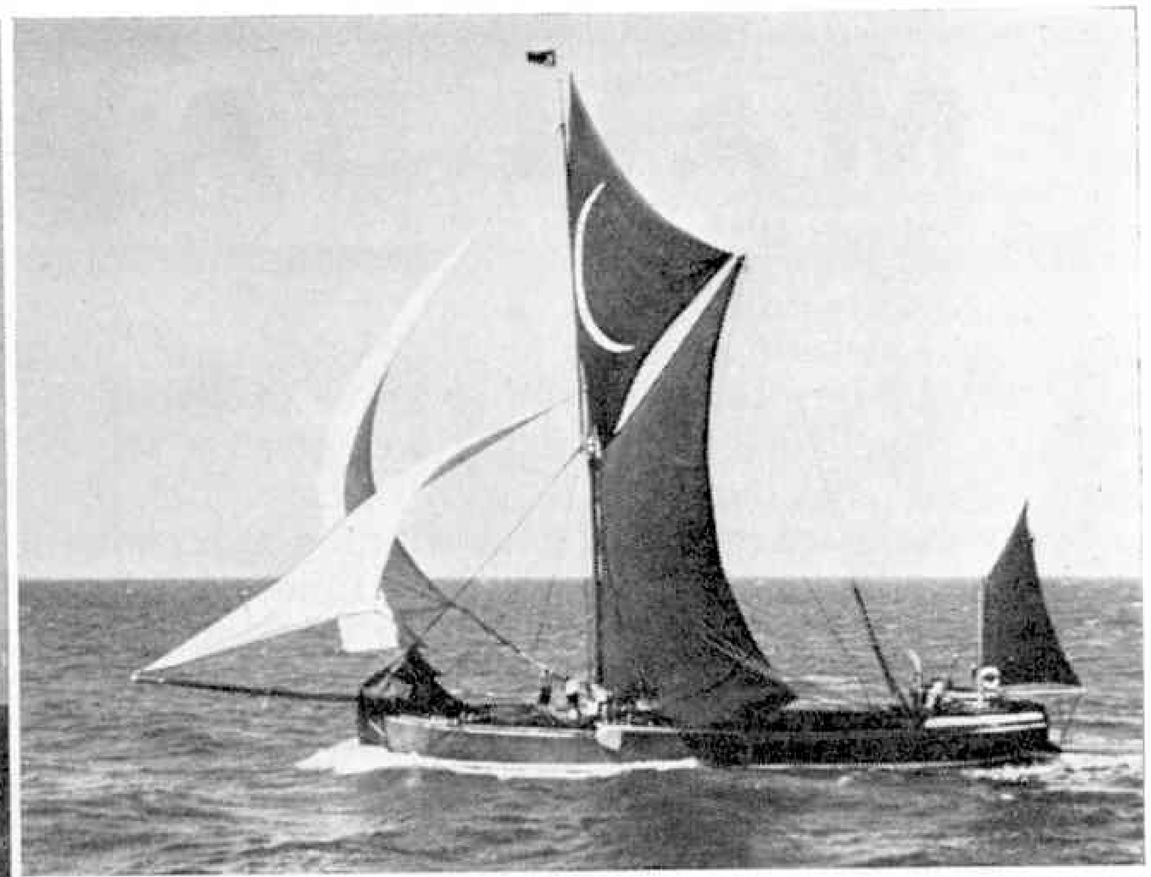
* * * *

The Hornby Buffer Stop provides the correct finishing touch to a siding, but apart from its appearance it will prevent rolling stock from "rolling" too far. To be fully effective it must be secured to the end rail in the siding by means of a Rail Connecting Plate. These plates should be used throughout the layout, for they lock together the end sleepers of adjacent rails and prevent the rail joints from coming apart. The rail joint pins do keep the rails in line, but additional security is provided by the Rail Connecting Plates. If the track is screwed to a baseboard, the plates are not so necessary.

The curved branch and the straight section at the trailing end of Points can be joined securely to adjacent rails by means of the connecting plates, but at the other end of the Points the special "box" sleeper used for mounting the point operating lever and rod calls for something different. For this purpose there are the PCC Points Connecting Clips, which are specially-formed wire fittings that are easily applied just where they are needed. Like the connecting plates, the clips are supplied with the track components concerned—in this case Points—with which they are to be used. But, in case they get lost or damaged they are listed for separate sale as well, a convenience that many owners of Hornby Trains will appreciate.

By the way, to fix the track to a baseboard you need No. 5 roundhead screws three-quarters of an inch long, but they should not be screwed down too tightly. For one thing, screws that are too tight can distort the sleepers, while running is easier if the rails can move up and down—ever so slightly—under the weight of the trains. In other words the track should be able to "breath", as a real track does.





Seen (left) with wind-filled red and white spinnaker is the bowspit barge "Veronica", built in 1906, winner of the last Thames Barge Race. Above: Second to cross the line in the same race was "Sirdar", built in 1898 and owned by the London and Rochester Trading Company. Illustrations by the author.

Coaster Commentary

SAILING BARGES—GRAND OLD LADIES OF THE SEA

By ROBERT GORE

ONE of the rules of the seaways is that powered vessels should give way to sail, but as the years of progress roll by the reverse seems to be the case, though in a slightly different way from the intention of the rule. I am thinking of those grand old ladies of the sea, the sailing barges, and in particular the Thames sailing barges, whose numbers have rapidly dwindled by giving way to the more efficient steam and motor ships.

A sharp reminder of the passing of more leisurely days when an observer looking across the estuary could see many of these graceful vessels, was given us in June last year when, after the annual Thames sailing barge race, it was announced that this was the last of the series. The time chosen for the decision was perhaps an appropriate one for it coincided with the centenary of the first annual match held in 1863. One of the prime movers of these yearly events was a London contractor, William Henry Dodd whose barge *W.H.D.* was the first winner. On his death he bequeathed £5,000 for the provision of prize money for future races, and one must surely be grateful for his enterprise.

Much coastal and foreign trade with continental ports between Ushant and the Elbe was carried on by barges until the steam coaster began to encroach on their preserves. Now there are only a hundred or so, compared with about 600 before the last war, usefully employed on river or coastal work. However, a number of them have lost their original character on account of having their masts cut down and a small wheelhouse erected by the stern for protection from the weather. Absence of masts meant absence of sail and, therefore, auxiliary engines were fitted, and that obviated reliance upon wind, sometimes doubtful, for propulsion. With cargo capacities ranging from about 80 to 200 tons and a crew of two, you can still find a few of them in smaller ports with cargoes such as grain, paper pulp, fertilisers, etc., usually transhipped over the side from ocean-going freighters in the large ports. It is believed that there is now only one true sailing barge still trading and this is the *Cambria*, skippered by Bob Roberts, author and broadcaster of seafaring tales. Another sailing barge in service, but with an auxiliary engine, is the *Will Everard* which was built with a steel hull at Great Yarmouth in 1925.

The sturdy hull of a barge is box-like, with a flat bottom that enables her to sit on the mud at low water and is somewhat "beamy". Some owners had vessels specially built for racing with cargo carrying as a secondary consideration, but in these days when difficulties in the coastal trade are experienced, the maintenance of barges mainly for racing is a very expensive item and is possibly one reason why some have regretfully been scheduled for breaking up. It may be that a few will be saved from this fate, by a benefactor, for use as yacht-barges. Recently one 61-year old vessel was taken up the Thames to a mooring where she became a riverside restaurant!

So useful did these barges prove themselves that they earned the reputation of being able to go practically anywhere, and doubtless because of this, and the fact they had shallow draughts, it was often jokingly said along the Thames that they could sail anywhere after a heavy dew!

During the last war important duties were found for them in mine clearance and at Dunkirk, too, eight were sunk while inactive vessels rotted at their moorings.

Another old-timer, the paddle steamer *Medway Queen*, which evacuated some 7,000 Servicemen from the Dunkirk beaches, has been withdrawn from duty but the possibility of becoming a memorial clubhouse may save her from the scrapyard.

MAILBAG...

Sir,

It may be of interest to you to know that about 1907, when living in Whitley Bay, Northumberland, I was given a set of "Mechanics Made Easy" made by Elliott and Hornby of Liverpool.

With this I was successful in winning a prize with an extending fire escape in a competition organised by Elliott and Hornby.

My reason for writing is to let you know that with this set I learned a considerable amount of structural and mechanical engineering which was of great value to me in my career.

I should like to congratulate you on the great strides from "Mechanics Made Easy" of those days to "Meccano" of the present day.—Harold Midgley, M.Sc. Eng. (Lond.), M.I.C.E., M.I.E.E., Exmouth, Devon.

Footnote: *"Mechanics Made Easy" was the name originally given by Frank Hornby to the constructional sets which he invented and which were later given the internationally-famous name Meccano.—Editor.*

Sir, A very interesting hobby, which I adopted some while ago, is that of brass rubbing. Monumental brasses were erected in the late thirteenth century to the late sixteenth century, although by the latter date the quality of the engraving was considerably poorer.

The enclosed photograph is of a "rubbing" I made in Hertfordshire. The brass itself is found in the Church of St. Dunstan, Hunsdon and was erected in 1591 in memory of James Gray, a park-keeper. The park-keeper is shown aiming at a stag while "Death" is aiming at the keeper, saying, "*Sic Pergo*" (So I Proceed, i.e. I do as you do).

The plate is very interesting as it shows how little the engravers knew of the human skeleton as can be seen by the rib cage and joints. The quadrangular plate is engraved on two brass plates—one measuring fourteen inches by eighteen, the other—the inscription—nineteen inches by seven.—Jonathan G. Parsons (aged fifteen), Roxwell, near Chelmsford.

* * * *

Sir, After reading the article in the November *M.M.* about pillar boxes I wondered how many of the people who use letterboxes daily realise that each one has its own number. The system of numbering is worked out by each postal area. In London, this area can be determined by a special postal district map but in other parts of the country this may be more difficult. The best way of collecting is to buy a small notebook and a street map of the area in which you intend to collect the letterbox numbers, keeping note of the numbers in the book. On each box is stated its location, together with its cypher and type (e.g. wall box, pillar box, etc.).

This can develop into an exciting hobby and we have got all but 60-odd out of 506.

By the way, Edward VIII letterboxes are not so uncommon—there are two in our small area alone.—R. A. Dewey Harrow, Middlesex.

* * * *

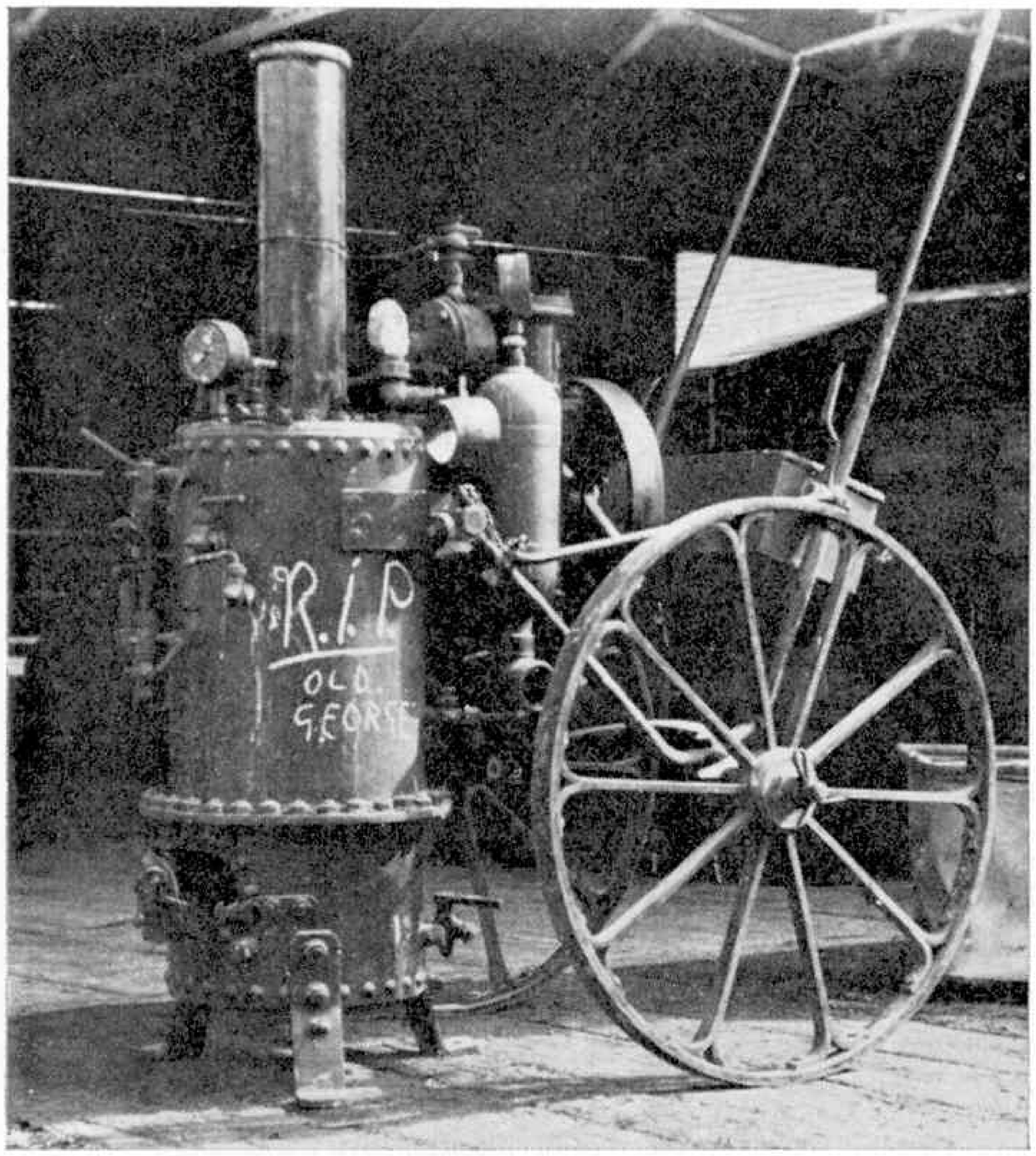
Sir, I am a regular reader of the *Meccano Magazine* and thought I would write to you to say how much I enjoy it—both the text and the photographs.

Some time ago there was an article on the hydro electric power scheme in Tasmania. We have a grazing property, and shear 3,000 sheep and 1,000 lambs each year. Shearing time is always a very busy and interesting one. I live in the Northern Midlands of Tasmania—we are twenty miles from the city of Launceston (57,000 population) and 100 miles to the south is Hobart, which is the capital (109,000 population). Have you ever been to Australia, Editor, or to Tasmania? (*No, I regret to say—Editor.*)

One of these days I would like a trip to England and the Continent. I have left school now and work on the farm here, but I have a younger brother, John, who goes to Oresay High School which is eighteen miles from here. He goes by bus each day.

On the boundary of our property is the South Esk River which, after recent rain, overran its banks and spread out over a few hundred acres of our marsh.

This illustration shows the brass rubbing made by our correspondent Jonathan G. Parsons, whose letter appears above.



The "Valiant" fire pump referred to in the the letter A. D. Browning, of Ramsgate.

On the top boundary is the main Hobart–Launceston railway line and four passenger and three freight trains go by each day. There are not a lot of people who travel on trains these days—most go by buses or private cars.

We have fish in the river and backwater here, mainly trout, tench and perch, which we catch in the summer evenings—also plenty of mosquitos, which catch us!

I must close, wishing the *M.M.* and yourself the best of luck in the future.—Peter A. Sattler, Powranna, Tasmania.

* * * *

Sir, As an older reader of the *Meccano Magazine* (I am now 21), I would just like to let you know that I appreciate the *M.M.* very much. As my own special interest is spotting and keeping records of coasters, I look forward every other month to "Coaster Commentary" with great expectation. I have learned much from these articles, and I would like Robert Gore to know that they are appreciated.

I was especially interested to see the photographs of *Wirral Coast* and *Elfi Breuer* in the November magazine. The former is now engaged on the Liverpool–Portrush container service, operated by the Link Line, which commenced in September. I saw the *Wirral Coast* arriving with the first cargo of containers. The latter vessel called at my home town of Coleraine last year with a cargo of coal. Coleraine and Portrush are only five miles apart, and there is plenty of shipping activity of a coastal nature.

I am also mildly interested in buses, and I find David Kaye's articles on these vehicles stimulate my interest. Over the years since my boyhood days I have built up a collection of Dinky Toys buses, and similar vehicles of other makes.

May I take this opportunity of wishing the *Meccano Magazine* many more years of publication. Best wishes for the New Year!—W. J. M. Blair, Coleraine, Co. Londonderry.

Sir, I enclose a photograph which shows an old Valiant fire pump resurrected from a brewery where it had rested unused for many years.

Made by Messrs. Merryweather towards the end of the nineteenth century it was named "Valiant" because the first one was built to Admiralty order for H.M.S. *Valiant*. Its price then was £170.

Using coal for fuel it pumped 100 gallons of water a minute with a powerful jet that reached to a height of 100 feet. With the pump a collapsible canvas tank was supplied. The pump weighed 7 cwt. and its carriage 2 cwt. Unfortunately, all records and details concerning this veteran were destroyed during an air raid on London.

Overhauled and restored to complete working order, the pump will probably find a last resting place in the Kent Fire Brigade Museum.—A. D. Browning, Ramsgate.

* * * *

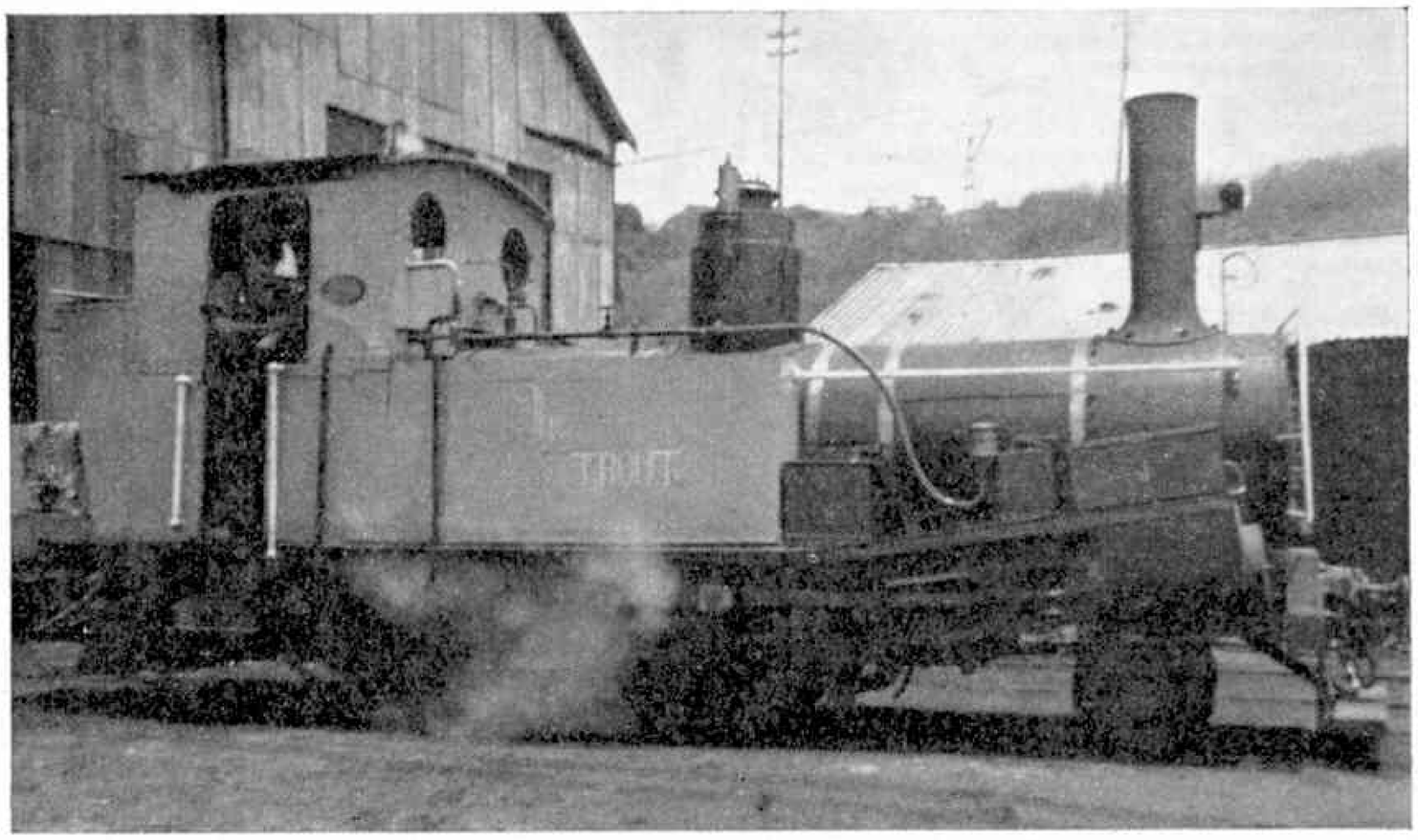
Sir, I have been a reader of the *M.M.* for three years now and always enjoy the articles, especially those about cars and Dinky Toys.

I thought you might be interested in a photograph and details of a very old engine still in use here. There may be older ones in use but that I do not at present know. This one is used here, at Portland, in the cement works. My father is a draughtsman here and there is a small village attached to the works.

The engine, the "Trout", is a "D" class built at Glasgow in 1874 by Neilson and Company. She was bought from the N.Z.R. early in 1916 and has been in use here ever since. (Weight 17 tons, cylinders $9\frac{1}{2} \times 18$ inches, drivers $36\frac{1}{2}$ inches, boiler pressure 160 lb.)

D143 was one of a batch of seven bought from Neilsons in 1874 by the N.Z.R. Four more were obtained from the same builders in 1878, together with five more from Dübs and Company of Glasgow. In 1880, an order for six more was placed with Neilsons, making a total

(*Continued on page 575*)



The illustration on the right, sent in by Jim Wright, of Northland, New Zealand, shows the locomotive "Trout" built at Glasgow in 1874 and still in use.

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FOR OTHER STAMP ADVERTISEMENTS SEE PAGE 573

For Stamp Enthusiasts

Starting Right

By F. E. Metcalfe

FEW will question the statement that stamp collecting is about the most popular of all indoor hobbies. At one time or another, the great majority of us get bitten by the "stamp bug", but alas, many cease collecting after the first flush of enthusiasm has passed. This is a pity, as there is no doubt about it stamp collecting can provide a wonderful relaxation from the ordinary chores of everyday life.

Why is it that so many "starters" pack up the hobby after a while? In the course of things I see many collections which have been formed by people who have never got beyond the beginner stage. These collections provide the clue as to why they have been discarded—their owners had got off on the wrong foot, so to speak, and things had never righted themselves. All that could have been done was to scrap the collection and start again, but being by then a bit fed up with the whole affair it was only the scrapping part of the operation which appealed, and thus one more philatelist was lost.

When I began collecting stamps they were quite scarce compared with today, so much so that we used to include in our collections postcard cut-outs, etc. and with very, very few exceptions we were forming general collections. All was grist for the mill, and we were glad enough of any and every stamp that came our way. Now it is true that for a hobby to retain its appeal it must be felt there is not only a goal to attain, but some chance, however slim, of getting somewhere near it. In my early days you could feel you *were* getting somewhere with a general collection, but today not only are there more than 100,000 different stamps already in existence, but getting on for another 4,000 new ones are appearing every year.

Taking this into consideration, it can readily be seen what a hopeless task it is nowadays to go in for a general collection with even the faintest hope of ever reaching a goal. Now those little discarded collections I have mentioned, as far as they had gone—which was not very far—had been formed on general lines, and their owners had realised that they were not getting anywhere with them and never would, hence the decision to sell out.

There are any amount of books which set out to instruct would-be collectors, and all too many of them contain a piece of advice which has been out-of-date for the last 30 or 40 years; I refer to that parrot-like cry to start off by buying the biggest packet of assorted stamps that you can afford, the theory being that when a collector has bought that big packet, and more stamps (all of which will cost very much treasured pocket money) have been bought, then the collector can see which stamps appeal most to him, and concentrate accordingly.

Let us follow this a bit further. A young collector gets an album which costs a few shillings at least, and before much knowledge is acquired he is likely to have spent a pound or two. Comes the day when the truth dawns, so off he goes to the stamp dealer to sell the general collection, and with the cash obtained for it buy stamps of the countries he has decided upon. It is here where the big shock comes, for that little general collection, containing as it does stamps mostly suitable only for packets, is not worth the dealer's time to break up. So at best, stamps which may have cost several pounds only fetch a few shillings, and it is at this stage that the hobby loses so many collectors. I have seen it happen time and time again.

Now there are, of course, some collectors who take all stamps which come their way, and stick them into a book (to be forgotten once they are mounted), but collecting this way one does not get one-tenth of the fun there is to be obtained from the hobby if tackled properly. What do I suggest? What should you collect, so as to really enjoy stamp collecting? That, of course, is up to you. Some people like to collect thematically, that is go in for stamps depicting, birds, flowers, buildings, railway trains, stamps on stamps, etc.; many get a lot of fun out of our own British Commonwealth stamps of the present reign, or of the KGVI period; the modern stamps of countries such as Austria, France, Spain, U.S.A., etc. appeal to others. There is tremendous pleasure to be had out of any of these groups, and as you can "get somewhere" with them your interest is likely to be retained. But do please consider which stamps you would like before you spend any money and thus avoid having to sell—with the resulting disappointment—stamps you had bought before you had made up your mind which philatelic path to follow.

Mind, I am not saying that you should never want to change. As a matter of fact, it is quite possible that your first choice may not entirely satisfy, but if you have collected on rational lines there is no need to suffer that disappointment which an attempt to sell a small general collection, ex the biggest packet you could afford, is almost certain to bring. A nice little thematic collection, or one formed on limited lines, with some stamps worth a dealer's attention, will bring something with which to buy the stamps you now want.

There are just one or two more points I want to touch on. If you go in for mint stamps, do take care to see that you mount them properly, and use good stamp mounts. Ask your dealer which kind he can recommend, and take the greatest care when you use them, for you should not forget that when you ask a dealer to buy your collection, the first thing he does is to flick up one or two of the mint stamps, and if they have not been properly mounted then you "have had it", chum! Another point, a poor copy is never cheap, for people who pay real money for stamps nowadays will not look at copies which are in any way damaged or have heavy unsightly cancellations.

And finally, don't rush. Stamp collecting is a grand hobby and one which can provide a lifetime of relaxation if carried out on the right lines. Study first the line you wish to take and then go slowly, picking up the stamps you like in your chosen range. But *do* limit that range if you want to feel that you are getting somewhere; which is essential if you are to retain your interest in the world's most popular indoor hobby.

Stamp Gossip

Swaps

I SOMETIMES get letters from young (and not always young) collectors who, living in isolation as it were (that is away from places where there are stamp clubs, etc.) would like to correspond about, and swap, stamps with other collectors in different parts of the world. One such is young Brian Weavers, of 23 Burton Crescent, E. Ivanhoe, Australia, who tells me he is ten years old and would like to

swop stamps with other young enthusiasts in New Zealand (that should be easy), Brazil, Finland or Hungary (not so easy). So if young stamp enthusiasts who read these words care to get in touch with Master Weavers (who writes an exceedingly nice letter) he will probably be pleased to respond. With postages so high, and stamps so easily come by, I don't think there is as much swapping done by post as there was in my young days; but I still remember how I used to enjoy this activity which, if both sides play the game, can be very pleasant indeed.

"PUFFIN' BILLIES"

Last month I mentioned how the sight of an express train tearing along fascinated me. Of course, it is not only the big roarers which I like to see. No indeed, for

I got quite a thrill when I saw the engine depicted on the left of the Colombian stamp illustrated here. I wonder how many readers have seen anything like that old-timer puffing along, the sight of which reminded me of a little railway way down in South America where, years ago, you could see more than one such locomotive chuffing along the narrow gauge in a most important manner. Come to think of it, we thought they were important, too, for the advent of the huge monsters had not dawned then. Alas, even the latter are now becoming outmoded. Anyhow, this Colombian stamp is certainly a precious addition to my sideline collection of trains and locomotives. Unfortunately, there are not near as many stamps in that field as there are of aircraft, which, to be quite candid, could not interest me less.

MAKESHIFTS

No part of this changing world exceeds the British Commonwealth in the matter of political movements. Of course, all this means new stamps, for in some cases

the newly-independents are in a hurry to show the world their new status, and what could be better (or cheaper) than a set of stamps? It takes time to prepare these fascinating bits of paper, of course, so what about a makeshift issue? That was Nyasaland's dilemma when she broke away from the Rhodesias, and she solved it quite cleverly by using the revenue stamps in current use, and merely crossing out the word "Revenue" and adding "Postage". These new postage-cum-revenue stamps will not have a long life, for a pictorial issue is already replacing it. As overprinted stamps are now quite popular (a new-found popularity, after all those overprints of Basutoland, etc. in 1961 which proved so profitable to buyers) I think it safe to say that these Nyasaland overprints will be well worth buying. Unfortunately for those of us with limited pocket money, the stamps go up to £1, which means quite an outlay. Still, there are short sets, and this means that you will have a makeshift set of stamps with a history attached to them, and this is likely to go up in price.

HOLIDAYS

This is hardly the period to think about holidays, except for folks with well-lined pockets and plenty of time to spare, who can indulge in those expensive trips chasing the sun, or real snow. But most of us have memories of last summer, such as it was, and many must have been to the Channel Islands and while there taken a trip to Herm Island—that delightful speck in the ocean, which issues its own stamps. Regarding the latter, as I have explained

previously, they are not recognised by the British Post Office. However, Herm Island stamps do actually cover a postal service, although our Post Office only allows them to appear on the back of envelopes. Well, Herm has issued, for the third year, a set of three "Europa" stamps which, to say the least, are more interesting than some of the stamps issued by other P.O.s to mark the third anniversary of the European Postal and Telegraph Conference. Another point: Herm Island stamps are used annually on 150,000 letters, etc. So there is room for them all right.

(*Continued in column 1, next page*)

By E. W. Argyle

Famous Bridges On Stamps

TANCARVILLE BRIDGE

EUROPE'S longest suspension bridge is the Tancarville Bridge across the Seine estuary. It superseded a dozen ferries which were insufficient to handle the traffic. The bridge provides a short cut for traffic between Le Havre and Paris, saving 20 miles, and even more for traffic between Le Havre, Brittany and Normandie. It was opened on July 11, 1959, is 3,149 feet long and cost more than £6,000,000. Before the bridge was built traffic had to go round the Seine Estuary to Rouen in order to get across.

SAN FRANCISCO BAY

THE most notable bridge in the world today, both as to size and design, is the San Francisco–Oakland Bay Bridge, covering, with half-a-mile of tunnel through Yerba Buena Island and its approaches, a total distance of 8 miles. It incorporates three different types of bridge—suspension, cantilever and girder—and has deeper foundations than any other bridge; and cost £19 million to build. The bridge was opened on November 12, 1936.

Stamp Gossip—

(*Continued from previous page*)

WHICH ONE?

With so many stamps bearing interesting designs it is quite a task to know which to pick to illustrate my notes. France alone issues enough to more than fill my space and as it is quite a while since I referred to the many delightful stamps released across the Channel, it is about time I repaired the omission. I could not do it better than by selecting the stamp depicting the bathyscaphe which made the record ocean plunge of 9.200 metres. It must have been cold down there! This stamp is illustrated on the previous page.

THE TIP OF THE MONTH

Those who go in for British Commonwealth stamps will have noticed that, for some time now, short sets of commemorative stamps have appeared but have been withdrawn in a month or two. Now stamps of the Commonwealth, as well as being first favourites in the Commonwealth itself, are collected extensively in the U.S.A. and all this means a big demand sooner or later. Sales figures show that the short life of the stamps in question has meant also short sales, and in the long run demand is bound to catch up with what supply there is. Thus it can only mean that the time to buy these nice little sets is while they are current, and I would say that all of them are good buys. I would never recommend stamps to be bought exclusively for their investment possibilities, but it is worth taking into consideration the fact that the stamps you are buying with your precious pocket money will prove worth their keep.

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CALLING ALL BUS SPOTTERS

New Models

EVER since Leyland Motors Ltd. acquired Albion Motors Ltd., in July 1951, it has been their policy to show new Leyland models at the Earls Court Commercial Motor Show on even years and new Albion models at the Kelvin Hall Show in Glasgow on odd years. Hence 1963 saw the debut on the stand of the new Albion "Viking" VK41L model. This has a wheelbase of 16 ft. 1 in. on which can be mounted a forward entrance body with the dimensions 31 ft. 7 in. × 8 ft. 2½ in. It is powered by a six-cylinder 0.370 diesel engine as in the Albion Chieftain Super Six Scammell Tractor unit. This develops 106 b.h.p. at 2,200 r.p.m. (bus version) or 110 b.h.p. at 2,400 r.p.m. (coach version). Both variations are fitted

By David Kaye

with Albion's own 5-speed constant mesh gearbox. The prototype has been fitted with an Alexander 41-seat body finished in the livery of W. Alexander and Sons (Midland) Ltd.

From the Scotstoun factory on the banks of the Clyde in 1926 came the first Albion "Vikings" with their four-cylinder petrol engines rated at 30 h.p., but developing 60 h.p. The PK26 model confusingly seated 29 passengers, and there was a similar PM28 version. Three years later the "Viking Six", coded PNC26 and PR28 (the latter seating 32 people) appeared. However neither had a very long life, for the "Viking" was superseded by the PX65 "Valkyrie" in 1931, and the following year saw the PV70 oust the "Viking Six".

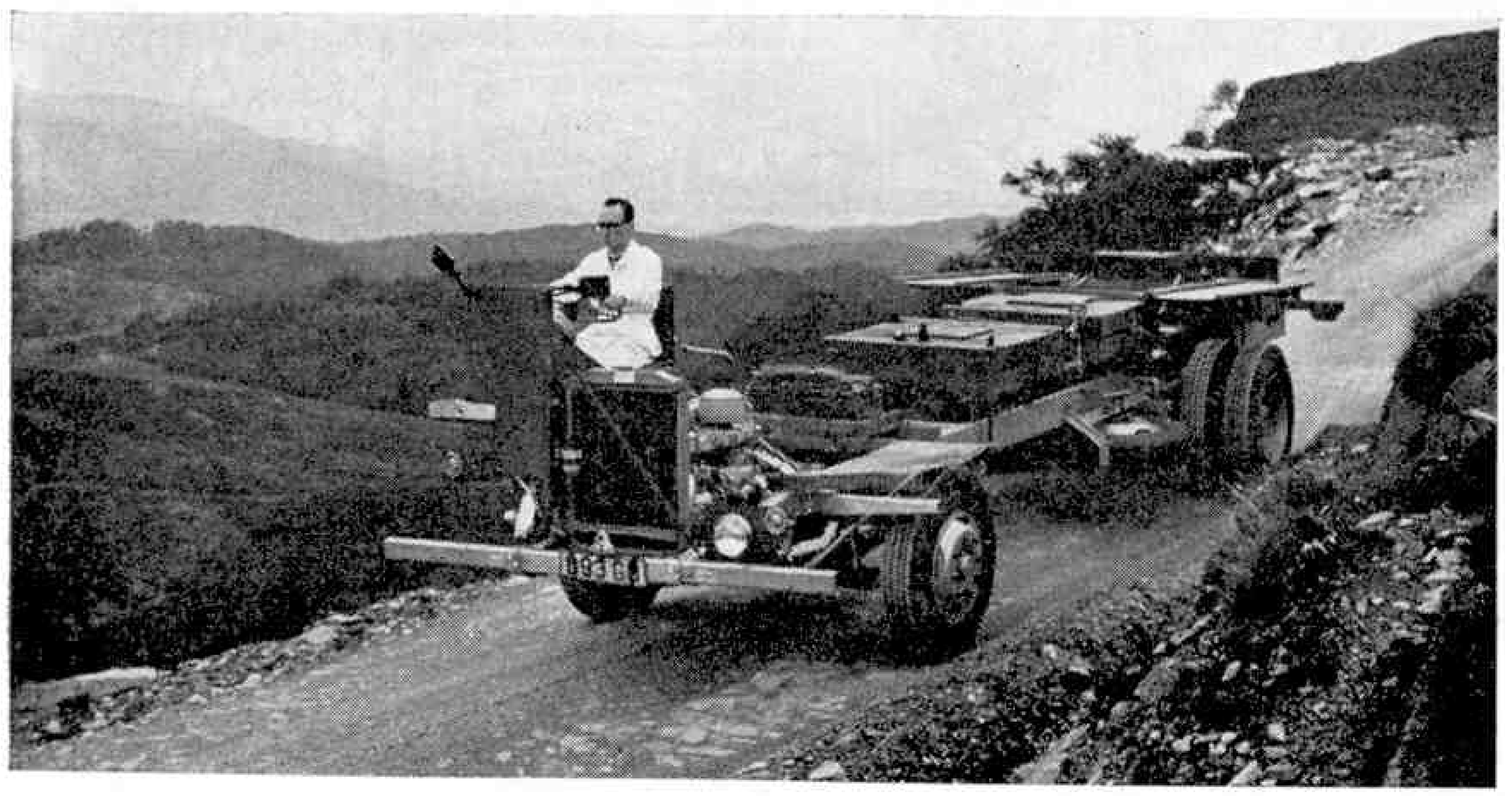
The other new model at the end of 1963 is the Guy "Arab V". This is encouraging, since it looked not so long ago as if Guy would soon be a name of the past, like Gilford and Crossley. The "Arab I" double-decker arrived on the wartime scene in 1942 with a 16 ft. 3 in. wheelbase and powered by a Gardner 5LW engine, although 40 of these 500 Mark Is were allowed to have the larger Gardner 6LW engine for hilly route operation. Since all aluminium was needed for the aircraft industry at this date, cast iron and steel were used for castings, adding no less than 18½ per cent to the total weight of the chassis. Later in 1942 special Ministry of Transport dispensation was granted to lengthen the vehicle by 6 inches to an overall length of 26 ft. 5 in. (the legal maximum being 26 ft. 0 in.). This long nosed variety, designed to accommodate the 6LW engine more comfortably, was called the "Arab II". In its turn it was replaced by the "Arab III" in 1947. Here the radiator was dropped four inches to give the driver a better view. Not only were most models fitted with the more powerful 8.40 litre 6LW engine, but between 1948 and 1951 some had an alternatively Meadows 6DC630 engine of 10.35 litres, such as London Transport's famous G436 (KGK 981).

Since 1951 the "Arab IV" has been with us. First it had a 16 ft. 4 in. wheelbase, suitable for 27 ft. bodies, but soon this was extended to take the 30 ft. × 8 ft. body. Now comes the "Arab V" with an 18 ft. 6 in. wheelbase and a frame which has been lowered by 2½ in., thus cutting the number of steps required for forward entrance versions from three to two. It is fitted with a Gardner 6LW engine developing 112 b.h.p. at 1,700 r.p.m. and has full airbrakes. Front entrance models can seat 72, but the rear entrance variety can manage 74. To support local industry Wolverhampton Corporation have 50 "Arab Vs" on order, half of which have recently been delivered. The whole series will be Nos. 72–121 (7072–7121 UK) and they are being fitted with M.C.W. H72F bodies.

* * * *

Turning to the small operators we have covered in 1963, let me bring you up-to-date with their fleets. LPX 150, the Bedford OB belonging to Bucks Coaches of Worthing, has been sold by Southdown to Moir of Bellshill, Lanarkshire. Seaview Services in the Isle of Wight have acquired Read's Grey-Red Coaches of Ryde. This has brought into their fleet the following vehicles: (*Cont. in col. 3 next page*)

An unusual combination is Cumberland 151 (LAO 145) seen here at Keswick Bus Station. It is a Leyland "Royal Tiger" PSUI/13 with an Eastern Coachworks B45F body. Photograph by R. Gibson.



Albion "Viking" prototype chassis photographed during tests in the Trossachs, an ideal proving ground within easy reach of the Company's Scotstoun factory. Photograph by courtesy of Leyland Motors Ltd.

Soccer Skills—

(*Continued from page 540*)

third post and so on to the end of the line. This exercise can be varied, using the left foot only when going back, and then both feet can be used, making it a complete exercise.

Stanley Matthews himself used this method of training to develop his amazing skill with the ball. So if it is good enough for him, I think it is one we can all take notice of. I hope you all have success with it.

Try Building this Unusual Bungalow—

(*Continued from page 560*)

There are, however, two additional parts used, one Red Brick and one White Brick, but, if you do not possess these, trouble can be averted by decreasing the overall size of the building. A possible way of doing this is to remove the three Bricks forming each of the lower sides of the horizontal stroke of the "T", and replace them with the Brick, Window and Half Brick situated on each side of the vertical stroke of the "T", adjacent to the Long Bricks and Large Window arrangement of parts. The resultant gap is closed by moving up the now-isolated parts to fill the space.

When constructing the model, take special note of the places where two layers of Red Bricks are used, and where two Half Bricks take the place of one Brick. Arrange the Tie Bars as shown, noting particularly that the two Roof Ends serve also as Tie Bars, thus leaving enough of the real ones to finish the model. No. 3 Brick Rods are used throughout.

Road and Track—

(*Continued from page 541*)

Swallow Sidecars. Their impact on the motor-cycle sidecar industry, with smart streamlined shapes at a time when most sidecars were ugly square boxes, quickly brought big business and fame.

Within a few years the partners decided they could do something to improve the unimaginative square bodies bestowed on mass-produced family saloons. As a start they took a 1927 Austin chassis, gave it a larger than standard four-seater saloon body in two colours, with rounded tail and radiator to match and soon they were overwhelmed with orders for Austin, Fiat, Standard and Swift.

A bigger factory at Coventry was the next move and it was here that Bill Lyons was able to achieve a secret ambition of becoming a car manufacturer in his own right. Getting started without much capital was not easy, but he succeeded by persuading Standard's to supply him with their 16 h.p. engine and chassis, to which he fitted a very *chic* body, half of which was bonnet. He called the car an S.S. It was a scramble to get one ready in time for the 1931 Olympia Motor Show but worth it, for on opening day there was almost a stampede on the S.S. stand; no one had ever seen such fabulous looking cars for £310. Value for money, eye-catching lines and attention to detail have been the secret of Bill Lyons' success; it still is today.

Soon there came the smaller 9 h.p. S.S., priced at £210. S.S. cars were entered in rallies, engines were tuned for speed, then came the handsome S.S. 90 open sports two-seater, followed by the o.h.v. S.S. 100 and, of course, the 2½ litre Jaguar saloon.

After the war, S.S. became Jaguar Cars and then, at the 1949 Earls Court Show, in typical Lyons' fashion, the famous XK series took the world by storm. The 3½ litre twin overhead camshaft engine, which has taken Jaguar to the highest pinnacle of fame, was actually sketched out during wartime fire-watching duties; for sheer efficiency and power it has been unequalled and has gained Jaguar five outright wins at Le Mans, plus many other races all over the world.

Today, it is the "E" Type Jaguar that commands the greatest respect on the road, for it is one of the finest sports cars in the world. Will Jaguar race again? Possibly. Sir William Lyons has now acquired Coventry-Climax engines and through them already has a stake in Formula One racing.

Round the Societies—

(*Continued from page 549*)

The club entrance fee is 1/– (Ian Allan Locospotters' Club members admitted free). The annual subscription is 4/6 to cover cost of printing and mailing the newsheet. Prospective members should write to Mr. C. B. Brown, of 17 Glen View Street, Cornholme, Todmorden, Lancashire (for the Lancashire and Yorkshire Division) and Mr. W. J. Sawyer, of 13 Ravenfield Drive, Rotherham Road Estate, Barnsley, for the Midland Division.

"Lundistan Government Railways"—

(*Continued from page 562*)

engines can be honourably installed.

At the time of the preparation of the notes on which this description is based it was proposed to develop a further branch line to lead to a special terminal for "Ocean Liner" traffic. This terminal would also handle extensive shipments of container traffic, but for the moment this scheme remains in the project stage.

The Midland section consisted of a simple oval double-track main line, with crossover points joining the two tracks, and with internal as well as external sidings. There is now no track connection between the Midland section and the other divisions, the rails in question having been lifted recently. One track in each of the two Three-Rail yards has been removed and this process of running down by degrees will carry on until the existing Three-Rail locomotives have been withdrawn from service and their track lifted. The whole layout will then be Two-Rail only.

Making Good Use of Stations—

(*Continued from page 563*)

Cars and commercial vehicles are synonymous with main-line stations, so the whole scene is given life and action by the introduction of parking space for taxis and cars bringing passengers. For these we use Dublo Dinky Toys Austin Taxi (No. 067) and Volkswagen Delivery Van (No. 071), while the local farmer picks up some parcels in his Land Rover (No. 073). The G.P.O. are always busy collecting mail and Dublo Dinky Toy No. 068 Royal Mail Van provides a bright splash of colour at their ramp.

Communications mean telephones and so a number of Hornby Telegraph Poles (No. 5090) can take their place along the lineside adjacent to the station.

Since it is often the little things that make the scene, passengers are on the platform, mingling with station staff, and at the same time avoiding the progress of the Lansing Bagnall Tractor (No. 076) with its train of Trailers (No. 078) as it winds its way along the platform.

Do not forget that passengers should be approaching and leaving the entrance, while some may be talking to taxi drivers.

Calling all Bus Spotters—

(*Continued from page 574*)

ODL 279 Bedford SBG/Duple C41F built 1957.
PDL 640 Bedford SB3/Duple C41F built 1958.
VDL 968 Bedford SB3/Duple C41F built 1961.
671 ADL Bedford SB3/Duple C41F built 1963.

At the same time Seaview Services have withdrawn two of their Bedford OBs, EDL 475 and FDL 318.

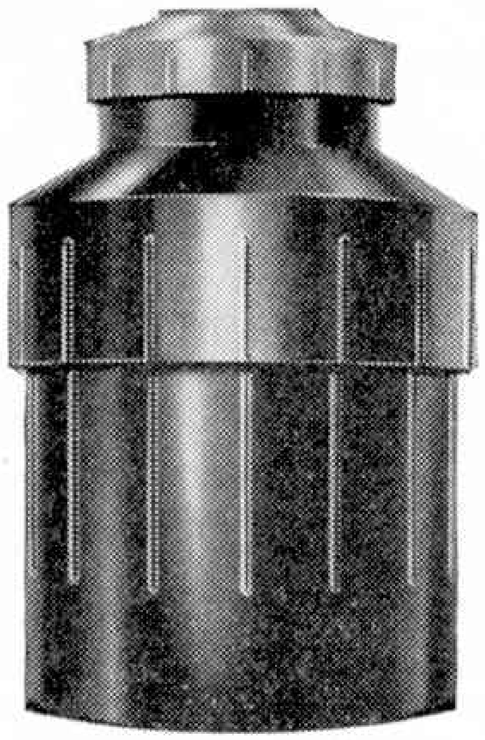
Safeguard have taken delivery of their 36-footer—1637 PF, an A.E.C. "Reliance" with a Willowbank B53F body. Similar vehicles are on order for delivery in January and September this year. This will mean that 200 BPG and 250 LPB can be sold. XCG 712 is to be sold and be replaced by two 41-seater Bedfords. The latest addition is 119 GBM, a 29-seater Bedford VAS.

Mailbag—(*Continued from page 569*)

of 22 built in Scotland. Scott Bros. of Christchurch, New Zealand, also built ten, completing the last in 1888. D143 is now due for some repairs but is expected to be used for some time yet. Two of the other old engines are of 1877 vintage, built by the Avonside Engine Company of Bristol, and are still going strong.

We also have Pecketts, large and small, a Hunslet and more modern diesel engines. A really comprehensive overhaul of the Hunslet has just been finished by the workshop and she is in tip-top order.

I might add that D143 was once used on New Zealand's Main Trunk!—Jim Wright (aged 12—H.R.C. 324014), Portland, Northland, New Zealand.



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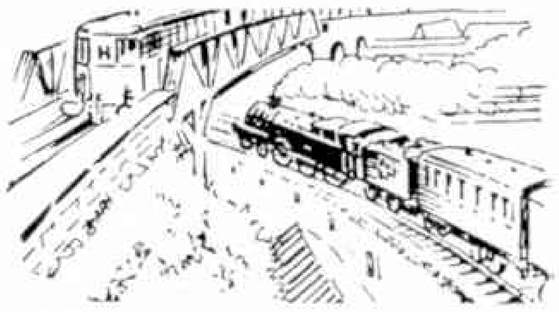

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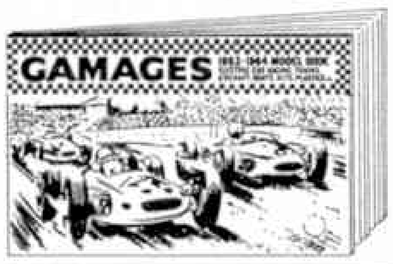

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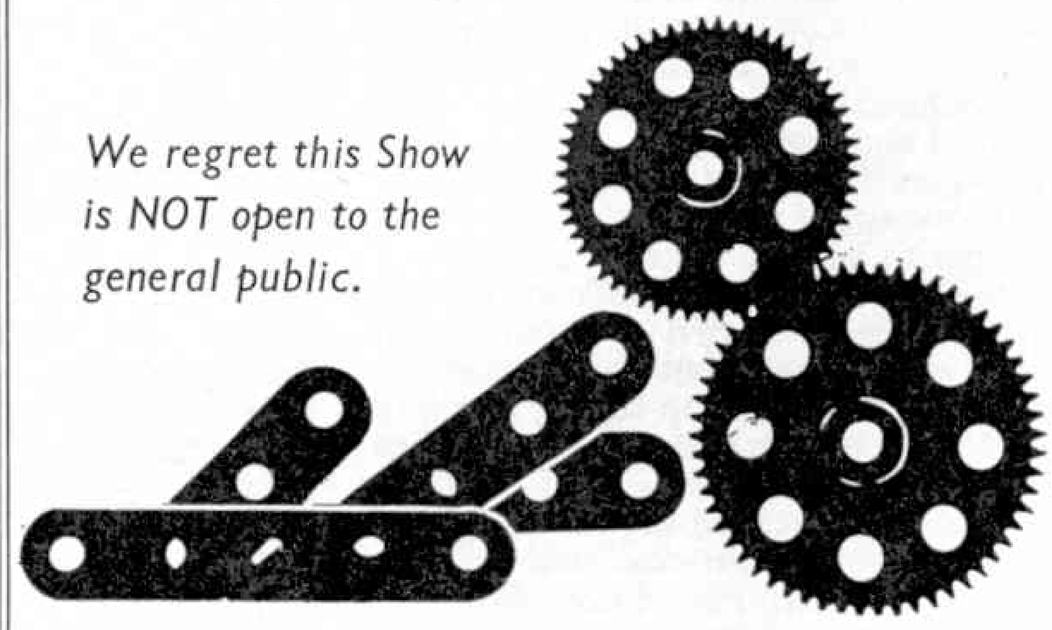

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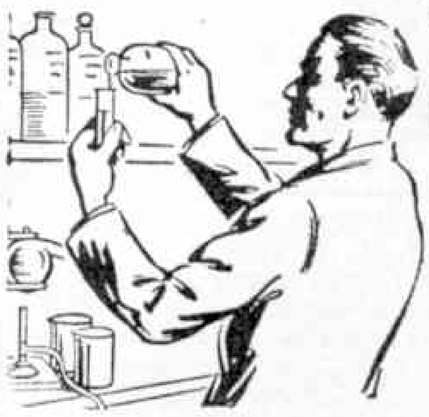

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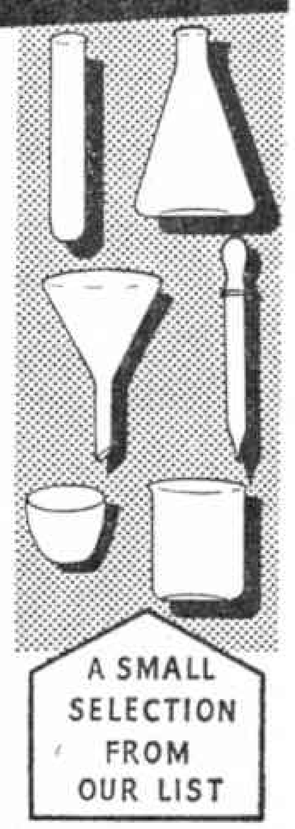

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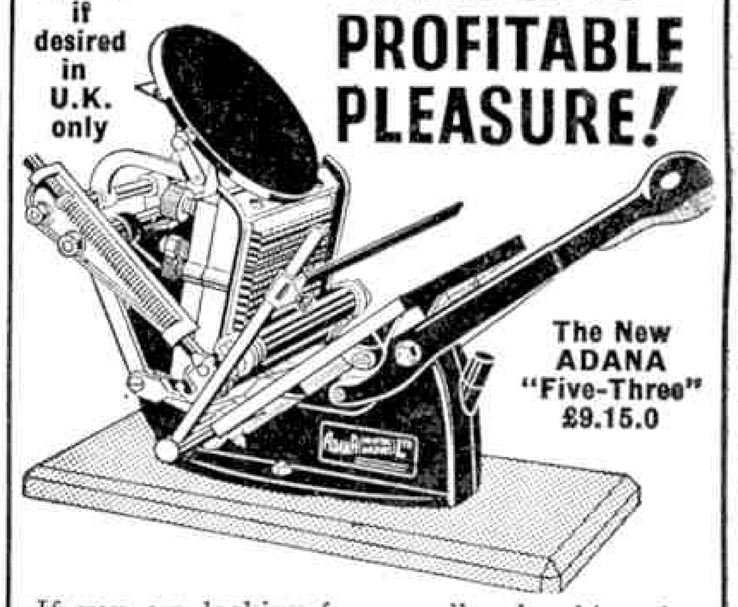

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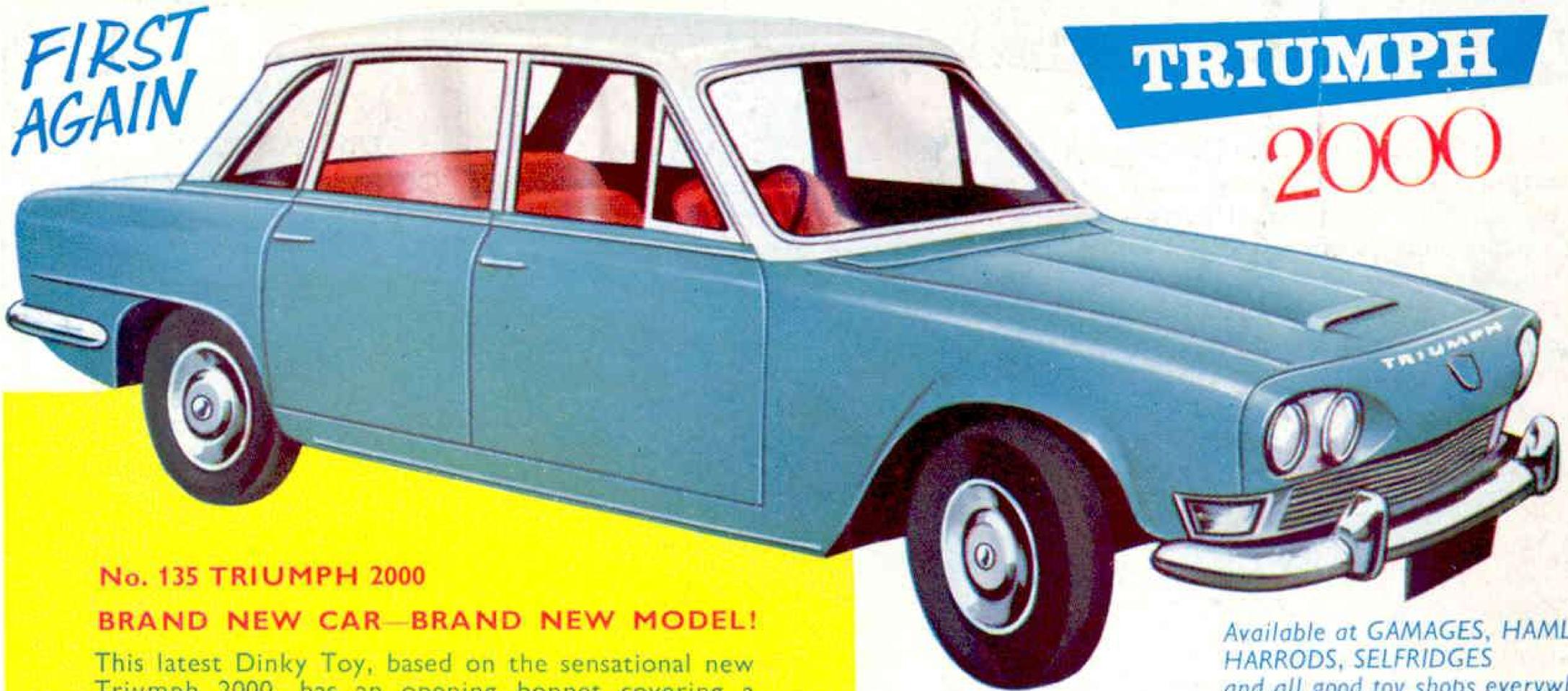

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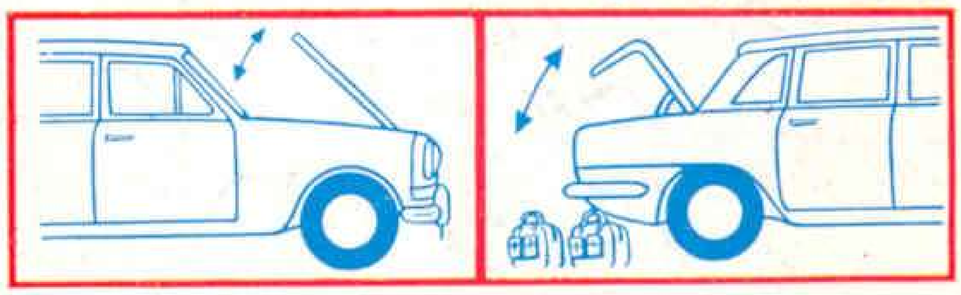

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