

Lima 1977-78

Trains in British design.

OO Scale
N Gauge
O Gauge

lima trains

Number one in the world of model railways.

Lima: number one in the world

The mighty locomotives... the bustling, crowded stations... the sheer power needed to move people and goods from place to place.

All the romance of the railways is yours in miniature, in your own home, with a Lima model railway system.

Lima trains are in use in literally millions of homes all over the world. And Lima produce more model railways and accessories than any other manufacturer in the world.



So when you buy Lima you can depend on real expertise—in depth. Technical expertise that will keep your trains running on time—year after year. Expertise in detailed modelling that makes your railway really come alive. Plus an unrivalled choice of rolling stock and accessories in three different scales—to help your railway system grow and develop into a lifetime hobby.

But most important of all, Lima expertise means the kind of value for money that makes your model railway a real investment.

Lima choice.

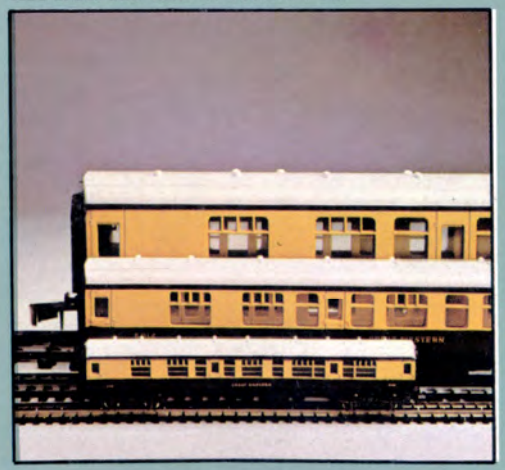
Of all the major manufacturers, only Lima offers you all 3 important scales. So you can choose the gauge or scale that's right for you, your home, and your pocket.

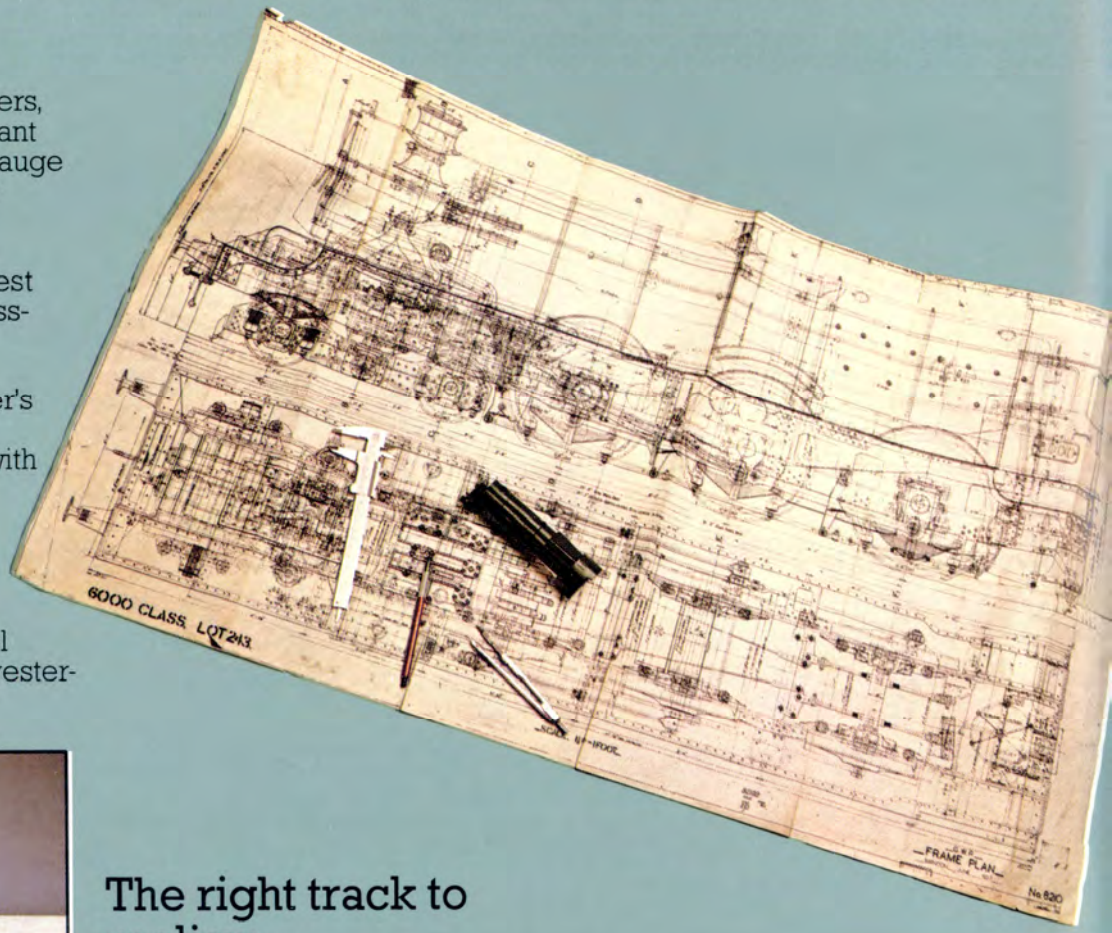
And within that choice lies another. The choice of the biggest range of rolling stock and accessories made by any world manufacturer.

'OO' scale—the UK modeller's favourite. A vast new range of British outline rolling stock, all with British Standard Couplings.

'N' gauge—superbly engineered micro models—for the specialist, and those with limited space for a layout.

'O' gauge—giant size model railways. The classic gauge of yesteryear but still a favourite with modellers the world over.





The right track to realism.

Research into new models at the Lima factory means getting it right—even if it takes a year or more to produce the final result. Every loco and piece of rolling stock is thoroughly and painstakingly researched from original blueprints and photographs, in close co-operation with railway authorities, museums, and historians the world over.

...then experts turn their skills to the task of 'shrinking' the real thing to the scale of your choice, and building in the reliability you've come to expect from Lima.

# of model railways.

Production line modelling.

From finely detailed scale drawings, the skills of the toolmaker turn the body of a new model from a drawing board project to a hand finished hard steel mould.

Then the production models are formed under pressure with modern high impact polystyrenes.

Painting and finishing.

Next the bodyshells pass to the paintshop where the painstaking task of colouring, marking and protecting the model begins. Spray painting is used to colour the roof and body-work, and highly advanced machinery applies 4-colour transfers to all sides of the model simul-taneously. Finally, the body is finished by hand.





The motor.

At the heart of each loco is Lima's well proven, 3 pole, electric motor. This tough powerful unit works on 4 to 12 volts direct current and has 2 permanent magnets. With each armature carefully wound and tested to give the kind of long life for which Lima has a universally acknowledged reputation.

The chassis.

Meanwhile, wheels and chassis are being assembled. Ready for the bodywork and motor (for loco-motives) to be fitted.



Everything is hand tested.

Before packing and delivery to your local Lima stockist, every item is individually tested. And each loco performs its first job of work; hauling a big payload of rolling stock.

Packaged with care.

Look for the eye-catching boxes of the Lima range—they're never far away in all the best model and hobby shops. Every box lets you know just what you're buying. Each individual product is cradled to keep it safe on its journey from the factory to your home. Ready to give you a lifetime of pleasure.

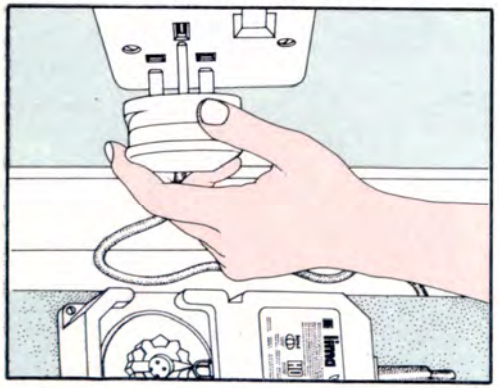
Operating and maintaining your Lima railway.

Lima model railways have been designed to incorporate the latest advances in precision model engineering.

A little care and regular routine servicing will ensure reliable and trouble-free running.

General.

Lima micro motors run at between 4 and 12 volts DC from either the battery box supplied with each set or from a suitable power unit/transformer that has a variable speed control and forward and reverse action. When using a power unit with secondary output terminals, always ensure that the controlled DC terminals only are connected to the track. The AC output should only be used for trackside accessories, such as points. Before plugging into the mains, check that the correct ampage fuse has been fitted in the plug. When not in use, disconnect the controller from the mains.





Locomotive maintenance.

For smooth and trouble-free running, the tracks should be kept clean and dust-free by wiping with a soft cloth moistened with a little methylated spirit. Also check that the fish plates are correctly aligned and are making good contact. Drive wheels of locomotives should be cleaned periodically by using a light abrasive paper.

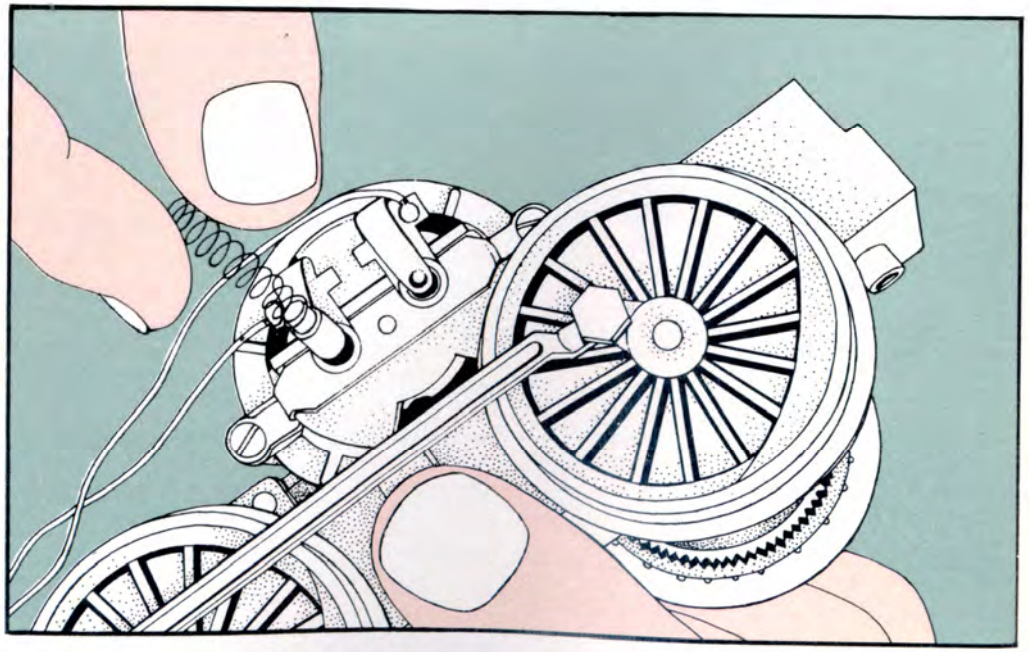
Do not oil the brushes or commutator. (These should be kept clean by using a cloth moistened with a little carbon tetrachloride.)

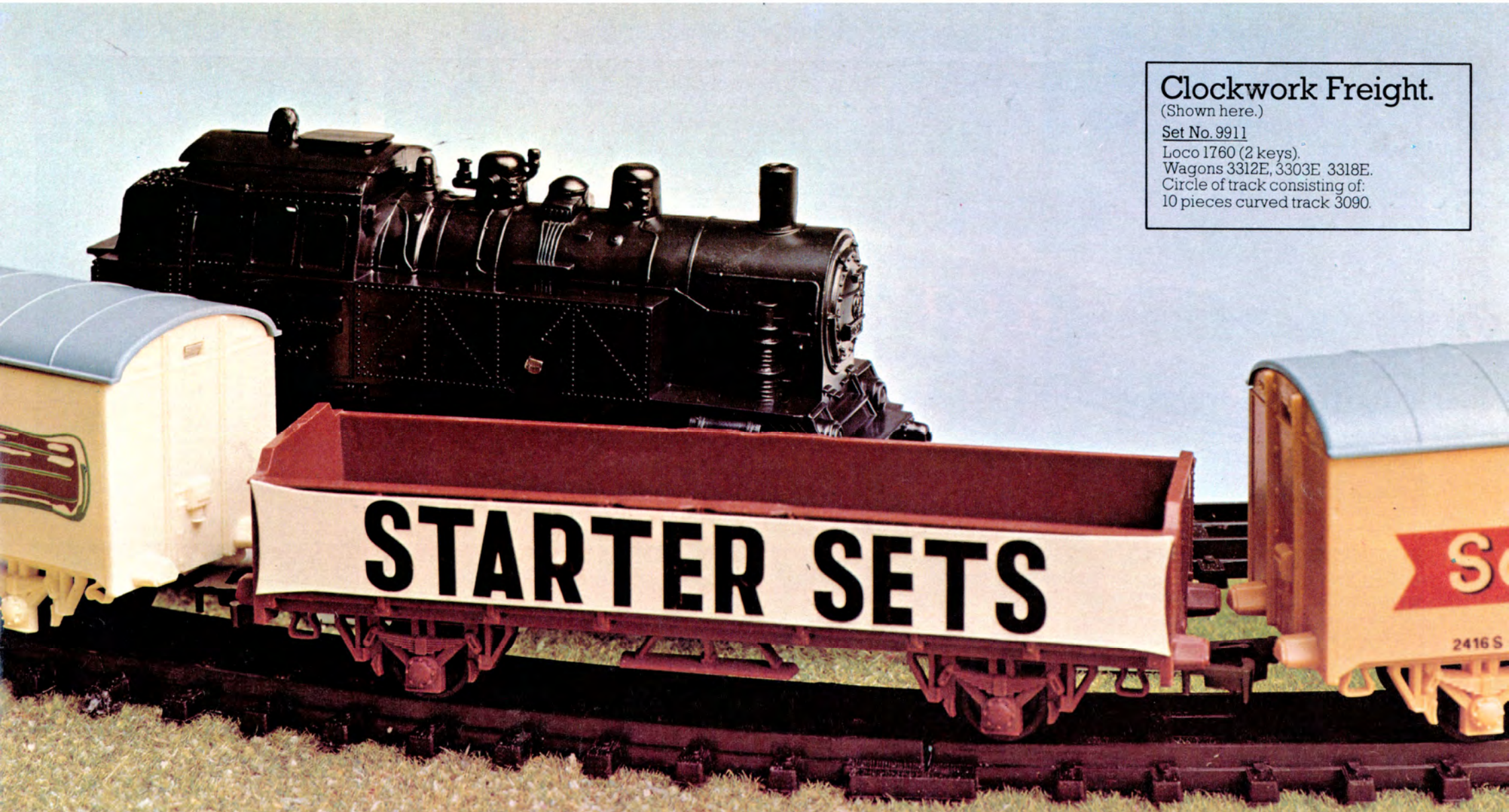
Carbon brush replacement.

After a considerable period of use (150 hours approx.) the two carbon brushes may need replacing. The method, which is quite simple, is as follows:

1. Remove the chassis and motor unit from the body.
2. Lay the chassis on its side with the brush retaining contact, arms on top.
3. With a screwdriver or similar object, ease the brush spring retaining arm away ensuring that the spring does not jump out.
4. After removing the spring, clear away any remaining part of the carbon brush with a pin. The brush housing should then be cleaned out with a twist of paper. Finally, blow any dirt particles clear.
5. Insert the new brush into the housing, replace the spring and carefully bend the retaining contact arm back into position.
6. Repeat the procedure for the other brush.

And don't forget, when servicing adjustments are required, your Lima Service Dealer is always ready to help you.





Clockwork Freight.

(Shown here.)

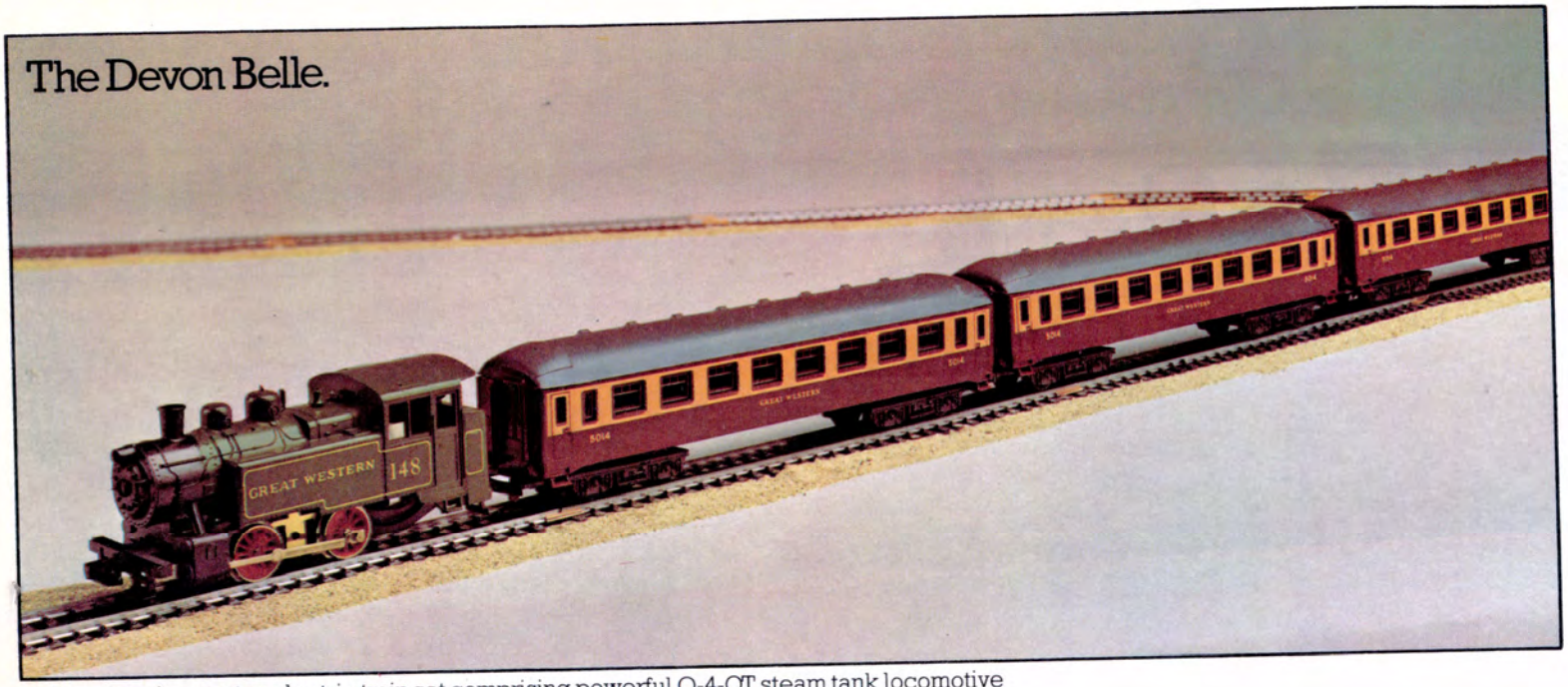
Set No. 9911

Loco 1760 (2 keys).
Wagons 3312E, 3303E 3318E.
Circle of track consisting of:
10 pieces curved track 3090.

An ideal and inexpensive way to get into the magic of model railways – these 3 starter sets incorporate many of the features of more sophisticated sets, for a very modest investment.

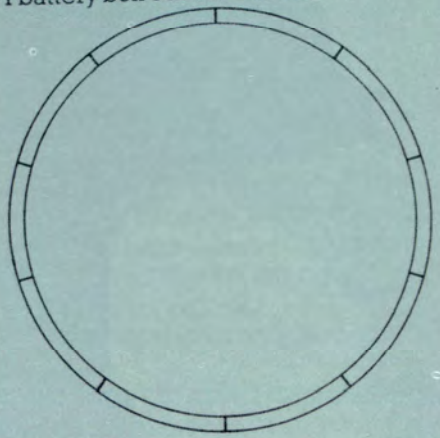
The clockwork set incorporates a circle of tough link-locked track. Just right for the younger train enthusiast. While the two battery controlled sets make a remarkably inexpensive beginning to what can easily become a life-long hobby. All Lima OO/HO accessories and track can be added to these two basic layouts, so their potential is endless.

The Devon Belle.

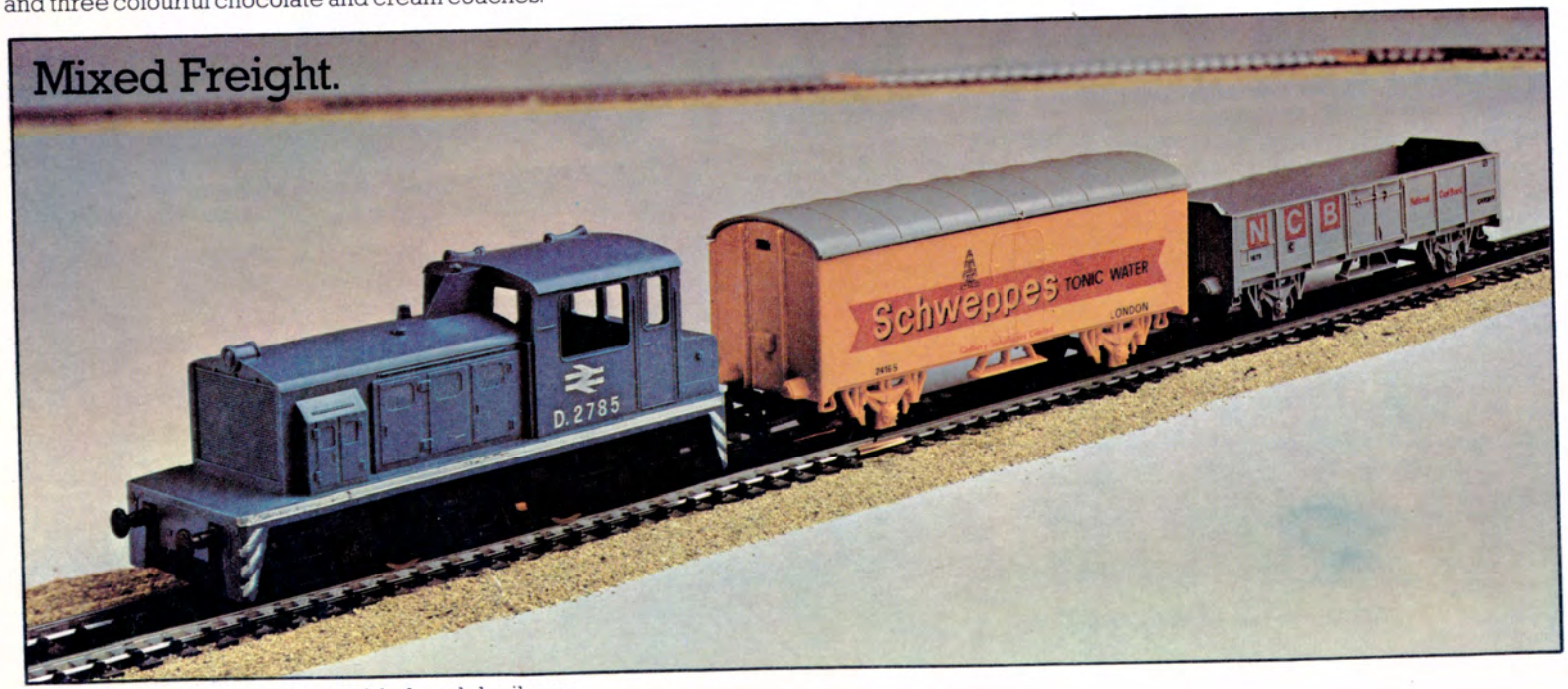


An inexpensive starter electric train set comprising powerful O-4-OT steam tank locomotive and three colourful chocolate and cream coaches.

Set No. 4508
Loco 1712.
3 Coaches 9438.
Circle of track consisting of:
9 pieces curved track 3030,
1 power connecting rail 3030C.
1 battery box control unit 012A.

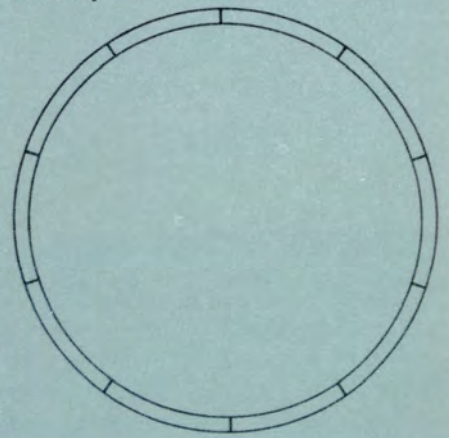


Mixed Freight.



An ideal introduction to the world of model railways.
Its 0-4-0 diesel locomotive is equally happy on the main line or in the shunting yard.

Set No. 4009
Loco 1650.
Wagons 3134 , 3144.
Circle of track consisting of:
9 pieces curved track 3030,
1 power connecting rail 3030C.
1 battery box control unit 012A.



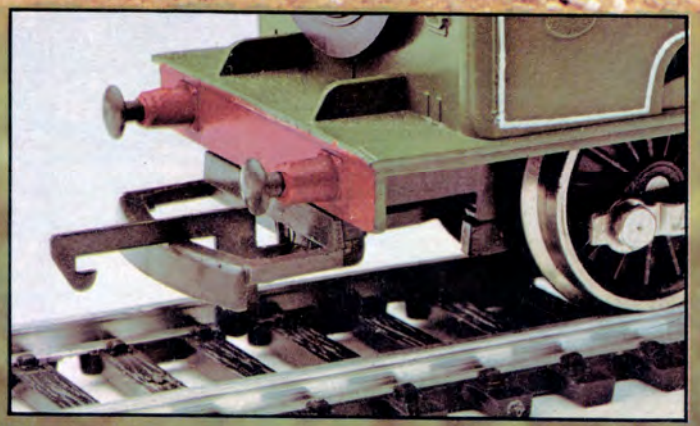
Over the last twenty-five years or so, 'OO' has become the most popular and widely used scale in the UK.

The gauge (between the rails) is 16.5 mm and the general dimensions are to 'OO' scale (4mm:1ft), although most other countries use the HO scale (3.5mm:1ft). Nevertheless, as a general rule American and Continental wagons and locos are that much larger in real life than their British counterparts, so when the 2 systems (HO Continental and OO British) are mixed together, they appear perfectly compatible. The track gauge for for both OO and HO systems remains constant at 16.5mm.

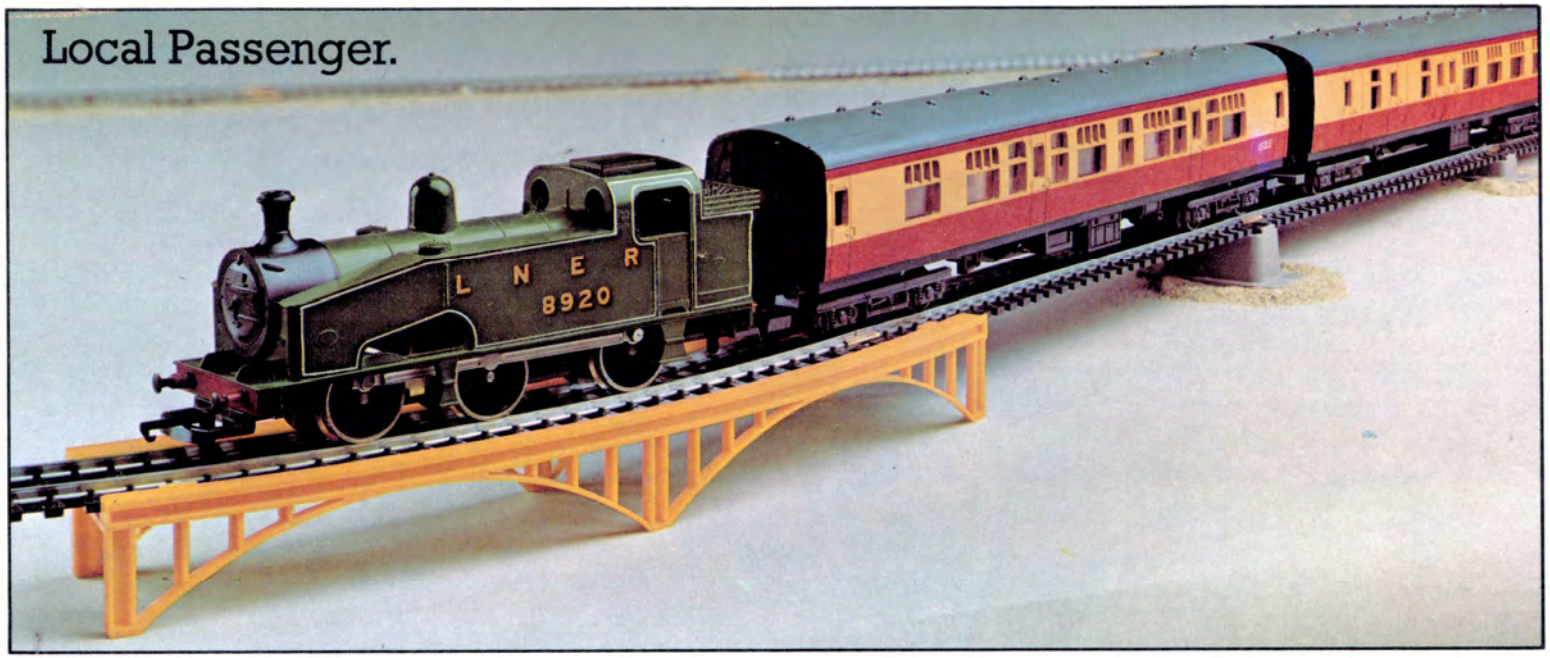
As you will see in the following pages, the vast majority of Lima rolling stock is strictly 'OO'. Apart from a few selected 'HO' items which are included because of their truly international significance.

Moreover, the Lima 'OO' range features the new 'British Standard Couplings' so Lima rolling stock can easily be added to all other leading makes of British designed model railway systems.

All models in the Lima 'OO' range feature the new 'British Standard Couplings'. So Lima rolling stock can easily be added to all other leading makes of British designed model railway systems.

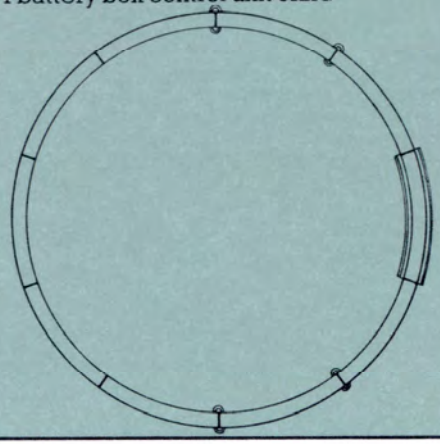


Local Passenger.

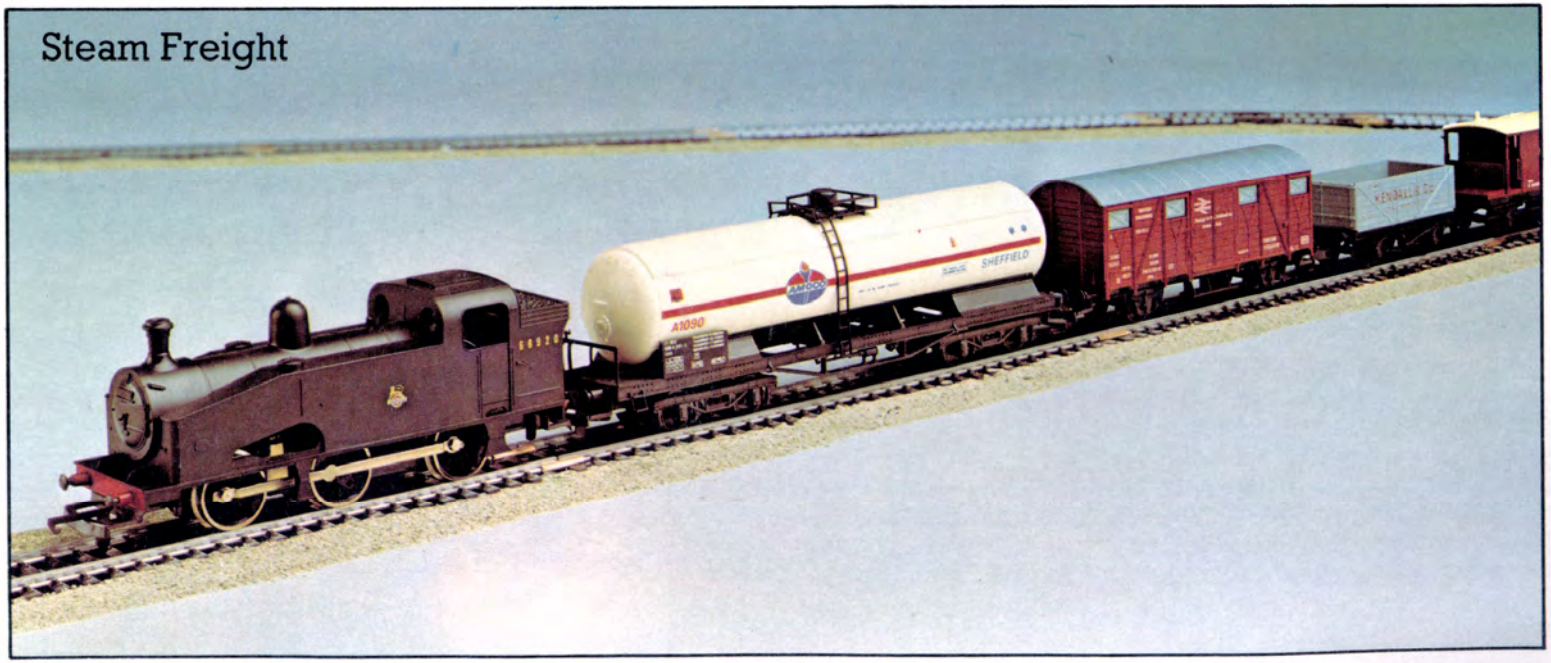


A typical example of a local passenger train of the early 1950's, this set teams up a J50 class locomotive with 2 BR Mark 1 coaches in crimson and cream.

Set No. 6008
Loco 5101M.
Coaches 5311, 5331.
Circle of track consisting of:
9 pieces curved track 3030,
1 piece power connecting rail 3030C.
1 Bridge 055,
1 battery box control unit 012A.

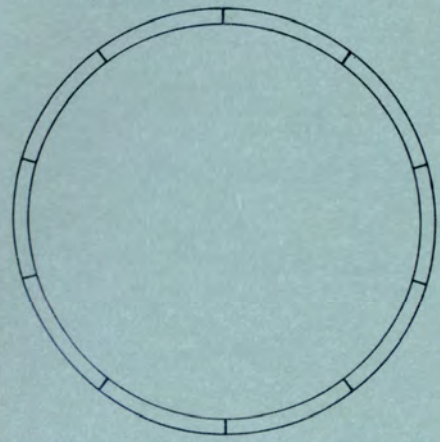


Steam Freight

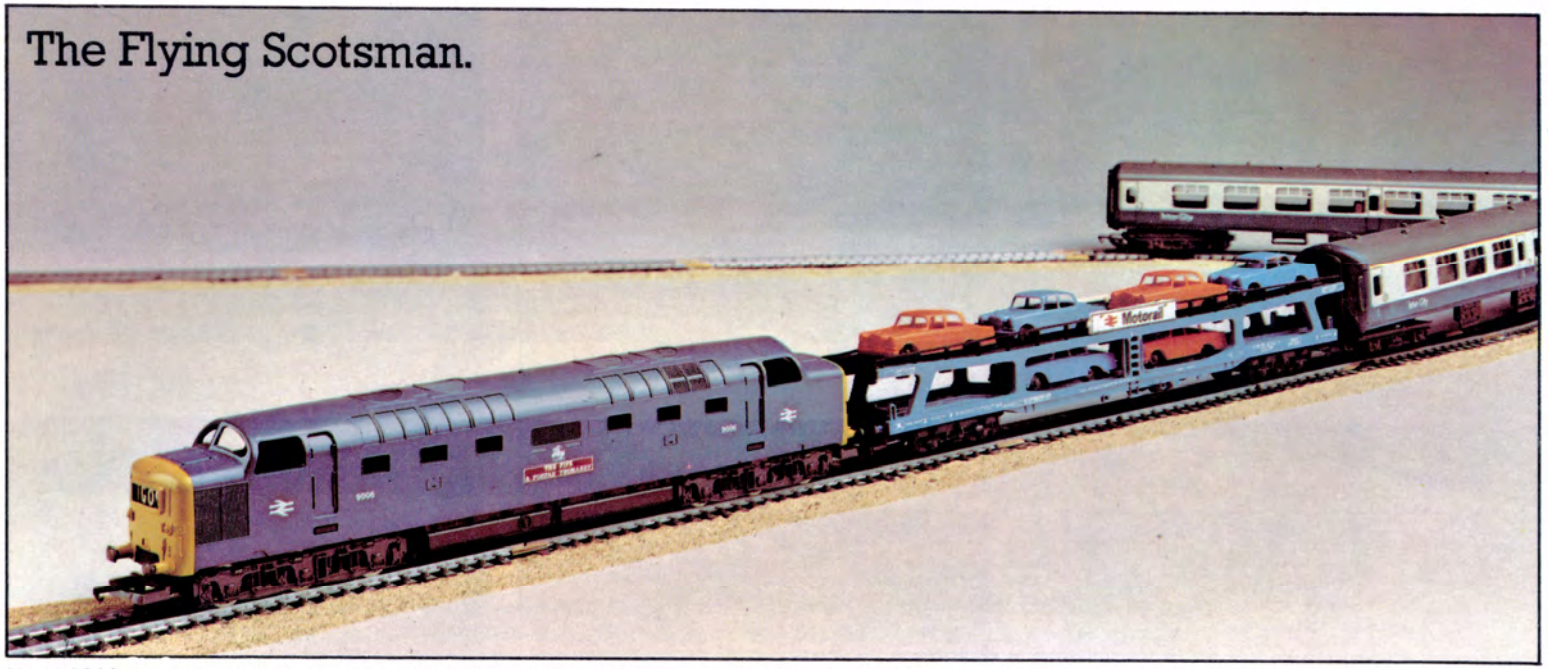


An exciting example of a mixed freight train, its steam tank locomotive is finished in the early B.R. Livery of the late 1950's.

Set No. 4509
Loco 5102M.
Wagons 3165, 2913, 5613, 5620.
Circle of track consisting of:
9 pieces curved track 3030,
1 piece power connecting rail 3030C.
1 battery box control unit 012A.

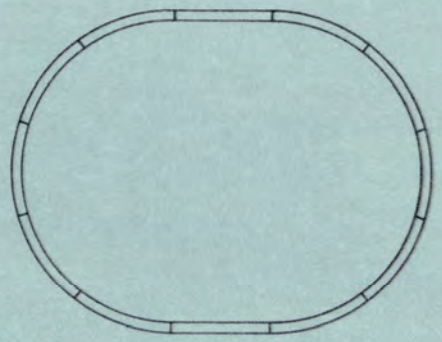


The Flying Scotsman.

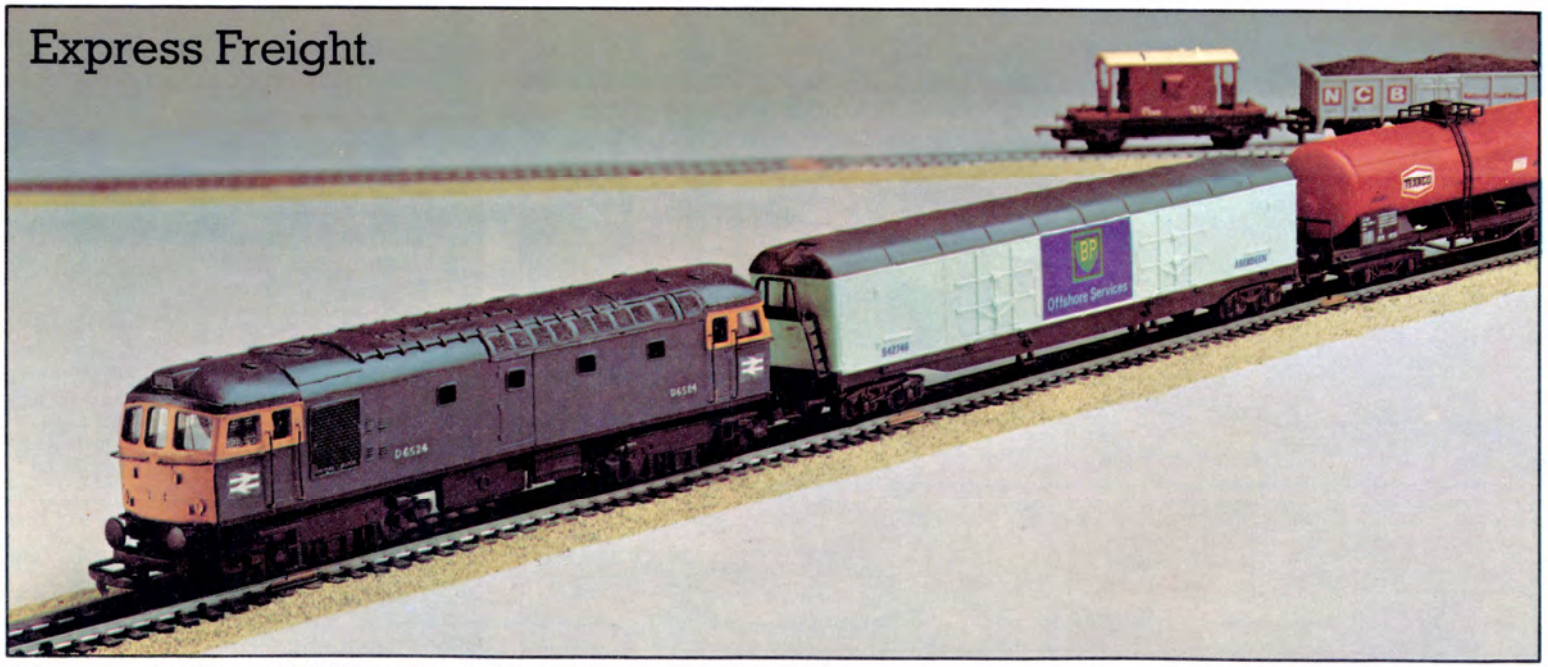


Since 1862 this famous train has run daily between Kings Cross and Edinburgh. The title was officially adopted in 1923, the train previously being known as the 'Special Scotch Express.' The Lima set features the powerful 'Deltic' 3300BHP diesel.

Set No. 6308
Loco 5106M.
Coaches 5302, 5303.
Car carrier 9053.
Oval track consisting of:
9 pieces curved track 3030,
1 piece power connecting rail 3030C,
2 pieces straight track 3020.
1 battery box control unit 012A.

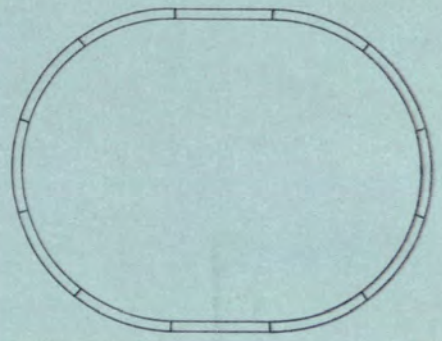


Express Freight.

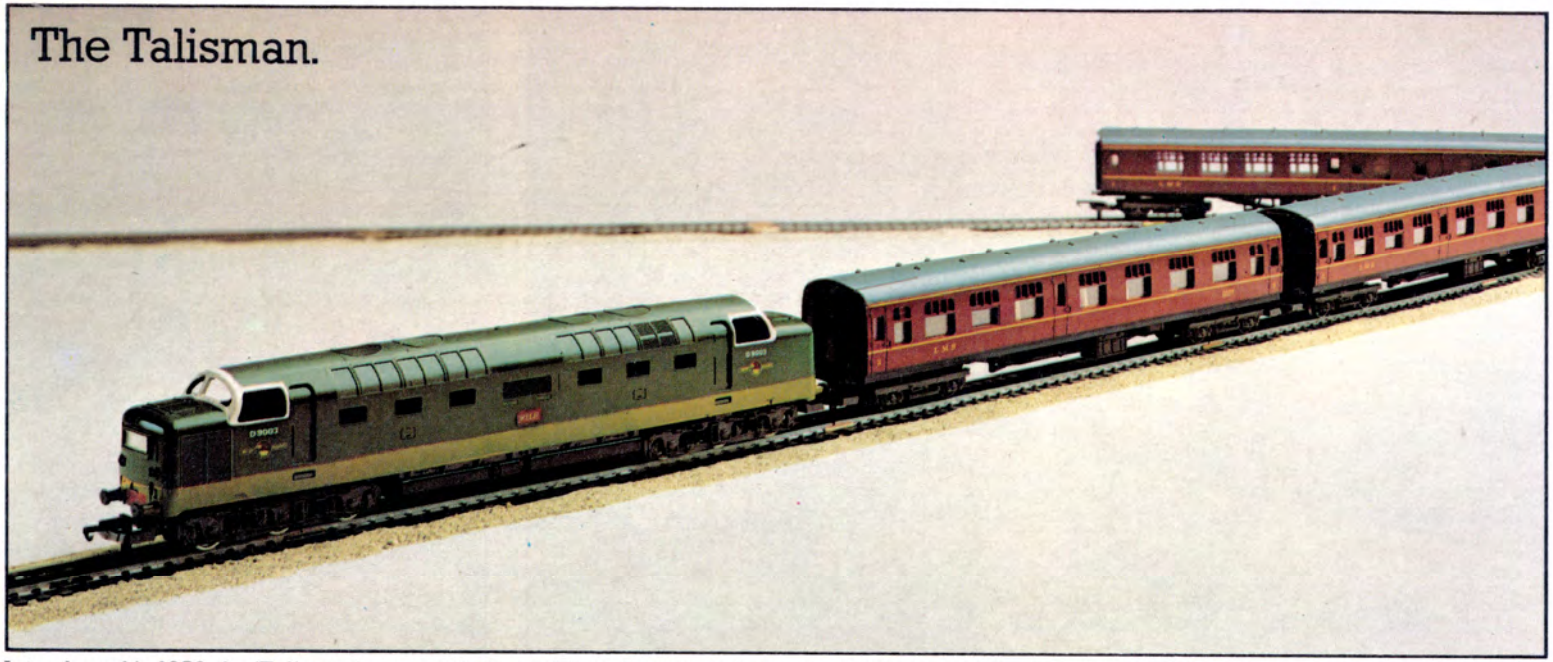


A fine example of the early 1960's express freight train.
With mixed goods wagons hauled by a BRCW Class 33 diesel/electric locomotive capable of 85 mph.

Set No. 6309
Loco 5115M.
Wagons 5620, 3173, 3199.
Tanker 2916.
Oval track consisting of:
9 pieces curved track 3030,
1 piece power connecting rail 3030C.
2 pieces straight track 3020.
1 battery box control unit 012A.

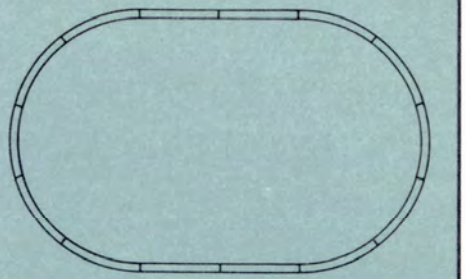


The Talisman.

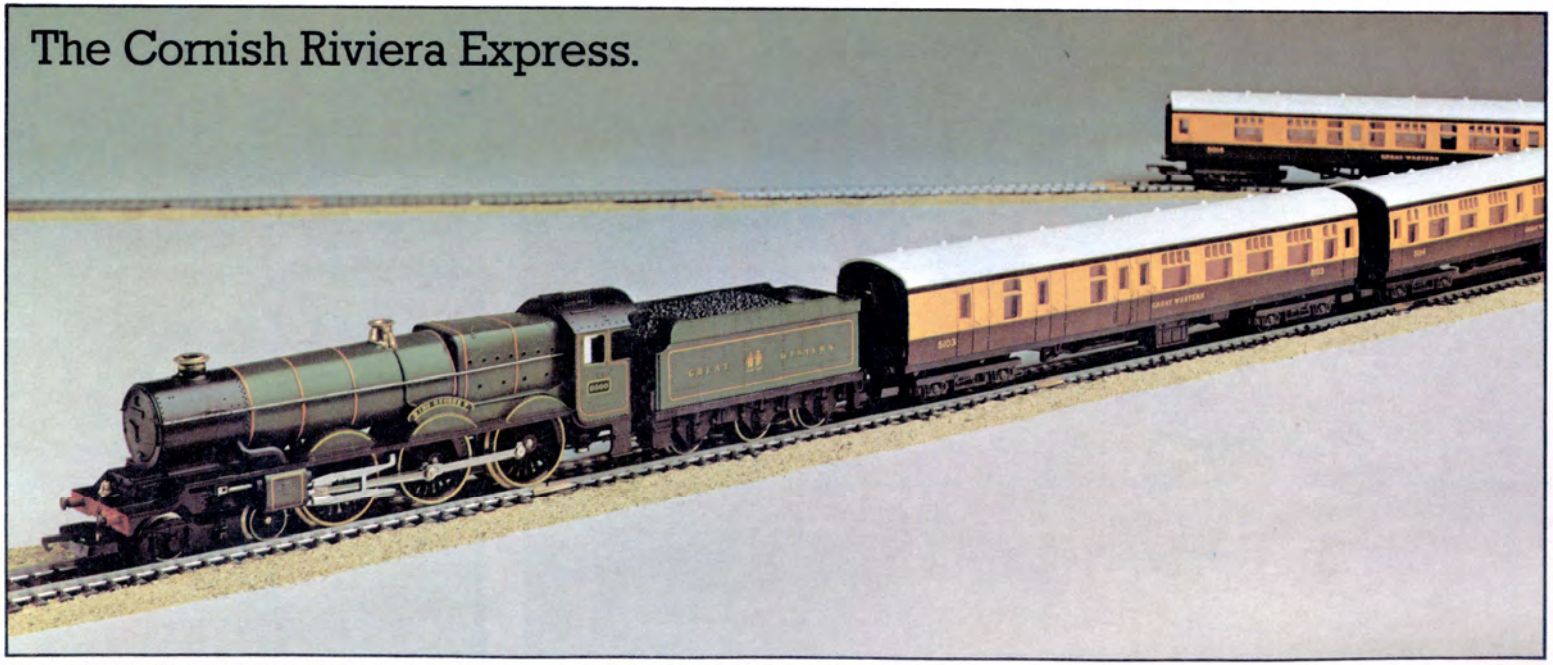


Introduced in 1956, the 'Talisman' averaged 60 mph Kings Cross to Edinburgh. In 1962 'Deltic' diesels were introduced, and in 1965 the route was extended to bring Glasgow within seven hours of London. The Lima 'Talisman' carries BR livery of 1962/3 period.

Set No. 2164
Loco 5105M.
2 coach 5312.
1 coach 5332.
Oval of track, consisting of:
9 pieces curved track 3030,
1 piece power connecting rail 3030C,
4 pieces straight track 3020,
1 battery box control unit 012A.

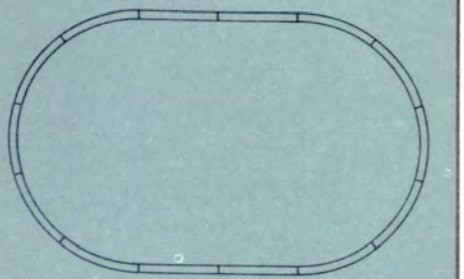


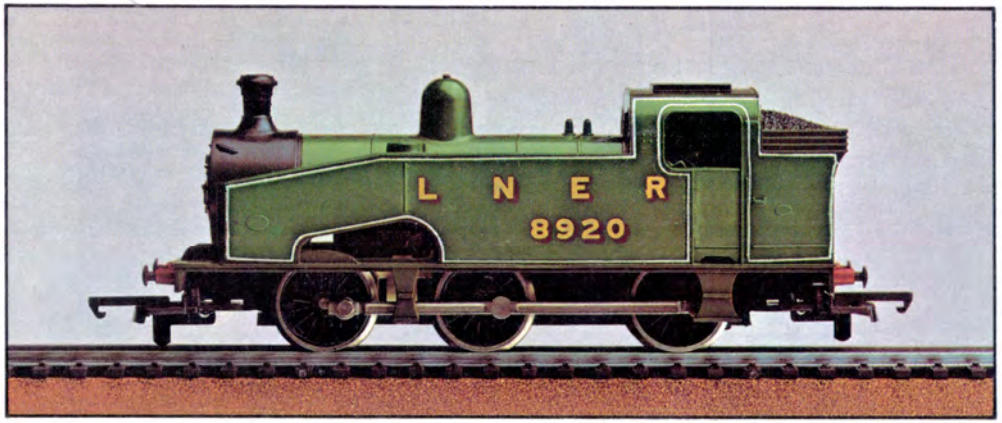
The Cornish Riviera Express.



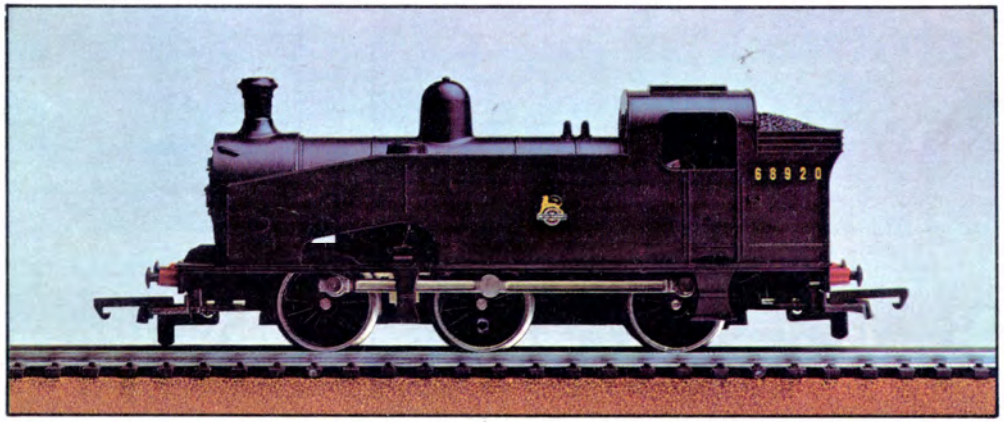
Probably the Great Western Railways' most famous train, 'The Cornish Riviera Express' was introduced in 1904. With the distinctive chocolate and cream coaches and powerful 'King' class 460 locomotives, as featured in the Lima set, entering service in the '20s.

Set No. 2162
Loco 5103M.
2 coaches 5333.
1 coach 5313.
Oval of track , consisting of:
9 pieces curved track 3030,
1 piece power connecting rail 3030C,
4 pieces straight track 3020,
1 battery box control unit 012A.

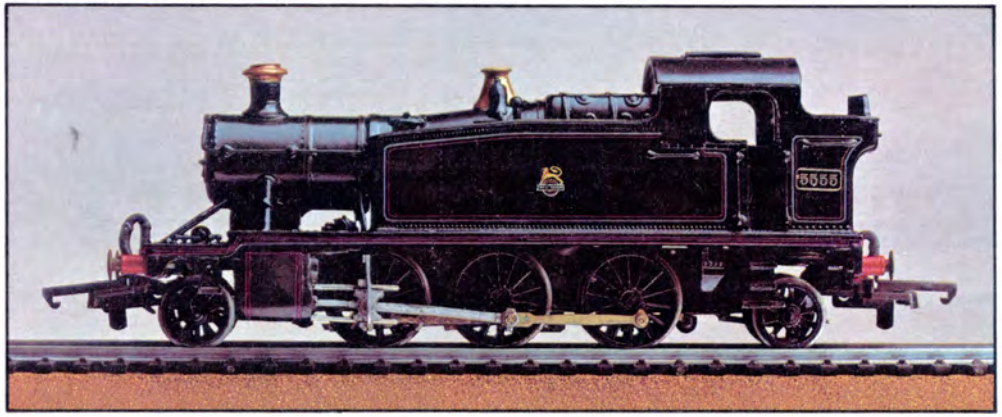




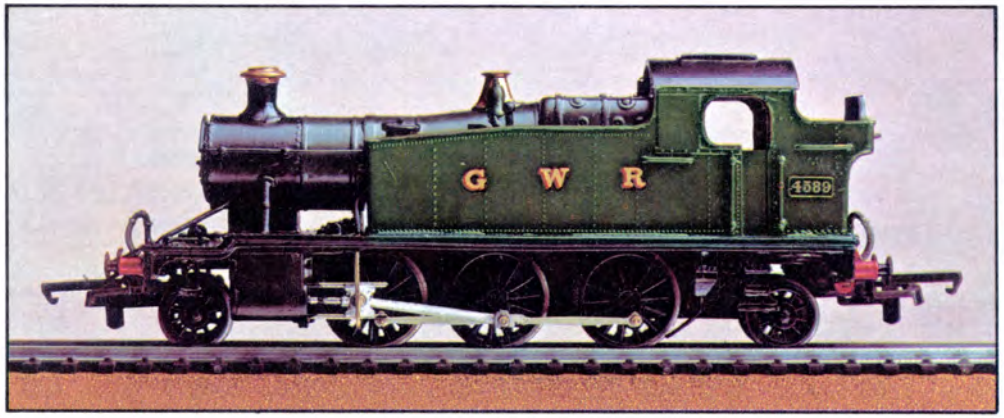
5101M 0-6-0T Class J50 Tank Locomotive. LNER livery.



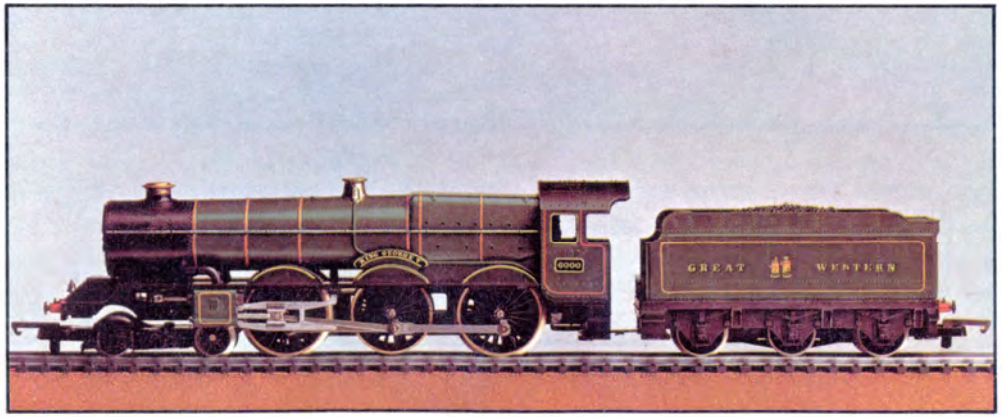
5102M 0-6-0T Class J50 Tank Locomotive. BR livery.



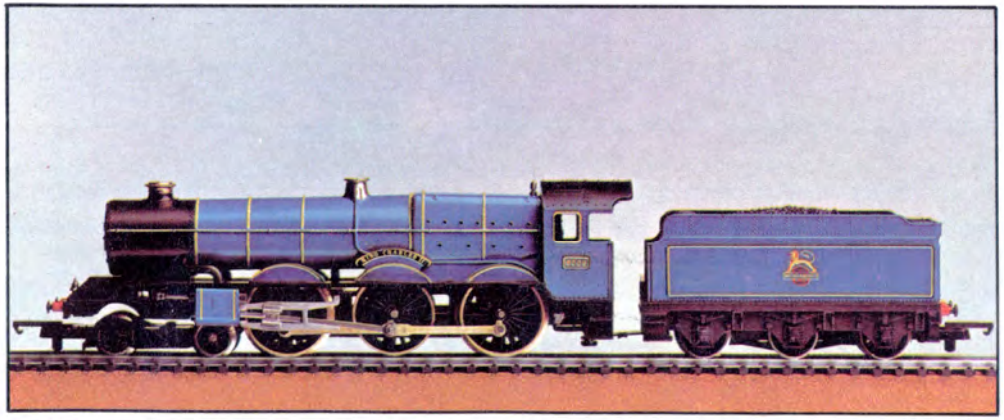
5110M 2-6-2T Class 45XX Prairie Tank Loco. BR livery.



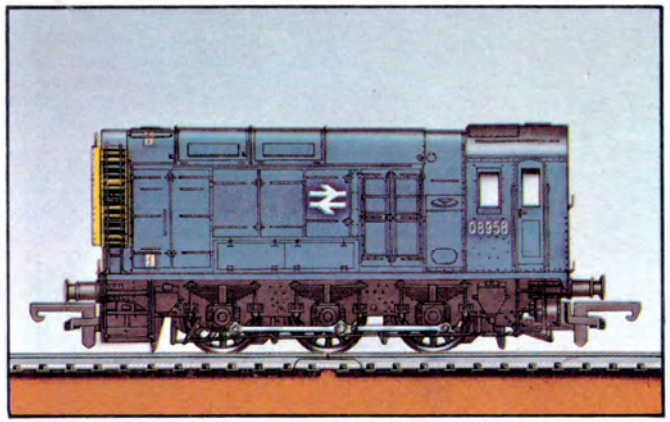
5111M 2-6-2T Class 45XX GWR Prairie Tank Locomotive.



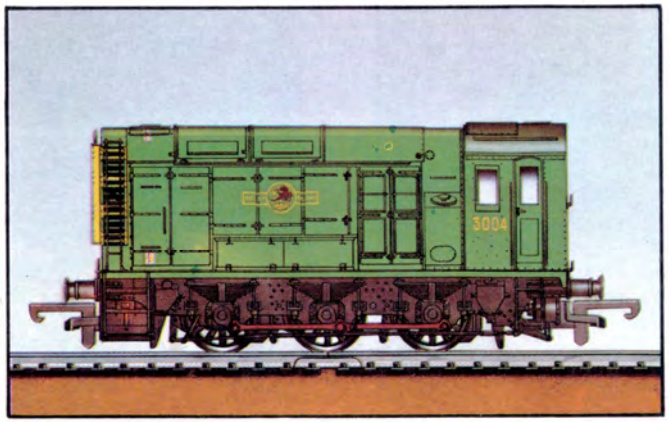
5103M 4-6-0 'King' Class Express Locomotive. GWR livery.



5104M 4-6-0 'King' Class Express Locomotive. BR livery.



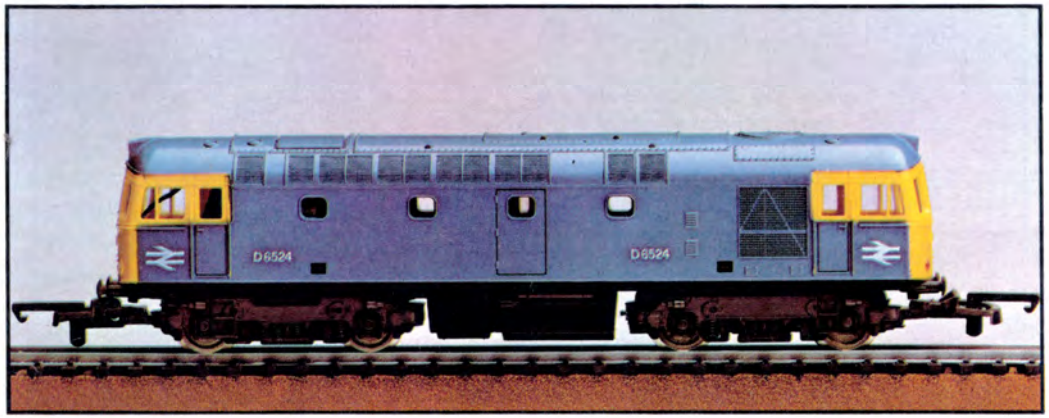
5107M 0-6-0 350BHP Diesel Shunter. BR livery.



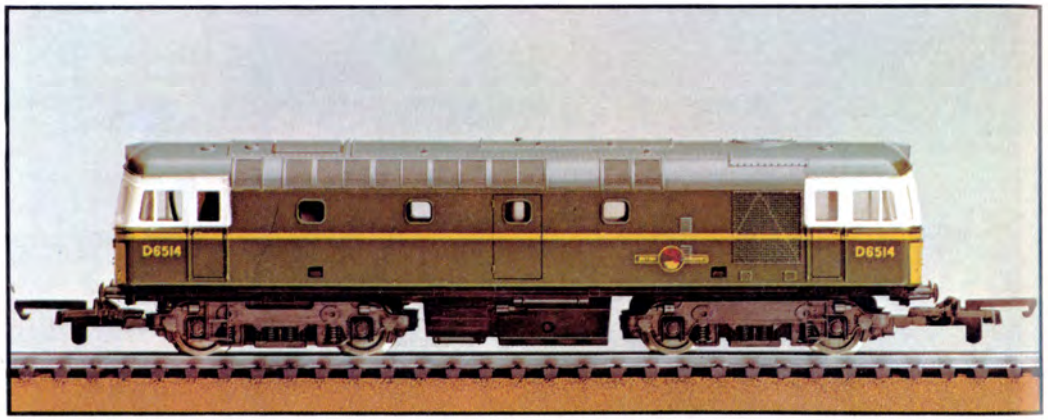
5108M 0-6-0 350BHP Diesel Shunter. Early BR livery.



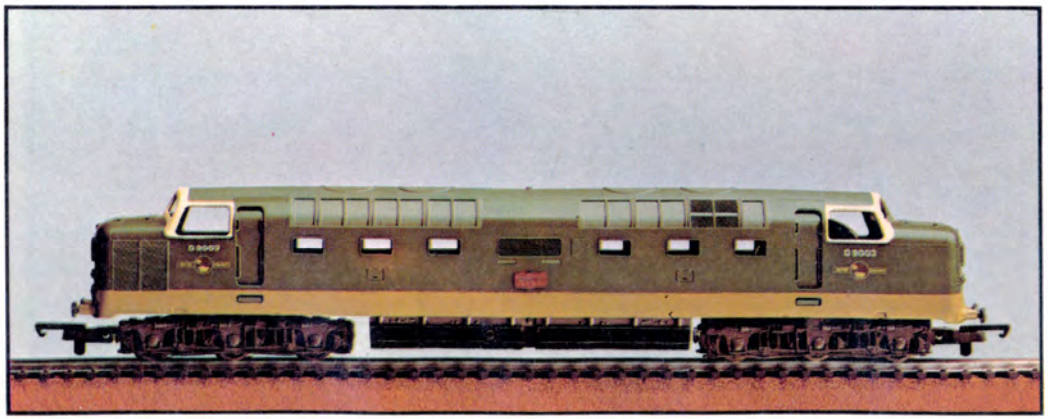
5109M 0-6-0 350BHP Diesel Shunter. LMS livery.



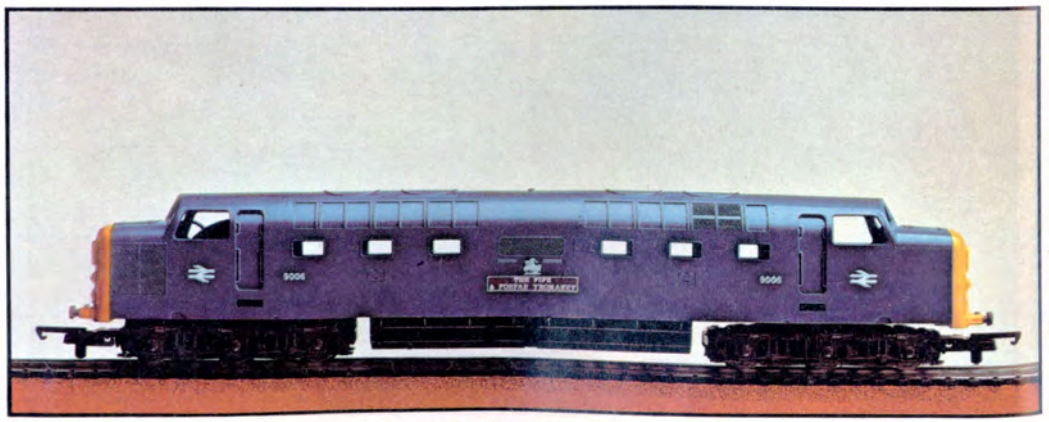
5114M BR Class 33 Bo-Bo Diesel Locomotive.



5115M BR Class 33 Bo-Bo Diesel Locomotive. Early BR livery.



5105M BR Class 55 'Deltic' Co-Co Diesel Loco. Early BR livery.



5106M BR Class 55 'Deltic' Co-Co Diesel Locomotive.

A short history of British railway liveries.

Prior to the First World War, Britain boasted some fifty major independent railway companies, plus many more smaller light railways.

But by the end of the war, most of these companies were both short of staff and in a poor way financially. A decision was made that they should merge, and 1921 saw the foundation of the four great companies:

The London, Midland and Scottish Railway (LMS) who used a rich maroon livery.

The Great Western Railway (GWR) with their distinctive chocolate and cream colours.

The London and North Eastern Railway (LNER) whose coaches were finished in varnished teak.

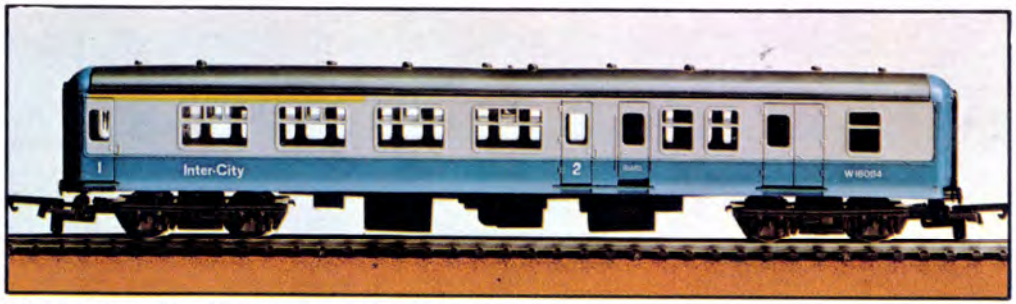
The Southern Railway (SR), resplendent in dark green.

With the Nationalisation of these independents in 1948, these beautiful liveries were replaced by the first British Railways colour scheme of crimson and cream (popularly referred to as Blood and Custard!)

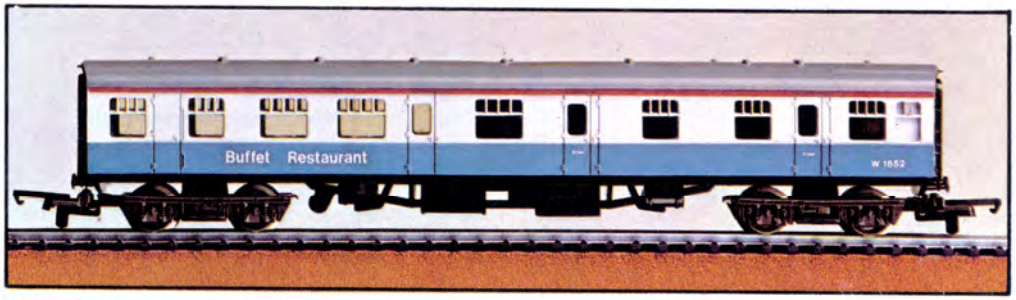
In 1954 BR had a change of heart and returned to certain regional colours and liveries, i.e. Southern in green (a colour that was later copied by the Southern Railway System of America) and the named trains on the Western Region in the famous chocolate and cream.

The current blue/grey livery was introduced for all regions in the middle-sixties and was swiftly adopted by all regions. Certain items of rolling stock can still be seen bearing the old colours on Preservation Society lines.

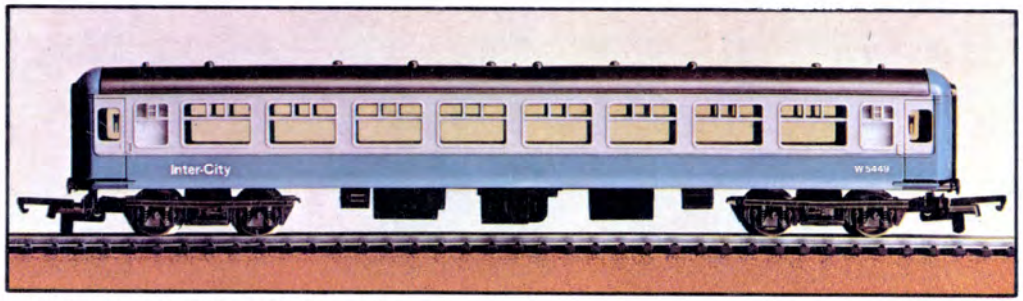
Happily, the modeller can still reproduce trains in the exciting colours of yesteryear, by drawing on the vast range of Lima rolling stock available in different liveries.



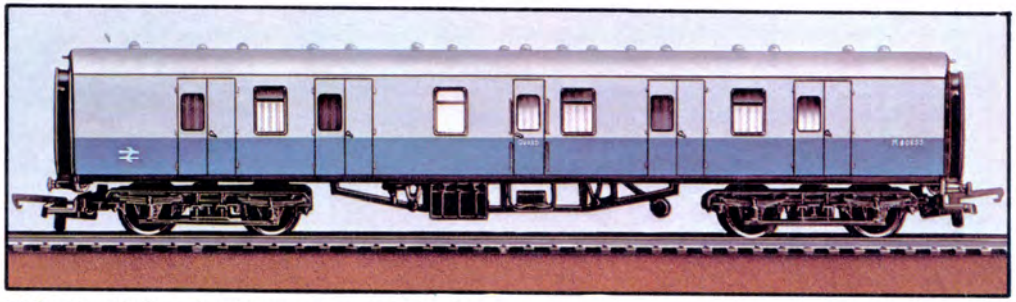
5303 BR Mark 2B Inter-City Corridor Brake Coach.



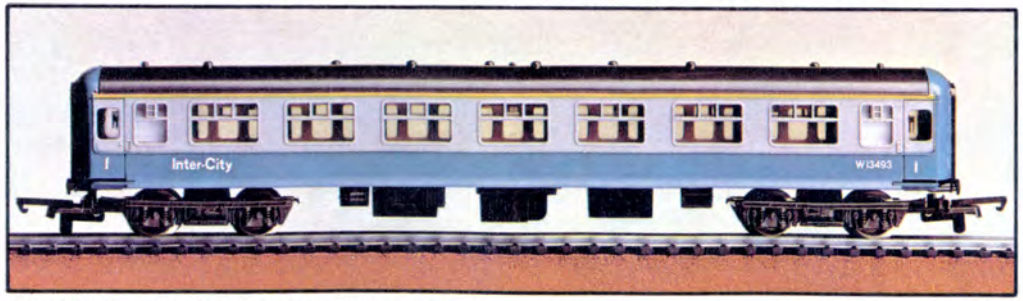
5321 BR Mark 1 Restaurant/Buffet Car.



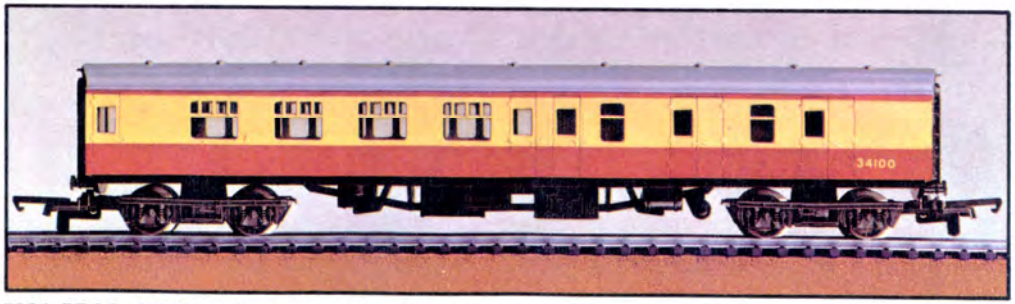
5302 BR Mark 2B Inter-City Open Coach.



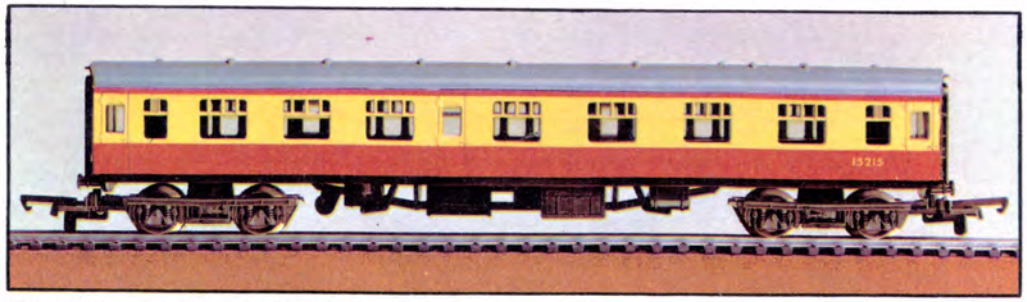
5343 BR 58ft Standard Gangwayed Brake Van.



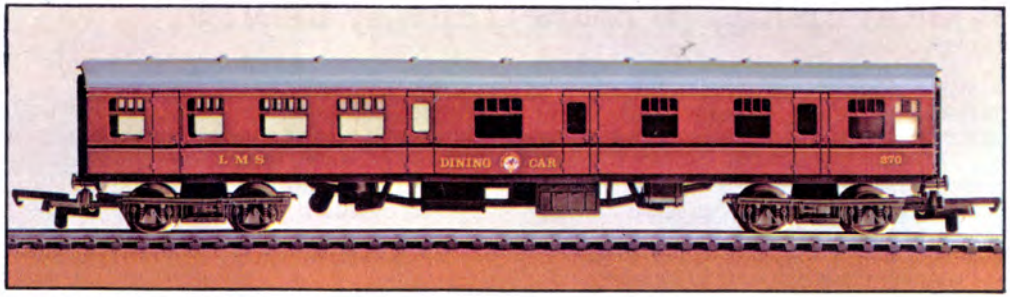
5301 BR Mark 2B Inter-City First Class Corridor Coach



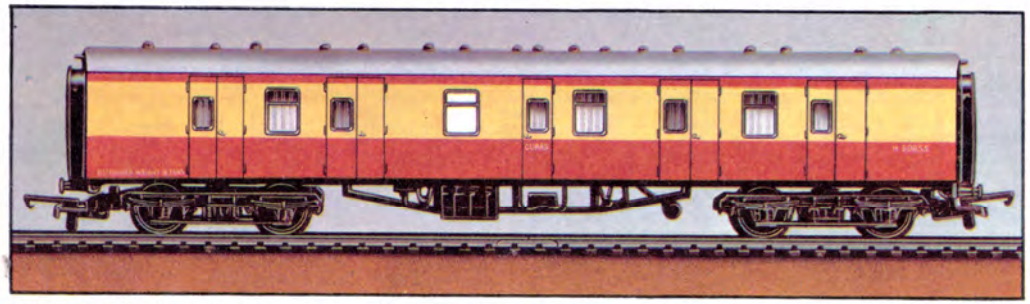
5331 BR Mark 1 Corridor Composite Coach.



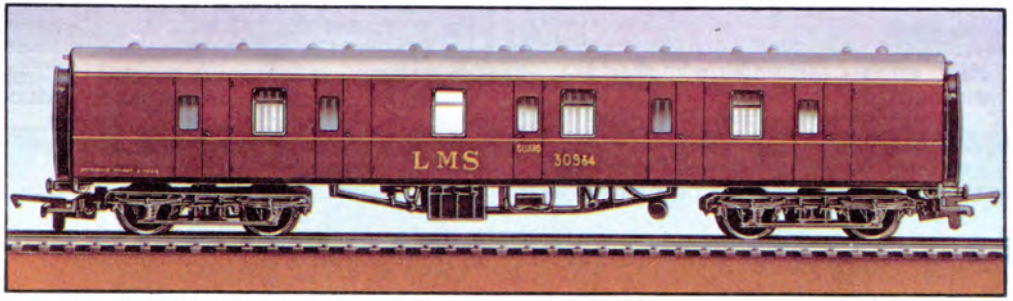
5311 BR Mark 1 Corridor Brake Coach.



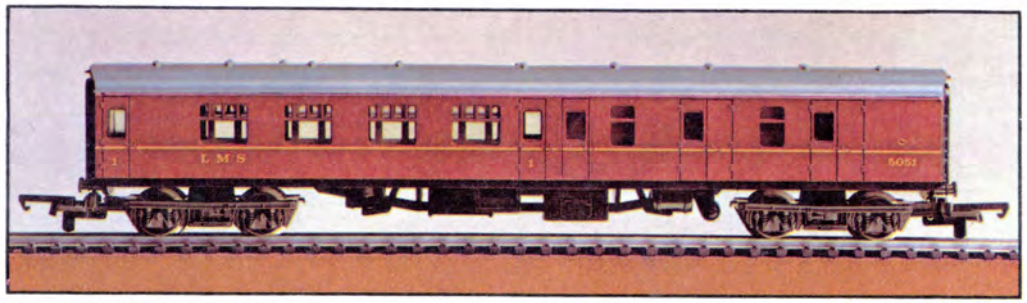
5323 LMS Mark 1 Restaurant Car.



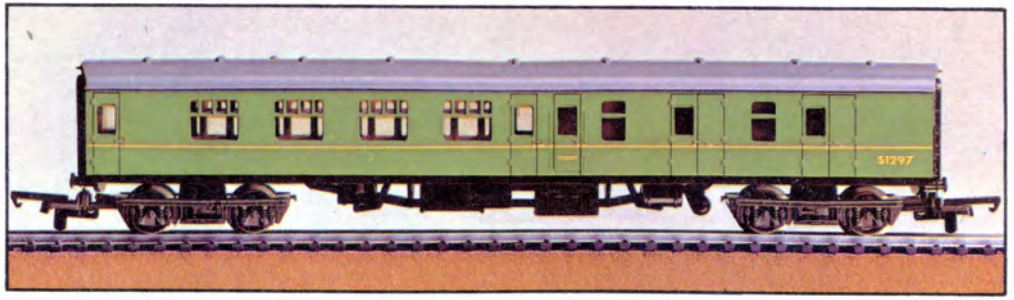
5344 BR 58ft Standard Gangwayed Brake Van.



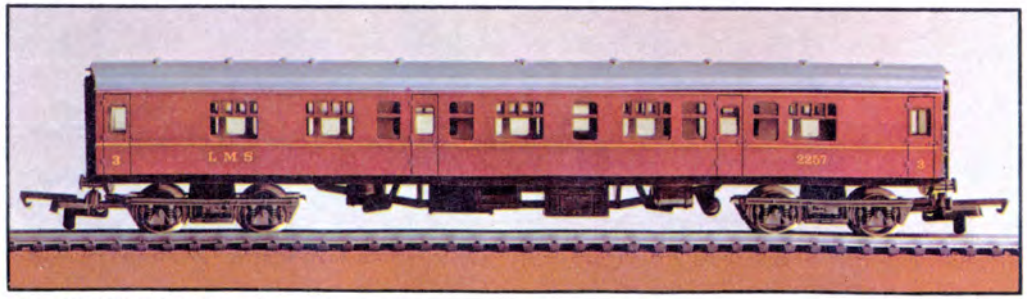
5342 LMS 58ft Standard Gangwayed Brake Van.



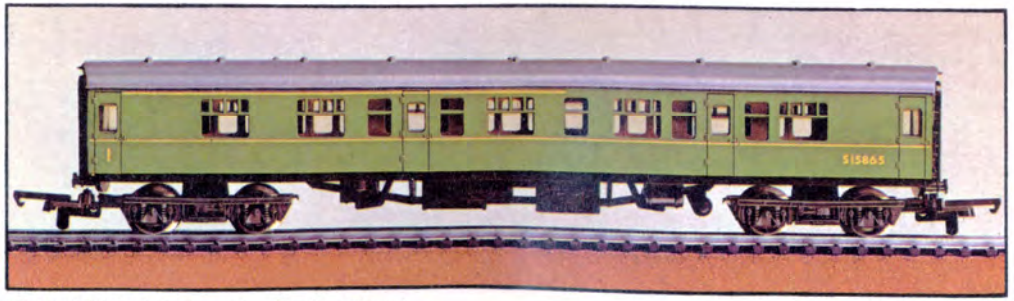
5332 LMS Mark 1 Corridor Composite Coach.



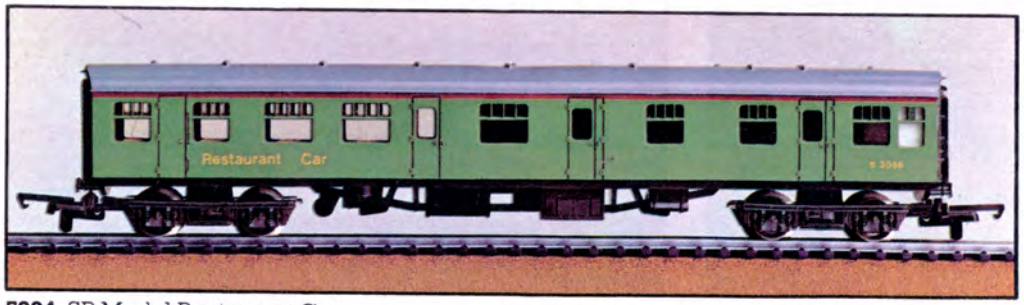
5334 SR Mark 1 Corridor Composite Coach.



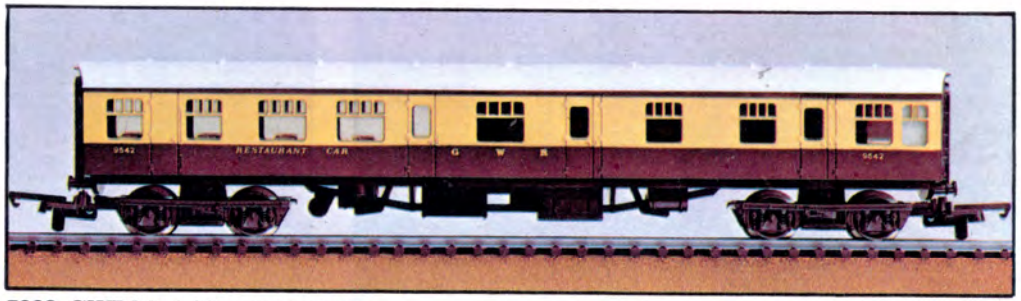
5312 LMS Mark 1 Corridor Brake Coach.



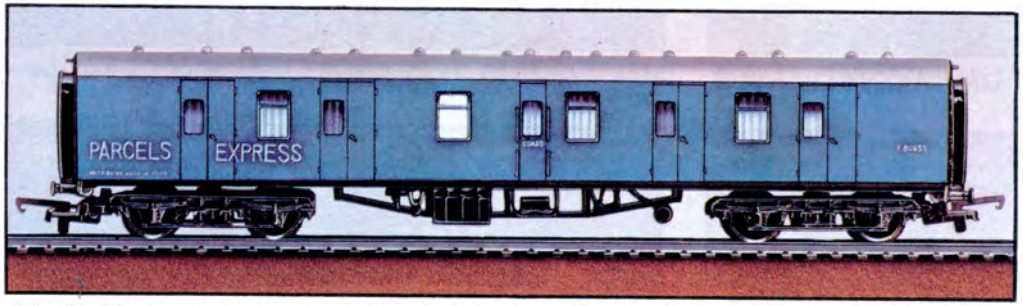
5314 SR Mark 1 Corridor Brake Coach.



5324 SR Mark 1 Restaurant Car.



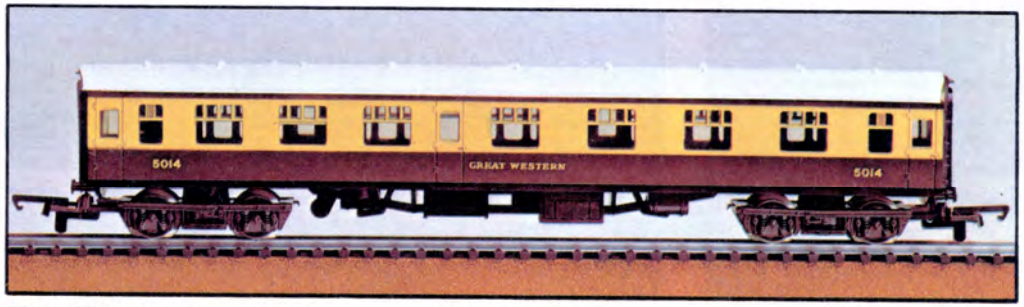
5322 GWR Mark 1 Restaurant Car.



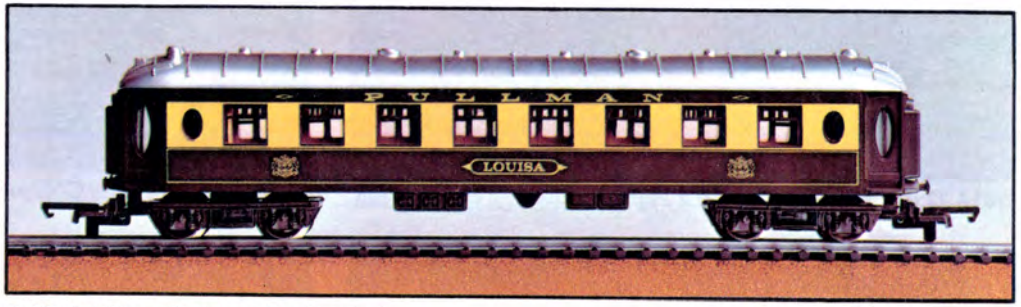
5341 BR 58ft Standard Gangwayed Brake Van 'Parcel Express'.



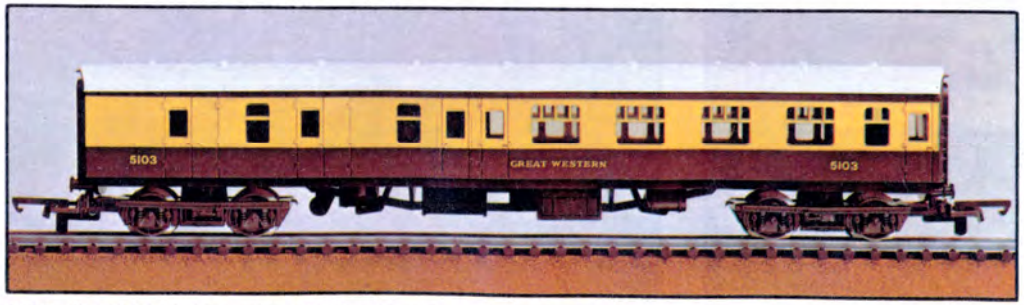
5345 GWR 58ft Standard Gangwayed Brake Van.



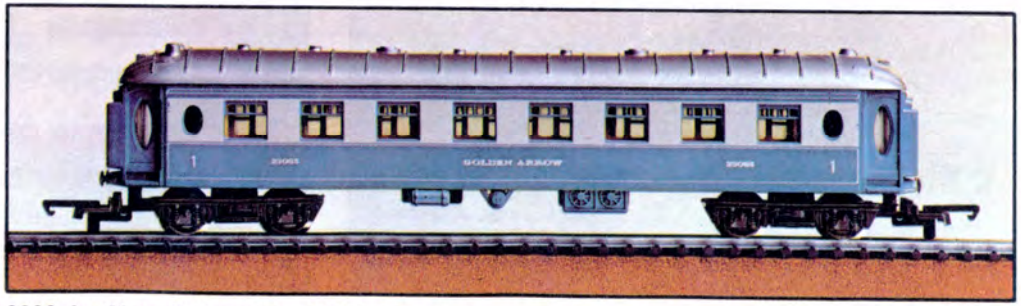
5313 GWR Mark 1 Corridor Composite Coach.



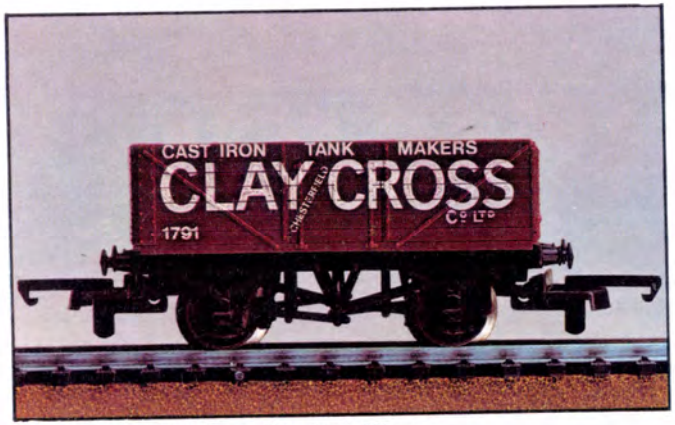
9199 1st Class Pullman Car 'Louisa'.



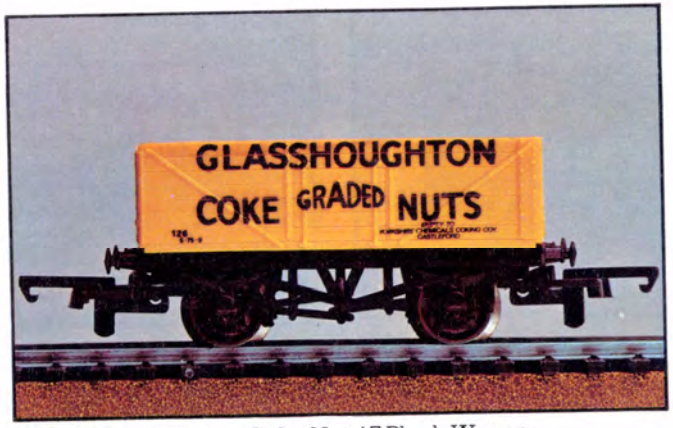
5333 GWR Mark 1 Corridor Brake Coach.



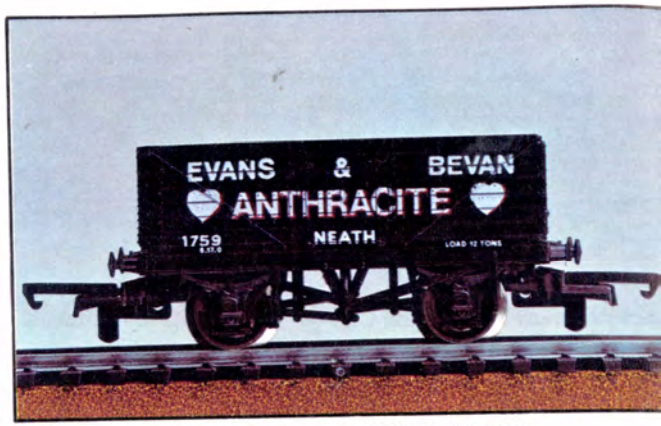
9200 1st Class Pullman Car 'Golden Arrow'.



5611 'Clay Cross Co Ltd' 7 Plank Wagon.



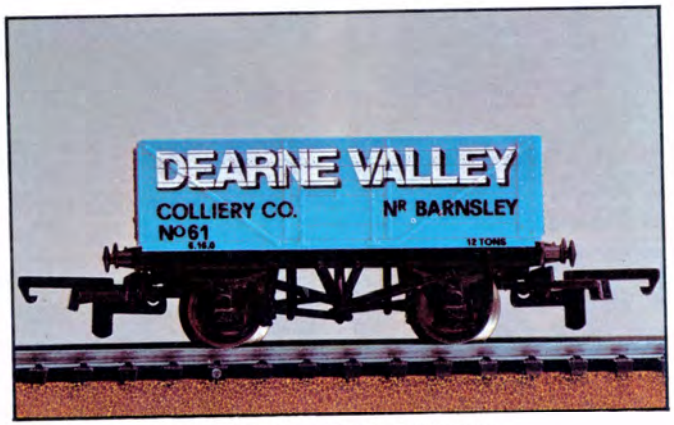
5612 'Glasshoughton Coke Nuts' 7 Plank Wagon.



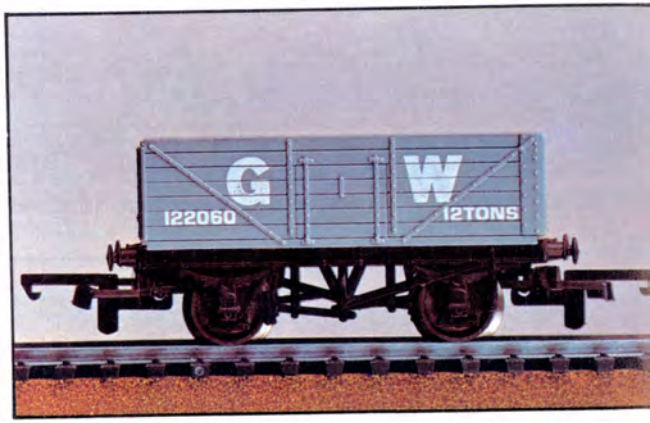
5613 'Evans & Bevan Anthracite' 7 Plank Wagon.



5614 'Oxford District Gas Co' 7 Plank Wagon.



5615 'Dearne Valley Colliery' 7 Plank Wagon.



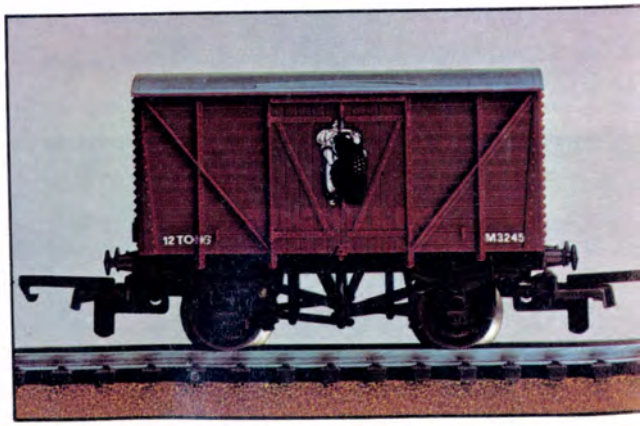
5616 GWR 7 Plank Wagon.



5601 'Typhoo Tea' 20 Ton Box Van.



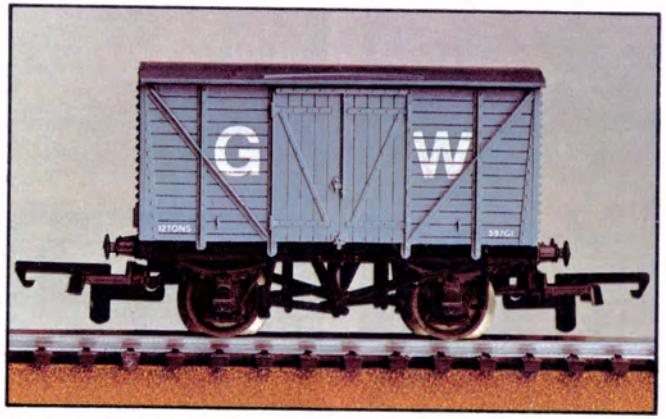
5602 'Homepride Flour' 20 Ton Box Van.



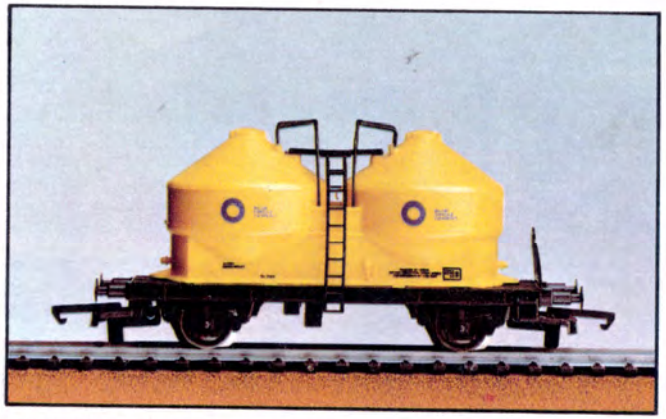
5603 'Michelin Tyres' 20 Ton Box Van.



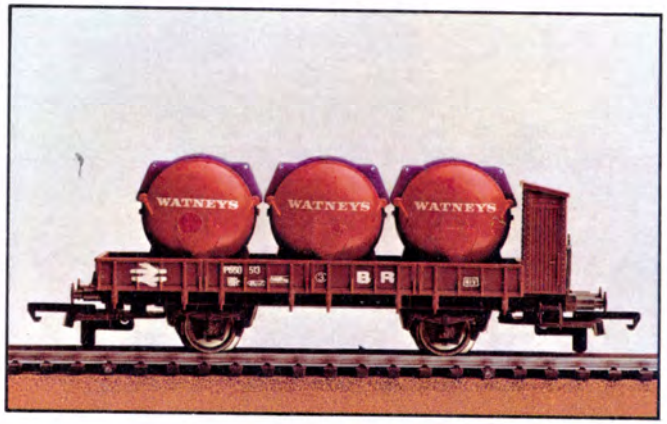
5604 'St Ivel Dairy Products' 20 Ton Box Van.



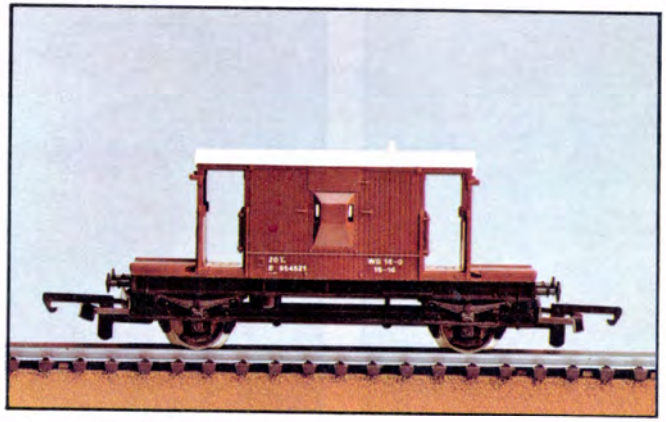
5605 GWR 20 Ton Box Van.



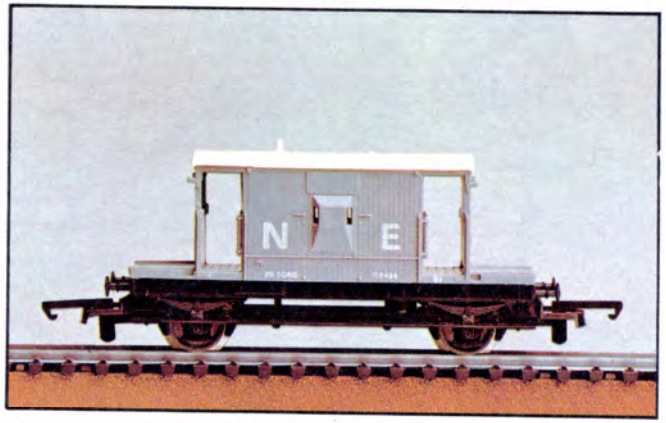
2805 'Blue Circle' Twin Tank Cement Wagon.



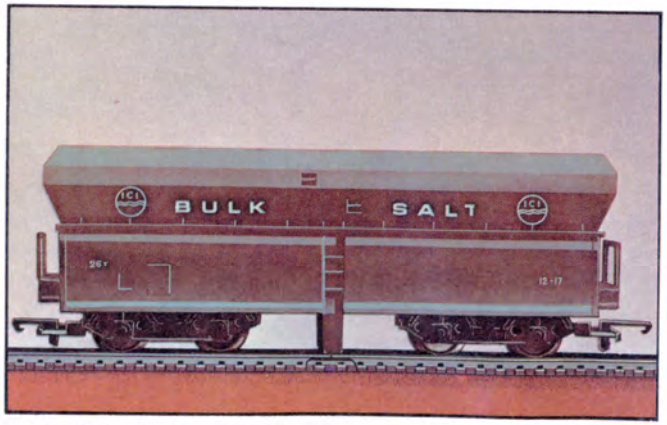
2822 'Watneys' Triple Cask Beer Wagon.



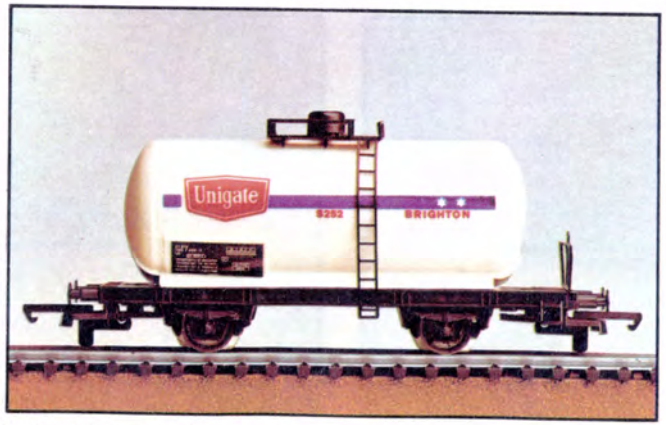
5620 BR 20 Ton Brake Van.



5621 LNER 20 Ton Brake Van.



2892 'ICI Salt' Hopper Wagon.



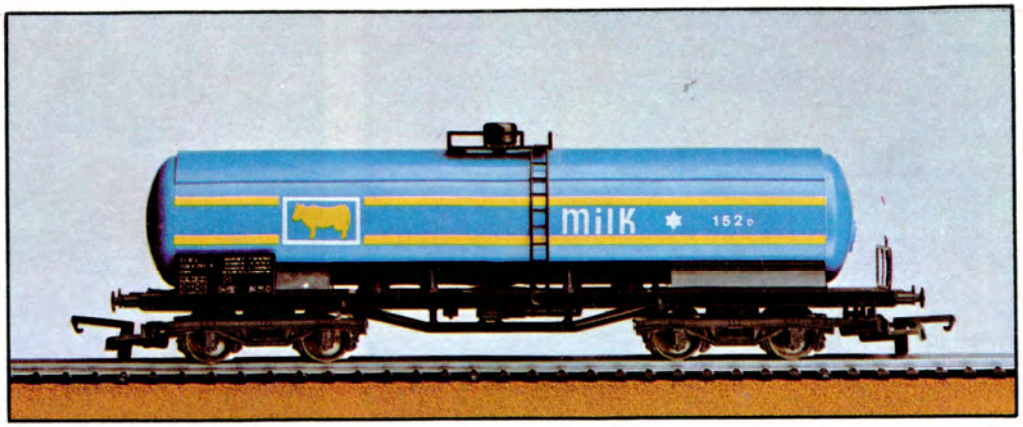
2721 'Unigate' Milk Tank Wagon.



2720 'ICI' Chemical Tank Wagon.



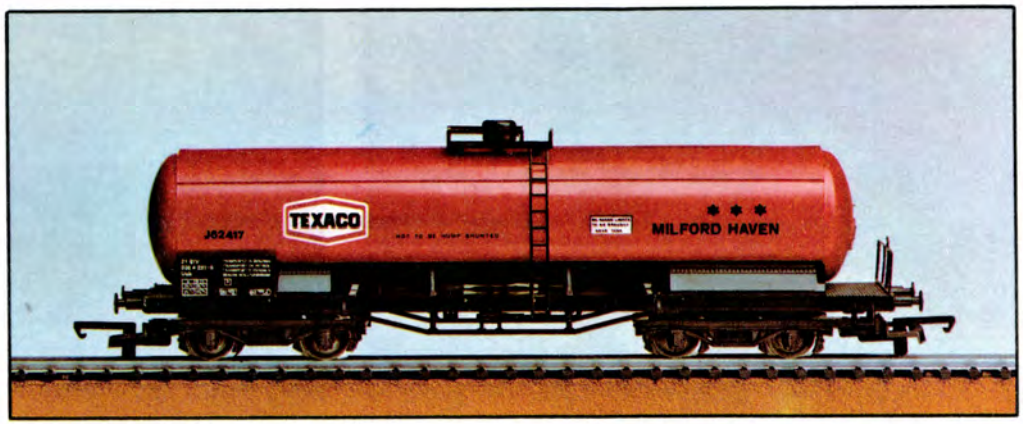
2904 'Shell Gas' Bogie Tank Wagon.



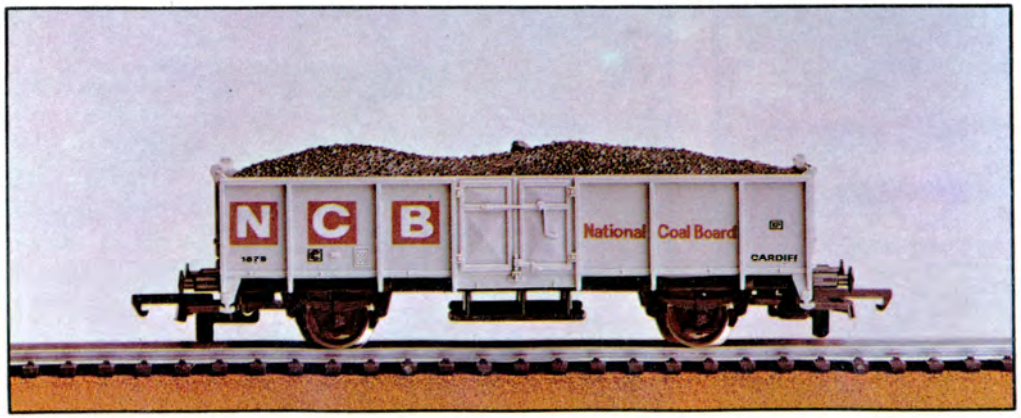
2911 'Milk' Bogie Tank Wagon.



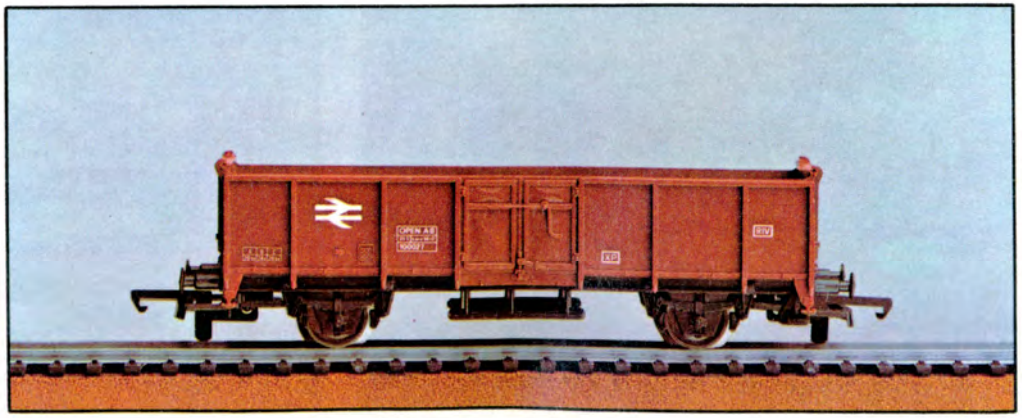
2913 'Amoco' Bogie Tank Wagon.



2916 'Texaco' Bogie Tank Wagon.



3173 'National Coal Board' Mineral Wagon.



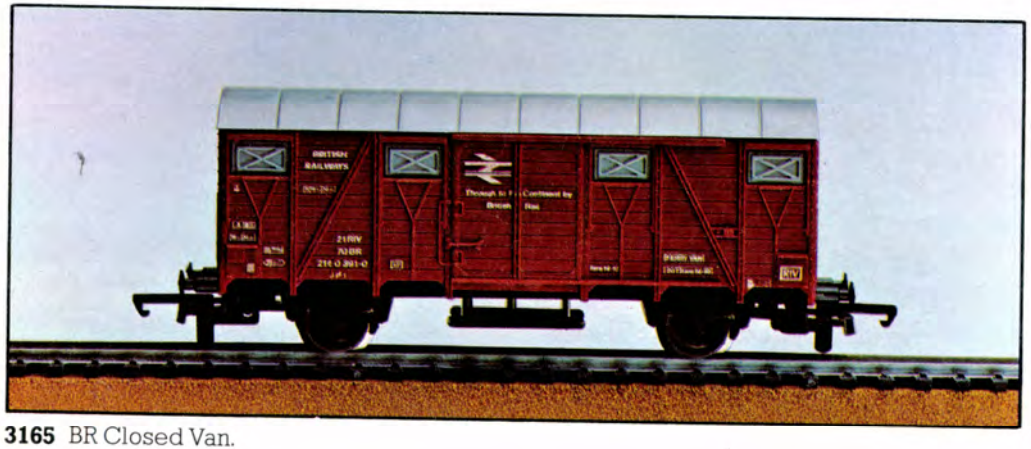
3175 BR Long Wheelbase Mineral Wagon.



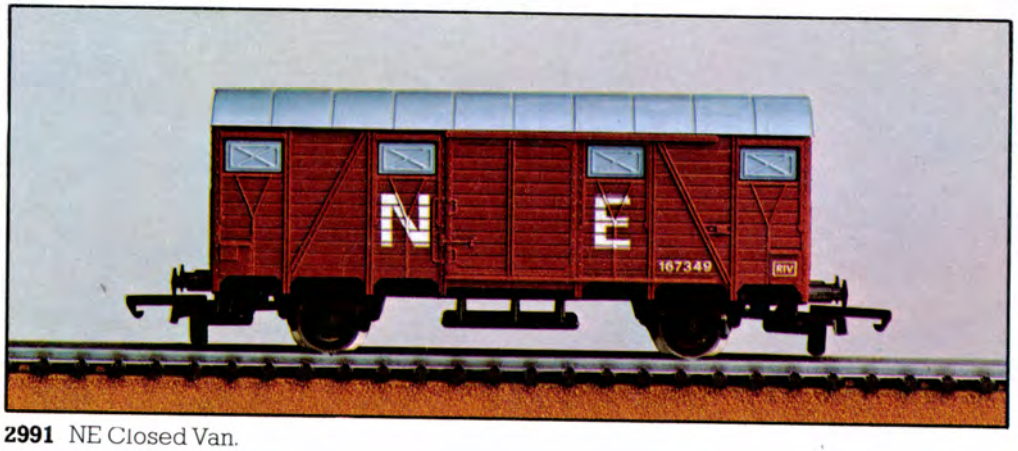
3118 'Schweppes' Refrigerator Van.



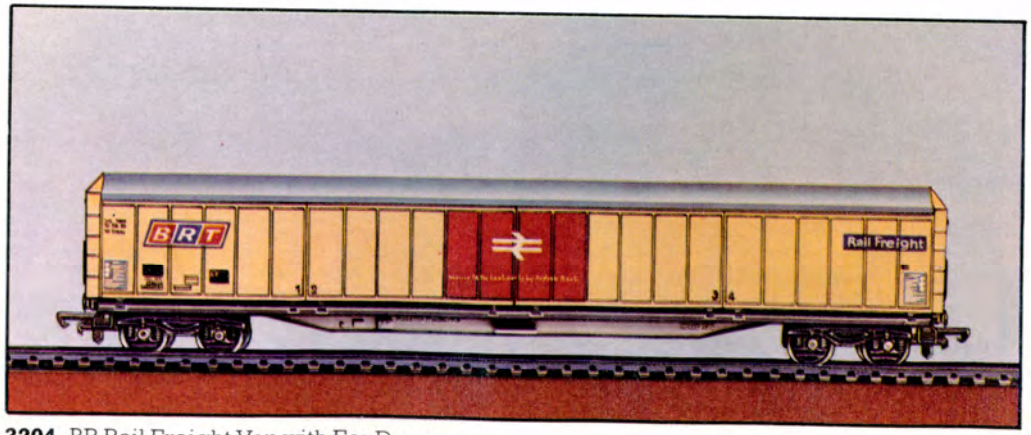
3155 East Anglian Meat' Closed Van.



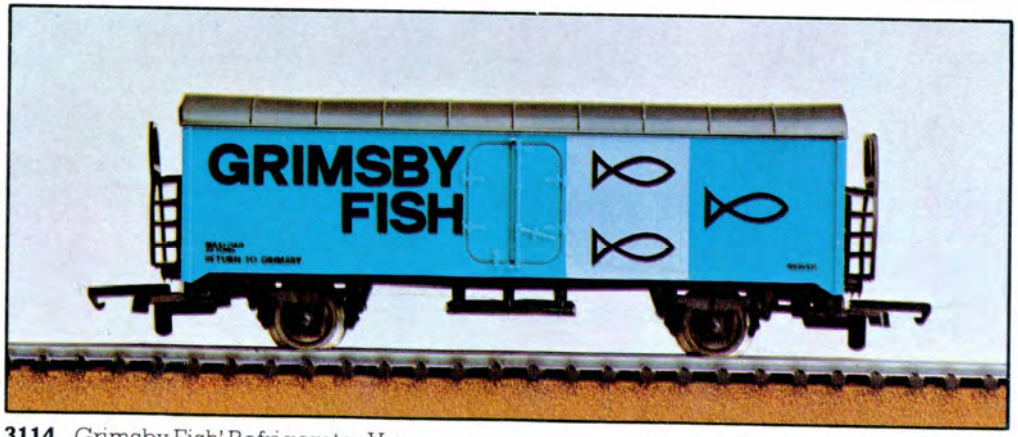
3165 BR Closed Van.



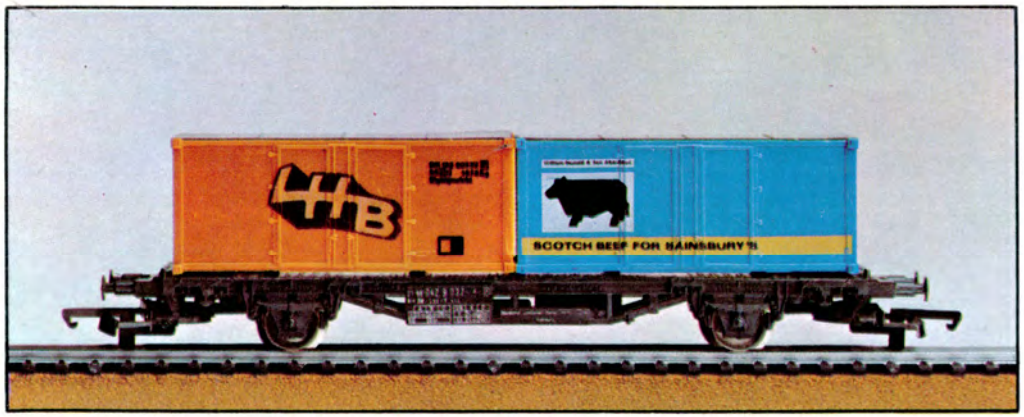
2991 NE Closed Van.



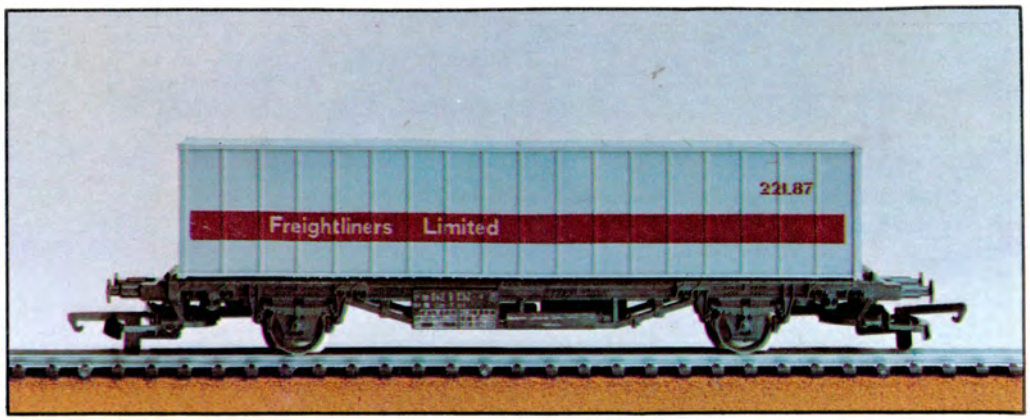
3204 BR Rail Freight Van with For Doors.



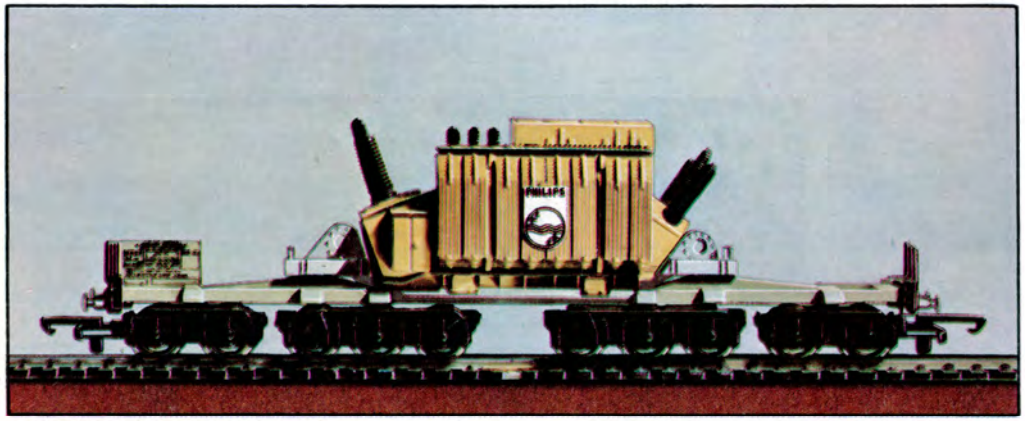
3114 Grimsby Fish' Refrigerator Van.



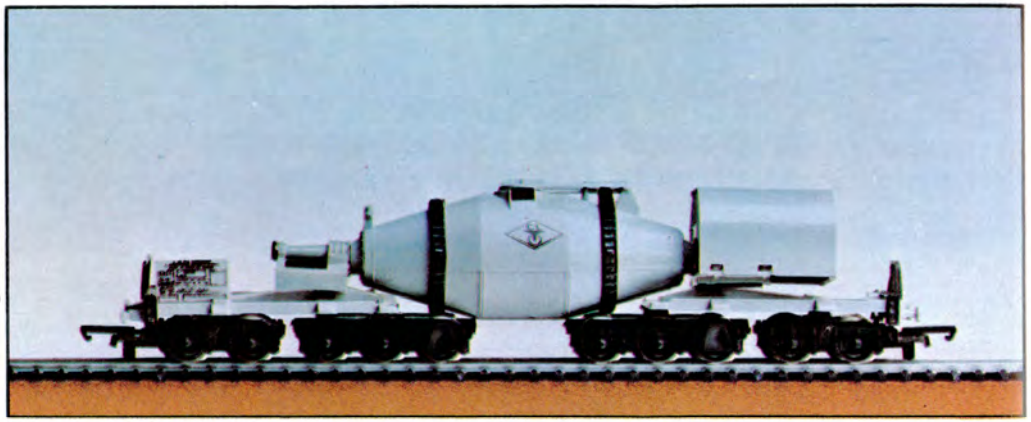
2852 'Scotch Beef' Container Wagon.



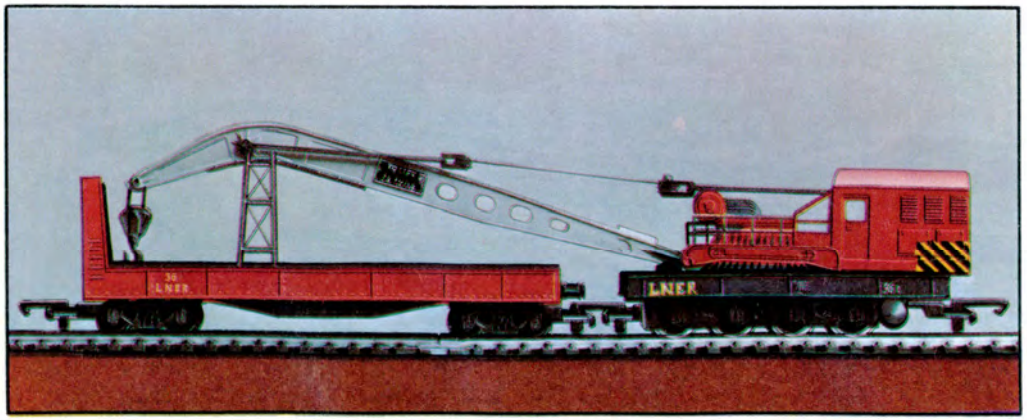
2871 'Freightliners Ltd' Container Wagon.



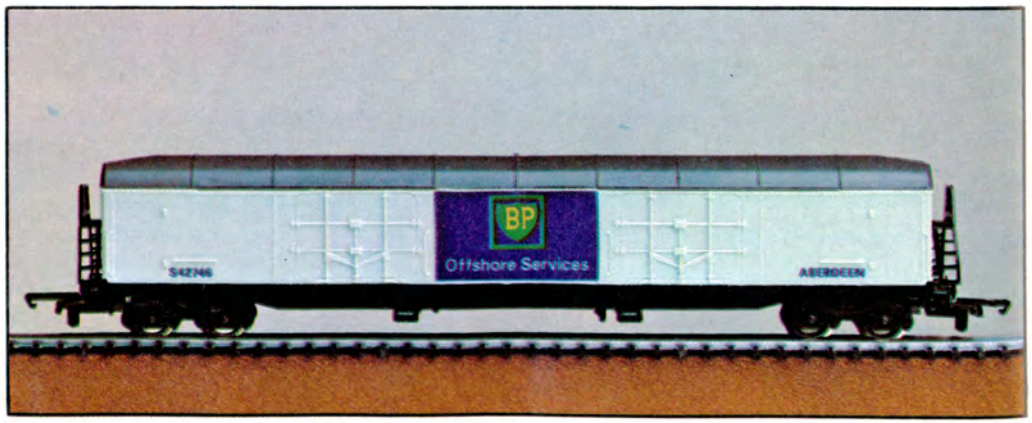
9056 Multiple Wagon with Transformer Load.



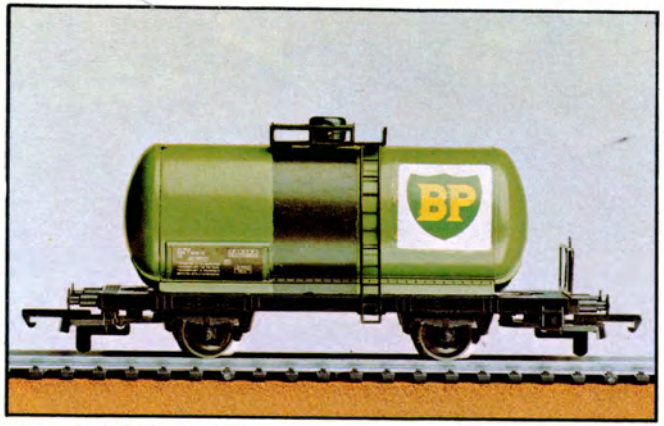
9052 'Calf' Foundry Wagon.



9059 LNER 35 Ton Breakdown Crane Wagon.



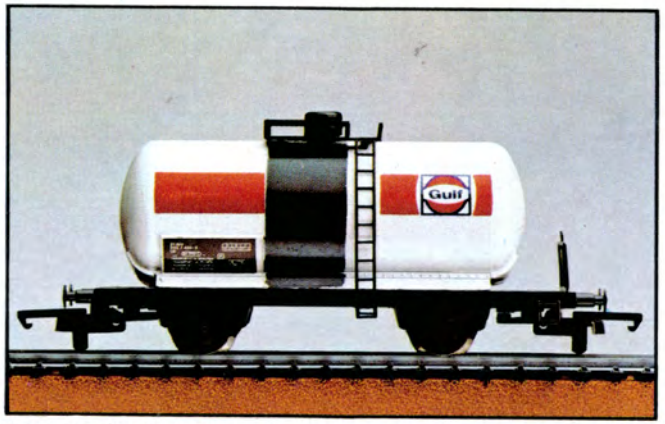
3199 'BP Offshore Services' Supply Wagon.



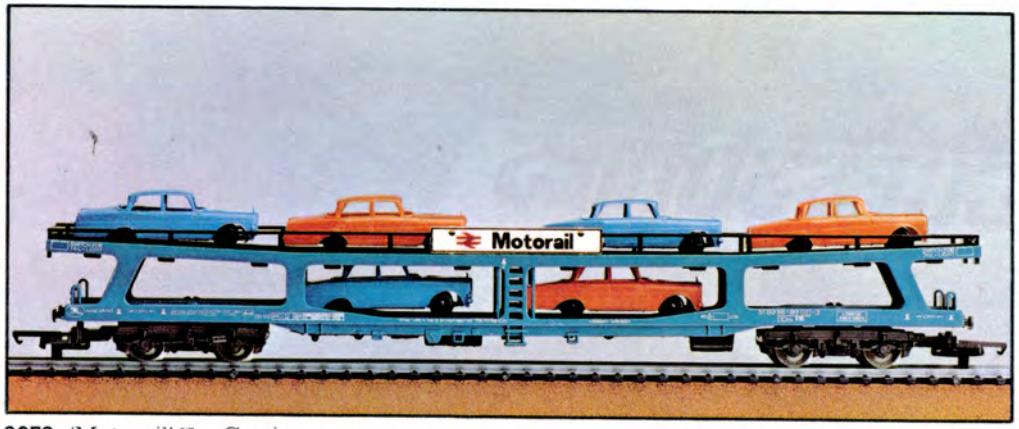
2715 'BP' Tank Wagon.



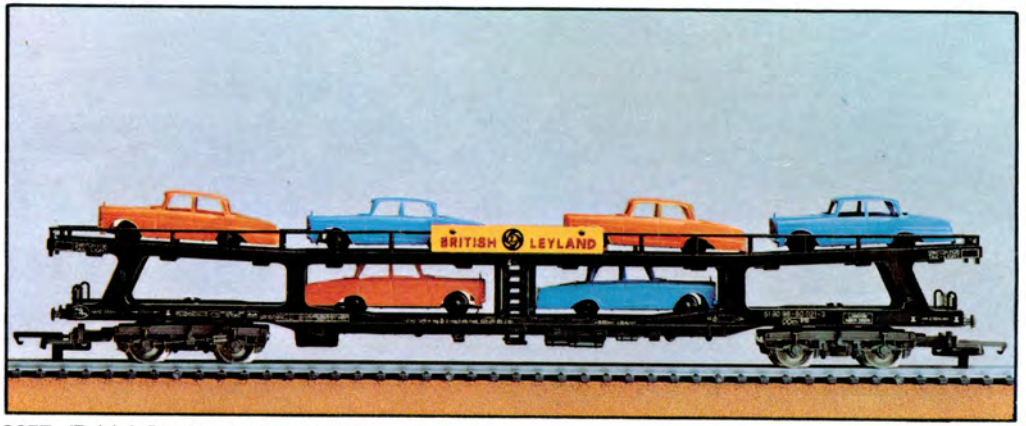
2713 'Shell' Tank Wagon.



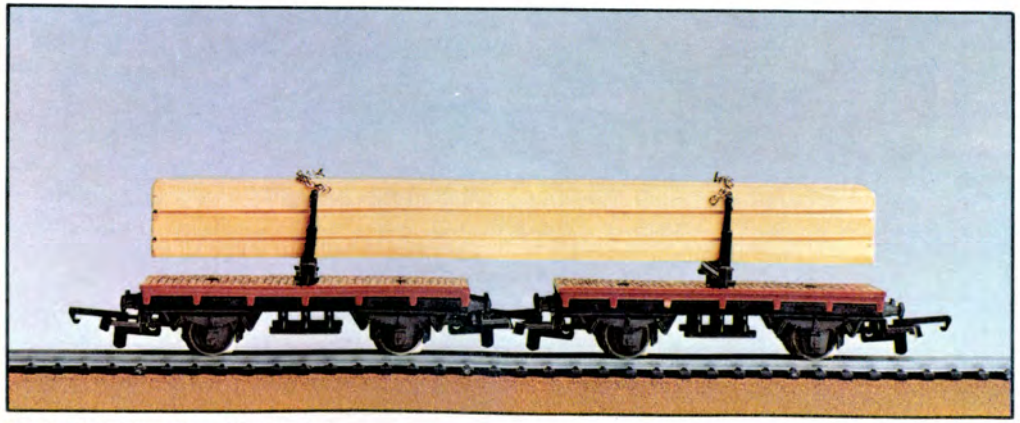
2718 'Gulf' Tank Wagon.



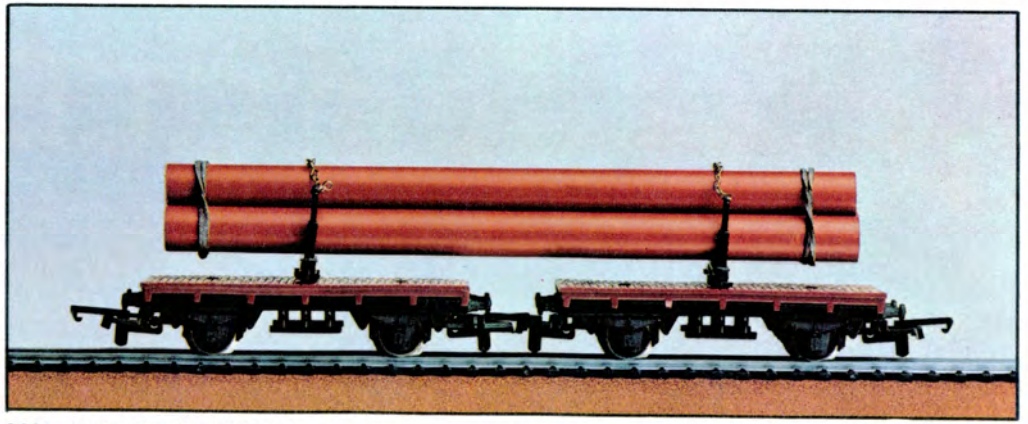
9053 'Motorail' Car Carrier.



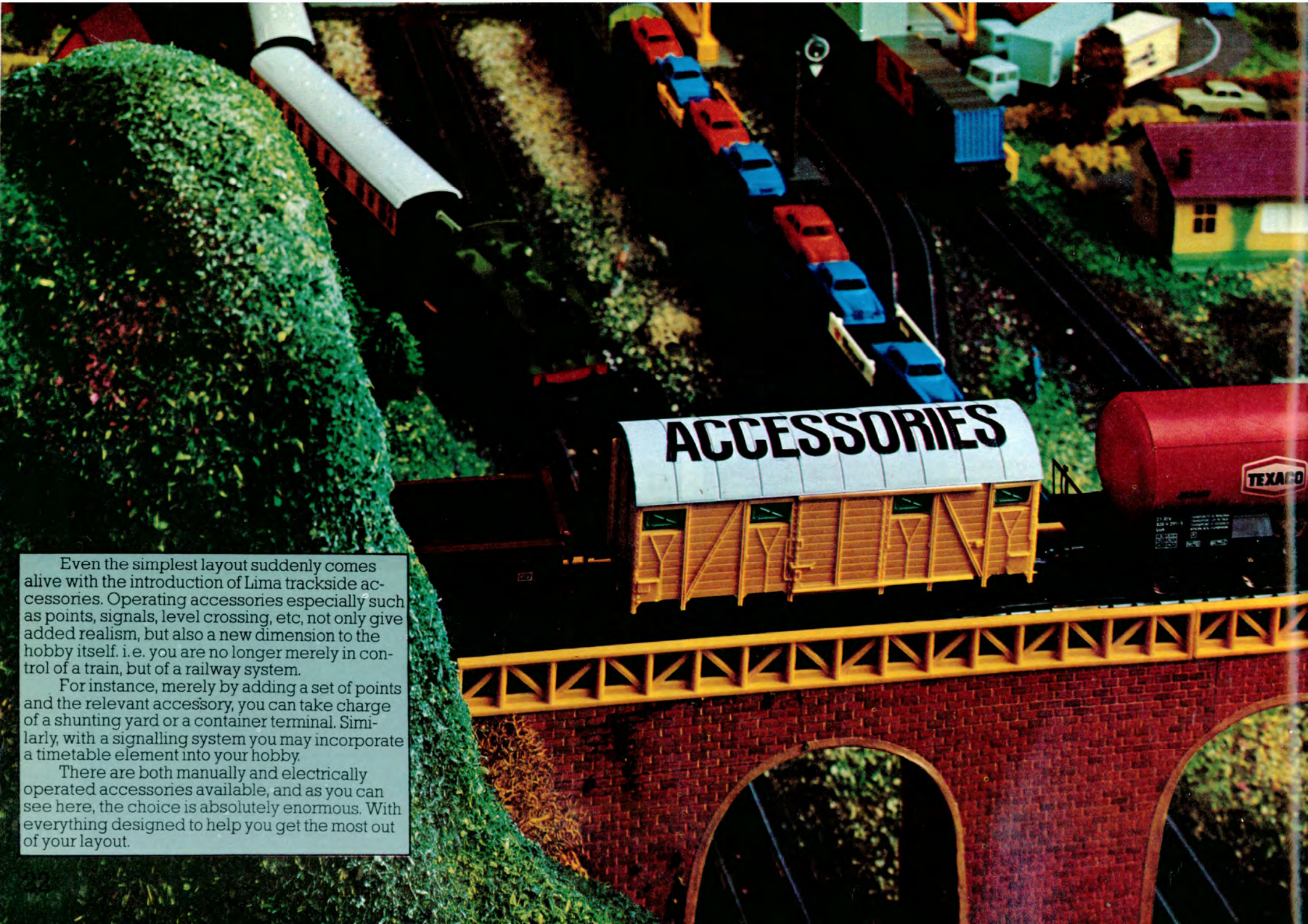
9057 'British Leyland' Car Carrier.



9038 Twin Trucks with Planks



9039 Twin Trucks with Pipes.



Even the simplest layout suddenly comes alive with the introduction of Lima trackside accessories. Operating accessories especially such as points, signals, level crossing, etc, not only give added realism, but also a new dimension to the hobby itself. i.e. you are no longer merely in control of a train, but of a railway system.

For instance, merely by adding a set of points and the relevant accessory, you can take charge of a shunting yard or a container terminal. Similarly, with a signalling system you may incorporate a timetable element into your hobby.

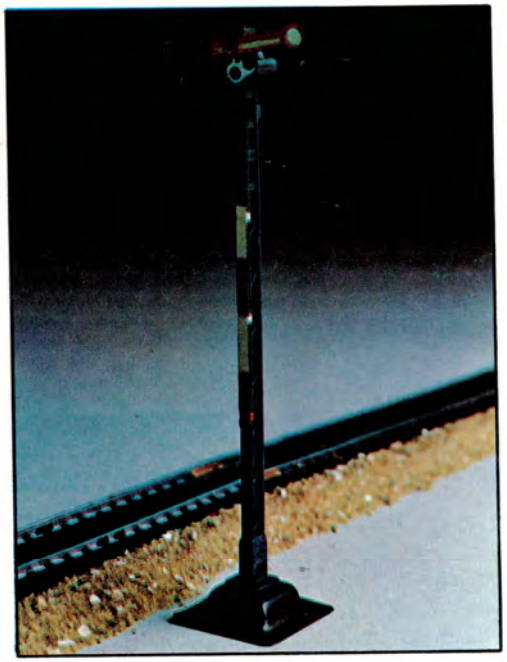
There are both manually and electrically operated accessories available, and as you can see here, the choice is absolutely enormous. With everything designed to help you get the most out of your layout.

Of all the varied types of accessories available, the one which really seems to fire the imagination is the signal. And it's not really surprising, for it's the signal which makes possible the kind of railway network that we know today. Without signals to control the traffic flow, the complex running of multiple trains to a strict timetable would be quite impracticable. So whether it's warning the driver of conditions on the track, or giving the 'up train from King's Cross' priority, the signal is vital to the safe and efficient running of the whole railway system.

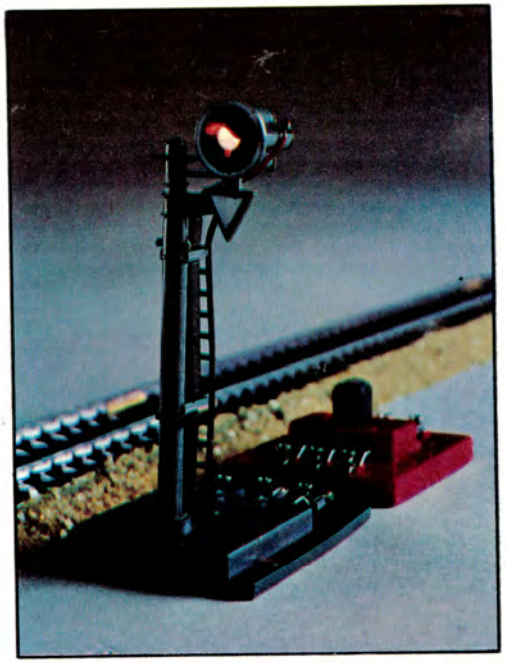
Shown here is the comprehensive Lima range – including most types of signals in use today.



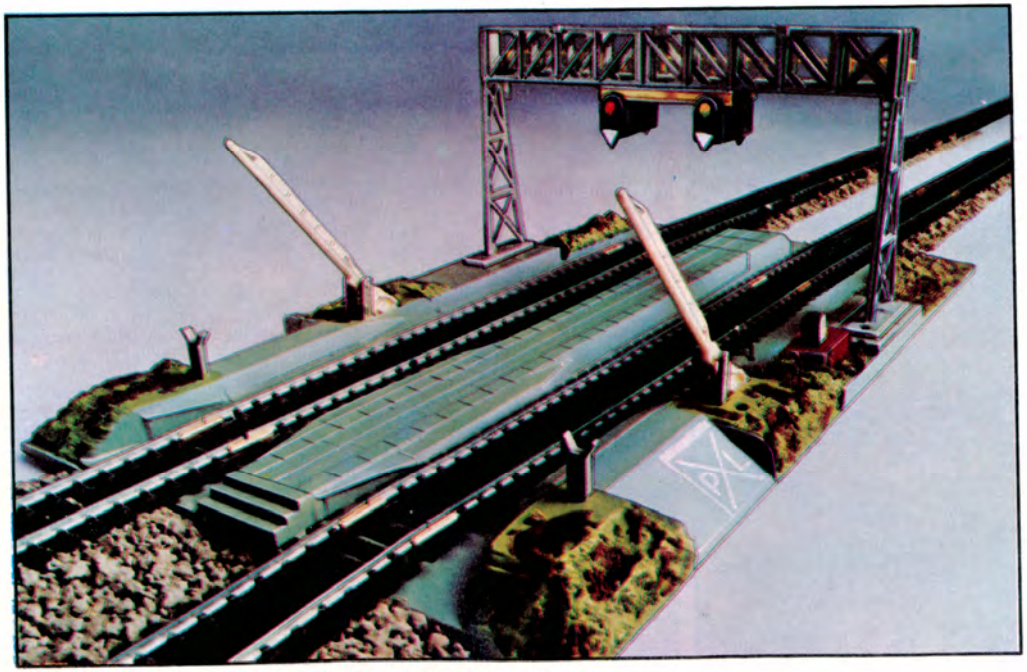
023 Signal with Four Lights.



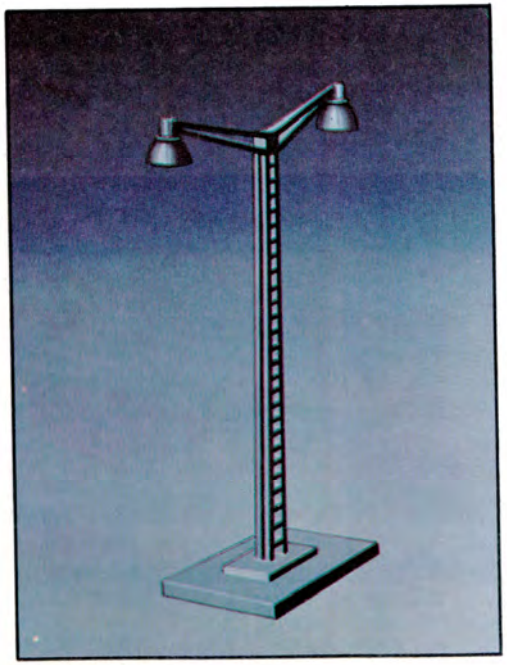
028 Signal.



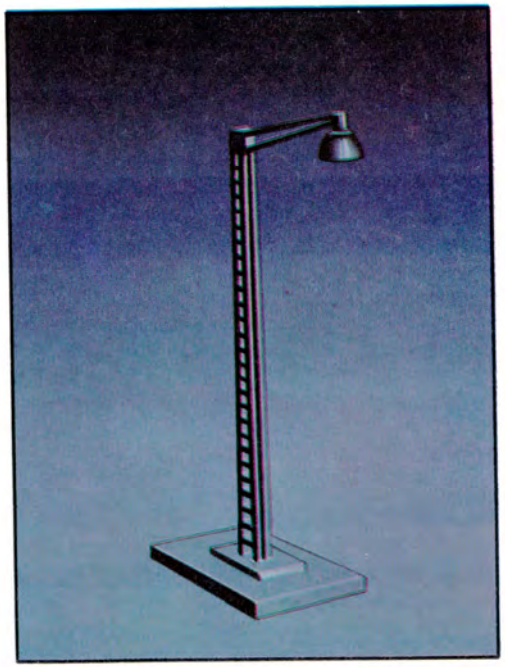
022 Signal with Two Lights.



025 Overhead Gantry Signal with Level Crossing.



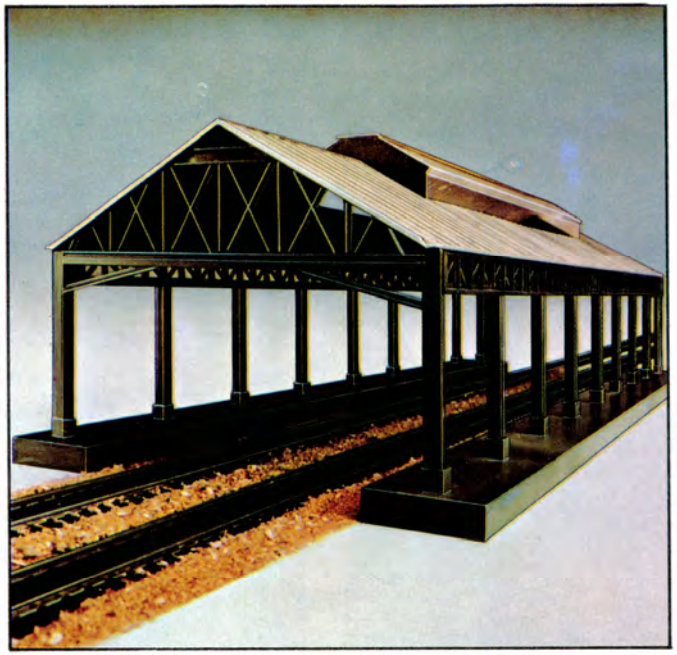
027 Street Lamp.



026 Single Street Lamp.



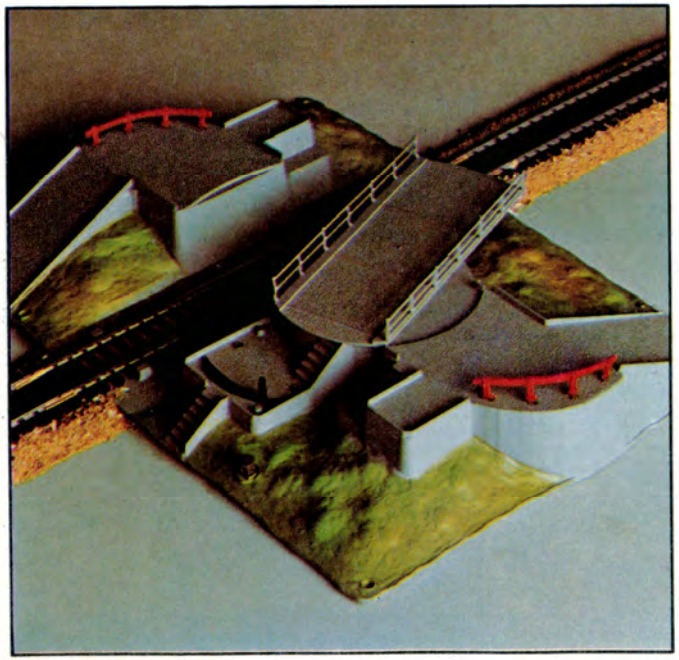
033 Station.



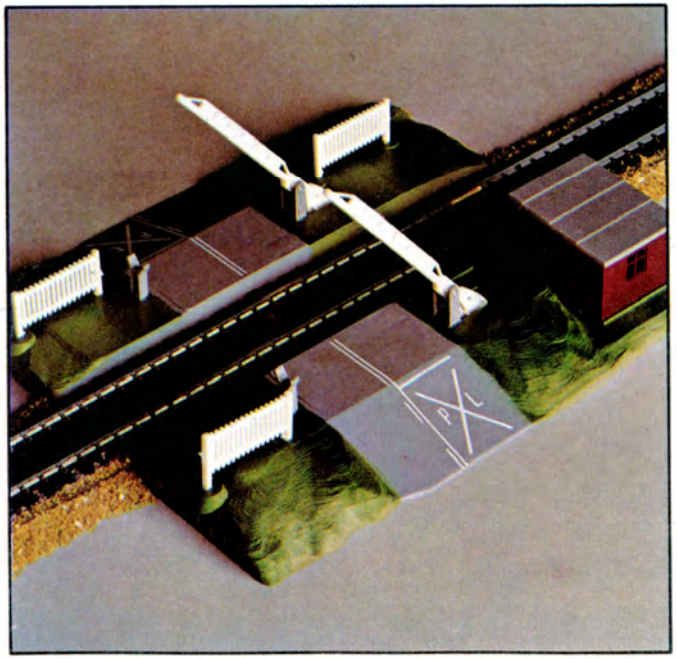
031 Station Canopy



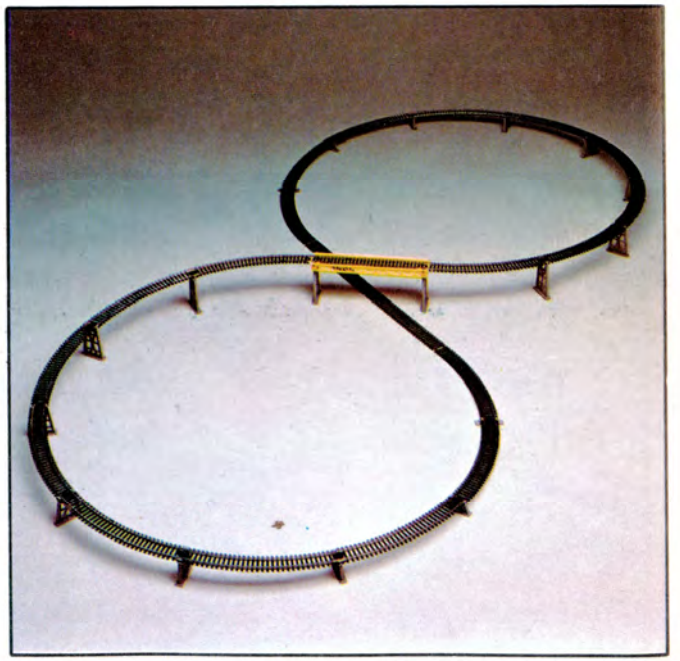
046 Station with Signal.



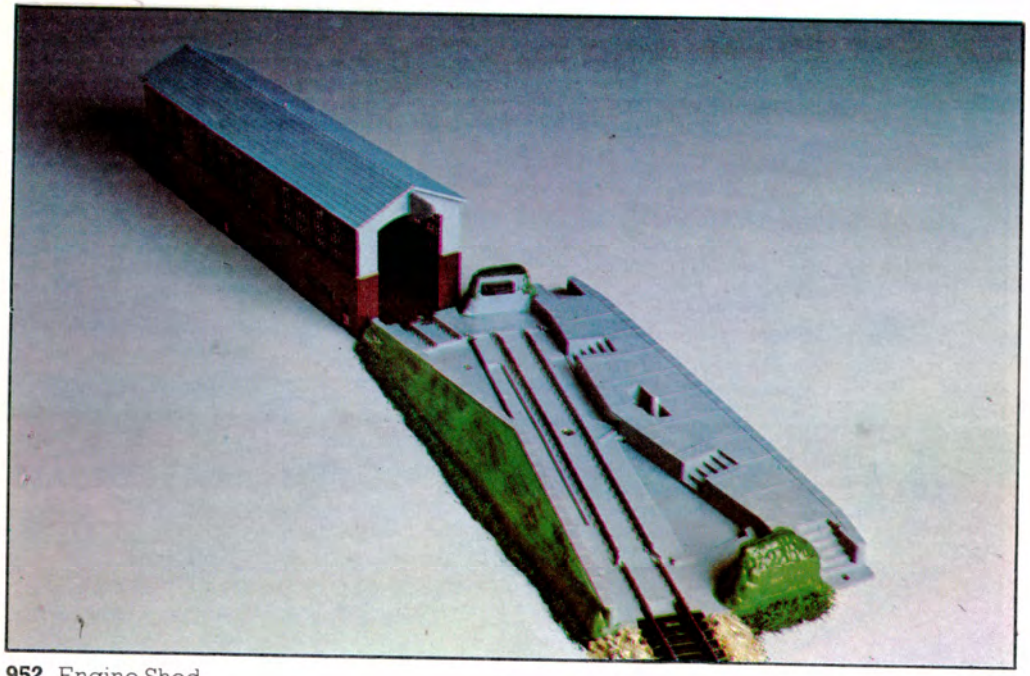
052 Mechanical Swing Bridge with Auto Train Stop.



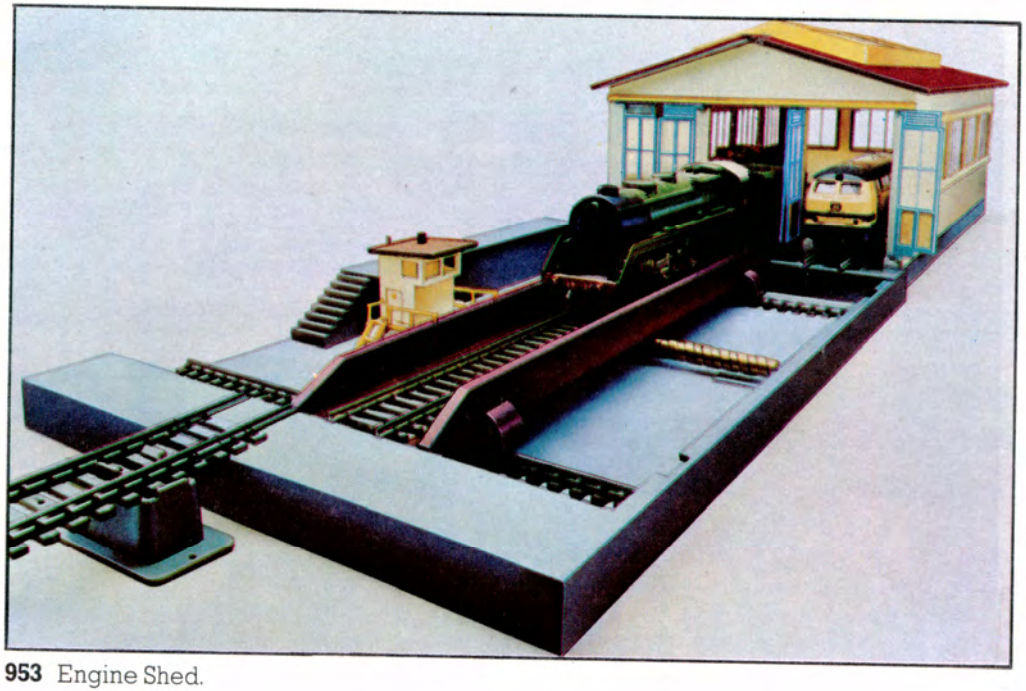
021 Automatic Level Crossing.



911 Bridges for Figure of Eight Tracks.



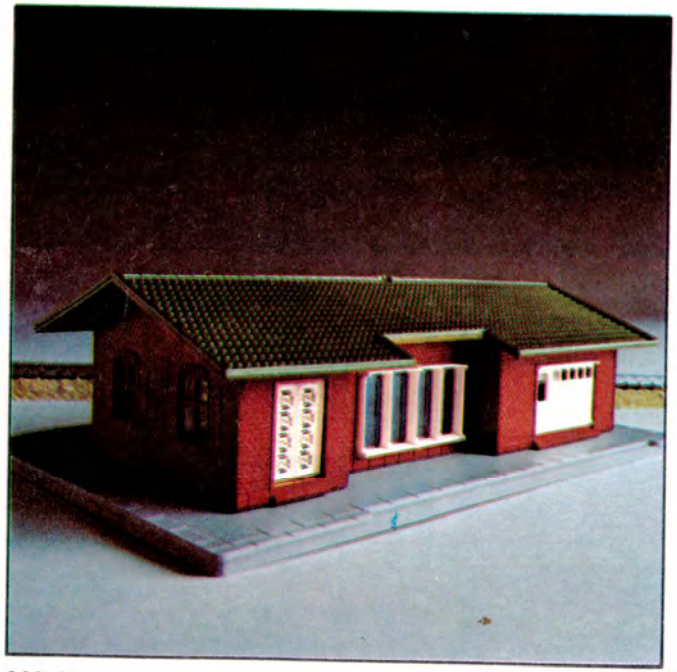
952 Engine Shed.



953 Engine Shed.



2080 Tunnel.



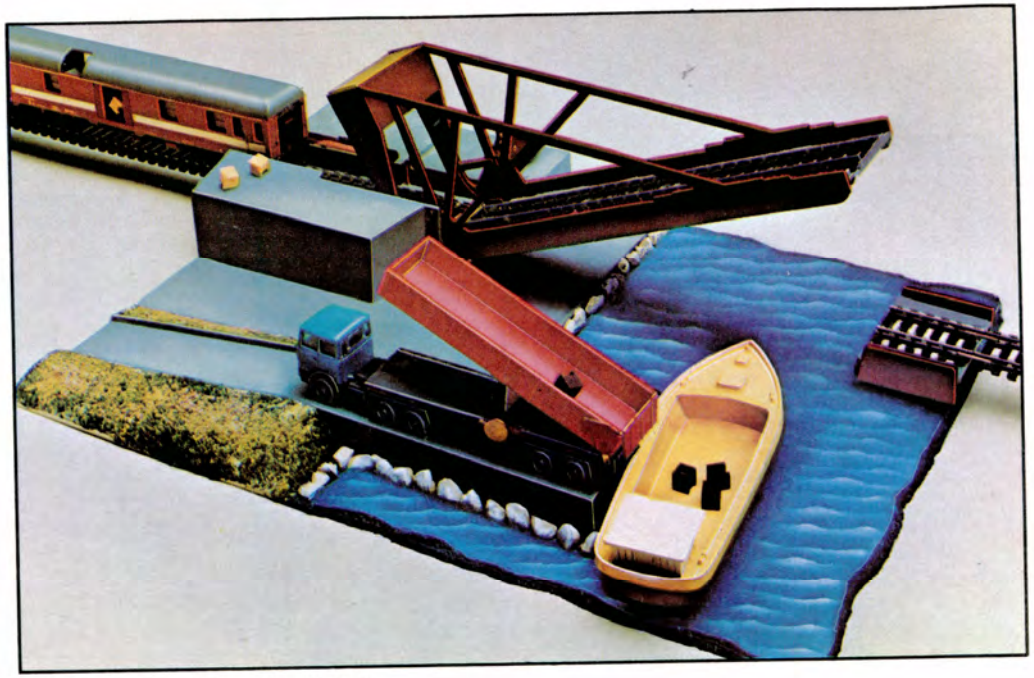
044 House.



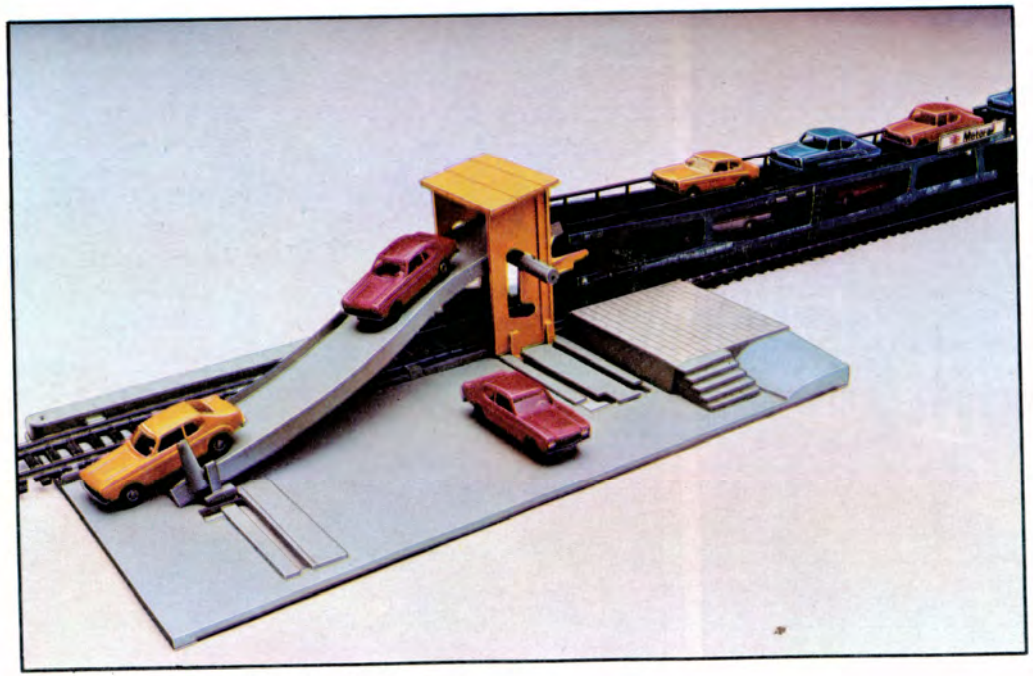
042 House.



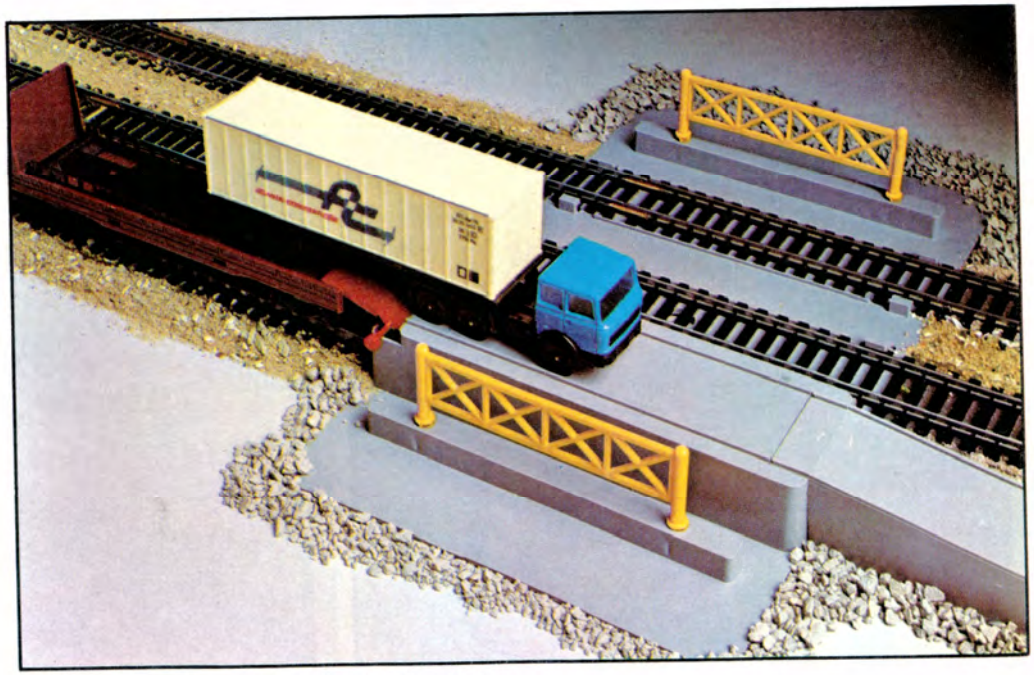
960 Operating Terminal for Loading/Unloading Containers.



051 Lifting and Unloading Bridge



941 Automatic Car Unloader Base.



963 Container Terminal and Unloading Siding.

801 Atlantic Container Line Lorry.

802 Boat Transporter.

806 Circus Animal Transporter.

821 VW Passat.

820 Mercedes.

803 Builders Merchant Lorry.

805 Seatrain Container Lorry.

804 Shell Petrol Tanker.

831 4 Containers: Sealand, LEP, Kuhne, Freightliner.

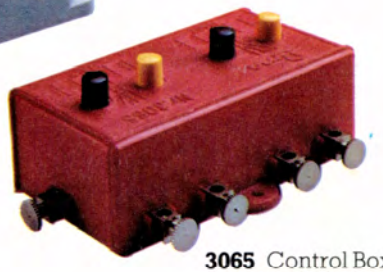


832 4 Containers: CTI, ACL, Danzas, CNC.





2054 Power Unit Class 11.
220/240 Volts 50/60 HZ – AC only.
Output 12.5V. DC = 0.25A. 3.2VA.
Protected by automatic cut-out.
Conforms to British Standard 4435.



3065 Control Box.
Suitable for operating up to 2 accessories (electric points, etc.).



3066 Junction box.
As your layout becomes more complex, and more accessories are fitted (electric points, switches, lighting, etc.) a junction box 3066 will prove very useful – as it can be connected up to as many as six different accessories.

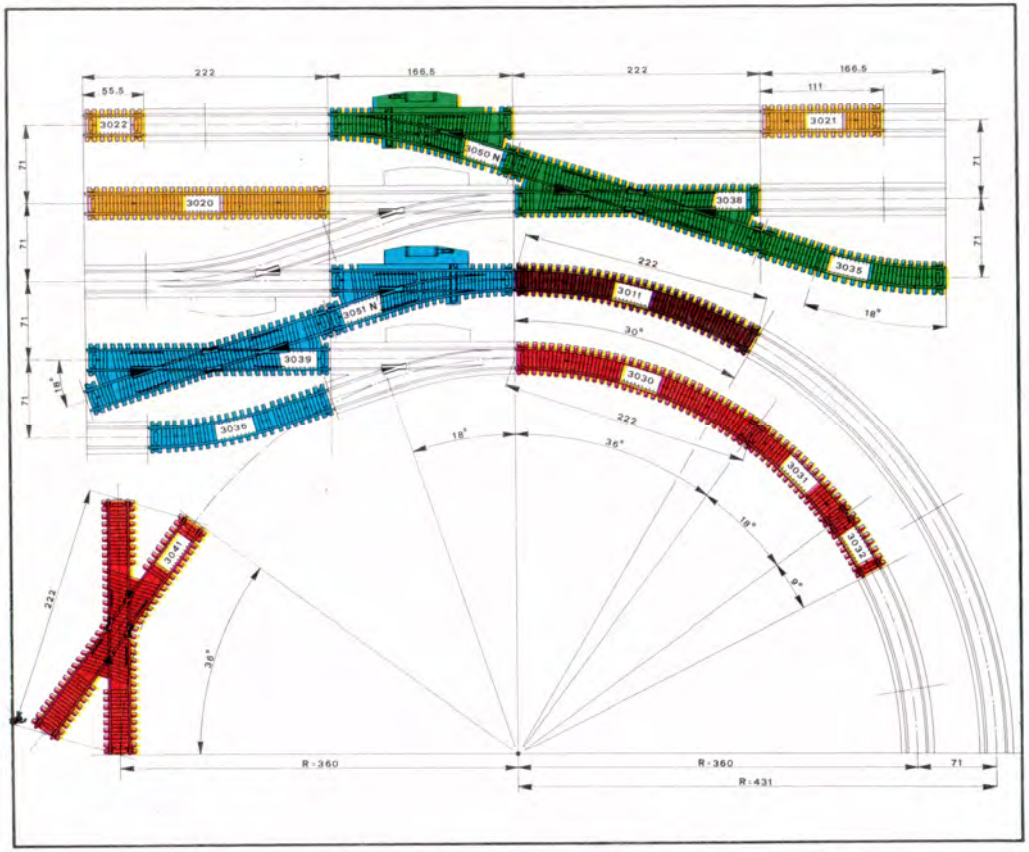


2058 Transformer.
Operates more than one train by direct current, and a number of accessories by alternating current.
For use with the following tracks:
3030/C curved track with power clip.
3024R ¼ straight with power clip.

Track installation.

One of the main essentials to remember when installing your track is to ensure that the trains on adjoining tracks can circulate freely without touching.

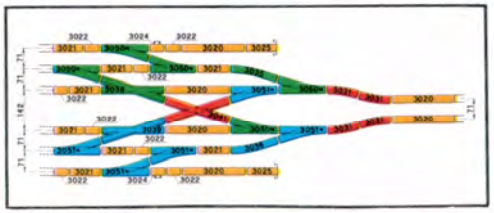
In a Lima 'HO/OO' scale system the correct distance between track centres is 71 mm, maintained both in straight runs and through the curves.



Some typical combinations of Lima track. These diagrams can be used to build up more complex layouts. But please note that the distance between two tracks (centre to centre) must always be at least 71mm in 'HO/OO' scale.

For example let's take this big station with six tracks. In the centre are two points, 3050 and 3051, and a diamond crossing 3041. In order to maintain our correct spacing of 71 mm (otherwise the trains would crash) it is necessary to use the new type of crossing (3036 right and 3039 left).

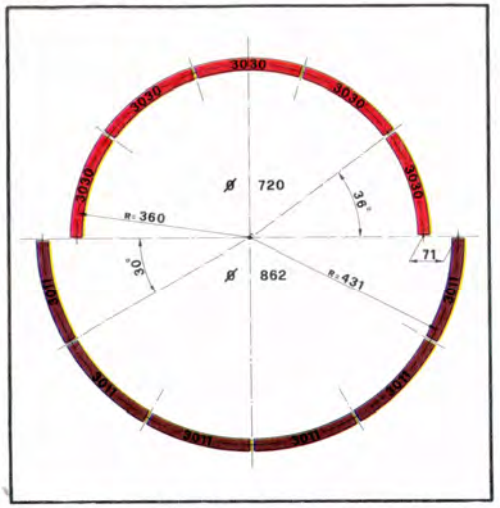
Thus, the spacing of the two central tracks will be 142 mm – exactly twice our basic 71 mm.



The entrance to a station. Groups of points and crossings are used to convert the two tracks of the main line into six tracks inside the station.

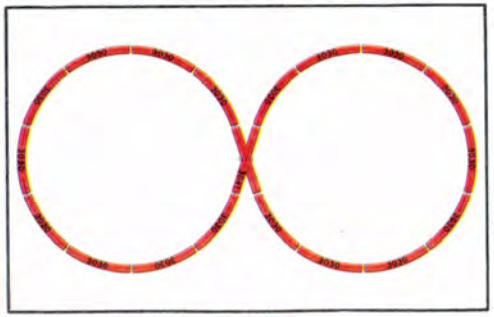
For two concentric circuits one must use curves with a different radius. In Lima systems there are two types of curves, with respectively 36° (3030) and 30° (3011) arc.

With ten elements with 36° arc you obtain a circle of 720 mm diameter. While with twelve elements of 30° arc the circle will be 862 mm. The difference between the arcs of the two circles (431 the larger and 360 the smaller) is 71 mm – our basic spacing measurement.



Basic circles in 'HO/OO' scale. 12 pieces of curved track 3080 make up a small circle of 720mm diameter. 10 pieces of curved track 3086 make up a large circle of 860mm diameter.

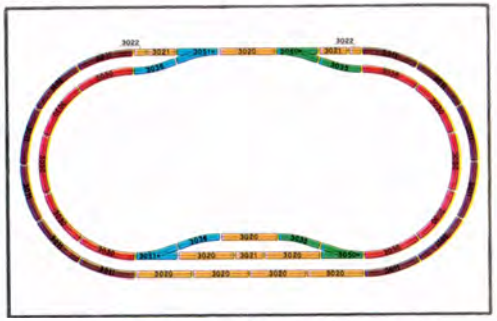
Figure '8' Track. The 36° crossing (3041) should correspond geometrically to two curves (3030) side by side.



A figure '8' run. 18 pieces of curved track 3080 are required, plus a crossing of 36° 3041.

To construct a long passing loop. Use two points (one left and one right), with compensating tracks 3035 and 3036 – to maintain the correct spacing between tracks.

The Lima system is so geometrically precise, that the chord of the arc of each of the two curved elements is 22.2 mm long – the same as the length of the straight track 3020.



Compensating tracks. For double tracks, compensating tracks are required, together with points, to maintain the correct spacing between the two near rails of 71mm. The following are available: Right-hand compensating track for right-hand points 3050 – 3050E. Left-hand compensating track for left-hand points 3051 – 3051E.

For special layouts. When including gradients or descents, 'extendable track' 3026 should be used. This track has the facility of being extended from half straight length to three quarter straight length by means of a sliding section.

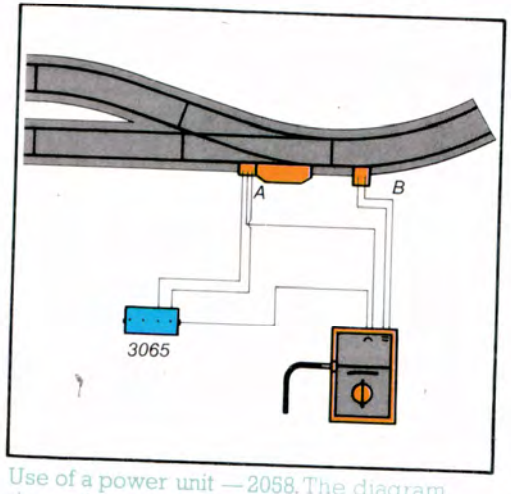
In other cases, 'flexible track' 3042 may be used. This is 900 mm long and can be cut to size with an ordinary hack-saw.

Electrification of the circuit. An essential factor in the construction of a truly lifelike model railway system is the proper electrification of the track. Not only does this add realism to the operation of the trains, but speeds up all the various shunting and routing procedures. Lima manufacture a complete range of accessories, allowing 'remote' operation – just as in a real railway.

Points. Even on a simple layout points are a necessity. Lima manufacture two types – the manually controlled type (3050 and 3051), and the electrically controlled type (3050E and 3051E), which allow 'remote' operation and are powered by 'alternating current' from the power unit (2058).

Electric points. The electric point is fitted with two electro-magnets which, once the power is applied, move the blade of the point from side to side.

There are three connection wires: One 'neutral' (at the centre) and two 'positive' for the two operating positions. To avoid the coils overheating, the control box must be operated with a short sharp movement. Never keep the control button pressed down.



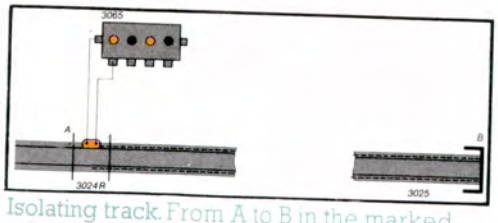
Use of a power unit — 2058. The diagram shows the correct wiring.
A = electric point operated by alternating current through control box 3065D. B = connection of the power feed to the track (direct current) through curved track 3030C.

The control box. The control box 3065 is required for all 'remote' operations. There are four buttons arranged in pairs for operating two points. In this case the control box is operated on 'alternating current'.

Isolating sections of track. The use of an isolating track permits one train to be held stationary while another train is operated. This is achieved by cutting off the electricity from the locomotive of the train it is required to hold.

The 'dead-end' track. The simplest way of using an isolating track is to install a siding ending in a 'dead-end' track and a set of buffers.

In this case the isolating track would be a ¼ straight isolating track 3024R, connected to a control box 3065. This operates in the following way.



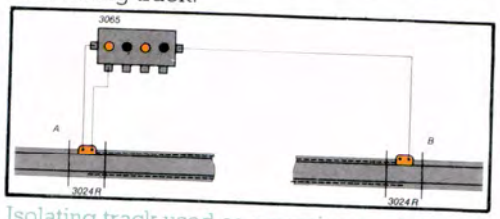
Isolating track. From A to B in the marked section power to the track is cut off unless the left-hand button on the control box 3065 is pushed.

Non-pressed button. The train once passed the breaking point will stop automatically – with all power to it now cut off.

Pressed button. Power is restored and the train is able to complete its shunting, or move off again.

Loops. With two sections of isolating track, placed at the two ends of a loop, and the usual control box, it is possible to control the running of a given train independently from another travelling on the same line.

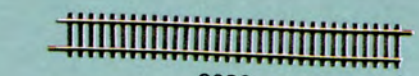
With the button down the 'loop' is powered and the train can run normally. With the button up (cutting off the power from the locomotive) the train in the loop is stationary. And since the control box has four buttons, it is possible to operate up to four stretches of isolating track.



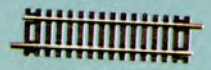
Isolating track used as a passing track. From A to B in the marked section power to the track is cut off unless the left-hand button on the control box 3065 is pushed.

'Direct' and 'Alternating' current. It is important to remember that control of the points is achieved using 'alternating current', while for the insulated track 'direct current' is required. For this reason, it is not possible with the same control box to operate both points and isolated stretches.

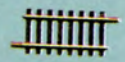
If it should eventually become necessary to prevent the transfer of power from one track to another, the metal fish plate 015 may be removed from the control box and replaced with an insulated fish plate.



3020
straight track (220 mm)



3021
1/2 straight track (110 mm)



3022
1/4 straight track



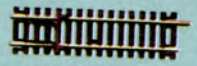
3024
1/4 straight with power clip.



3024R
1/4 straight isolating track.



3023
buffer stop.



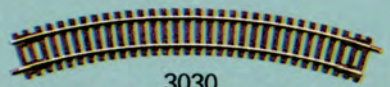
3025
1/2 straight with buffer stop.



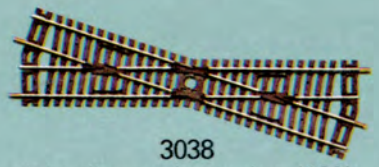
3026
extendable track 1/2 to 3/4.



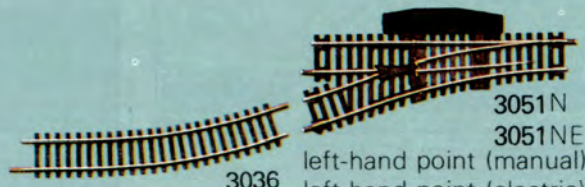
02
railer.



3030
curved track (dia 720 mm).

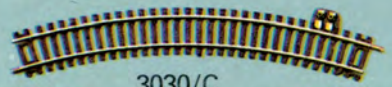


3038
right diamond crossing (18°).

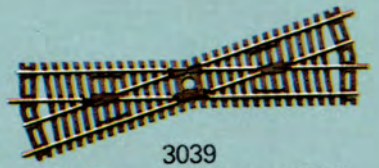


3036
compensating right track.

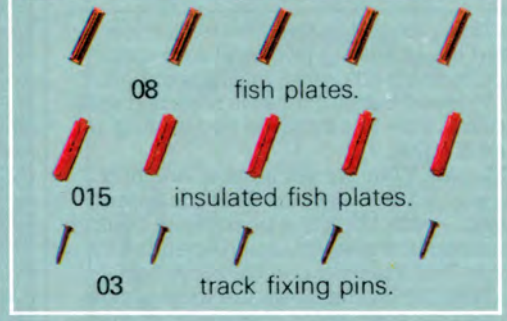
3051N
3051NE
left-hand point (manual).
left-hand point (electric).



3030/C
curved track with power clip.



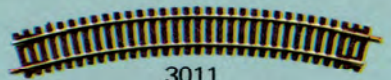
3039
left diamond crossing (18°).



08 fish plates.

015 insulated fish plates.

03 track fixing pins.



3011
curved track (dia 860 mm).

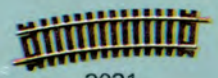


3041
diamond crossing (36°).



3035
compensating left track.

3050N right-hand point (manual).
3050NE right-hand point (electric).



3031
1/2 curved track.



3032
1/4 curved track.



3042 flexible track (90 cm).



Extra track is available in the following packs:

3070 6 pieces straight track (220mm) 3020.

3071 6 pieces ½ straight track (110mm) 3021.

3080 6 pieces curved track (diameter 720mm) 3030.

3081 6 pieces ½ curved track 3031.

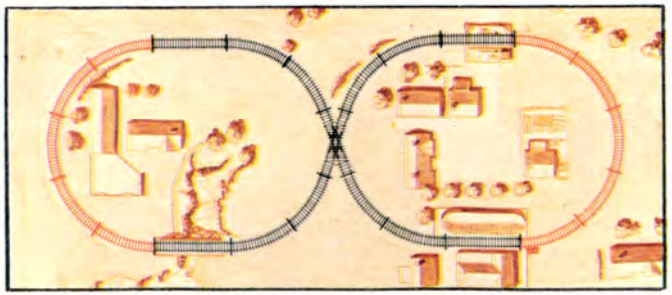
3086 6 pieces outer curved track (diameter 860mm) 3011.

3075 1 curved track with power clip 3030C. 2 ¼ straight tracks with power clip 3024.

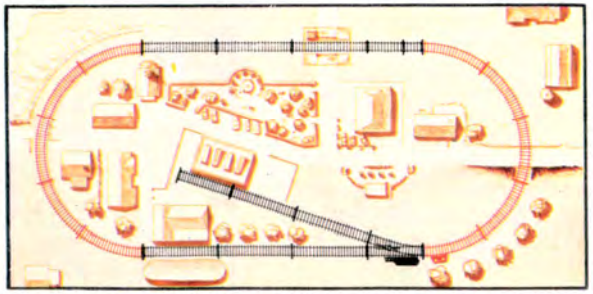
3076 1 straight track 3020, 1 ½ straight track with buffer stop 3025, 1 ¼ straight isolating track 3024R.

3078 1 straight track (220mm) 3020, 1 hand-operated uncoupler 3028.

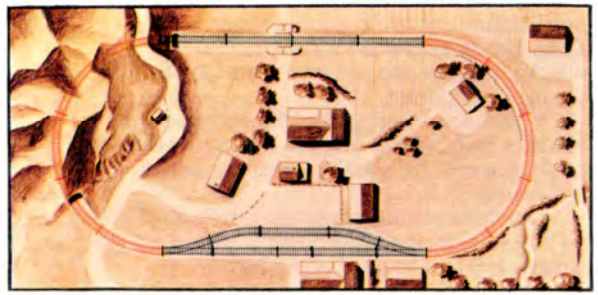
3077 4 pieces ¼ straight track 3022, 2 pieces curved track 3020, insulated fish plates 015.



4051 8 pieces curved track (diameter 720mm) 3030, 4 pieces straight track (220mm) 3020, 1piece diamond crossing (36°) 3041.



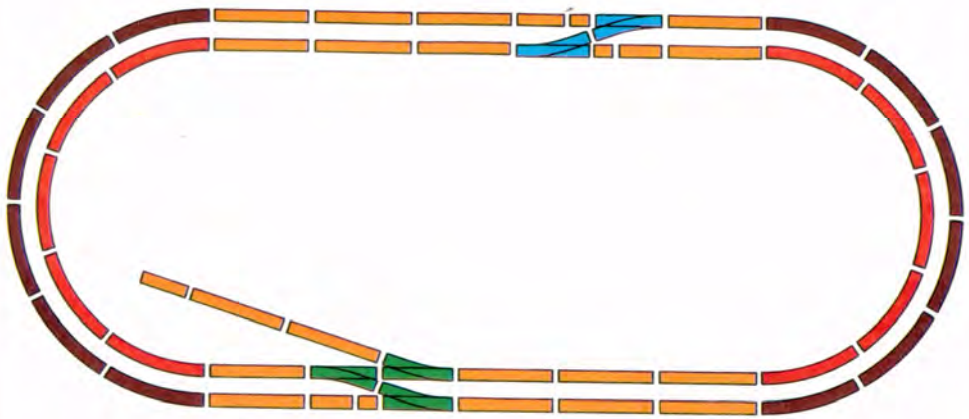
4052 8 pieces straight track (220mm) 3020, 1 piece ½ straight track (110mm) 3021, 2 pieces ¼ straight track 3022, 1 piece ½ straight track with buffer stop 3025, 1 piece right-hand point (manual) 3050.



4057 7 pieces straight track (220mm)3020, 1 piece ½ straight track (110mm) 3021, 1 piece right hand point (manual) 3050N, 1 piece left hand point (manual) 3051N.

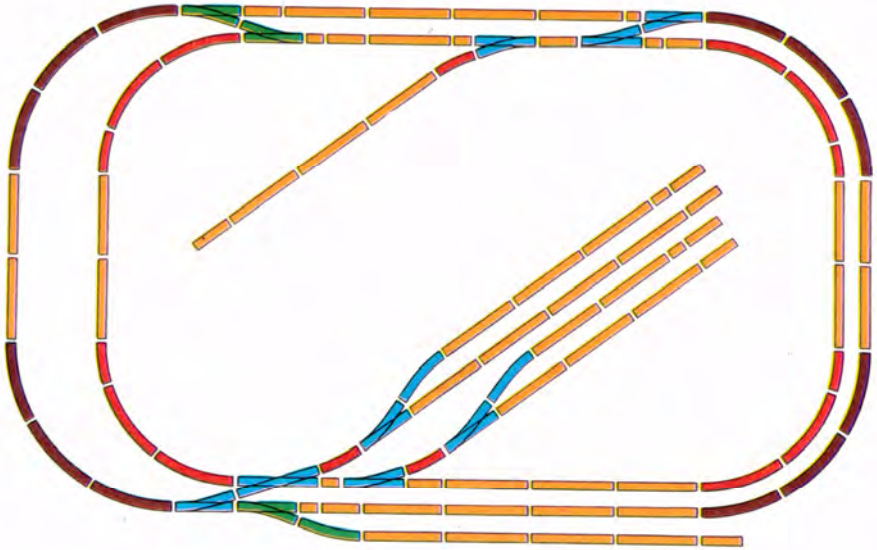
Here's how Lima Track extension packs can make more of your train set.

cm. 212x 90

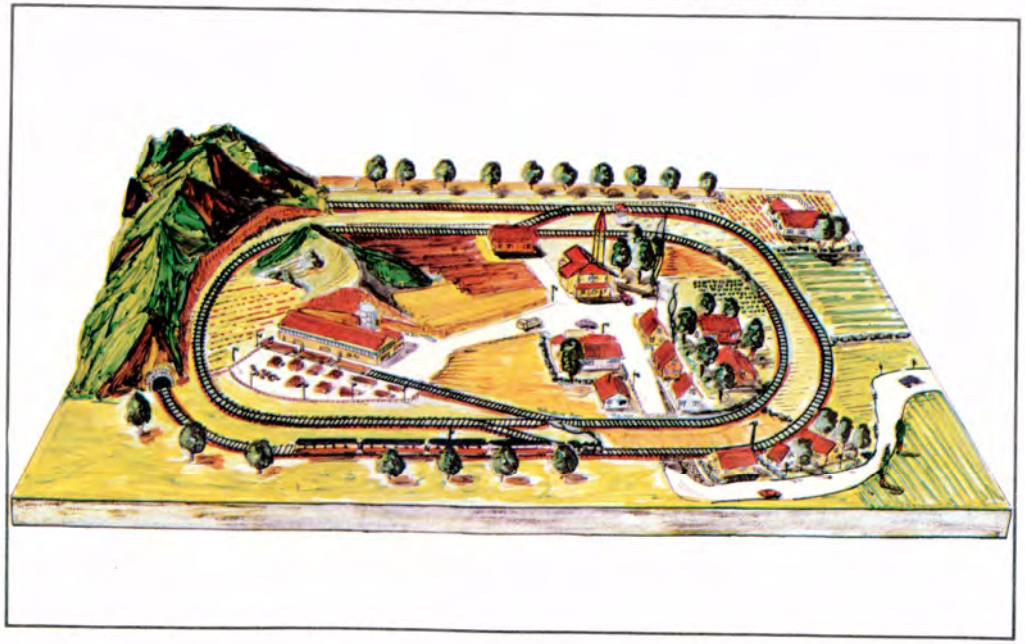


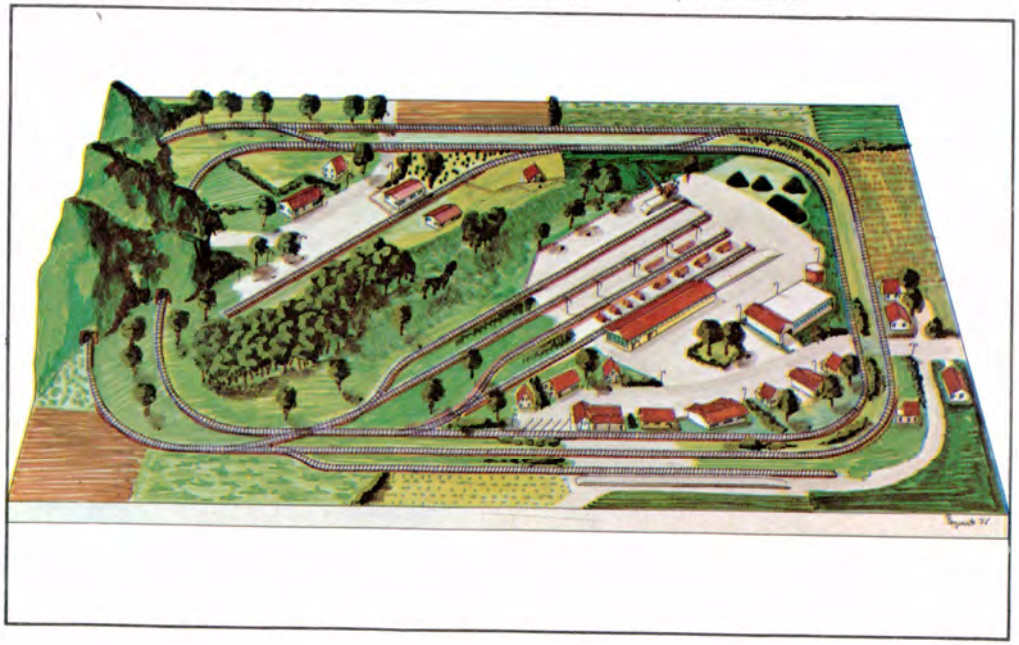
1 piece 3030/C
9 pieces 3030
12 pieces 3011
18 pieces 3020
3 pieces 3021
3 pieces 3022
1 piece 3025
3 pieces 3050N
2 pieces 3051N

cm. 229x141

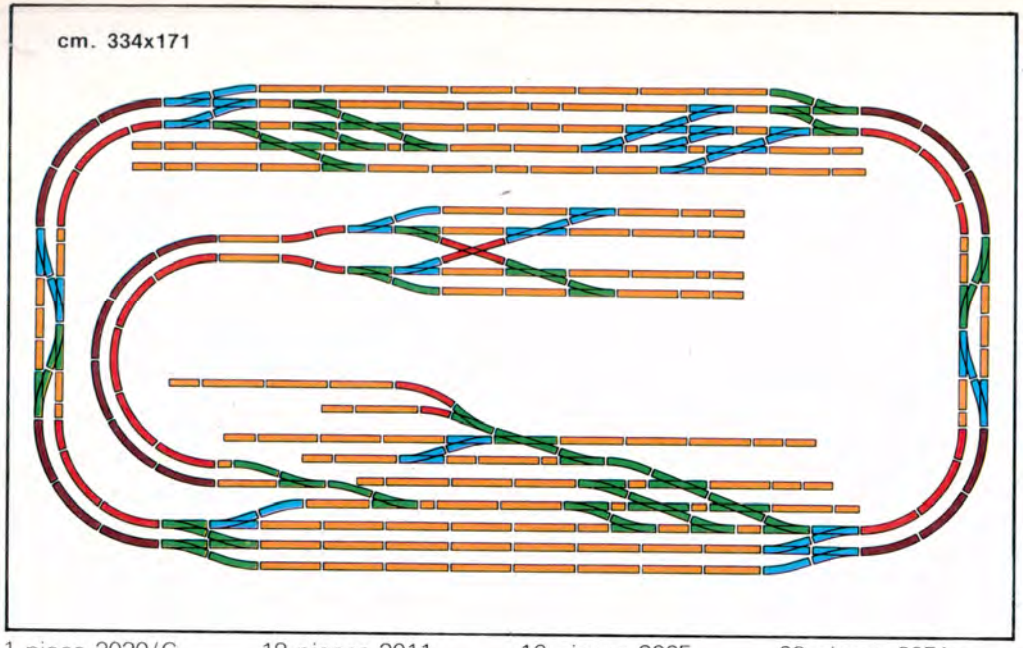


1 piece 3030/C
7 pieces 3030
7 pieces 3031
12 pieces 3011
39 pieces 3020
6 pieces 3021
8 pieces 3022
6 pieces 3025
3 pieces 3050N
7 pieces 3051N
1 piece 3035
2 pieces 3036
1 piece 3039

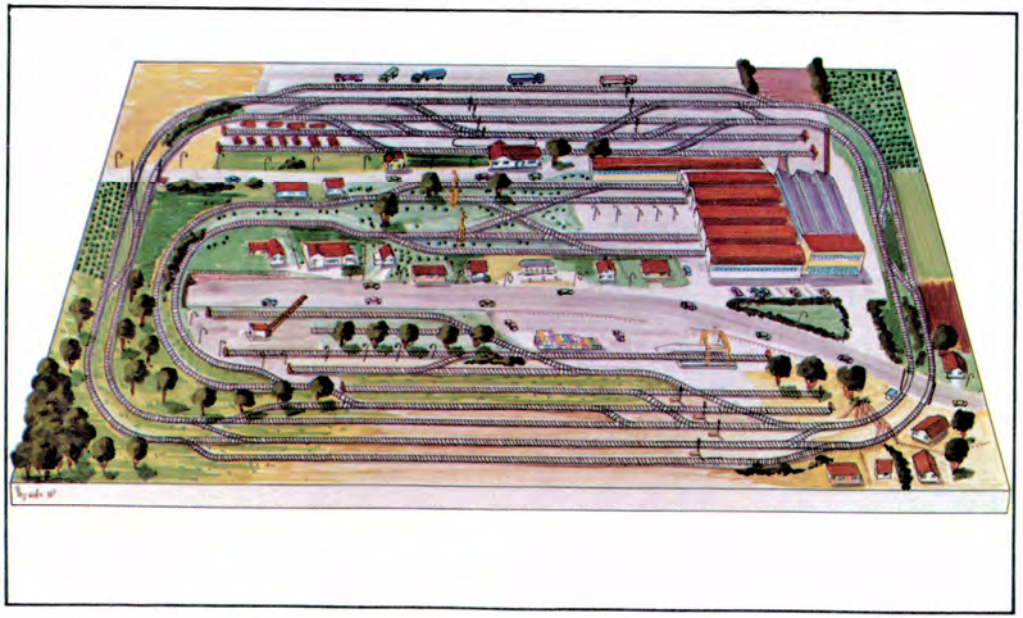




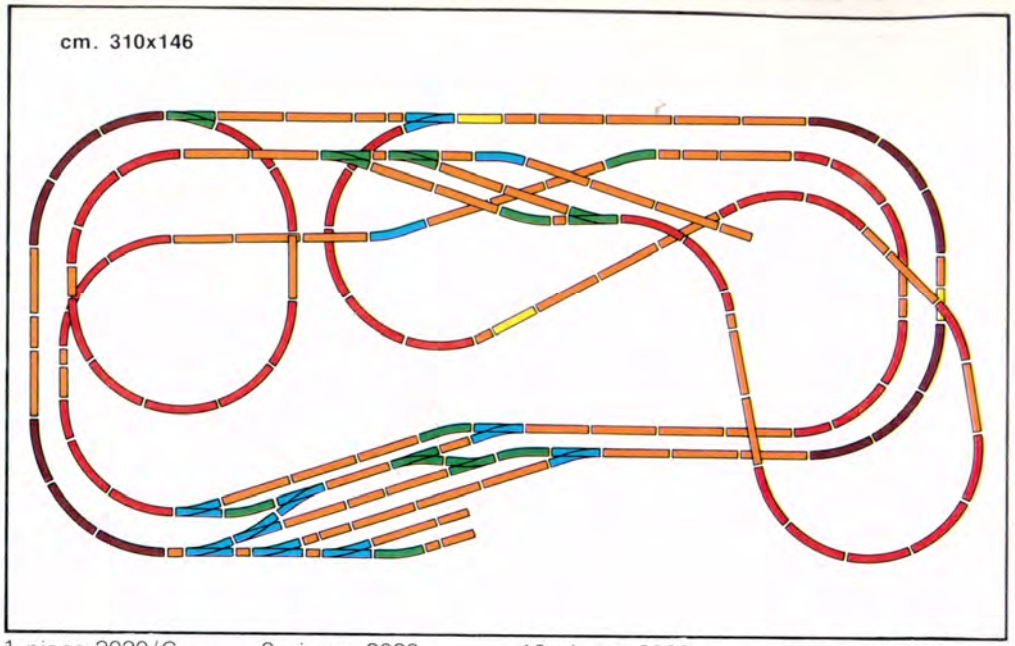
cm. 334x171



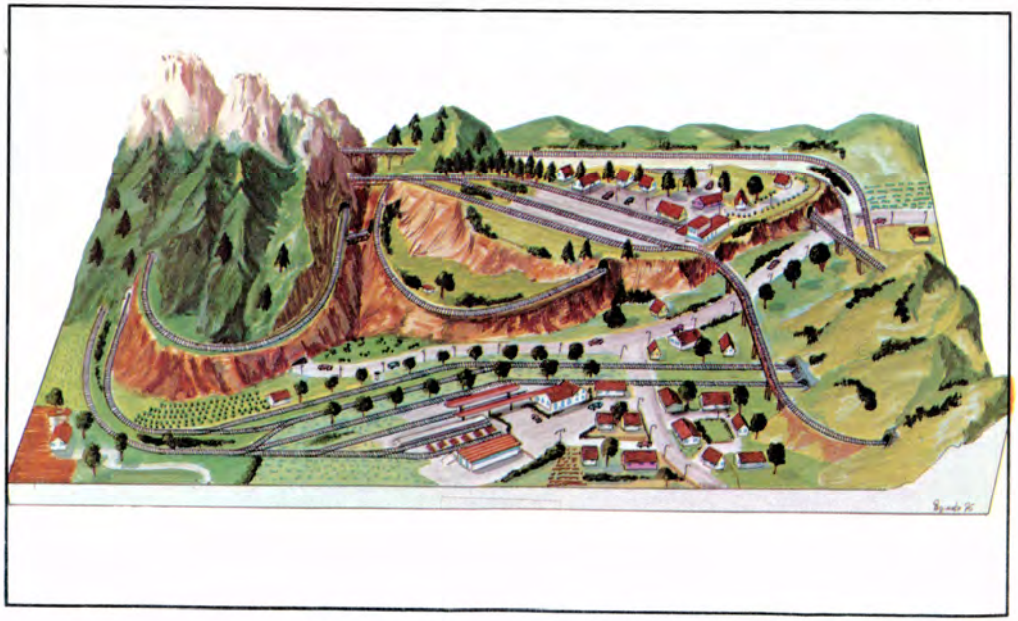
1 piece 3030/C
13 pieces 3030
9 pieces 3031
18 pieces 3011
84pieces 3020
27 pieces 3021
16 pieces 3022
16 pieces 3025
6 pieces 3035
4 pieces 3036
28 pieces 3050N
22 pieces 3051n
3 pieces 3039
7 pieces 3040
1 piece 3041



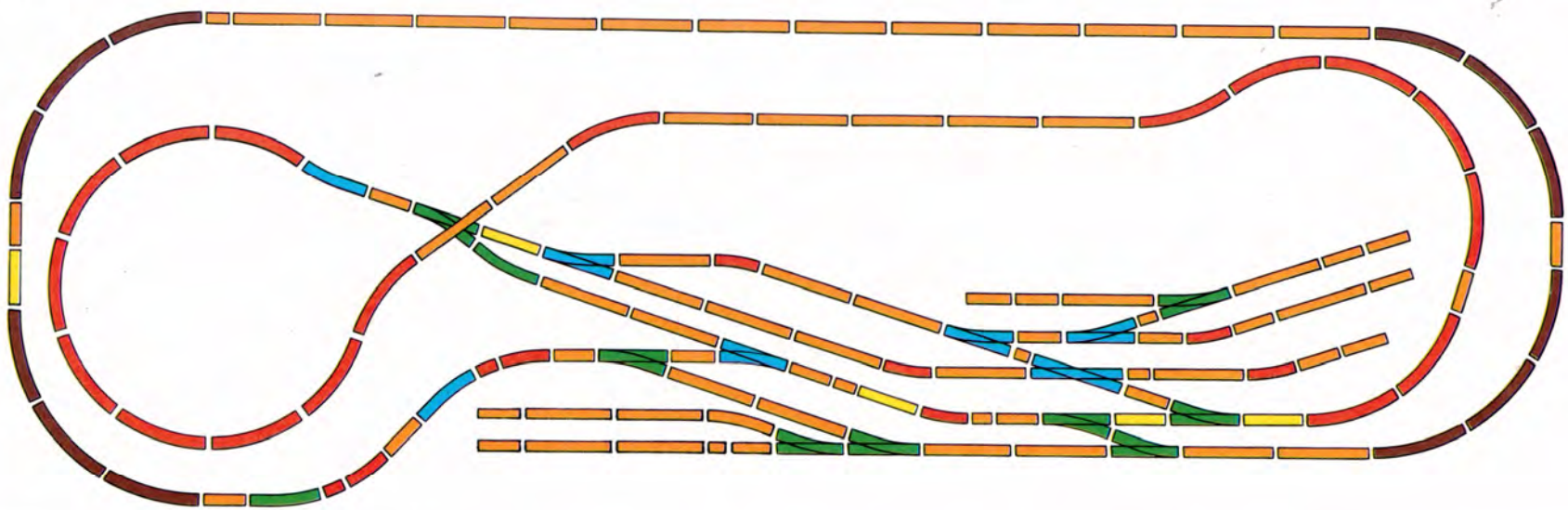
cm. 310x146



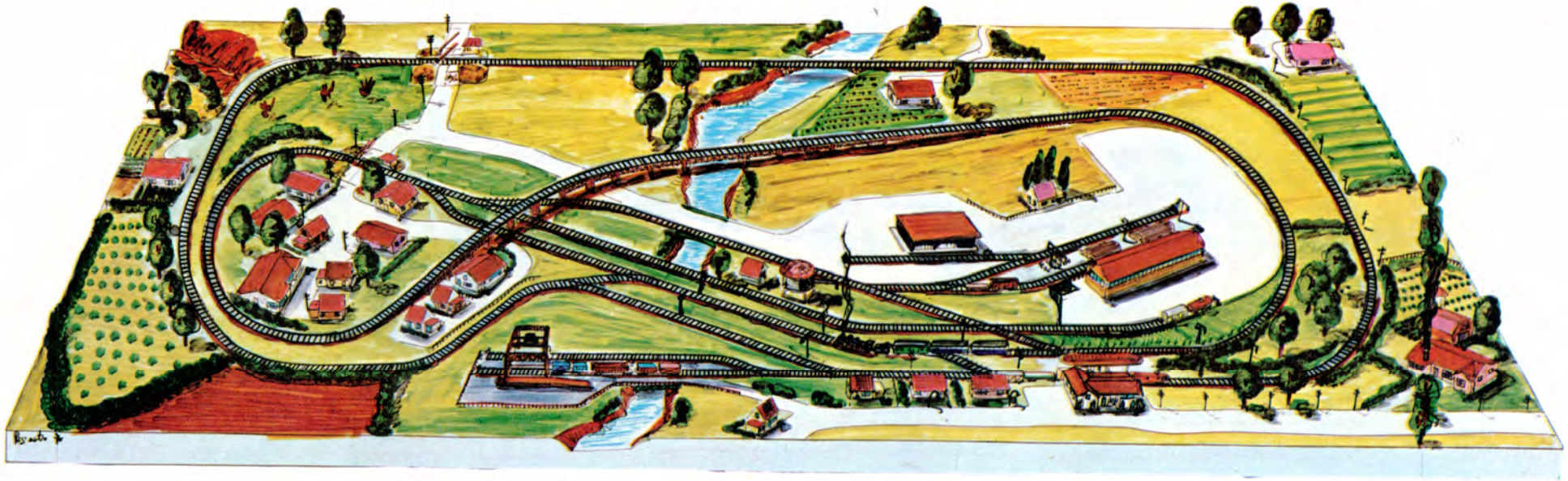
1 piece 3030/C
31 pieces 3030
5 pieces 3031
2 pieces 3032
49 pieces 3020
12 pieces 3021
13 pieces 3022
13 pieces 3011
3 pieces 3025
3 pieces 3026
6 pieces 3035
2 pieces 3036
6 pieces 3050N
9 pieces 3051N

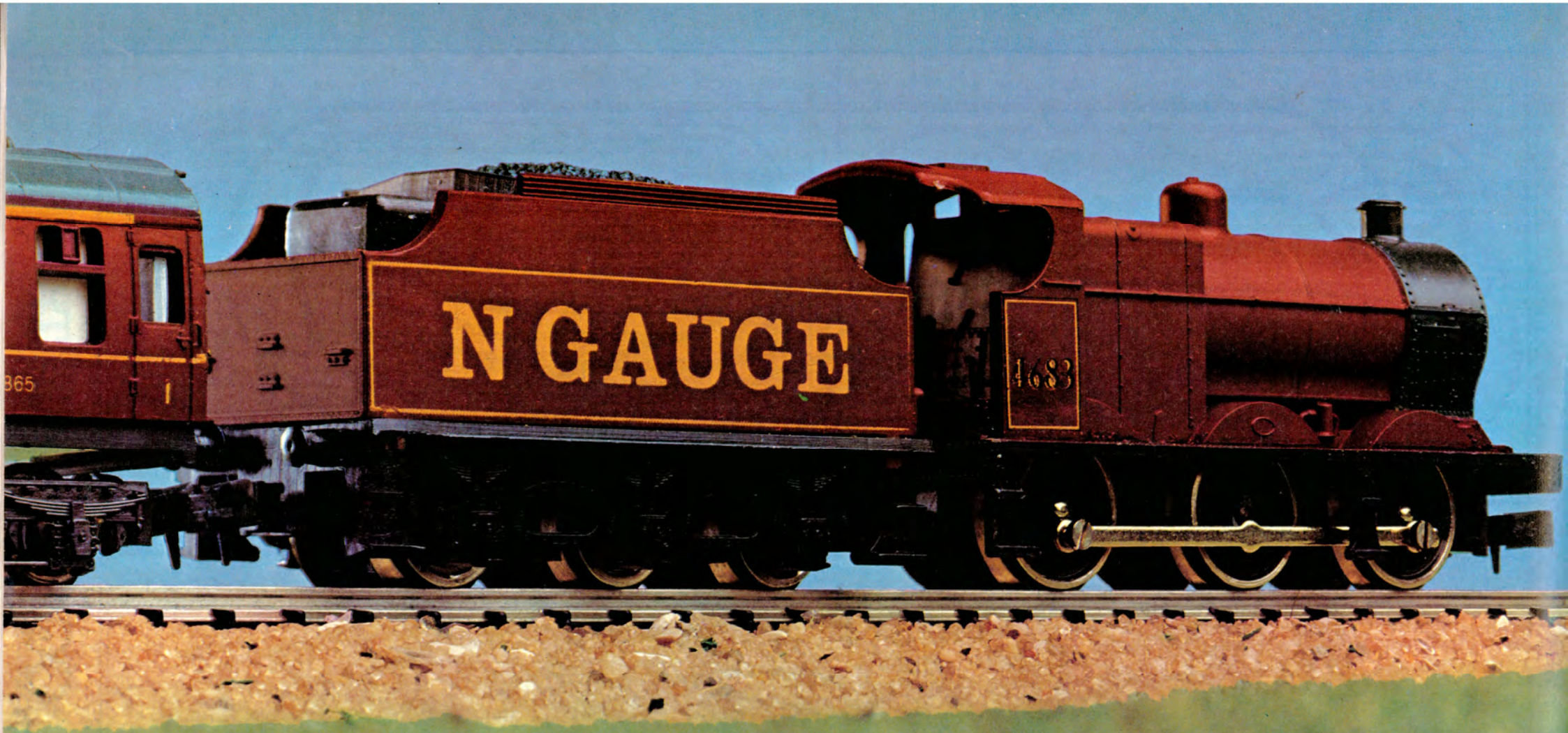


cm. 362x117



1 piece 3030/C	16 pieces 3030	7 pieces 3022	5 pieces 3026	2 pieces 3032	42 pieces 3020	2 pieces 3036	4 pieces 3051N
	7 pieces 3031	6 pieces 3025	3 pieces 3035	12 pieces 3011	18 pieces 3021	8 pieces 3050N	1 piece 3039



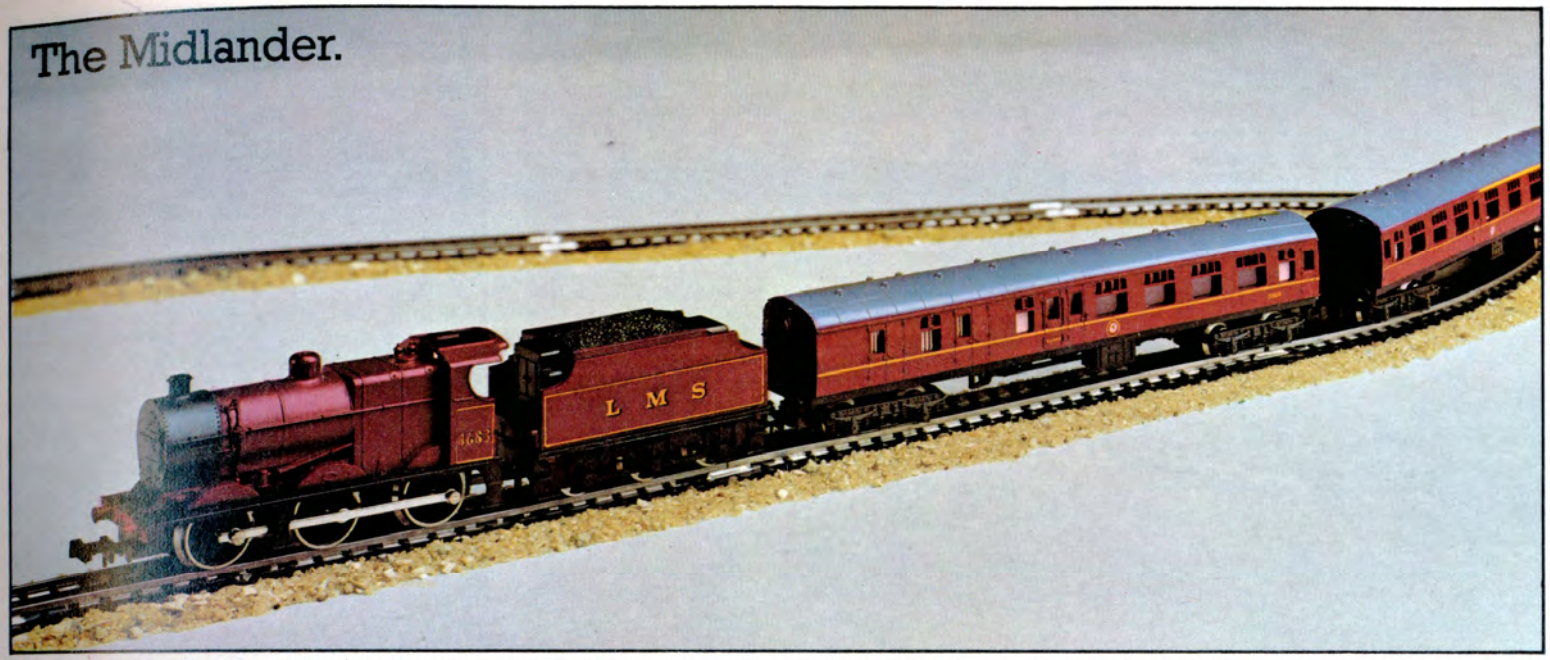


The fastest growing gauge in the model railway field is undoubtedly 'N' Gauge.

Modern technology has brought reliability in miniature, and 'N' Gauge is particularly suited to today's living conditions, which put a premium on space. Many people just don't have the room for a permanent 'OO' system – whereas a really intricate and action packed 'N' Gauge layout will easily fit onto a baseboard as small as 3ft × 2ft.

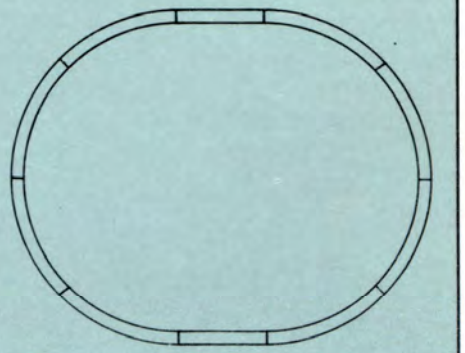
The gauge used for 'N' is 9mm to a scale of 2mm:1ft. And of course, the smaller the scale the more precise the manufacturing process has to be. All the more remarkable then, that Lima has been able to pack such a wealth of fine detail into their 'N' Gauge models. In fact, Lima's many years experience with this scale has earned them an enviable reputation.

The Midlander.

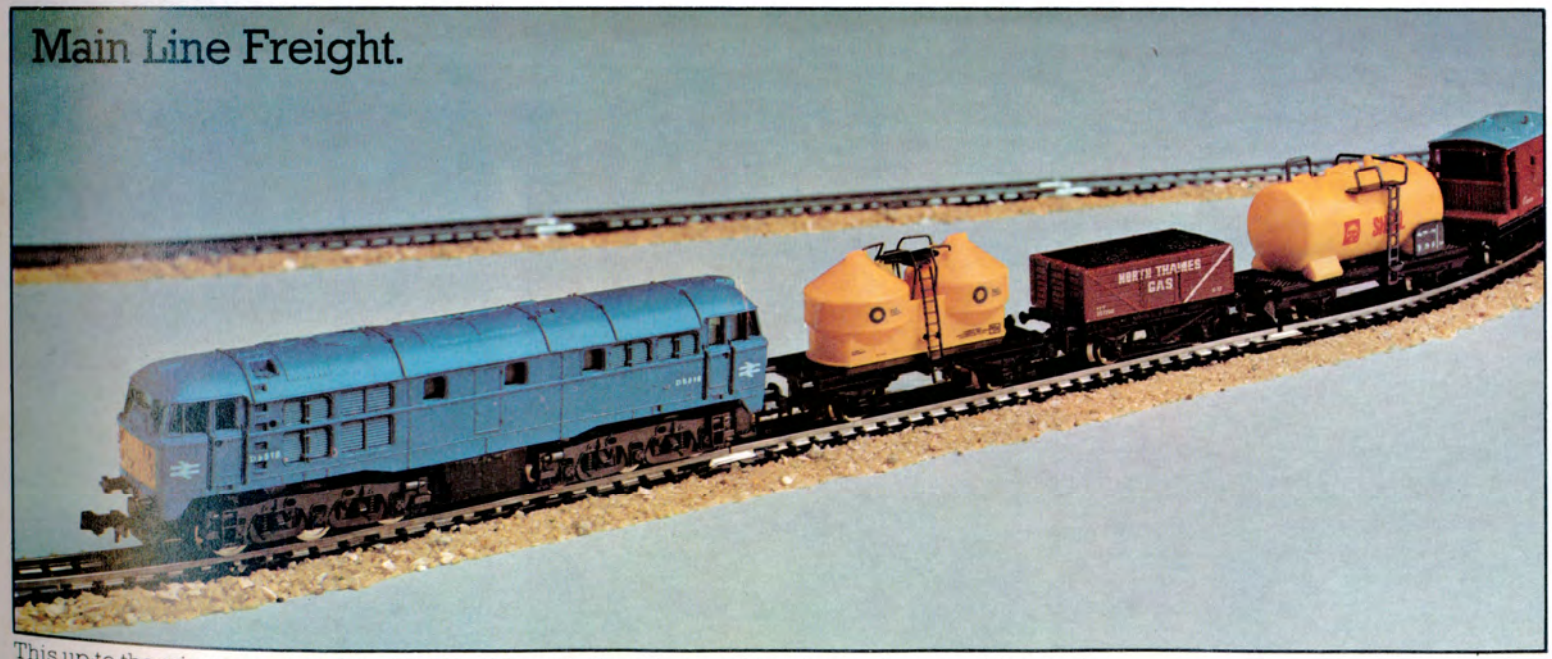


The famous 'Fowler' Class 4F tender locomotive, with a first/second class Mark 1 composite coach, and a brake and coach.
All in the distinctive BR livery of the late 1950's.

Set No. 138
Loco 259.
Coaches 314, 315.
Oval of track consisting of:
7 pieces curved track 571,
1 piece power connecting rail 571C,
2 pieces straight track 561.
1 battery box control unit 012A.

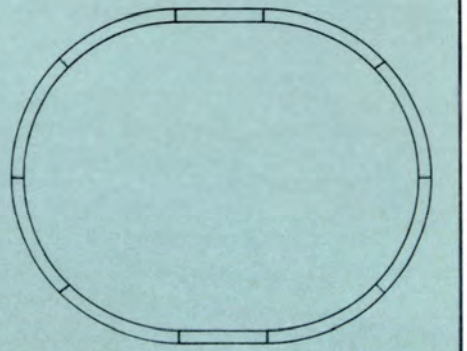


Main Line Freight.

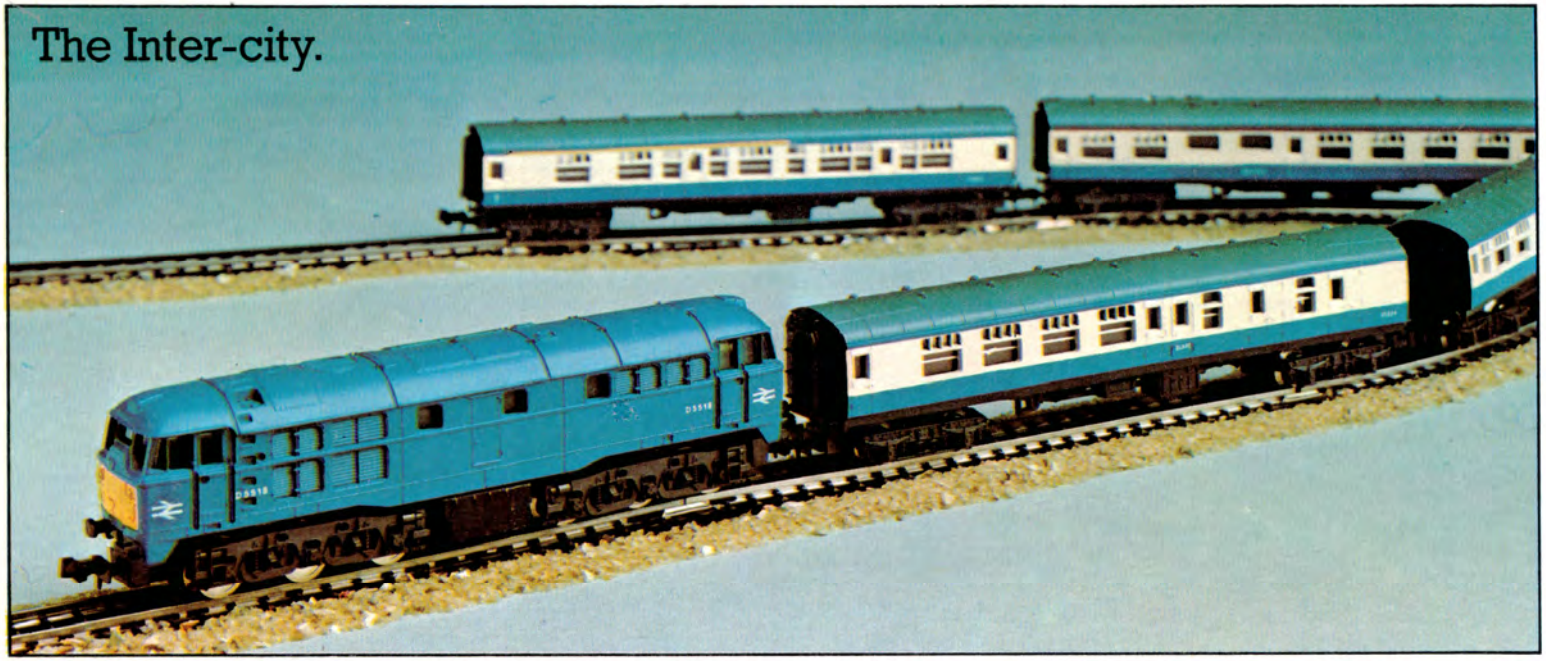


This up-to-the-minute set contains a BR AIA-AIA brush diesel loco and four items of goods rolling stock,
and represents a typical freight train seen running today in all parts of the country.

Set No. 139
Loco 209.
Wagons 407, 729, 452, 405.
Oval of track consisting of:
7 pieces curved track 571,
1 piece power connecting rail 571C,
2 pieces straight track 561.
1 battery box control unit 012A.



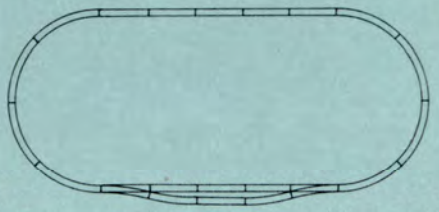
The Inter-city.



Perhaps the most popular of all today's trains,
providing a speedy passenger service between Britain's major cities.

Set No. 168

Loco 209. 2 coaches 306.
1 coach 307. 1 coach 313.
Oval of track with passing loop,
consisting of:
7 pieces curved track 571,
9 pieces straight track 561,
1 right-hand point 525,
1 left-hand point 526,
2 compensating curves 553,
1 piece power connecting rail 571C.
1 battery box control unit 012A.



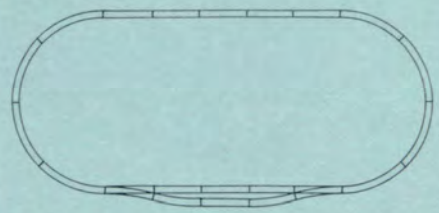
The Age-of-Steam Goods.

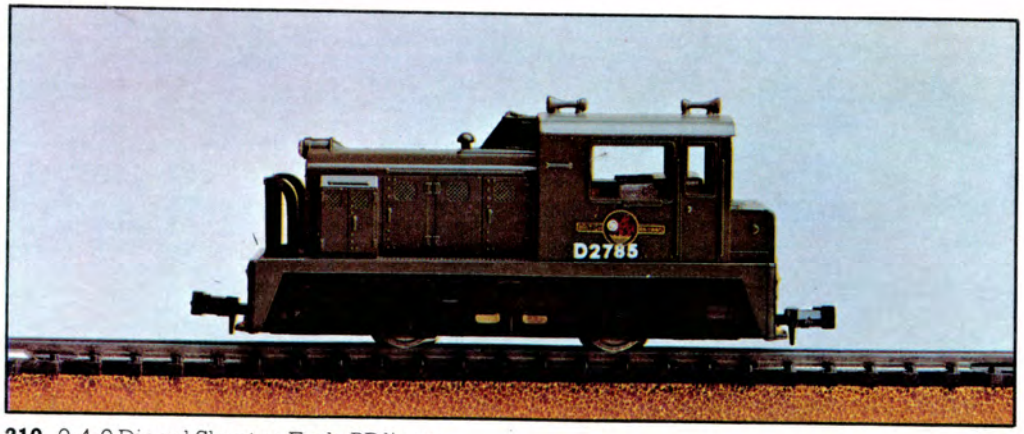


This eight wagon freight train is hauled by the 'Fowler' Class 4F tender locomotive
and was used on main lines when speedy transfer of loads had priority.

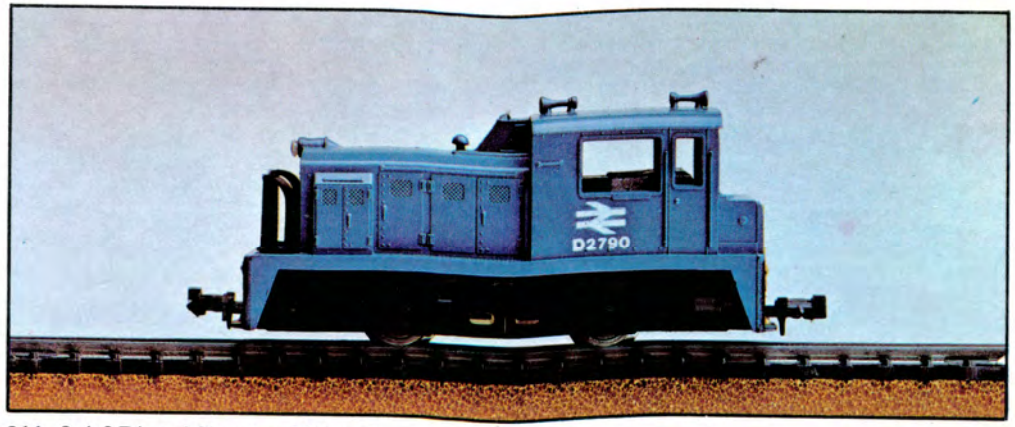
Set No. 169

Loco 258. Wagons 737, 451, 405, 400, 734, 735, 462, 407.
Oval of track with passing loop,
consisting of:
7 pieces curved track 571,
9 pieces straight track 561,
1 right-hand point 525,
1 left-hand point 526,
2 compensating curves 553,
1 piece power connecting rail 571C.
1 battery box control unit 012A.





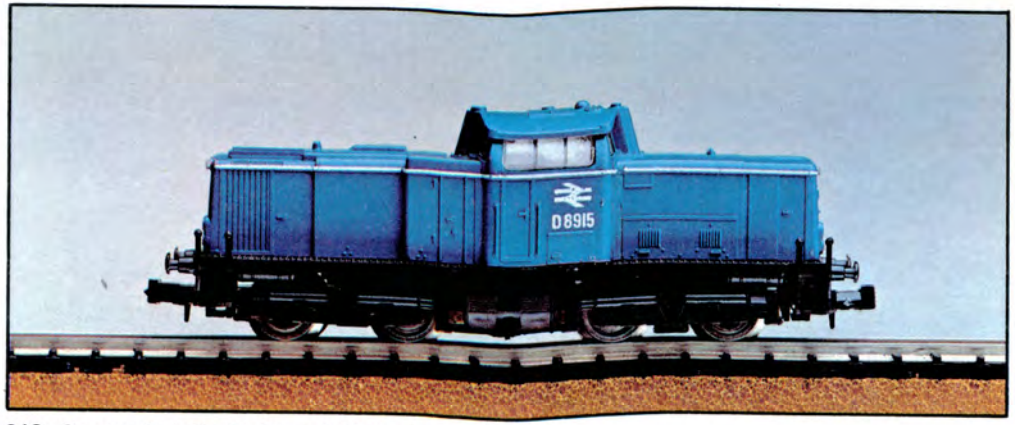
210 0-4-0 Diesel Shunter. Early BR livery.



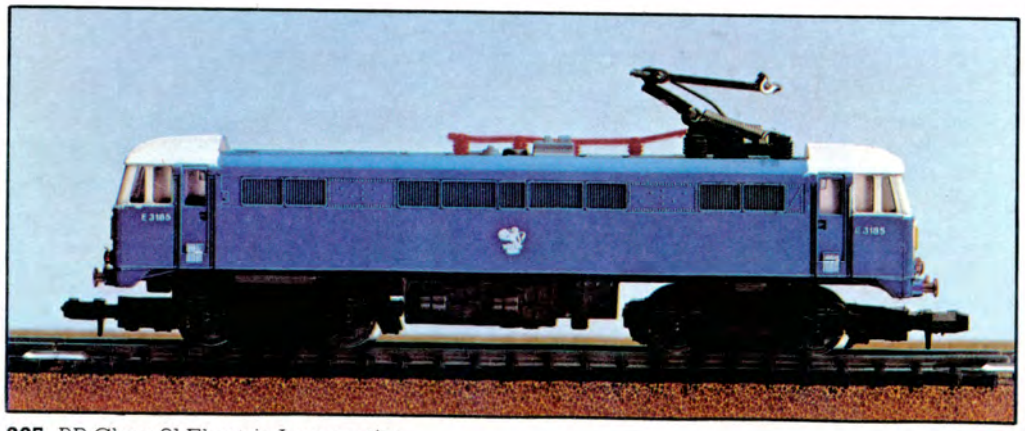
211 0-4-0 Diesel Shunter. BR livery.



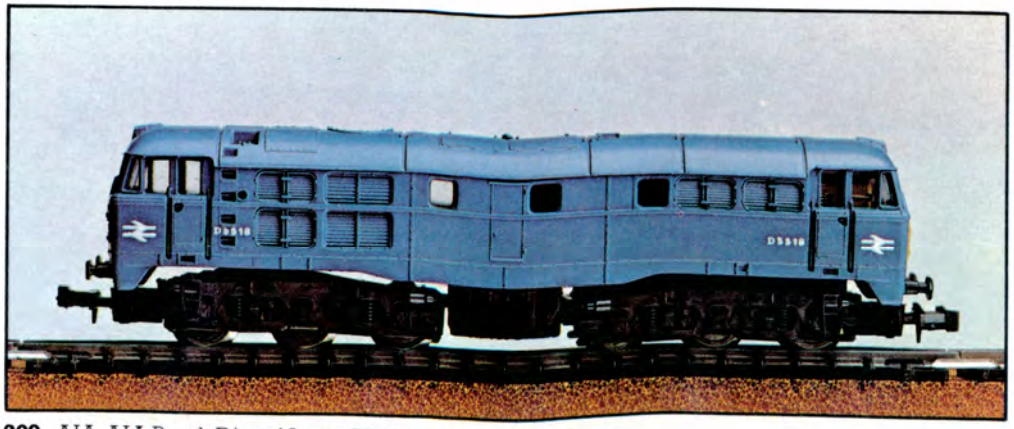
212 Centre Cab Bo-Bo Diesel. Early BR livery.



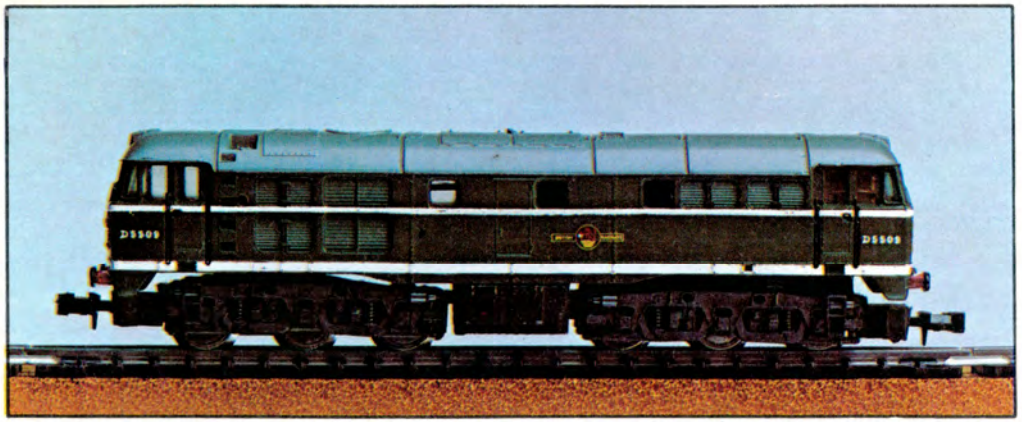
213 Centre Cab Bo-Bo Diesel. BR livery.



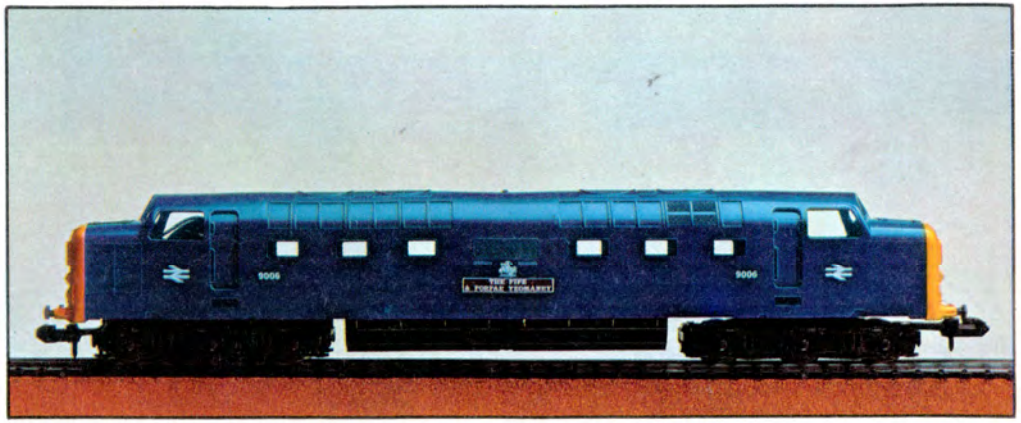
205 BR Class 81 Electric Locomotive.



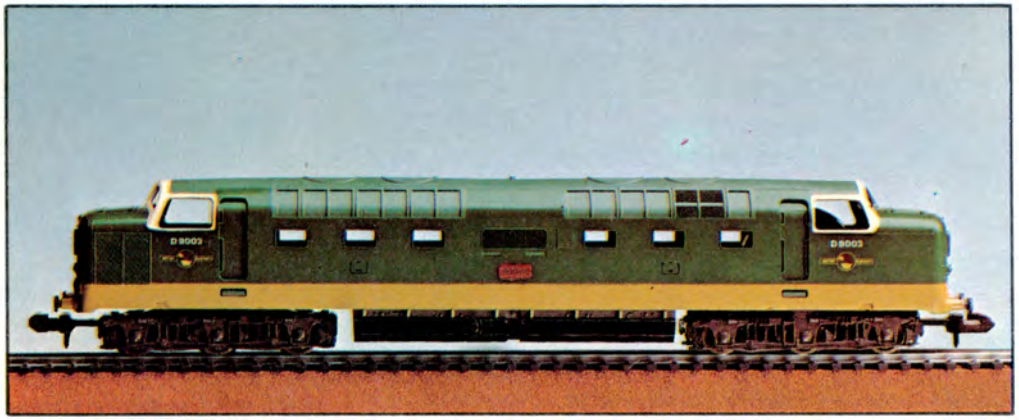
209 AIA-AIA Brush Diesel Loco. BR livery.



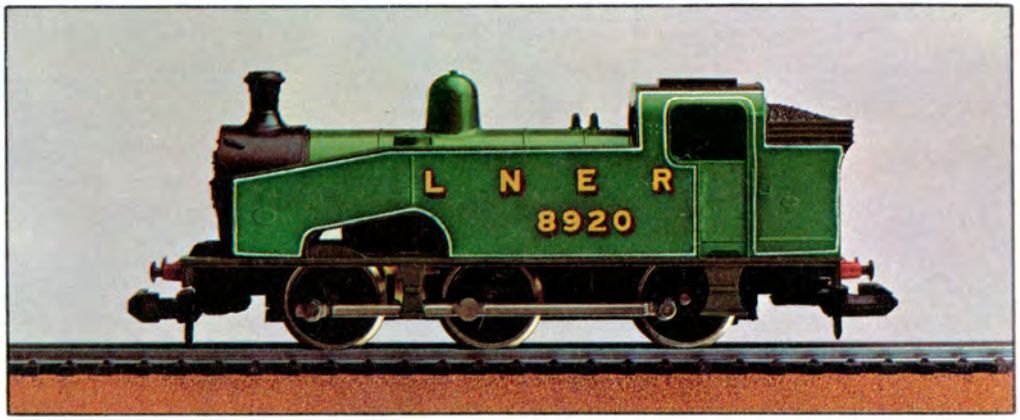
214 BR Class 31 AIA-AIA Diesel Locomotive.



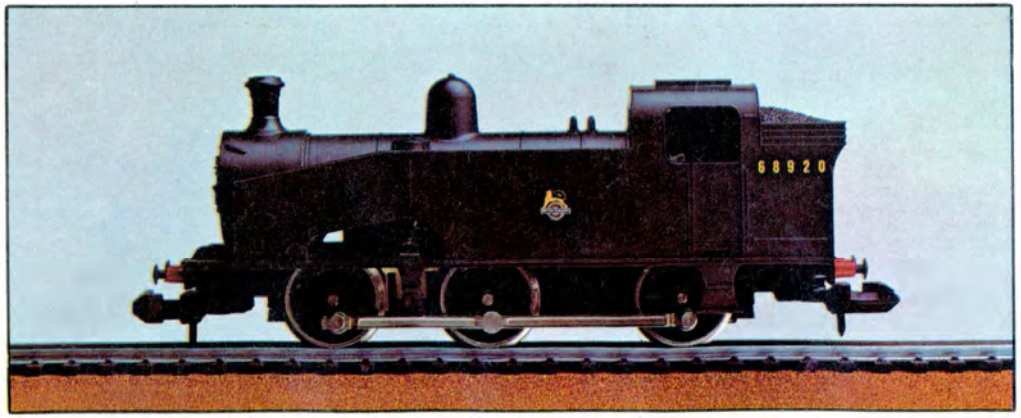
217 BR Class 55 'Deltic' Co-Co Diesel Locomotive.



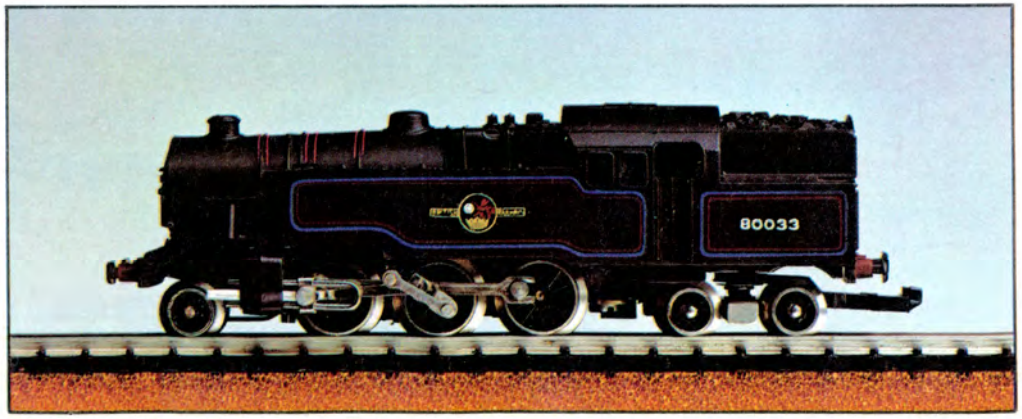
253 BR Class 55 'Deltic' Co-Co Diesel Locomotive. Early livery.



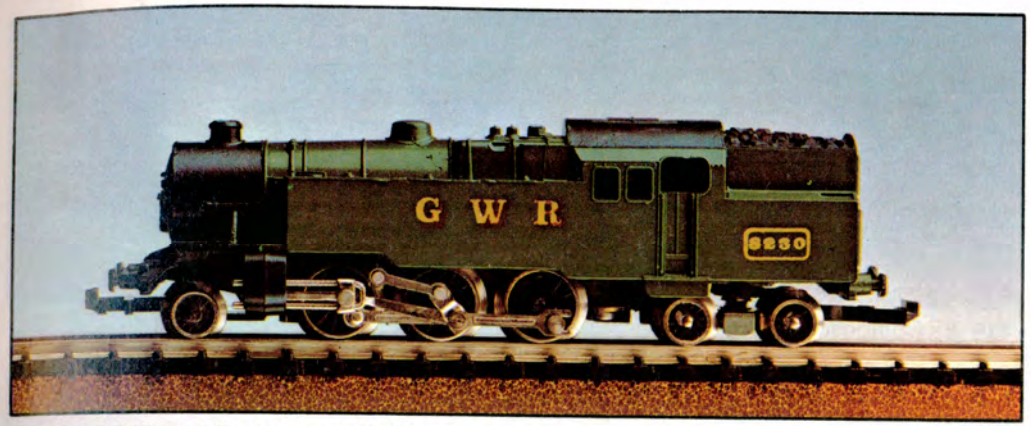
254 0-6-0T Class J50 Tank Loco. LNER livery.



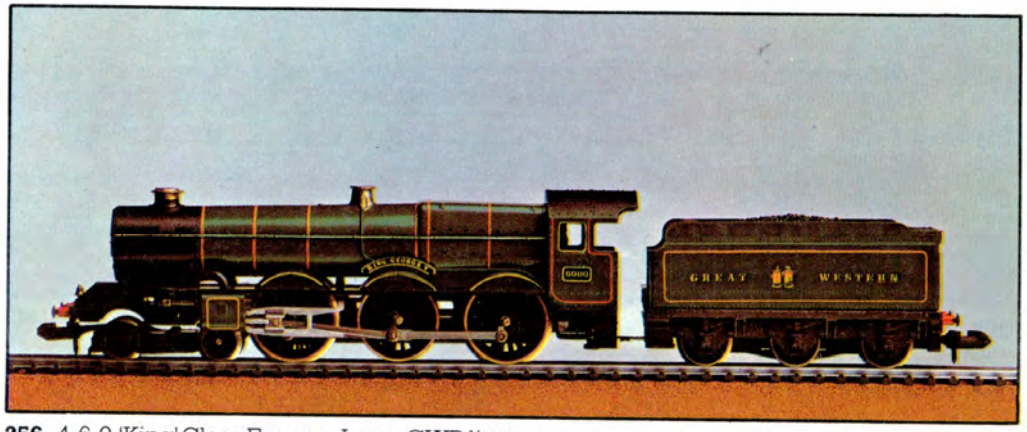
255 0-6-0T Class J50 Tank Locomotive. BR livery.



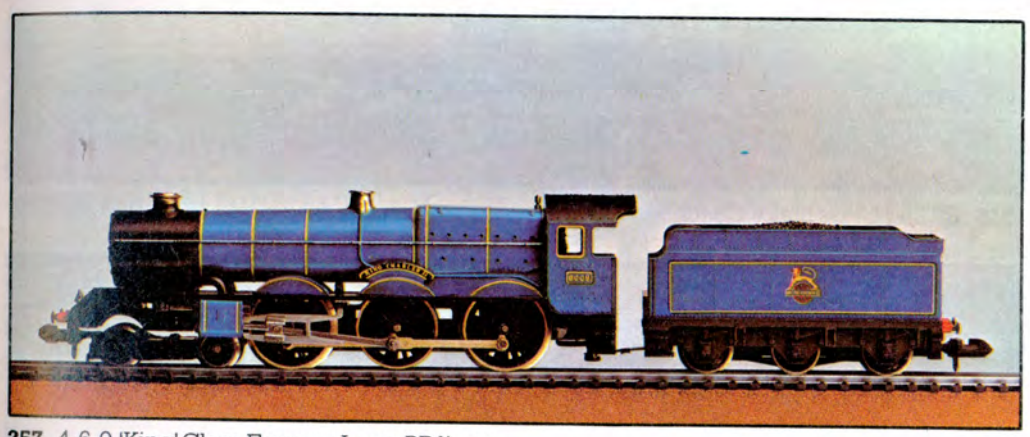
227 2-6-4T Class 4 Tank Loco. BR livery.



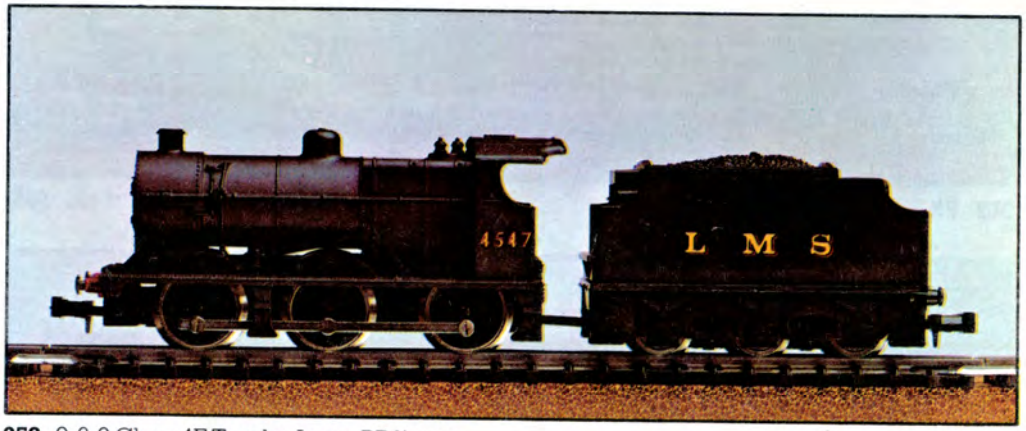
228 2-6-4T Class 4 Tank Loco. GWR livery.



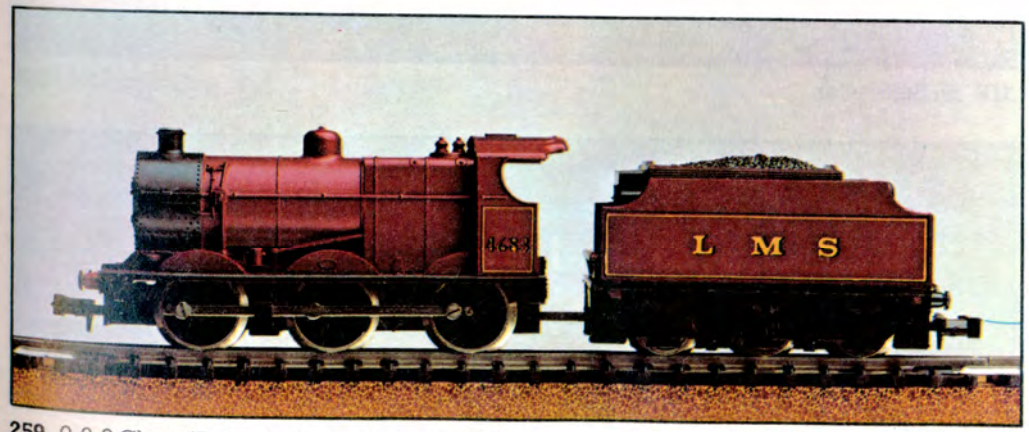
256 4-6-0 'King' Class Express Loco. GWR livery.



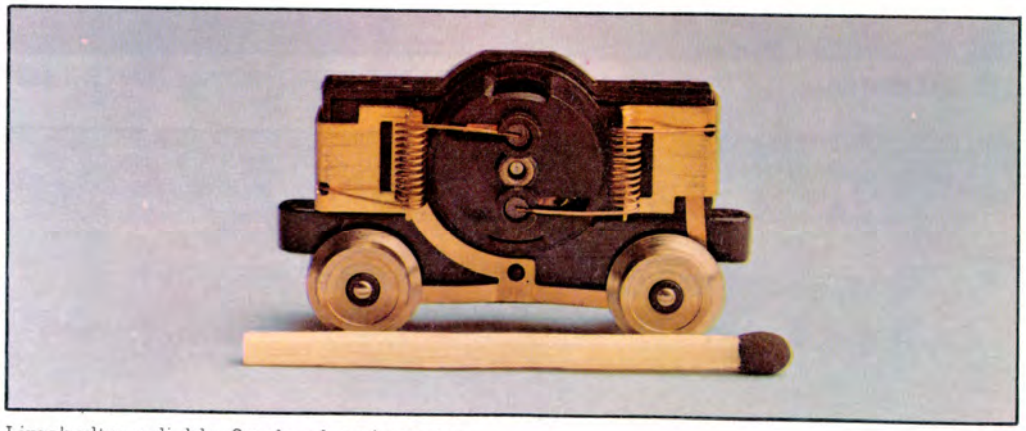
257 4-6-0 'King' Class Express Loco. BR livery.



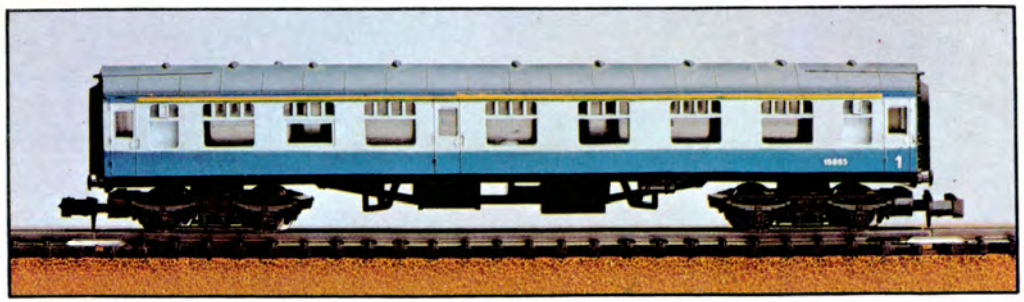
258 0-6-0 Class 4F Tender Loco. BR livery.



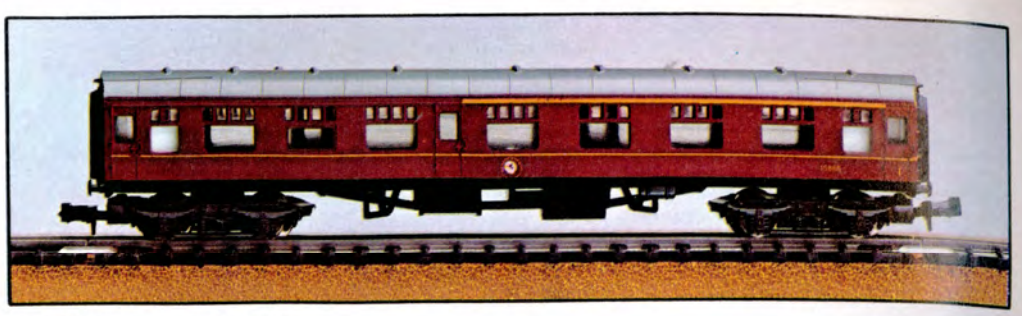
259 0-6-0 Class 4F Tender Locomotive. LMS livery.



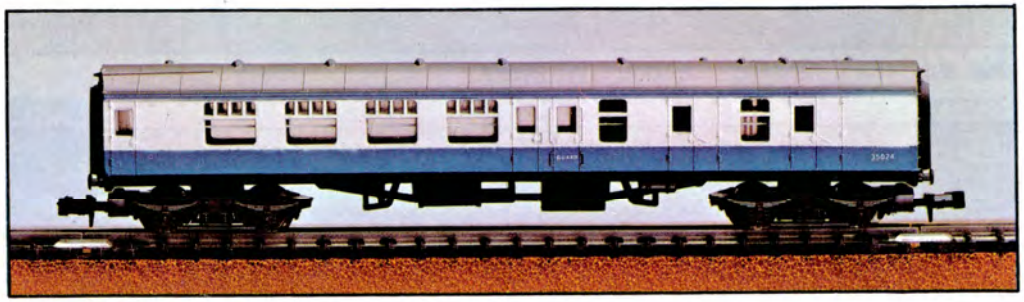
Lima's ultra-reliable, 3 pole, electric motor.
A graphic example of advanced technology in miniature.



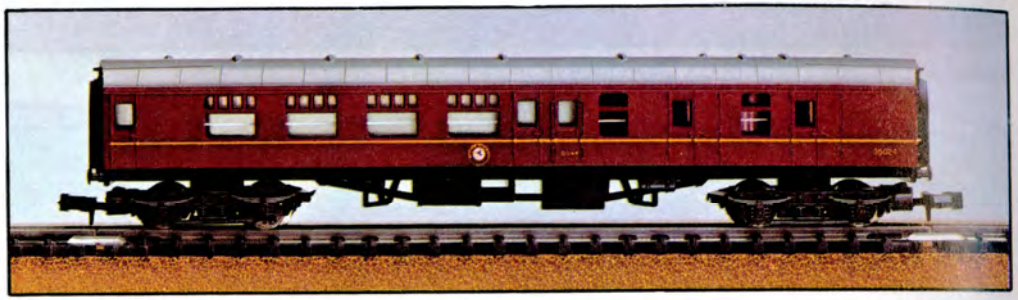
306 BR Composite Coach.



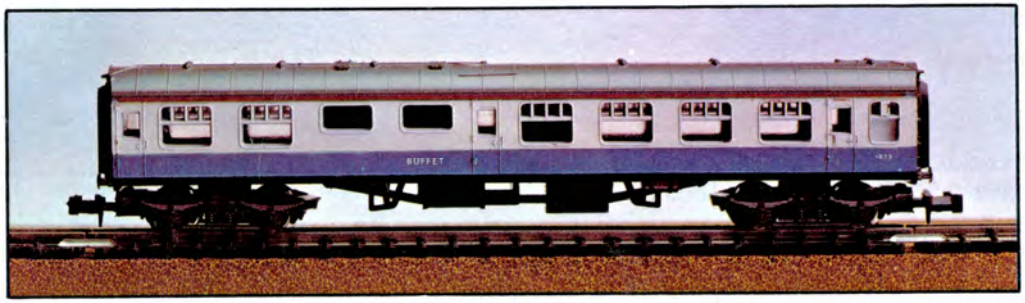
314 BR Composite Coach.



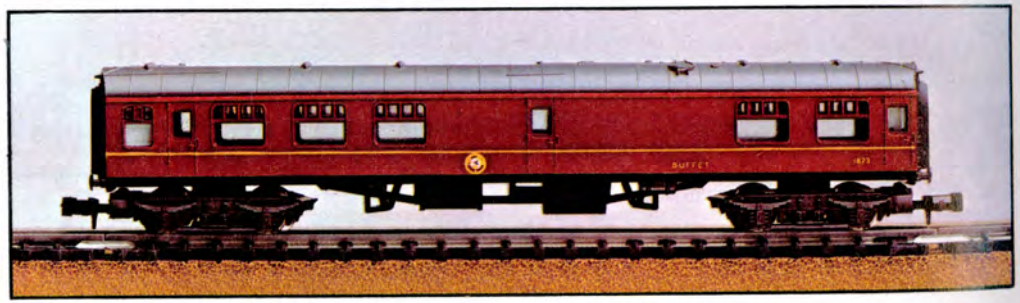
307 BR 2nd Class Brake Coach.



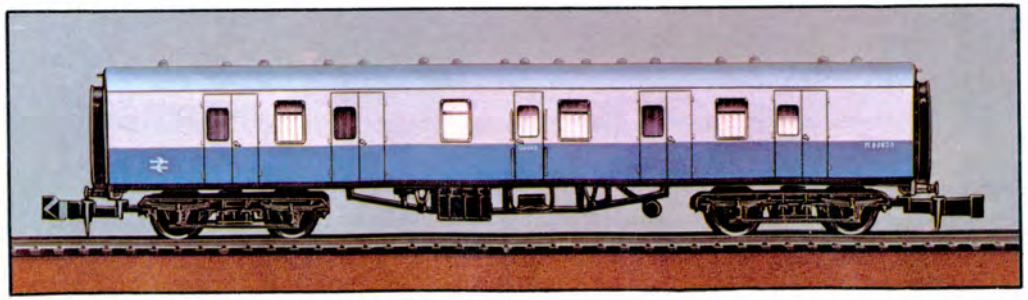
315 BR 2nd Class Brake Coach.



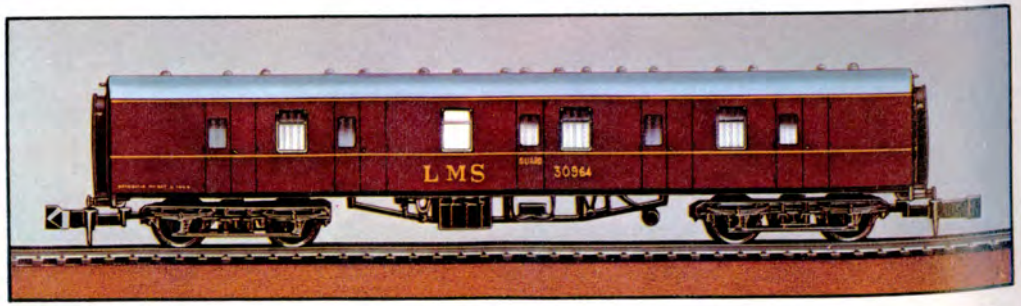
313 BR Buffet Car.



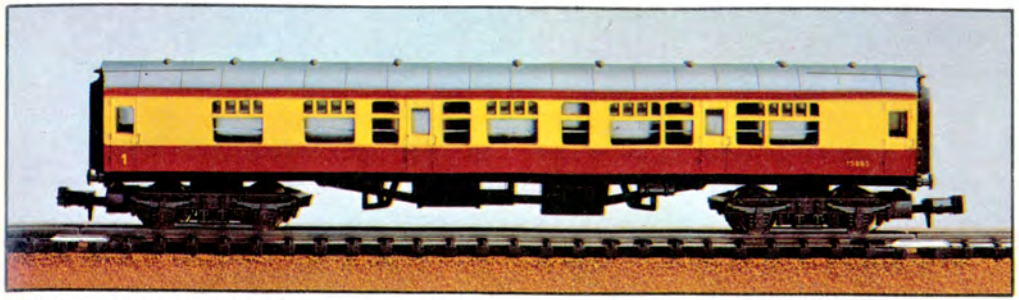
316 BR Buffet Car.



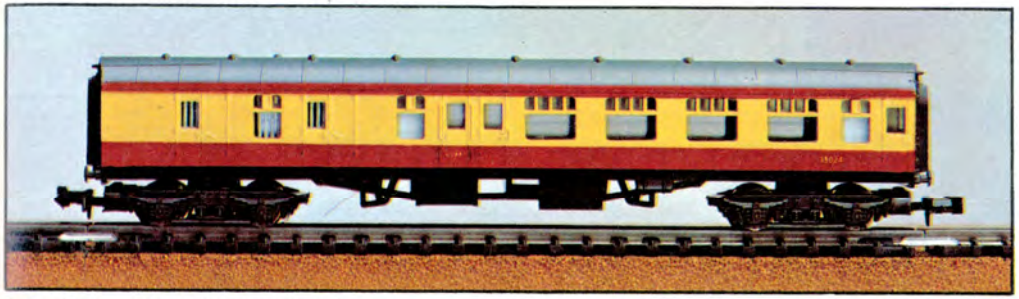
368 BR 58ft Standard Gangwayed Brake Van.



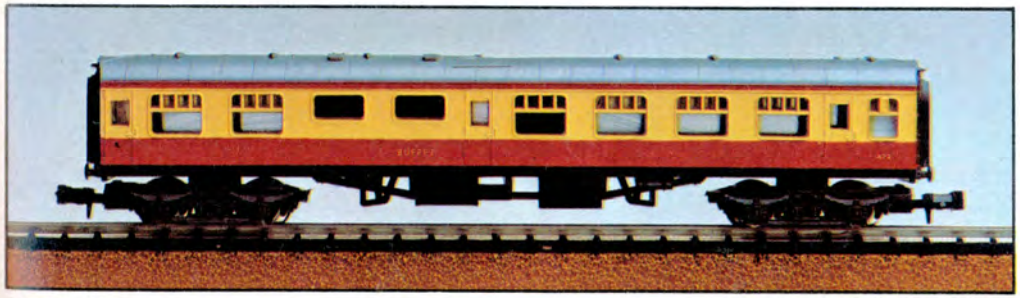
367 BR 58ft Standard Gangwayed Brake Van.



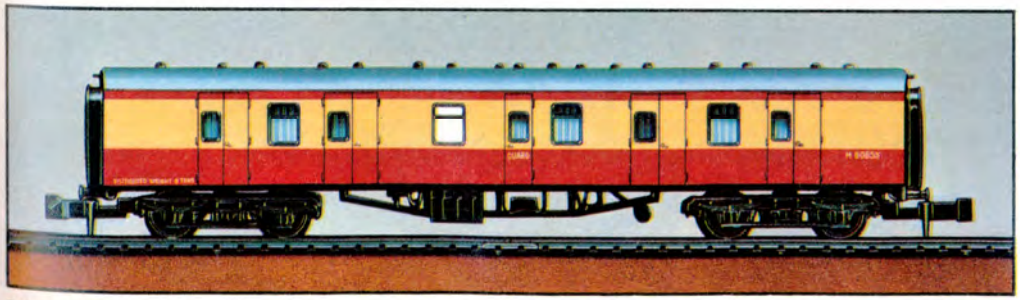
357 BR Composite Coach.



358 BR 2nd Class Brake Coach.



359 BR Buffet Car.



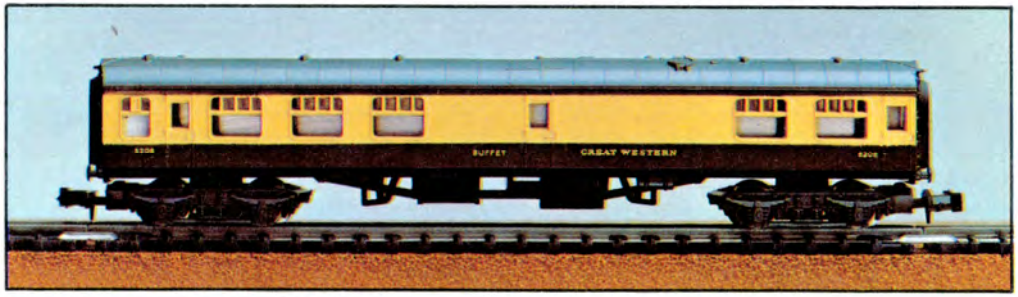
369 BR 58ft Standard Gangwayed Brake Van.



361 BR Composite Coach. GWR livery.



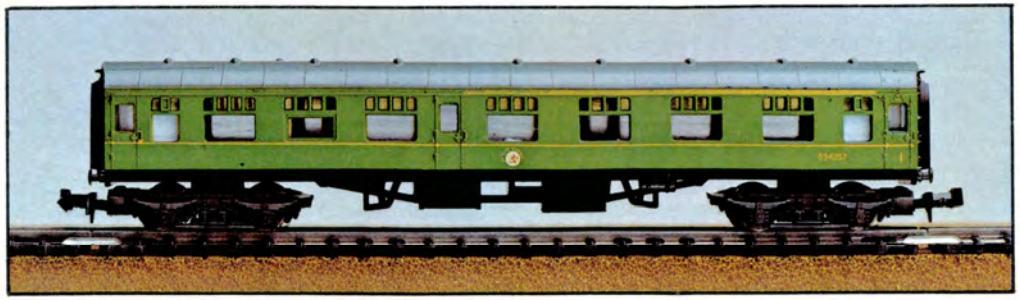
362 BR 2nd Class Brake Coach. GWR livery.



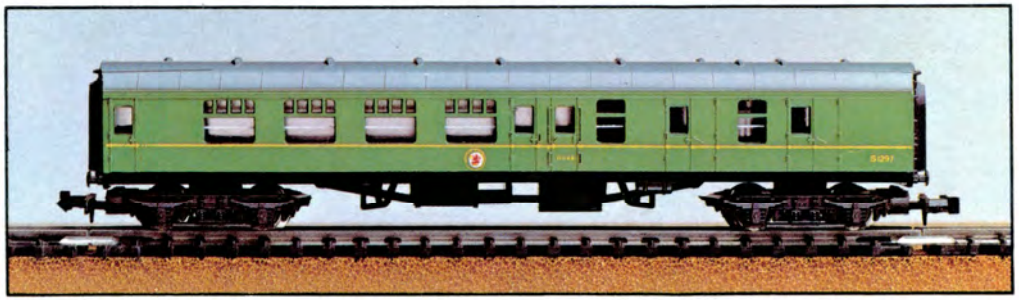
363 BR Restaurant Car. GWR livery.



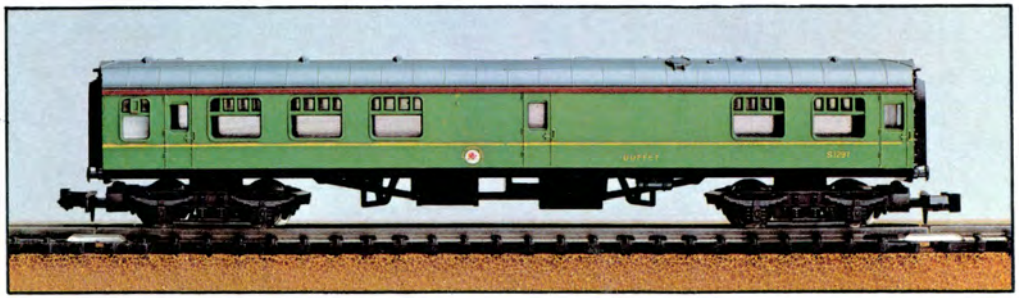
366 BR 58ft Standard Gangwayed Brake Van. GWR livery.



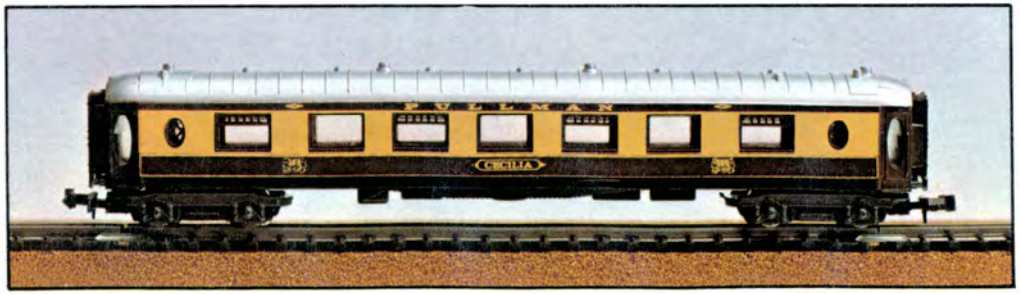
352 BR 2nd Class Brake Coach. SR livery.



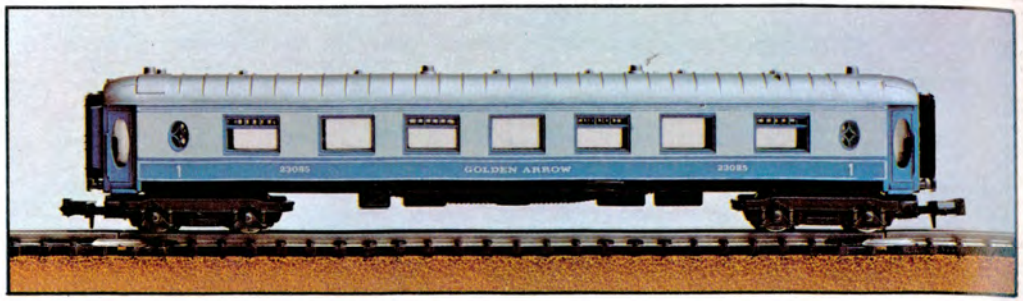
353 BR Composite Coach. SR livery.



354 BR Buffet Car. SR livery.

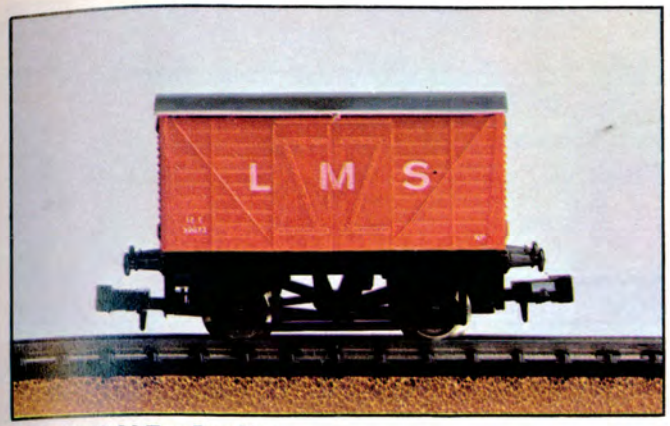


355 BR 1st Class Pullman Car 'Cecilia'

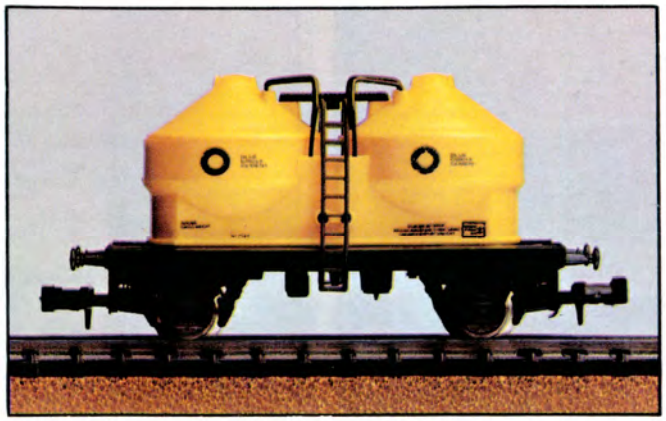


356 BR 1st Class Pullman Car 'Golden Arrow.'

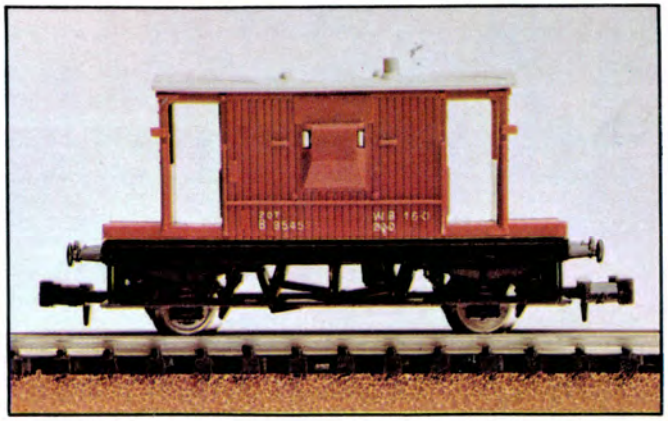




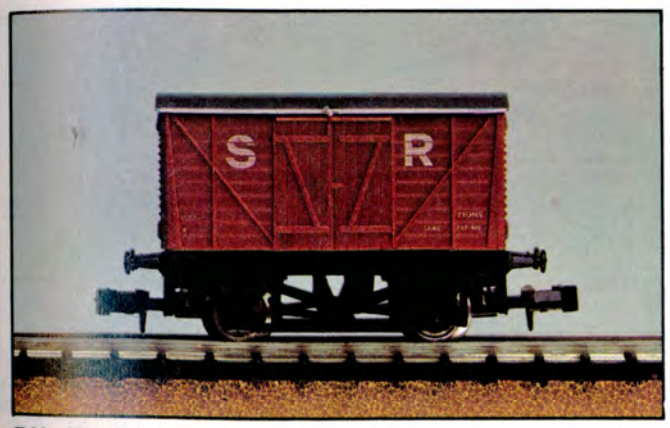
477 LMS 20 Ton Box Van.



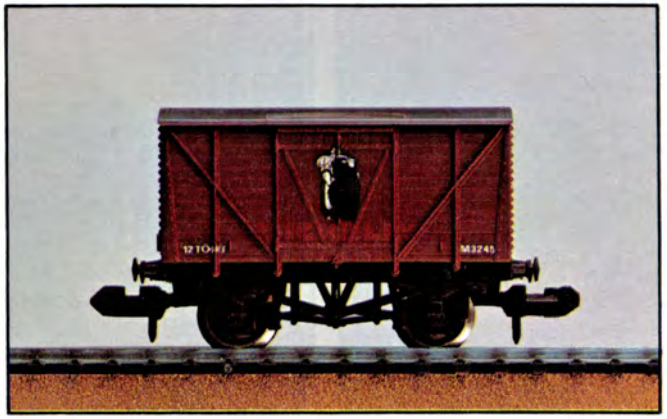
729 'Blue Circle' Twin Tank Cement Wagon.



405 BR 20 Ton Brake Van.



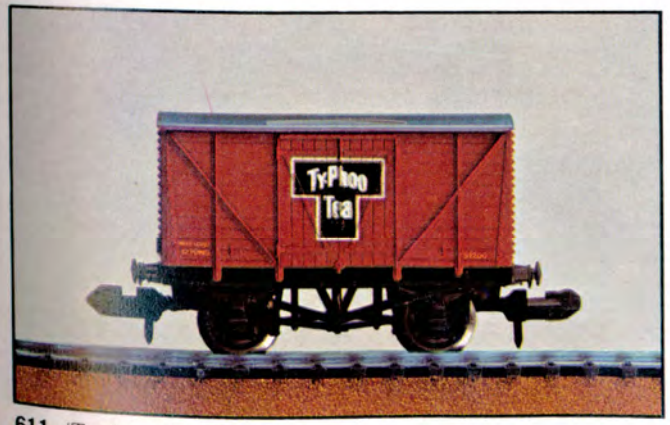
740 SR 20 Ton Box Van.



613 'Michelin Tyres' Box Van.



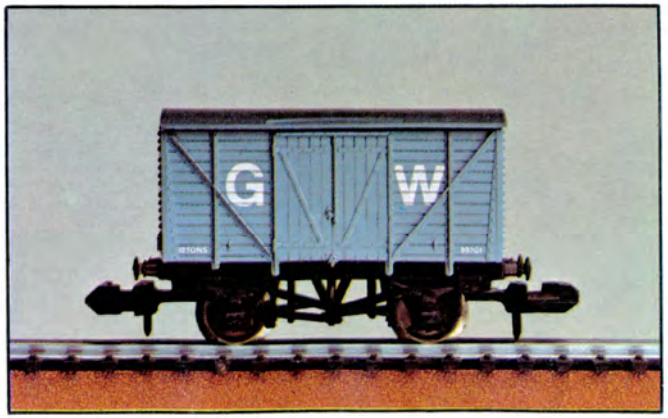
612 'Homepride Flour' Box Van.



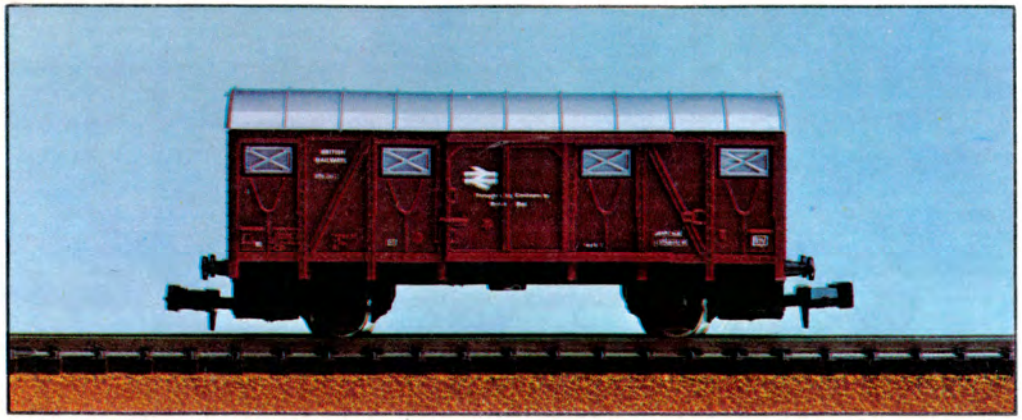
611 'Typhoo Tea' Box Van.



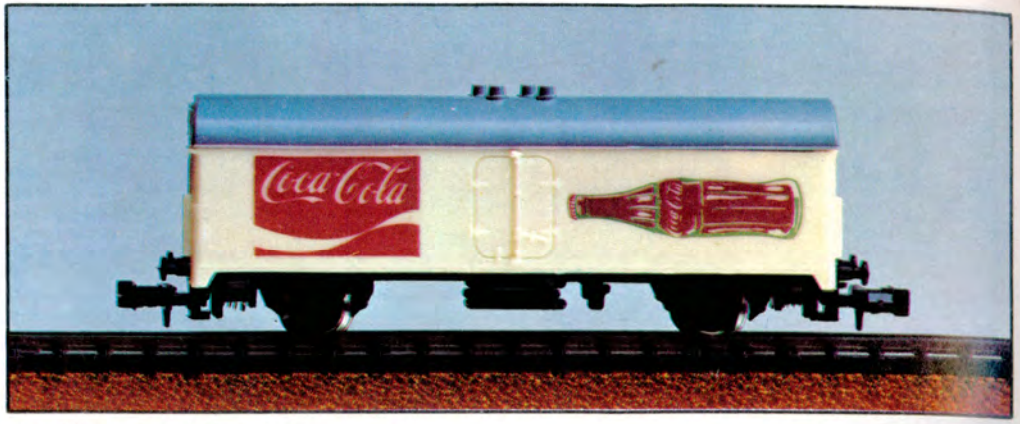
614 'St Ivel Dairy Products' Box Van.



615 GWR Box Van.



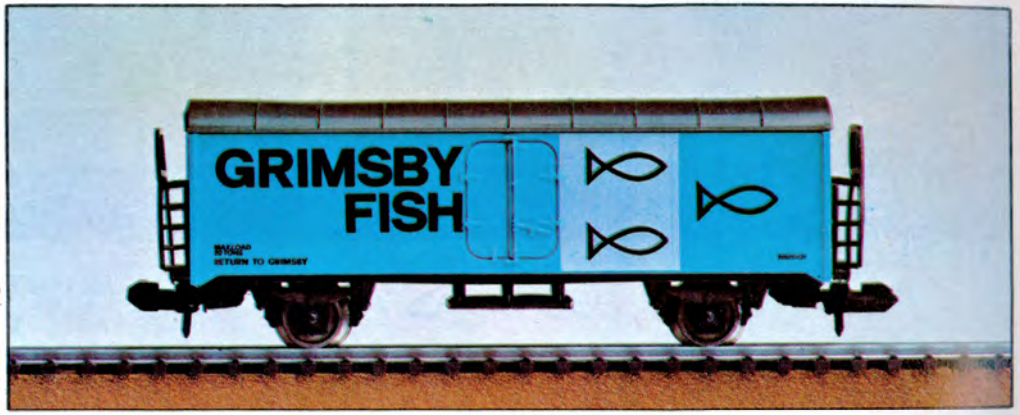
400 BR Closed Van.



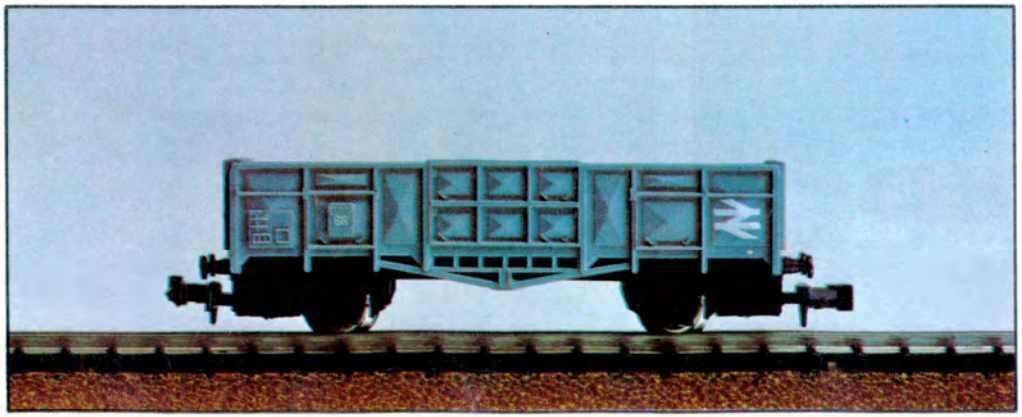
479 'Coca Cola' Closed Van.



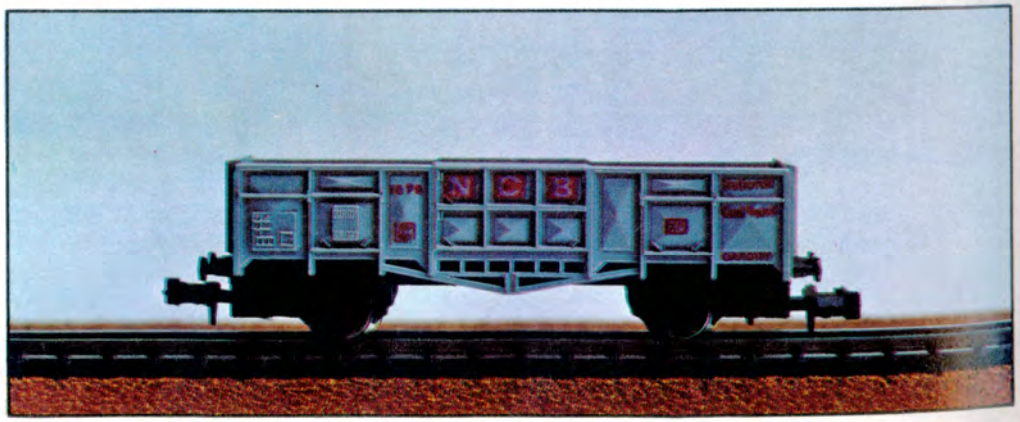
462 'East Anglian Meat' Closed Van.



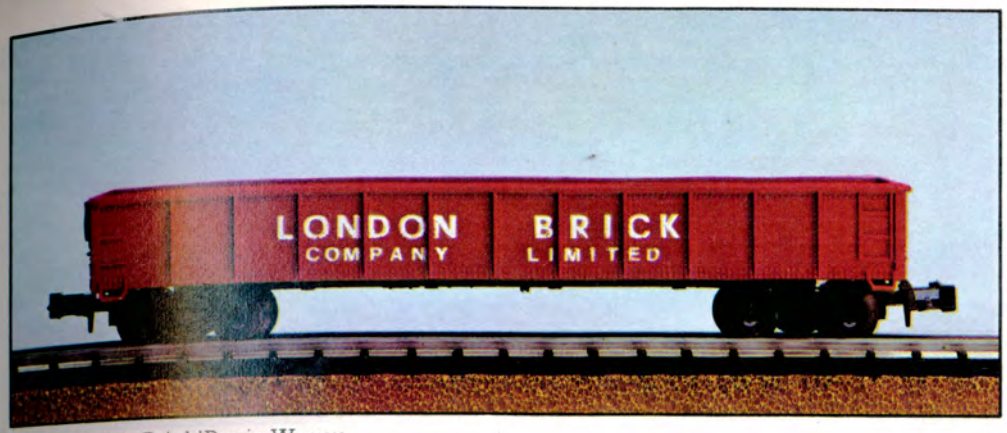
463 'Grimsby Fish' Refrigerator Van.



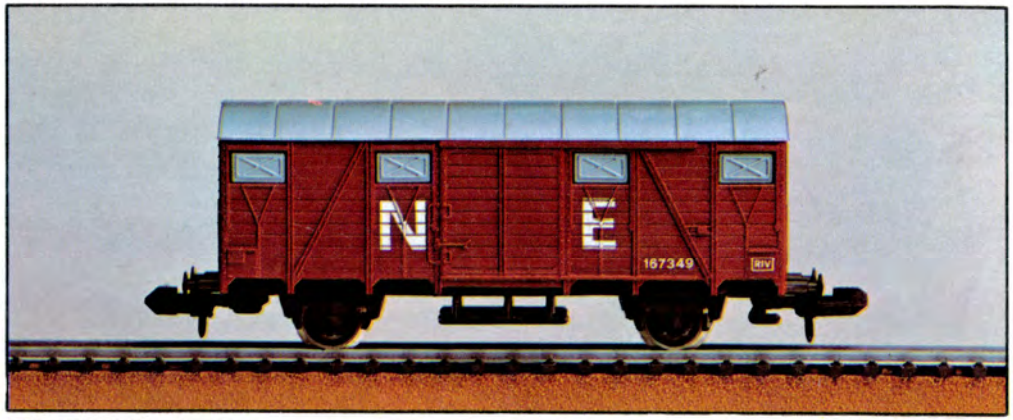
725 Mineral Wagon.



726 'National Coal Board' Mineral Wagon.



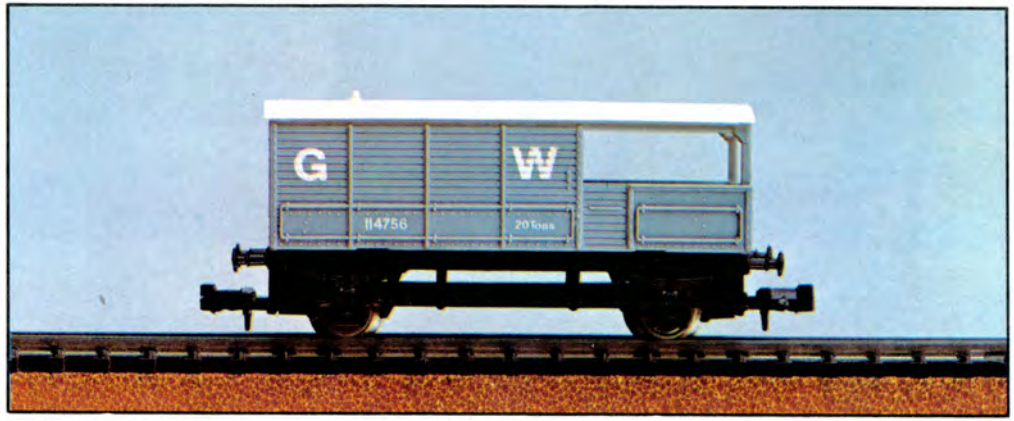
720 'London Brick' Bogie Wagon.



412 NE 20 Ton Box Van.



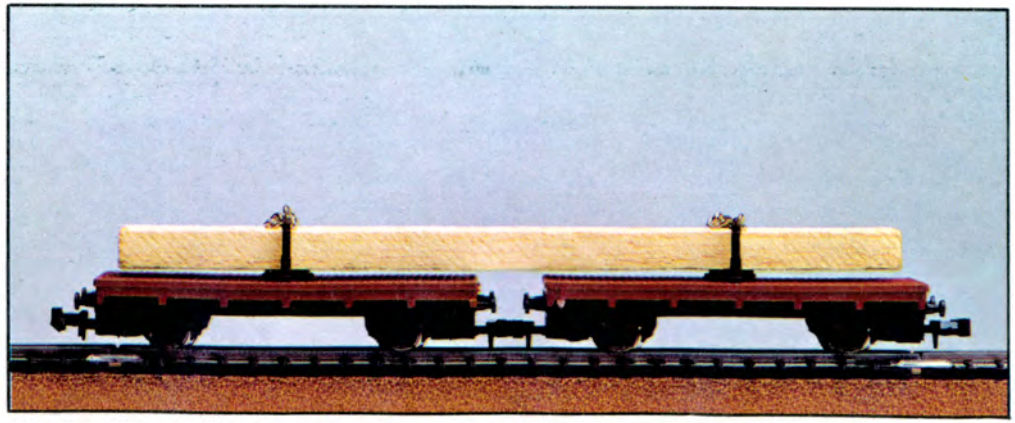
474 'Schweppes' Box Van.



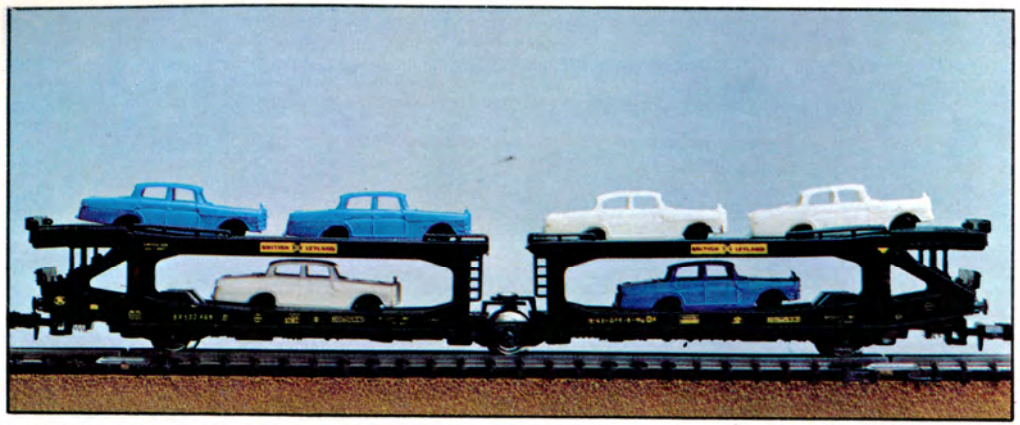
410 GWR Brake Van.



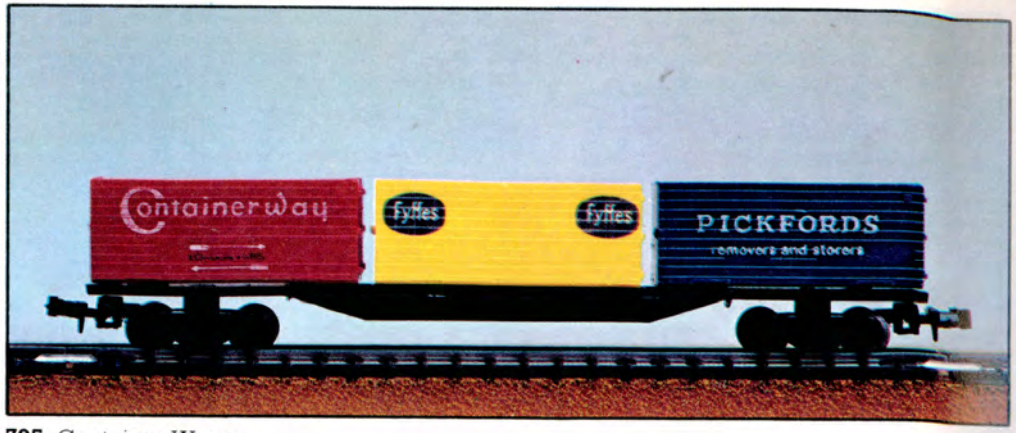
782 'ICI Chemicals' Tank Wagon.



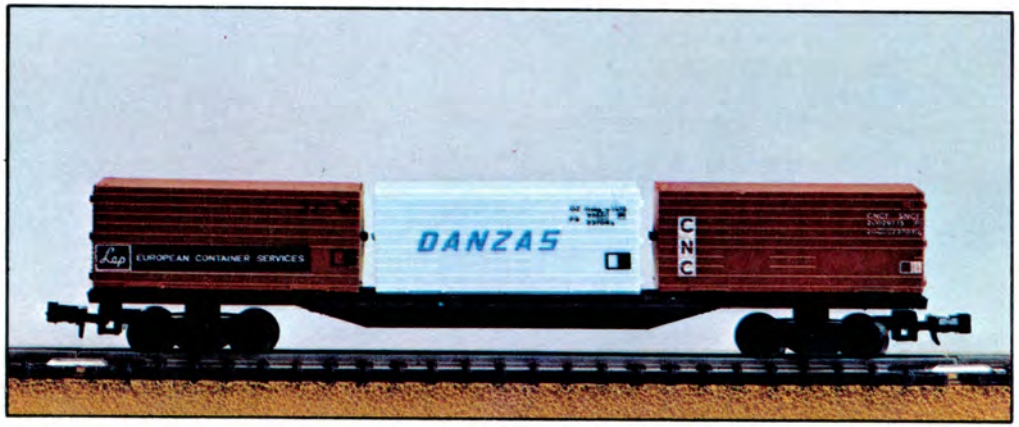
483 Twin Trucks With Planks



792 'British Leyland' Car Carrier.



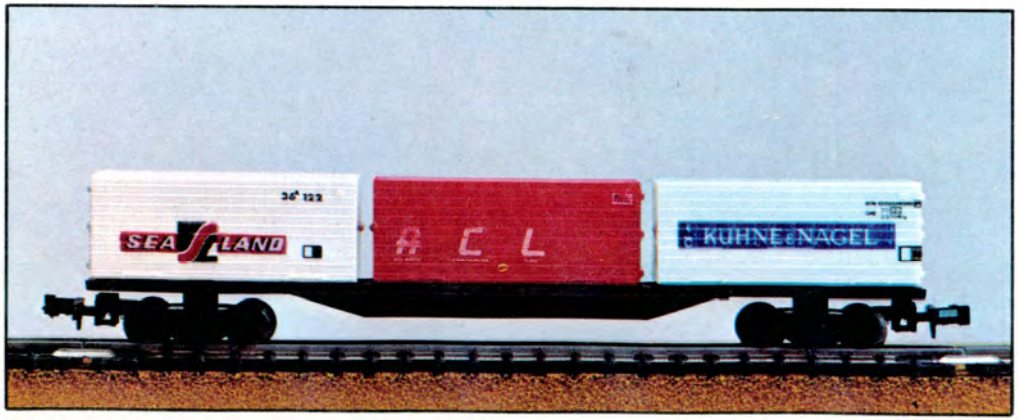
795 Container Wagon.



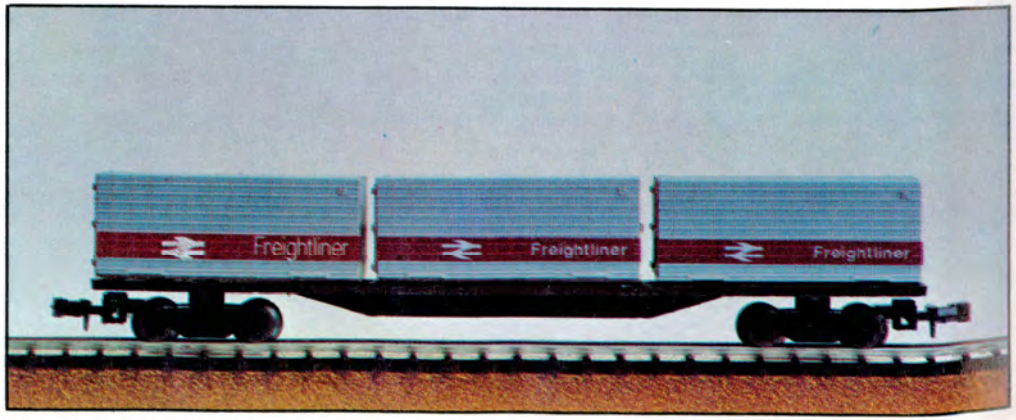
485 Container Wagon.



486 Container Wagon.



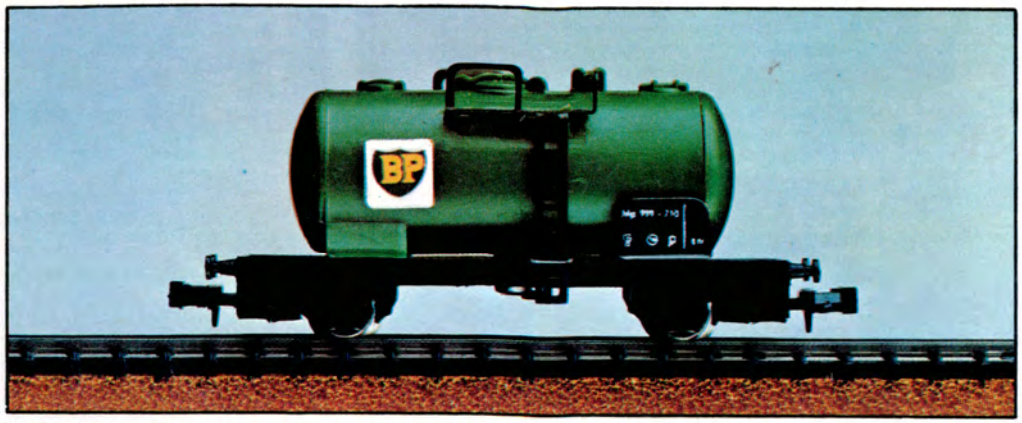
487 Container Wagon.



484 Freightliner Wagon.



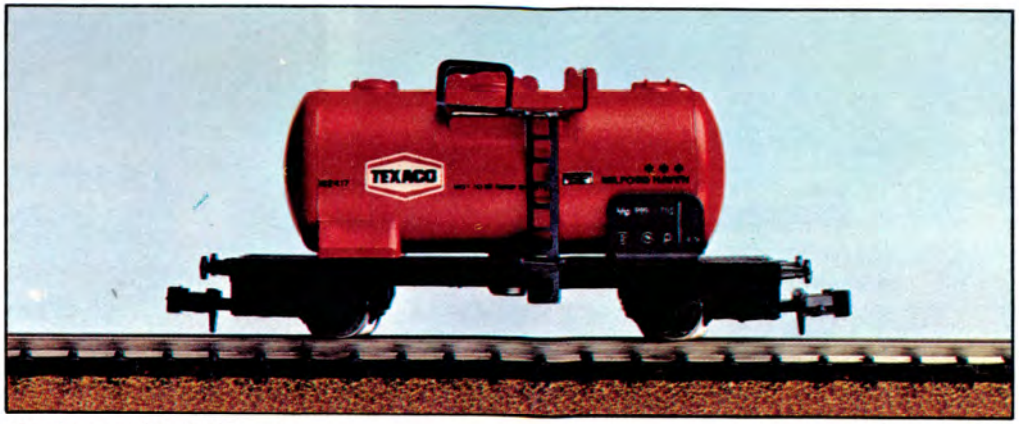
452 'Shell' Tank Wagon.



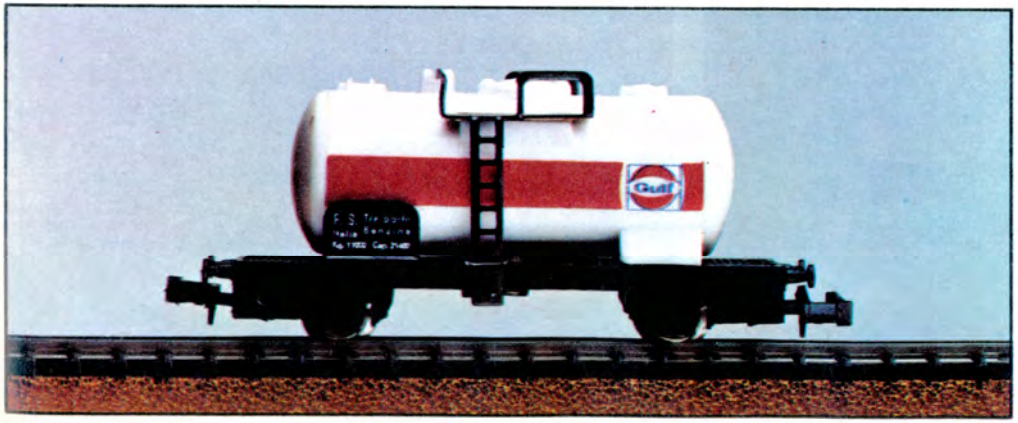
454 'BP' Tank Wagon.



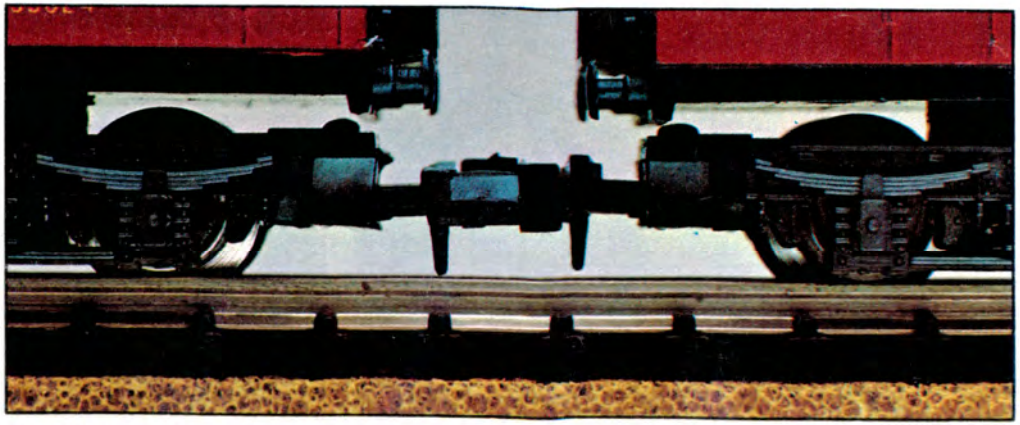
781 'Mobil Oil' Tank Wagon.



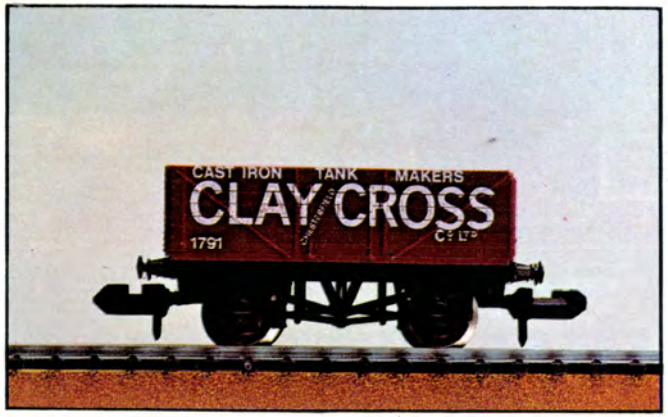
455 'Texaco' Tank Wagon.



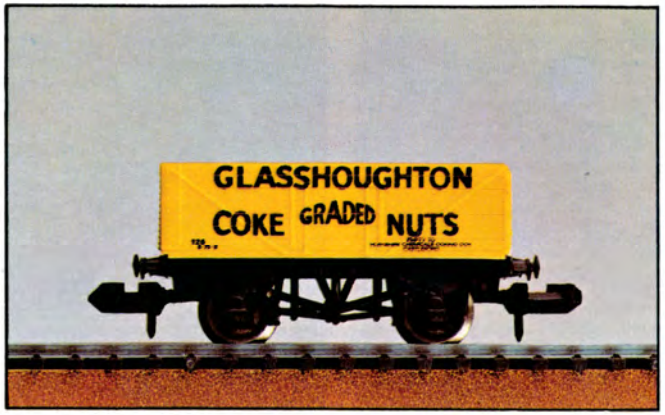
780 'Gulf' Tank Wagon.



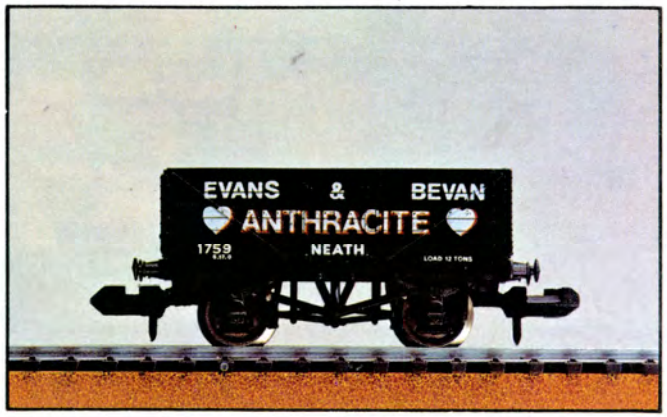
Lima 'N' Gauge features 'Universal Coupling', as used throughout the world. And seen here on two Lima wagons.



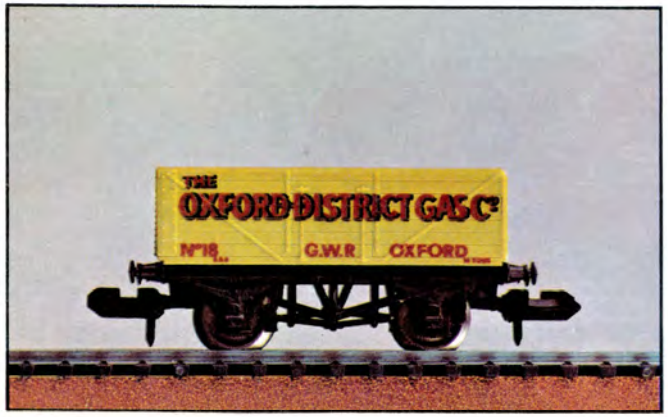
601 'Clay Cross Co Ltd' 7 Plank Wagon.



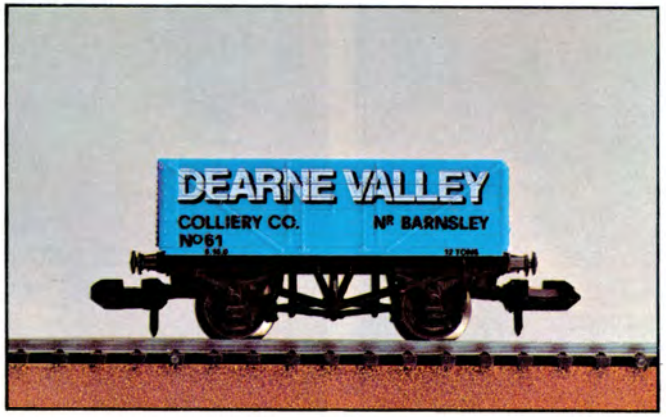
602 'Glasshoughton Coke Nuts' 7 Plank Wagon.



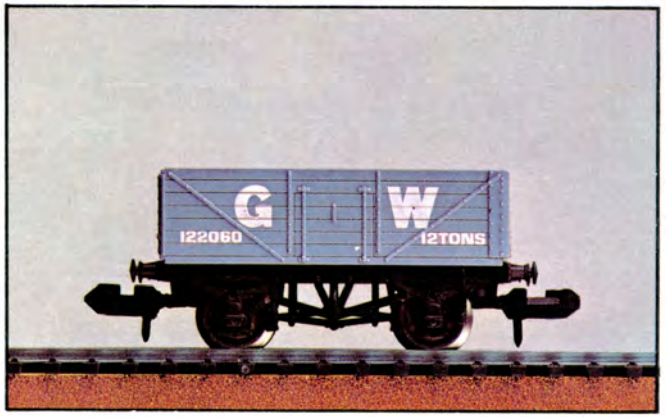
603 'Evans & Bevan Anthracite' 7 Plank Wagon.



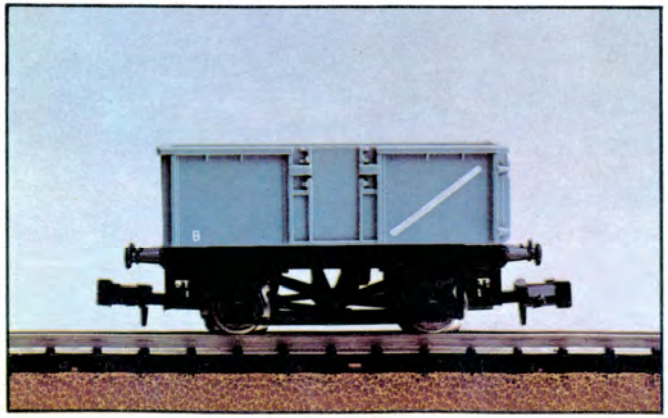
604 'Oxford & District Gas Co' 7 Plank Wagon.



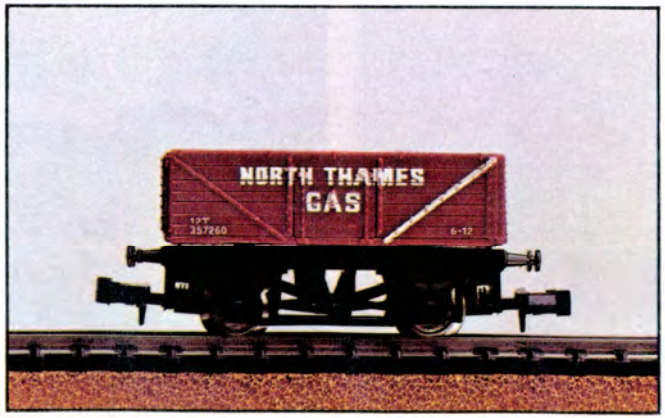
605 'Dearne Valley Colliery' 7 Plank Wagon.



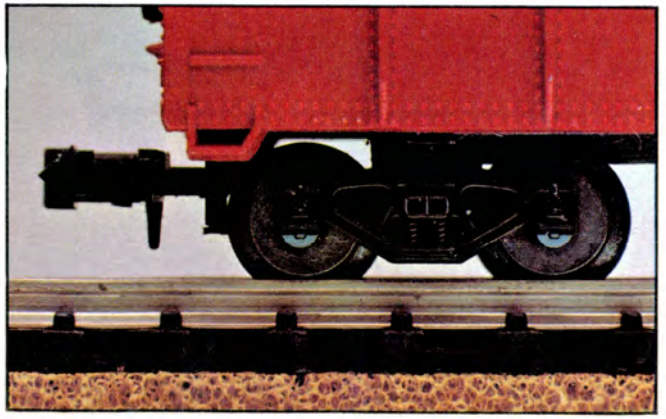
606 'GWR' 7 Plank Wagon.



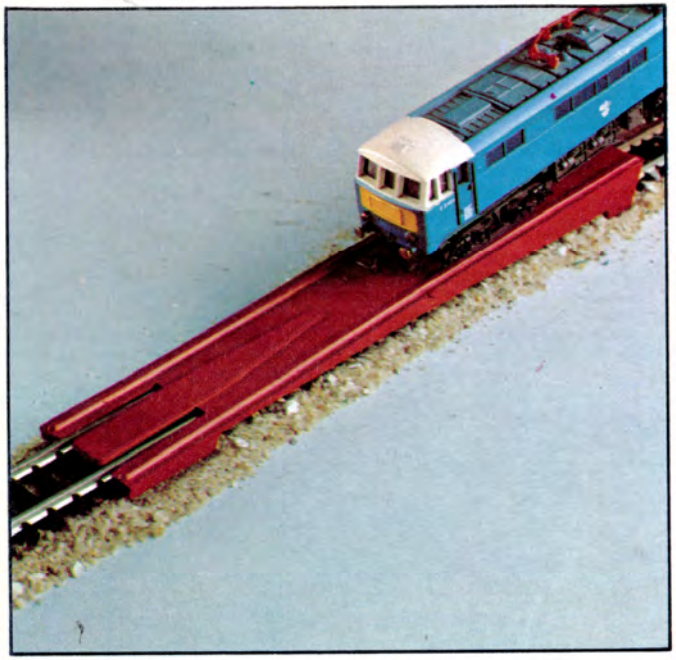
406 Open Mineral Wagon.



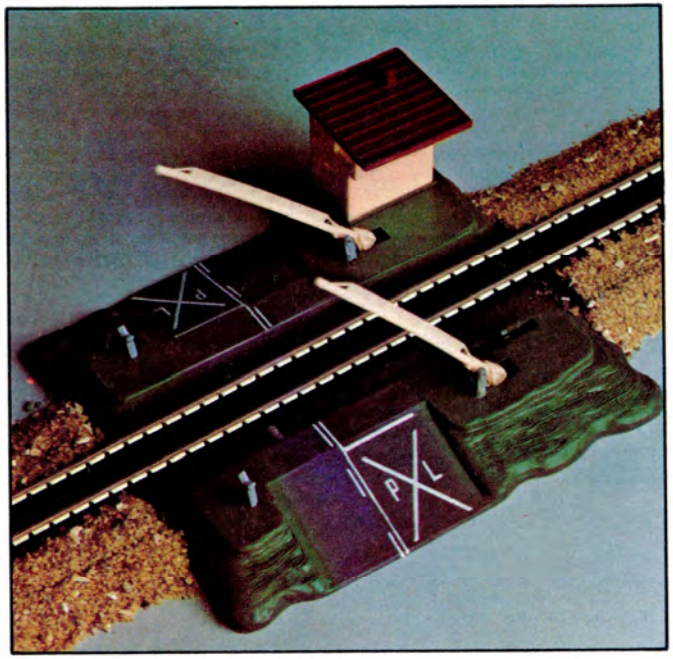
407 'North Thames Gas' Open Wagon.



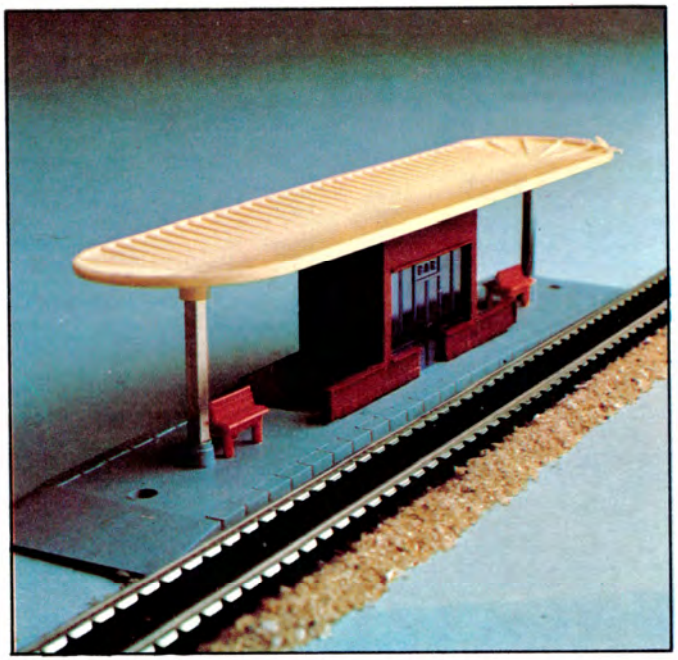
Lima's painstaking attention to detail extends even to the Bogies



721 Railer.



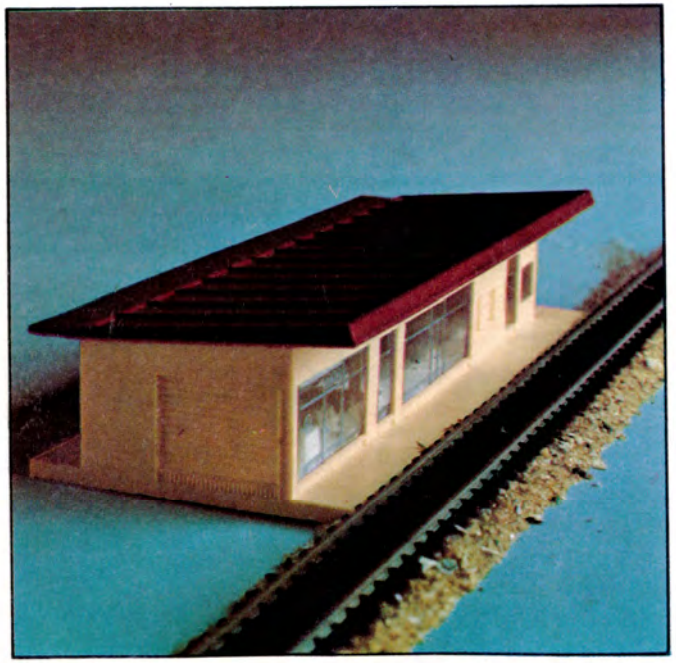
722 Automatic Level Crossing.



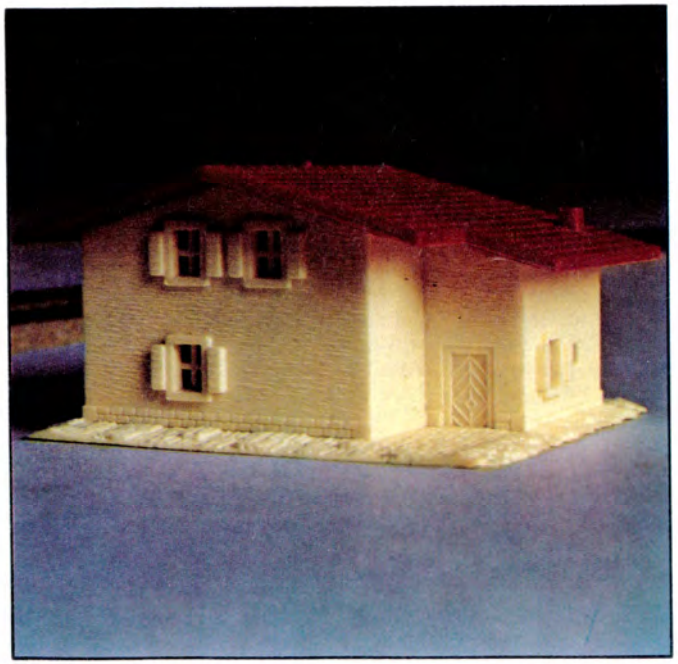
702 Station with Roof.



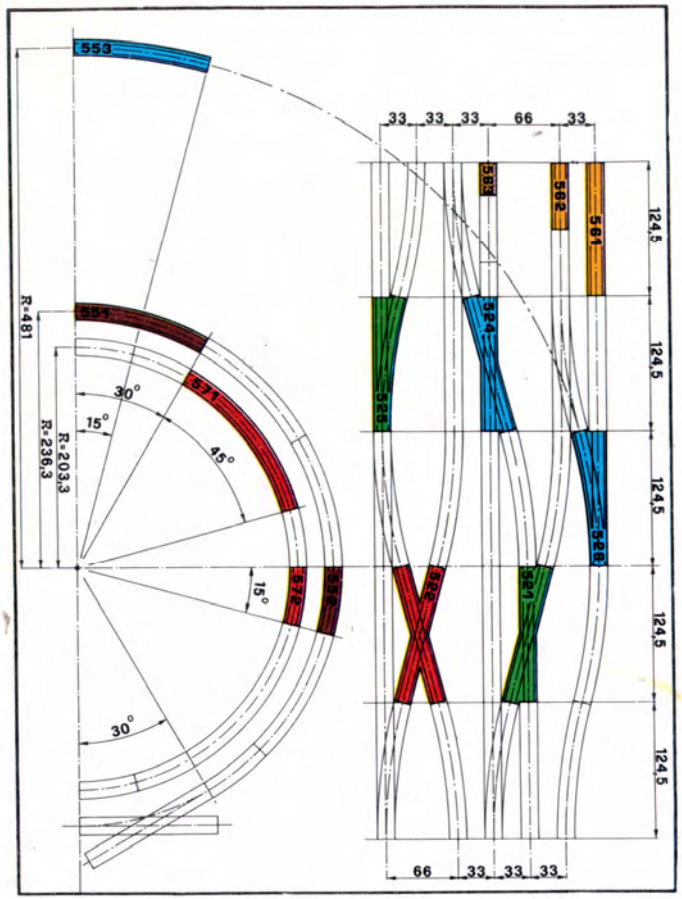
705 Tunnel.



714 Station Building.



715 House.



Remember when installing your track that trains on adjoining tracks must be able to pass freely without touching.

In Lima 'N' Gauge the basic measurement to be born in mind is represented by a distance between tracks of 33mm., maintained in both straight lines and through the curves.

For instance the compensating curve 533 when used with points 525 and 526 maintains this basic 33mm spacing.



561 straight track (124 mm).



562 1/2 straight track (62 mm).



563 1/4 straight track.



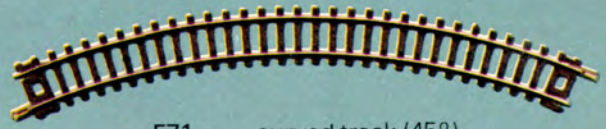
564 1/2 straight with power clip



564R 1/2 straight with power terminal



565 1/2 straight with buffer stop.



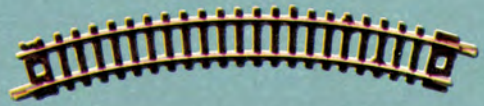
571 curved track (45°).



571C curved track with power terminal.



572 1/3 curved track (15°).



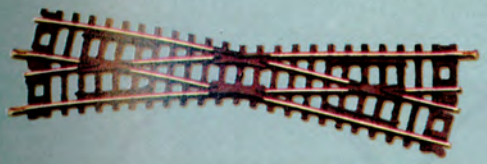
551 curved track (dia 472 mm).



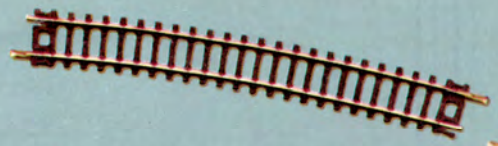
552 1/2 curved track (dia 472 mm).



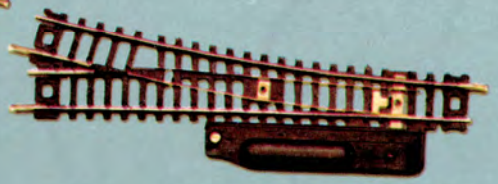
511 flexible track length 736 mm.



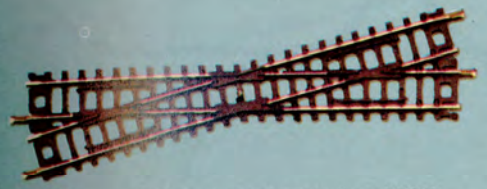
521 right diamond crossing (15°).



553 compensating curved track.



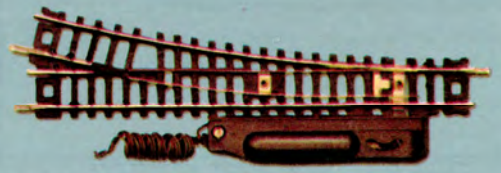
525 right-hand point (manual).



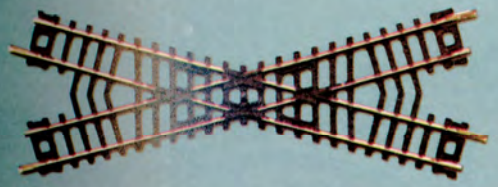
524 left diamond crossing (15°).



017 insulated fish plates.



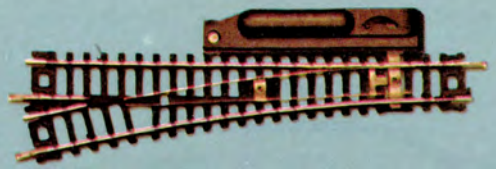
525E right-hand point (electric).



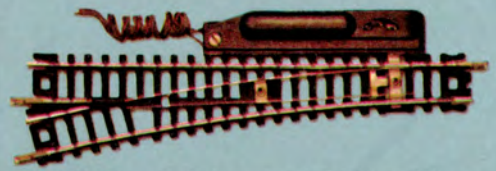
522 diamond crossing (30°).



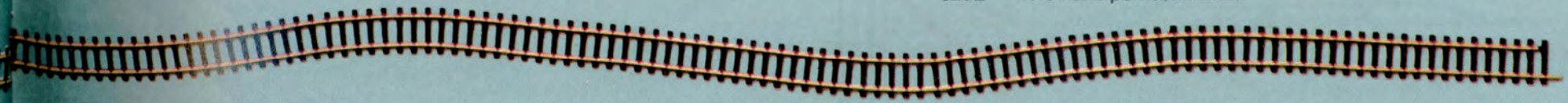
018
'N' Gauge fish plates (metal)
for new flexible track 511.

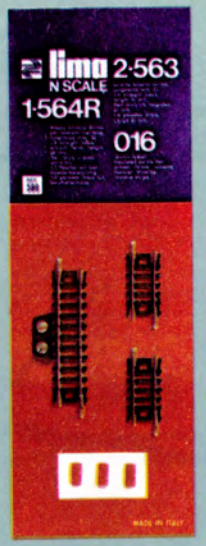


526 left-hand point (manual).



526E left-hand point (electric).

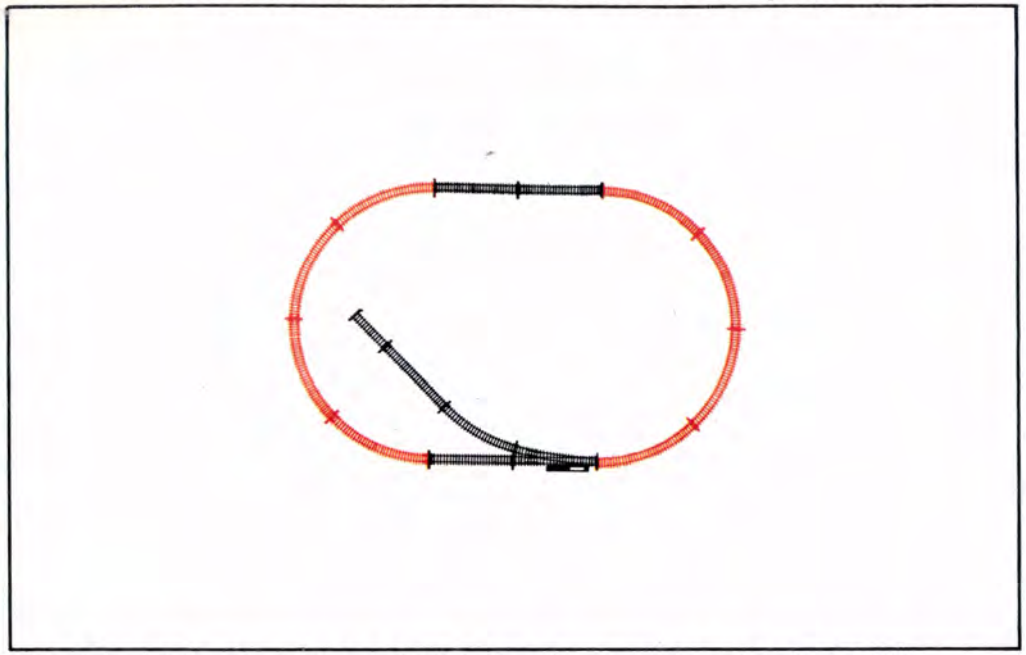




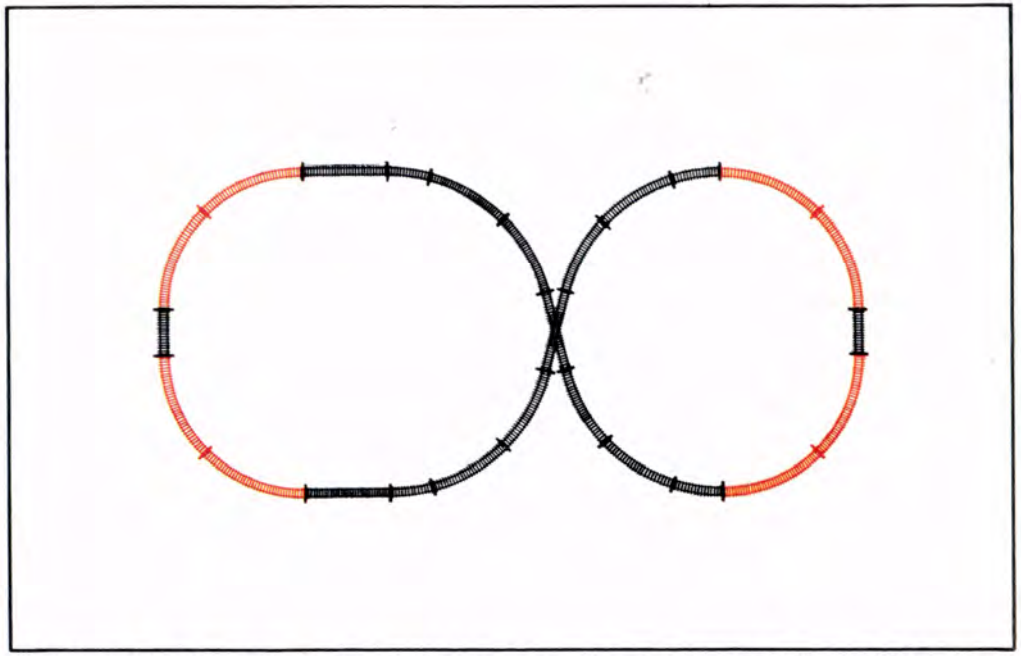
Extra track is available in the following packs:

580 6 pieces straight track (124 mm) 561.
581 6 pieces 1/2 straight track (62 mm) 562.
590 6 pieces curved track (45°) 571.
592 6 pieces 1/3 curved track (15°) 572.
591 6 pieces curved track (diameter 472 mm) 551.
593 6 pieces 1/2 curved track 552.
585 1 pieces curved track (45°) 571, 1 piece curved track with power connecting terminal 571C.
586 1 piece 1/2 straight track with power connecting terminal 564R, 2 pieces 1/4 straight track 563, insulated fish plates 017.
587 1 pieces straight track (124 mm) 561, 1 piece isolating track with power connecting terminal 564R, 1 piece 1/2 straight track with buffer stop 565.

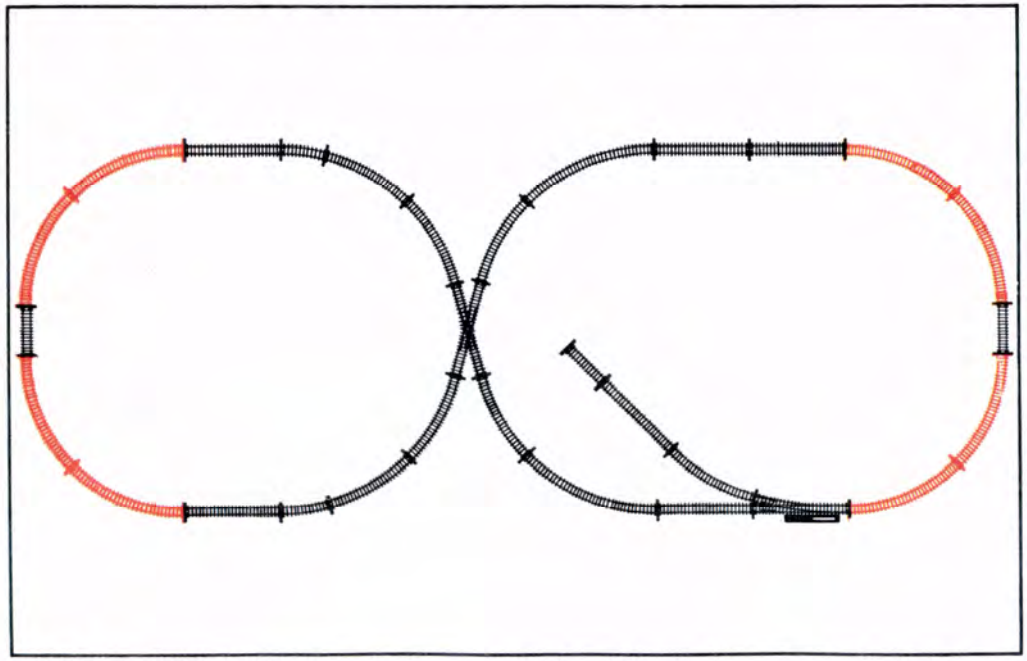
Here's how Lima Track extension packs can make more of your train set.



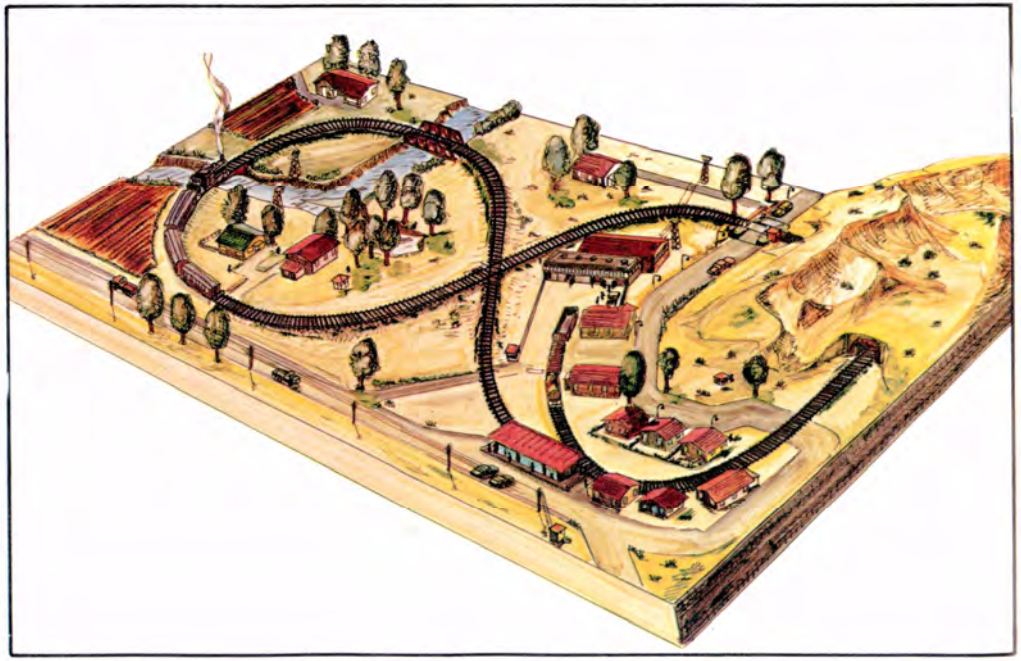
540 1 piece right-hand point (manual) 525, 1 piece ½ straight track with buffer stop 565, 4 pieces straight track (124mm), 1 piece curved track (diameter 472mm) 551.



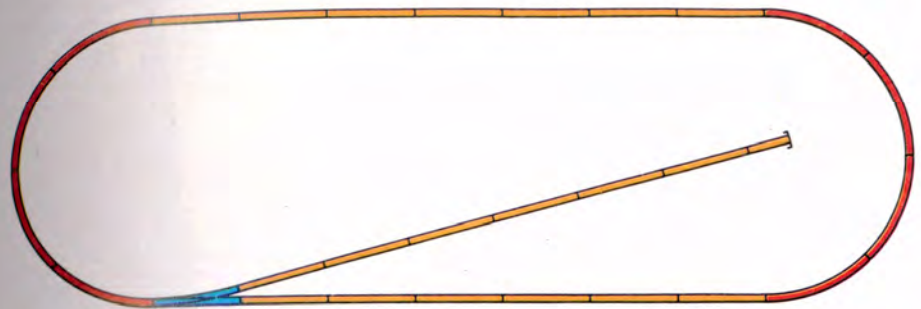
541 1 piece 30° diamond crossing 522, 8 pieces curved track (diameter 472mm) 551, 4 pieces ⅓ curved track (15°) 572, 2 pieces ½ straight track (62mm) 562, 2 pieces straight track (124mm) 561.



540 + 541

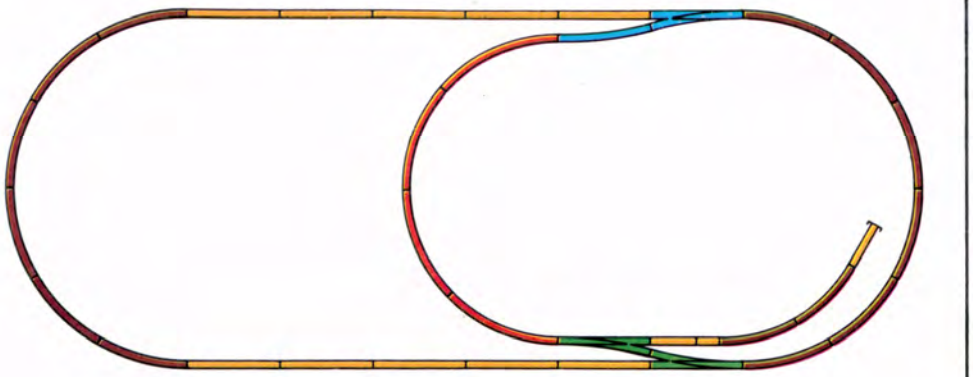


cm. 130x 43



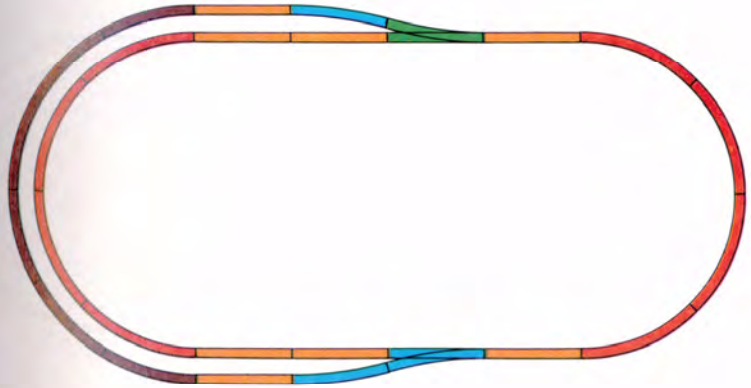
1 piece 571C
7 pieces 571
19 pieces 561
1 piece 565
1 piece 526

cm. 49x124



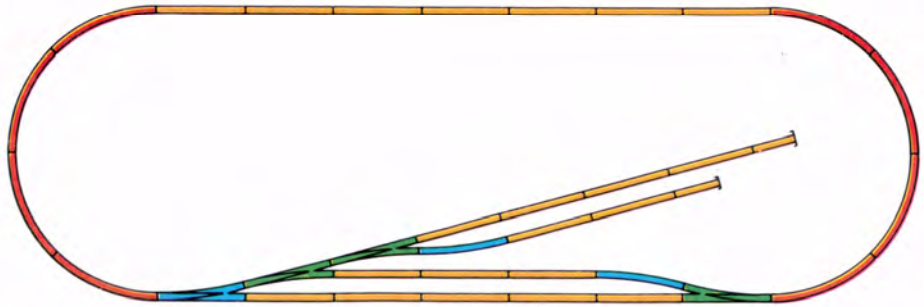
1 piece 571C
14 pieces 551
3 pieces 571
1 piece 553
10 pieces 561
1 piece 565
1 piece 562
1 piece 563
2 pieces 525
1 piece 526

cm. 49x 96



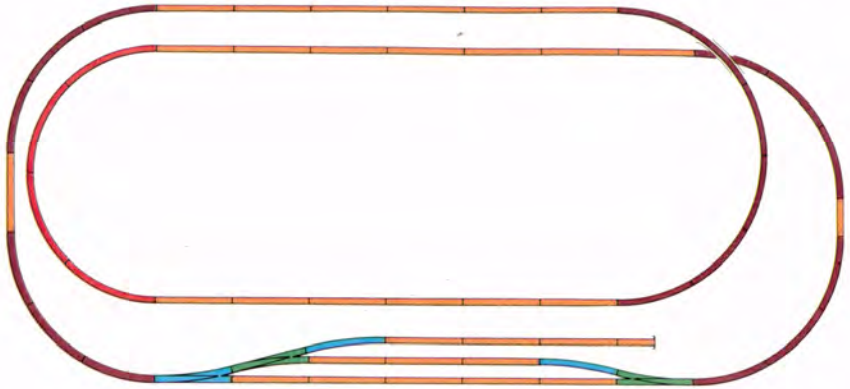
1 piece 571/C
7 pieces 571
6 pieces 551
2 pieces 553
1 piece 525
1 piece 526

cm. 130x 43



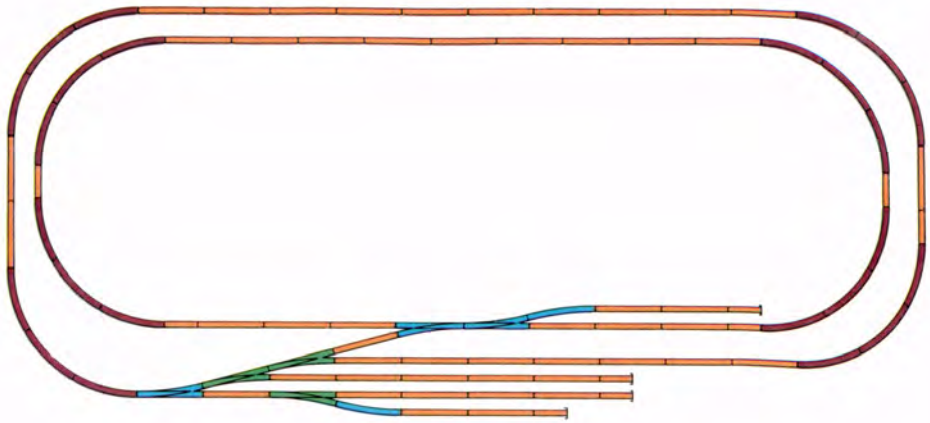
1 piece 571/C
7 pieces 571
21 pieces 561
2 pieces 553
3 pieces 525
1 piece 526
2 pieces 565

cm. 136x 62



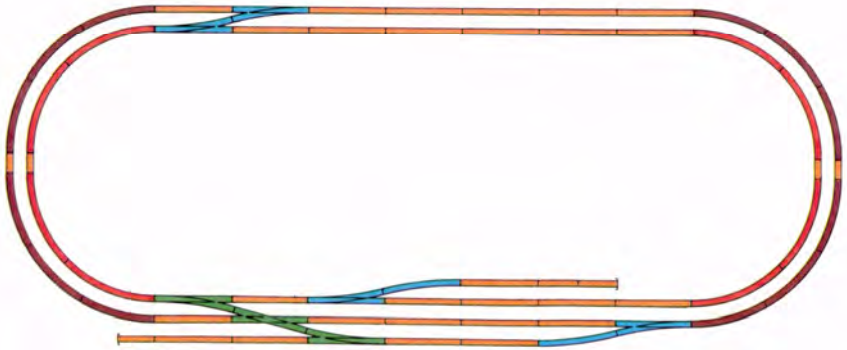
1 piece 571C	3 pieces 571	31 pieces 561	2 pieces 525	1 piece 565
18 pieces 551	2 pieces 553	1 piece 562	1 piece 526	

cm. 174x 77



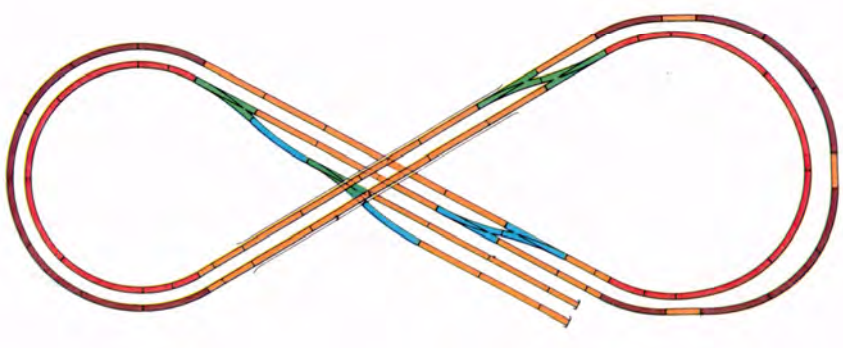
1 piece 564	2 pieces 553	4 pieces 562	3 pieces 526
24 pieces 551	50 pieces 561	3 pieces 525	4 pieces 565

cm. 136x 56



1 piece 571C	7 pieces 571	27 pieces 561	4 pieces 563	1 piece 521
12 pieces 551	2 pieces 553	1 piece 562	2 pieces 525	4 pieces 526
				2 pieces 565

cm. 152x 56



1 piece 571C	7 pieces 571	24 pieces 561	4 pieces 563	2 pieces 526
16 pieces 551	8 pieces 572	7 pieces 562	4 pieces 525	2 pieces 565

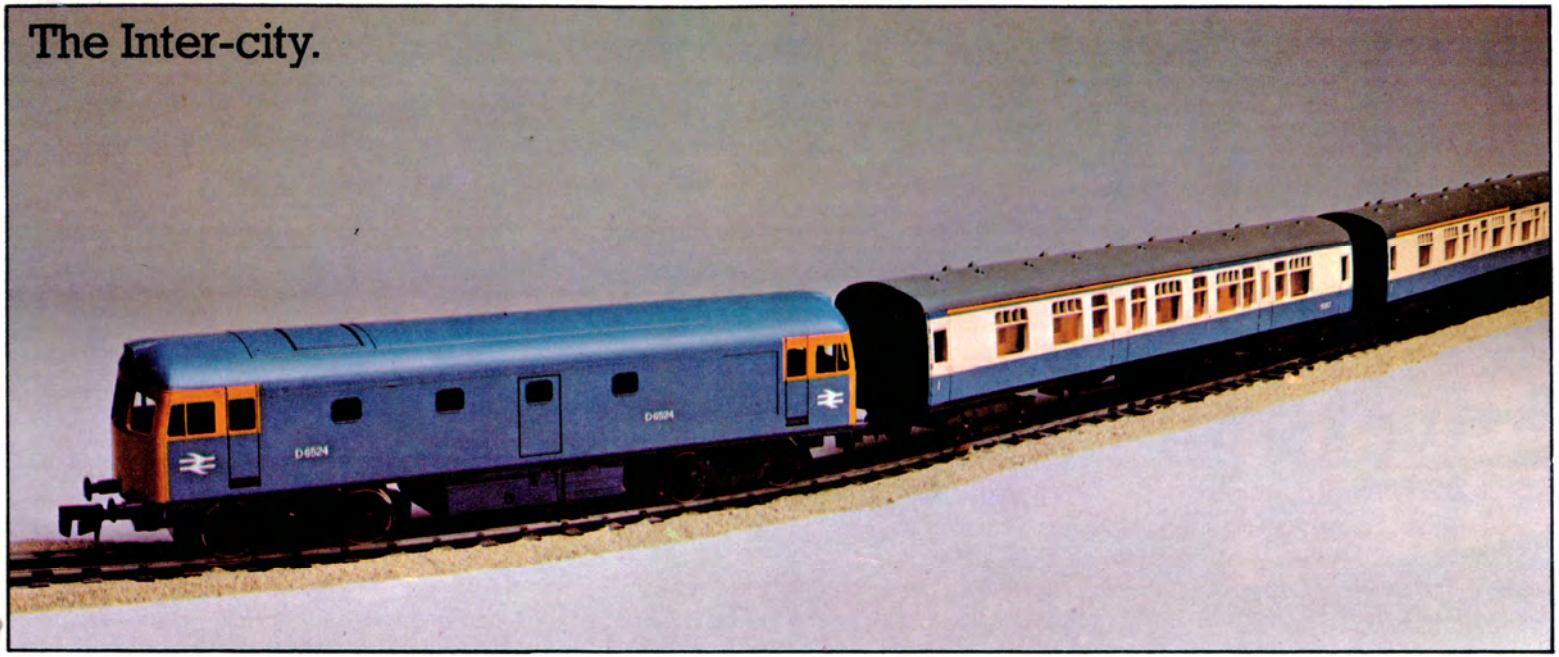


'O' Gauge (with a gauge of 32mm and a scale of 7mm:1ft) was one of the earliest sizes used for railway modelling (in the days when living space was more plentiful, and miniature manufacturing processes less advanced) and is still in a class of its own.

Despite this, Lima are the only major manufacturers in the world currently producing British livery train sets, locos and rolling stock at a realistic price. Thus the range is not only in great demand by the serious modeller but is also ideal for younger children. Small hands find the big locomotives and rolling stock easy to handle. And the wagons and coaches are large enough to be used with a host of popular toys.

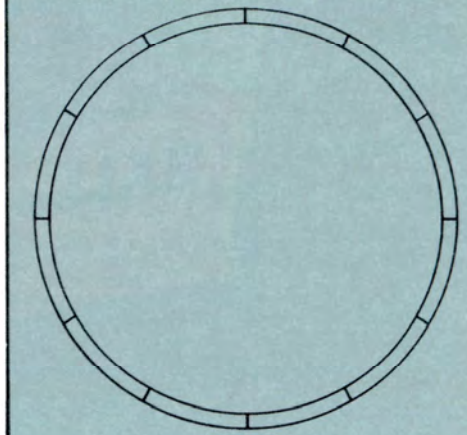
What's more, 'O' Gauge makes the perfect outside layout. Because of their size the trains are not dwarfed by their surroundings, and can look really fantastic running through your garden on a sunny day.

The Inter-city.

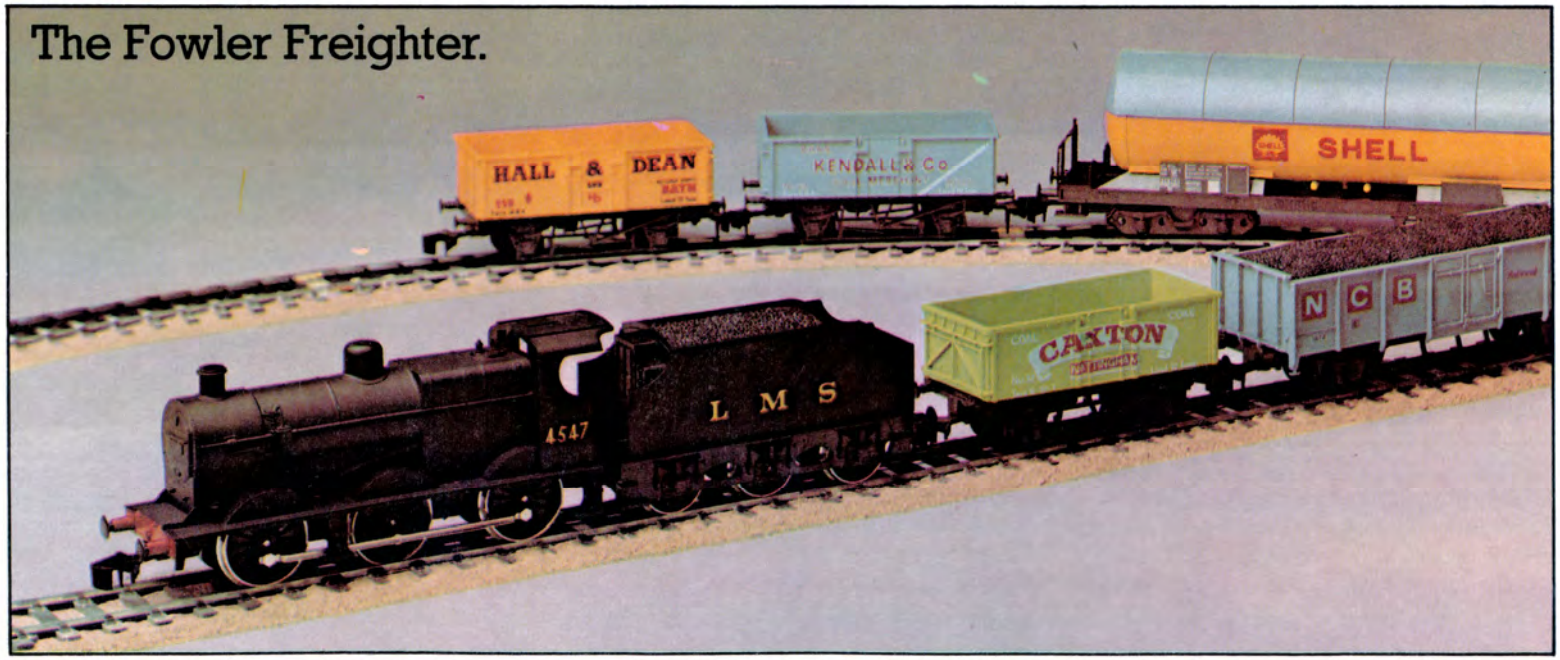


Perhaps the most popular of all today's trains.
Seen everywhere providing speedy passenger service between Britain's major cities.

Set No. 0308
Loco 6577.
Coaches 6619, 6619.
Oval of track consisting of:
11 pieces curved track 6811,
1 piece power connecting rail 6811C.
1 battery box control unit 012A.

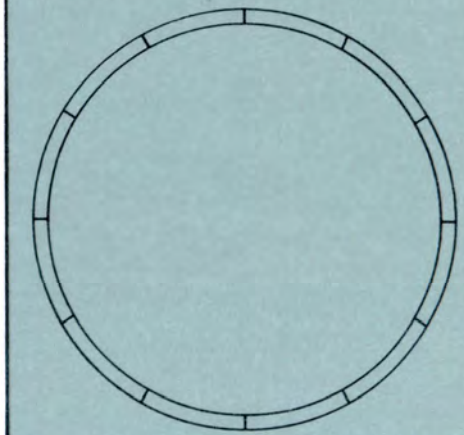


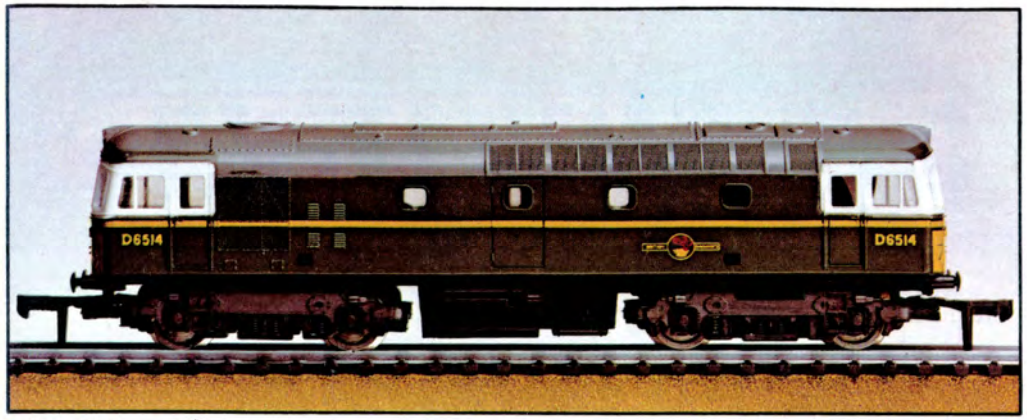
The Fowler Freighter.



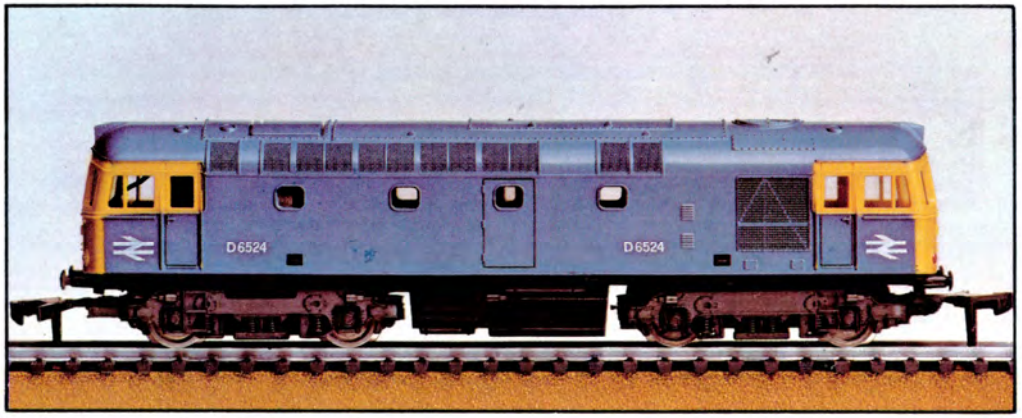
This five-wagon goods train hauled by the 'Fowler' Class 4F tender loco looks particularly impressive with the different colour schemes used on the private owner wagons, sadly missing from today's railways.

Set No. 0309
Loco 6533. Wagons 6726, 6730, 6733, 6731, 6765.
Oval of track consisting of:
11 pieces curved track 6811,
1 piece power connecting rail 6811C.
1 battery box control unit 012A.

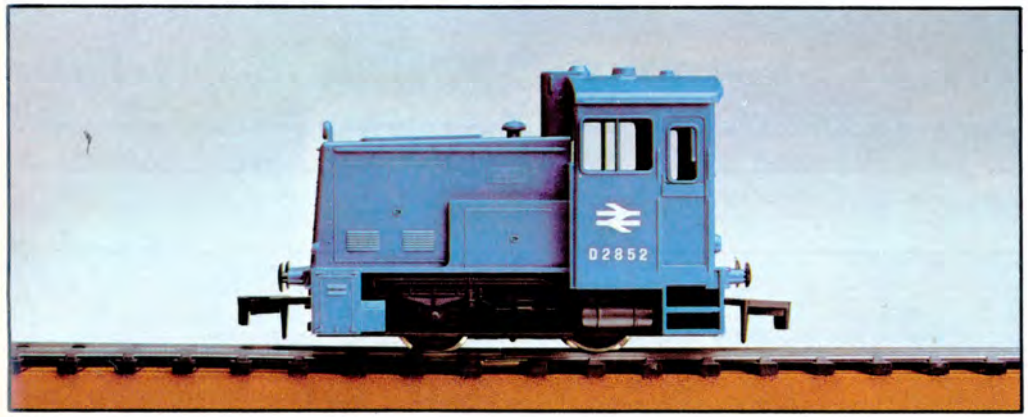




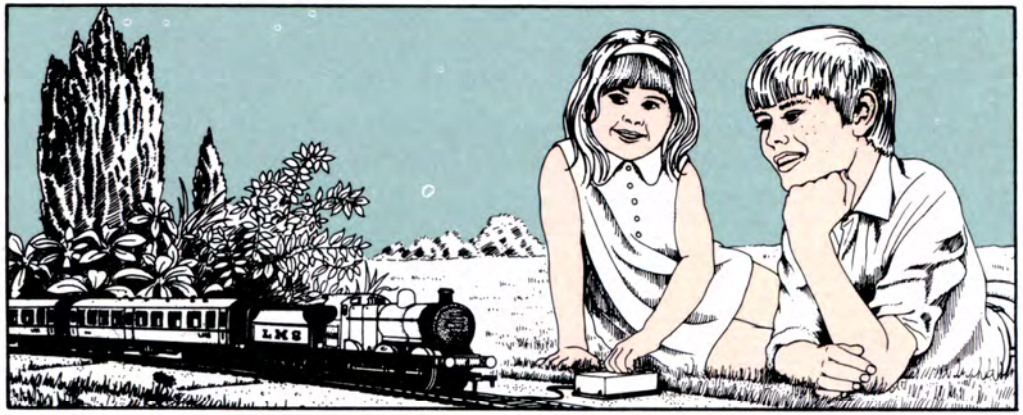
6576 BR Class 33 Bo-Bo Diesel Locomotive. Early livery.



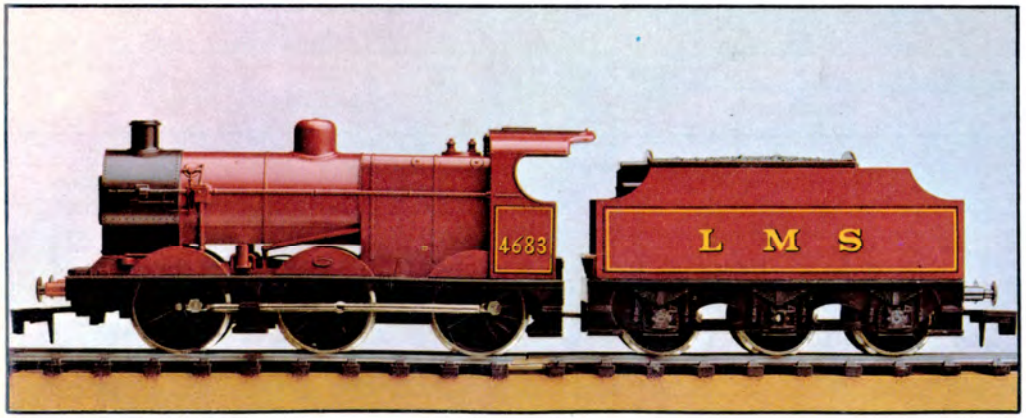
6577 BR Class 33 Bo-Bo Diesel Locomotive.



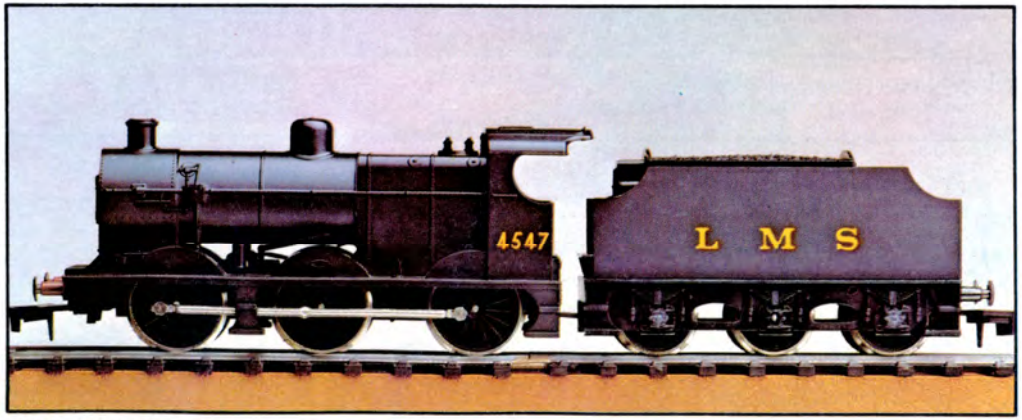
6546 0-4-0 Diesel Shunter. BR livery.



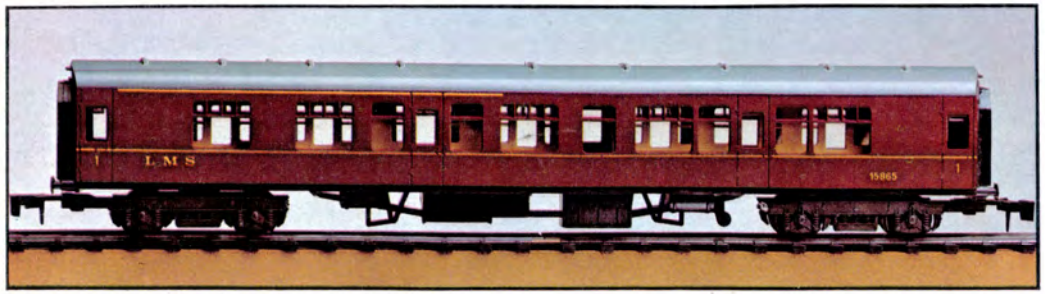
'O' Gauge makes the perfect outside layout.
Because of their size the trains look really fantastic running through the garden on a sunny day.



6534 0-6-0 Class 4F Tender Locomotive. LMS livery.



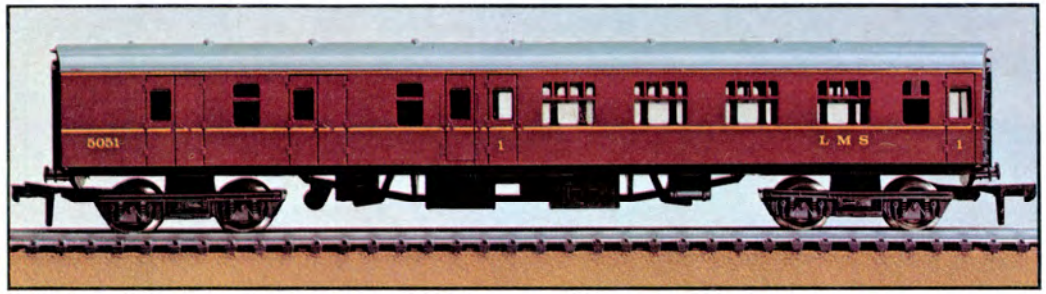
6533 0-6-0 Class 4F Tender Locomotive. BR livery.



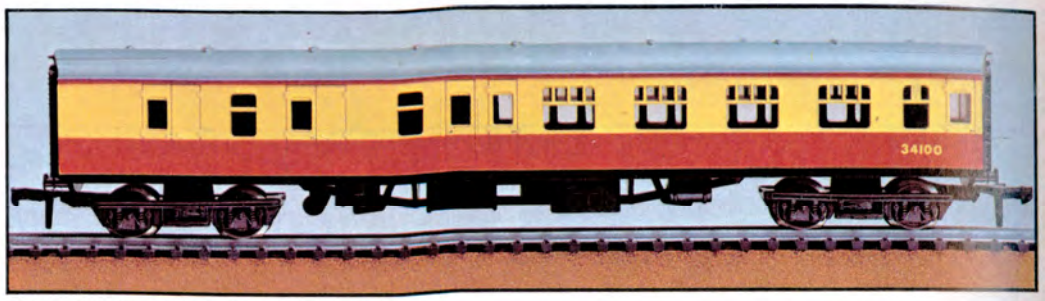
6616 BR/LMS Mark 1 Composite Coach.



6618 BR Mark 1 Composite Coach.



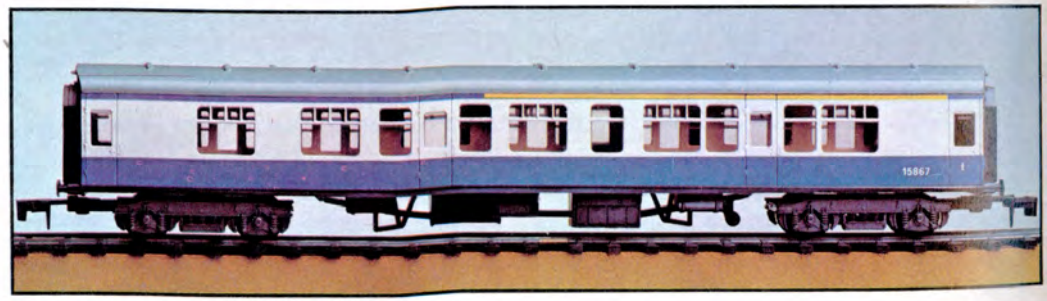
6645 BR/LMS Mark 1 Corridor Brake Coach.



6644 BR Mark 1 Corridor Brake Coach.



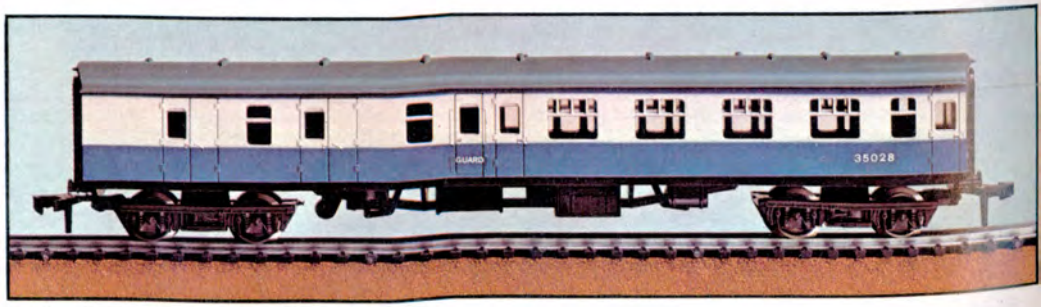
6617 BR Mark 1 Composite Coach.



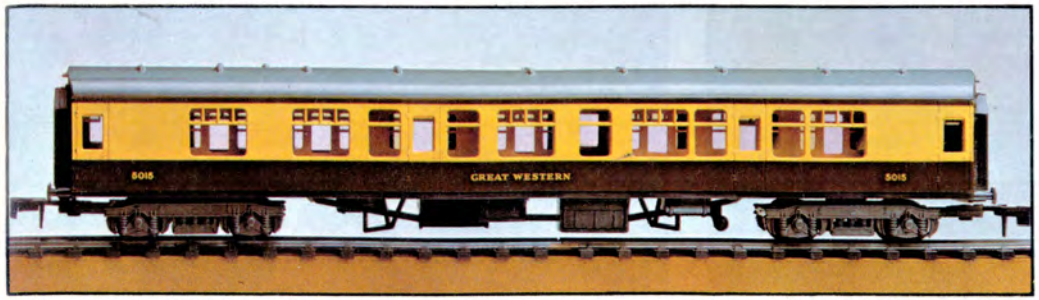
6619 BR Mark 1 Composite Coach.



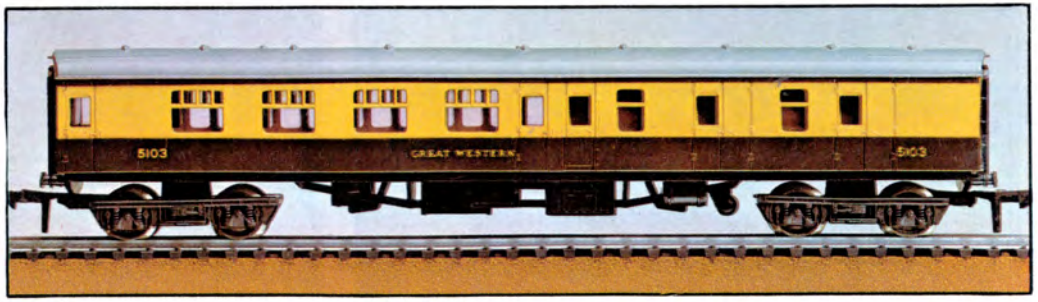
6647 BR Mark 1 Corridor Brake Coach.



6654 BR Mark 1 Corridor Brake Coach.

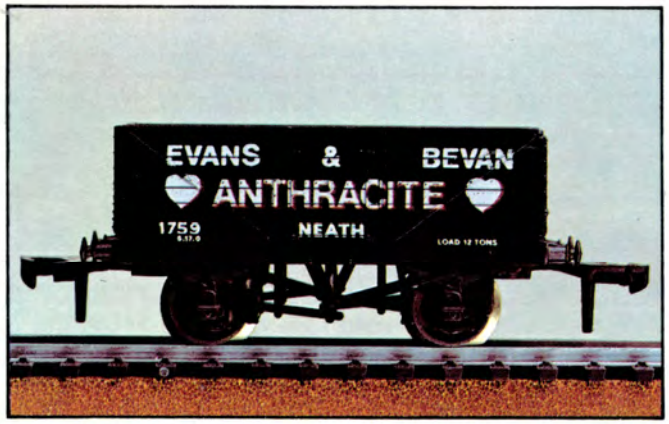


6620 BR/GWR Mark 1 Composite Coach.

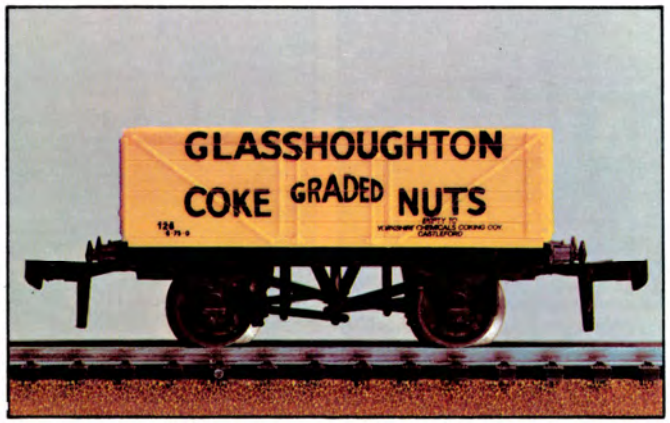


6646 BR/GWR Mark 1 Corridor Brake Coach.





6756 'Evans & Bevan Anthracite' Mineral Wagon.



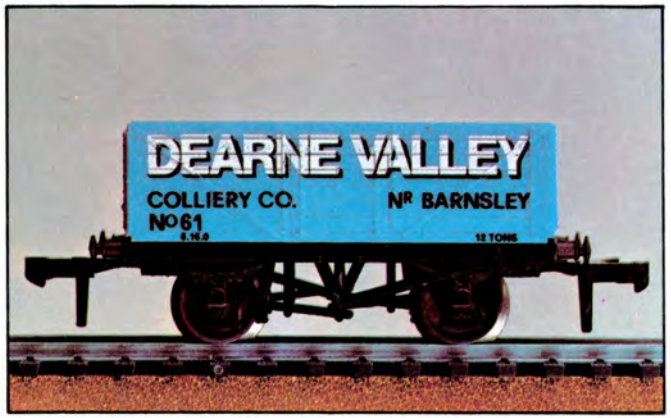
6755 'Glasshoughton Coke Nuts' Mineral Wagon.



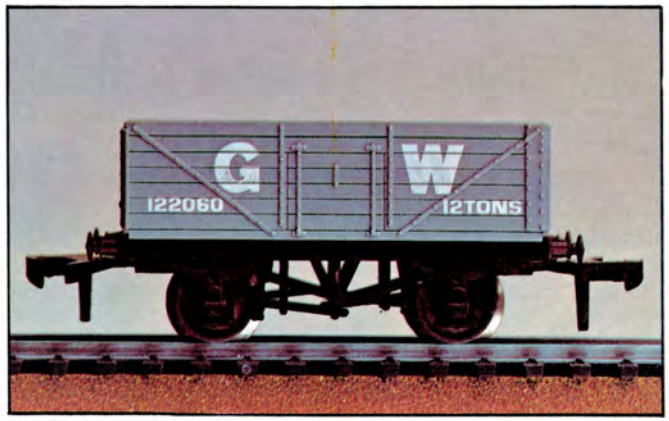
6754 'Clay Cross Co Ltd' Mineral Wagon.



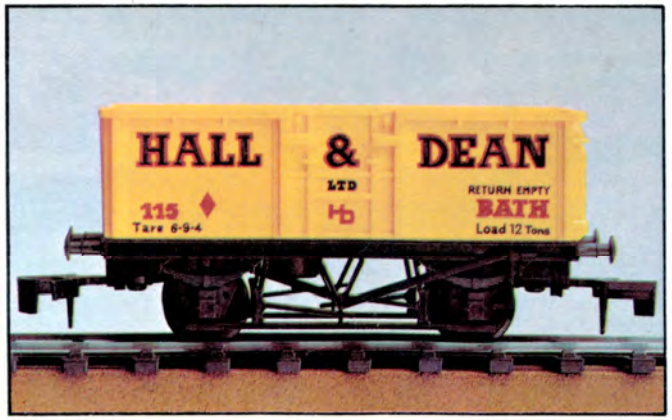
6737 'Oxford & District Gas Co' Mineral Wagon.



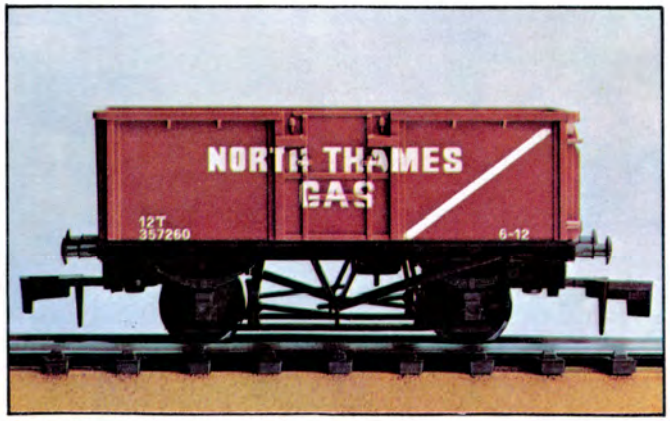
6738 'Dearne Valley Colliery' Mineral Wagon.



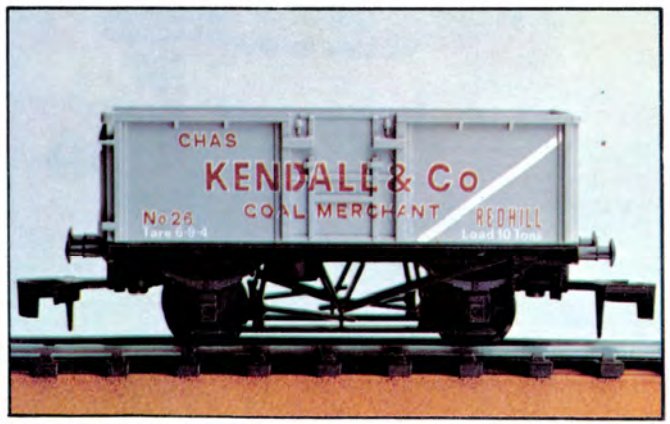
6739 GWR Mineral Wagon.



6733 'Hall & Dean' Mineral Wagon.



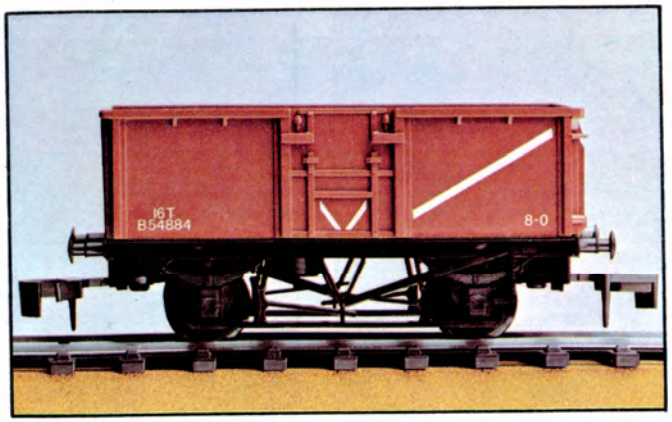
6729 'North Thames Gas' Mineral Wagon.



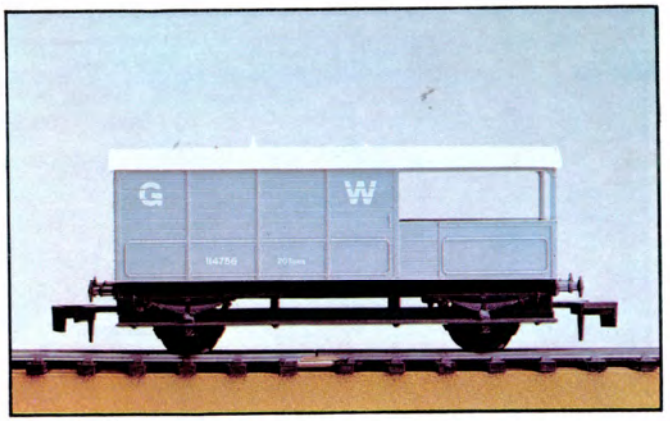
6730 'Chas. Vendall' Mineral Wagon.



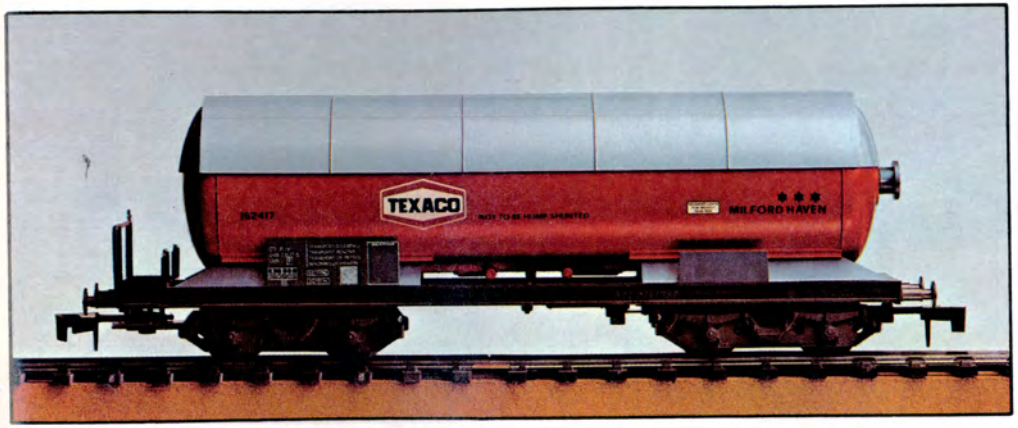
6731 'Caxton' Mineral Wagon.



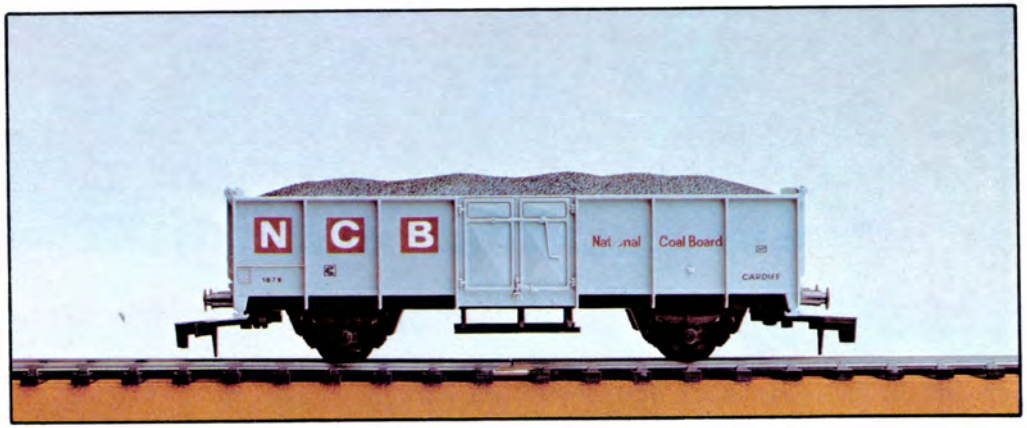
6732 Open Mineral Wagon.



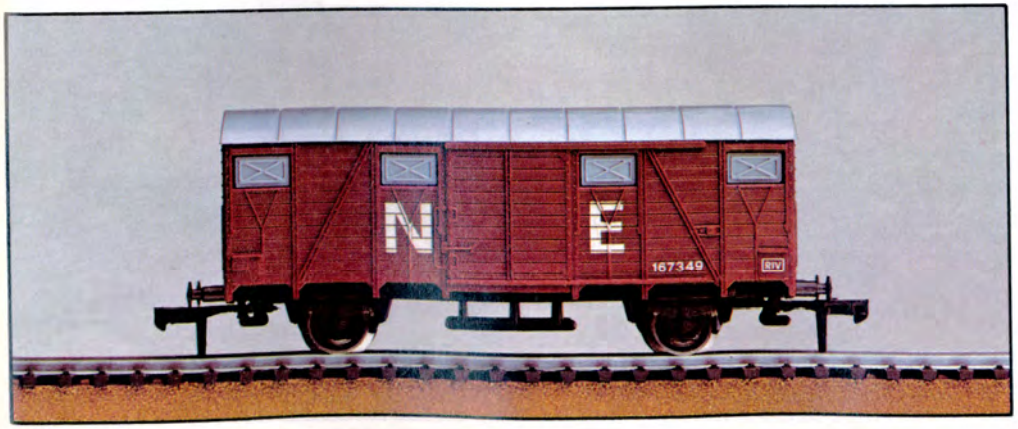
6746 GWR Brake Van.



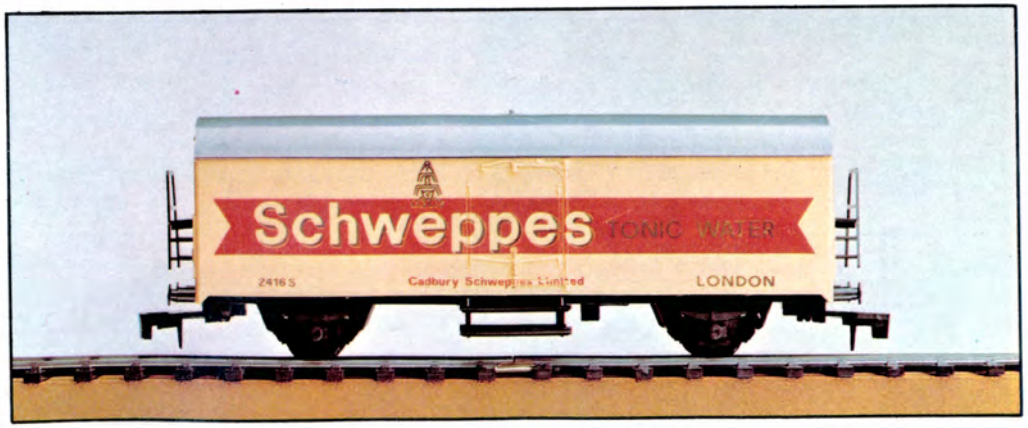
6770 'Texaco' Tank Wagon.



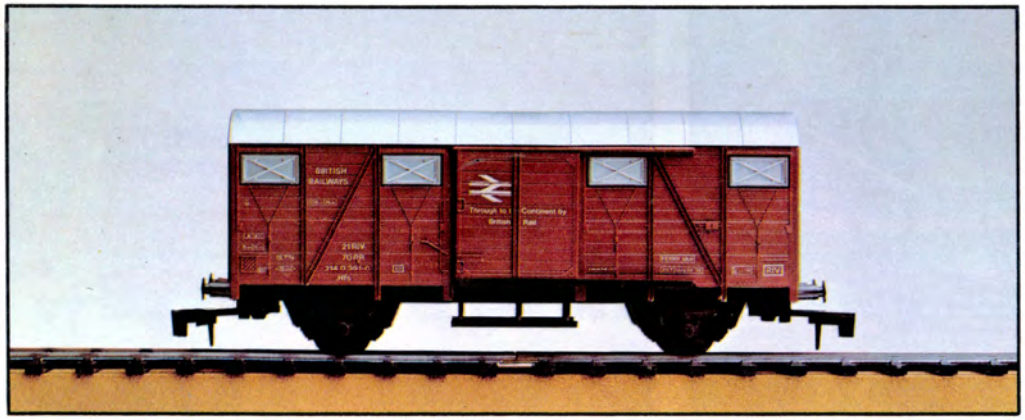
6726 'National Coal Board' wagon with coal.



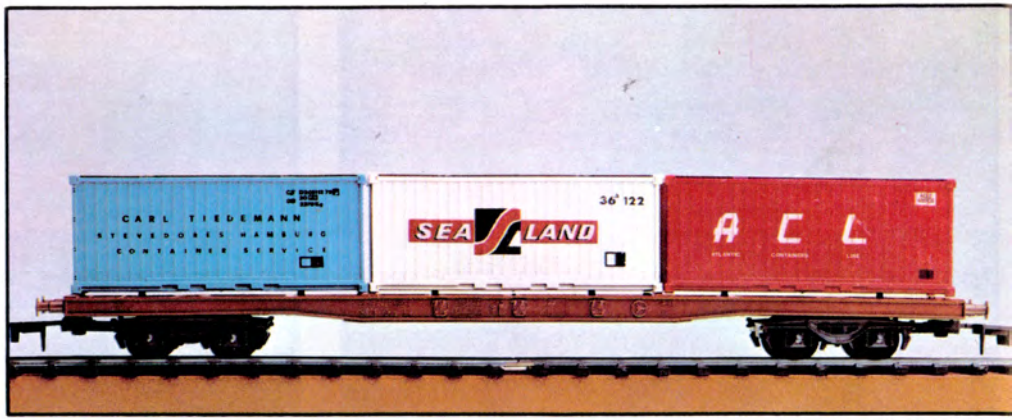
6751 NE 20 Ton Box Van.



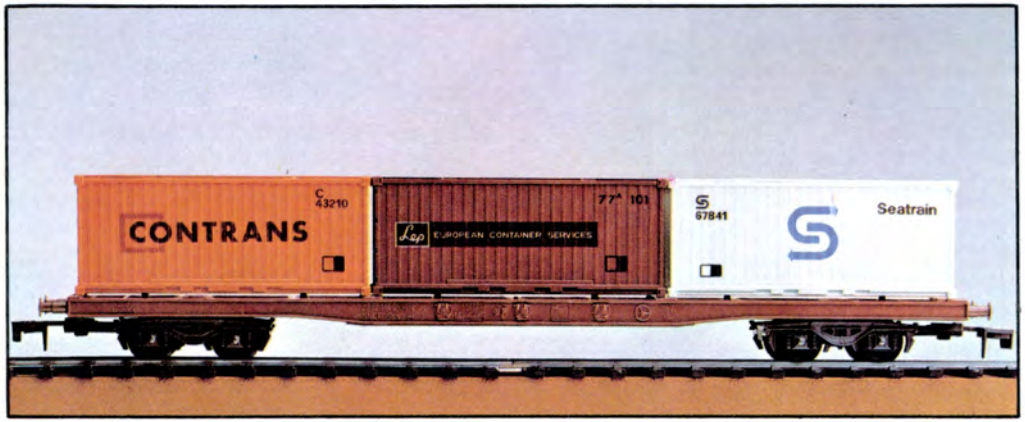
6710 'Schweppes' Closed Van.



6745 BR Closed Van.



6783 Container Wagon.



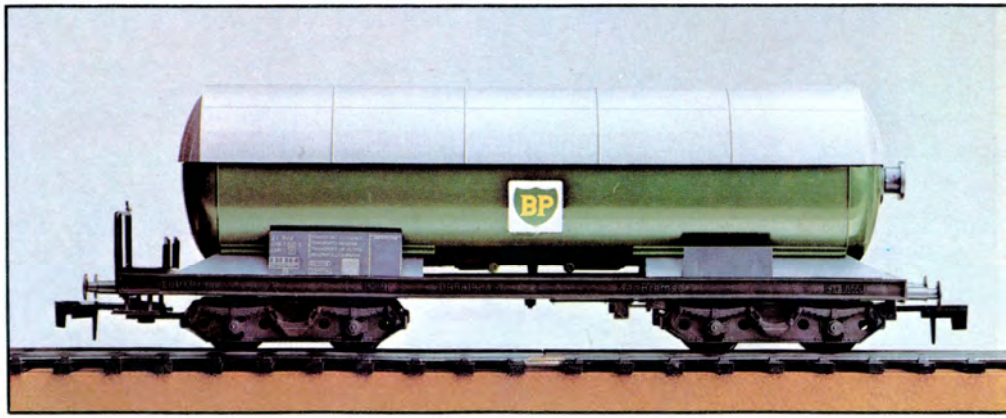
6784 Container Wagon.



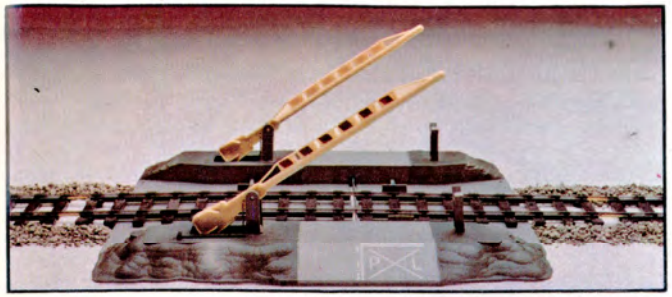
6768 'Mobil Oil' Bogie Tank Wagon.



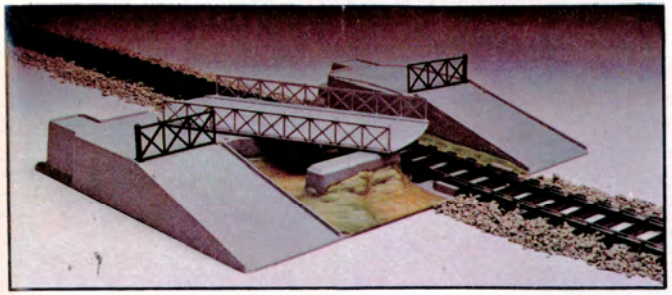
6765 'Shell' Bogie Tank Wagon.



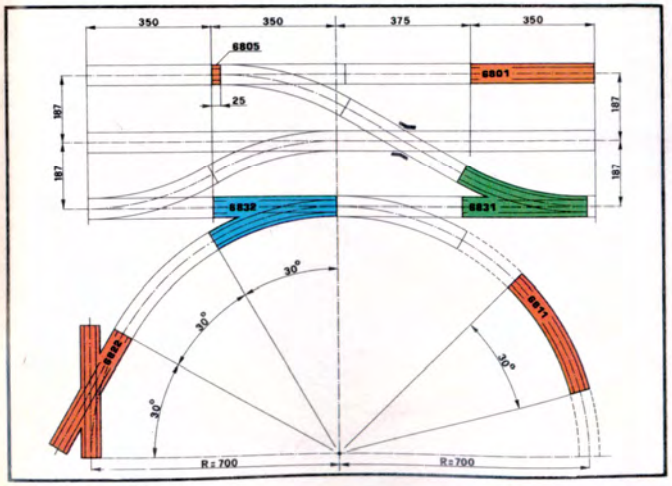
6766 'BP' Bogie Tank Wagon.



6850 automatic level crossing.

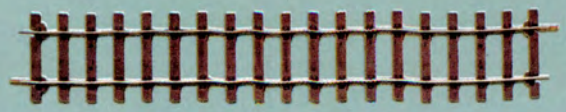


6851 automatic swing bridge.

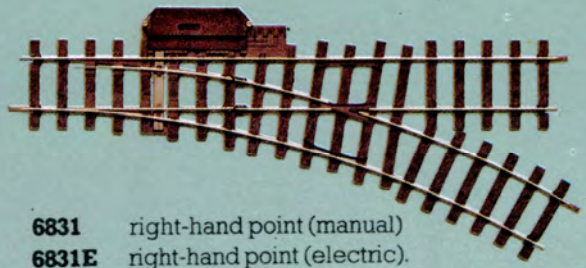


As in all gauges, when adjoining tracks are used it is essential to ensure that the trains can pass without fouling each other. Thus in 'O' Gauge a distance between tracks of 187mm must be observed, both on straights and through the curves.

Thus, a curved track 6811, when used with points 6831 and 6832 will allow this spacing requirement to be met.



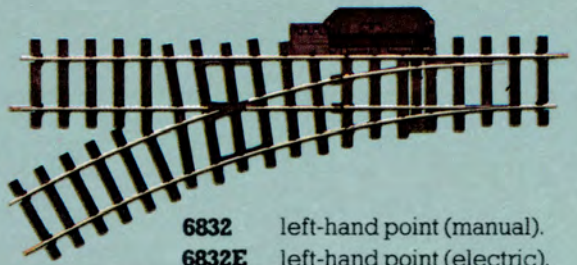
6801 straight track (350mm).



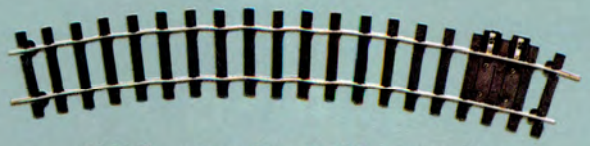
6831 right-hand point (manual)
6831E right-hand point (electric).



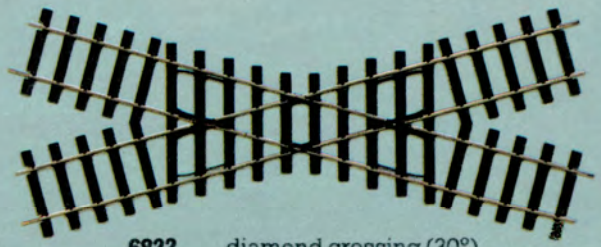
6811 curved track (1400mm dia.).



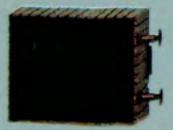
6832 left-hand point (manual).
6832E left-hand point (electric).



6811C curved track with power clip.



6822 diamond crossing (30°)



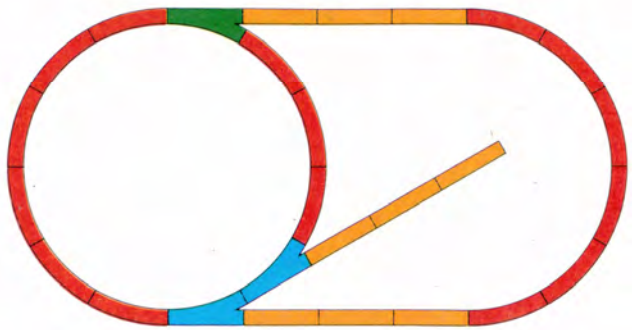
6841 buffer stop.



6805 compensating track.

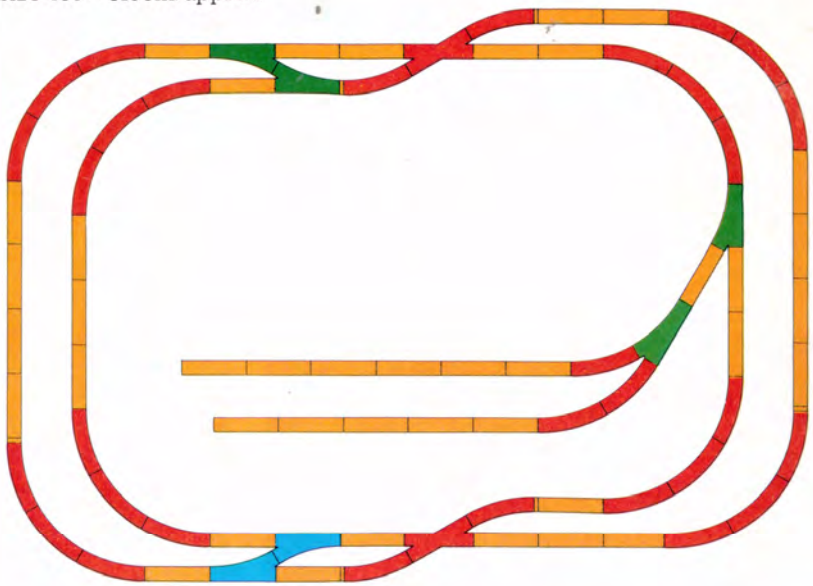
O Gauge Track Plans

Overall size 300 × 150cm. approx.



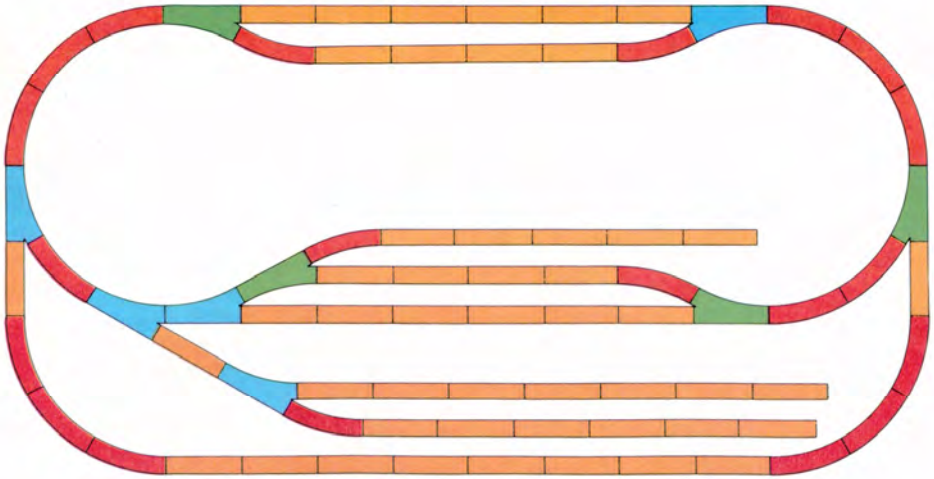
1 piece 6811C
14 pieces 6811
9 pieces 6801
2 pieces 6832
1 piece 6831
1 piece 6841

Overall size 435 × 315cm. approx.



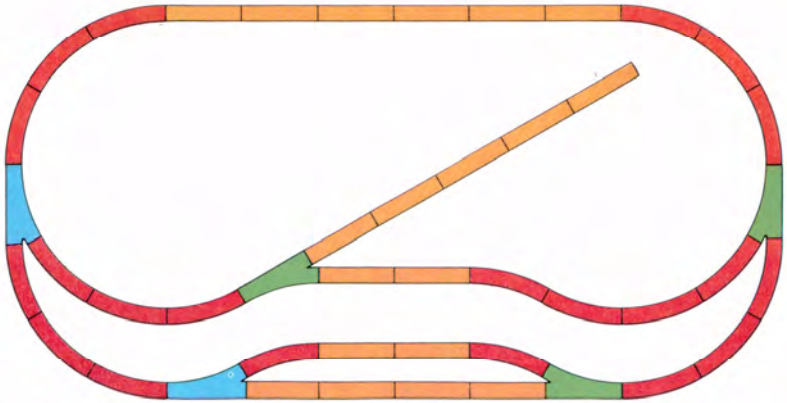
1 piece 6811C
30 pieces 6811
41 pieces 6801
6 pieces 6805
2 pieces 6822
4 pieces 6831
2 pieces 6832
2 pieces 6841

Overall size 430 × 220cm. approx.



1 piece 6811C
19 pieces 6811
49 pieces 6801
4 pieces 6831
5 pieces 6832
3 pieces 6841

Overall size 360 × 185cm. approx.



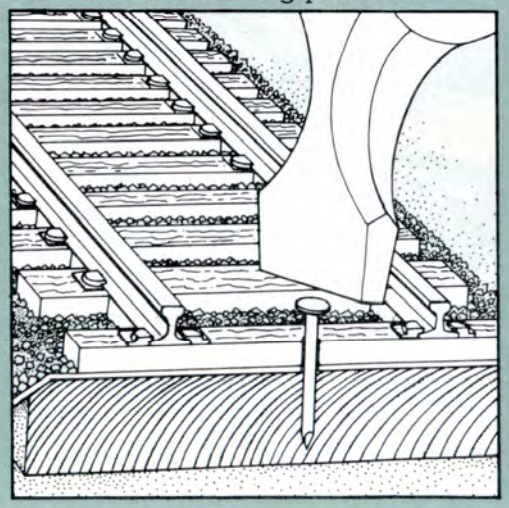
1 piece 6811C
20 pieces 6811
19 pieces 6801
3 pieces 6831
2 pieces 6832
1 piece 6841

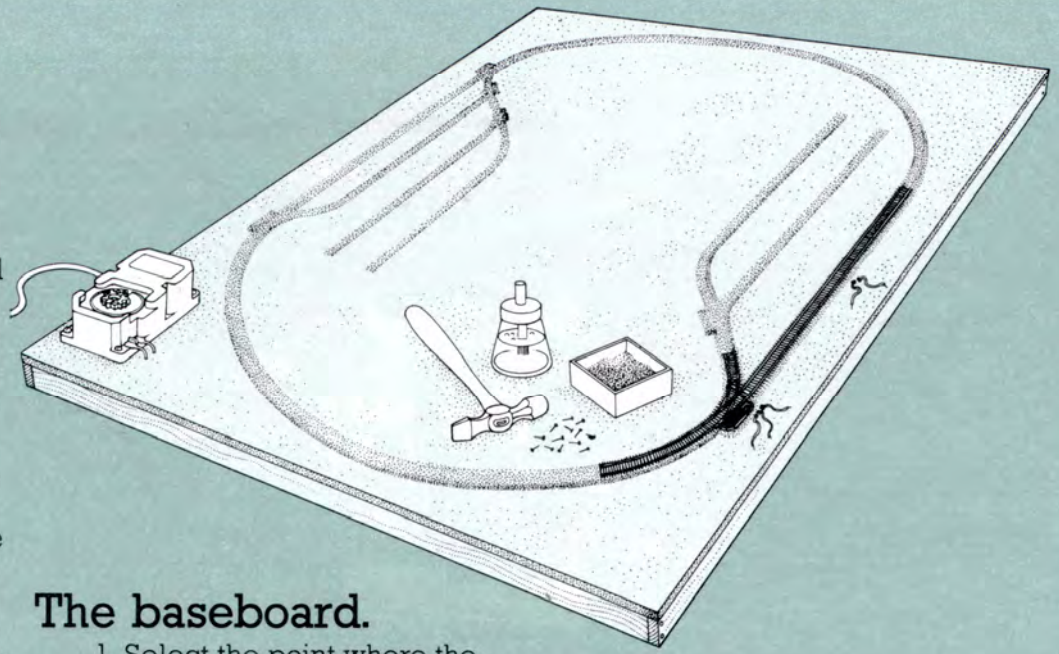


How to build your Lima layout.

A layout is a personal thing. So design and build your individual layout to incorporate those features in which you have a particular interest. For some people building their railway system provides the maximum enjoyment, while others find that operating their trains round complex shunting systems, or running to strict timetables, gives them most pleasure.

Remember, decide where your layout is to be kept. If it has to be stored under a bed or flat against a wall, a tiered layout may not be practicable. So first decide how much room you have available. And relate this to the scale you have chosen – whether its 'OO', 'N' or 'O'. For the smaller scales an 8′ × 4′ baseboard mounted on 2″ × 2″ legs should provide an ideal starting point.





The baseboard.

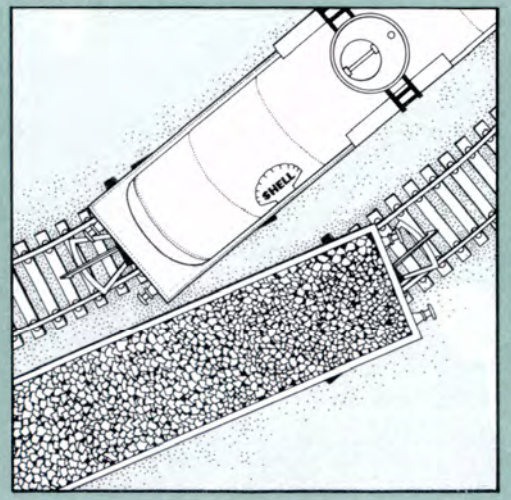
1. Select the point where the power feed to the tracks will be and position the power controllers and circuit control units. This should be near a corner of the layout, to give the operators room to work.

2. Fix or screw the top tier of the layout to the baseboard.

3. Paint the baseboard or cover it with flock.

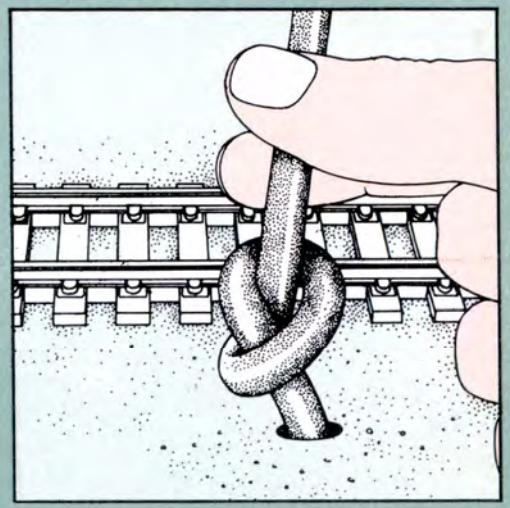
4. Lay the trackwork and check alignment carefully (make sure that the 'straights' are really straight). Ensure the locomotives and rolling stock can pass each other without fouling on the curves or pier supports.

5. Fix the track with Lima fixing pins.



Wiring.

Wire laid across the top of the baseboard spoils the look of the layout, and may get caught up with the trains. So always drill holes and take it underneath. Remember to tie a knot in the leads while assembling, just above the baseboard hole, so they can't be pulled through accidentally.



Landscaping.

For building tunnels and hills, chicken wire is the ideal material. Providing a secure base that is easily moulded to the required shape. Remember to turn up the ends of the wire as a safety measure.

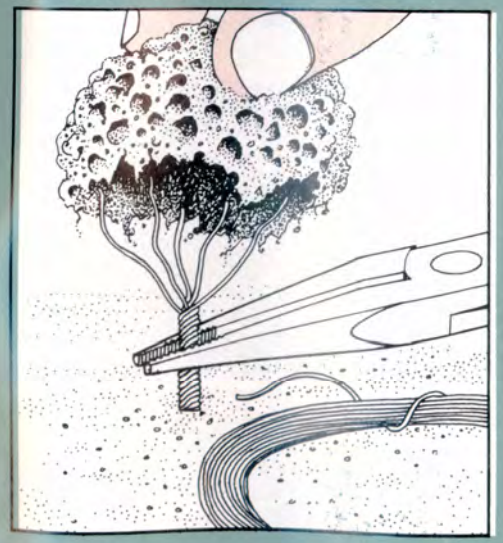
When you've positioned your wire framework on the layout, be

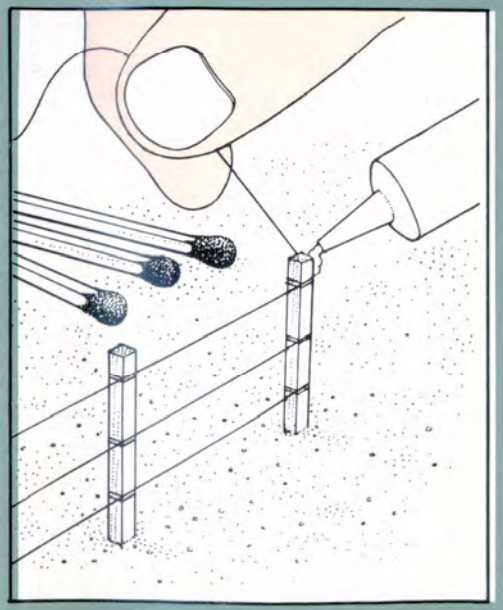
Printed in Italy - il Resto del Carlino, Officine Grafiche - Bologna



careful to check that the rolling stock does not foul against it, and that if a breakdown or a derailment should occur in a tunnel, you are able to remove the obstruction without dismantling the layout.

Now comes the time to blend in your scenery. Dampen strips of newspaper and lay them onto the chicken wire. Criss-crossing the strips to provide strength. Cover the wire completely and apply a coat of wallpaper paste. Then apply a second layer of damp paper and repeat the process. Allow to dry, and test for strength using light hand pressure. Further layers can be added if need be.



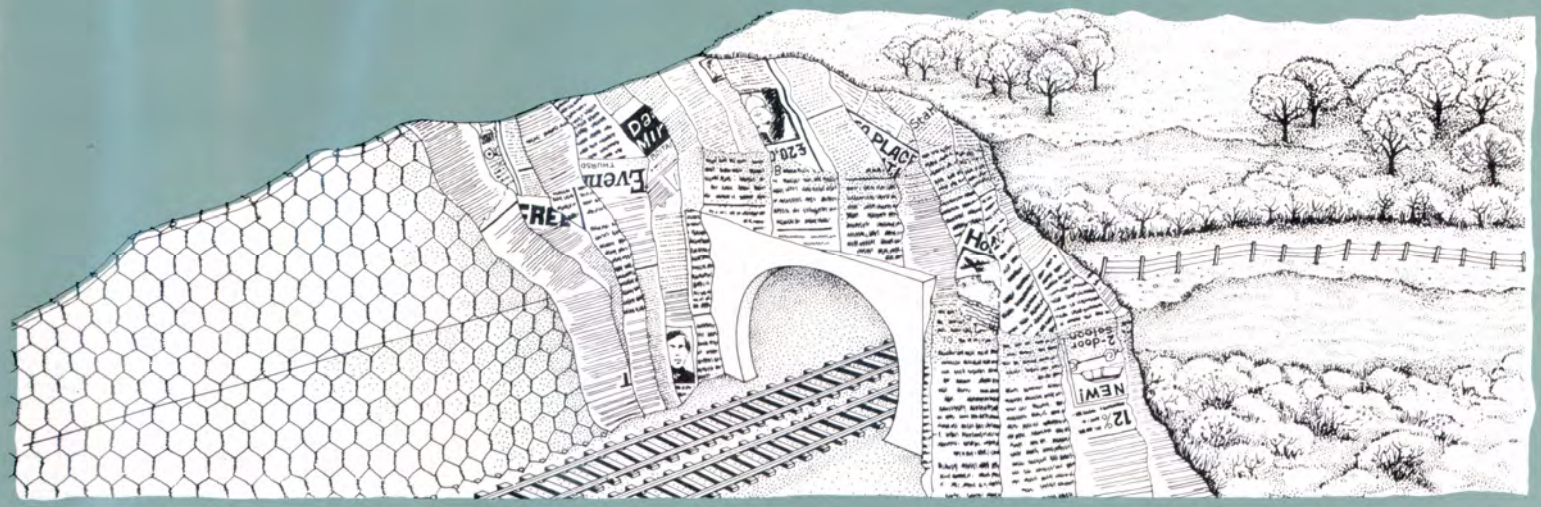


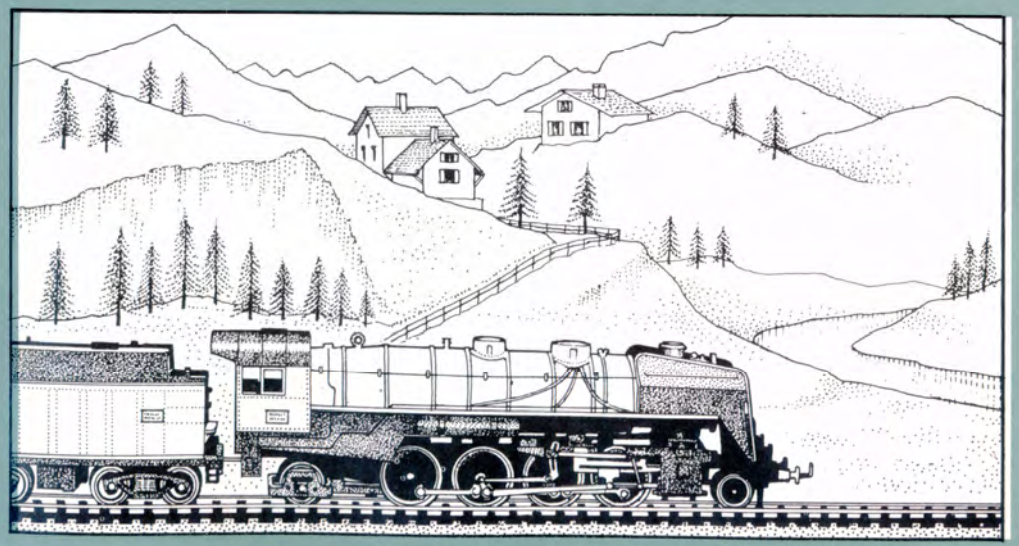
When building a quarry, cliff, or any rocky surface., apply a finishing coat of plaster filler, but do not smooth down. When dry, paint as required. Valleys and hills require a smoother surface. So either apply plaster and smooth down, or use a coating of paste and sprinkle flock on the surface. Flock undoubtedly gives the most realistic grass finish of any material.

Fences can be made from matchsticks and asphalt roads from emery boards. If you used a painted backdrop, remember to use dark colours in the foreground and paler colours the further back you go.

Now add trees, perhaps a river (painted, wire reinforced glass is best), and use pieces of sponge painted green to form hedges and shrubs.

With just a little planning and imagination, your Lima layout can grow and develop as your own skill increases. Providing you with a whole lifetime of modelling satisfaction.





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