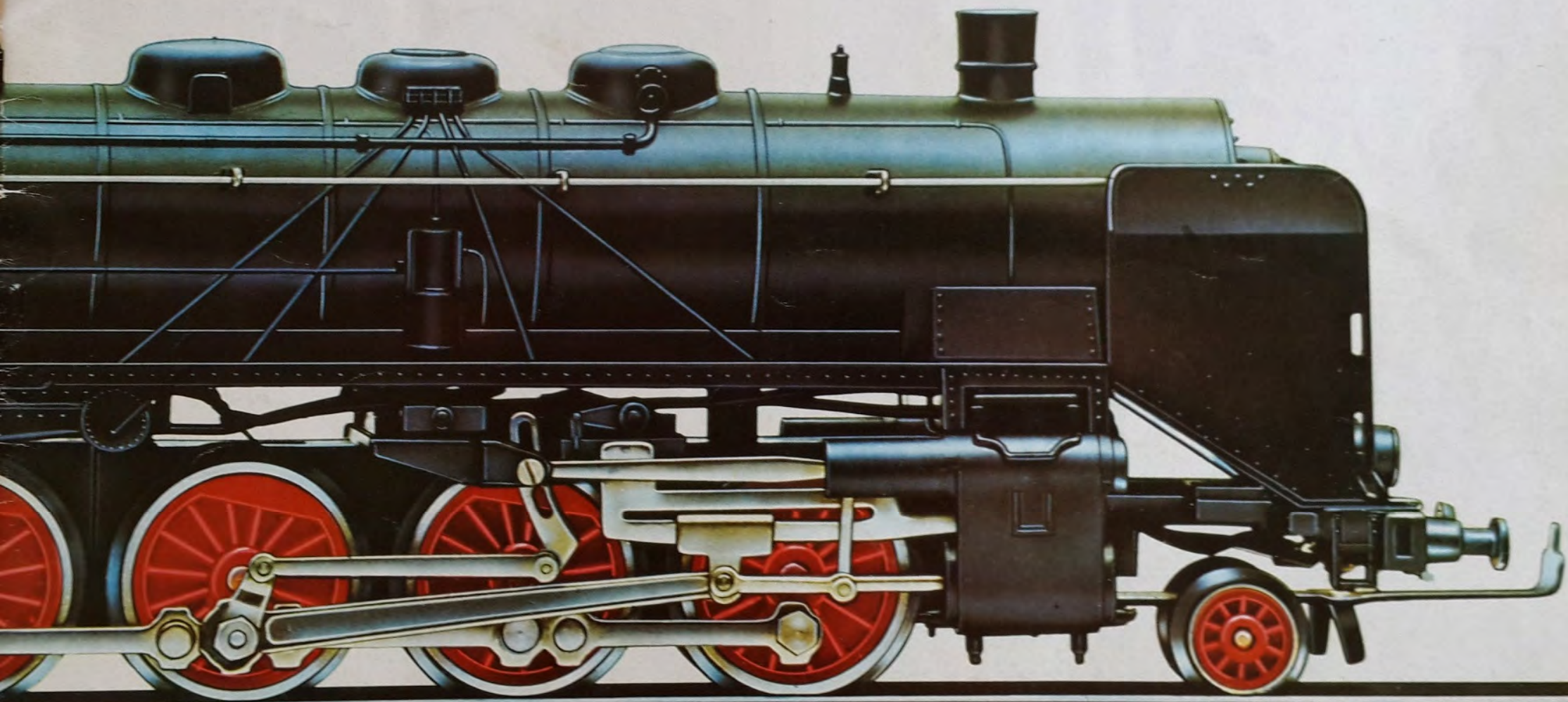


# THE COMPLETE GUIDE TO LIMA MODEL RAILWAYS 1978/79



English international edition



# THE HISTORY



success of the railways, the development of modern industrial society would have been well nigh impossible.

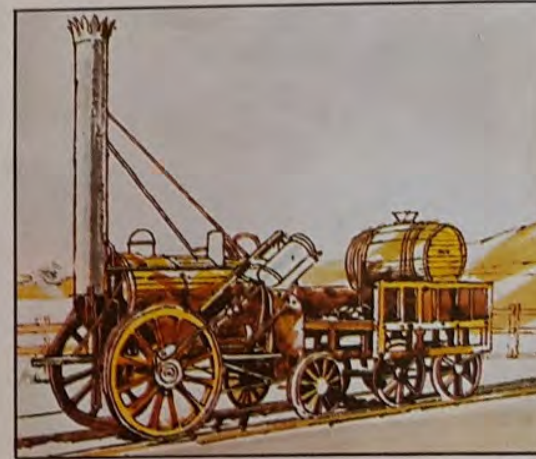
## THE PIONEERS

The introduction of the railways, and their subsequent development, can be traced back through history to the formation of one simple idea. The invention of metal wheels with flanges, enabling them to run on a fixed track made up of parallel lines. In fact, this principle was developed as long ago as the 8th century A.D. and for centuries animal power was the main form of propulsion.

The invention of railways as we know them today can probably be traced back to the work of a number of scattered pioneers, working all over Europe, during a period of about 200 years between 1600 and 1800. The stimulus coming from the beginning of large scale coal mining. Wagons were used to carry materials from the pit to a nearby point where the coal could be loaded into larger road wagons, for transporting inland or to the sea ports.

## THE COMING OF STEAM

It is generally accepted that the first public freight railway in the world was the Surrey Iron Railway, engineered by Jessop and Outram in 1803. But only with the opening of the Liverpool and



Manchester Railway in 1830 did the railway become established in Britain as a regular means of public transport rivalling the canal and coach companies.

During the 19th century, railway development gathered speed. Beginning with primitive machines like Stephenson's 'Rocket' locomotives soon became larger and much more akin to those familiar today.

While by the 1860s the railway map of Great Britain had assumed a shape that still forms the basis for the present system.

On the mainland of Europe it was Belgium which set the pace in railway building. Under the guidance of Leopold I, advised by George and Robert Stephenson, Belgium became the first continental state to achieve a planned railway system.

The first line between Brussels and Malines was opened in 1835, with Stephenson locomotives. And a national plan to link England, France, Germany and Holland through a cross centered on Malines, was completed in 1844.

By 1850 Belgium had over 450 miles of line in operation — specifically planned, unlike the British



system, to serve national needs.

Germany was the next European country to adopt railways. In 1835 came the first, the Bavarian Ludwigsbahn from Nuremberg to Furth, built by a French engineer and using a Stephenson locomotive, 'Der Adler'.

Frederick William, the future Prussian sovereign became an ardent railway supporter, and by 1848 Prussia had 1,500 miles of track, while other states were also beginning to build.

The impact of railways in Germany was in many ways the most revolutionary in Europe. Iron tracks opened up the interior lands, bringing with them trade and new business opportunities — and

Without a doubt, the railways have played a major part in the development of civilisation as we

know it today. Before the introduction of the steam locomotive running on an iron railway track in the early 1800s, the only means of inland freight carriage and passenger movement was by horse or pack animal. A method that was slow and unsure, to say the least.

An industrialised economy demands fast and regular communications, and it is safe to say that without the

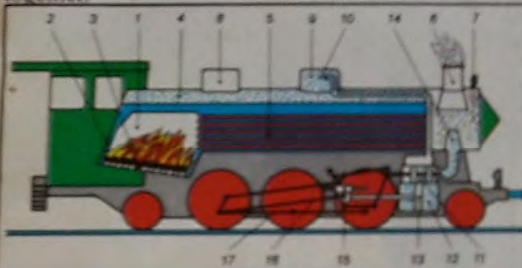


# OF RAILWAYS

paving the way for the rapid expansion of the economy after 1850. Moreover, by breaking down inter-state barriers, the railways played a major part in political unification.

In Italy the first line was opened between Naples and Portici in 1839. But wars and political upheavals delayed further progress until the second half of the century.

It was Cavour, minister to King Victor Emmanuel of Piedmont who really got Italy's railway system under way. Utterly dedicated to the unification of Italy, he realised that the railways could play a vital role by bringing the populations of the various states together.



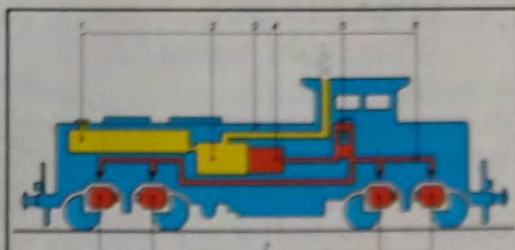
- Steam**
- |                          |                      |
|--------------------------|----------------------|
| 1. Furnace               | 9. Steam dome        |
| 2. Hatchway              | 10. Steam regulator  |
| 3. Grate                 | 11. Slide valve gear |
| 4. Boiler                | 12. Cylinder         |
| 5. Group of boiler pipes | 13. Piston           |
| 6. Chimney               | 14. Blast pipe       |
| 7. Smokebox              | 15. Crosshead        |
| 8. Sandbox               | 16. Drive rod        |
|                          | 17. Side rod         |

Between 1853 and 1863 the Turin to Novara, Central Italian, Turin and Susa, Victor Emmanuel, Ivrea, Maremma, and Leghorn and Meridionale lines were constructed. When war ultimately came in 1859, the railways enabled rapid mobilisation of the Italian forces. And by the time Italian unity was completed in 1871, the country possessed nearly 4,000 miles of track.

In 1829, the great French engineer Marc Seguin produced a steam locomotive working on the same principle as Stephenson's English 'Rocket'. This was used on the railway he built from Saint-Etienne to Lyons in 1832.

The first modern French railway was opened from Paris to Saint-Germain in 1837 – and the French government granted concessions to private companies for lines from Paris to Rouen, Le Havre, Dieppe, Orleans and Dunkerque.

The Paris-Rouen line was completed in 1843, and its success led to the launching of a French national railway programme.



- Diesel electric**
- |                               |  |
|-------------------------------|--|
| 1. Gas oil tank               | 5. Regulator                               |
| 2. Diesel motor               | 6. Cable from regulator to electric motors |
| 3. Exhaust gas pipe           | 7. Electric motor                          |
| 4. Electric current generator |  |

The first railway track on Swiss soil was built by the French. In fact it was 1847 before the first purely Swiss railway was inaugurated – running from Zurich to Baden, a distance of 14 miles.

In 1850, Robert Stephenson was invited by the Swiss government to advise on a properly planned railway network, to link the major cities and help in the defence of the country.

Stephenson's plan provided for one main trunk line, starting at Geneva and skirting the lake as far as Lausanne; then turning north, and eventually reaching Baden, from where the existing 'Spanisch-Brotli Bahn' was to be extended.

The first railway in Holland was opened between Amsterdam and Haarlem as early as 1839. Because of the dense population and short distances involved, frequent passenger services were quick to develop. The myriad of small private companies which did the pioneering work were gradually merged, until by the 1930s there were two systems, one private and one state owned.

Denmark was the first Scandinavian country to have a standard gauge public railway, a line being opened from Copenhagen to Roskilde in 1847.

The railway came to Norway in 1854, with a short standard gauge line between Oslo (then Christiania) and Eidsvoll. Development was difficult and speeds were low because of the mountainous terrain. The Oslo – Bergen line for example, was not built until 1909 and attains an altitude of 4,270 ft. with over 250 tunnels.

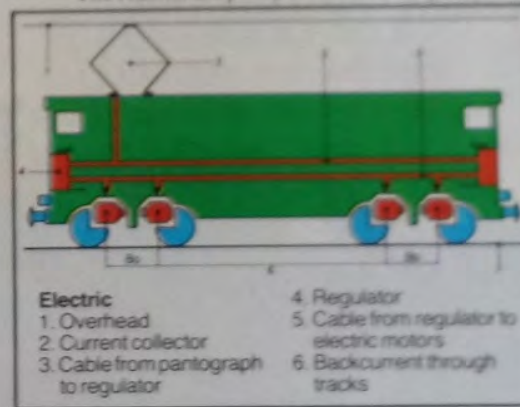
In Sweden the first standard gauge line was opened in 1856, and the first main line, between Stockholm and Gothenberg, in 1862. The first lines were privately owned, but these were gradually absorbed by the Swedish State Railways starting in 1879, and today almost all the rail network is part of the state system.

The last Scandinavian country to open a railway was Finland, where the first line, linking Helsinki and Hameenlinna, was completed in 1862. The first locomotive used was a 4-4-0 'Ilmarinen' imported from England, while the first Finnish-built locomotive was not completed until 1874. Unlike other Scandinavian countries Finland uses a gauge of 5 ft., similar to that of Russia.

## THE SEARCH FOR POWER

In the early days of the railways, steam reigned supreme. Over a long period, the powers of the steam locomotive were developed to a point which the pioneers can never have envisaged. They developed speed – Britain holds the record with 126 m.p.h. by Sir Nigel Gresley's streamlined Mallard – and power – the U.S.A. had 570-ton locomotives capable of hauling 18,000 ton ore trains. Steam locomotives could be built for almost any task. Why then, have they vanished from many areas, and are being phased out in many others?

The reasons are partly economic and partly



- Electric**
- |                                       |  |
|---------------------------------------|--|
| 1. Overhead                           | 4. Regulator                               |
| 2. Current collector                  | 5. Cable from regulator to electric motors |
| 3. Cable from pantograph to regulator | 6. Backcurrent through tracks              |

social. The diesel and electric locomotives which are taking the place of their steam forebears are more costly, but they are available for work over much longer periods. A steam locomotive must visit the depot for attention every day. When its fire is out it takes a long time to light it and reheat the boiler to raise a working pressure of steam. By contrast, a diesel shunter can work twenty-four hours a day for a whole week or more, before paying a short visit to its depot. Thus, because diesel and electric locomotives can do more work, fewer are needed. Furthermore, they can maintain higher average speeds than steam units and work more trains as a result – with a smaller crew.

On the social side, the unavoidable dirt and grime connected with steam locomotive work of all kinds has become unacceptable today. Sadly, the day of the steam train almost everywhere in the world seems to be drawing to an end.

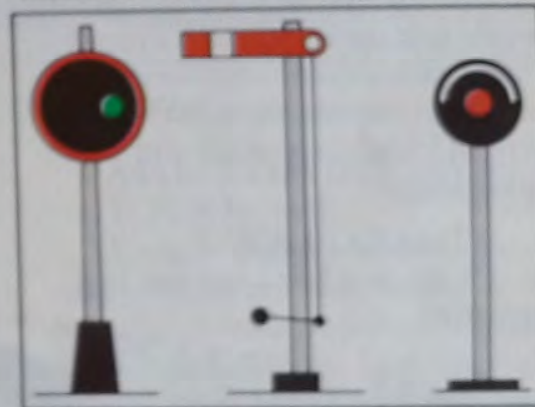
## TRAIN SAFETY

When the railways were young signalling was not needed. With early steam, speeds were low and loads small.

As speeds rose the great advantage of railways – low friction between rail and wheel – became a disadvantage. Trains could not stop quickly, and as railway traffic grew beyond the point where trains were so few and far between they could never come together, something had to be done to tell the drivers where other trains were.

It took the introduction of signals, especially the electric telegraph, to overcome these problems.

The earliest forms of standardised signals included the disc and crossbar – which rotated horizontally on a post – and the semaphore using a wooden arm – horizontal for 'danger', lowered at 45



degrees for 'caution,' and vertical to indicate 'all clear.' Now, however, these are giving way to signals in which the indications are given by coloured lights – controlled by circuits on the track.

## THE FUTURE

For the last century and a half, railways have risen, flourished, and apparently declined, only to rise again. The magic of steel wheels on steel rails still holds good, as today's upsurge in urban mass traffic testifies.

Railway engineers are already thinking of a time when trains will drive themselves. And development is already going on to replace the conventional steel track with more advanced forms. It seems that the hovertrain will be the transport of the future, travelling at up to 300 m.p.h. on concrete beams.

But even if rails and wheels give way to guiding beams and air cushions, it is certain that the railways will be with us for a very long time to come – to the continuing delight of enthusiasts the world over.

# HOW LIMA TRAINS HAVE

The history of railways throughout the world makes a fascinating study. But how much more fascinating to re-create this history in your own home, with a Lima model railway system.

All the romance of the railways is yours in miniature – with the incredible range of Lima rolling stock, locomotives and accessories.

In fact, Lima trains are in use in literally millions of homes all over the world because they produce more model railways and accessories than any other manufacturer. So you can rely on Lima's experience and knowledge.

## LIMA EXPERTISE

When you buy Lima you buy expertise.

Technical expertise, ensuring that your trains will always run on time – year after year.

Modelling expertise, so that every tiny detail is right, and your model railway really comes alive.

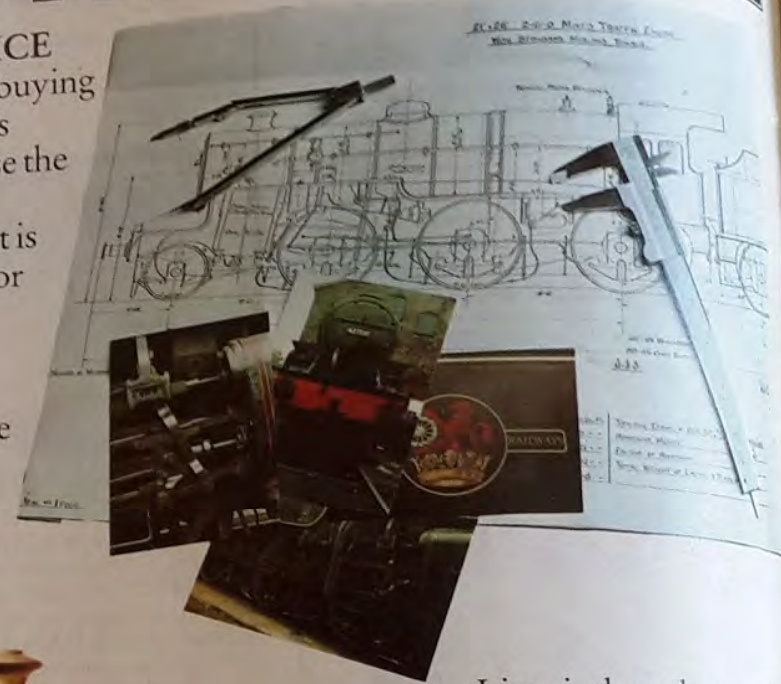
Plus an unrivalled choice of rolling stock and accessories, in three different scales. So your railway system can grow and develop into a lifetime hobby.

But perhaps most important, Lima expertise gives you the kind of value for money that makes your model railway a lasting investment.

**LIMA CHOICE**  
When you're buying a model railway, it's important to choose the right gauge.

The gauge that is right for you, and for the space you have available in your home.

With Lima the choice is easy. Of all the major manufacturers,



Lima is the only one which can offer you all 3 important gauges.

'HO' scale – the favourite with modellers and Lima offer a vast new range of British outline stocks, all with British Standard Couplings.

'N' gauge – the mini-gauge. Superbly engineered micro models, ideal for those with limited space to set up their layout.

'O' gauge – maxi-trains. The giant size classic gauge. Uniquely effective out of doors.



# CAPTURED THAT HISTORY



## LIMA REALISM

If a thing's worth doing it's worth doing well – that's the Lima philosophy. So every new model is painstakingly researched, with no

a hand-finished mould of hard steel. Then the production models are formed under pressure in modern high impact polystyrenes.

Spray painting is used to colour and protect, while highly advanced machinery applies 4-colour transfers to all sides of the model simultaneously.

Finally, the body is checked, and each model is finished off by hand.

## LIMA POWER

Every Lima loco is powered by a well proven, 3 pole electric motor.

and reliability that has come to be expected from all Lima models.

job of work – hauling a big payload of rolling stock under the eagle eyes of



## LIMA ROLLING STOCK RUNS SMOOTHLY

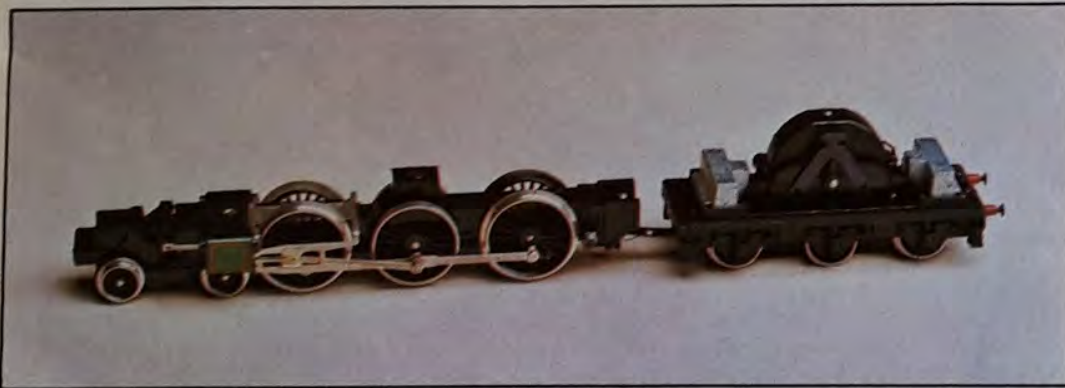
Lima axles are made from toughened metal and have conical points to lessen friction and to give extra smooth running. While each wheel is insulated from the axle to prevent the risk of short circuits.

the testers.

## A PIECE OF HISTORY IN YOUR HOME

Lima models are made with the same love and care that was lavished on real life originals on which they are based – and it shows. Enabling you to re-create, in your own home, the great railways of the past and present, with a vividness that enchants both young and old alike.

With Lima, railway history really comes alive.



time or effort spared to get the right result.

Every loco and piece of rolling stock is designed from the original blueprints and photographs of the real thing. In close consultation with railway authorities, museums and historians throughout the world.

From the finely detailed scale drawings, skilled toolmakers prepare

This tough, reliable unit has two permanent magnets, and works on up to 12 volts direct current.

The care that Lima lavish on all their products is especially apparent in the assembly of these famous motors which were first made in 1946, and have been continuously improved upon since. Each armature is carefully tested, to give the long life



## DOUBLE CHECKED TO STAND THE TEST OF TIME

Before any Lima model leaves the factory it is individually tested to make sure that everything is perfect. Then each loco performs its first real

# LIMA GIVES YOU MORE CHOICE



If you want to start the hobby of model railways, it is possible to buy separately all the individual components, such as locos, coaches, wagons, track, power units and accessories. But the simplest, the most economic and certainly the most satisfactory way to begin is with a complete Lima Train Set.

Only Lima offers all the important gauges – 'HO', 'N' and 'O'. So you can tailor your Lima system to your exact needs.

Indeed, Lima produces a bigger range of

locomotives, rolling stock and accessories than any other manufacturer.

Lima Train Sets range from the most simple circle layout, to advanced systems containing sophisticated track accessories such as containers, unloading depots, bridges and level crossings.

All types of trains are supplied in sets or separately, steam goods, steam passenger, diesel goods, diesel passenger, etc. – the choice is almost endless.

Also available are additional track packs and accessories which can turn a simple train set into a lifetime hobby.



# HO SCALE

HO is the international scale.

In fact, more railway modellers around the world use HO than any other scale. 3.5mm to the foot is the basic measurement, so you can if you wish build an HO set up in a space as small as a card table. However, the average layout is probably more like 244cm x 122cm.

Although there are exceptions, HO is usually the scale for the modeller who wants to get the effect of a real railway network and enjoys building models too. As you will see in the following pages, Lima offers a truly enormous range of locomotives and rolling stock in this very popular scale.





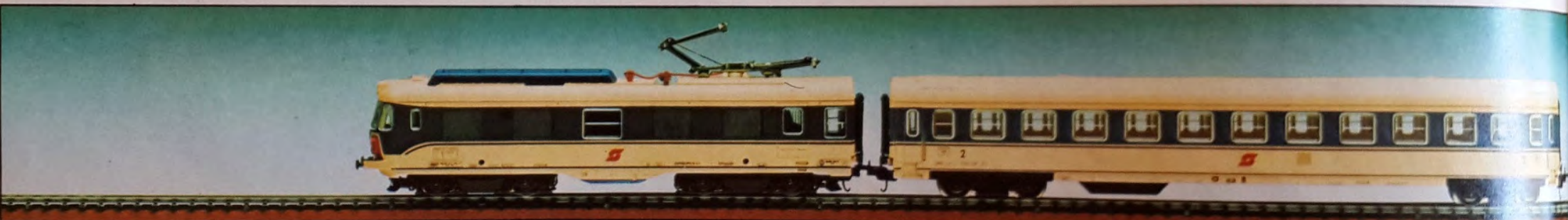
201010L Electric locomotive of the Japanese train TOKAIDO.

201011 Wagon for train TOKAIDO.



201019L Dutch electric locomotive Intercity.

201020 Dutch coach Intercity.



201070L Austrian locomotive 'Transalpin.'

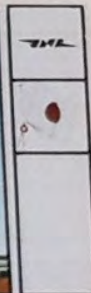
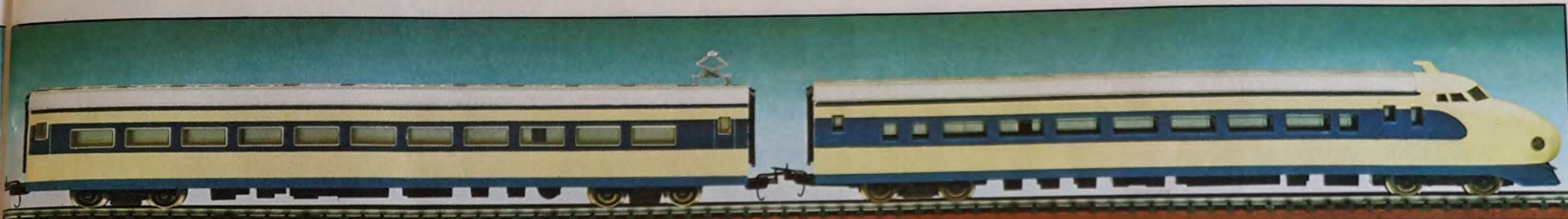
201071 2nd class Austrian coach 'Transalpin.'



201080L French power coach X 4900

201081 French middle coach X 4900





201012 Wagon with Pantograph for the train TOKAIDO.

201013 Dummy locomotive for the train TOKAIDO.

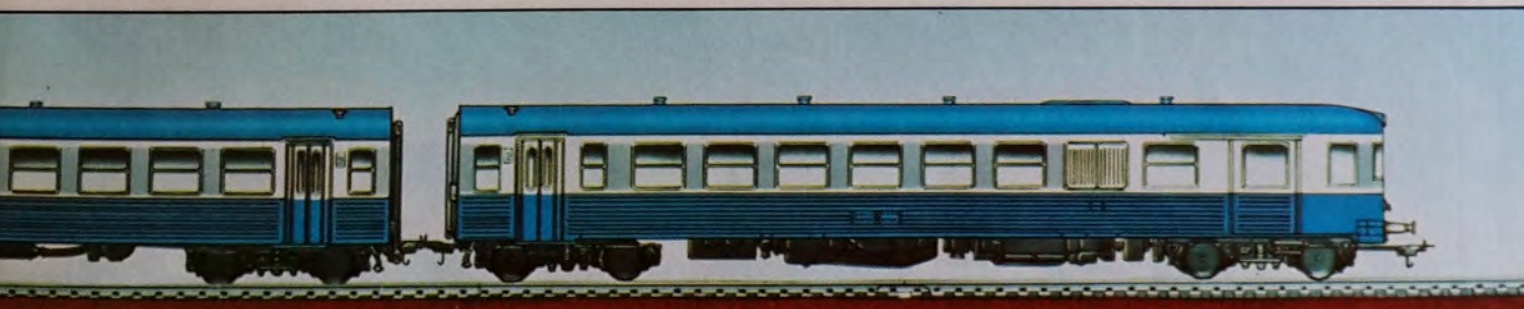


201021 Dutch rear coach Intercity.



201073 Austrian restaurant car 'Transalpin.'

201072 Rear Austrian coach 'Transalpin.'



201082 French driver coach X 4900



DB  
  
 NEW

201626L German diesel locomotive V 80. Length 147mm.



DB  


201640L German diesel locomotive V 200.



DB  


201630L German diesel locomotive V 160. Length 184mm.



DB  


201641L German diesel locomotive Series 221.



DB  


201631L German diesel locomotive V 160. Length 184mm.




201701M British steam locomotive with tender 0-6-0 Class 4 (FOWLER)



U.S.A.  


201654L MDT diesel locomotive Sante Fé.




201656L MDT diesel locomotive SAR.

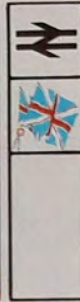
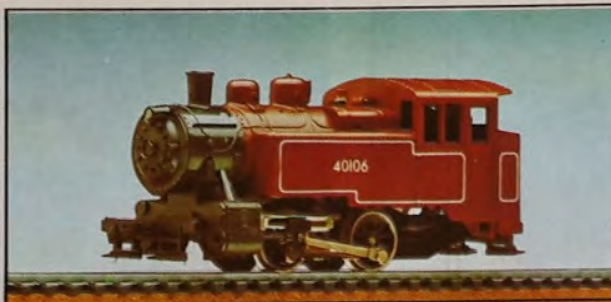




201657 Australian Diesel shunting



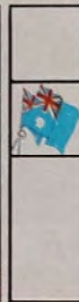
201660 German electric locomotive BRe 69.



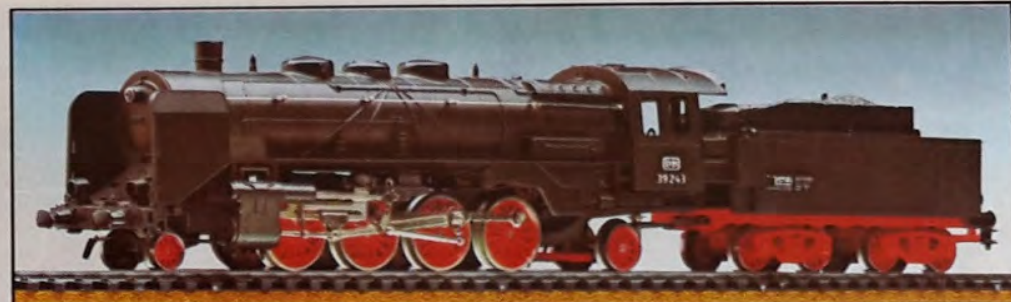
201710M Steam locomotive with tender.



203005L Locomotive with tender for shunting. Length 110mm.



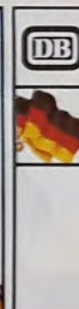
201715M Steam locomotive class 219.



203003L German steam locomotive with tender series 39. Length 270mm.



201716L Steam locomotive with tender 4-6-2 Class 38.



203006L Steam locomotive with tender. Length 205mm.



203002L French steam locomotive with tender 'MIKADO' 141. Length 270mm.



203008L Steam locomotive with tender 'SHIFTER' PRR.



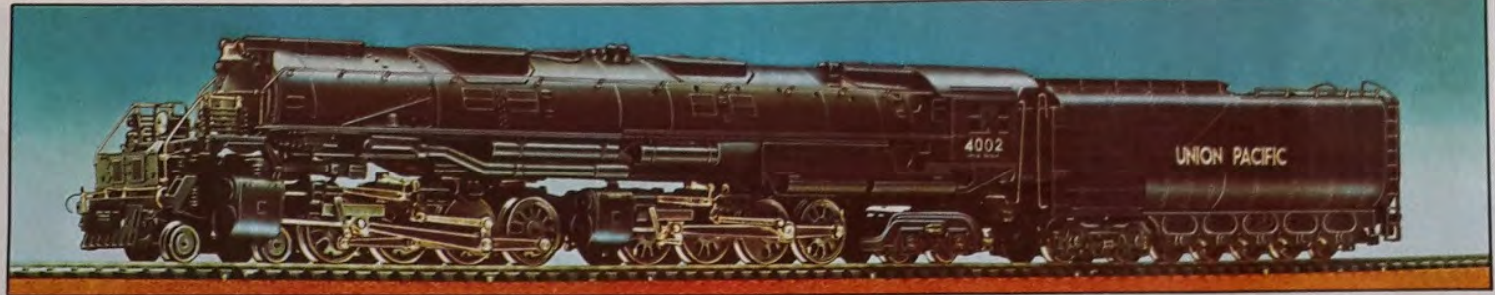
U.S.A.

203009LA Steam locomotive with tender MIKADO N.Y. Central.



NEW

203014L German steam locomotive with tender. Length 270mm.



U.S.A.
NEW

203012L Articulated 4-8-8-4 Mallet type steam locomotive with tender 'Big Boy'.




203015L Australian steam locomotive with tender.



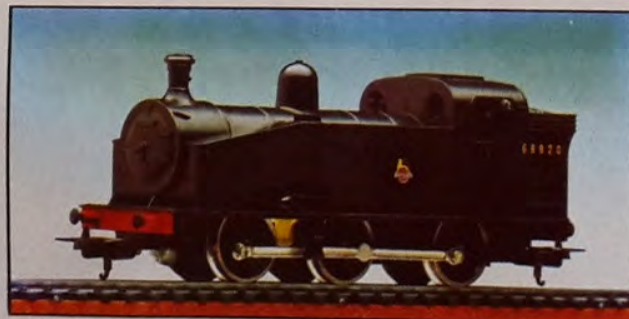
NEW

203016L German steam Locomotive w/tender Series BR10.



U.S.A.

203007LD Steam locomotive 'BOOSTER' C.N.




205102M British steam locomotive LNER.

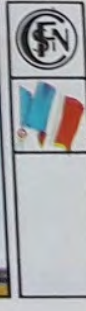
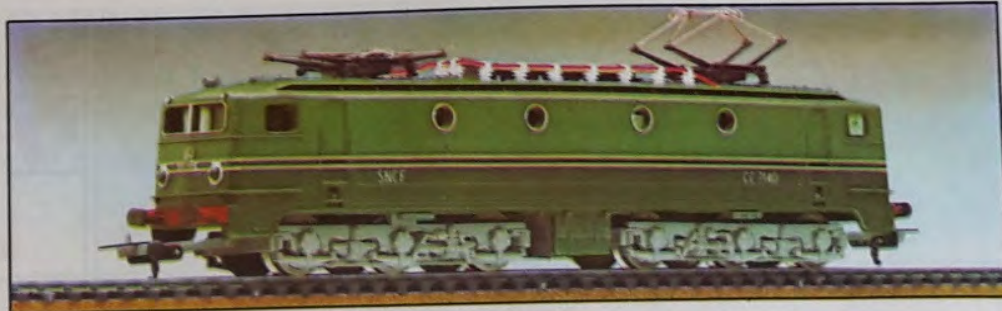


NEW

205107M 0-6-0 350BHP Diesel Shunter. BR livery.



205103M British steam locomotive with tender 4-6-0 king class 5000.



208029L French electric locomotive CC7100 series 217mm.



205106M BR Class 55 'Deltic' Co-Co Diesel Locomotive.



208031L Electric locomotive series RB e 4/4. Length 260mm.



205115M British diesel locomotive BoBo Class 33.



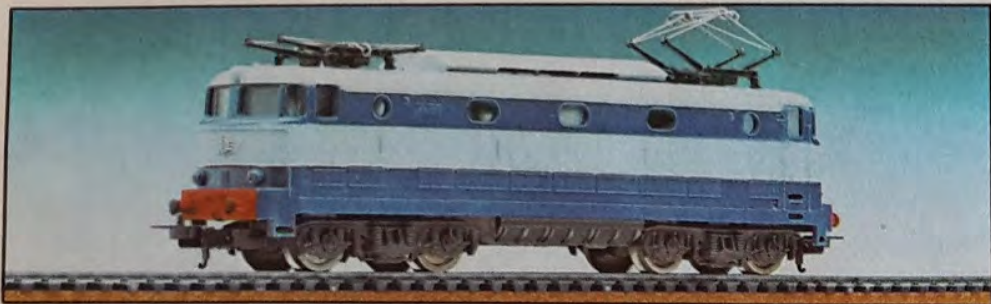
208032/L German electric locomotive series B 184. Length 196mm.



208024L Dutch electric locomotive series 1200. Length 204mm.



208033L French electric locomotive BB9200 series 185mm.



208034L Italian electric locomotive Bo' Bo' E444 'La Tartaruga' 190mm.



208041L Diesel locomotive Co' Co' class 930 205mm.



208036L French diesel locomotive Bo' Bo' BB67000 series 195mm.



208042L Australian Diesel electric locomotive, Class 44.



208037L German electric locomotive ETA. Length 258mm.



208043L Co. Co diesel locomotive Class 'S' V.R.



208040L German electric locomotive series B 111. Length 196mm.



208044L French electric locomotive Bo' Bo' BB 15000 series 200mm.



208046L Swiss electric locomotive 'St. Gotthard'. Length 222mm.



208051L Swiss electric locomotive RE 6/6. Length 222mm.



208047L French electric locomotive CC 21,000. Length 225mm.



208054L German electric locomotive B 151.



208048L Swiss electric locomotive



208055L D.B. class E151 C-C electric locomotive.



208056L Electric locomotive S.A.R. for the 'BLUE TRAIN'



209650 Dummy locomotive S.A.R. for the 'BLUE TRAIN'



208057L Electric locomotive of the SAR-SAS E919.



209651 Dummy locomotive S.A.R.



208058L Electric diesel locomotive series CC 72000 for express trains of the SNCF.



208064L Italian electric locomotive Bo' Bo' Bo' E656 'Caimano' 210mm.



208060L O.B.B. B-B electric locomotive.



208066L Swiss class RE 4/4 B-B electric locomotive (TEE Livery).



208071L Locomotive diesel FP 45 SF.



209600 Dummy diesel locomotive FP 45 of the S.F. company.



Items marked "NEW" are under realization and not all are already available.



U.S.A.

208082L Diesel locomotive ALCO 420 B & O.



U.S.A.

209621 Dummy diesel locomotive ALCO 420 B & O.



208100L D.B. class E 103 C-C electric locomotive (TEE Livery).



208122L French quadricurrent electric locomotive Co' Co', CC40100 225mm.



208103L French electric locomotive Bo' Bo', BB17000 175mm.



NEW

208123L Diesel locomotive, Co' Co', GM 32 class 5 205mm.



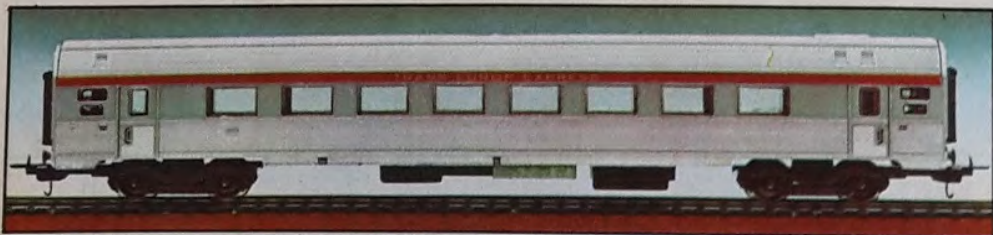
NEW

208116L Desel locomotive BR 288 for military train.



NEW

208124L Diesel locomotive Co' Co', class 42 205mm.



301023 Type A coach (TEE) Paris-Bruxelles-Amsterdam.



305312 British coach MK1 of LMS.



305301 BR Mark 2B Inter-City First Class Corridor Coach.



305314 SR MK1 corridor brake coach.



305302 BR Mark 2B Inter-City Open Coach.



305322 British buffet car MK1 of G.W.R.



305303 BR Mark 2B Inter-City Corridor Brake Coach.



305324 British buffet car MK1 of SR.



305311 BR MK1 corridor brake coach.



305331 British coach brake in the colours BR.



305332 British wagon brake of LMS.



305334 SR MK1 corridor composite coach.



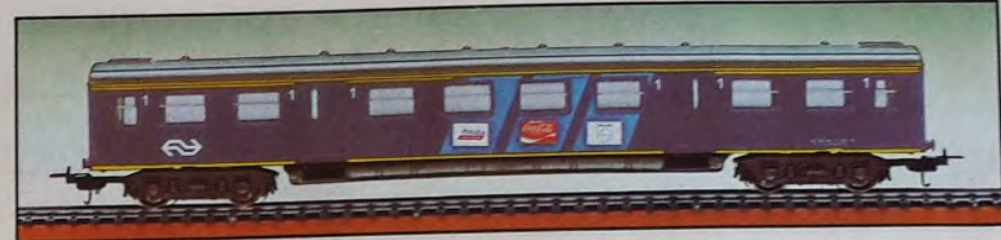
305342 L.M.S. 58ft standard gangwayed brake van.



305344 BR 58ft standard gangwayed brake van.



305345 G.W.R. 58ft standard gangwayed brake van.



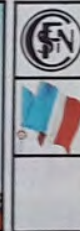
309109 N.S. First class coach.



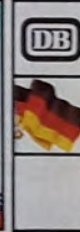
309110 N.S. second class.



309112 Swiss first class coach (Type A).



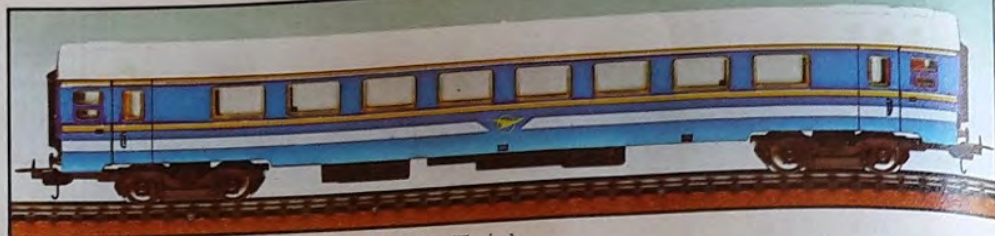
309117 French 1st class coach. A9 series, 255mm.



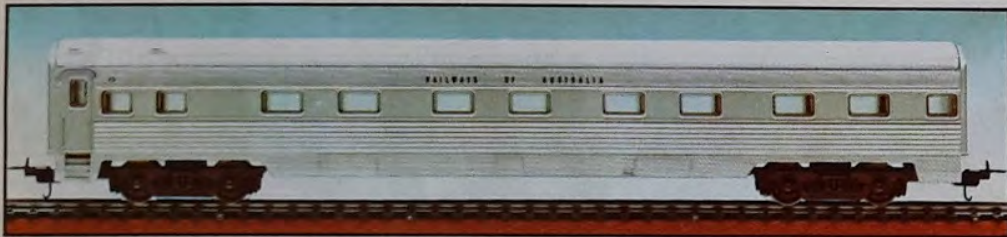
309125 D.B. battery rail car trailer.



309126 First class wagon of the train 'The Overland'



309139 1st class coach of the S.A.R. train 'Blue Train'



309127 2nd class carriage of the Australian train 'Indian Pacific Express'



309147 'Suburban train' coach of the SAR-SAS.



309129 French coach A9 series 'Grand Comfort' 268mm.



309153 D.B. first class 4 wheel coach.



309133 Italian 1st class coach TEE 'Lemano' 268mm.



309155 D.B. second class silver fish.



309138 Italian 1st class coach 'Gran Comfort' 268mm.



309157 D.B. dummy coach for fast trains.



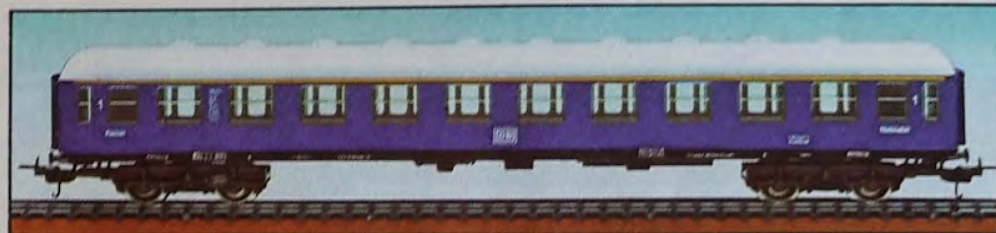
309166 O.B.B. second class coach.



309171 6 axle coach 1st class of the Australian railways.



309167 D.B. Pullman car RHEIN GOLD.



309172 D.B. first class coach.



309168 D.B. first class RHEIN GOLD.



309174 German 1st class coach 268mm.



309169 D.B. dining car RHEIN GOLD.



309178 D.B. second class coach.



309170 D.B. coach RHEIN GOLD.



309184 Compartmented coach Apim.



309185 Saloon coach Avium,



309186 Restaurant car Würmz,



209197 Passenger car for military train.



309204 D.B. dining car



309207 French restaurant car 268 mm.



309210 French refreshment car "Grill Express" 268 mm.



309211 Swiss dining car with pantograph



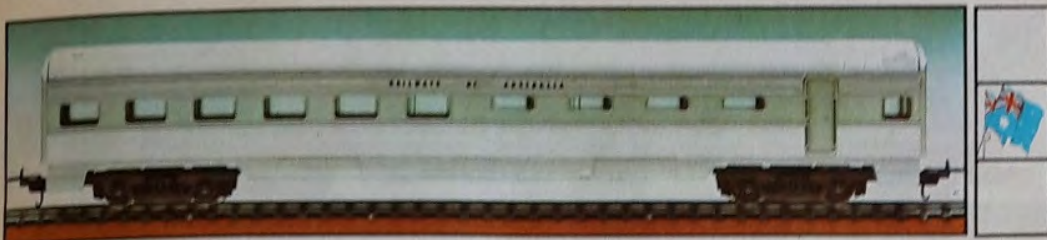
309213 French cinema coach 268 mm.



309214 D.S.G. dining car



309215 Dining car of the Australian train "The Overland".



309216 Dining car of the Australian train "Indian Pacific Express".



309237 Swiss ten sleeping car.



309221 Forum - exhibition car AEG.



309240 French 2nd class coach, VTU 75 "Corail" 268 mm.



309230 French driver/1st class coach Bxe 2 level 274 mm.



309242 1st class coach of the S.A.S. of the train "Trans Karoo".



309231 French 2nd class coach Bxe 2 level, 274 mm.



309243 Dining car coach of the S.A.S. of the train "Trans Karoo".



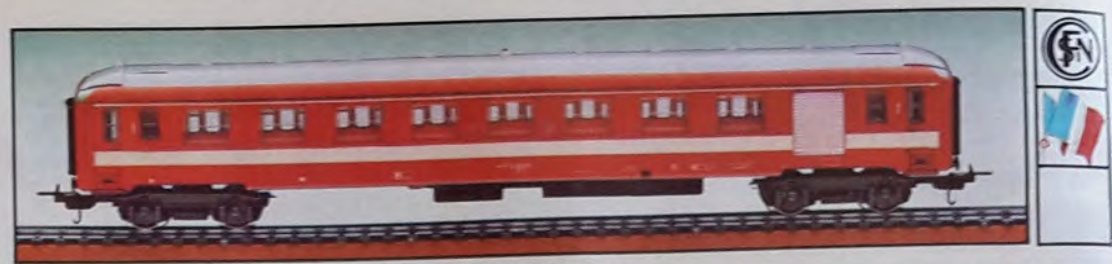
309236 Italian "Self Service" coach, 268 mm.



309244 2nd class coach of the S.A.S. of the train "Trans Karoo".



309245 S.B.B. self service coach.



309307 French composite first class/luggage coach A70, 255 mm.



309246 6 axle sleeping car of the Australian railways.



309309 German luggage van, 2 axles.



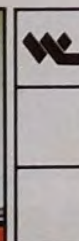
309247 Power van of the Australian train "Indian Pacific Express".



309311 French composite passenger/luggage coach, A4 Dtux "Grand comfort" 268 mm.



309301 Wagon-Lits baggage car.



309316 Swiss TEE first class coach.



09305 N.S. restaurant car.



309317 Italian luggage van "Grand comfort" 255 mm.





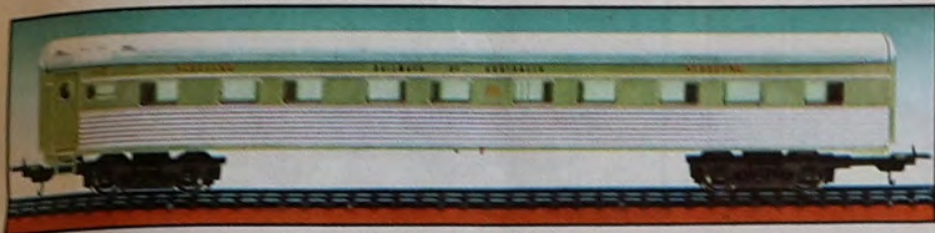
Items marked "NEW" are under realization and not all are already available.



309319 Composite coach S.A.R. of the train "Blue Train".



309333 Baggage car of the S.A.R. train "Trans Karoo".



309322 Sleeping car of the Australian train "Indian Pacific Express".



309334 Swiss Luggage von Series D, 211 mm.



309323 Sleeping car of the Australian train "The Overland".



309337 D.B. baggage car for fast trains.



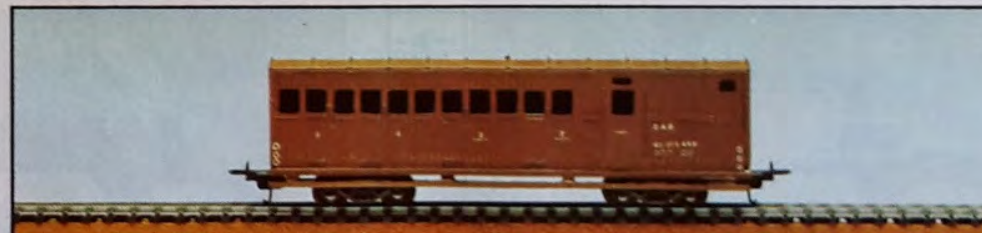
309329 Italian 1st and 2nd class coach "Eurofima" 268 mm.



309342 Australian brake van, class 8300.



309330 D.B. composite 'EURO FIMA'.



309343 Guard's van, type V-8.





302711 ESSO tank wagon



302804 Two axles silos box car OMYA.



302819 Goods wagon with Löwenbräu beer containers.



302713 SHELL tank wagon.



302805 'Blue Circle' Twin Tank Cement Wagon.



302822 'Watneys' Triple Cask Beer Wagon.



302715 BP tank wagon.



302810 German wagon Bascula.



302825 French wagon for the transport of wine Beaujolais Village.



302718 Tank wagon GULF.



302811 KLmm open wagon of the Italian State Railways w/pipes.



302830 Open wagon with transport LIMA materials.



302720 'ICI' Chemical Tank Wagon.



302812 KLmm open wagon of the Italian State Railways with plates.



302861 Open wagon with transport of 'Mercedes' and 'AGFA'

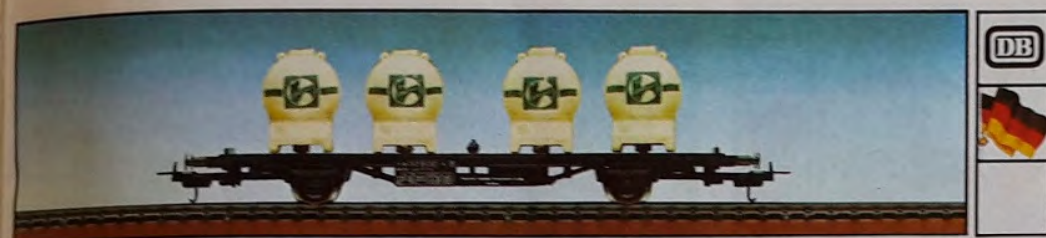




302842 Platform car with spherical containers "SLOTTTS"



302871 'Freightliners Ltd' Container Wagon.



302844 Platform car with spherical containers HOECHST



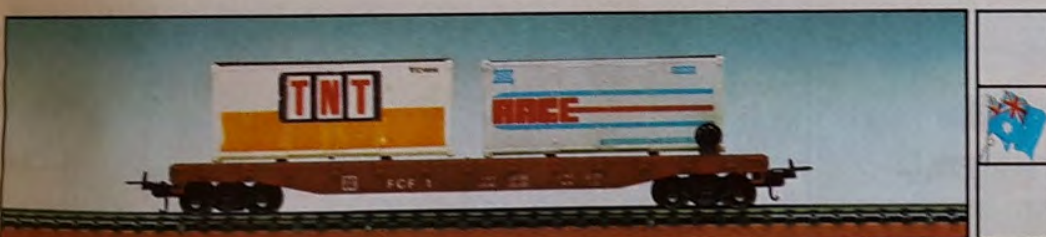
302903 Tank wagon Mobil Oil.



302852 Wagon with containers 'LHB' and 'SCOTCH BEEF'



302904 Tank car SHELL for the transport of L.P. gas.



302865 Fiat with Australian containers TNT + RACE



302912 4 axle tank wagon 'Golden Fleece'



302866 Fiat with Australian containers ACT + ESS.



302913 'Amoco' Bogie Tank Wagon.





302916 Tank car TEXACO.



302917 4 axle tank wagon of S.A.R.



303101 Norwegian goods van w/sliding doors.



303109 Carlsberg Danisch beer wagon.



303118 'Schweppes' Refrigerator Van.



303103 Interfrigo refrigerator car.



303111 Spatenbräu German beer wagon.



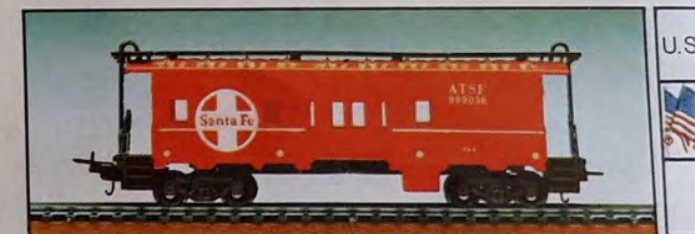
303121 Caboose wagon B & O.



303105 L Bogie brake van of the S.N.C.F. with working rear red lights.



303113 Refrigerator wagon for Coca Cola.



303126 Caboose wagon A.T.S.F.



303107 Australian closed van.



303114 Grimsby Fish Refrigerator Van.



303154 'Ovomaltine' Closed Wagon UIC.



303155 East Anglian Meat Closed Van.



303165 BR Closed Van.



303173 'National Coal Board' Mineral Wagon.



303163 Two axle covered car of the Italian State Railways chartered to FIAT.



303167 Closed wagon for transport of bananas.



303175 BR Long Wheelbase Mineral Wagon.



303164 Two axle covered goods van 'A.S.G.'



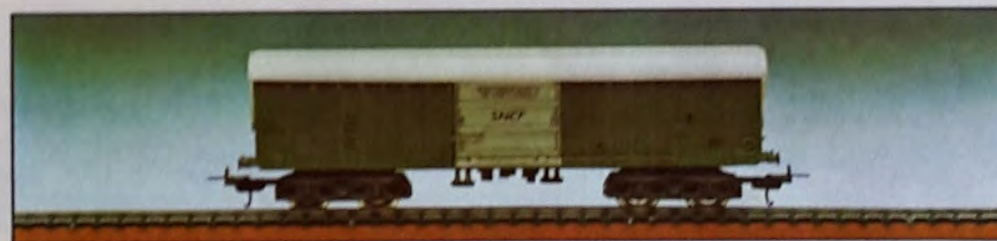
303172 Two axle UIC open wagon, type 2, of the French Railways.



303185 Dutch car with telescopic opening.



303181 German wagon with opening top for special transport.



303182 French wagon with opening top.



303186 D.B. car with telescopic opening.



303520 Open wagon, 121mm.



303521 Open wagon with cover, 121mm.



303188 Car w/opening top TAES.



303204 BR Rail Freight Van with Four Doors.



303189 Australian wagon with opening top 'All Trans'.



303212 Open car type GONDOLA of the 'BURLINGTON' Company.



303191 Refrigerator wagon Interfrigo.



303221 Wagon type REEFER 50' of the Libby's company.



303193 Refrigerator van 'Martini', 4 axles, 242mm.



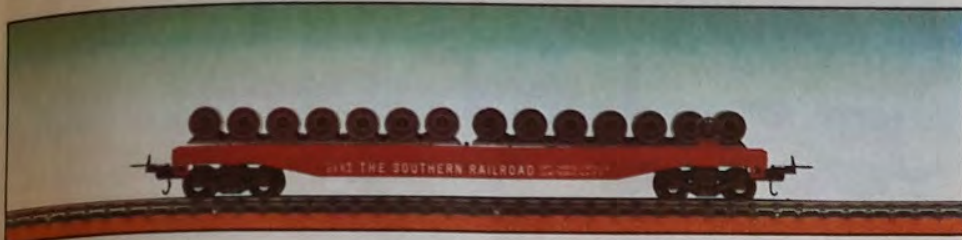
303232 Tank car 62' of the CGW.



303199 'BP Offshore Services' Supply Wagon.



303239 62. Tank car AMPOL.



U.S.A.  


303261 Platform car with.



  
  
 NEW

303500 Truck with gun.



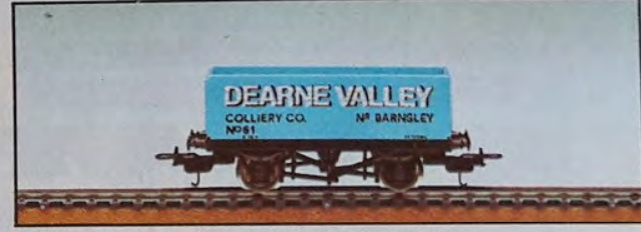
  
  
 NEW

303504 Open truck, 2 axles, for military train, 121mm.





303515 Box car explosive.




305615 'Dearne Valley Colliery' 7 Plank Wagon.



  
  
 NEW

303508 Closed van, 2 axles, for military train. 121mm.




305602 'Homepride Flour' 20 Ton Box Van.




305620 BR 20 Ton Brake Van.





303510 Australian open van.




305603 'Michelin Tyres' 20 Ton Box Van.



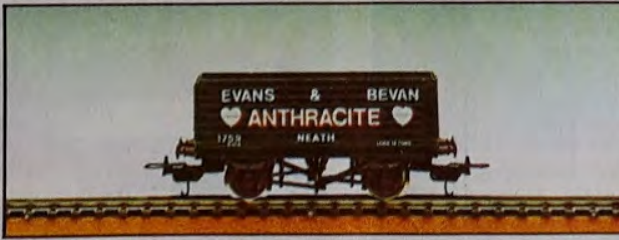
  
  
 NEW

305625 Closed van, 2 axles, 'Horse Box' G.W.R.





303511 Open car S7354.



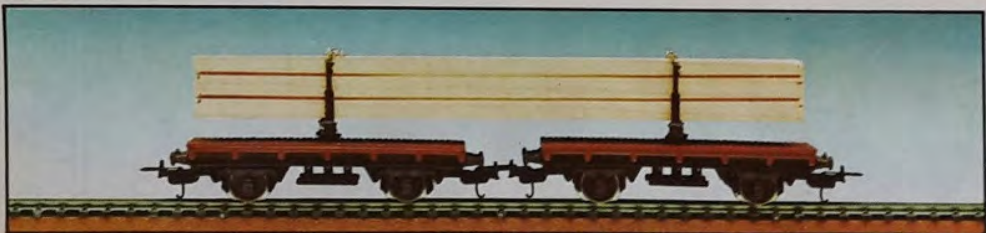
  


305613 'Evans & Bevan Anthracite' 7 Plank Wagon.



  
  
 NEW

305628 2 Axle Horse Box SR Livery.



309038 Twin Trucks with Planks.



309039 Twin Trucks with Pipes.



309040 Closed van S.A.R.



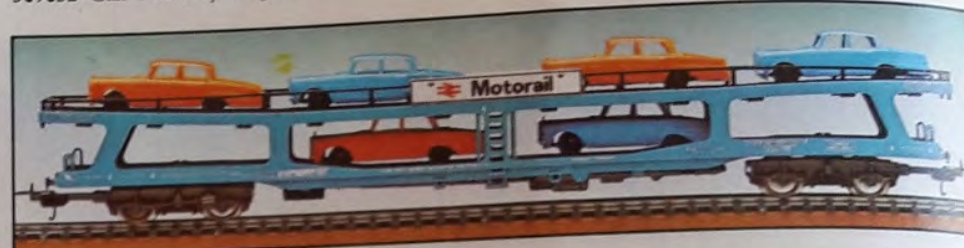
309041 Open wagon S.A.R.



309046 Closed wagon, 4 axles, S.A.R.



309052 'Calf' Foundry Wagon.



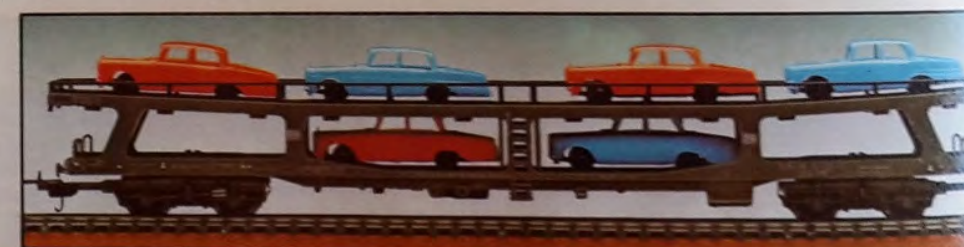
309053 'Motorail' Car Carrier.



309056 Multiple Wagon with 'Phillips' Transformer Load.



309059 35 Ton Breakdown Crane and Flat Car. LNER Livery.



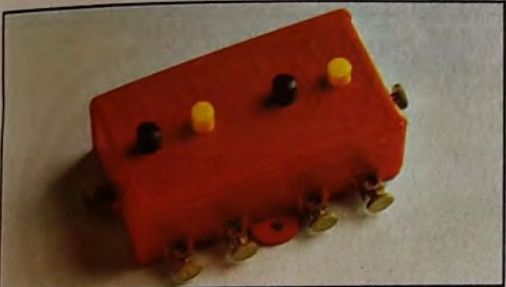
309054 German wagon transport automobiles.



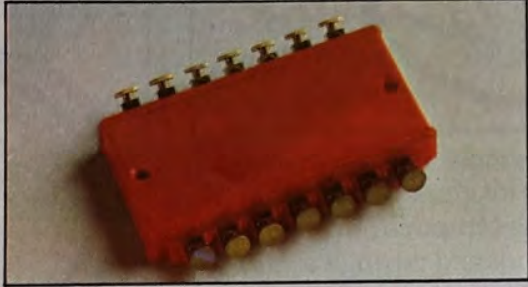
# POWER CONTROLLERS

The transformer is basically a piece of equipment which takes current from the mains and converts it to the appropriate voltage, A.C. or D.C., to feed the various locomotives and accessories of a model railway system.

Lima manufacture a whole range of power units, for a whole range of different applications. Each one protected from any possible short-circuit or overload by means of fuses or automatic cut-outs, giving complete safety of operation.



503065 Push-button control box.



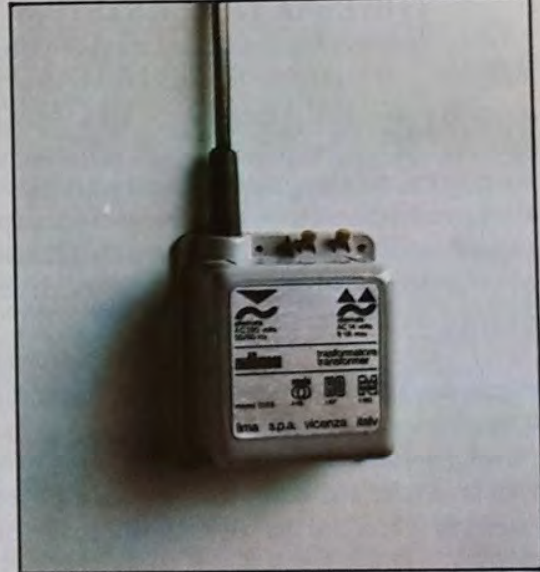
503066 Junction box.



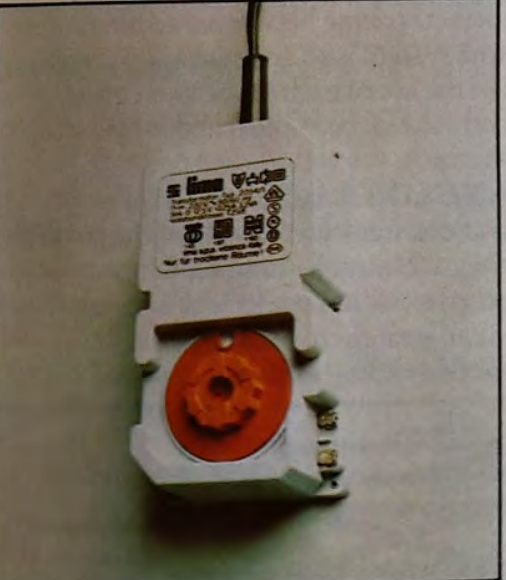
500012 Battery box for 2 flat batteries 4.5V in series. Output 9V.



500012A Battery box for 6 1.5V batteries in series. Output 9V.



502055 Transformer for electromagnetic devices. Input 220V, 50 Hz AC. Output 14V AC. Power 7VA.



502054 Transformer. Power 3.6VA. Input 220V AC. Output 0-12V DC. Designed to operate one train or DC accessories.



502056 Transformer for 2 trains. Input 220V. Output 0-12V DC or 0.5A. **NEW**



502057 Transformer for 2 trains, points and electrical accessories. Input 220 V. DC Output 0-12V at 0.7A. AC output 14V at 0.5A. Protected against short circuits by thermal cutout. **NEW**



502059 Transformer for several trains, points and accessories. 220V input. DC output 0-15 at 2A. AC output 14 V at 1.2A. Protected against short circuits by thermal cutout. **NEW**

# TRACK INSTALLATION

## THE LIMA TRACK SYSTEM

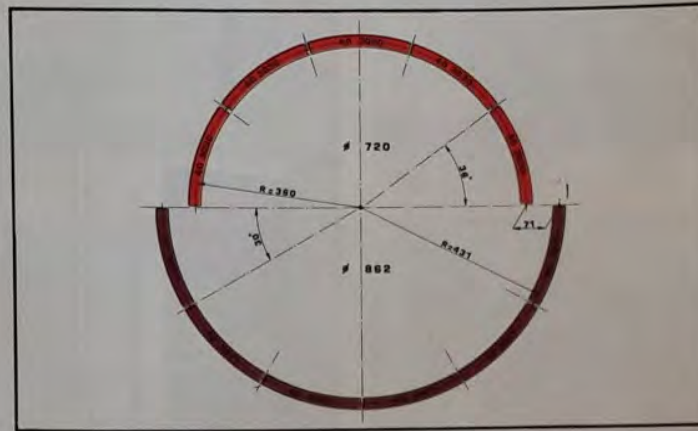
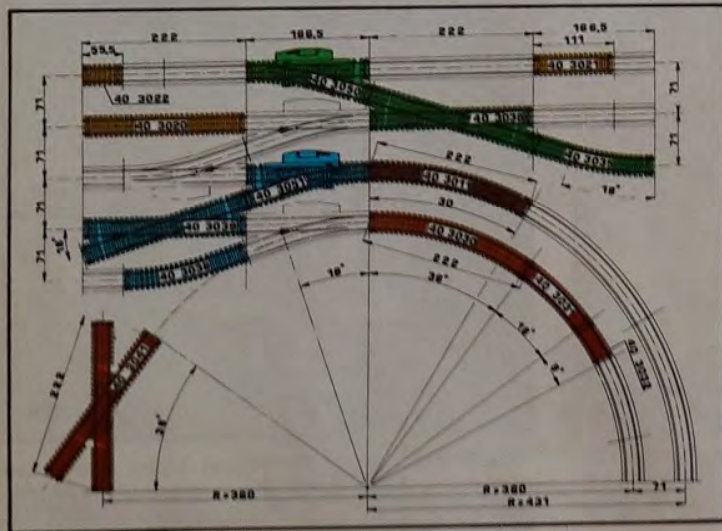
The track is the foundation of your model railway. It is therefore essential to ensure that the track system you install is the finest you can buy. Lima track is just that. It has been carefully developed over the years by experts, whose painstaking research now means that the Lima track system is unique and unsurpassed by any other. You'll find the time and trouble taken at this stage of your hobby amply repaid by smooth running and increased enjoyment later.

Even the smallest layout can provide hours of enjoyment, but the development of larger and more complex layouts will give you all the excitement of running a real railway network.

There are various gauges in use for model railways. Here are the measurements of the main types:-

- 'OO' 16.5mm to the scale of 1:76
- 'HO' 16.5mm to the scale of 1:87
- 'N' 9mm to the scale of 1:160
- 'O' 32mm to the scale of 1:45

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. For example, in a Lima 'OO/HO' scale system the correct distance between track centres is 71mm, maintained both in straight runs and through the curves. For two concentric circuits, as illustrated above, you must use curves with a different radius. In the Lima 'OO/HO' system these two types of curves have respectively 36° (item 403030) and 30° (item 403011) of sweep.

With 10 pieces of 36° sweep you get a circle of 720mm diameter. While with 12 pieces of 30° sweep the circle will be 862mm. The difference between the sweeps of the two circles is 71mm, our safe distance between track centres.

## CONSTRUCTING A 'FIGURE 8'

When building a 'figure of 8' track, it is essential

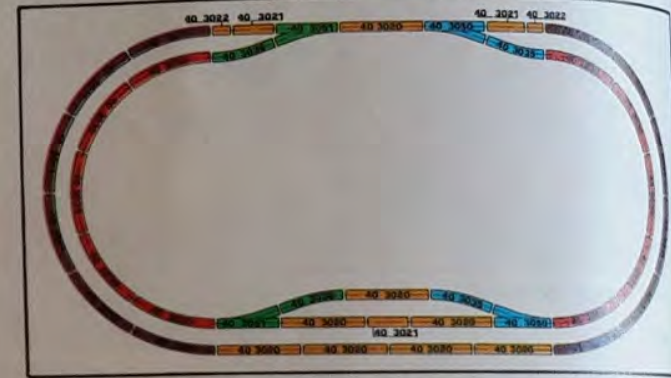


that the cross-over should correspond geometrically to two curves side by side.

Thus in 'OO/HO' scale, the 'figure 8' circuit illustrated below would require 18 pieces of curved track (item 403030), plus a cross-over of 36° (item 403041).

## CONSTRUCTING A PASSING LOOP

Use two points (one left hand and one right hand) with the appropriate compensating tracks to

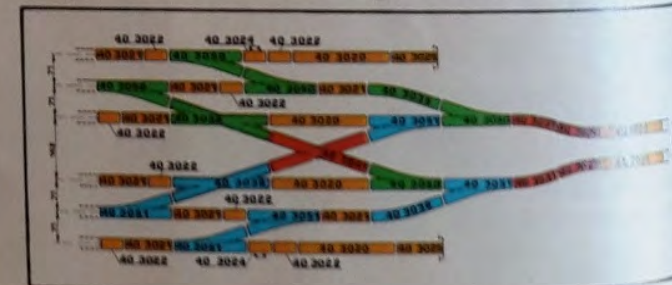


maintain the correct spacing between tracks.

The Lima system is so geometrically precise, that the chord of the arc of each of the two curved elements is exactly the same as the length of the straight track (see illustration).

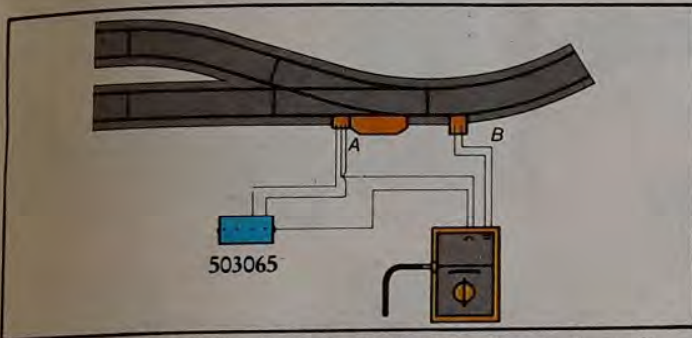
## ADVANCED TRACK LAYOUTS

For advanced track layouts including gradients or descents, 'extendable track' (item 403026) may prove useful. This special track has the facility of being extended from half straight to three quarter straight length by means of a sliding section.



Groups of points and crossings can be used to convert two tracks of main line into six tracks at the entrance to a station (see illustration).

In other cases, flexible track can be used to produce special curves and can be cut to size with an ordinary (fine-tooth) hack-saw.



USE OF POWER UNIT – 502058. The diagram shows the correct wiring.

A = electric point operated by alternating current through control box 503065D. B = connection of the power feed to the track (direct current) through curved track 403030C.

## POINTS IN YOUR TRACK SYSTEM

Even on a simple layout points are a necessity. Lima manufacture two types – the manually controlled type, and the electrically controlled type which allows ‘remote’ operation and is powered by ‘alternating current’ from the power unit. Both types are available in both left-hand and right-hand versions.

The electric point is fitted with two electromagnets which, once the power is applied, move the blade of the point from side to side.

There are 3 connecting wires on the electric point: One ‘neutral’ (in the centre) and two positive for the two operating positions. When using this kind of point the control box must be operated in short sharp movements to avoid the coils overheating. Never keep the control button pressed down as this can cause the coil to fail.

## ISOLATING SECTIONS OF TRACK

For the most realistic results, many railway modellers run more than one train on a given section of track. However, care must be taken that the various trains do not collide, and can stop at the right moment and the right place to let other trains through.

The use of an ‘isolated stretch of track’ allows one train to be held stationary while another train is operating. This works by cutting off the electric current from the locomotive of the train it is required to hold.

The simplest way of using an ‘isolated stretch of track’ is to install a siding ending with a set of buffers.

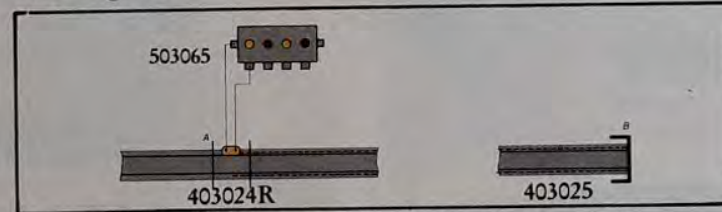
In this case ¼ straight isolating track (item 403024R) would be incorporated in the siding section connected to a control box (item 503065). This operates as follows:–

### WITH THE BUTTON NOT PRESSED

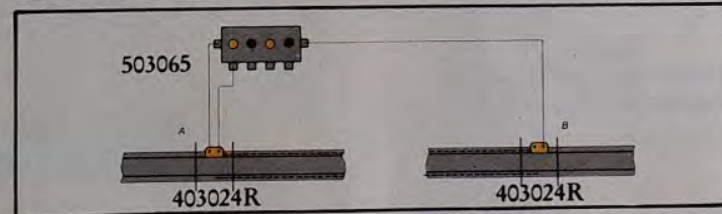
Once past the braking point, the train will stop – with all power to it cut off.

### WITH THE BUTTON PRESSED

Power is restored – and the train is able to move again.



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 503065 is pushed.



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 503065 is pushed.

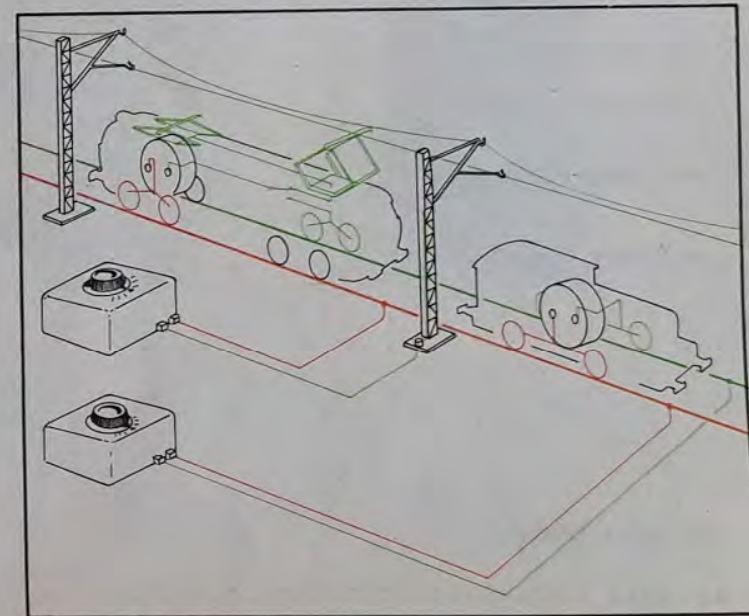
## ELECTRIFICATION OF THE CATENARY

The Catenary is the system used to support overhead wires which carry one pole of the electric current to the locomotive (the other pole being supplied through the track) and which can add an exciting new dimension to your model railway. The overhead wires are supported by a series of insulated posts along the sides of the track and the current passes from the overhead wires to the locomotive through a ‘Pantograph’ which is housed on top of the locomotive.

The basis of the system is the same principle as that used in real life railways today, and is particularly useful where two locomotives are to run on the same section of track.

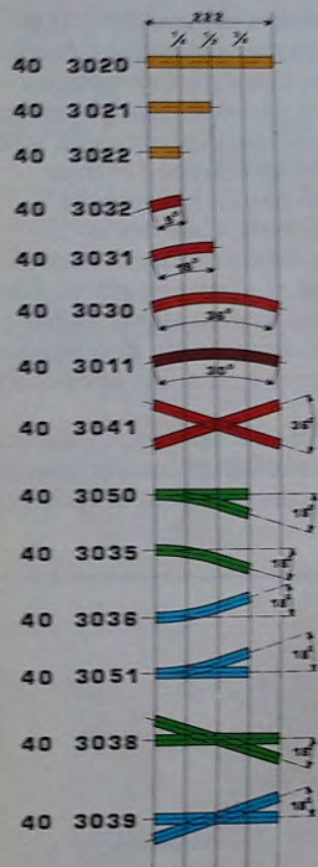
To ensure good electrical contact between the Pantograph and the overhead wires the Catenary is constructed so that the wires are always exactly the same height from the track. In addition, the posts are placed along the track with alternating long and short supports so that the Pantograph zig-zags as the locomotive travels, thus ensuring good contact and avoiding excessive wear at any one point in the Pantograph conductor.

When two locos are used on the same track, one of the locos, fitted with a Pantograph can collect its current from one rail and the overhead wires, whilst the other loco will collect its current from the track.



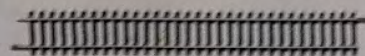
# TRACK

The elements of track in the LIMA system. Please note that each element is based on a measurement of 222mm and its fractions. This example is "OO" scale.

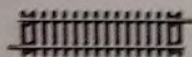


This track diagram is colour-coded to illustrate the different track components, i.e.:

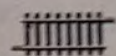
- ORANGE: straight track
- RED: 1st radius curved track
- BROWN: 2nd radius curved track
- GREEN: right hand points
- right hand compensating track
- BLUE: left hand points
- left hand compensating track
- left hand crossing
- YELLOW: special tracks.



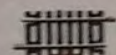
403020  
straight track (220mm)



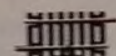
403021  
1/2 straight track (110mm)



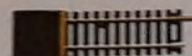
403022  
1/4 straight track



403024  
1/4 straight with power clip



403024R  
1/4 straight isolating track.



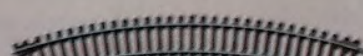
403025  
1/2 straight with buffer stop.



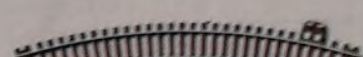
403026  
extendable track 1/2 to 3/4.



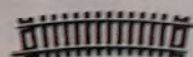
403028 Wagon uncoupler.



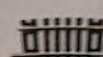
403030  
curved track (dia. 720mm).



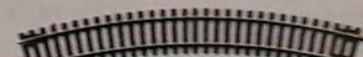
403030C  
curved track with power clip.



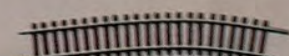
403031  
1/2 curved track.



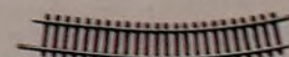
403032  
1/4 curved track.



403011  
curved track (dia. 860mm).



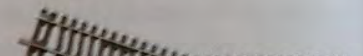
403036  
compensating track right



403035  
compensating left track.



600002 Ramp.



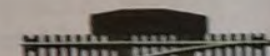
403038  
right diamond crossing (18°).



403039  
left diamond crossing (18°).



403041  
diamond crossing (36°).



403051  
403051 E  
left-hand point (manual).  
left-hand point (electric).



403050 right-hand point (manual).  
403050 E right-hand point (electric).



403042  
flexible track (90cm).

40 3026

40 3042



**403070**  
6 pieces  
straight track  
(220 mm)  
403020.



**403080**  
6 pieces  
curved track  
(diameter  
7020 mm)  
403030.



**403086**  
6 pieces  
outer curved  
track  
(diameter)  
860 mm  
403011.



**403075**  
1 curved  
track with  
power clip  
403030C.  
2 1/4 straight  
tracks with  
power clip  
403024.



**403076**  
1 straight  
track 403020.  
1 1/2 straight  
track with  
buffer stop  
403025.  
1 1/4 straight  
isolating  
track  
403024R.



**403078**  
1 straight  
track  
(220 mm)  
403020.  
1 hand-  
operated  
uncoupler  
403028.



**403050**  
Right hand  
points,  
hand  
operated.



**403051**  
Left hand  
points,  
hand  
operated.



**403079**  
2 x 403035  
(right  
compensating  
track),  
2 x 403036  
(left  
compensating  
track).



**403048**  
1 x 403050,  
1 x 403051,  
1 x 403036  
1 x 403035.



**403038**  
Crossing 18°  
right hand.



**403041**  
Crossing 36°.



**403071**  
6 pieces  
1/2 straight  
track  
(110 mm)  
403021.



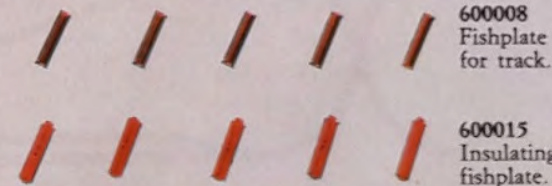
**403081**  
6 pieces  
1/2 curved  
track 403031.



**403077**  
4 pieces  
1/4 straight  
track 403022.  
2 pieces  
1/4 curved  
track 403032  
insulated fish  
plates 600015.



**403026**  
Variable  
length track  
(1/2 to 3/4).

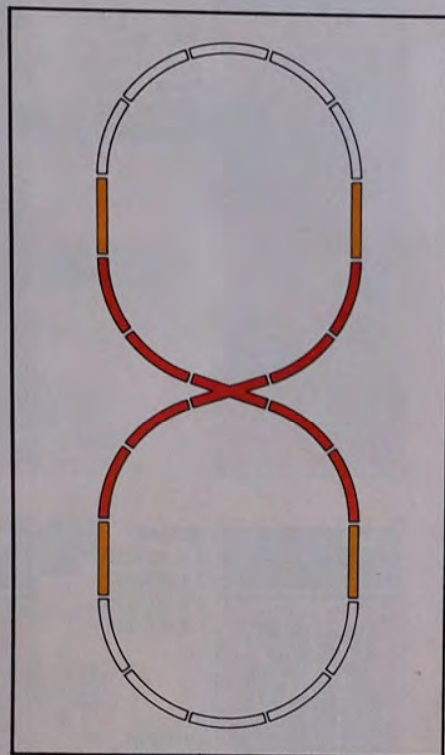


**600008**  
Fishplate  
for track.

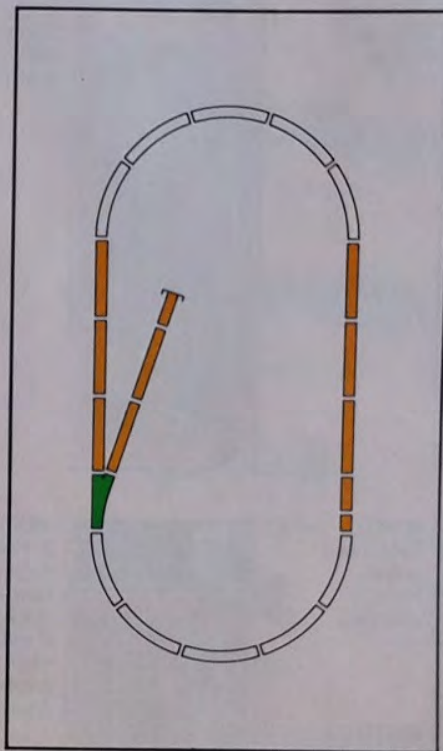
**600015**  
Insulating  
fishplate.

# EXTENDING YOUR SET

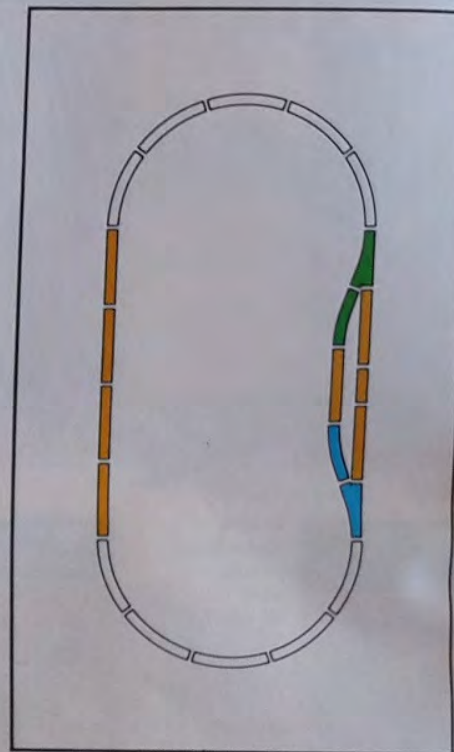
If you have purchased a simple Lima set, perhaps containing only a circle or an oval of track, it's a good idea to consider at the same time the range of Lima track extension packs. In this way you are able to instantly turn your simple layout into an exciting system with designs suitable for passenger terminals, goods yards, signal gantries and much more. These packs contain all the necessary pieces of track to add to your original train set to build it up into a much more complete system.



**404051** 8 pieces curved track (diameter 720 mm) 403030, 4 pieces straight track (220 mm) 403020, 1 piece diamond crossing (36°) 403041.

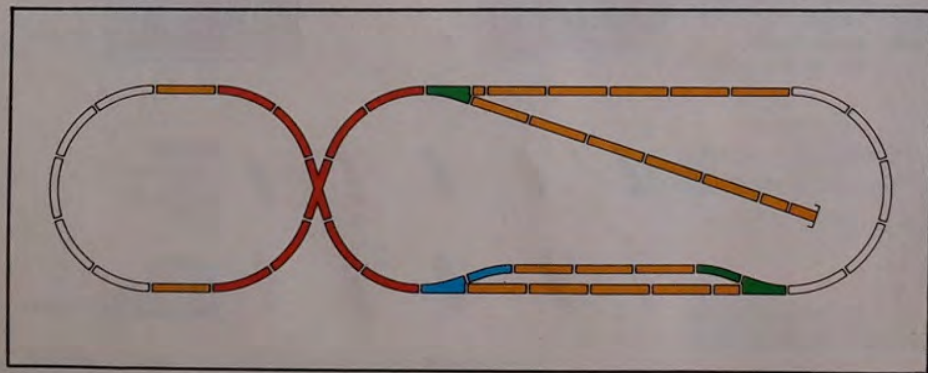


**404052** 8 pieces straight track (2020 mm) 403020, 1 piece 1/2 straight track (110 mm) 403021, 2 pieces 1/4 straight track 403022, 1 piece 1/2 straight track with buffer stop 403025, 1 piece right-hand point (manual) 403050.



**404057** 7 pieces straight track (220 mm) 403020, 1 piece 1/2 straight track (110 mm) 403020, 1 piece right hand point (manual) 403050, 1 piece left hand point (manual) 403051.

*This layout is built by adding the track packs A+B+C to the existing circle.*



A+B+C



# BRIDGES

One of the biggest problems facing railway modellers is the lack of space. One answer is to build up another layout some 8-10cm above the first – but it is important to remember that a locomotive can only climb certain gradients. If the incline is too steep the driving wheels will spin and the locomotive may stop, unable to reach the top.

As a general rule, if the gradient is of 3% the ramp must not exceed 3cm of track per metre. Thus in this case, for the ramp to give a height of 9cm the gradient must be spread along 3 metres of track.

Where short trains are used a steeper incline is possible – up to 4.5%. Giving a gradient spread along 2 metres of track where a height of 9cm is desired. Lima supply three basic sets of ramps:

## 600055 BANKED BRIDGE IN A CURVED STRETCH

If you have a small circle of track with 720mm diameter, you can use bridge 600055 and the respective trestles to build up a viaduct with a banked stretch.



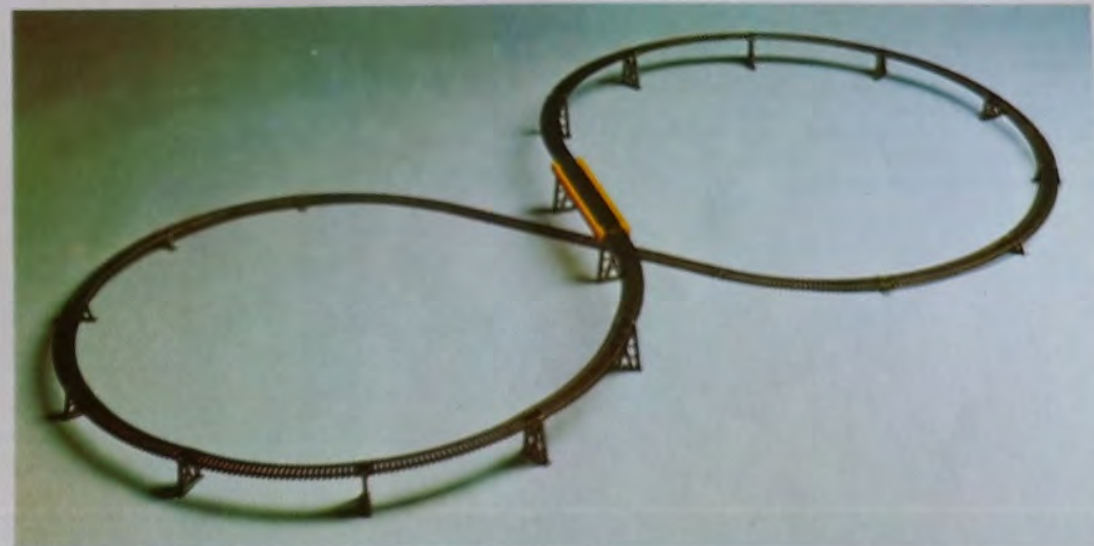
## 600057 BANKED BRIDGE IN A STRAIGHT STRETCH

You can transform a small circle into an "oval" by adding a straight piece of viaduct and two straight pieces of track (item 403020).



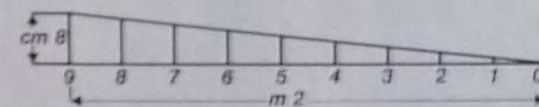
## 600911 BRIDGE FOR A FIG. 8 BANKED CIRCUIT

Using 600911 you can construct a figure "8" circuit passing over the track by means of a straight piece of viaduct (item 403020) and nine trestles of increasing height for each one of the two ramps.

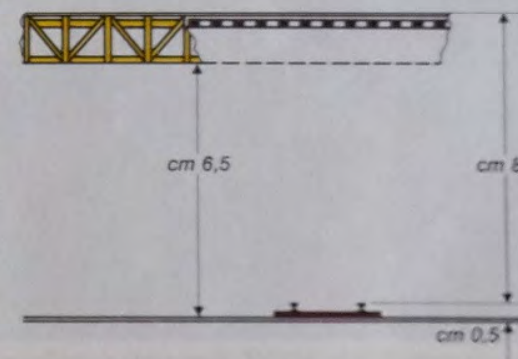


Central point of the figure "8". The height measurements refer to the point where one track passes over the other. A gap of 65mm is necessary to allow trains to run on the lower track.

Gradual incline. Use item 600911. Every Lima locomotive can climb such an incline, even when loaded with a normal complement of wagons or coaches.



The bridge in item 600055 gives a track height of 2.8cm maximum. The circle can be enlarged by adding two or more sections of straight track (item 403020).



The bridges and piers of item 600911 give a track height of 8.6cm and allows a train to pass under the top tracks. There are nine piers for each ramp, limiting the gradient to 4%.

Please note that if you are using an electric locomotive with a pantograph, the pantograph must be lowered to avoid collision with the bridge.

# HOUSES

Lima have this year designed and developed a new idea in houses which enables them to be adapted to many shapes and sizes. There are two basic styles in the new range:- an OO scale House and Bungalow. These basic items can be fitted together to produce four very attractive combinations as follows:-

1. One Bungalow on top of the other.
  2. Two Bungalows placed together to form an L-shape.
  3. A House on top of the Bungalow.
  4. Two Houses placed end to end.
- The fact that this new system is so versatile will enable you to enhance your layout in many ways with Lima's new range of houses.

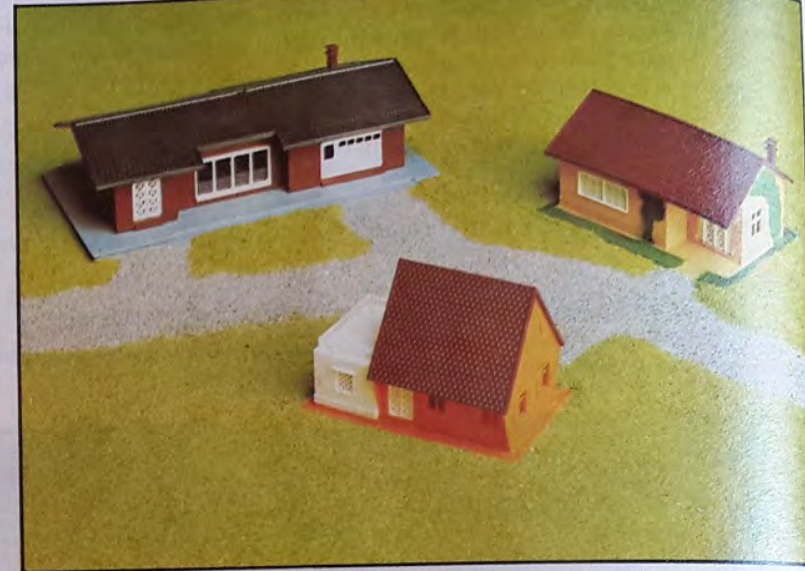
Items marked "NEW" are under realization and not all are already available.



600045 Station.

600024 Station with sound signal.

600041 Freight depot.



600044 Bungalow.

600042 Small house with garage.

600043 Country cottage.



600050 British house in cottage style.

601048 Bungalow, suitable for town or country settings.



1. One Bungalow on top of the other.



2. Two Bungalows placed together to form an L-shape.



3. A House on top of the Bungalow.

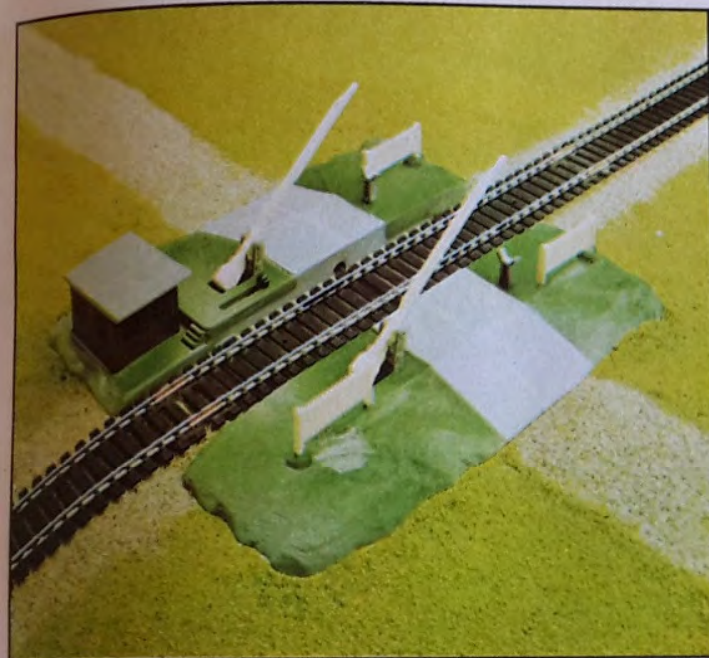


4. Two Houses placed end to end.



# ACCESSORIES

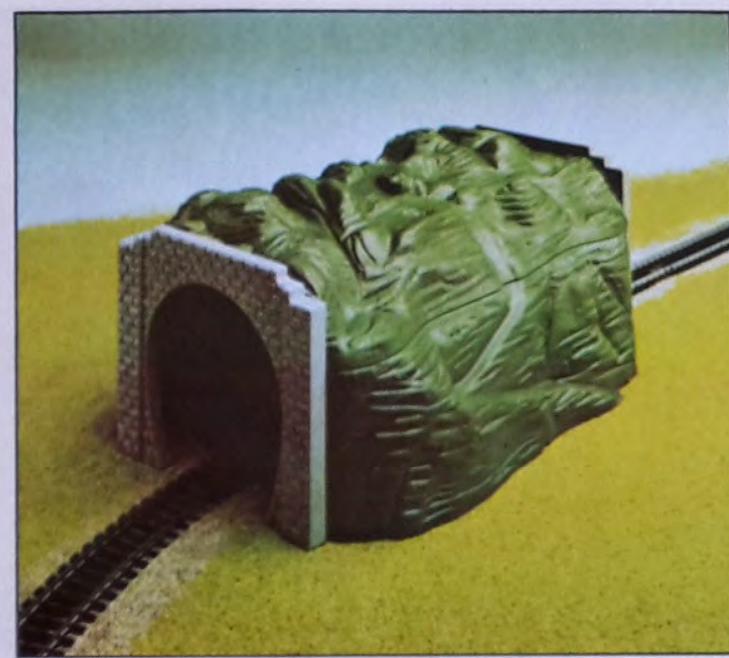
Items marked "NEW" are under realization and not all are already available.



600021 Automatic level crossing.



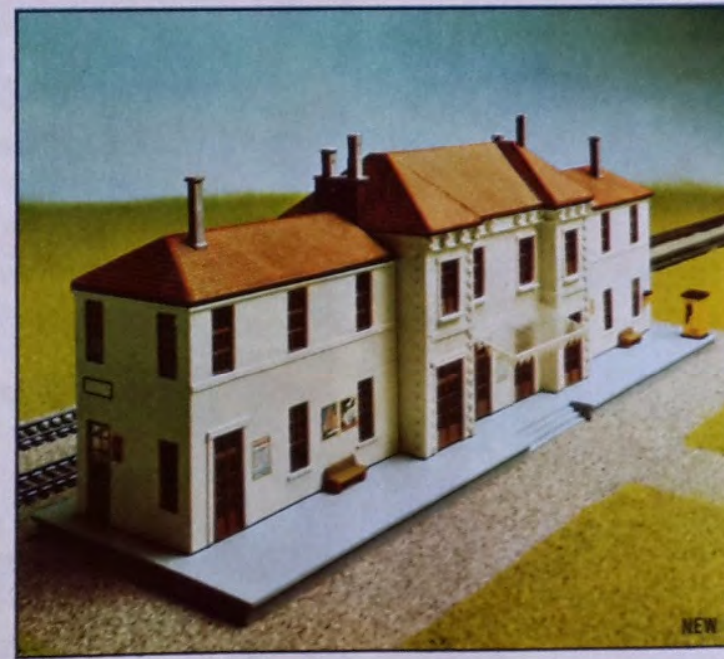
602080 Tunnel.



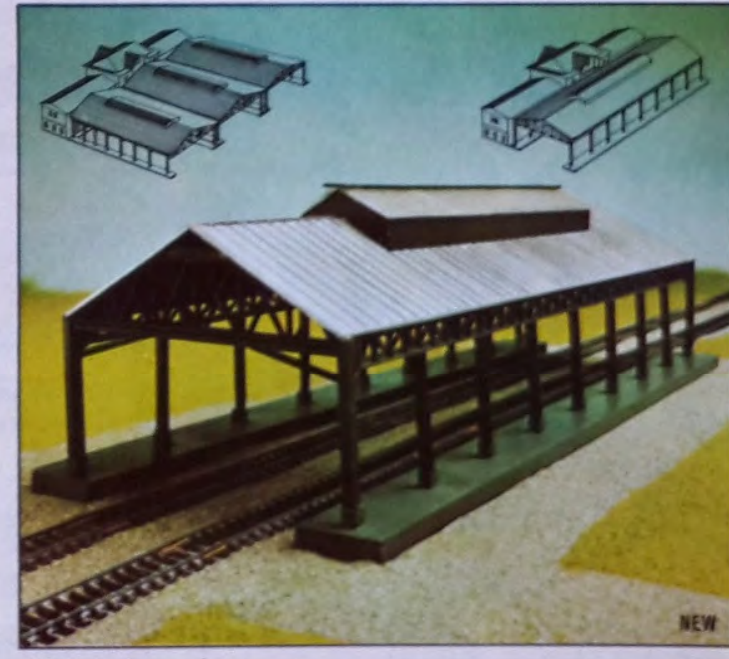
602081 Tunnel kit.



602071 Station roof.



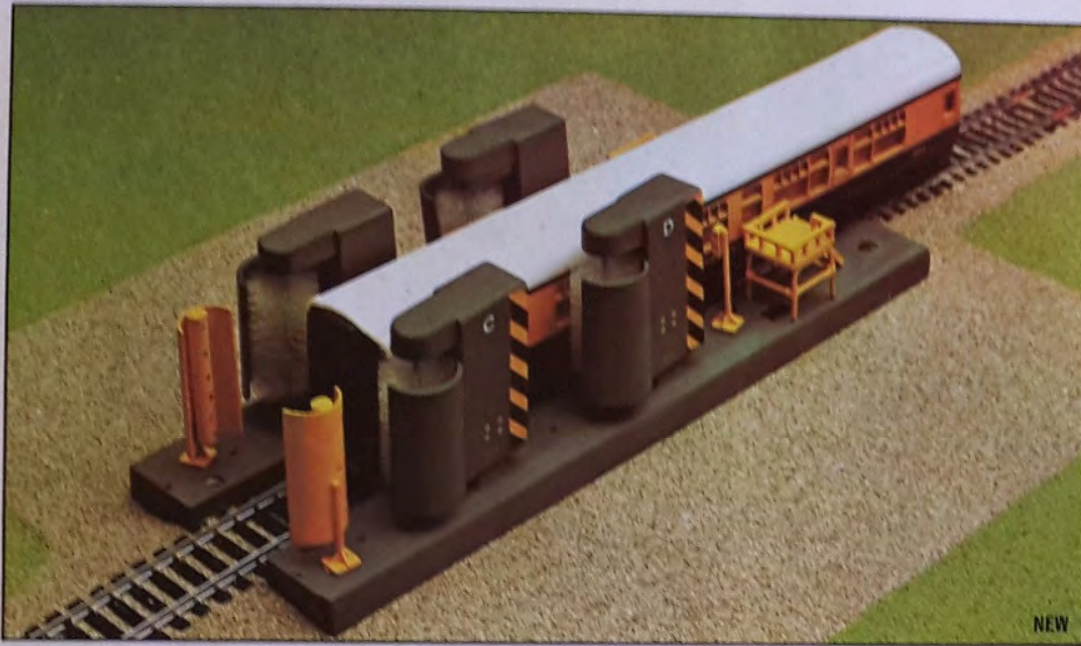
600033 Station.



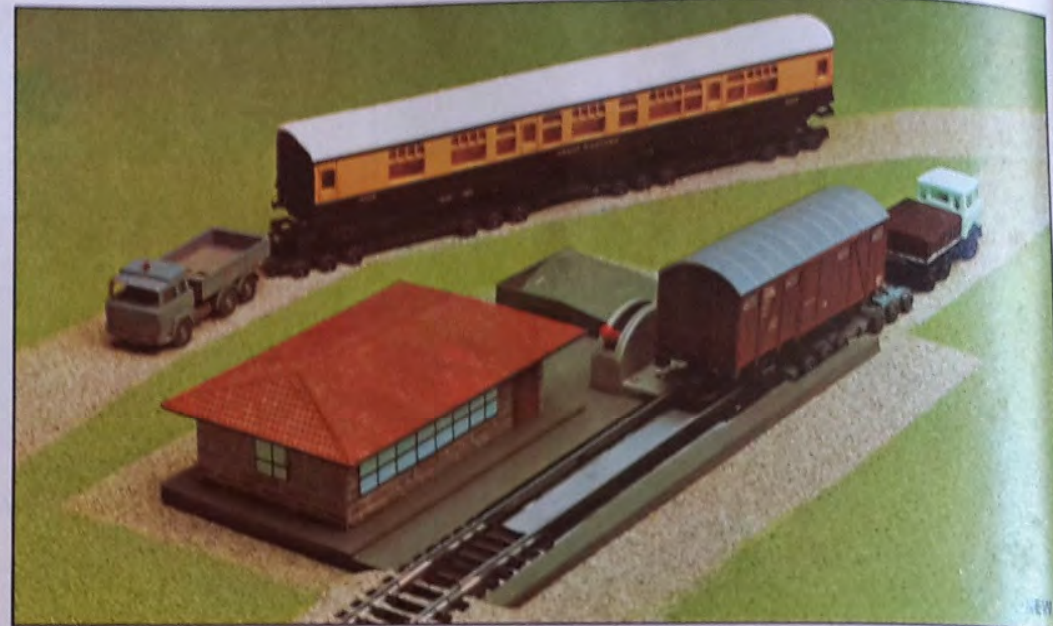
600031 Station roof.

# ACCESSORIES

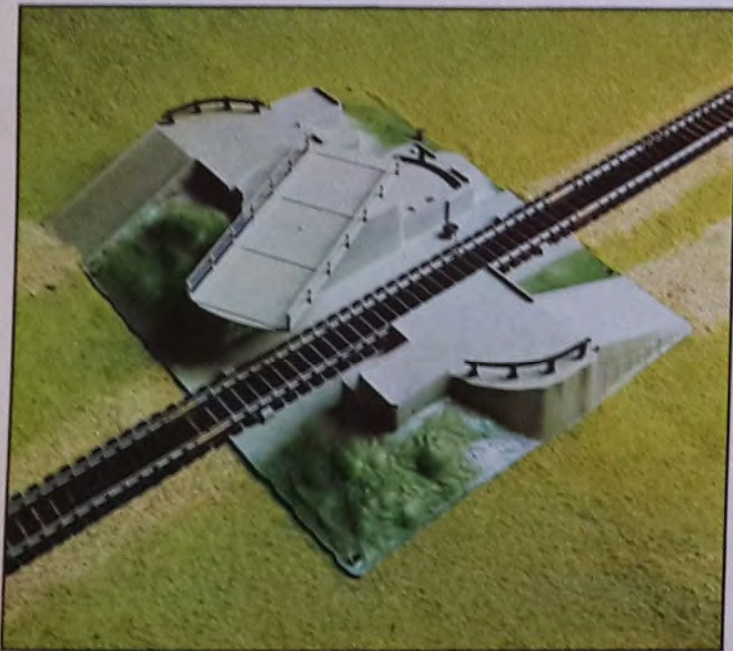
Items marked "NEW" are under realization and not all are already available.



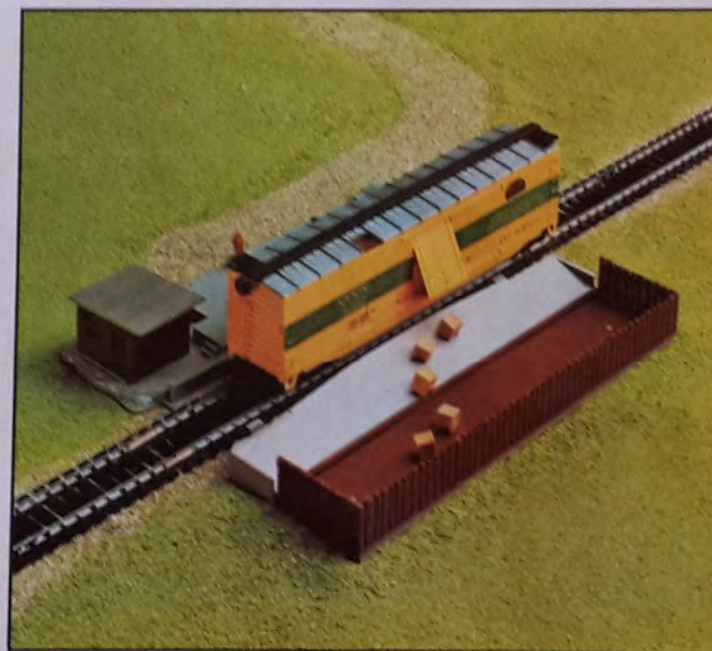
600951 Automatic Drive-Through Coach Wash.



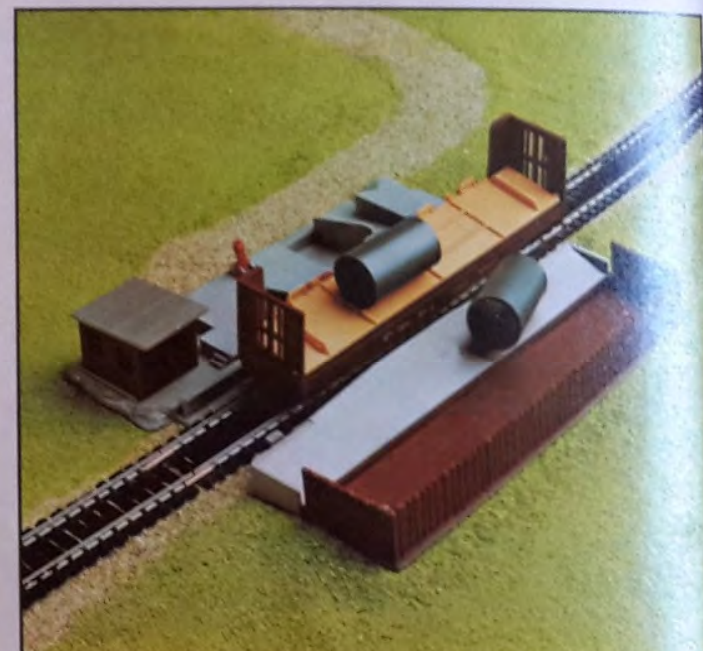
600970 Rolling Stock Road Transporter.



600052 Mechanical Swing Bridge with Auto Train Stop.

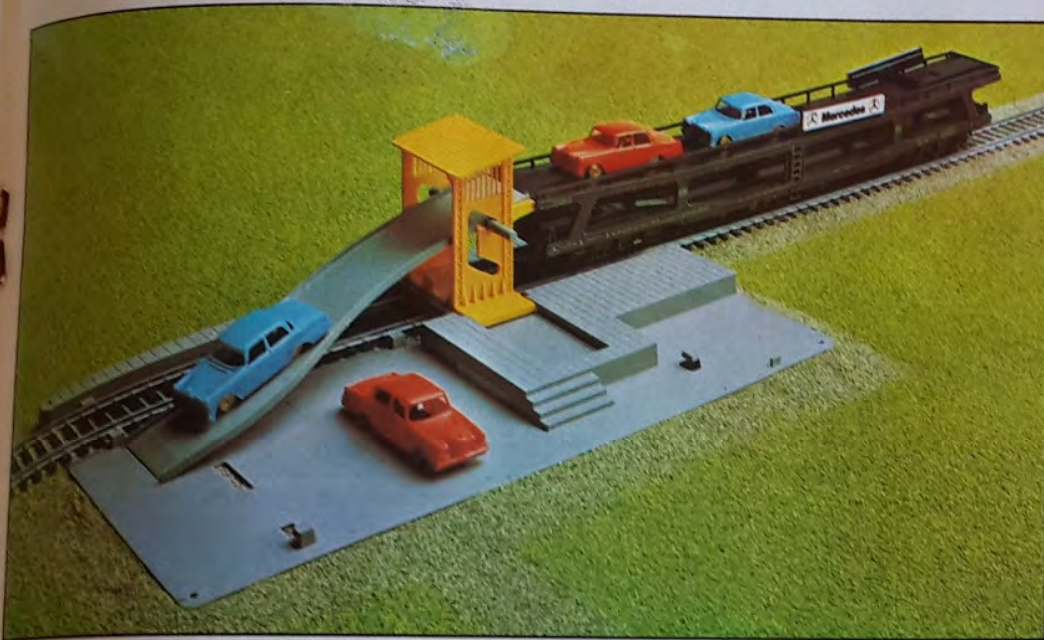


600982 NYC box car with automatic unloading of cases, complete with unloading platform.



602880 Wagon carrying pipes, with automatic unloading action.

# ACCESSORIES



600940 Mercedes car transporter wagon with terminal for automatic unloading of cars.



600941 Ford Capri car transporter wagon with terminal for automatic unloading of cars.



600942 Spanish Semat car transporter wagon with terminal for automatic unloading of cars.



600976 German luggage van with automatic unloading of cases, unloading base and motor lorry.



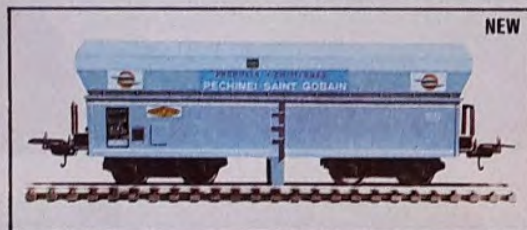
600977 Italian luggage van with automatic unloading of cases, unloading base and motor lorry.



600978 French luggage van with automatic unloading of cases, unloading base and motor lorry.



602891 German ER III coal wagon with automatic unloading.



602893 French coal wagon Pechiney St Gobain with automatic unloading.



600961 Gantry crane for loading and unloading, 2 motor boats.



600960 Gantry crane for loading and unloading, 2 containers, "SEA TRAIN" and "DUNLOP".

600822  
Ford Capri.

600820  
Mercedes.

600823  
FIAT 131

600804  
Shell  
Petrol  
Tanker.

600803  
Builders  
Merchant  
Lorry.

600801  
Atlantic  
Container  
Lorry.

600807  
Dunlop  
Container  
Lorry.

600805  
Seatrain  
Container  
Lorry.

600802  
Boat  
Transporter.

600806  
Circus  
Animal  
Transporter.



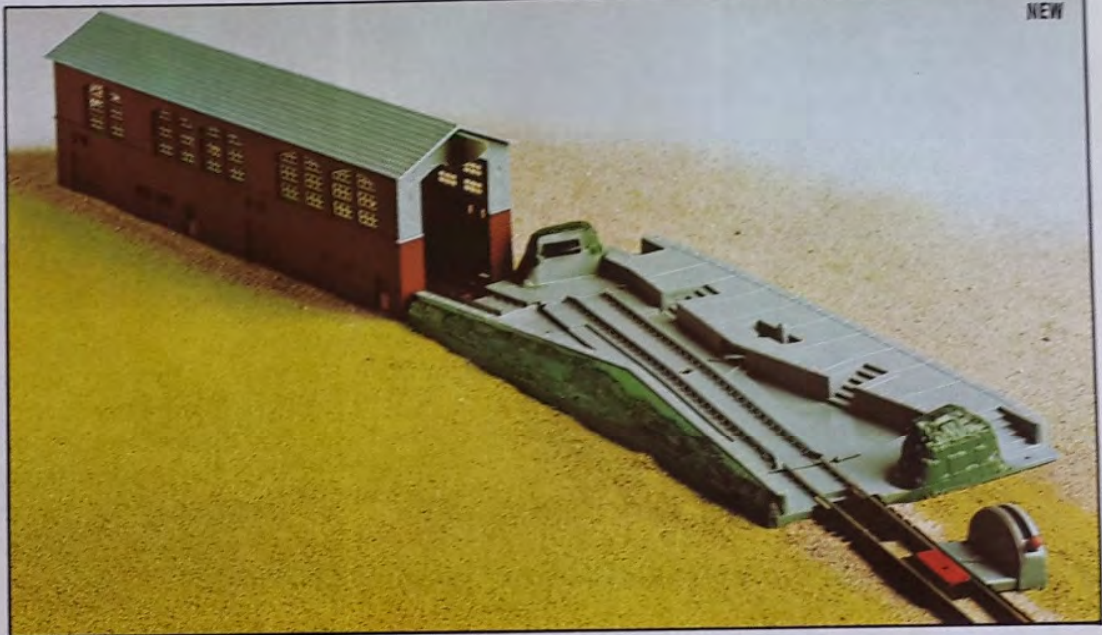
Items marked "NEW" are under realization and not all are already available.

# ACCESSORIES

Items marked "NEW" are under realization and not all are already available.



600963 Container Terminal and Unloading Siding.



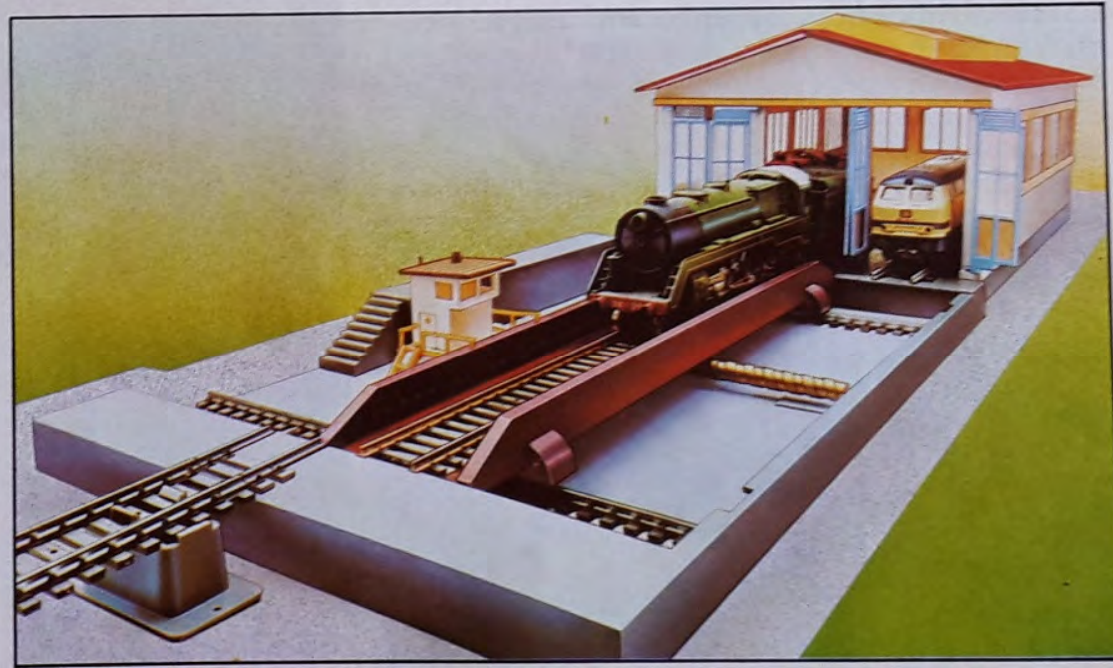
600952 Engine Shed.



600830

600831

600832



600953 Engine Shed with Switching Gear Manually Operated.

# CATENARY AND MASTS

Items marked "NEW" are under realization and not all are already available.

## THE CATENARY AS A SCENIC ACCESSORY

The Catenary system can quickly turn an ordinary layout into an exciting system because the Catenary itself enhances the scenery and overall appearance. Many modellers like to use the Catenary system purely as a scenic accessory without the use of the electric current and this is made possible by the fact that Lima have taken great care to produce Catenary accessories and parts of supreme quality and style.

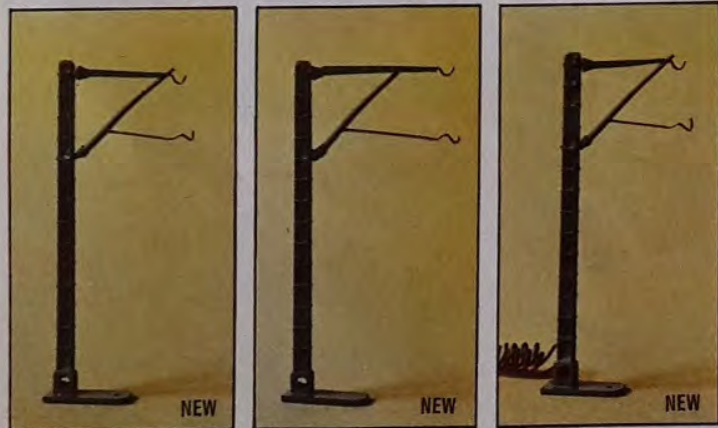
If, however, you are a modeller with some experience and wish to adapt your existing locos for use with the electrified Catenary system then you should purchase the special Lima Pantograph adaptor kit shown opposite.

## THE ASSEMBLY OF THE CATENARY

We have explained previously on page 35 the principles of the electrification of the Catenary system and how the posts are placed to ensure good electrical contact with the Pantograph.

The Lima conductor wire connected to the Catenary is made from copper-covered steel, 0.7mm thick and the Catenary supports are specially produced to fit with each type of track unit, straight, curved, short or long. These support posts are designed to fit at the junctions of the track units.

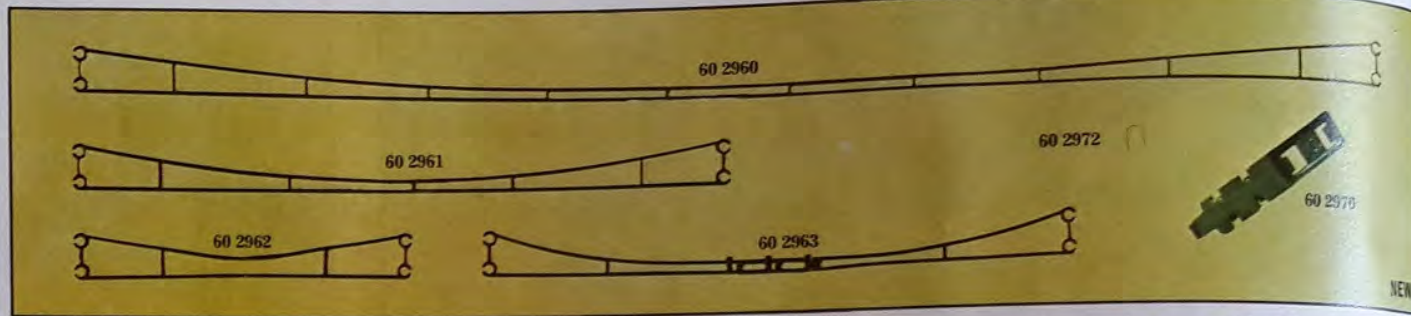
Lima produce three different types of Catenary



602950

602951

602952



support post as follows:-

602950 - with short support brackets

602951 - with long support brackets

602952 - with electrical terminals

All the posts must be arranged on the same side of the track and if, for example they are located on the outside of the track they must be of the short support type in order to maintain a taut overhead wire.

In Figs. A and B we illustrate the use of the



Catenary at points and crossings, and in Figure B we show the use of various posts through a long stretch of track and curves which include points and crossings.

## ELECTRIFICATION OF YOUR LOCOMOTIVE

If you wish to convert your existing Lima locomotive to operate with the Catenary under electric current you may purchase the special Lima Pantograph adaptor kit. There are three different types of Pantograph available as follows:-



602975

602976

602977



Each kit contains a switch, the necessary cable, the Pantograph and a detailed instruction leaflet. Great care should be taken to follow the instructions when altering your locomotive and fitting the Pantograph.

# SIGNALS

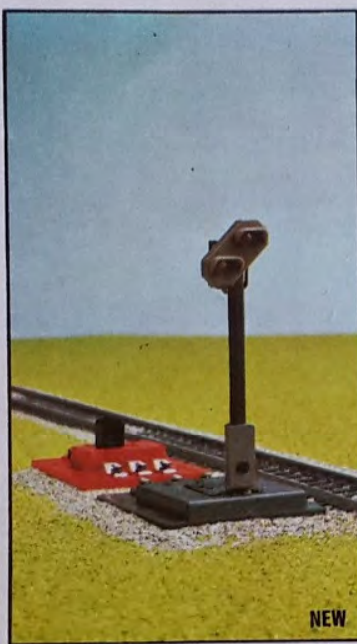
Items marked "NEW" are under realization and not all are already available.



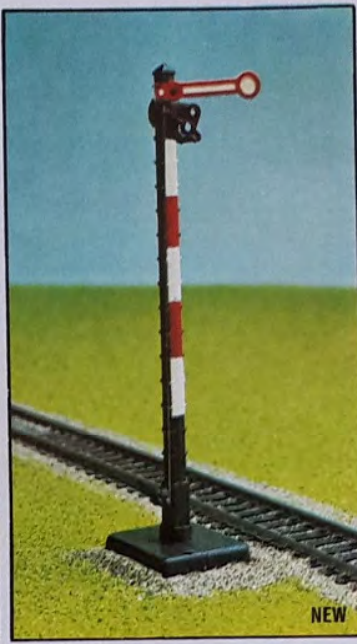
600027 Lamp with two arms. **NEW**



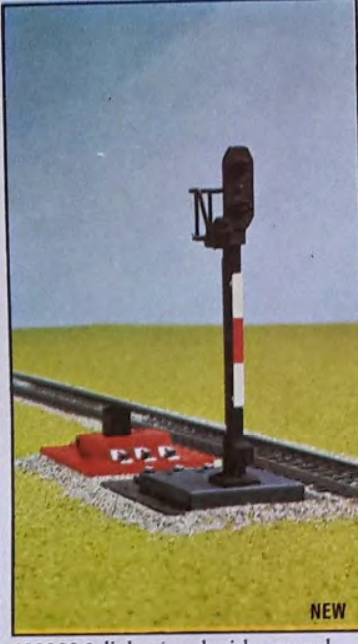
600026 Lamp with single arm. **NEW**



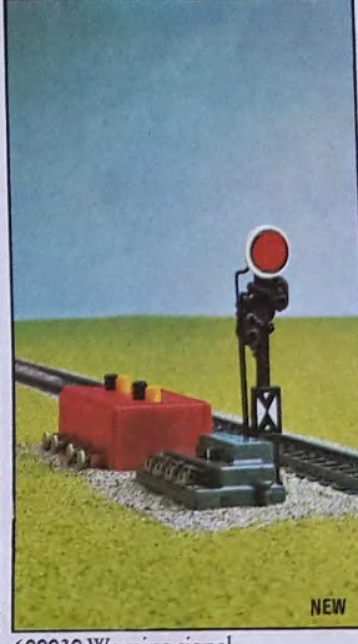
600022 Red and green light signal with control switch 3067. **NEW**



600023 4-light signal with control switch 3067. **NEW**



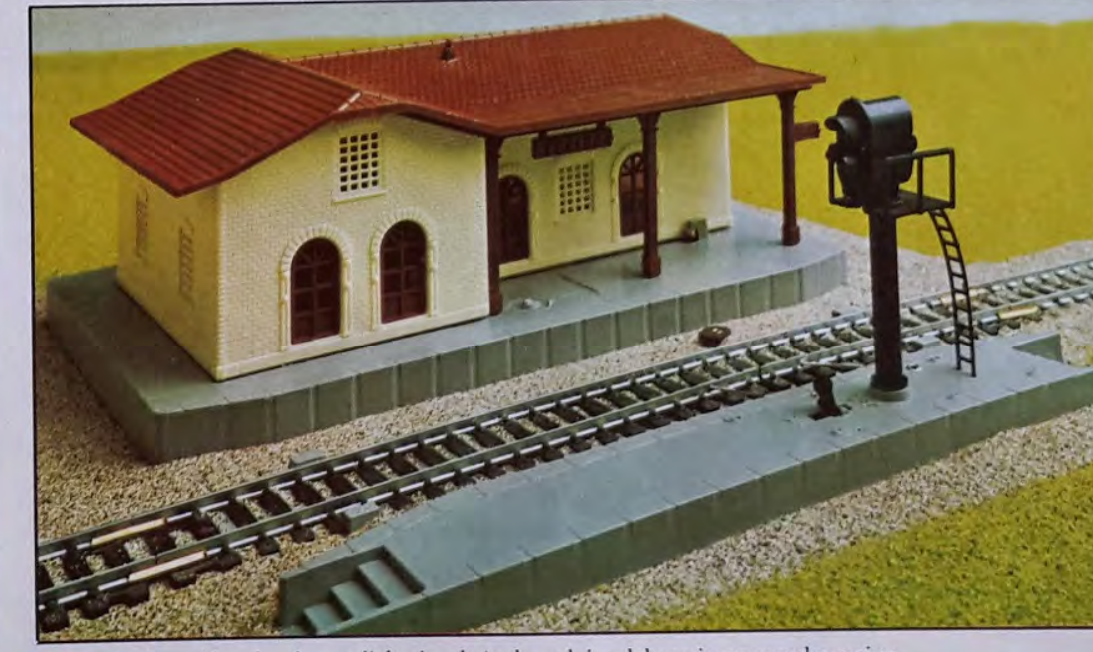
600028 Single arm 2-position signal. **NEW**



600029 2-light signal with control switch 3067. **NEW**



600030 Warning signal with control switch 3067. **NEW**



600025 Double signal on gantry with automatic level crossing. The train stops when the red signal is shown. **NEW**

600046 Station with red and green light signal. At the red signal the train stops at the station. **NEW**

# N SCALE

One of the newest developments in model railways, 'N' Gauge, is especially suited to today's living conditions where space is at a premium.

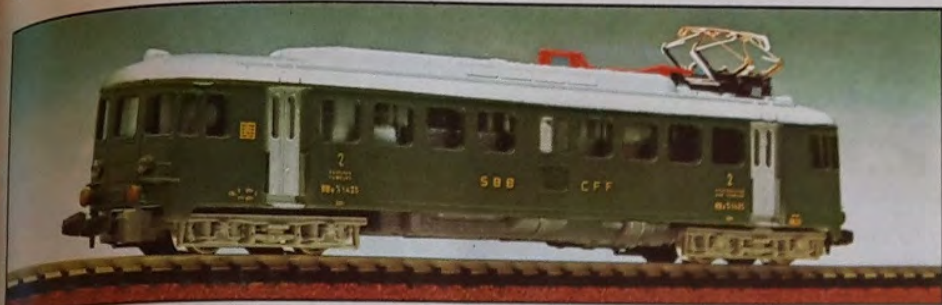
Many people just don't have room for a permanent 'OO/HO' system – but a really intricate 'N' Gauge layout can easily fit onto a baseboard as small as 92cm x 61cm. Another important factor is that the

modeller who wishes to be creative with his scenery can incorporate much more into an 'N' Gauge layout with its facility to create a larger 'backdrop.' The gauge used for 'N' is 9mm to a scale of 2mm:1 ft.

Lima have an enviable world-wide reputation for packing both reliability and a wealth of fine detail into their 'N' Gauge models. A reputation built up over many years of experience with this scale.







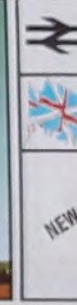
220204 Swiss R.B.E. 4/4 electric power car.



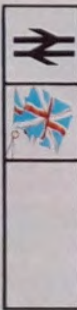
220226 D.B. class 4410 B-B Electric Locomotive.



220205 BR Class 81 Electric Locomotive.



220228 2-6-4T Class 4 Tank Loco. GWR Livery.



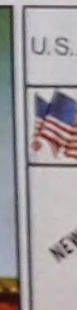
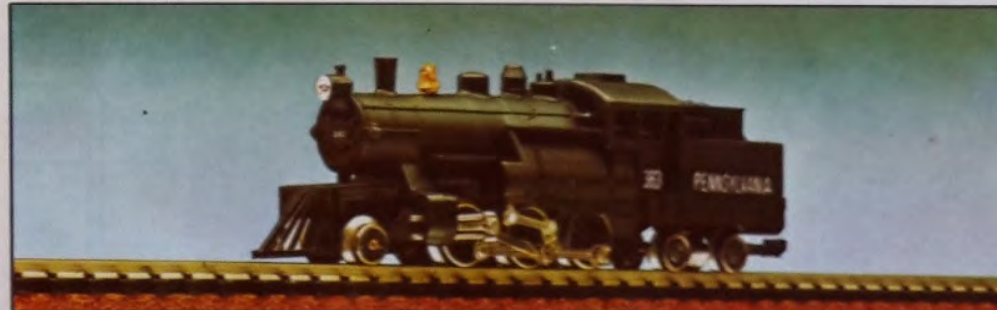
220214 BR Class 31 AIA-AIA Diesel Locomotive.



220234 L Diesel loco type F7 Santa Fé.



220217 BR Class 55 'Deltic' Co-Co Diesel Locomotive.

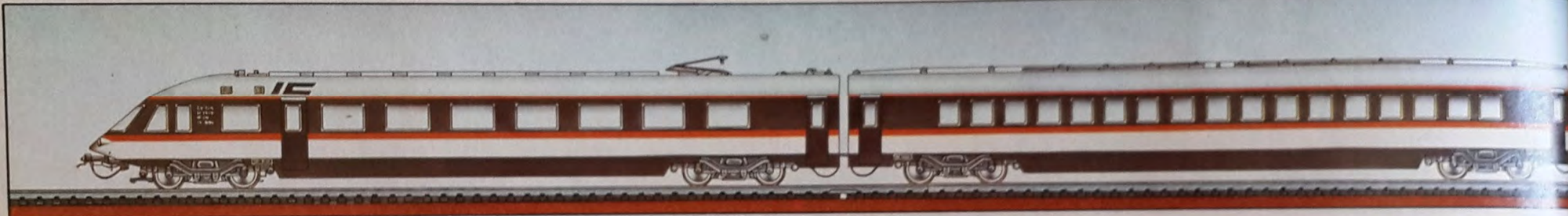


220250L Q1B steam loco Pennsylvania.



220290 Electric loco of the Japanese train super express.

220291 Central coach of the Japanese train



220295 German electric locomotive intercity.

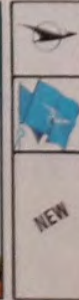
220296 German coach intercity.



220246 Australian Diesel shunting.



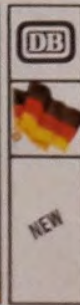
220247 SAR Diesel shunting.



220272 Diesel shunting locomotive MDT 'B & O', 65mm.



220252 Steam locomotive for military train.



220256 4-6-0 tank loco with tender class 6000 'King Class' of the B. R.



Items marked "NEW" are under realization and not all are already available.



NEW

super express.

220292 Coach of the Japanese train super express.



NEW

220297 German coach intercity.

220298 German rear coach intercity.




220259 0-6-0 Class 4F Tender Locomotive. LMS livery.



U.S.A.

220263L Diesel locomotive type GP30 Santa Fe.




220260 0-6-0 Steam Locomotive CL. 219.



U.S.A.

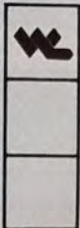
220284L Diesel locomotive type FP45 B. & O.



320303 Wagon-lits dining car express of the WL company.



320313 BR Buffet Car.



320304 Pullman of the WL company.



320314 BR Composite Coach.



320306 BR Composite Coach.



320315 BR 2nd Class Brake Coach.



320307 BR 2nd Class Brake Coach.



320316 BR Buffet Car.



320308 Swiss first class coach type A.



320319 Swiss restaurant car.



320321 DB combined coach 1st and 2nd class Eurofima.



320357 BR Composite Coach.



320352 DB sleeping car.



320358 BR 2nd Class Brake Coach.



320341 Pennsylvania observation coach.



320359 BR Buffet Car.



320345 Pennsylvania coach.



320360 Swiss TEN sleeping car.



320345 Pennsylvania combined coach.



320361 BR Composite Coach. GWR Livery.



320362 BR 2nd Class Brake Coach. GWR Livery.



320363 BR Restaurant Car. GWR Livery.



320853 Passenger car for military train.



320400 BR Closed Van.



320405 BR 20 Ton Brake Van.



320427 Closed wagon 'Stock' type, 50' 90mm.



320403 German open wagon.



320408 FIAT closed van UIC.



320451 ESSO tank wagon.



320854 German 1st class passenger coach 138mm.



320856 German 1st class passenger coach 138mm.



320860 German 2nd class passenger coach 138mm.

Items marked "NEW" are under realization and not all are already available.



320452 'Shell' Tank Wagon.



320464 Interfrigo refrigerator car.



320490 Refrigerator car 50' 90mm.



320454 'BP' Tank Wagon.



320474 'Schweppes' Box Van.



320495 Closed wagon 'Box' type 50' 90mm.



320455 'Texaco' Tank Wagon.



320479 'Coca Cola' Closed Van.



320601 'Clay Cross Co. Ltd., 7 Plank Wagon.



320481 SITFA car-transporter.



320483 Double Bascule-car with load of planks.



320482 Double bascule with load of pipes.



320620 Tank wagon, 4 axles, 'Mobiloil'



320602 'Glasshoughton Coke Nuts' 7 Plank Wagon.



320634 Closed wagon for military train 65mm.



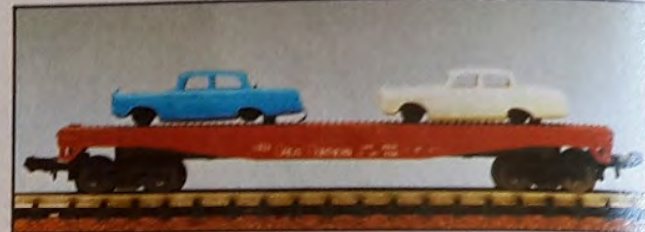
320763 Cabooso wagon S.Fé.



320611 'Typhoo Tea' Box Van.



320726 'National Coal Board' Mineral Wagon.



320772 Flat car 50' GN, with motor cars.



320612 'Homepride Flour' Box Van.



320729 'Blue Circle' Twin Tank Cement Wagon.



320776 Flat car 50', S.Fé with cables.



320632 Open wagon for military train 65mm.



320760 Flat car with containers 'ACL - CP Ships' 90mm.



320785 'Golden Fleece' tank wagon.



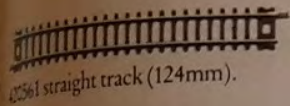
320630 Truck with gun.



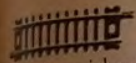
320796 Wagon with containers ACL + TNT + RACE



# TRACK



420561 straight track (124mm).



420562 1/2 straight track (62mm).



420563 1/4 straight track.



420564 1/2 straight with power clip.



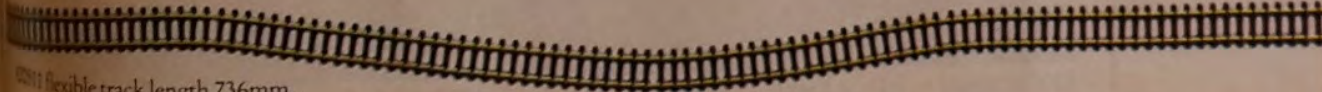
420564R 1/2 straight with power terminal.



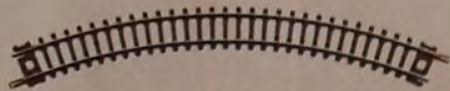
420565 1/2 straight with buffer stop.



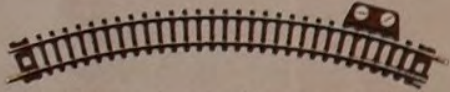
420571 Railer.



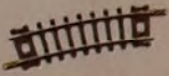
420511 flexible track length 736mm.



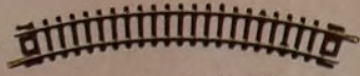
420571 curved track (45°).



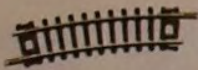
420571C curved track with power terminal.



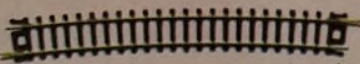
420572 1/3 curved track (15°).



420551 curved track (dia 472mm).



420552 1/2 curved track (dia 472mm).



420553 compensating curved track.



420521 right diamond crossing (15°).



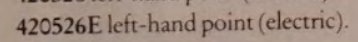
420524 left diamond crossing (15°).



420522 diamond crossing (30°).



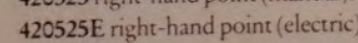
420526 left-hand point (manual).



420526E left-hand point (electric).



420525 right-hand point (manual).



420525E right-hand point (electric).



600018 'N' Gauge fish plates (metal) for new flexible track 420511.

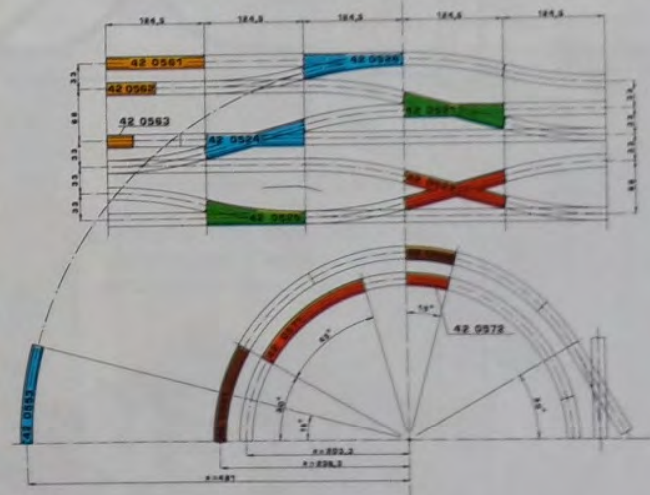


600017 insulated fish plates.

Extra track is available in the following packs:



- 420580 6 pieces straight track (124mm) 420561.
- 420581 6 pieces 1/2 straight track (62mm) 420562.
- 420590 6 pieces curved track (45°) 420571.
- 420592 6 pieces 1/3 curved track (15°) 420572.
- 420591 6 pieces curved track (diameter 472mm) 420551.
- 420593 6 pieces 1/2 curved track 420552.
- 420585 1 piece curved track (45°) 420571.
- 1 piece curved track with power connecting terminal 420571C.
- 420586 1 piece 1/2 straight track with power connecting terminal 420564R.
- 2 pieces 1/4 straight track 420563.
- insulated fish plates 420017.
- 420587 1 piece straight track (124mm) 420561.
- 1 piece isolating track with power connecting terminal 420564R.
- 1 piece 1/2 straight track with buffer stop 420565.

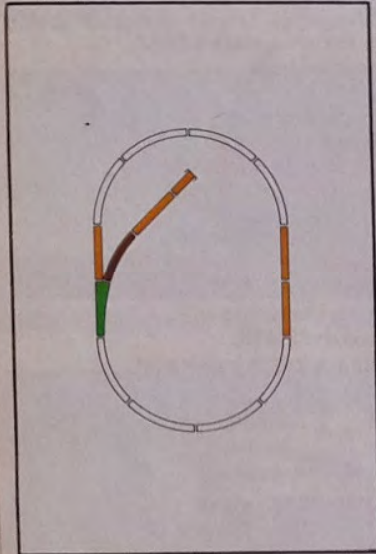


Remember when installing your track that trains on adjoining tracks must be able to pass freely without touching.

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.

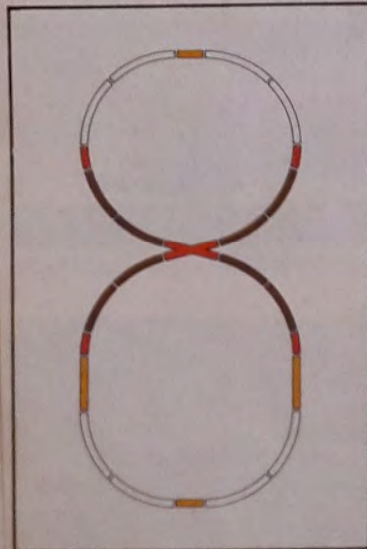
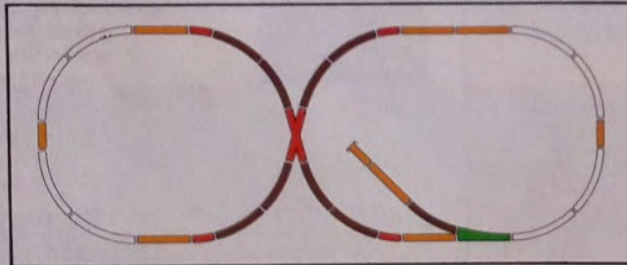
For instance the compensating curve 420533 when used with points 420525 and 420526 maintains this basic 33mm spacing.

# EXTENDING YOUR SET



420540 1 piece right-hand point (manual)  
420525, 1 piece 1/2 straight track with  
buffer stop 420565, 4 pieces straight  
track (124mm), 1 piece curved track  
(diameter 472mm) 420551.

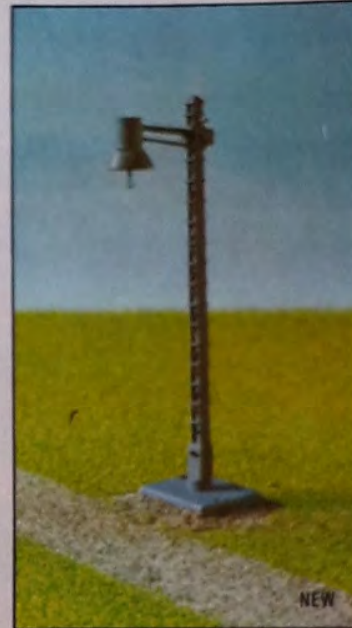
420540+420541



420541 1 piece 30° diamond crossing  
420522, 8 pieces curved track (diameter  
472mm) 420551, 4 pieces 1/3 curved track  
(15°) 420572, 2 pieces 1/2 straight track  
(62mm) 420562, 2 pieces straight track  
(124mm) 420561.



# SIGNALS



620710 Single Street Lamp.



620711 Double Street lamp.



620709 Semaphore Signal.



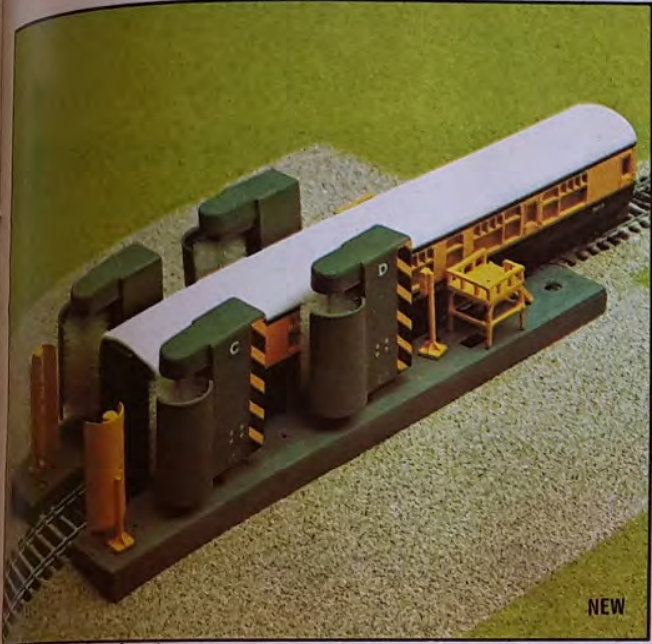
620712 Signal with Four Lights.



620713 Signal with Two Lights.

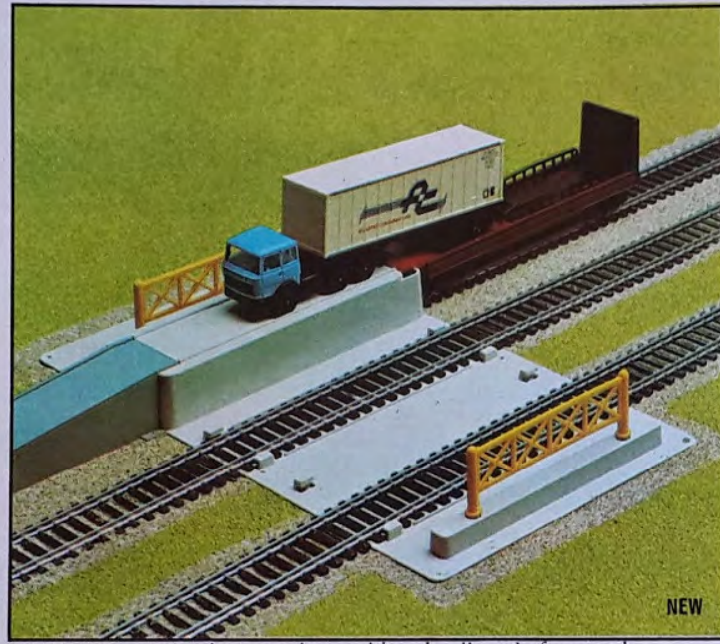
# ACCESSORIES

Items marked "NEW" are under realization and not all are already available.



NEW

620700 Station for cleaning wagons.



NEW

620706 Wagon carrying container, with unloading platform and road transporter.



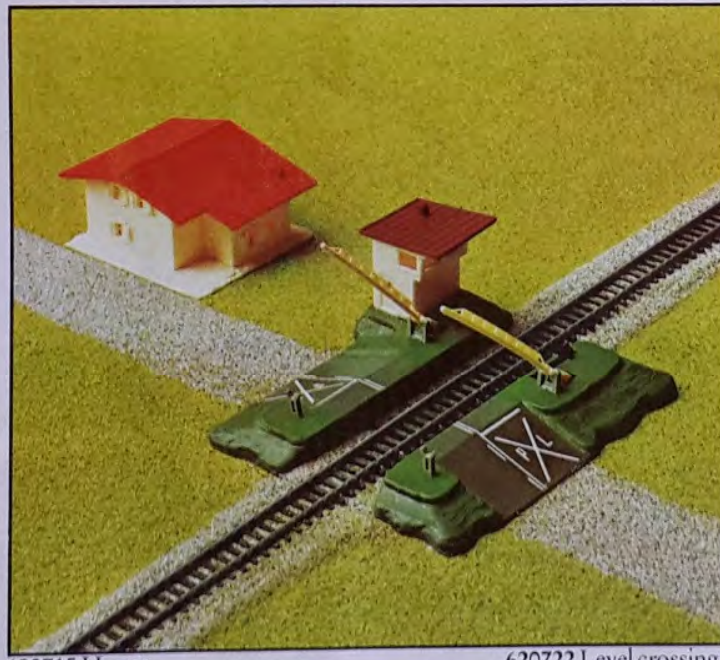
NEW

620707 Platform truck carrying containers "LHB-SCOTCH BEEF," gantry crane for loading/unloading, and road transporters.



620702 Station roof.

620714 Station.



620715 House.

620722 Level crossing.



620705 Tunnel.

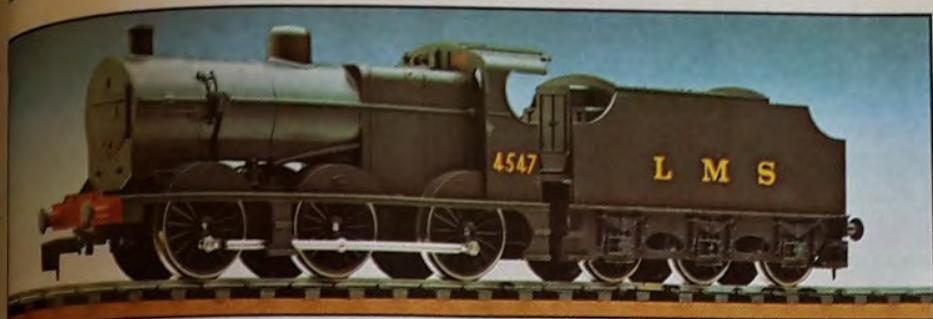
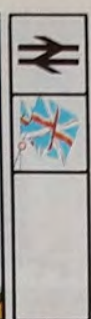
# O SCALE

Lima are the only manufacturers in the world producing 'O' Gauge train sets, locos and rolling stock at a popular price.

The range is not only in demand for the serious modeller but is ideal for younger children. Small hands can easily manipulate the big locomotives and rolling stock; and 'O' Gauge wagons are large enough to be used with model soldiers, cars, and a host of other toys.

But where 'O' Gauge really comes into its own is out of doors. Because of their size the trains are not dwarfed by their surroundings. There are few finer sights than an 'O' Gauge loco running through a sunlit garden with a full load of wagons and Lima's new brass track means you can leave it out in all weathers without worry.

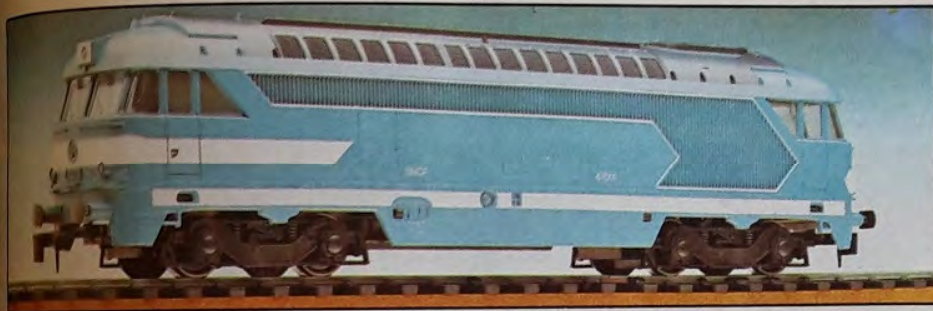


216533 0-6-0 Class 4F Tender Locomotive. BR livery.




216577 BR Class Bo-Bo Diesel Locomotive.

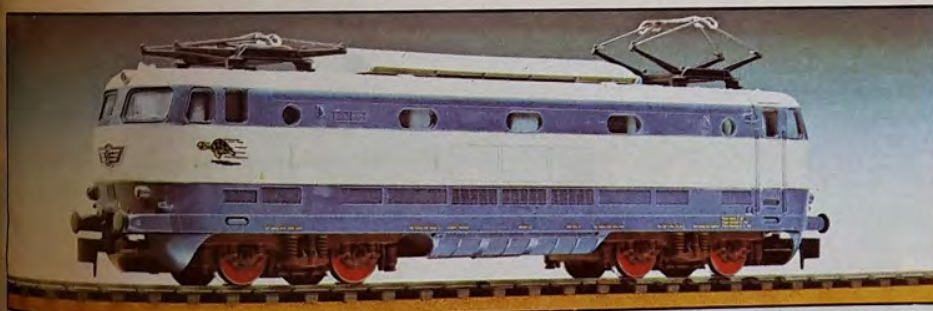



216572 S.N.C.F. class B-B 67000 diesel locomotive




NEW

216578 D.B. diesel loco for passenger and goods train V160.




216573 F.S. E 444 B-B electric locomotive.

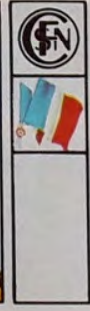



NEW

216580 DB diesel loco V160.




216541 DB 0-4-0 Diesel shunter.

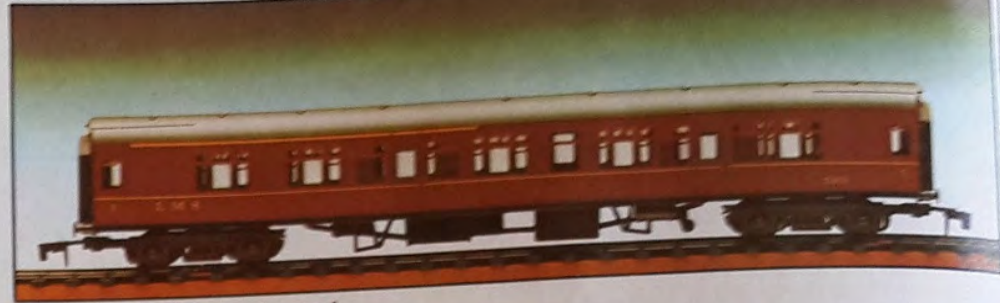
216543 SNCF 0-4-0 Diesel shunter.




216546 0-4-0 Diesel Shunter. BR Livery.



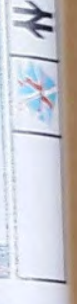
316602 F.S. first class coach.



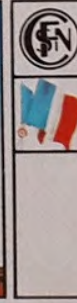
316616 BR/LMS composite coach.



316605 D.B. first class coach 'TEE' Helvetia.



316618 BR composite coach.



316610 S.N.C.F. coach.



316619 BR Mark 1 Composite Coach.



316611 Swiss first class coach.



316620 BR/GWR Mark 1 Composite Coach.

Items marked "NEW" are under realization and not all are already available.



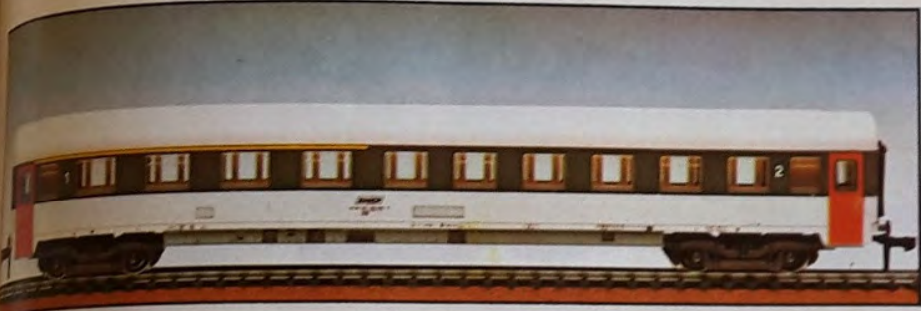
DB  
  
 NEW

316643 D.B. Eurofima coach.



  
  
 NEW

316645 BR/LMS Mark 1 Corridor Brake Coach.



  
  
 NEW


316644 S.N.C.F. Eurofima coach.



  
  
 NEW


316646 BR/GWR Mark 1 Corridor Brake Coach.



316648 S.N.C.F. baggage car.



DB  
  
 NEW

316649 D.B. luggage van for fast trains.



  
  
 NEW

316647 BR Mark 1 Corridor Brake Coach.



DB  
  
 NEW

316651 D.S.G. sleeping car



DB  
  
 NEW

316653 D.B. sleeping car TEN.




316671 S.N.C.F. restaurant car.



  
  
 NEW

316654 BR Mark 1 Corridor Brake Coach.




316672 S.N.C.F. restaurant car 'Grill Express'.



DB  


316704 Wagon for transport of German beer SPATENBRAU.




316706 STEF refrigerator car of the French Railways.




316710 SCHWEPPEs refrigerator van.




316705 German refrigerator car 'Interfrigo'.




316709 Wagon for transport of Danish beer CARLSBERG.




316713 Coca Cola refrigerator van.






316721 Two axle UIC open wagon type 2 of the Italian State Railways.




316732 Open Mineral Wagon.




316745 BR Closed Van.




316726 NCB wagon with coal.




316737 'Oxford & District Gas Co' Mineral Wagon.




316746 GW Brake Van.




316730 'Chas. Kendall' Mineral Wagon.




316742 Covered car of the Italian State Railways chartered to FIAT.




316747 OVOMALTINE closed van UIC.




316764 ESSO tank wagon.




316765 SHELL tank wagon.



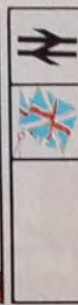
316768 'Mobil Oil' Bogie Tank Wagon.



316786 Wagon w/two containers D.B.



316770 Tank wagon TEXACO.



316791 Platform wagon of the German Federal Railways w/MANNESMANN tubes.



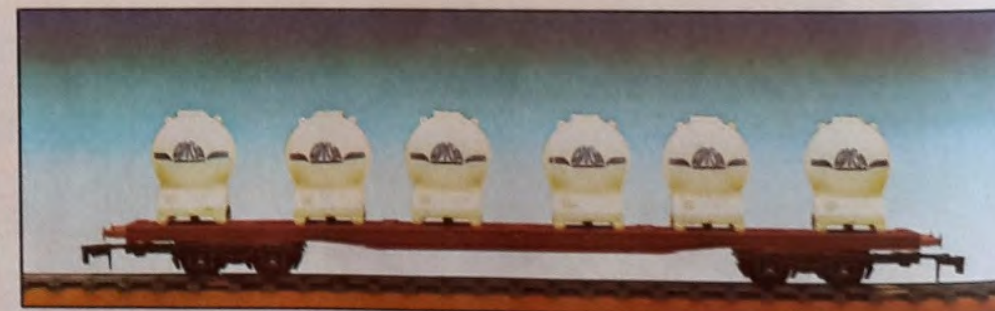
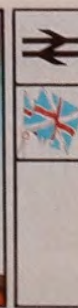
316783 Wagon with containers C.I. - SEALAND - ACL.



316792 Platform wagon with spherical containers, D.B.

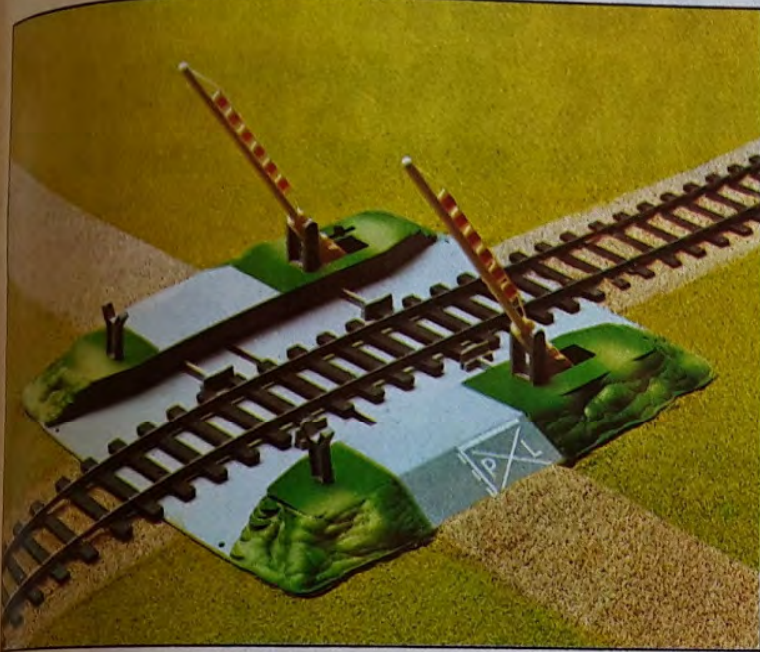


316784 Wagon with containers SEATRAN - LEP - CONTRANS.

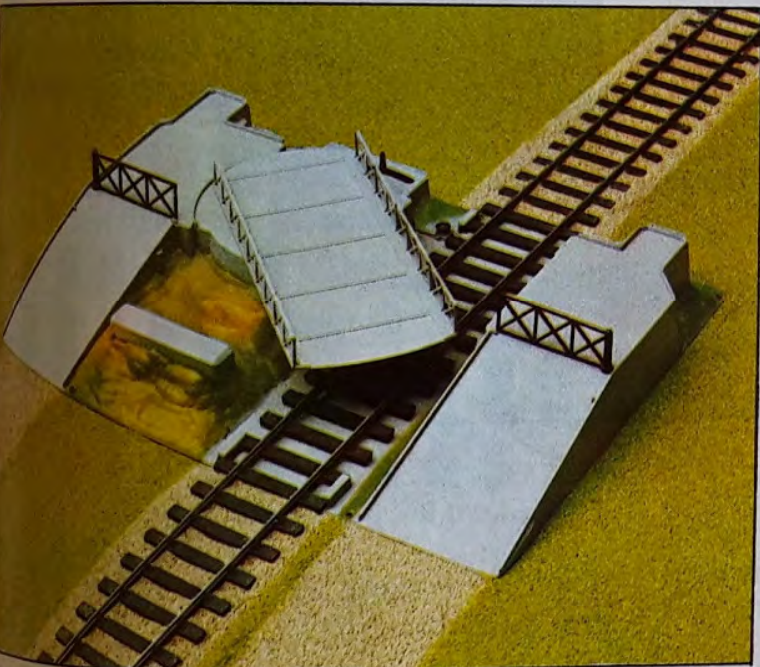


316793 Platform wagon with spherical containers of the Societe Anonyme OMYA.





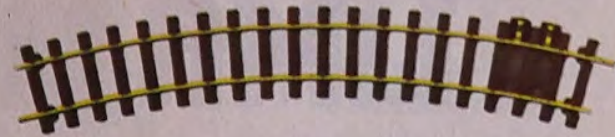
416850 Automatic level crossing.



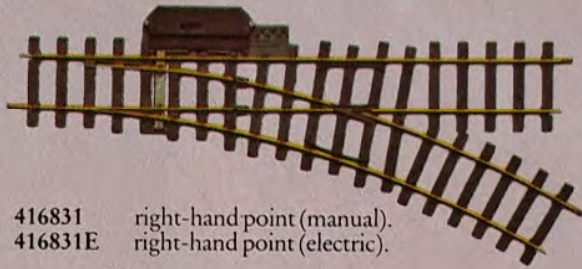
416851 Swing road bridge.



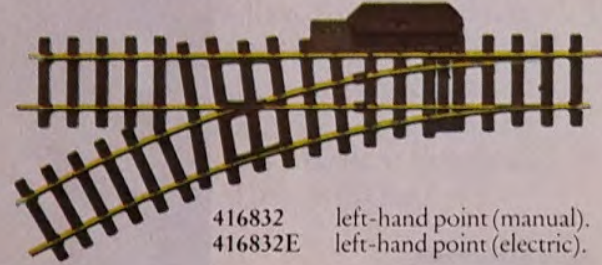
416811 curved track (1400mm dia.).



416811C curved track with power clip.



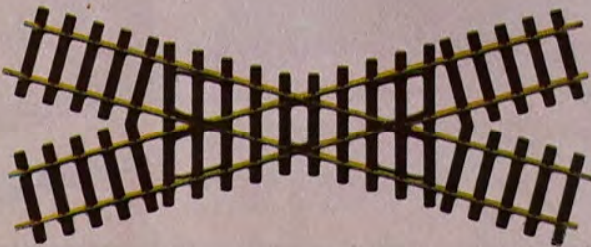
416831 right-hand point (manual).  
416831E right-hand point (electric).



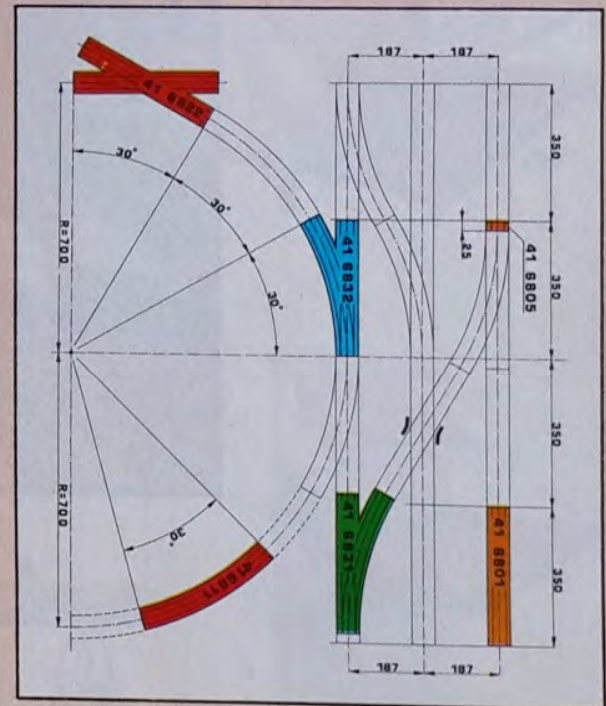
416832 left-hand point (manual).  
416832E left-hand point (electric).



416801 straight track (350mm).



416822 diamond crossing (30°).



416841 buffer stop.



416805 compensating track.

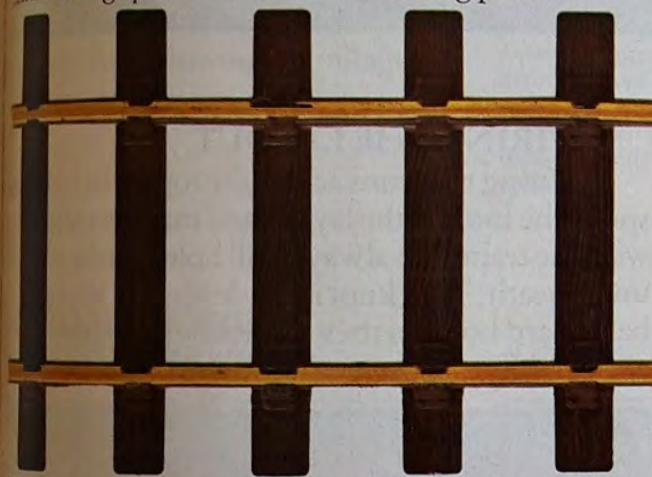
# HOW TO BUILD YOUR LIMA MODEL RAILWAYS SYSTEM



# MAKING A START

## CHOOSING THE RIGHT SYSTEM

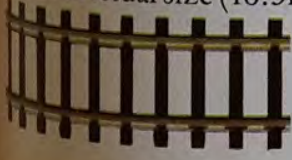
It's important to consider at the outset the two major factors which will determine the system you choose: the space available to you, and the type of layout you prefer (whether it has lots of complicated scenery or intricate shunting systems or is a simple layout to begin with). 'N' gauge is most suitable where space is very limited. 'O' gauge is ideal for very large rooms or out of doors. While 'HO/OO' scale, the most popular of all, makes a versatile compromise. An 250cm x 125cm baseboard mounted on 5cm x 5cm legs provides an ideal starting point.



O gauge Actual size (32mm between track)



HO scale Actual size (16.5mm between track)



'N' gauge Actual size (9mm between track)

## THE BASEBOARD BEGIN WITH THE RIGHT TOOLS

Before starting on the construction of your baseboard, you must ensure that you have the correct tools for the job. The Lima tool set shown here contains all the important tools you will need to begin.



60 0011 The Lima Tool Set contains the basic tools you will need to make your layout: a hacksaw (with one blade for metal and one for wood), two fine files, one rasp, pliers, tweezers, a hand drill (with extra bit), a screwdriver and a hammer.

Start the baseboard by fastening with oval nails an 250cm length of wood (about 5cm x 2.5cm in section) on edge on one side of the plywood top. Then lay another 250cm length alongside this as an easy guide for marking the lengths of the crosspieces and ends. Fasten the shorter pieces and the ends next, and the other long side last. The corner blocks should be

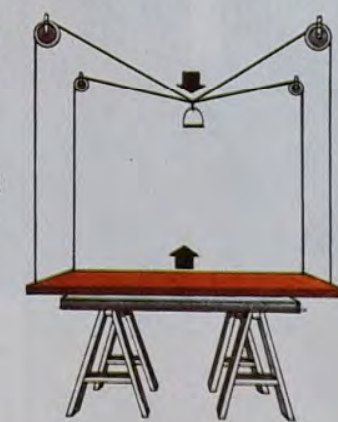
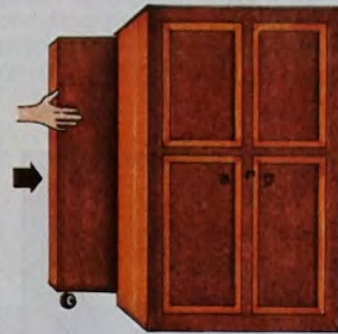


60 0003 60 0004

made from two short lengths of 5cm x 10cm timber and cut at 45° angles to fit. Nail these to the ends and side.

The baseboard can now be mounted on legs, or suspended from the ceiling by means of a pulley. Alternatively, it can be attached to the wall

on hinges with a pulley as we show in the illustration. Alternatively, it can be attached to the wall on hinges with a pulley, mounted on wheels to fit behind the wardrobe, or simply stored under the bed.

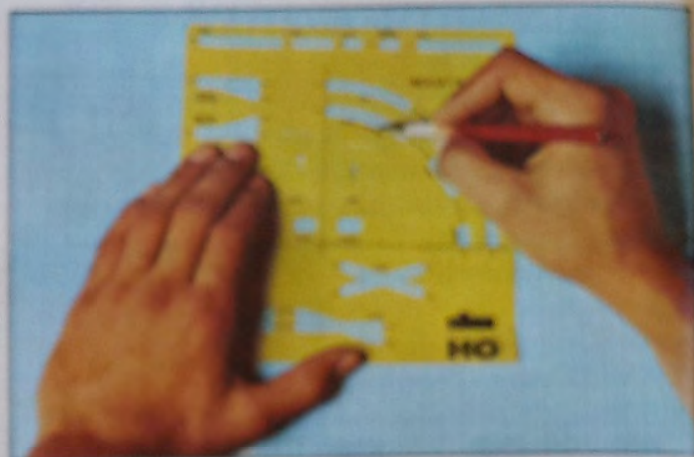


## PLANNING THE TRACK

Locate the track sections in the exact order shown on your plan, so you'll have no trouble fitting in the power feed to the track and positioning the power controllers and circuit control units. These should be placed near a corner of the layout to give the operators room to work.

Fasten the track temporarily and check the alignment carefully — ensuring that the locomotives and rolling stock can pass each other without fouling on curves or in tunnels.

Now fix the track flat to the table with Lima fixing pins (item 40003).



'HO' 60 0002    'N' 60 0002    'O' 60 0004

## TRACK PLAN STENCIL

Specifically designed to help you when making plans for your layout, the Lima Track Plan Stencil is available in 'HO', 'O' and 'N' scales.

By drawing through the cut-outs in the stencil you can make accurate scale drawings of track, points, crossovers and control boxes, etc. In this way you can see precisely how the finished system will fit together, and the exact space needed to lay it out.

## WIRING THE LAYOUT

Wiring that runs across the top of the baseboard spoils the look of the layout and may get entangled with the trains. So always drill holes to take it underneath. Tie a knot in the leads, just above the baseboard hole, so they cannot be pulled through accidentally.

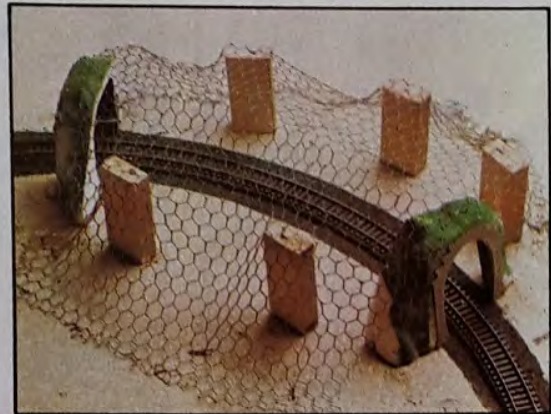


# MAKING SCENERY

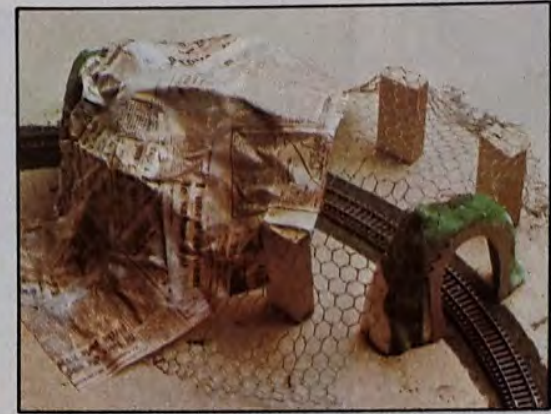
The first rule in making scenery is to follow nature. Observe the colours, shapes, textures and groupings found in real life. Keep things in proportion to your locomotives and rolling stock, and be certain that the change from wild areas to villages etc. is gradual and natural.

Scenery-making should proceed in several stages. First plan your contours and features with a rough sketch. Deciding where you want a river, which areas will be high and which low. And allowing for villages, stations and tunnels.

## LANDSCAPING



1. For landscaping and hills, chicken wire is the ideal material. It provides a firm base, yet is easily moulded to the required shape. But remember to turn up the ends of the wire for safety.
2. Before you cover it, position the wire framework on the layout and check that the rolling stock doesn't foul against it.

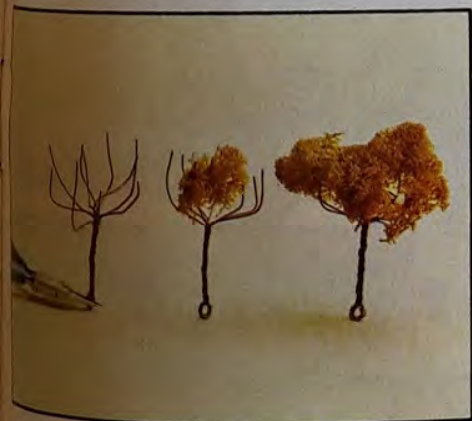


3. Now dampen strips of newspaper and lay them onto the wire. Criss-crossing to provide strength. When the wire is completely covered, apply a coat of wallpaper paste. Then cover with a second layer of damp paper and repeat the process. When dry, test for strength using light hand pressure. Further layers can be added if needed.



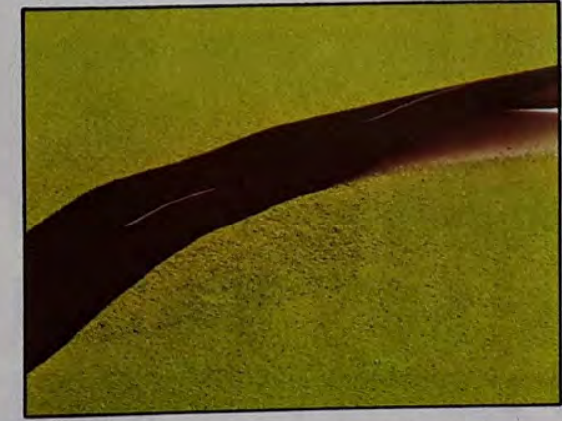
4. You can easily build a Lima Tunnel (item 602080) into your hill before you position the chicken wire. It creates a really authentic effect.
5. Finally, colour the model so it blends in with the rest of your scenery.

## HOW TO MAKE TREES, HEDGES OR SHRUBS



1. Pieces of lichen, mounted on wire make ideal trees.
2. Twist a few strands of soft wire to form a trunk, leaving the ends for the branches.
3. Then push the lichen onto the branches and the tree is complete!

## ROADS



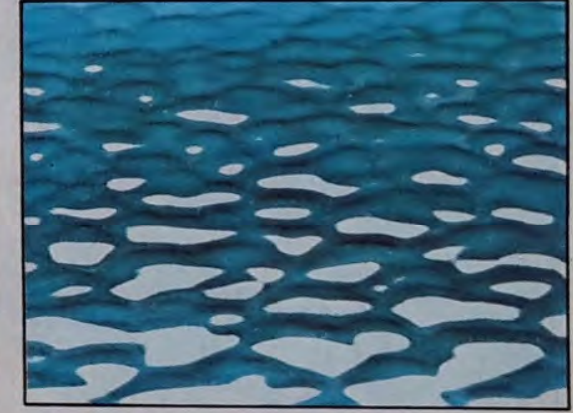
1. Roads can be constructed by cutting lengths from readily available scenic mats, fastened down with suitable adhesive.

## FENCES



2. Realistic fences can be made from cotton wool round matchsticks – or use proprietary kits.

## RIVERS

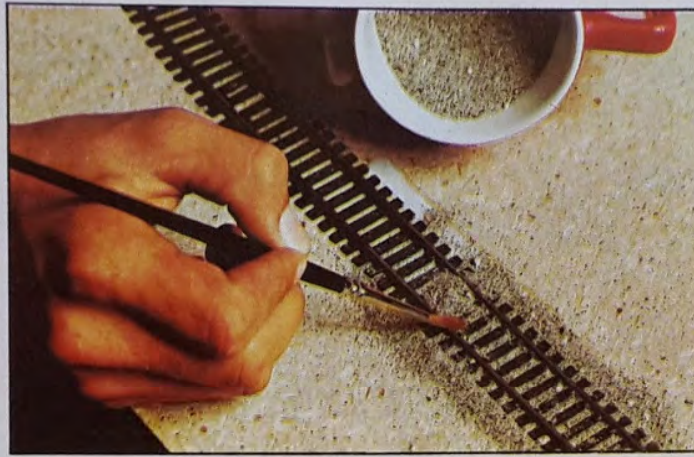


3. Patterned glass preferably with a 'ripple' effect is best for rivers. Simply spray the underside with a suitable blue paint.

## PUTTING BALLAST ROUND YOUR TRACK



1. First paint the area to be covered with glue.



2. Spread ballast mixture along the track and work it between the sleepers, using a small paint brush.  
3. Push the ballast down with your fingers. Scrape away any that extends more than 4mm from the sleepers at the trackside.



4. When the ballast is where you want it, allow to dry and you'll have ballast that's firm, but looks realistically loose.  
5. Consult your local Lima stockist for details of available materials.

**How to make buildings work in your system** With care and good planning from the beginning, the range of Lima houses, stations and engine sheds will heighten the realism of your layout and increase the fun and fascination you and your friends will have with model railways.





# TRACK PLANS

# HO SCALE

What makes a model railway different from other hobbies involving models? The fundamental answer is the track. This is where the fascination with miniature railways really begins.

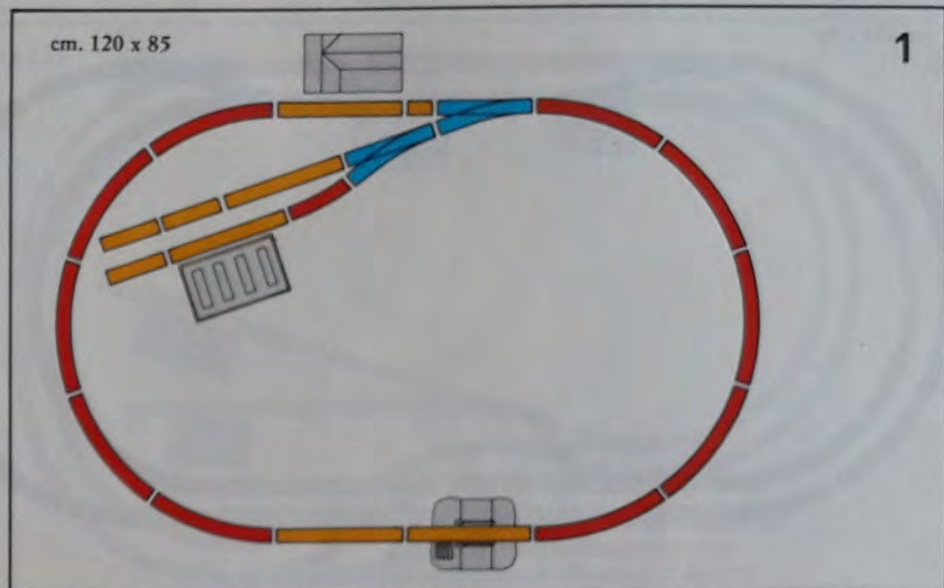
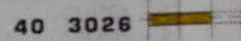
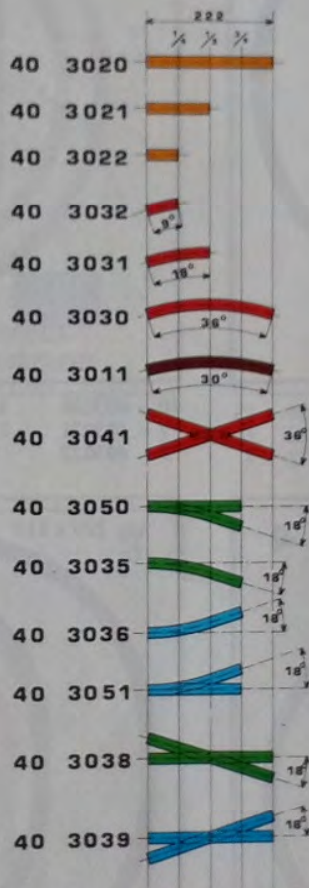
While a lot of fun can be had with a basic train set, building this up into a proper railway layout can turn railway modelling from a pleasant pastime into a lifelong hobby, in the true sense of the word.

On the following pages you'll find a number of track plans - designed to help you develop and extend your system. The components of each are numbered and described, to assist you in planning a change from one layout to another.

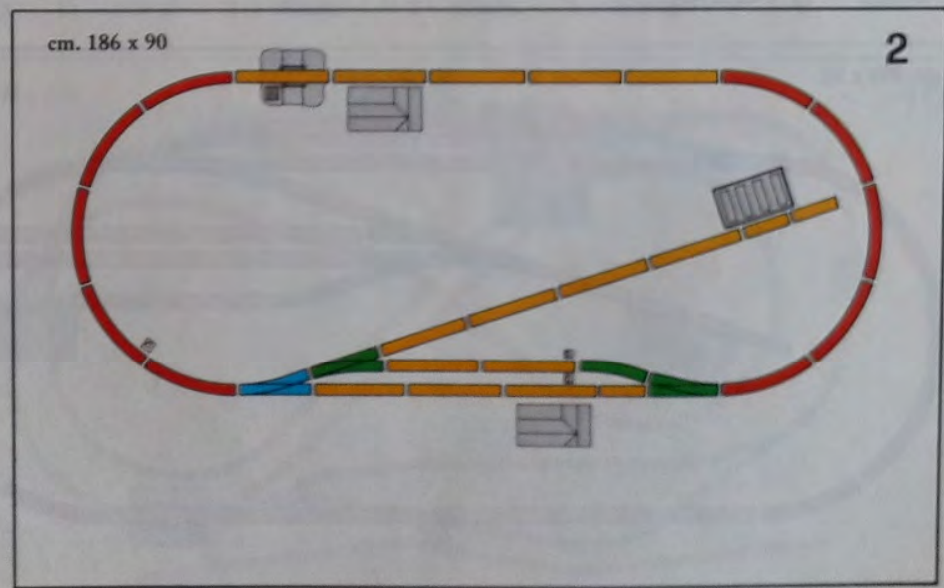
But remember, don't be over-ambitious at the outset by building a larger and more complex layout than you can handle. Even the simplest of these plans will give you a considerable amount of pleasure - both in building and in running. And you'll have a lot more fun if you take things easily, stage-by-stage, as your skill and experience develops.

Also remember that for smooth and safe operation, the track assembly must be done with maximum care. Lima have produced a special track system (System 222) to make this easy. All parts are geometrically based on the length of a straight track section of 222mm or its fractions. Straights and curves are divided into 2 categories: basic and subsidiary, which are equal in length so they can either be connected to the layout without altering its geometry.

So if you follow these track plans carefully, you simply can't go wrong.

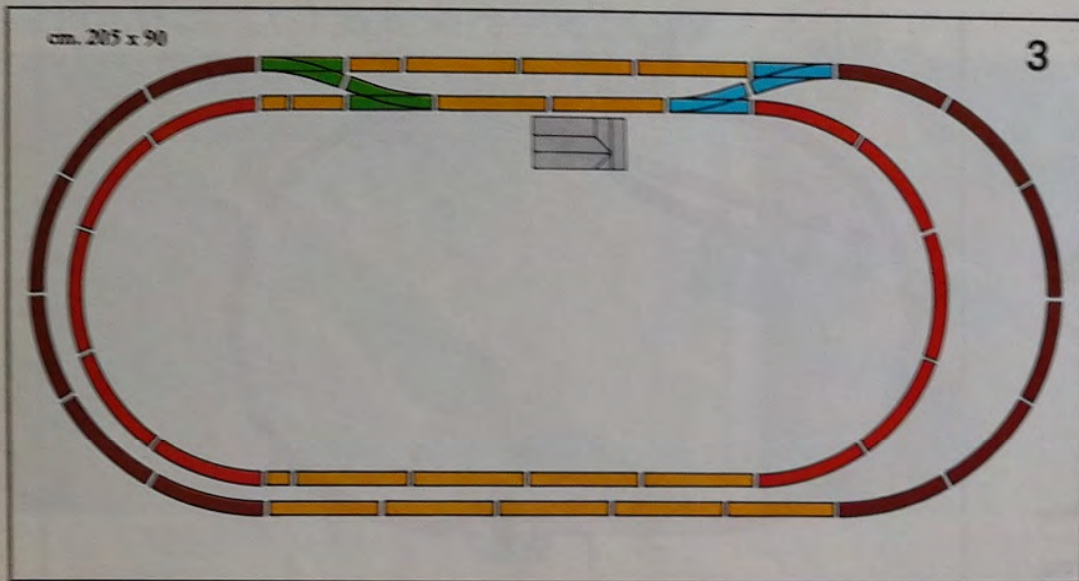


- |            |            |             |            |            |            |
|------------|------------|-------------|------------|------------|------------|
| 5 - 403020 | 1 - 403022 | 9 - 403030  | 1 - 403031 | 1 - 600021 | 1 - 600041 |
| 1 - 403021 | 2 - 403025 | 1 - 403030C | 2 - 403051 | 1 - 600045 |            |

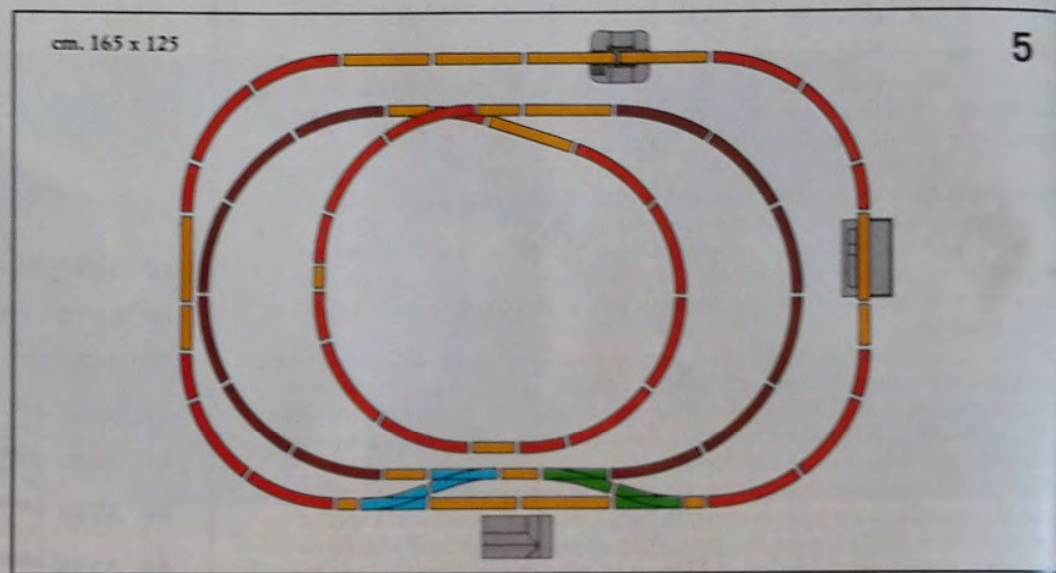


- |             |            |             |            |            |            |
|-------------|------------|-------------|------------|------------|------------|
| 14 - 403020 | 1 - 403025 | 1 - 403030C | 1 - 403051 | 2 - 600045 | 1 - 600021 |
| 2 - 403021  | 9 - 403030 | 2 - 403050  | 1 - 403035 | 1 - 600041 | 3 - 600022 |

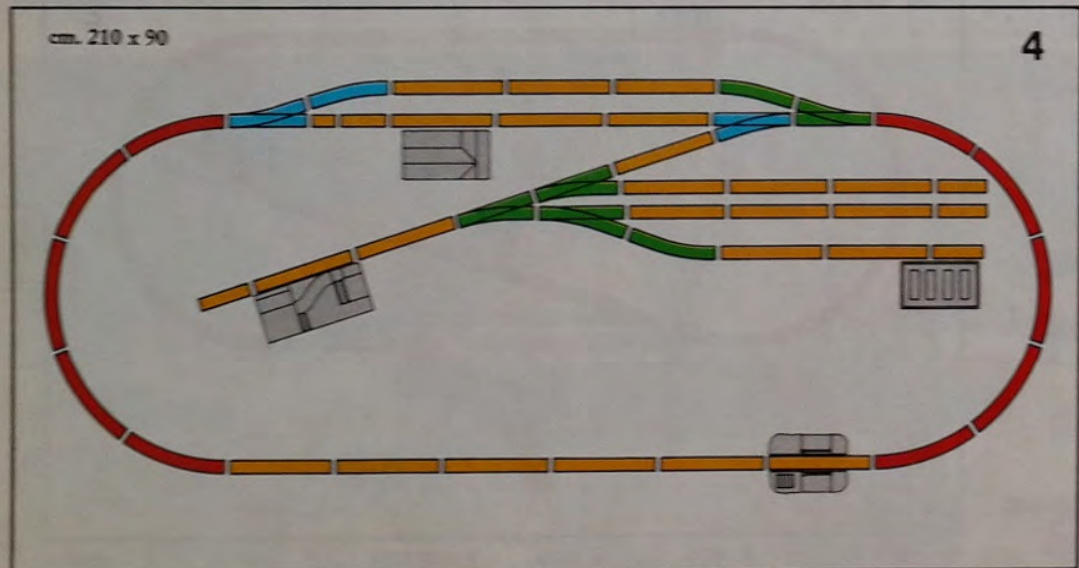
# HO SCALE



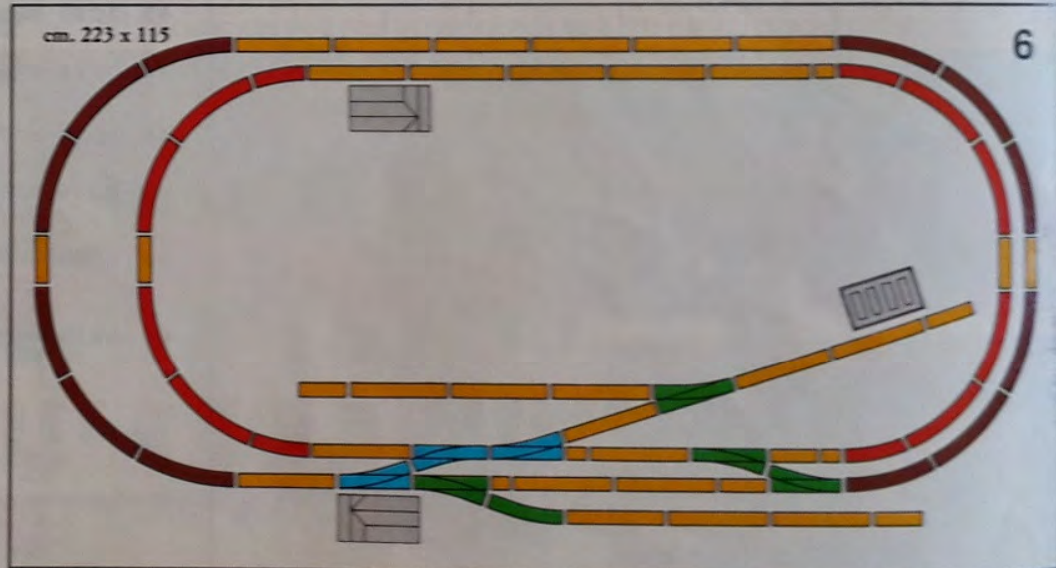
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| 2 - 403021  | 9 - 403030  | 2 - 403051 |            |
| 2 - 403022  | 1 - 403030C |            |            |



- |             |             |            |            |
|-------------|-------------|------------|------------|
| 10 - 403020 | 12 - 403011 | 8 - 403031 | 1 - 600021 |
| 7 - 403021  | 15 - 403030 | 2 - 403050 | 1 - 600045 |
| 3 - 403022  | 1 - 403030C | 2 - 403051 | 1 - 602080 |

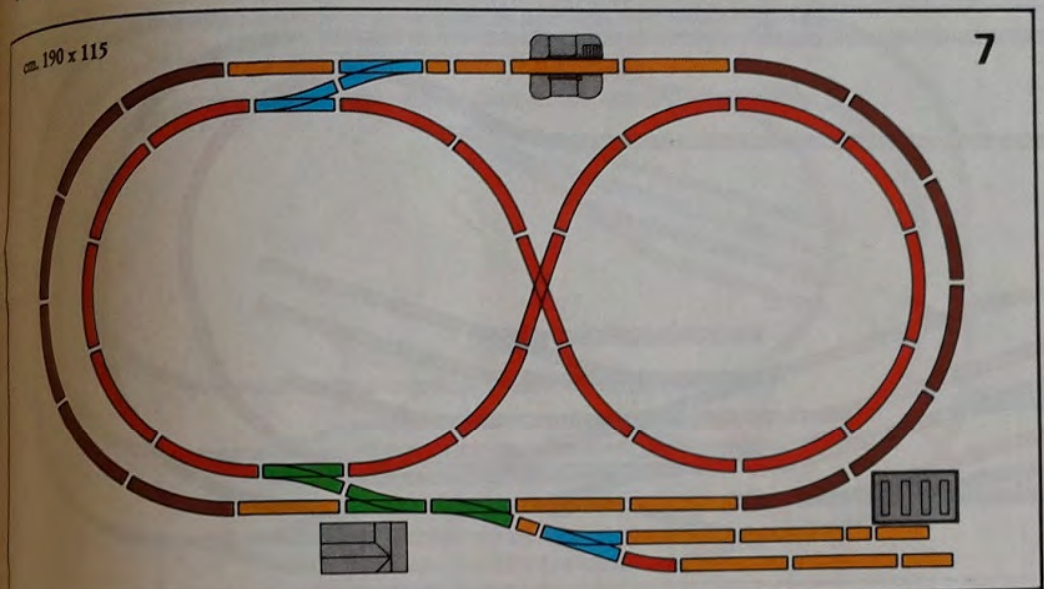


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| 23 - 403020 | 4 - 403025  | 2 - 403051 | 2 - 403035 | 1 - 600041 |
| 1 - 403021  | 9 - 403030  | 4 - 403050 | 1 - 600021 | 1 - 600940 |
| 1 - 403022  | 1 - 403030C | 1 - 403036 | 1 - 600045 |            |

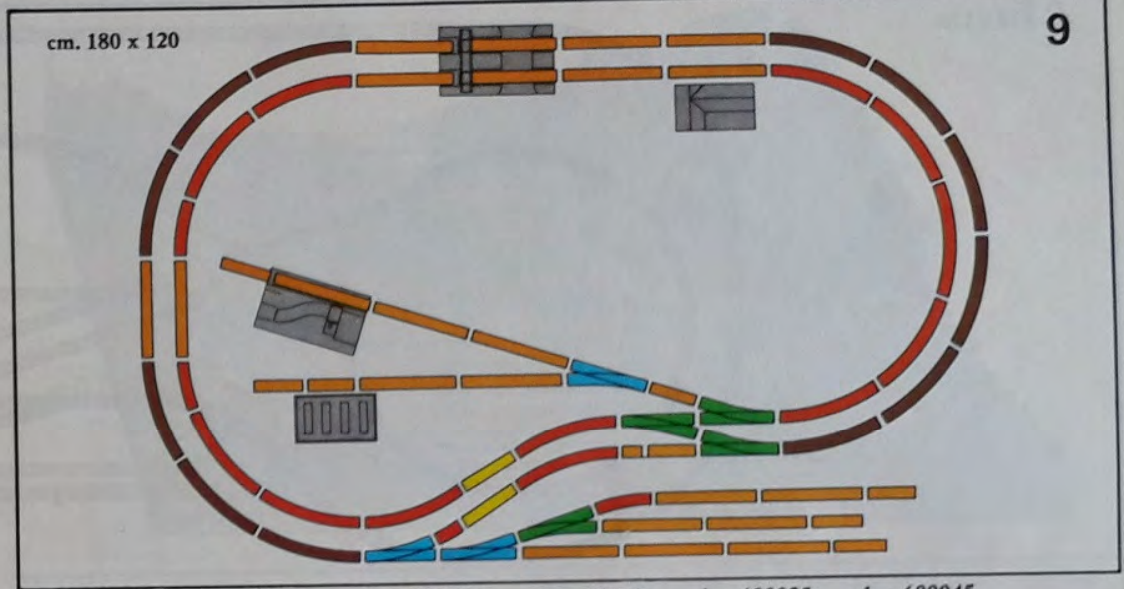


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|-------------|-------------|-------------|------------|------------|
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| 6 - 403021  | 12 - 403011 | 4 - 403031  | 1 - 403035 |            |
| 4 - 403022  | 7 - 403030  | 4 - 403050  | 2 - 600045 |            |

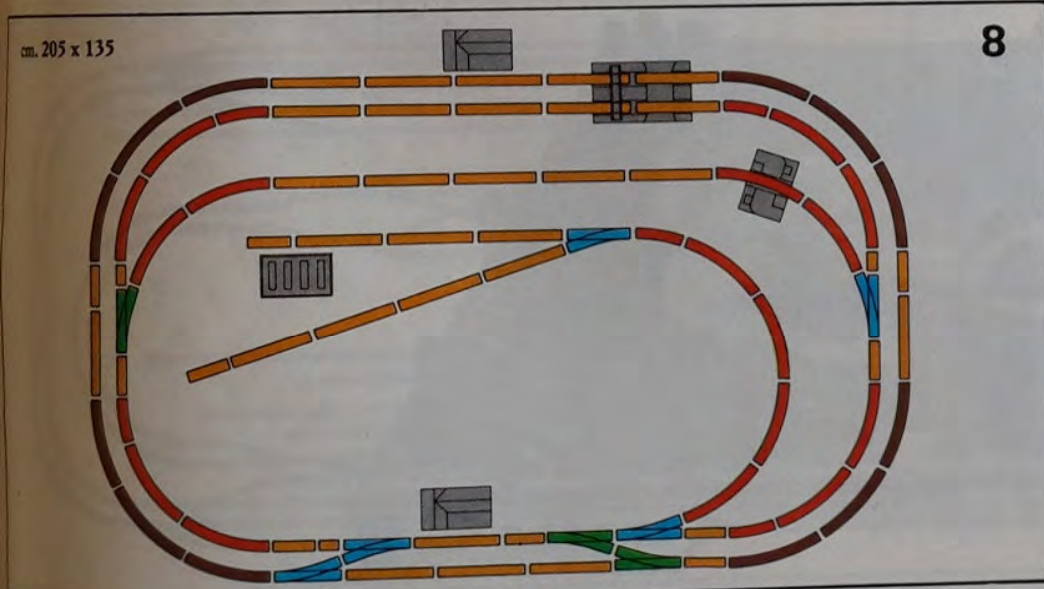
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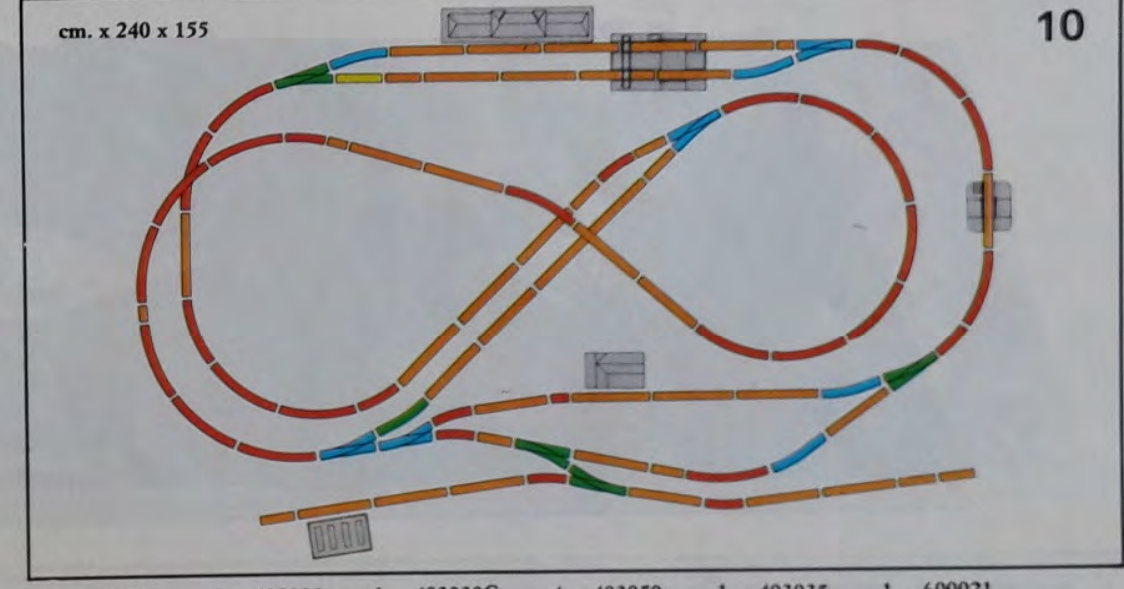
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| 17 - 403030 | 1 - 403041  | 1 - 600021 |            |



- |             |             |             |            |            |            |
|-------------|-------------|-------------|------------|------------|------------|
| 22 - 403020 | 5 - 403025  | 1 - 403030C | 3 - 403051 | 1 - 600025 | 1 - 600045 |
| 3 - 403021  | 12 - 403011 | 3 - 403031  | 4 - 403050 | 1 - 600940 |            |
| 1 - 403022  | 11 - 403030 | 1 - 403032  | 2 - 403026 | 1 - 600041 |            |



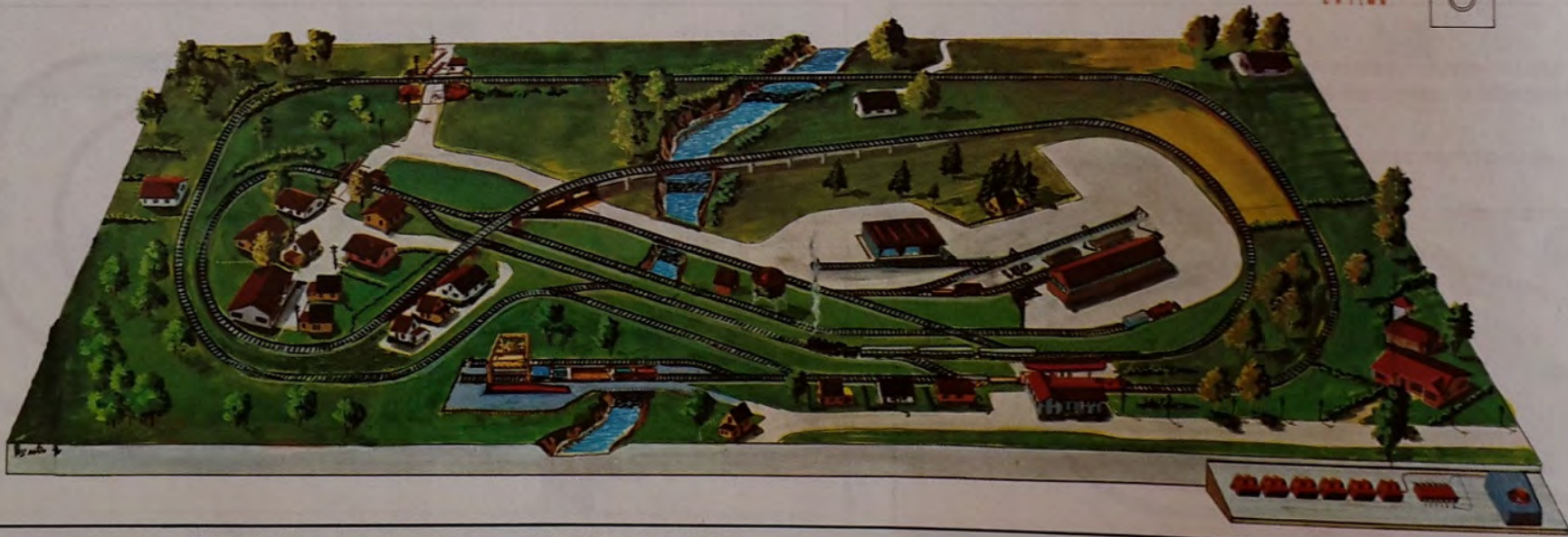
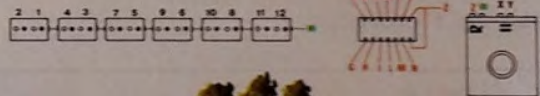
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| 15 - 403030 | 5 - 403051  | 1 - 600041 | 1 - 600025 |



- |             |             |             |            |            |            |
|-------------|-------------|-------------|------------|------------|------------|
| 34 - 403020 | 2 - 403025  | 1 - 403030C | 4 - 403050 | 1 - 403035 | 1 - 600021 |
| 7 - 403021  | 1 - 403026  | 9 - 403031  | 4 - 403051 | 1 - 600033 | 1 - 600041 |
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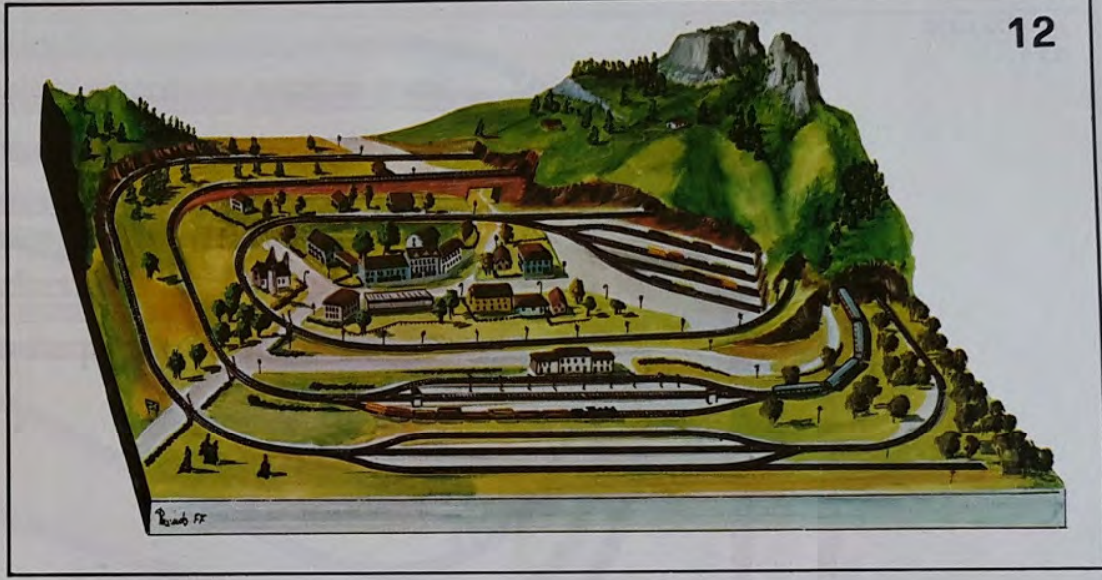
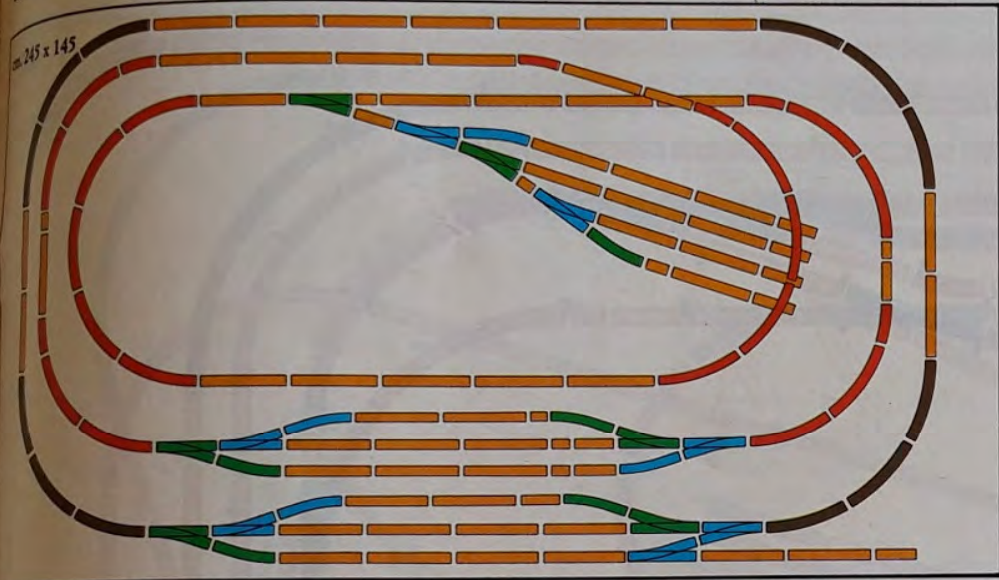
# HO SCALE

cm. 370 x 120

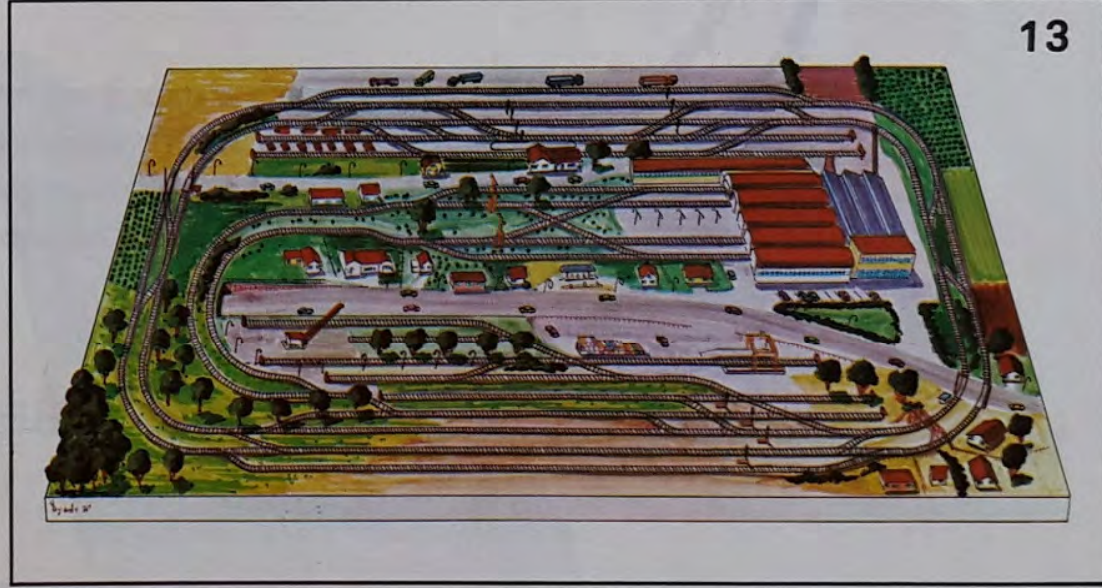
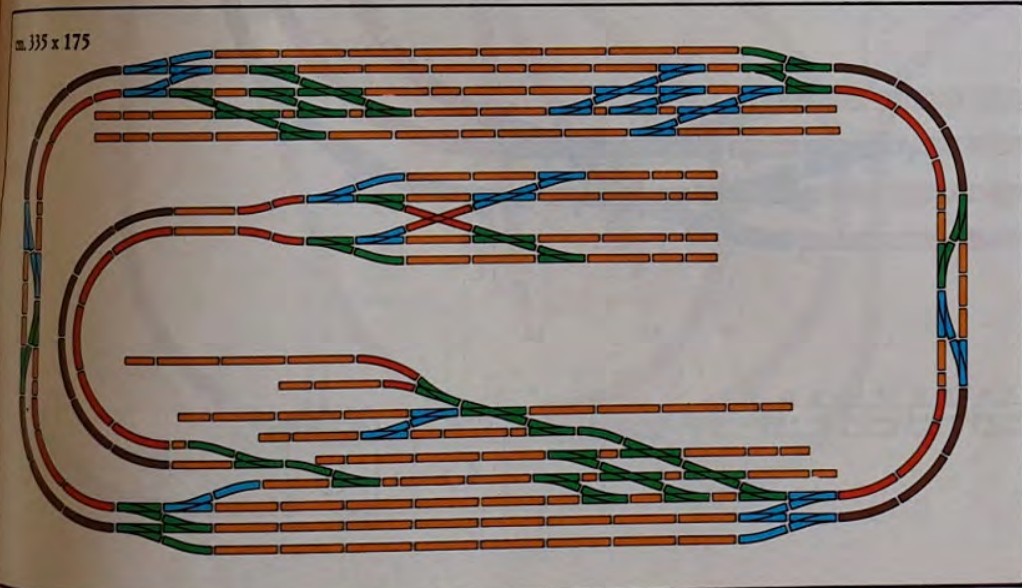


- |             |             |             |            |              |            |
|-------------|-------------|-------------|------------|--------------|------------|
| 1 - 40303C  | 2 - 403032  | 18 - 403021 | 5 - 403026 | 8 - 403050 E | 6 - 503065 |
| 16 - 403030 | 12 - 403011 | 7 - 403022  | 3 - 403035 | 4 - 403051 E | 1 - 503066 |
| 7 - 403031  | 42 - 403020 | 6 - 403025  | 2 - 403036 | 1 - 403039   | 1 - 502057 |

# H0 SCALE



- |            |             |             |            |
|------------|-------------|-------------|------------|
| 1 - 403020 | 5 - 403025  | 1 - 403030C | 7 - 403051 |
| 1 - 403021 | 12 - 403011 | 6 - 403031  | 4 - 403036 |
| 1 - 403022 | 16 - 403030 | 6 - 403050  | 5 - 403035 |

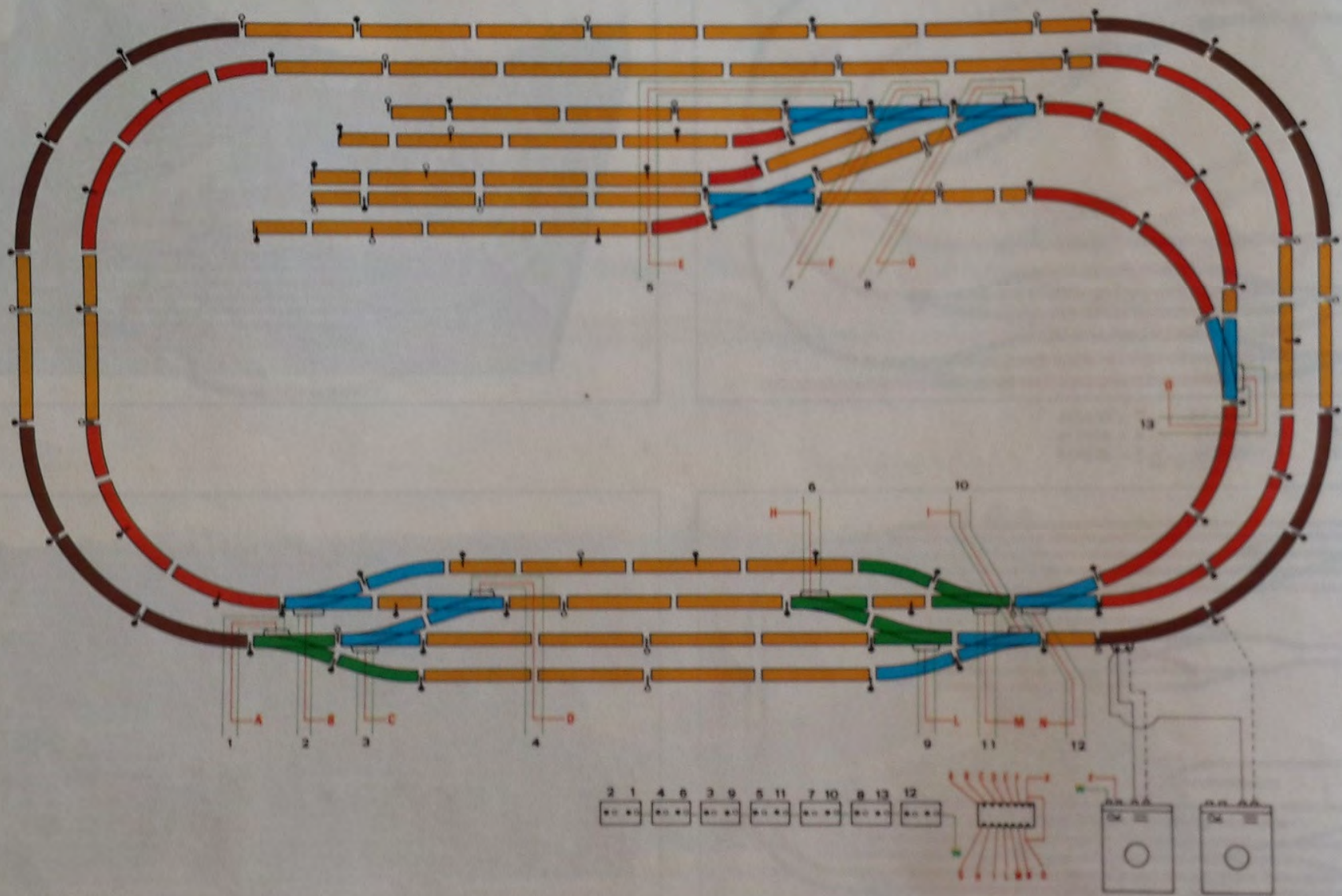


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|-------------|-------------|-------------|-------------|------------|
| 1 - 403030C | 18 - 403011 | 16 - 403022 | 4 - 403036  | 3 - 403039 |
| 1 - 403030  | 84 - 403020 | 16 - 403025 | 28 - 403050 | 7 - 403038 |
| 1 - 403031  | 27 - 403021 | 6 - 403035  | 22 - 403051 | 1 - 403041 |

# HO SCALE

cm. 256 x 130

14

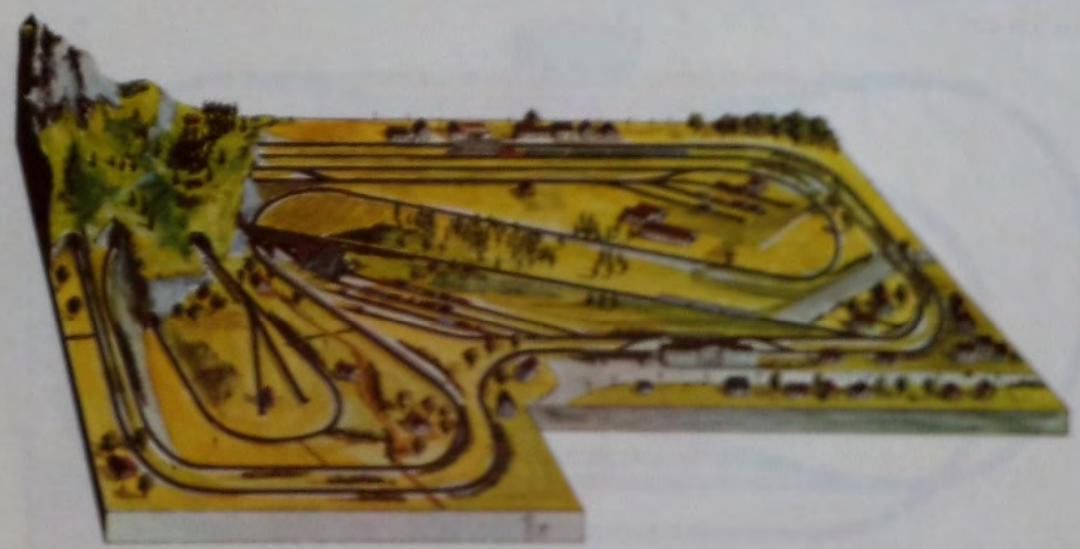


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|-------------|-------------|-------------|-------------|-------------|--------------|------------|------------|
| 1 - 602952  | 16 - 602960 | 2 - 602962  | 4 - 403022  | 13 - 403030 | 1 - 403039   | 2 - 403035 | 1 - 503066 |
| 26 - 602951 | 56 - 602961 | 49 - 403020 | 5 - 403025  | 1 - 403030C | 4 - 403050 E | 2 - 403036 | 2 - 502057 |
| 73 - 602950 | 29 - 602963 | 11 - 403021 | 12 - 403011 | 8 - 403031  | 9 - 403051 E | 7 - 503065 |            |

# HO SCALE

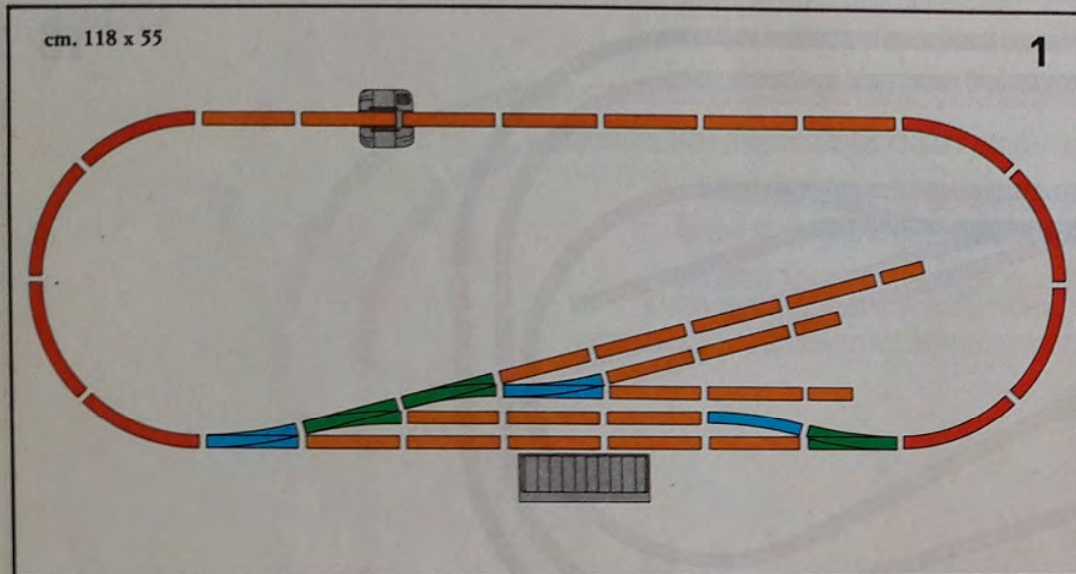
120 x 215

15

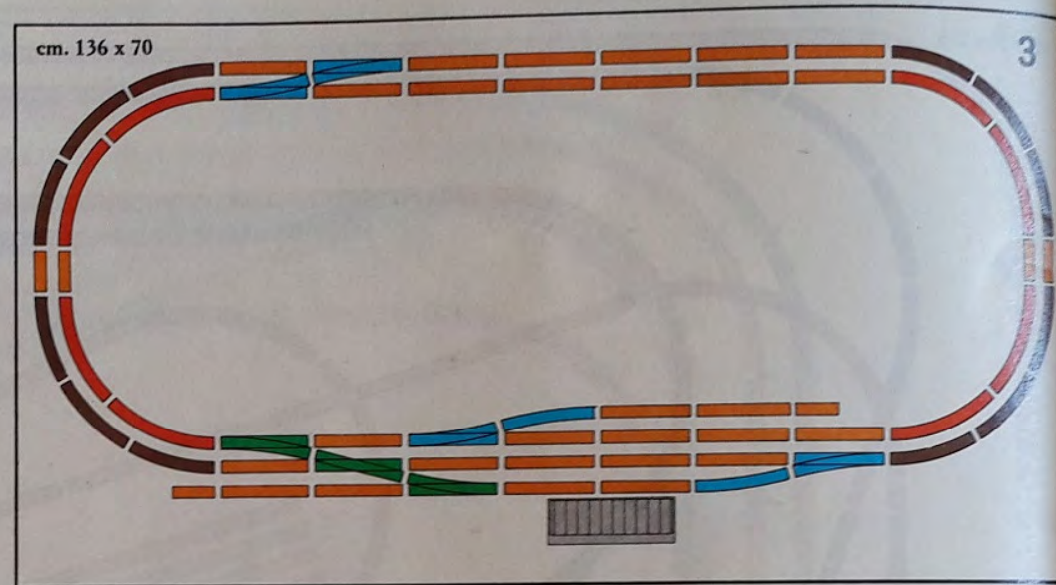


9 - 403025	1 - 403030C	4 - 403051
13 - 403011	10 - 403031	2 - 403055
37 - 403030	11 - 403030	

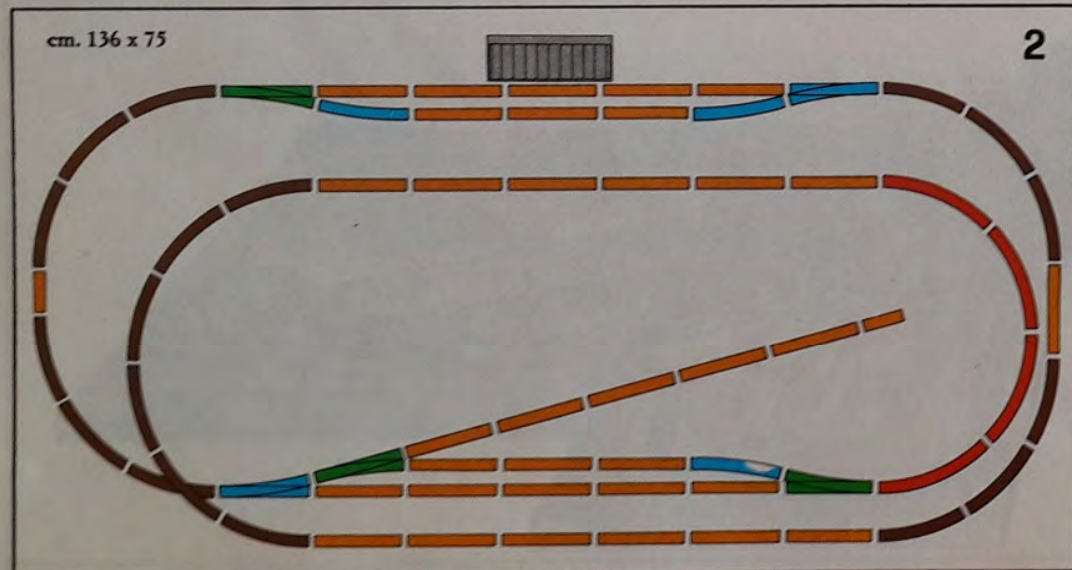
# N SCALE



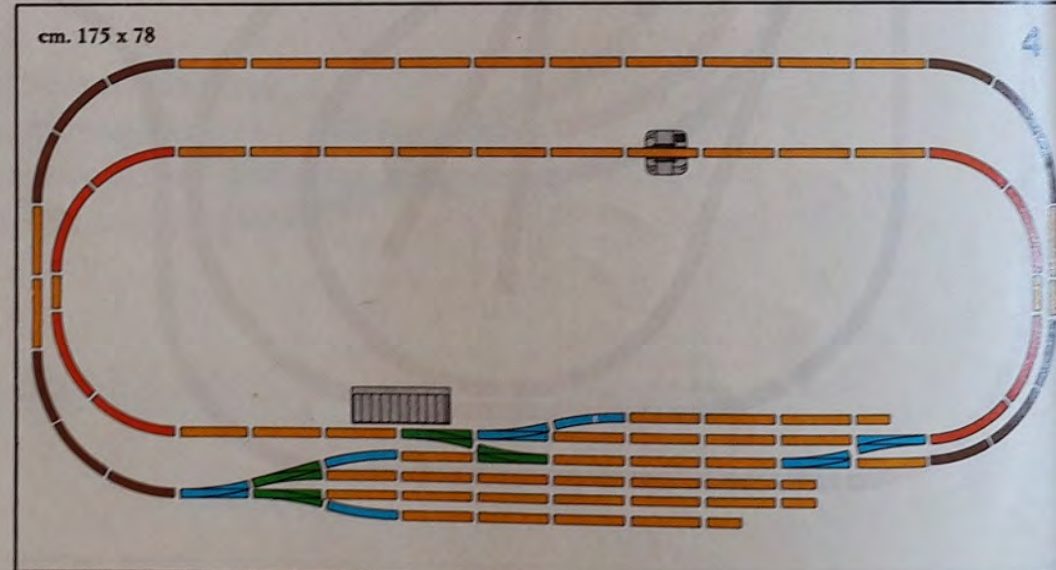
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|-------------|-------------|------------|
| 23 - 420561 | 1 - 420571C | 1 - 420553 |
| 3 - 420565  | 3 - 420525  | 1 - 620714 |
| 7 - 420571  | 2 - 420526  | 1 - 620722 |



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|-------------|-------------|------------|------------|
| 28 - 420561 | 12 - 420551 | 4 - 420526 | 2 - 420553 |
| 4 - 420562  | 7 - 420571  | 2 - 420525 | 1 - 620714 |
| 2 - 420565  | 1 - 420571C | 1 - 420521 |            |



- |             |             |            |            |
|-------------|-------------|------------|------------|
| 34 - 420561 | 18 - 420551 | 2 - 420526 | 1 - 620714 |
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| 1 - 420565  | 1 - 420571C | 3 - 420525 |            |

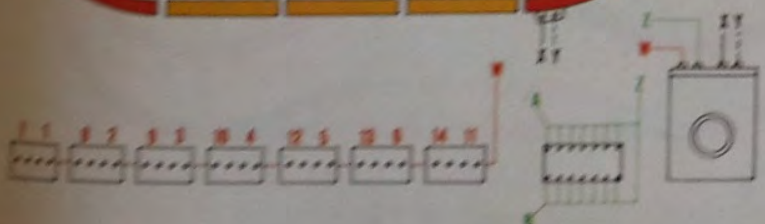
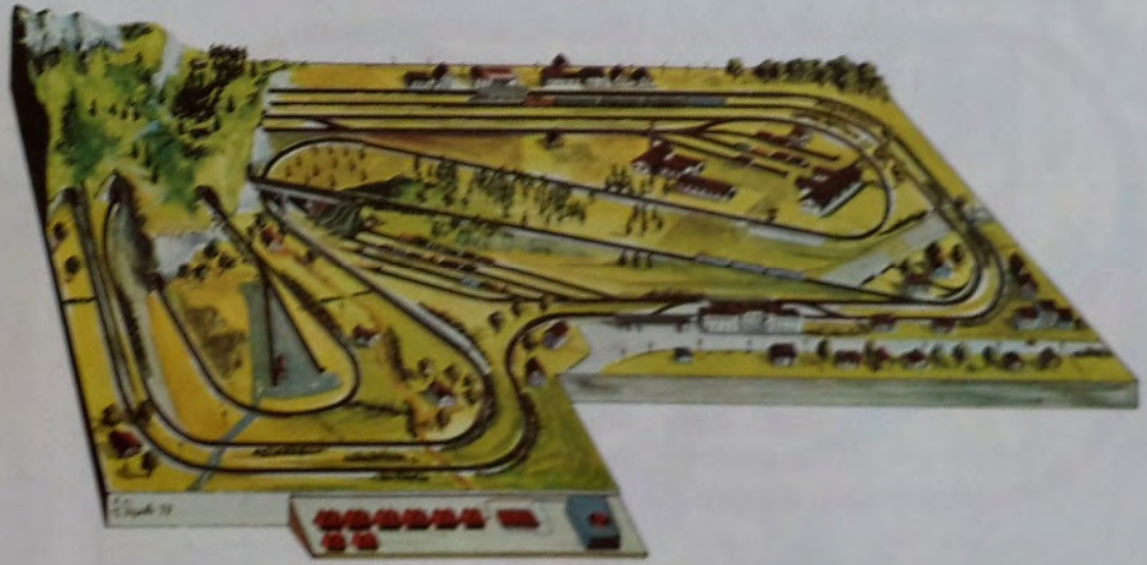


- |             |             |            |            |
|-------------|-------------|------------|------------|
| 54 - 420561 | 12 - 420551 | 4 - 420526 | 1 - 620714 |
| 3 - 420562  | 7 - 420571  | 4 - 420525 | 1 - 620722 |
| 4 - 420565  | 1 - 420571C | 3 - 420553 |            |



# N SCALE

ca. 175 x 125

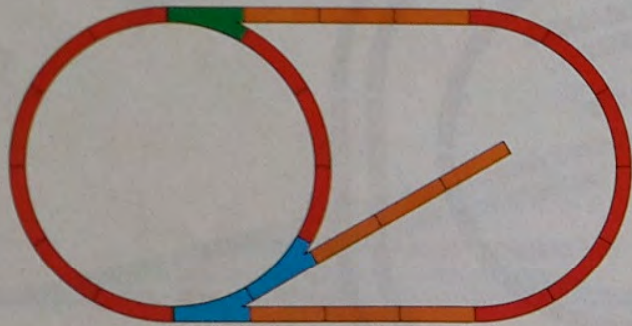


- |            |            |              |            |
|------------|------------|--------------|------------|
| 4 - 420562 | 8 - 420572 | 10 - 420525E | 1 - 503066 |
| 5 - 420563 | 9 - 420551 | 4 - 420526E  | 1 - 502057 |

# O SCALE

cm. 300 x 150

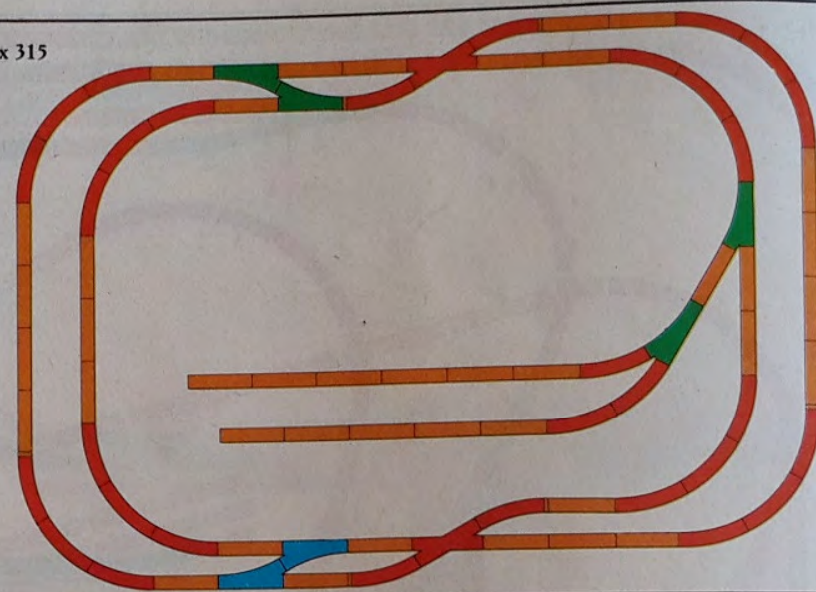
1



- |             |            |
|-------------|------------|
| 1 - 416811C | 2 - 416832 |
| 14 - 416811 | 1 - 416831 |
| 9 - 416801  | 1 - 416841 |

cm. 435 x 315

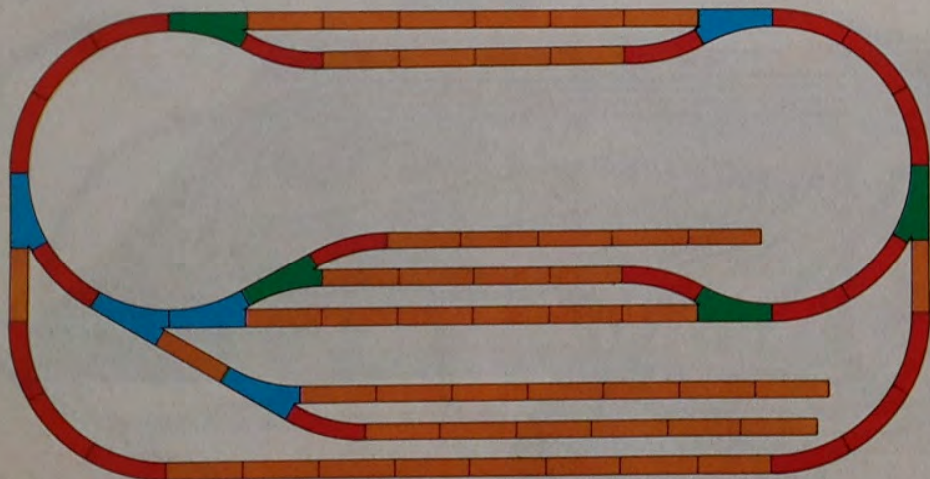
3



- |             |            |            |
|-------------|------------|------------|
| 1 - 416811C | 6 - 416805 | 2 - 416832 |
| 30 - 416811 | 2 - 416822 | 2 - 416841 |
| 41 - 416801 | 4 - 416831 |            |

cm. 430 x 220

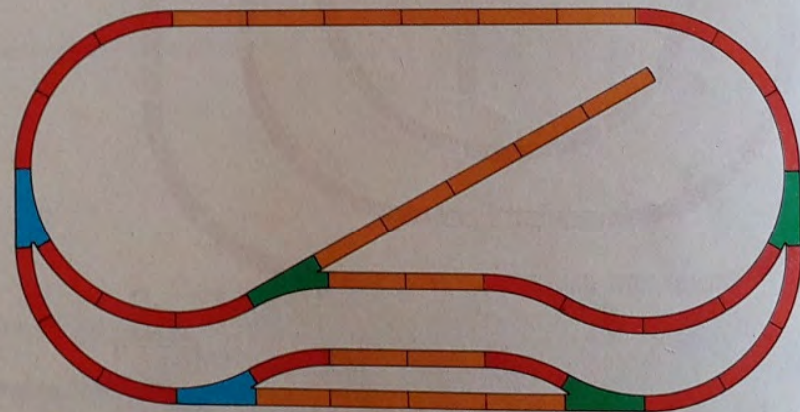
2



- |             |             |
|-------------|-------------|
| 19 - 416811 | 5 - 416832  |
| 49 - 416801 | 3 - 416841  |
| 4 - 416831  | 1 - 416811C |

cm. 360 x 185

4



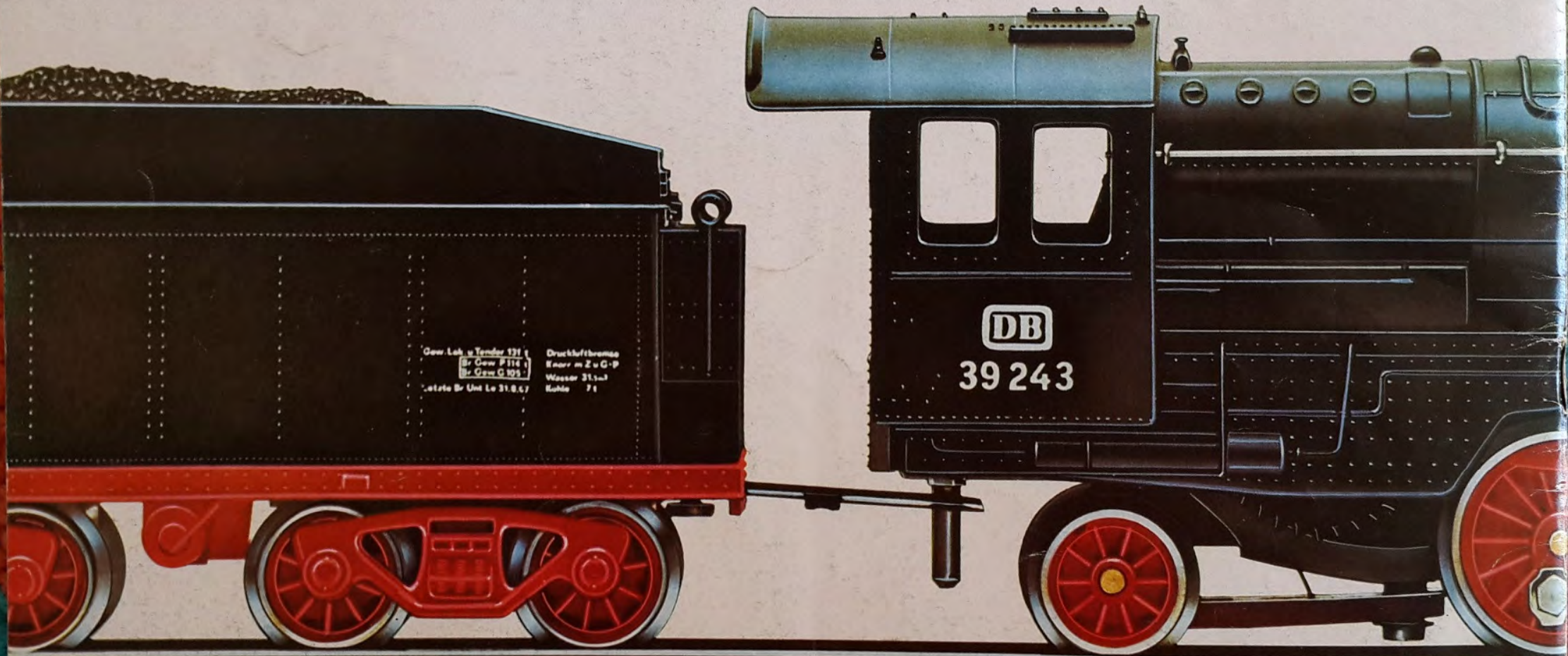
- |             |            |
|-------------|------------|
| 1 - 416811C | 3 - 416831 |
| 20 - 416811 | 2 - 416832 |
| 19 - 416801 | 1 - 416841 |





600183

Via Giovanni Imperiali 77  
36100 Vicenza (Italy)



Gew. Lok. u. Tender 121 t  
Druckluftbremse  
B. Gew. 1114 t  
Kessel m. Z u G-P  
B. Gew. 105 t  
Wasser 21,1 m<sup>3</sup>  
Lok. u. Tender 31,8 t  
Kohle 7 t