

BERTIES

99P



# LIMA

# *Railways*

1984/85 BRITISH EDITION, OO SCALE - N GAUGE.



# LIMA TRAINS: MODELLING WITHOUT FRONTIERS

## Model railways on a grand scale – at the right price.

The attractive town of Vicenza in Italy is probably best known throughout the world, as the home of Lima. Our factory here has continually expanded over the past few years, and today Lima clearly ranks as world leader in the production of model railways.

High technology, and our vast experience has resulted in modern manufacturing processes that keep production costs to a minimum. For you that means a great range of models, at very affordable prices.



Today's latest materials and our painstaking research into every prototype assures you of a consistent high quality and fine detail in every Lima model. Buy Lima and you'll get great value for money. And with the vast Lima range you'll find endless possibilities to

build up a fabulous layout, and an absorbing hobby.

## From prototype to finished model!

Buying Lima means you are buying the best in technology and experience. Every new model we introduce demands months of patient research, into original drawings, photographs and, wherever possible, studying the life-size original.

The prototype model, perfect in every detail, only goes into production after stringent checks and running tests.

Every single component is examined closely before becoming part of the final assembly. And close attention to liveries, applied with our own special process, completes a model that you'll be proud to run on your railway.



Finally, long term tests on durability and reliability are your guarantee that you have a model worthy of the standards we set ourselves as World leaders.

## The right scale for you.

Choosing the right scale is important, and depends both on the space you have available and on personal preference. Lima gives you that choice.

**OO Scale** (16.5 mm gauge) is probably the most well known and popular scale.



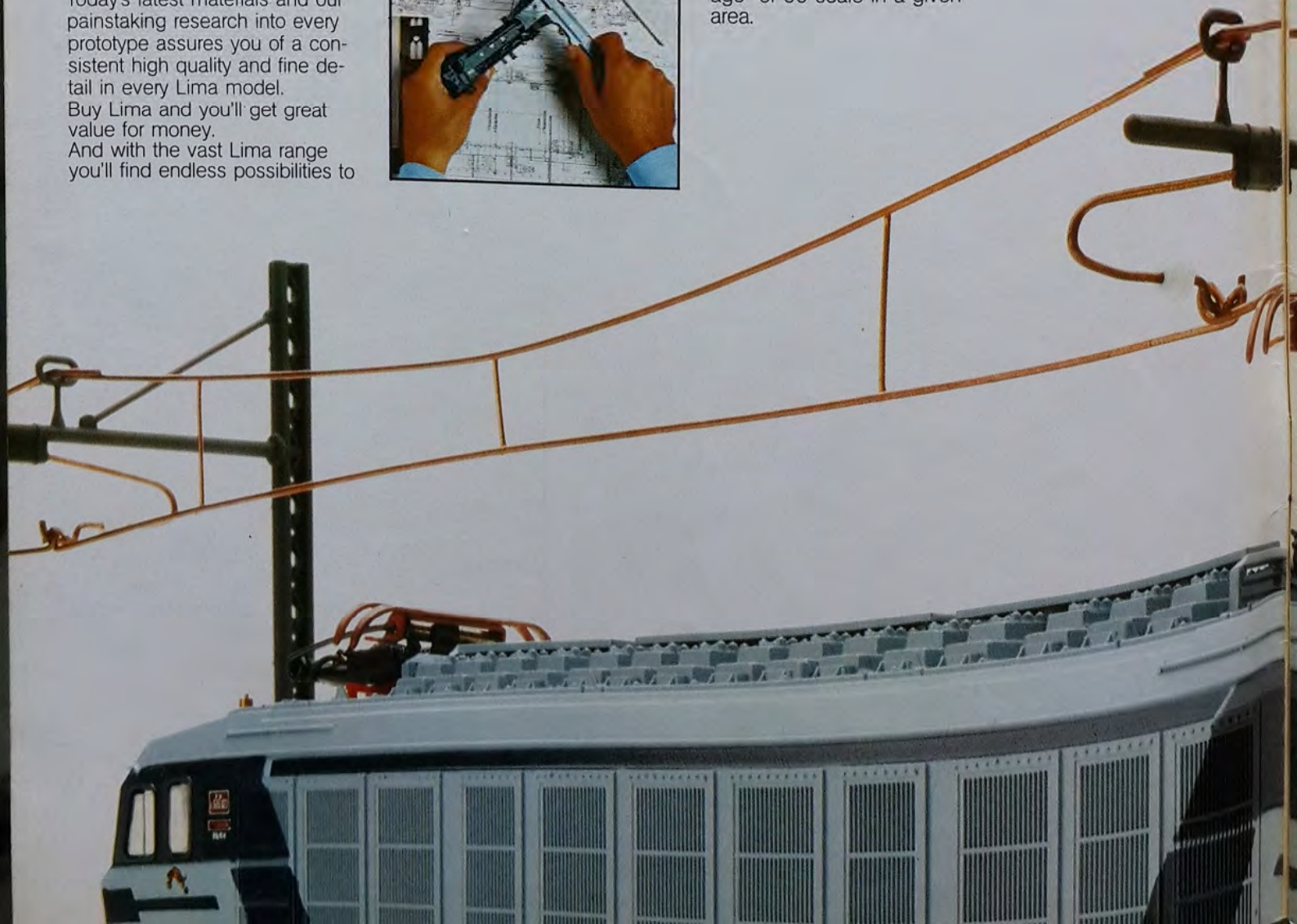
**N Gauge** (9 mm) is the perfect miniature railway, precise in every detail that, can accommodate almost twice the track "mile age" of OO scale in a given area.

## LIMA Locomotives: Built for power.

Every Lima OO locomotive uses the tried and tested Lima 'G' motor for long life and reliability. This high performance motor is both efficient and strong – capable of pulling long trains of coaches and wagons – even on a gradient – without fear of overheating. It's a result of many years' development – based on the characteristics we know that modellers demand – and a design that features very efficient noise reduction, and elimination of T.V. and radio interference.

## LIMA Train Sets – starting you on the right track.

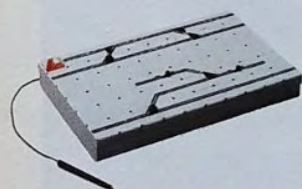
Your first Lima Train Set will open up infinite possibilities for building that layout you always dreamed of. Model railways, even from the most modest beginnings, soon becomes a passion and Lima Train Sets are the easy way to begin the fascinating hobby of model railways. It



# RS.



won't be long before you can call yourself a true enthusiast, well on the way to building a railway network of your own that runs exactly along the lines of the real thing. Lima Train Sets are the ideal way to start. Many contain accessories based on real railway operations that immediately bring your layout to life.



From there the limits for development are endless.



Whilst every attempt is made to ensure the complete accuracy of all items in the Lima range, the manufacturers have altered/amended designs, specifications, materials, etc., as necessary, to enable them to produce such models by current production methods.

Items marked **NEW** are not necessary readily available at this time.

INDEX	Pages
<b>Train Sets</b>	
Train Sets	4-11
<b>Golden Series</b>	
Golden Series	12-15
<b>OO Scale</b>	
OO Scale Locomotives	16-27
OO Scale Passenger Coaches	28-33
OO Scale Freight Wagons	34-37
OO Scale Nickel Silver Track	38-39
OO Scale Accessories	40-45
OO Scale Catenary	46-47
OO Scale Track Plans	66
<b>Micromodels N</b>	
Micromodels	48-49
<b>N Gauge</b>	
N Gauge Locomotive and Train Sets	50-51
N Gauge Passenger Coaches	42-53
N Gauge Freight Wagons	54-55
N Gauge Accessories	56
N Gauge Inox Track Series	57
N Gauge Track Plans	68
<b>OO Scale - N Gauge</b>	
Control Panel	58
Power Controllers	59
How to build a layout	60-61
Track Installation -	
Where to build a layout	62-63
Electrification	64-65

# LIMA CLOCKWORK TRAIN SETS

## CRICK FOR THE YOUNGER

CHILD AND IDEAL INTRODUCTION TO RAILWAYS.

131001

Contents:  
Clockwork Loco - Refrigerator Wagon  
Pepsi-Cola - Open Wagon - Full circle  
of easy assembled link lock track.



132051

Contents:  
Clockwork Steam Locomotive - Refrigerator wagon  
Coca-Cola - Auto Transporter  
- 2 red automobiles Mercedes - Swing Gate Level  
Crossing - 18 pieces of easy  
assembled link lock track.



LIMA modelli

CRICK

TRENO MECCANICO  
CLOCKWORK TRAIN  
TRAIN MECANIQUE  
UHRWERKZUG  
UHRWERKTREIN  
TRAIN MECANICO

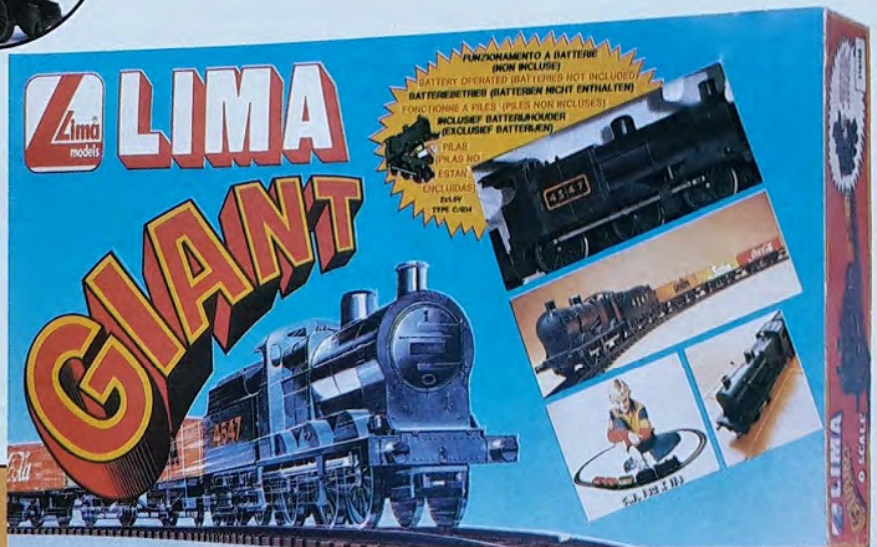
# GIANT

## LIMA BATTERY TRAIN SETS

'O' GAUGE  
FOR A BIG REALISTIC  
PLAY VALUE

110150

Contents:  
Steam Locomotive battery  
operated - Open Wagon  
Lima - Open Wagon Ba-  
nana - Open Wagon Ova-  
lentine - Oval track.



# START

A GREAT NOVELTY IN  
OO GAUGE. OPERATION  
BY MEANS OF BATTE-  
RIES IN LOCOMO-  
TIVE. CAN BE PLAYED  
WITH ANYWHERE.

152401

Contents:  
Steam Locomotive bat-  
tery operated - Tank wa-  
gon Shell - Wagon car-  
rying pipes, with automat-  
ic unloading action, com-  
plete with unloading  
base - Builder merchant  
lorry - Full circle of easy  
assembled link lock  
track.



# LIMA TRAIN SETS

There is no better way to start on the exciting lifelong hobby of model railways than by investing in a Lima Train Set. Lima Train Sets represent high value for money and are designed to meet all pockets and all desires, whether diesel or steam, passenger or freight. An ideal gift for every potential train driver.

All British outline Lima Electric Train Sets include:

- Locomotives, wagons and coaches in British 'OO' (1/76) scale.
- British style couplings compatible with other leading makes.
- Unique 'Track Clips', enabling track to be solidly locked and stopping annoying de-railments and electrical connections.
- Fully guaranteed product, backed up with nationwide service agents.
- All products comply with UK Toy Safety Regulations and power controllers with British Standards.
- Lima 'First Layout' booklet.

## 101809B

The ideal start for any young enthusiast. Contains: **205108MG** BR Diesel Shunter - **302651** Shell Tanker - **302681** Car Carrier - **602076** 2 Mercedes Cars - **500012** Battery Box - Circle of steel track.

## 103807T

A super detailed mains powered set. Just the right thing for the intended railway hobbyist. Contains: **205157MG** BR Class 20 Diesel Locomotive - **305620** BR Brake Van - **305690** 7 plank wagon Austin Rover - **305669** 7 plank wagon Clarks - **305685** Box Van Birds Eye - **502052EN** Mains transformer/controller 8 layout.

### 101809B

## Junior Freight Set



Contents:



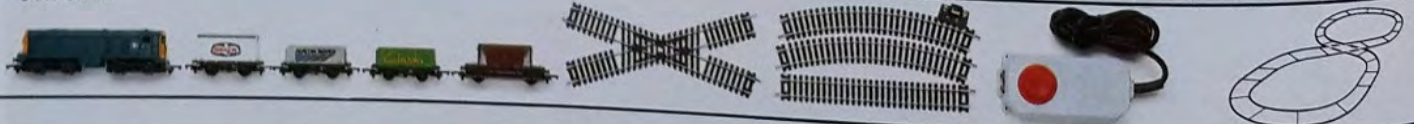
### 103807T

## GWR Freight Set

w/the figure 8 layout box "A"



Contents:



### 104407B

## Express Freight Set



Contents:



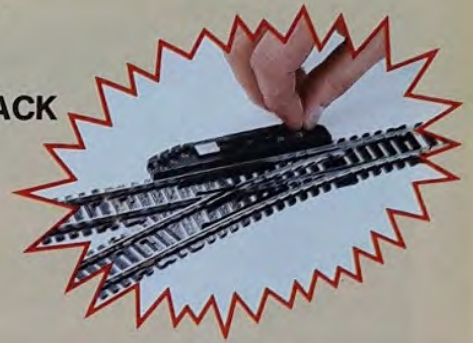
# 104407B

A perfect gift with GWR 94XX loco and eight wagons. Contains: **205117MG** GWR 94XX Steam Locomotive - **302651** Shell Tanker - **303142** Coca Cola wagon - **303157** Castrol Wagon - **303362** Mineral Wagon - **303364** SNCF Mineral Wagon - **303372** Closed Van - **303373** Explosive Box Van - **303374** Lima Box Van - **500012** Battery Box - Oval of steel track.

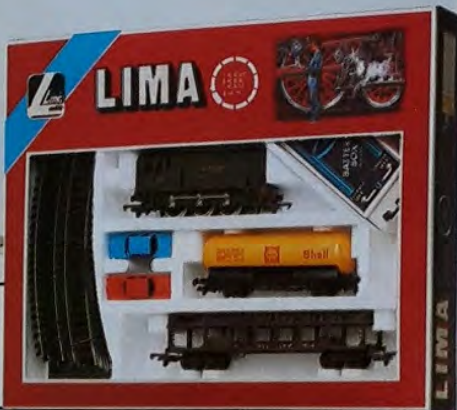
## ADDITIONAL TRACK LAYOUTS

# STANDARD TRACK

How to enlarge the circuit. Starting with a LIMA train set, you may realize with the addition of the track layout boxes, more complex circuits. In each set of the additional track layout boxes, the components allow the realization of a railway circuit very similar to the real things, and to transform it into a complete layout we suggest the addition of some accessories (such as trees, buildings etc.).



### POINTS HAND OPERATED



**A**

40 4010 consists of:

- 4x40 3020
- 8x40 3030
- 1x40 3041

cm 196x75

## additional track



**B**

40 4011 consists of:

- 8x40 3020
- 1x40 3021
- 1x40 3022
- 1x40 3050
- 1x40 3025

cm 160x75

**C**

40 4012 consists of:

- 2x40 3023
- 1x40 3050
- 1x40 3051
- 1x40 3035
- 1x40 3036
- 6x40 3011

cm 116x90



**A+B**

**A+C**

**B+C**

**A+B+C**

## HST Standard Set



Contents:



## Motorail Set



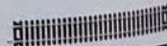
Contents:



## Express Passenger Set



Contents:



## Rail Freight Set



Contents:





### 103406T

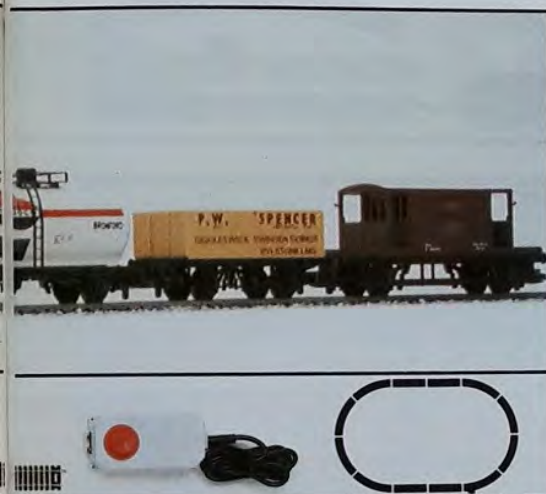
125mph excitement, captured in this true-to-life model of the world famous High Speed Train. All coaches are correct scale length. Mains operated controller and containing: **205160MG** HST Power Car - **205164** HST Dummy Power Car - **205161** Mk.III 1st. Class Inter-City Coach - **502052EN** Mains transformer/controller - Oval of steel track.



### 106207T

Not only a highly treasured train set, but also a complete Motorail Terminal with working car unloader. Hours of fun. Mains operated controller and containing:

**205106MG** Class 55 'Deltic' Co-Co Locomotive "Royal Scots Grey" - **300941** Motorail Car Carrier - **302720** Amoco Tanker Wagon - **305687** Box Van Beefeater - **305632** 'Spencer' Open Wagon - **305620** B.R. Brake Van - **600940** Car unloading terminal and four cars - **502052EN** Mains transformer/controller - Oval of steel track.



### 104406T

A modern inter-city passenger train set, typical of those seen on all regions of British Rail and including the well-known Class 50 'Revenge' diesel locomotive and three Inter-City Mk.II coaches. Contains: **205141MG** BR Class 50 Diesel Locomotive 'Revenge' - **305301** BR Mk. 2B Inter-city First Class Coach - **305302** BR Mk.2B Inter-city Second Class Open Coach - **305308** BR Mk.2 Buffet Coach - **502052EN** Mains transformer/controller - Oval of steel track.



### 106107T

The most modern up-to-date freight set available. All wagons are currently seen performing varied duties on B.R. Set includes Class 50 'Eagle' locomotive in B.R. Railfreight livery. With seven super wagons, is bound to be a certain hit. Contains:

**205142MG** BR Class 50 'Eagle' Railfreight Livery - **305668** BP 50 Ton Stone Hopper Wagon - **305639** 'Tarmac' Hopper Wagon - **305651** 'Haig' Whisky Wagon - **305664** Iron Ore Tippler Wagon - **305661** Procor 82 Ton 'UKF' Wagon - **305652** 'Black & White' Procor Hopper Wagon - **305620** BR Brake Van - **502052EN** Mains transformer/controller - Oval of steel track.



# HST De Luxe Set



Contents:



# King Set



Contents:



# Orient Express Set



Contents:



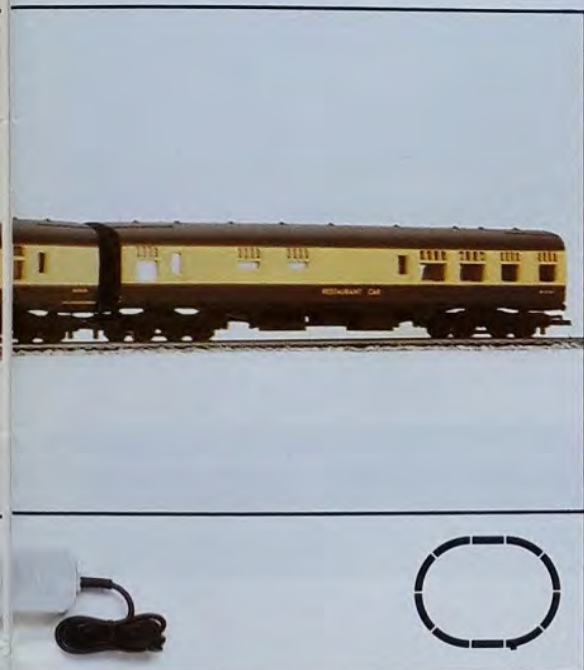
### 107006TL

For those who appreciate super detail, the ideal set. The HST power car is the recently named 'City of Kingston upon Hull' and comes complete with working headlights, highly detailed decoration, metal handrails and metal wheels. Included in this set are two Mk.III Inter-City coaches, which have metal wheels for smoother running. Set contains: **205160LG** HST Power Car 'City of Kingston upon Hull' - **205164** HST Dummy Power Car - **205163** Mk.III Buffet/Restaurant coach - **205161** Mk.III 1st Class Inter-City Coach - **502052EN** Mains transformer/controller - Oval of steel track.



### 104408TM

Capture the nostalgia of the steam age with this prestige set containing the famous G.W.R. 'King George V' locomotive and three highly detailed metal-wheeled G.W.R. coaches. For the connoisseur, the perfect gift, containing: **205103MG** BR 'King' Class loco 'King George V' - **305333** GWR Mk.I Corridor/Brake Coach - **305313** GWR Mk.I Corridor/Composite Coach - **305322** GWR Mk.I Restaurant Coach - **502052EN** Mains transformer/controller - Oval of steel track.



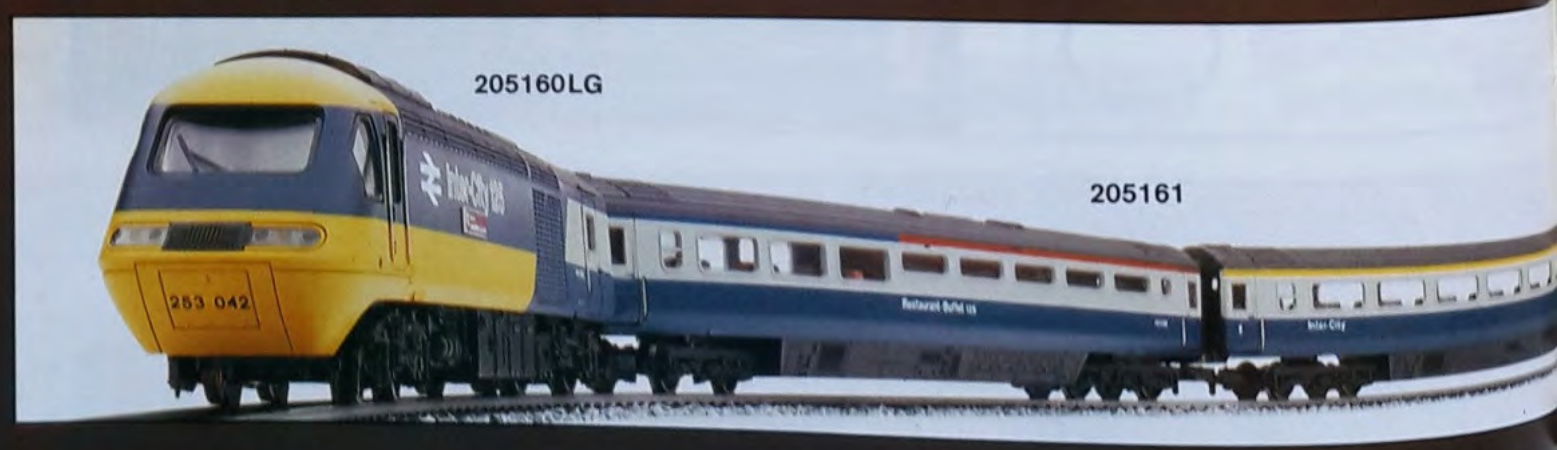
### 107004T

Modelled in 'HO' gauge, this beautifully decorated set vividly recaptures the magic of the 'Orient Express'. The set contains 'Bo-Bo-Bo' E656 'Caimano' locomotive with pantograph, three Pullman cars and two dining cars. (Coupling system is standard HO couplings). Contains: **208064** Bo-Bo-Bo E656 Caimano loco - **309201** Three x 1st Class Pull Coaches - **309202** Two x dining Cars - **502052EN** Mains transformer/controller - Oval of steel track.



British Rail's 125mph passenger train service began in 1976, with the first trains entering service between London and Bristol and South Wales. The service has since been extended and covers routes as diverse as Penzance, Haverfordwest, Harrogate, Cleethorpes, Sheffield, Hull, as well as the east coast main line to York, Newcastle, Edinburgh and Aberdeen.

205160 LG HST 125 Class 253 Power Car incorporating working headlights - 205164 HST 125 Class 253 Non Powered Trailer - 205161 BR MK 111 First Class Open Coach - 305366 BR Mark 3 2nd Class Inter-City Open Coach - 205162 BR MK 111 Trailer Guard Second includes Guard Compartement - 205163 BR MK 111 Buffet Restaurant Coach.



Built in Australia by Commonwealth Engineering, under licence from British Rail, the Express Passenger Train (XPT) runs between Sydney/Melbourne and Sydney/Northern Tablelands. The striking decoration of this train is faithfully captured in the Lima model.

# HIGH SPEED TRAINS

## ⇨ Inter-City 125

GOLDEN SERIES 00



305366

205162

205164



205163

205164



### 149751G

#### Inter-City 125

Part of the expanded 'Golden Series' range, the pack contains: **205160LG** HST Power Car 'City of Newcastle upon Tyne' with working headlights - **205164** HST Dummy Power Car - **205161** BR Mk.III First Class Open Coach - **205163** BR Mk.III Restaurant/Buffer Coach.



### 149755G

#### Inter-City XPT

Pack contains: **205165LG** XPT Power Car with working headlights - **205168** XPT Dummy Power Car - **205167** N.S.W. Trailer Guard Second Class - **205166** N.S.W. First Class Open Coach.



205166

205168





201094 2nd Class Central Coach for the TGV train.



201097 Central coach with bar for the TGV train.



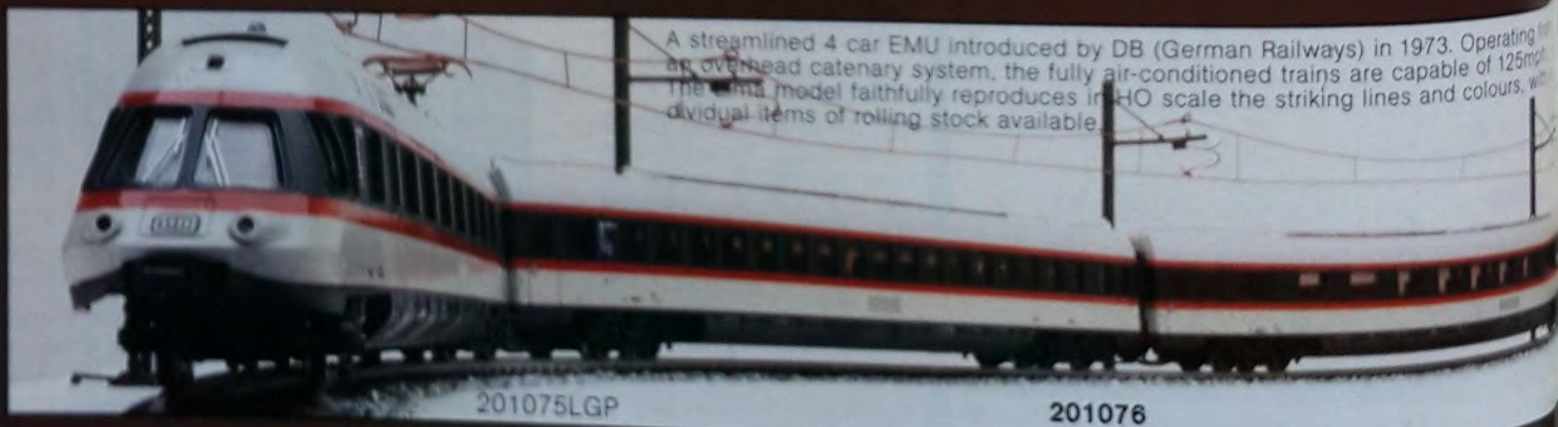
201095LGP

201098



203015LG

309171



A streamlined 4 car EMU introduced by DB (German Railways) in 1973. Operating on an overhead catenary system, the fully air-conditioned trains are capable of 125mph. The Lima model faithfully reproduces in HO scale the striking lines and colours, with individual items of rolling stock available.

201075LGP

201076



Built to the same design as the ET 403/404, the Airport Expresses are normally used for City Centre to Airport transit, as well as places such as Frankfurt.

201066LGP

201068

# FAMOUS INTERNATIONAL HIGH SPEED TRAINS

Running on the lines from Paris to Lusanne, Marseille and Montpellier, the Train de Grand Vitesse (TGV) is purpose-built for high speed operation. Operating on the Sud Est sector of France, the TGV holds the world's rail speed records of 236mph. As beautiful to look at as in real life, this Lima reproduction captures the vivid style and colour of the now world-renowned train. All rolling stock is articulated as in the real thing and is available in solo form.



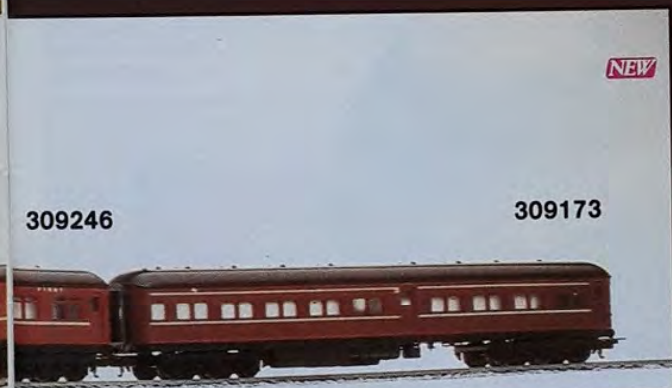
201096

201099

## 149711GP

### T.G.V.

Pack contains:  
**201095LGP** T.G.V. Power Locomotive (with operating pantograph) - **201099** T.G.V. Dummy Power Locomotive - **201098** T.G.V. 2nd Class Dining Coach - **201096** T.G.V. 1st Class Coach.



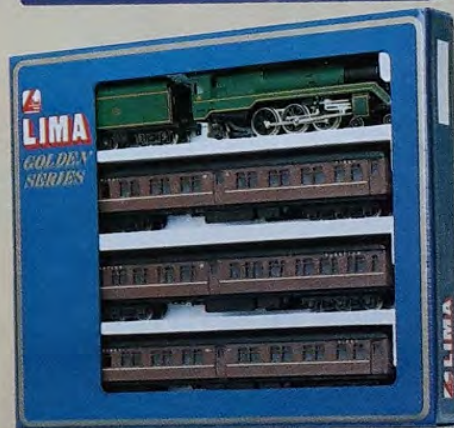
309246

309173

## 149753G

### OLD TIME STEAM

Pack contains: **203015LG** Steam locomotive with tender C.38 - **309171** Six axle 1st Class Coach - **309246** Six axle sleeping car - **309173** Six axle 2nd Class Coach.



201077

201078L

## 149742GP

### Inter-City ET 403/404

The pack contains:  
**201075LGP** DB ET 403 Electric Locomotive (with operating pantograph) - **201078L** DB ET 403 Non-power Locomotive - **201076** DB ET 403 1st Class Coach - **201077** DB ET 403 Dining Coach.



201067

201069L

## 149749GP

### Lufthansa Airport Express

Containing: **201066LGP** German Electric Locomotive 'Lufthansa' (with operating pantograph) - **201069L** German non-power electric locomotive 'Lufthansa' - **201067** German 1st Class Coach 'Lufthansa' - **201068** German Dining Coach 'Lufthansa'.



# LOCOMOTIVES

# 00

Lima's fine models of classic locomotives like the Great Western 'Kings' and LMS 'Crabs', truly bring to life the glorious days of thundering steam power.

The early days of the diesels, even now just a memory, are also captured in the superb. Warship and Western models, and modern day traction is well represented in the Lima range. In all, we offer the biggest selection of British outline locomotives and liveries in 00 which has long been the most popular scale in the U.K.

In 00 scale, the distance between the rails is 16.5 mm and models are built to the exact scale of 4 mm to one foot. Every British loco is, of course, fitted with a standard coupling compatible with all other British makes.



## Supertraction.

Lima have always striven toward realism in model railways. Now for life-like speeds we offer you a choice of two power plants, based on our famous G motor.

"Supertraction" is a low-ratio gearing, faithfully reproducing acceleration from a slow crawl to scale maximum speed.

"Supertraction" also gives you greater pulling power, transmitting energy more efficiently through the axles so that even steep gradients can be tackled at a steady climb.

## High-speed.

"High-speed" higher-ratio gearing is also available and is most suitable for locomotives renowned for their crack express speeds.

Trust Lima to get as near as possible to the real thing! Both motors feature self-lubricating gears that require no maintenance, and of course they both meet our standards of low noise and anti-interference on T.V.'s and radios.





# CLASS 09 'SHUNTERS'

Manufactured by the English Electric Company at Derby works in 1945 these diesel electric units producing a tractive effort of 35,000 lbs, formed the basis for many more Shunters built by various regions of B.R.



**205107MG** 0-6-0 Class 09 350 BHP Diesel Shunter. BR Livery.



**205108MG**

**205108MG** 0-6-0 Class 09 350 BHP Diesel Shunter. Early BR Livery.



**205109MG**

**205109MG** 0-6-0 Class 09 350 BHP Diesel Shunter. LMS Livery.



**205151MG**

**205151MG** 0-6-0 Class 09 350 BHP Diesel Shunter "Townsend Thoresen" Livery.

# CLASS 33 Bo-Bo

Based on the earlier Class 26 these diesel-electric Class 33 Bo-Bo's were manufactured by the Birmingham Carriage Com-

pany. They are largely based on the Southern region because their unique control system enables them to interwork in multiple with Southern electric-diesel locomotives and electric multiple-unit trains. They weigh 73 tons, have a fuel capacity of 800 galls and a top speed of 80 mph.



**NEW 205174MG** CI 33 Bo-Bo Diesel No. 33056 'Burma Star'.

# CLASS 20

A single cab Bo-Bo design built 1957-67. Powered by an English Electric 85 VT Mk. 2 diesel of 1,000 B.H.P. (746 KW) giving a tractive effort of 42,000 lbs and a maximum speed of 75 M.P.H.

**NEW**  
**205158MG** Class 20 Diesel-Electric Bo-Bo No 20171 Railfreight Livery.



**205156MG** Class 20 Diesel-Electric Bo-Bo No D8170 Early BR Livery.

**205157MG** Class 20 Diesel-Electric Bo-Bo No 20183 BR Livery.



# CLASS 55 'DELTAIC'

The Class 55 "Deltics", considered to be the 'King' of the diesels, were built by English Electric and entered service in 1961. They are the most powerful on B.R. with two 1650 hp 18-cylinder engines' and were the first Diesels built for regular working at 100 mph. They proudly carry the names and insignias of famous British Regiments.

**205106MG** Class 55 "Deltic" Co-Co Diesel n. 55022 "Royal Scots Greys".



**205105MG** Class 55 "Deltic" Co-Co Diesel n. D9008 "The Green Howards".

# CLASS 50 'DIESEL'

The Class 50 Diesel electric Co-Co's were built by the English Electric Company Limited from designs developed in conjunction with B.R. Introduced in 1967 they incorporated several new features which allowed remotely controlled working on push-pull trains. Power is from the E.E. 16 CYL engine which produces a top speed of over 100 mph. Locomotives of this Class have been allocated to the Western and Southern Regions, where they carry the names of famous Royal Navy Battleships.



205141MG

**205141MG** Class 50 Co-Co Diesel no. 50020 "Revenge".

**205142MG** Class Co-Co Diesel 1981 Railfreight Livery no. 50043 "Eagle".



205142MG

# CLASS 42/43 'WARSHIP'

The "Warships" were built between 1959 and 1962; Class 42 at Swindon and Class 43 at North British. Their engines produced 2,200 b.h.p. with a tractive effort of 52,000 lbs. They were BR's first real success in diesels, with a top speed of 90 mph. Unusually, the bogies are without axleboxes, bolsters or central pivots and they incorporate laminated coil springs to transmit body weight to bogie frames.



**205127MG**  
Class 42/43 'Warship'  
Diesel-Hydraulic Bo-Bo,  
Rail Blue Livery, No.  
D814 "Dragon".

**205128MG** Class 42/43 'Warship' Diesel-Hydraulic Bo-Bo, Original Western Region Maroon, No. D838 'Rapid'.

**205135MG** BR Class 42/43 'Warship' Diesel-Hydraulic Bo-Bo No. D843. "Sharpshooter".



205128MG



205135MG

# GWR RAILCAR

G.W.R. was the only Company to produce a really successful diesel powered rail car, first in service in 1933. No. 22 was built at Swindon in 1941. It had second class seating for 48 with limited luggage space, saw continuous service throughout the War and withdrawn for preservation in 1962. No. 34, was also built at Swindon in 1941 and carried up to 10 tons. It first ran in original GWR Chocolate and Cream livery until nationalisation when it was relined to BR's standard Maroon livery.



205132MG

205132MG G.W.R. Rail Car No. 22 original Livery.



205150MG

205150MG Diesel Railcar No W30W BR Green Livery.



205133MG

205133MG G.W.R. Rail Car No. 22 1948 Crimson/Cream Livery.

205144MG Diesel Parcels Car no. 34 in 1948 livery.



205144MG

205143MG G.W.R. Diesel Parcels Car no. 34 in original livery.



205143MG



# CLASS 52 'WESTERN'

Developed from the "Warships" the diesel-hydraulic "Westerns" were built at Swindon and Crewe and introduced in 1961. In early years their Voith hydraulic transmissions and bogies gave trouble and to improve availability they were restricted to West of England service. Their two engines produced 1350 b.h.p. and their coach-profile body, recessed windscreen and clean styling make them the most handsome diesels built.



205122MG

**205122MG** BR Class 52 'Western' Diesel-Hydraulic Locomotive. No. D1071 "Western Renown".



**205121MG** Class 52 'Western' Diesel-Hydraulic Locomotive, Western Maroon Livery No. D1016 'Western Gladiator'.

**205134MG** BR Class 52 'Western' Diesel-Hydraulic Locomotive No. D 1003 "Western Pioneer".



205134MG

**205126MG** Class 52 'Western' Diesel-Hydraulic Co-Co No. D1000 "Western Enterprise".



205126MG

# CLASS 87 'ELECTRIC'

British Rail's latest design of overhead electric locomotive, the Class 87 Bo-Bo's, were introduced in 1973 and were based on the previous Class 86/1. Their motive power is from four frame-mounted GEC 1250 h.p. traction motors producing a maximum speed of 100 mph. These pollution-free locomotives are the most sophisticated in full operation today.



205175GP  
NEW

**205175GP** Cl. 87 No. 87019 Sir Wiston Churchill.  
**205155GP** BR Class 87 Electric Locomotive No. 87022, "Coch O' the North" in latest "Railfreight" Livery.



205155GP

# DIESEL MULTIPLE UNIT CLASS 117/2

The last few years have seen a continuous growth in cross country and suburban diesel multiple services. These have proved to be a popular and cost effective method of passenger movement, especially over local commuter and shopper routes. Most types look basically similar and are built on two standard length underframes. Many combinations can be seen, including 2, 3 and 4 car sets. Our models are of the Pressed Steel Company's Motor Brake 2nd and the Lavatory Composite Car, which have seen service in most parts of the country. The Power Car was introduced in 1959, and powered by 2 BUT (Leyland) 6 cylinder 150 BHP engines. These mechanical transmission units weigh 36 tons and have an overall length of 64ft.

**205152MG** Class 117/2 DMU Motor brake 2nd Commuter Train "Refurbished" Livery.

**205153** Composite Coach Type 117/TC Commuter Train "Refurbished" Livery.

**205154** Class 117/2 DMU Motor Brake 2nd Non Powered Trailer Commuter Train "Refurbished" Livery.

**205147MG** Class 117/2 D.M.U. Motor Brake 2nd 1981 Livery.

**205148** Composite Coach type 117/TC 1981 Livery.

**205149** Class 117/2 D.M.U. Motor Brake 2nd Non Powered Trailer 1981 Livery.

**205136MG** Class 117/2 DMU Motor Brake 2nd 1974 Livery.

**205145** Composite Coach type 117/TC 1974 Livery.

**205138** Class 117/2 DMU Motor Brake 2nd Non Powered Trailer.

**205137MG** Class 117/2 DMU Motor Brake 2nd 1959 Livery.

**205146** Composite Coach type 117/TC 1959 Livery.

**205139** Class 117/2 DMU Motor Brake 2nd Non Powered Trailer.





149810



149809

## DMU Packs

### 149810

A complete DMU set in a single pack. Based on the 1981 BR livery, the pack is the easy way of acquiring a complete DMU of your own.

### 149809

Modelled upon the popular and original green DMU livery, this pack enables a complete 117/TC DMU to be purchased.



205152MG



205147MG



205136MG



205137MG



## GWR 4-6-0 "KING" CLASS

Possibly the most famous of all G.W.R. locomotives, these magnificent express passenger engines were built by C.B. Collet at Swindon and introduced in 1927. The original No. 6000 King George V represented Gt. Britain at the Baltimore and Ohio Railroad centenary celebrations in 1927, where its unusual warning bell was fitted. Withdrawn for preservation in 1962 this loco can still be seen on periodical excursions.



**205176MG** King Class No. 6026 "King John".



**205103MG** 4-6-0 'King' Class Express Locomotive. No. 6000 "King George V" in Lined GWR Green Livery.

**205104MG** 4-6-0 'King' Class Express Locomotive No. 6009 "King Charles II". Experimental BR Lined Blue Livery.





# LMS HUGHES 2-6-0 "CRAB"

These impressive mixed traffic locomotives were the first new design of main line engine on the L.M.S.R. after grouping. Introduced in 1926 and designed by George Hughes C.M.E., they were hard working, and highly successful. Over 240 were built at Horwich and their unusual valve gear led to the nickname "Horwich Crab".



205119MG

**205119MG** 2-6-0 'Crab' Class Express Locomotive. LMS Lined Maroon Livery.

**205120MG** 2-6-0 'Crab' Class Express Locomotive. BR Lined Black Livery.



205120MG



# GWR 45xx

## 2-6-2T

One of G.W.R.'s Standard Tank locomotives for cross country and branch line passenger work. The 45xx Class was designed by G.J. Churchward and 175 were built at Swindon Works between 1906-1929. These small Prairie tanks weighed 57 tons, produced a pressure of 200 lbs and had tractive effort of 21250 lbs superheated. They were a lighter and smaller development of the earlier 31xx.



205110MG

**205110MG** 2-6-2 T Class 45xx Prairie Tank Loco. BR Lined Black Livery.

**205111MG** 2-6-2 T Class 45xx GWR Prairie Tank Locomotive in Original Livery.



205111MG

# GWR 94xx

## 0-6-0T

94xx Class, intended for heavy shunting work and passenger traffic, was last in the line of Pannier Tanks produced for the G.W.R. at Swindon. Designed by F.W. Hawksworth and built in 1947 engine No. 9400 had allwelded tanks, an incredible coal capacity of 3½ tons, was super-heated and was fitted with Automatic Train Control. It was withdrawn from service in 1959 and is now preserved at the Great Western Railway, Museum at Swindon.



205117MG

**205117MG** 0-6-0 T 94xx Class Tank Locomotive. Original GWR Livery.

**205118MG** 0-6-0 T 94xx Class Tank Locomotive. BR Unlined Black Livery.



205118MG





## LNER J50 CLASS 0-6-0T

Designed by Sir Nigel Gresley in 1914, the J.50 Class was adapted for use on the steep inclines of West Riding. An increase in cylinder size and the tank engine design provided the extra adhesion. Lima's model is of engine No. 8920 built at Doncaster works in 1924, re-numbered by B.R. in 1948, and finally withdrawn from service in July 1961.



**205101MG** 0-6-0 T Class J.50 Tank Locomotive. LNER Lined Apple Green Livery.

**205102MG** 0-6-0 T Class J.50 Tank Locomotive. BR Unlined Black Livery.



# 00

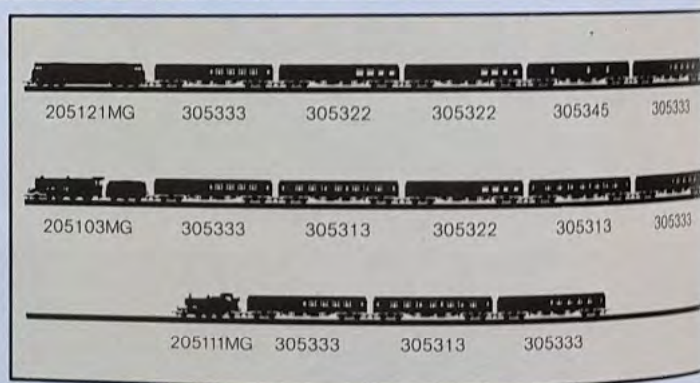
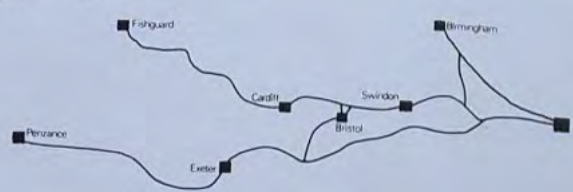
# PASSENGER COACHES

In period, style and livery you can pair Lima locomotives exactly with the passenger coaches they once hauled, or can be seen heading today. We pay just as much attention to detail here as we do in locomotive production, making sure every colour match and all markings are perfectly reproduced. Even in pre-nationalisation days, before the advent of British Railways, there were opportunities to see a varied mixture of coach liveries in one train. Lima's wide choice opens up possibilities for many interesting combinations.



## WESTERN REGION

The Great Western Railway was the only pre-grouping name to survive unchanged, and it absorbed some of the smaller railways of Wales into its territory, which already served the west of England and Birmingham routes. The elegant chocolate and cream livery was replaced by chocolate brown in 1909, but the loss of publicity value was soon realised and colours reverted to the original by 1921. This livery remained one of the hallmarks of Great Western pride well into British Railways times.



**305345** Standard Gangwayed Brake Van. Western Region Livery.

**305362** MK I Corridor 3rd Western region Livery.



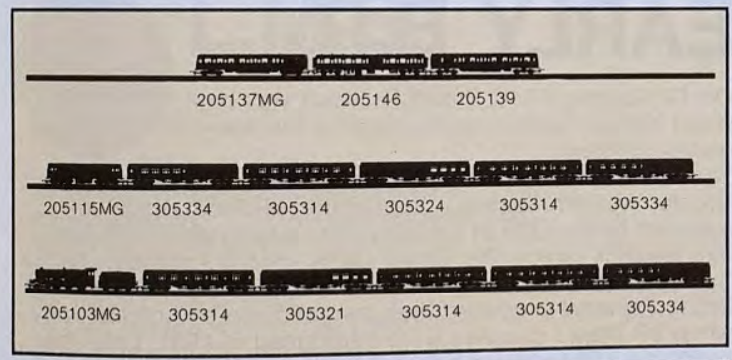
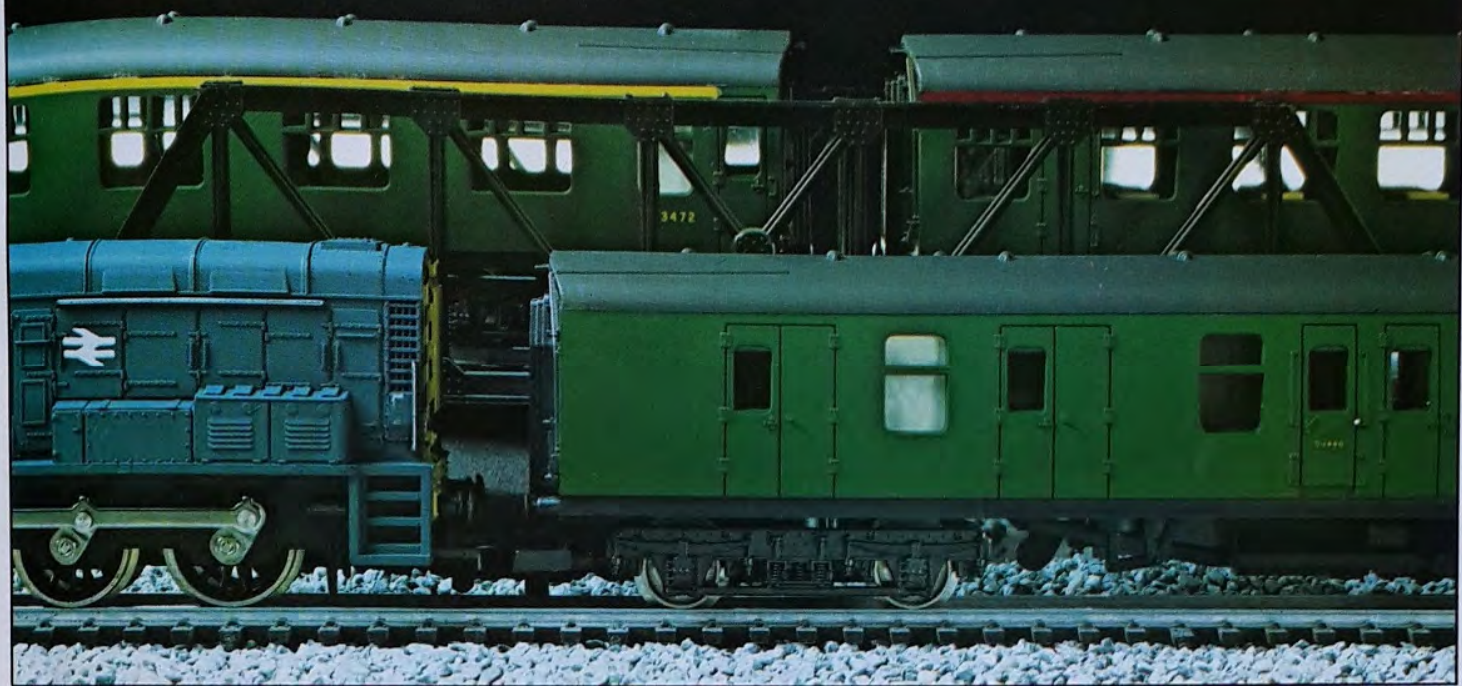
**305322** Mark I Restaurant Car. Western Region Livery.



**305313** Mark I Corridor Composite Coach. Western Region Livery.



**305333** Mark I Corridor Brake Coach. Western Region Livery.



# SOUTHERN REGION

The Southern Railway was formed by the amalgamation of the London Brighton and South Coast, London and South Western, and South Eastern and Chatham Railways. Southern's green livery was a common sight in the South and by the time nationalisation came the company boasted a fine fleet of modern carriages designed by Surrey Warner.



**305334** SR Mark I Corridor Brake Coach.



**305348** SR Standard Gangwayed Brake Van.



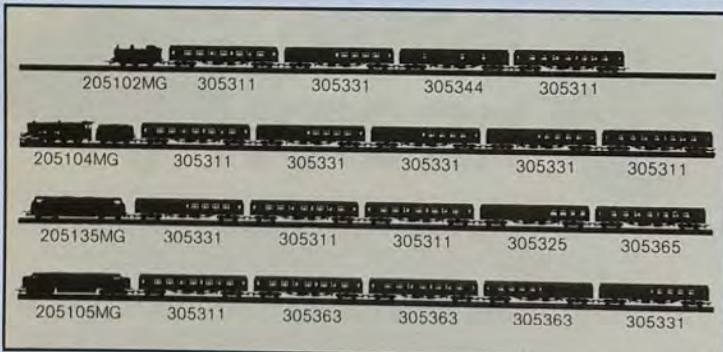
**305324** SR Mark I Restaurant Car.



**305314** SR Mark I Corridor Composite Coach.



**305365** SR Mark I Corridor 3rd Coach.



## EARLY B.R.

On 1st January 1948, British Railways was born; and was divided into six regions, each retaining the livery of its previous owner company.

The Southern and Western regions were the old Southern and Greater Western Railways; the London Midland region corresponded to the LMS in England; the Eastern and North Eastern Regions ran on the former LNER lines in England, and the Scottish region took over the LMS and LNER lines in Scotland. British Railways produced their own crimson and cream livery when BR Mark I coaches were introduced in 1951. Later the prototype XP64 version became the basis for the new Mark II designs and the current livery.



305344

**305344** Standard gangwayed Brake Van. Crimson and Cream Livery.

**305311** Mark I Corridor Composite Coach. Crimson and Cream Livery.



305311

**305363** BR Mark I Corridor 3rd. Crimson and Cream Livery.



305363



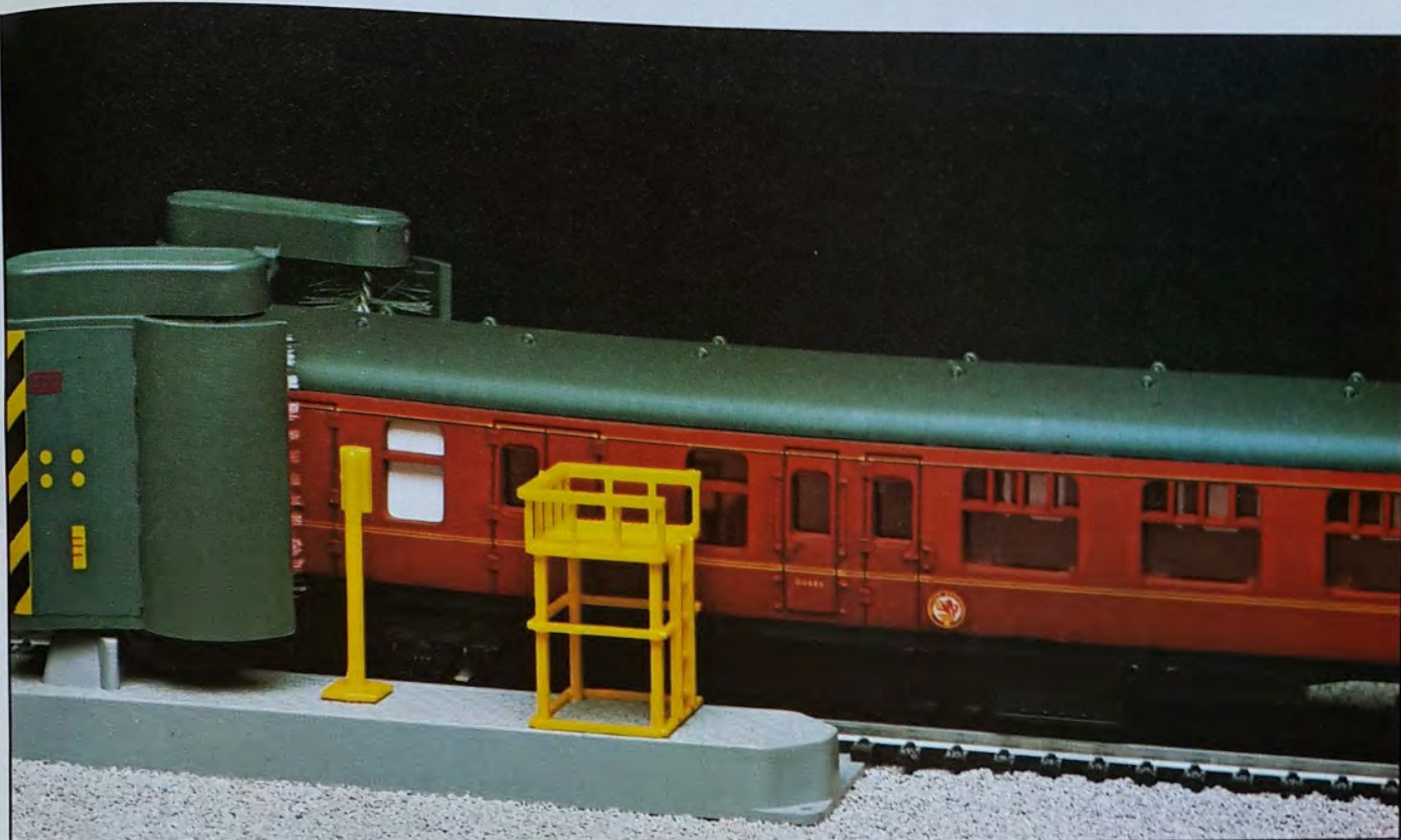
305325



305331

**305331** Mark I Corridor Brake Coach. Crimson and Cream Livery.

**305325** Mark I Restaurant Car Crimson and Cream Livery.



# L.M.S.

The London Midland and Scottish Railway was the largest of the new companies of 1923, and served the Midlands, North West, and much of Scotland – over 7,800 miles of track.

The LMS led the way in mass production of rolling stock, and earned an enviable reputation for carriage design through the work of designers David Clayton, David Bain and C.A. Park.



205102MG	305364	305364	305364	305342	
205119MG	305332	305312	305312	305312	305332
505121MG	305332	305312	305342	305312	305332
205105MG	305332	305312	305323	305312	305332



**305312** Mark I Corridor Composite Coach. LMS Maroon Livery.

**305332** Mark I Corridor Brake Coach. LMS Maroon Livery.



**305323** Mark I Dining Car. LMS Maroon Livery.



**305342** Standard Gangwayed Brake Van. LMS Maroon Livery.



**305364** Mark I Corridor 3rd. LMS Maroon Livery.



# INTER-CITY

The name Inter-City was first used in 1951 when a train was named "The Inter-City" for the Festival of Britain. In 1963 the name was used again in an advertising campaign and the concept of presenting the Inter-City service to take shape. In 1965 the first campaign was launched to present Inter-City on a national basis and the service now generates more than 8,400 million passenger miles per year. The latest Inter-City coach design (the Mk III) in its famous blue/grey livery was introduced in 1975 – with improved bogies for 125 mph running, power operated internal doors, more seats without extra weight (for better economy), tinted double glazed windows, and improved sound insulation. British Rail is the only European railway to provide air-conditioned coaches as standard (on its Inter-City service) without extra charge to the passenger.

## Mark I

The first series of B.R. coaches, incorporating visual features still recognisably related to vehicles of LMS, SR and GWR origins. Some still remain in service on 'Commonwealth' bogies for 100mph running with Mk.2 and 3 stock.

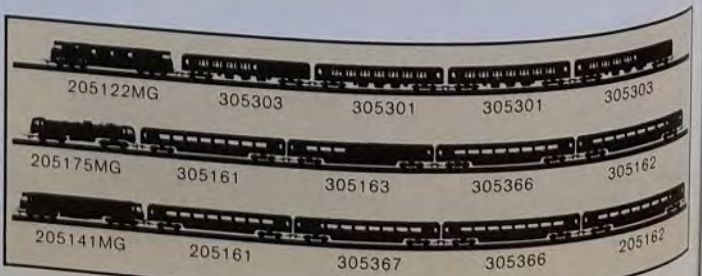
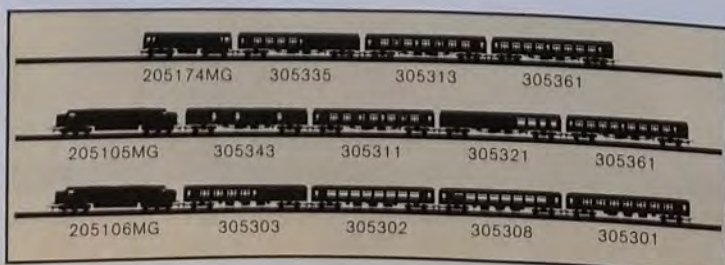


**305341** BR Standard Gangwayed Brake Van 'Express Parcels'.  
**305335** BR Mark I Corridor Brake Coach.



**305321** BR Mark I Restaurant/Buffer Car.  
**305343** BR Standard Gangwayed Brake Van.

**305315** BR Mark I Corridor Composite Coach.  
**305361** BR Mark I Corridor 2nd Coach.







### Mark II

First appearing in 1966, they were developed from the XP64 prototype stock. Sub marks, such as IIB, IIC, etc., indicate improvements, which include air conditioning, reduced size windows.

### Mark III

A highly developed design introduced in 1975 and used with buffers in loco-hauled trains and without buffers in HST sets. The coaches are fully air conditioned and have automatic opening vestibule doors.



205162



205161



305308

305308 BR II Mini Buffet Coach.



205162 BR MK 111 Trailer Guard Second includes Guard Compartment.

205161 BR MK 111 First Class Open Coach.



305301

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



205163

205163 BR MK 111 Buffet Restaurant Coach.



305302

305302 BR Mark 2B Inter-City Open Coach.



305366

305366 BR Mark 3 3rd Class Inter-City Open Coach.



305303

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



305367

305367 BR Mark 3 Sleeper Inter-City Coach.

# FREIGHT WAGONS



Despite modern developments in freight stock, there are still many older wagons to be seen on today's railways.

Lima covers the whole range. Open wagons with fixed and opening sides, closed vans for general goods, car and container transporters, tankers and even the most up-to-date bulk carriers.

Every year the choice grows and grows.

With Lima wagons you can compose freight trains of infinite variety - just as you see in real life.



**305669** 7 Plank Wagon 'Clarks'.



**305690** 7 Plank Wagon 'Austin Rover'.



**305676** 7 Plank Wagon 'Raleigh'.



**305677** 7 Plank Wagon 'Harrods'.



**305678** 7 Plank Wagon 'Courtaulds'.



**305679** 7 Plank Wagon 'Ebbw Vale'.



**305671** 'Pontefract Collieries' 7 Plank Wagon.



**305675** Grey 7 Plank Wagon.

**305674** N.C.B. 7 Plank Wagon.



**305620** BR 20 ton brake van.



**305621** LNER 20 ton brake van.



**305684** Box Van 'Shredded Wheat'.



**305685** Box Van 'Birds Eye'.



**305686** Box Van 'Walls'.



**305687** Box Van 'Beefeater'.



**305688** Box Van 'Stork'.



**305689** Box Van 'Whites Lemonade'.



**302720** Tank Wagon 'Amoco'.



**305635** 50 Ton stone hopper wagon 'Yeoman'.



**305636** 50 Ton stone hopper wagon 'A.R.C. Roadstone'.

**305625** GWR 2 Axle horse box.



**305626** 2 Axle Horse Box LMS Livery.



**305628** 2 Axle Horse Box SR Livery.



**305639** 50 ton Stone hopper wagon "Tarmac".



**305641** GWR 3 axle Milk tank wagon 'St. Ivel'.



**305644** GWR 3 axle Milk tank wagon "C.W.S. LTD".



**305640** 3 axle oil tank wagon "Corn Products".

**305630** Bogie bolster wagon Bobel "B" steel load.



**305629** GWR Bogie Bolster Wagon 'with steel load'.



**302870** 40' Containers Wagon 'Freightliner'.



**305652** Procor 45 ton Whisky Grain Hopper Wagon "Black & White".



**305651** Procor 45 ton Whisky Grain Hopper Wagon "Haig".



**305650** Procor 45 ton Whisky Grain Hopper Wagon "VAT 69".

**305654** Hopper Wagon 45 ton 'Grain Flow'.



**305665** Sealion Bogie Ballast Wagon Olive.



**305667** Seacow Bogie Ballast Wagon Grey/Yellow.



**305666** Sealion Bogie Ballast Wagon Bauxite.



**305668** 50 ton Stone Hopper Wagon B.P.



**305653** Procor 45 ton Bass Charrington Hopper Wagon.



305663

**305663** BR Bogie Iron Ore Tippler Wagon Grey.



305664

**305664** BR Bogie Iron Ore Tippler Wagon Orange Grey.



305370

**305370** BR Standard Bogie G.U.V. 'Air Compressor' Livery.

**305371** BR Standard Bogie G.U.V. Marron Livery.



305371

**305356** CCT parcels wagon 'Rail Blue Livery'.



305356



305357

**305357** CCT parcels wagon 'Early BR Livery'.



305358

**305358** LMS GUV bogie parcels van, maroon.

**305360** LMS GUV bogie parcels van. BR Blue.



305360

**305355** CCT parcels wagon 'Tartan Arrow'.



305355



305649

**305649** Tank Wagon Procor 102 ton "Total".



305661

**305661** Procor 82 tonne bogie pallet van "UKF" fertilisers livery.

**305660** Procor 82 tonne bogie pallet van "Fisons" fertilisers livery.



305660

**305662** Procor 82 tonne bogie pallet van standard BR livery.



305662



305659

**305659** Procor 82 ton Bogie Pallet Van Neill & Brown.



305645

**305645** Procor 102 tonne GLW class A bogie tank wagon "Esso" livery.



305647

305647 Procor 102 tonne GLW class A bogie tank wagon "Phillips Petroleum" livery.



305646

305646 Procor 102 tonne GLW class A bogie tank wagon "Fina" livery.

305310 BR MK I Engineers Dept Coach.



305310

302892 'NCB' coal-hopper wagon with operating doors.



302892



305656

305656 BR Standard 57ft Bogie GUV "Express Parcels".



305657

305657 BR Standard 57ft Bogie GUV 1958 lined maroon livery.

309053 'Motorail' car carrier.



309053

309057 'Austin Rover' car carrier.



309057



309067

309067 'British Steel Corporation' foundry wagon.



309068

309068 Multiple wagon with 'GEC' transformer load.

305350 Bogie parcel van 'Siphon G' early BR livery.



305350

305351 GWR Bogie parcel van 'Siphon G'.



305351



305353

305353 Bogie parcel van 'Siphon G'. BR Livery.



309048

309048 35 ton breakdown crane and flat car.

# TRACK PROGRAMME

## NICKEL SILVER



Track, as in real life, is a vital part of a miniature layout. Use of the best quality track can eliminate many of the niggling problems associated with transmission of low voltage current through rails.

LIMA are therefore very pleased to announce the introduction of high quality NICKEL SILVER track which will meet the demands of the most exacting modeller as well as being ideal for the construction of large and permanent layouts.

Nickel Silver is a specially made alloy consisting of 64% copper, 24% zinc and 12% nickel. Amongst its many advantages over the more conventional mild steel tracks are:

- Will not rust, making the track ideal for damp conditions and even permanent outdoor garden layouts.

- The alloy used has a very high electrical conductivity allowing an even distribution of current along the whole circuit. Drops in current at the distant points of layout furthest from the power source are thereby avoided.

- Wheel wear on locomotives is much reduced. The wide range of tracks, points and crossings in Nickel Silver is suitable for any type of circuit, even the most complex.

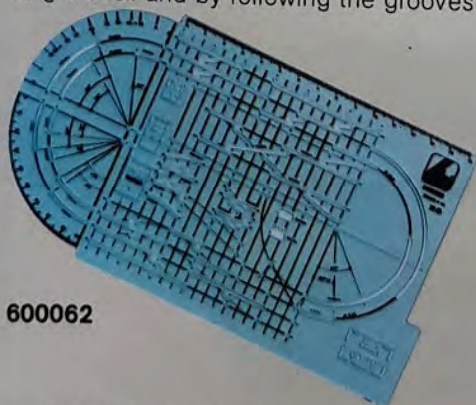
With the assistance of the 90 cm long flexible track (Ref. 403042) uneven stretches of layouts can be attempted and it is not difficult to construct curves at a radius to suit your own requirements.

### Self-Isolating Point

With the new Lima Self-Isolating Point, it is easy to isolate sidings and sections of track on a layout. The current is switched to the straight or curved section of the point by means of the movement of the inner rails.

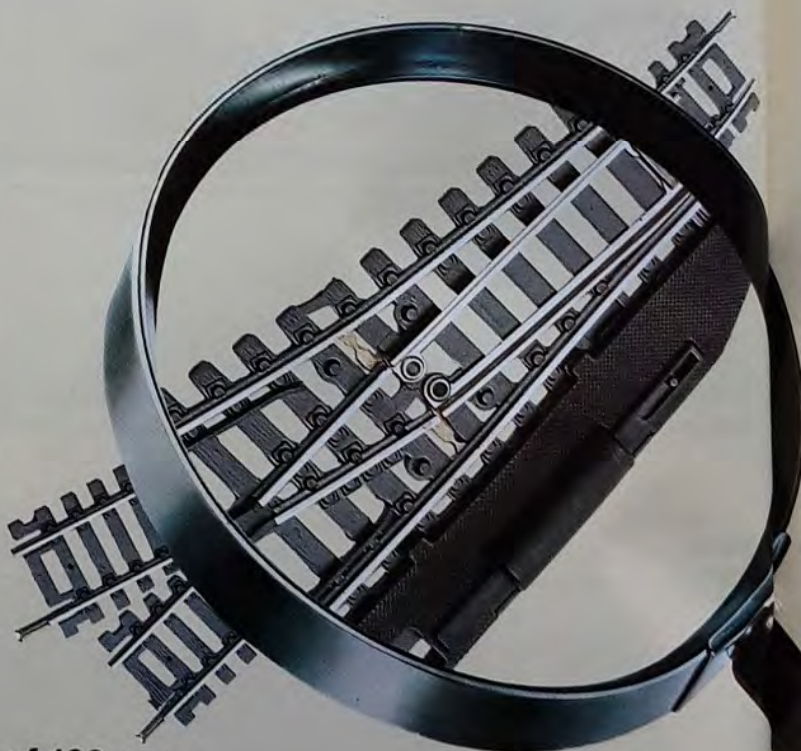


Lima has manufactured a special track planning stencil and by following the grooves with

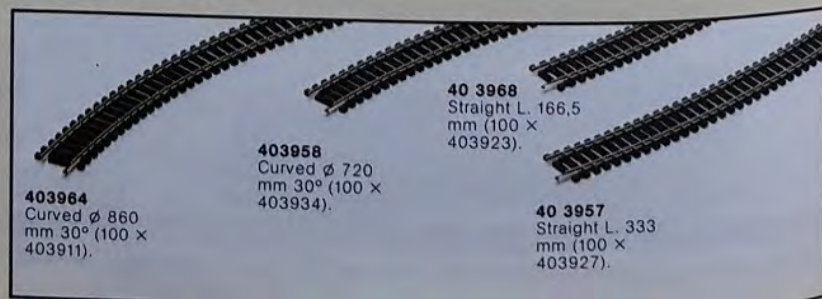


600062

and a pencil, you can easily plan all aspects of your intended railway track, straight and curved tracks, crossing and points.



### Box of 100 pcs



	0	1/3 55,5	2/3 111	1 166,5	1+1/3 222	1+2/3 277,5	2 333
STRAIGHT		40 3923 Straight L. 166,5 mm - Box 12 pcs.					
		40 3923C Straight with power clip L. 166,5 mm - Box 12 pcs.					
		40 3921 Straight L. 111 mm - Box 12 pcs.					
		40 3925 Buffer stop L. 111 mm - Box 6 pcs.					
		40 3924 Straight w/power clip L. 55,5 mm - Box 12 pcs.					
		40 3924R Straight isolating L. 55,5 mm - Box 12 pcs.					
		40 3922 Straight L. 55,5 mm - Box 12 pcs.					
		40 3927 Straight L. 333 mm - Box 12 pcs.					
1 <sup>st</sup> RADIUS mm 360		40 3934 Curved $\phi$ 720 mm 30° - Box 12 pcs.					
		40 3931 Curved $\phi$ 720 mm 18° - Box 12 pcs.					
		40 3932 Curved $\phi$ 720 mm 9° - Box 12 pcs.					
		40 3929 Curved $\phi$ 720 mm 45° - Box 12 pcs.					
		40 3929C Curved $\phi$ 720 mm 45° w/ power clip - Box 12 pcs.					
			40 3912 Curved $\phi$ 862 mm 22° - Box 12 pcs.				
2 <sup>nd</sup> RADIUS mm 431		40 3911 Curved $\phi$ 862 mm 30° - Box 12 pcs.					
		40 3917 Curved $\phi$ 862 mm 45° - Box 12 pcs.					

60 0002 Railer.

	0	1/3 55,5	2/3 111	1 166,5	1+1/3 222	1+2/3 277,5	2 333
CROSSINGS		40 3941 Diamond crossing 36° - Box 2 pcs.					
		40 3938 Right diamond crossing 18° - Box 2 pcs.					
		40 3939 Left diamond crossing 18° - Box 2 pcs.					
		40 3920 Straight L. 222 mm - Box 12 pcs.					
		40 3930 Curved $\phi$ 720 mm 36° - Box 12 pcs.					
			40 3950 Right-hand point manual - Box 2 pcs. 40 3950E Right-hand point electric - Box 2 pcs.				
POINTS		40 3935 Right compensating - Box 12 pcs.					
		40 3951 Left-hand point manual - Box 2 pcs. 40 3951E Left-hand point electric - Box 2 pcs.					
		40 3936 Left compensating - Box 12 pcs.					
			40 3933 Rerailer $\phi$ 720 mm 36° - Box 12 pcs.				
SPECIAL		40 3928 Uncoupler L. 222 mm - Box 6 pcs.					
		40 3926 Extendable L. 111 to 166,5 mm - Box 6 pcs.					
		40 3942 Flessible L. 900 mm - Box 12 pcs.					

# ACCESSORIES



With a few Lima accessories you can transform your layout into an action-packed railway. Each is an exact miniature, operating perfectly in the same way as the original. Everyone likes to think of themselves as an engineer landscaper, or architect when building a model railway. Lima's great range of accessories help you become all of these, easily and with a modest outlay.

**600941**

Automatic car unloading base. Complete with motorail car transporter and four cars. Ramp adjusts to both levels of transporter as your passengers drive on and off.



**600822**  
Ford Capri (two car pack).



**600823**  
Fiat 131 (two car pack).

**600803**  
Builders merchant lorry.



**600804**  
Shell petrol tanker.



**600801**  
Atlantic container lorry.



**600807**  
Dunlop container lorry.



**600805**  
Seatrain container lorry.



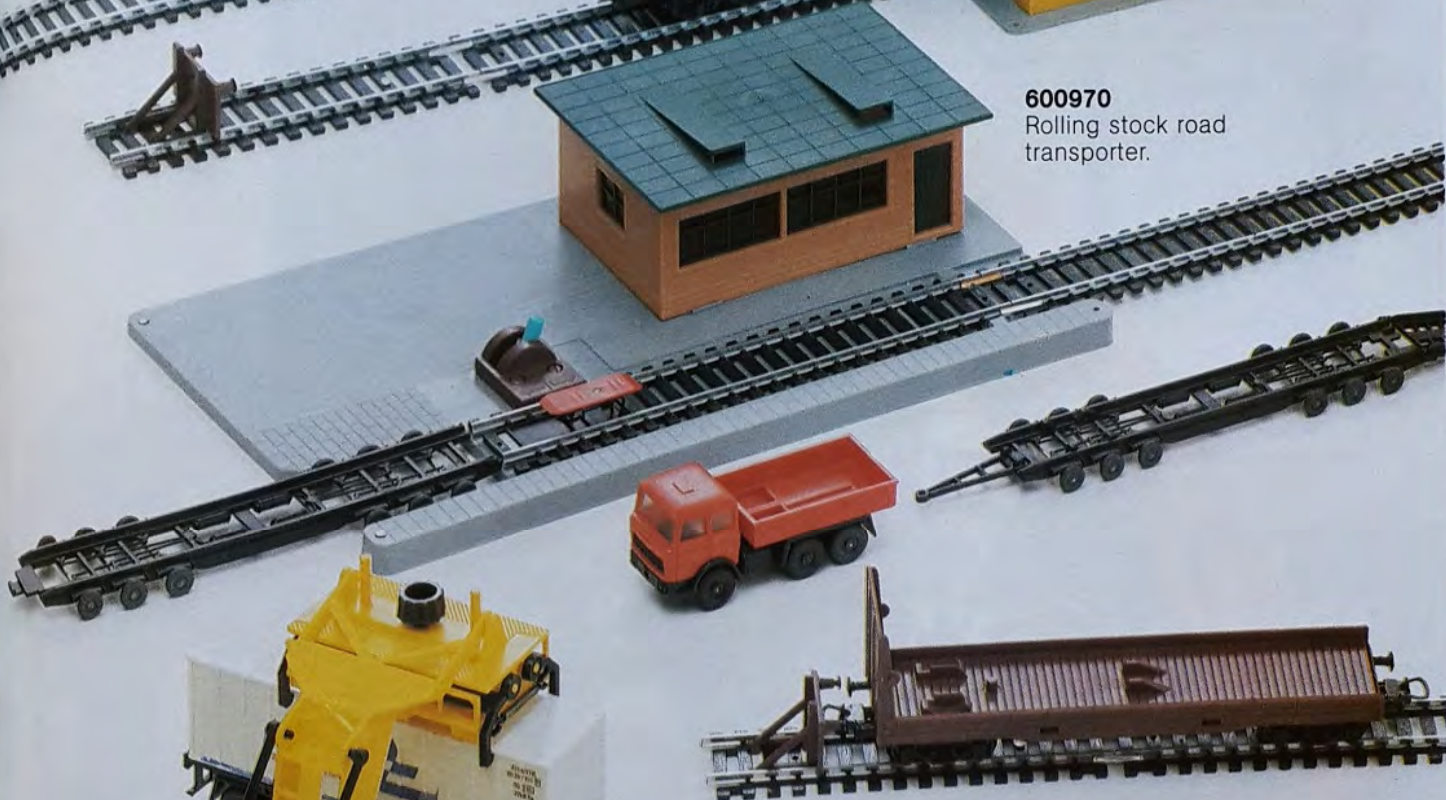
**600830-600834**  
Scale containers. For trackside stacking or for transportation. Four assorted in each pack.



600960  
Freightliner terminal. Your fully-equipped terminal makes light work of the flow of container traffic from road to rail. With rail transporter and two container lorries.



**600970**  
Rolling stock road transporter.



**600990**  
Container unloading crane. Easy transfer from road to rail on any part of your layout. Also for stacking containers at the depot.



**600951**  
Automatic coach wash. Automatically operated as coach movement activates brushes.

600025

Double signal on gantry with level crossing. The train stops when the red signal is showing the barriers lower automatically when the train is passing.



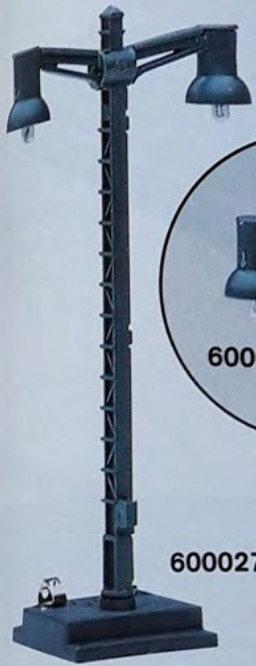
602892

Fully operational coal depot. double action transfer of coal from NCB hopper wagon to storage silo and back to road. Wagon and two lorries included.



# SIGNALS

Signalling is a basic necessity for very layout, in terms of realism and scale operation, allowing you to run your trains correctly and safely.



600027

600026

600026  
Lamp with single arm.  
600027  
Lamp with two arms.



600022

600023

600028

600029

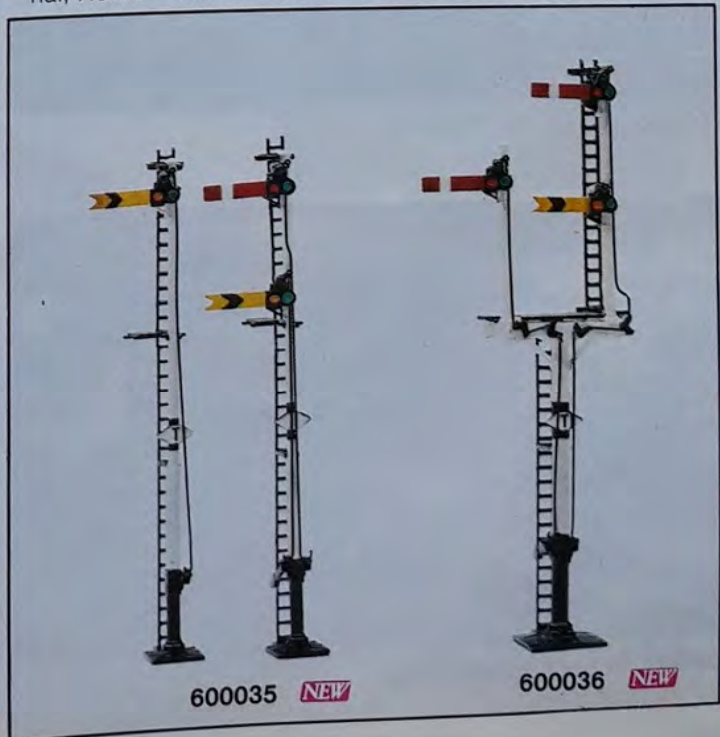
600030

600022  
Red and green light signal with control switch 3067.  
600023  
4-light signal with control.  
600028  
Single arm 2-position signal.

600029  
2-light signal with control switch 3067.  
600030  
Warning signal with control switch 3067.

600035  
LMS/BR Upper Quadrant Signal, Home + Home/Distant.

600036  
LMS/BR Upper Quadrant Junction + Signal.

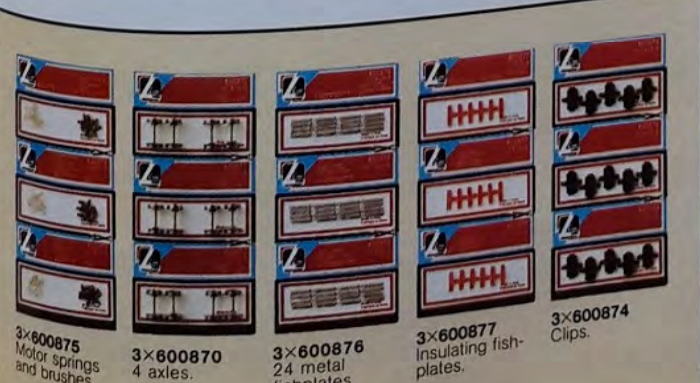


600035 **NEW**

600036 **NEW**



600927  
Lighting Set contents: 3x5 m. copper wire in various colours - 1x5 m. two core flex - 5 lighting sockets with bulbs (18 volts) - 2 «on-off» switches - 12 telegraph poles - 2 street lamps (in kit form).



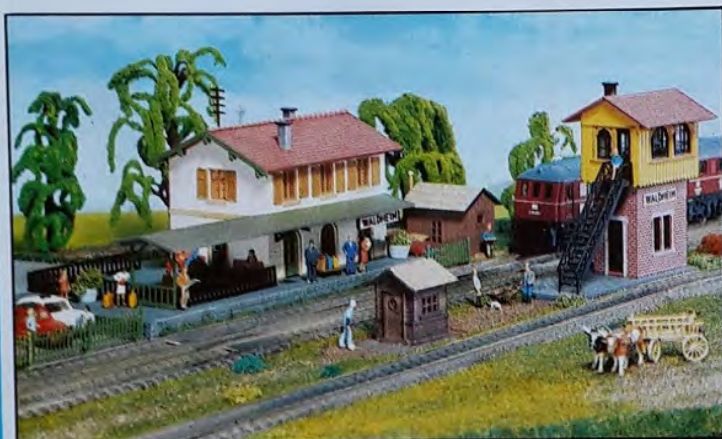
3x600875  
Motor springs and brushes.  
3x600870  
4 axles.  
3x600876  
24 metal fishplates.  
3x600877  
Insulating fishplates.  
3x600874  
Clips.

# 00 LANDSCAPING

ACCESSORIES

The scenery surrounding the model railway will become more and more realistic if you follow the contours of the countryside. With a few Lima accessories you can transform your layout into an action-packed railway.

Scenic accessories are not included in this set.



600931 Four piece station set.



600925 Seven piece bridge set.



600935 Five piece village set.



600933 Village Set.

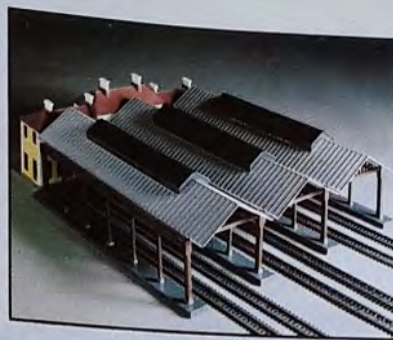


600932 Five piece station set.



600026 Station area set.

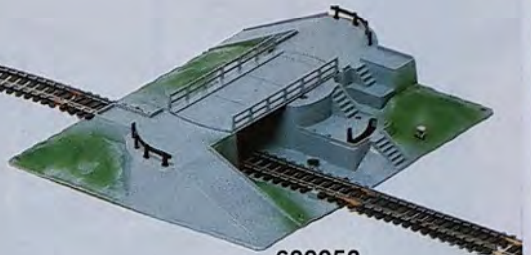
Example of use of the Main Line Station with 1 section 600033 and 1 section 600031.



Example of use of the Terminal Station with 1 section 600033 and 3 sections 600031.



**602080**  
Tunnel



**600052**  
Mechanical Swing Bridge with autom. Train Stop



**600031**  
Main station roof



**600955**  
Engine Shed

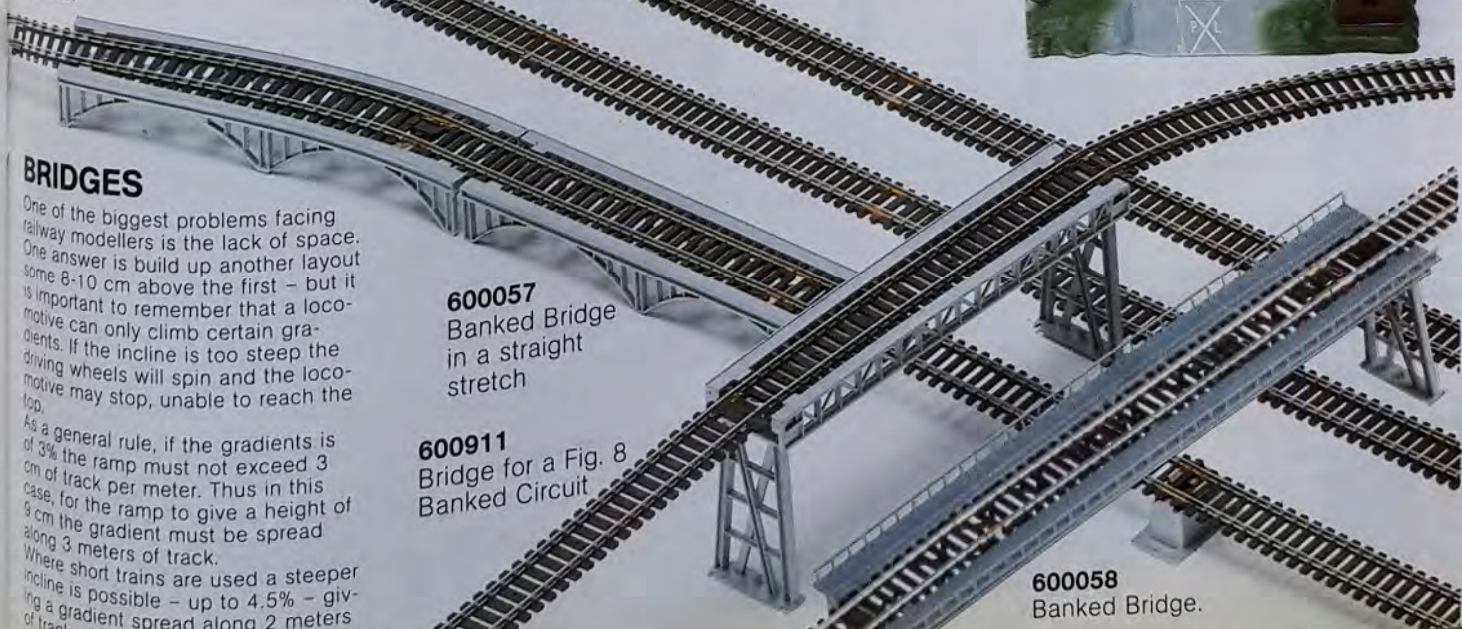


**600033**  
Main station

**600021**  
Automatic level crossing



**600055**  
Banked Bridge in a curved stretch



**600057**  
Banked Bridge in a straight stretch

**600911**  
Bridge for a Fig. 8 Banked Circuit

**600058**  
Banked Bridge.

## BRIDGES

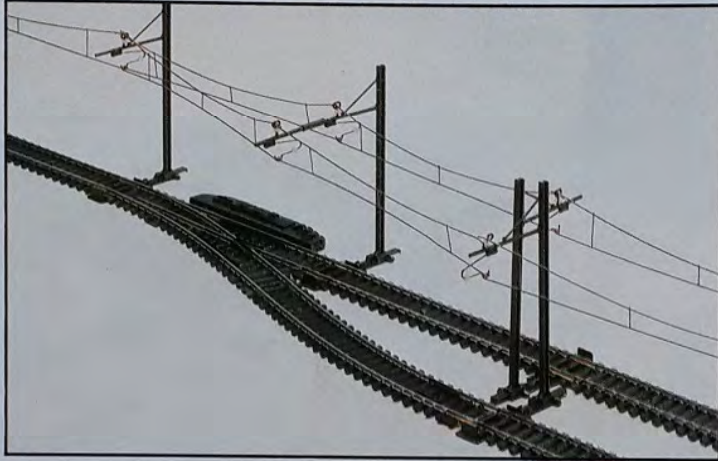
One of the biggest problems facing railway modellers is the lack of space. One answer is build up another layout some 8-10 cm above the first - but it is important to remember that a locomotive can only climb certain gradients. If the incline is too steep the driving wheels will spin and the locomotive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

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

Where short trains are used a steeper incline is possible - up to 4.5% - giving a gradient spread along 2 meters of track where a height of 9 cm is desired.

# CATENARY

## CATENARY ELECTRIFICATION AND INSTALLATION



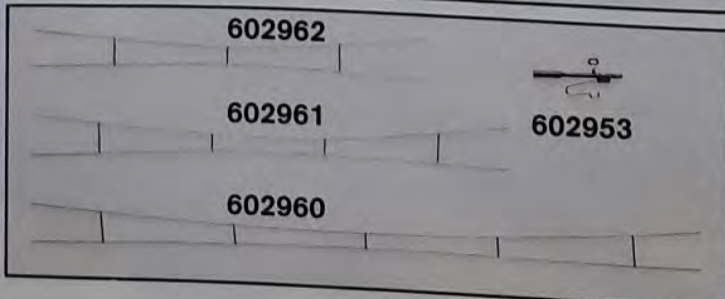
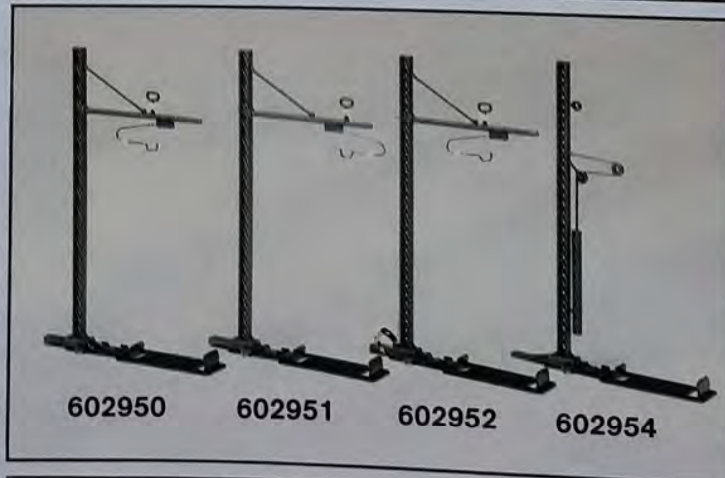
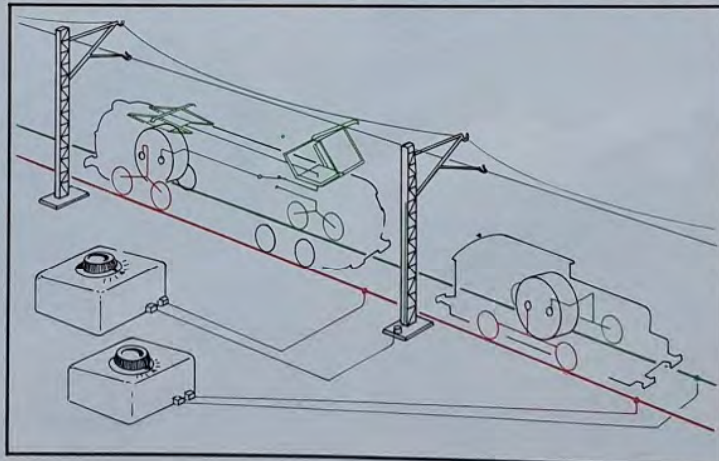
Having chosen the format of your layout and after establishing the positions of the main components you may add an exciting new dimension for further realism of your railway system.

As with real electric locomotives, electric current is collected from overhead wires fed from catenary supported on a series of insulated posts positioned along side the track, the power passes from the overhead wires to the motor of the locomotive via the pantograph.

The other contact is from one of the two rails and completes the circuit to the motor through the locomotive wheels.

Whilst simulating modern railway practice there is an additional advantage of being able to have two locomotives running on the same line independently operated, one collecting its current from a rail whilst the other loco will collect its current from the overhead wires..

All of the powered wheels of the two locomotives must be on a common feed from the two transformers (see figure



1). The direction and the speed of the two locomotives may be controlled independently.

The LIMA catenary system is fully compatible with the LIMA track system.

Also available is a variable length support bracket (602953)e for positioning alongside points.

Examples of fitting overhead catenary wires on straights and points are illustrated.

Note how the various posts are always located on to the same side of track, alternating long and short support brackets, so that, as with modern railway practice the overhead wires follow a zigzag pattern, which allows a better contact between the overhead wire and the pantograph, and evens wear.

LIMA produce 4 different types of catenary support post:

- 602950** - with short support brackets
- 602951** - with long support brackets
- 602952** - with electrical terminals
- 602954** - main catenary support.

## ELECTRIFICATION OF YOUR LOCOMOTIVE

If you wish to convert your LIMA electric locomotives to operate with overhead catenary in an easy way, you may purchase the special LIMA conversion kit which includes an adaptor, electric cable, pantograph and a detailed instruction sheet.

There are two types of pantograph which are adaptable for different locomotives: the traditional type (article 602975) and the oscillating single pantograph (article 602976).



602975



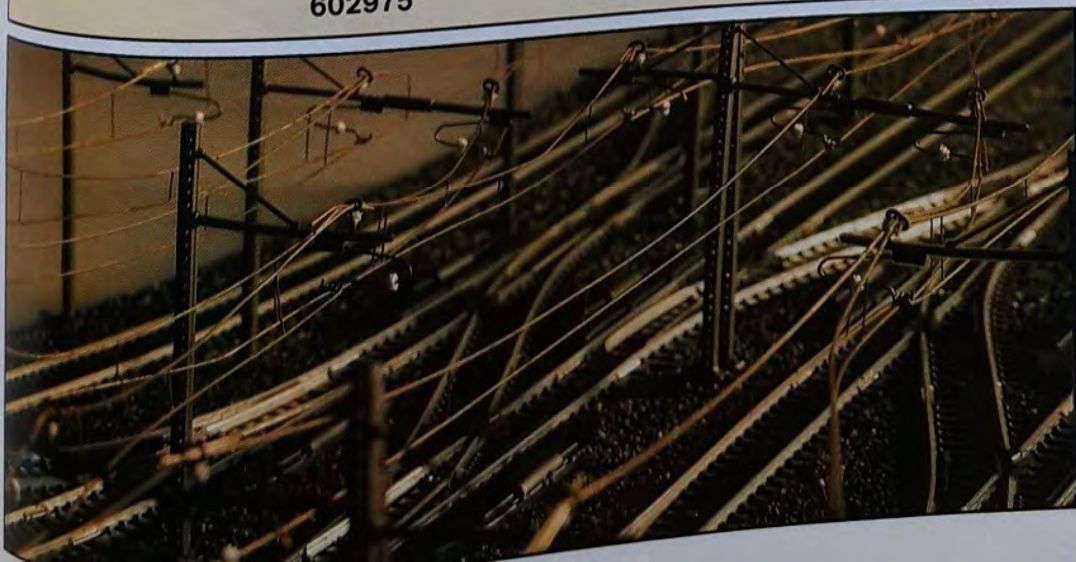
602976



602976



602975



# LOCOMOTIVES

# N



220124

**220124**  
2nd Class Central Coach for the TGV train.



220125

**220125**  
Central coach with bar for the TGV train.



220120G

220121

220122

320307

320307

22017G

220101

220102

220100G

220112

220110G

**NEW** 163902G

## LUFTHANSA AIRPORT EXPRESS

**220110G** German electric locomotive for the "Lufthansa" train. - **220111** German 1st class coach for the "Lufthansa" train. - **220112** German dining car for the "Lufthansa" train. - **220113** German dummy locomotive for the "Lufthansa" train.



Buying Lima means you are buying high technology and every Lima N gauge locomotive features our new high performance micro-motor. The articulated gearing with its twin contact between the worm and drive gears guarantees strength, durability and reliability. And another great improvement is a more realistic acceleration through to a true scale maximum speed. Suppressors are also fitted to eliminate all radio and television interference. The complete range of Lima N gauge models offers every possibility for building an exciting miniature railway system of your own. Lima N Gauge is appreciated by modellers the world over for its detailed accuracy and completely safe and trouble-free performance.



**NEW 163901G**

**T.G.V.**

**220120G** Electric locomotive for the T.G.V. train. - **220121** 1st class coach for the T.G.V. train. - **220122** 2nd class dining coach for the T.G.V. train. - **220123** Dummy locomotive for the T.G.V. train.

**163904G**

**INTERCITY**

**220217G** BR Class 55 'Delic' Co-Co Diesel Locomotive. No. 9006 "The Fife and Forfar Yeomanry". - **320306** BR Composite Coach. - **320307** BR 2nd Class Brake Coach. - **320313** BR Buffet Car.



**NEW 163903G**

**INTER-CITY ET 403/404**

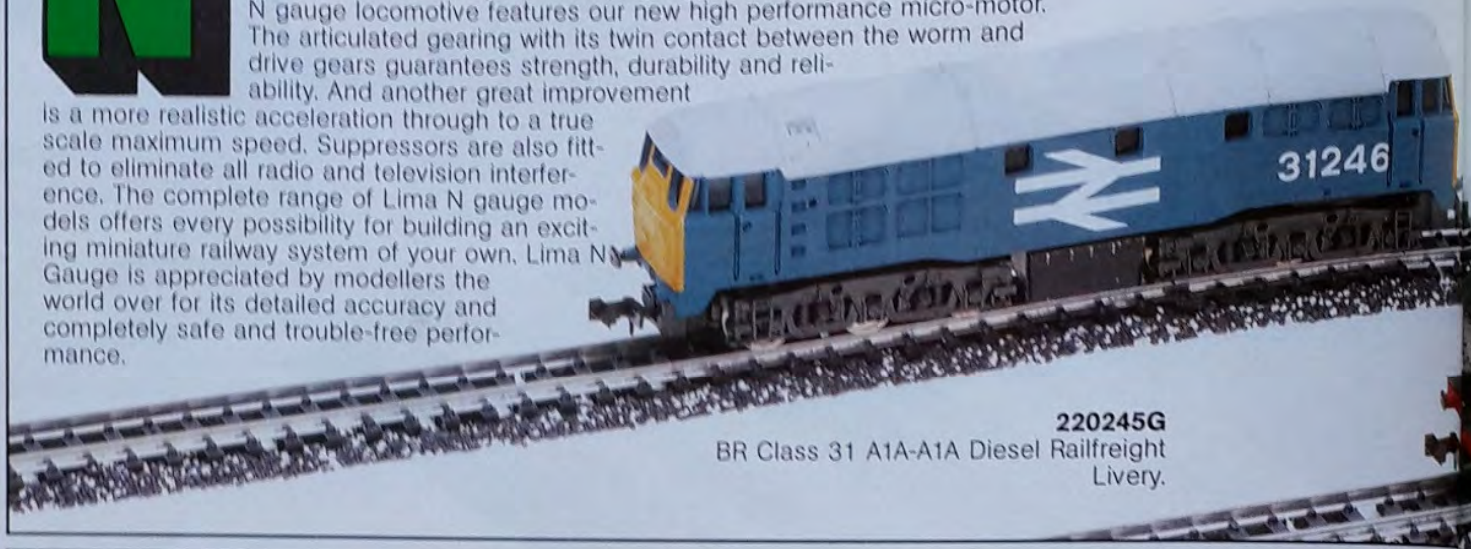
**220100G** Electric locomotive BR 403 Inter-city D.B. - **220101** 1st class coach BR 403 Inter-city D.B. - **220102** Dining car BR 403 Inter-city D.B. - **220103** Dummy locomotive BR 403 Inter-city D.B.



# N LOCOMOTIVES

Buying Lima means you are buying high technology and every Lima N gauge locomotive features our new high performance micro-motor. The articulated gearing with its twin contact between the worm and drive gears guarantees strength, durability and reliability. And another great improvement

is a more realistic acceleration through to a true scale maximum speed. Suppressors are also fitted to eliminate all radio and television interference. The complete range of Lima N gauge models offers every possibility for building an exciting miniature railway system of your own. Lima N Gauge is appreciated by modellers the world over for its detailed accuracy and completely safe and trouble-free performance.



**220245G**  
BR Class 31 A1A-A1A Diesel Railfreight Livery.



**220258G**

**220258G** 0-6-0 Class 4F Tender Locomotive. Unlined Black Livery.



**220211G**

**220211G** 0-4-0 Diesel Shunter. BR Livery.

**220209G** Class 31 A1A-A1A Diesel Locomotive. BR Blue Livery.



**220209G**

**220214G** Class 31 A1A-A1A Diesel Locomotive. early BR Livery.



**220214G**



**220217G**

**220217G** BR Class 55 'Deltic' Co-Co Diesel Locomotive. No. 9006 "The Fife and Forfar Yeomanry".



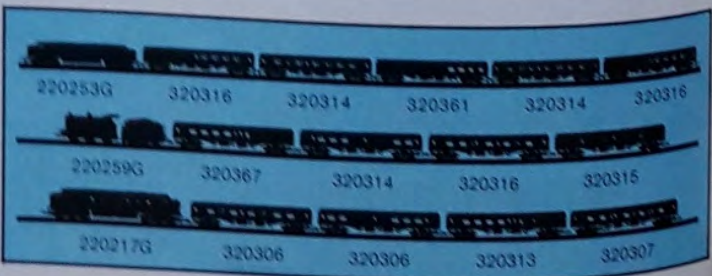
**220253G**

**220253G** BR Class 55 'Deltic' Co-Co Diesel Locomotive No. 9003 "Meld". Early Livery.



**220205G**

**220205G** BR Class 81 Electric Locomotive (Standard rail pick-up).



220253G 320316 320314 320361 320314 320316

220259G 320367 320314 320316 320315

220217G 320306 320306 320313 320307

**220249G**  
Electric Locomotive Rail-  
freight Livery.

**220259G**  
0-6-0 Class 4F Tender  
Locomotive. LMS Ma-  
roon Livery.  
**220210G** 0-4-0 Diesel  
Shunter. Early BR Liv-  
ery.



**N GAUGE  
SETS**

**121106T High Speed Passenger Set**

A realistically priced 'N' Gauge Train Set for those homes where space is at a premium. The set reproduces in miniature form a Class 51 B.R. A1A-A1A Diesel Locomotive. In B.R. green livery, the locomotive comes with three GWR coaches and mains power controller, to make the perfect gift for those who appreciate miniature engineering.

**121107T High Speed Freight Set**

An ideal start for a large layout on mini scale. The High Speed freight Set comes complete, ready-to-run, with mains power controller an five miniature wagons.

**High Speed Passenger Set**

121106T



Set contents:



**High Speed Freight Set**

121107T



Set contents:



# N PASSENGER COACHES



**320306** BR Composite Coach.



**320307** BR 2nd Class Brake Coach.

**320313** BR Buffet Car.



**320362** BR 2nd Class Brake Coach. WGWR Livery.



**320366** BR Standard Gangwayed Brake Van. GWR Livery.



**320363** BR Restaurant Car. GWR Livery.



320316 BR Buffet Car. LMS Maroon Livery.



320367 BR Standard Gangwayed Brake Van. LMS Maroon Livery.

320314 BR Composite Coach. LMS Maroon Livery.



320358 BR 2nd Class Brake Coach. early Crimson & Cream Livery.



320357 BR Composite Coach. early Crimson & Cream Livery.



320359 BR Buffet Car. Early Crimson & Cream Livery.

320352 BR Composite Coach. SR Livery.



320354 BR Buffet Car. SR Livery.



320353 BR 2nd Class Brake Coach. SR Livery.



# FREIGHT WAGONS



**320862** GWR bogie parcel van 'Siphon G'.

**320863** GWR bogie parcel van 'Siphon G'. Paalthorpes Sa



**320864** Bogie parcel van 'Siphon G'. BR Livery.



**320867** Bogie parcel van Siphon G 'Enparts'.

**320720** 'London brick' bogie wagon.



**320865** Bogie parcel van Siphon G Early BR Livery.



**320484** Bogie Freightliner transporter.



**320795** Bogie container transporter.

**320622** 'Amoco' bogie tank wagon.



**320792** 'British Leyland' car carrier.



**320868** C.C.T. parcels wagon "Tartan Arrow".



**320869** C.C.T. parcels wagon. 'Rail Blue Livery'.



**320870** C.C.T. parcels wagon. 'Early BR Livery'.



**320625** 'Milk' bogie tank wagon.

**320410** GWR Brake Van. Long wheelbase version.



**320611**

**320611** 'Typhoo Tea' box van.



**320614**

**320614** 'St Ivel Dairy Products' box van.



**320615**

**320615** GWR box van.

**320618** 20 ton box van 'Lucas Batteries'.



**320618**

**320619** 20 ton box van. 'Birds Custard Powder'.



**320619**

**320739** 'Castrol GTX' 20 ton box van.



**320739**



**320602**

**320602** 'Black Park' 7 plank wagon.



**320604**

**320604** 'Barrow Barnsley' 7 plank wagon.



**320607**

**320607** 'J.K. Harrison' 7 plank wagon.

**320608** 'P.W. Spencer' 7 plank wagon.



**320608**

**320609** 'Pinxton Collieries' 7 plank wagon.



**320609**

**320610** 'Buxton Gas Dept.' 7 plank wagon.



**320610**



**320616**

**320616** GWR



**320617**

**320617** 2 Axle Horse Box LMS Livery.



**320405**

**320405** BR 20 ton brake van.

# ACCESSORIES



**620707**

Freightliner terminal. Your fully-equipped terminal makes light work of the flow of container traffic from road to rail. With rail transporter and two containers lorries.



**620708**

Seatrain - Dunlop container lorries.



**620722**

Level crossing.



# LANDSCAPING

Scenic accessories are not included in this set.



**620727** Village Set.



**620763** Station set.



**620762** Station area set.



# TRACK PROGRAMME

# STAINLESS STEEL

AVAILABLE IN  
BLISTER OR  
BOXED



GAUGE = 600063



3x620717  
Insulating fish plates.



3x620703  
4 axles.

0	1/4 31,12	2/4 62,25	3/4 93,38	1 124,5	1+1/4 155,60	1+2/4 186,70	1+3/4 217,85	2 249

Straight L. 124 mm.  
42 0580 Blister 6 pcs.  
42 0561 Box 12 pcs.

Straight L. 62,25 mm.  
42 0581 Blister 6 pcs.  
42 0562 Box 12 pcs.

Straight w/power clip L. 62,25 mm.  
42 0594 Blister 2 pcs.  
42 0564 Box 12 pcs.

Straight isolating L. 62,25 mm.  
42 0595 Blister 2 pcs.  
42 0564R Box 12 pcs.

Buffer stop L. 62,25 mm.  
42 0596 Blister 2 pcs.  
42 0565 Box 6 pcs.

Straight L. 31,12 mm.  
42 0597 Blister 6 pcs.  
42 0563 Box 12 pcs.

Straight L. 249 mm.  
42 0598 Blister 6 pcs.  
42 0560 Box 12 pcs.

Curved  $\phi$  406 mm 45°.  
42 0590 Blister 6 pcs.  
42 0571 Box 12 pcs.

Curved  $\phi$  406 mm 45° w/power clip.  
42 0571C Box 12 pcs.

Curved  $\phi$  406 mm 15°.  
42 0592 Blister 6 pcs.  
42 0572 Box 12 pcs.

Curved  $\phi$  472 mm 30°.  
42 0591 Blister 6 pcs.  
42 0551 Box 12 pcs.

Curved  $\phi$  472 mm 15°.  
42 0593 Blister 6 pcs.  
42 0552 Box 12 pcs.

Curved  $\phi$  538 mm 45°.  
42 0599 Blister 6 pcs.  
42 0575 Box 12 pcs.

Curved  $\phi$  538 mm 45° w/power clip.  
42 0575C Box 12 pcs.

Left diamond crossing 15°.  
42 0544 Blister 1 pcs.  
42 0524 Box 2 pcs.

Right diamond crossing 15°.  
42 0541 Blister 1 pcs.  
42 0521 Doos 2 pcs.

Diamond crossing 30°.  
42 0542 Blister 1 pcs.  
42 0522 Box 2 pcs.

Left-hand point manual.  
42 0546 Blister 1 pcs.+1 pcs. compensat. track 42 0553.  
42 0526 Box 2 pcs.+2 pcs. compensat. track 42 0553.

Left-hand point electric.  
42 0546E Blister 1 pcs.+1 pcs. compensat. track 42 0553.  
42 0526E Box 2 pcs.+2 pcs. compensat. track 42 0553.

Right-hand point manual.  
42 0545 Blister 1 pcs.+1 pcs. compensat. track 42 0553.  
42 0525 Box 2 pcs.+2 pcs. compensat. track 42 0553.

Right-hand point electric.  
42 0545E Blister 1 pcs.+1 pcs. compensat. track 42 0553.  
42 0525E Box 2 pcs.+2 pcs. compensat. track 42 0553.

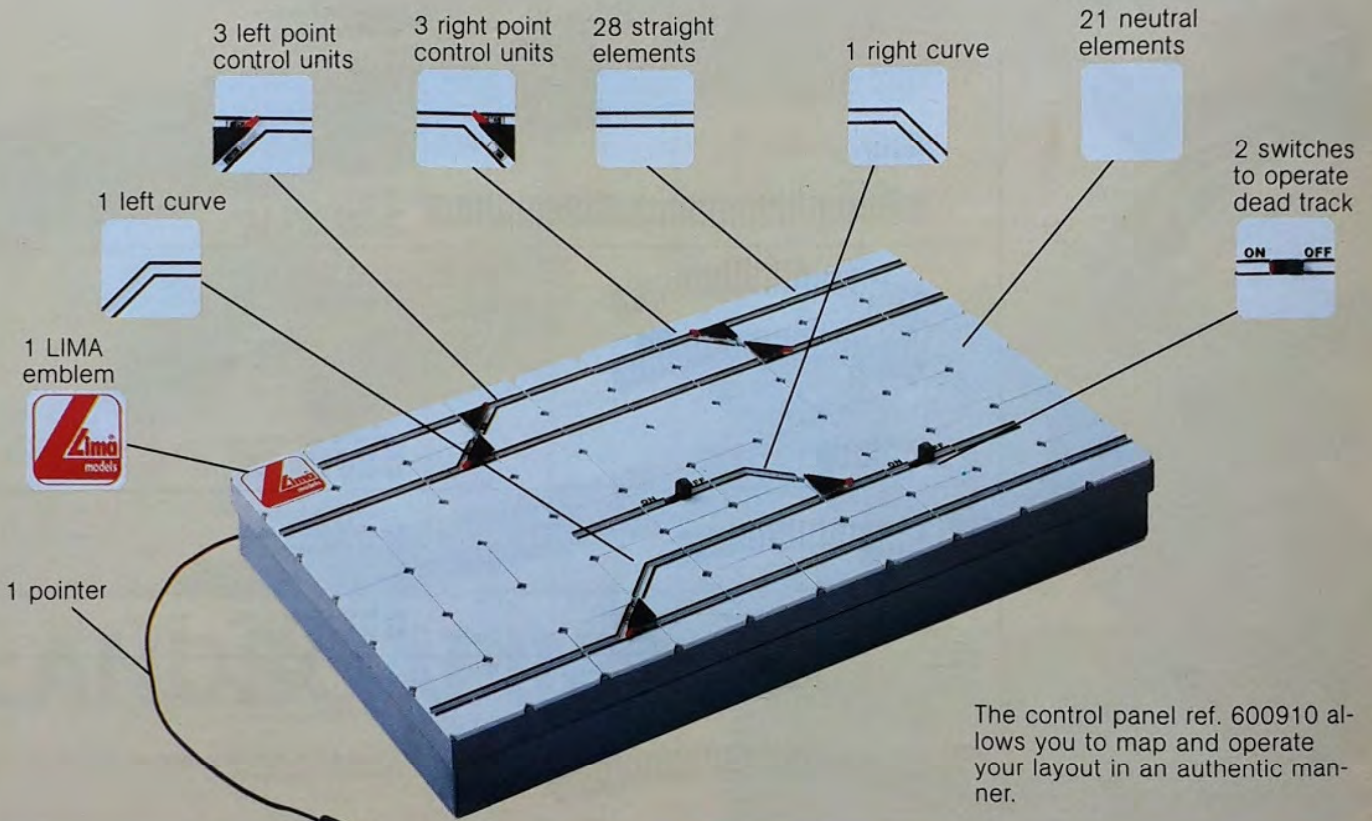
Compensating 42 0553.

Flexible L. 736 mm.  
42 0511 Doos 12 pcs.

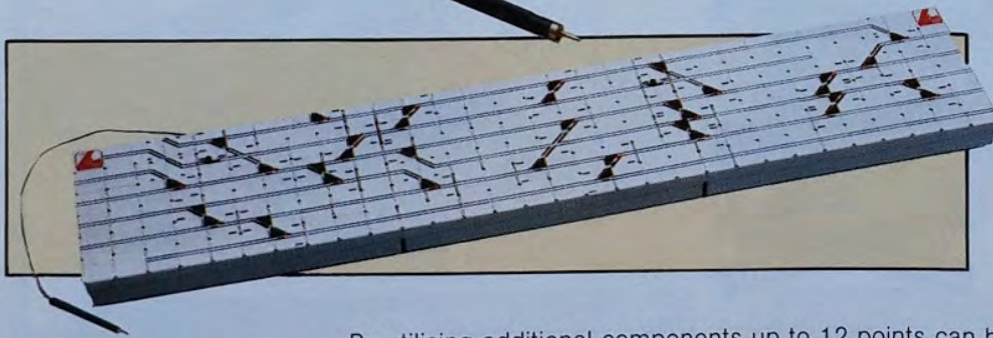
# CONTROL PANEL

Lima have developed a new multiple-point control panel for fast automatic train routing, designed on the lines of the system used on real railways. The control panel has interchangeable sections for you to map the layout of your tracks, and by using a special electronic pointer, trains can be directed automatically along chosen sections.

**600910**  
Kit control panel for railway circuits with LED light.  
composed of:



The control panel ref. 600910 allows you to map and operate your layout in an authentic manner.



**600905**  
Triple cable

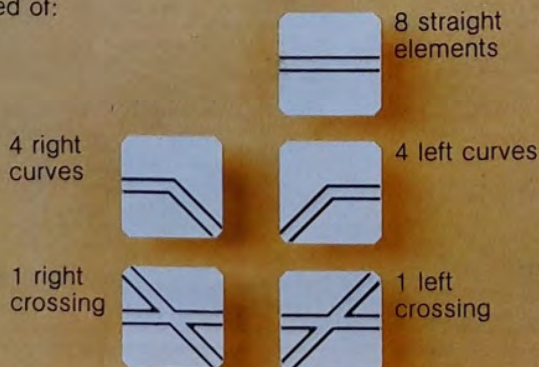


**600904**  
Twin cable

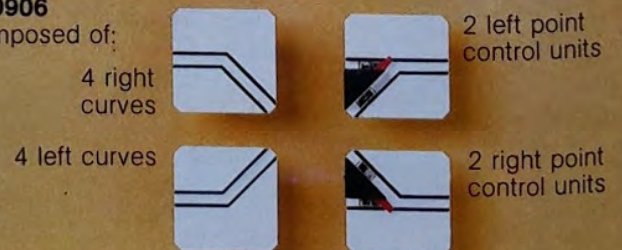


By utilising additional components up to 12 points can be operated.

**600908**  
composed of:



**600906**  
composed of:



**600907**  
composed of:



# POWER CONTROLLERS

The transformer is the heart of your layout. Current from the mains is converted into the appropriate voltage (AC or DC) necessary to power the various locomotives and accessories that make up your railway system. Lima produce a range of power controllers, with a wide range of uses. Each one is protected from any short-circuits or overload making them completely safe to use.



502052

**502052** Transformer. Power 3.6VA! Input 220V AC. Output 0-12V DC. Designed to operate one train or DC accessories.



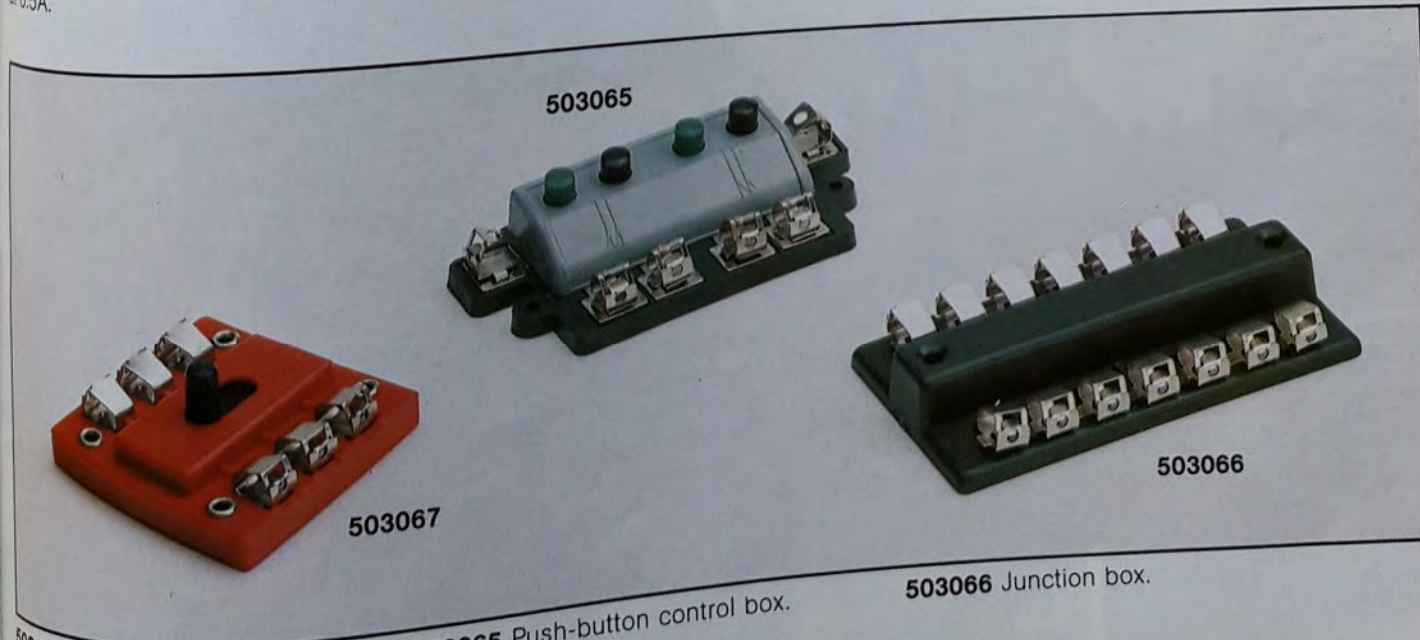
502053

**502053** Transformer for two trains, points and electrical accessories. Input 220V. Output 0-12V at 0.7VA DC. AC output 14V at 0.5A.



502055

**502055** Transformer for electromagnetic devices. Input 220V 59-60 Hz AC. Output 10V AC. Power 7VA.



503067

503065

503066

**503067** Switch Shunter.

**503065** Push-button control box.

**503066** Junction box.

# HOW TO BUILD A LAYOUT

## MAKING YOUR CHOICE OF SCALE

Within the different scales of model railways in the U.K. '00' is the widest and most popular gauge modelled. LIMA ma-



'00' scale Actual size (16,5 mm between rails).



'N' gauge Actual size (9 mm between rails).

nufacture a complete range of railway items and accessories in this scale.

'N' Gauge is also produced in a large range and is particularly suitable where only a limited space is available.

Today, more than in the past, space is the deciding factor when choosing a scale.

If you decide to have a complete layout, with station, freight yard, engine sheds and a multitude of track, in a limited space, 'N' Gauge is the wisest choice in which to model.

The '00 scale is preferred when you have more space at your disposal, and you will be able to create a layout utilizing the versatility of the LIMA system with maximum realism.

## DETAILED PLANNING OF YOUR LAYOUT

Having chosen your scale, do not be in a hurry to complete your layout.

Even if the work is not com-

pleted a good layout requires first of all careful planning and knowledge of the components to be used.

Before you fix the track, ensure that all the components are exactly positioned.

The following pages give examples of circuits of varying composition and complexity.

## THE MATERIALS AND TOOLS YOU WILL NEED

To build your layout you will need some hand tools, a small saw, two or three files for wood and metal, hammer, drill, pliers, screwdrivers and brushes.

Other items you will need are: glue, paper and cardboard, chicken wire (or jute canvas), chalk, coloured flock powder, sand, track pins and paints.

The basis of the layout is normally a rectangular wooden panel about 2 cm thick and of a minimum size 140x180 cm. If you wish to construct a wider and more complex circuit, you may add more panels according to space available.

## BUILDING YOUR LAYOUT

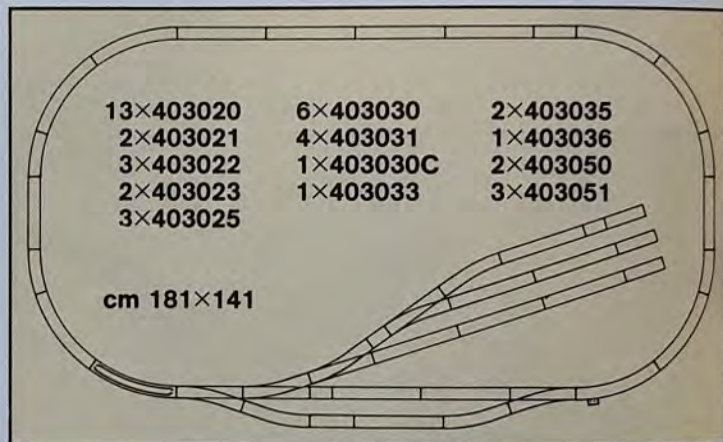
If building a layout for the first time, we advise that in a real railway the natural surroundings have to be taken into

consideration, in a miniature layout, the track circuit is first positioned and the landscape is created around it.

We suggest therefore, you determine the ground level before fixing the track and that you ensure the dimensions between the landscape and the railway system are correctly proportioned.

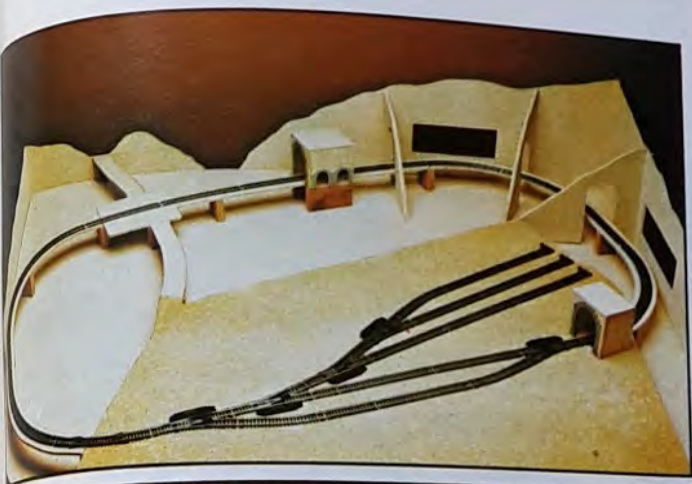
It is important to ensure:

- the levels of hills, river or lake bed, valley etc. are realistic
- the gradient: slope does not exceed more than 3,5% for each meter run
- to harmonize the residential



# LANDSCAPING

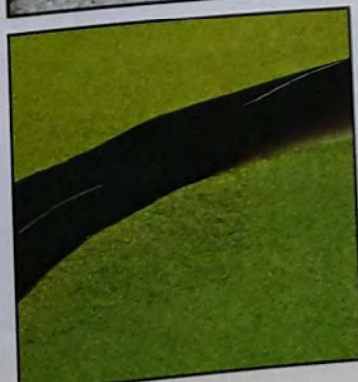
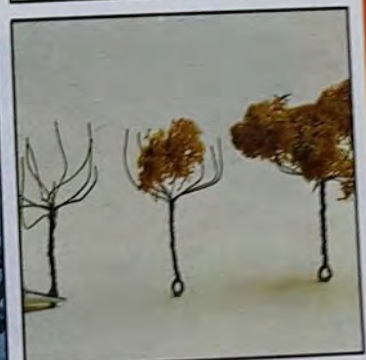
HOW TO BUILD A LAYOUT. N 00



The scenery surrounding the model railway will become more and more realistic if you follow the contours of the countryside. In general we suggest: **track ballast**, spread a liquid glue at the side and between the sleepers and sprinkle sand or coloured flock powder over the tracks. Once the glue is dry remove the surplus with a brush; **Hills and mountains**, use close mesh chicken wire, moulding it into the desired contours and the cover with alternate layers of paper and liquid glue. Mould undulations, and valleys, and ground with a broad knife. **Most important**, at the rear of banked parts, leave an opening to enable access to

stretches of track and ensure the structure does not obstruct the passage of trains on the circuit; **Trees, shrubs, hedges**, make on a frame-work of twisted wire, with pieces of lichen stuck to the strands. **Roads**, can be made of special stiff paper cut in strips or by gluing down very fine sandpaper; **Lawns and fields**, stick a simulated grass mat or green-dyed sawdust over a glue base; **Fences**, bend some metal or cotton wires around some wooden matches or tooth-picks; **Rivers, streams and lakes**, try a piece of patterned glass (to simulate waves) paint underneath in different shades of blue.

areas, industrial zones and country areas, and to correctly locate stations, houses and other buildings.



# TRACK INSTALLATION

## VERSATILITY AND ALIGNMENT OF THE LIMA TRACK SYSTEM

The track, points and crossings manufactured by LIMA allow easy assembly of the various track sections when installing a basic or complex layout.

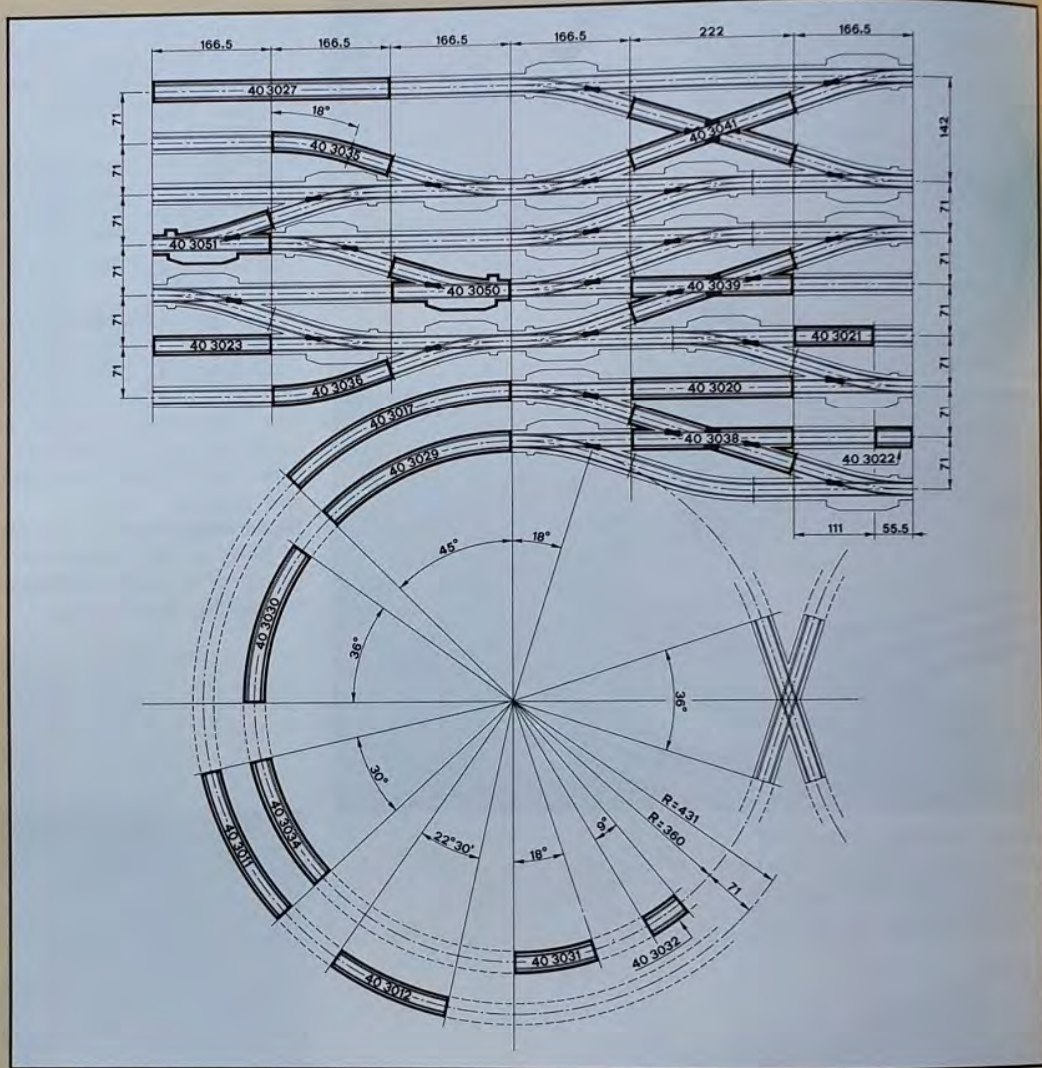
In addition to the good quality material employed in the manufacture of the many LIMA components, the radii of curves and the track geometry guarantee the most faithful reproduction of any railway circuit.

LIMA produce special track planning stencils (both for '00' and 'N' scales) and by following grooves with a pencil you may easily plan the railway track in all its elements: straight and curved tracks, points etc.

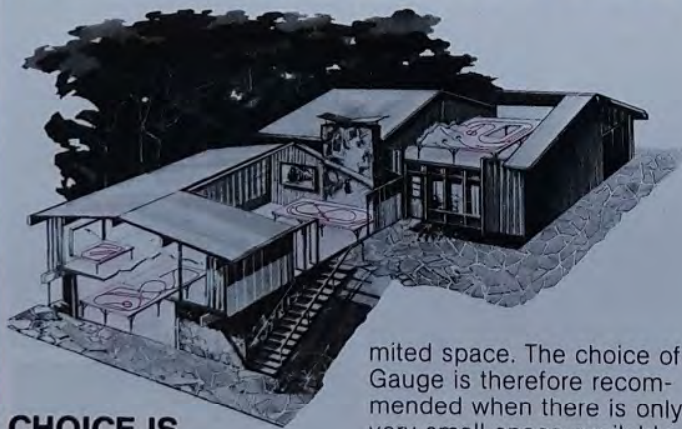
The LIMA system has, in the '00' scale, two types of curves, with radii of 360 mm and 431 mm respectively. For example, to make a complete circle with 720 mm diameter, 10 curved sections with a 36° arch or 8 curved sections with a 45° arch are required.

For a complete circle with 862 mm diameter 16 curved sections with a 22° 30' arch or 12 curved sections with 36° arch or 8 curved sections with 45° arch are required.

The wheelbase between two



## WHERE TO BUILD A LAYOUT



### CHOICE IS IMPORTANT

The biggest problem for most modellers the world over is where to build the layout and where to place it in a limited space.

Of course, with 'N' Gauge you may have a complex circuit and many trains in a very li-

imited space. The choice of 'N' Gauge is therefore recommended when there is only a very small space available. Many modellers build their layouts section by section, slowly absorbing all available space.

In this case '00' Gauge is often built on wooden panels which are set aside when not in use and are easily fitted together for railways operation. A layout may be installed in a

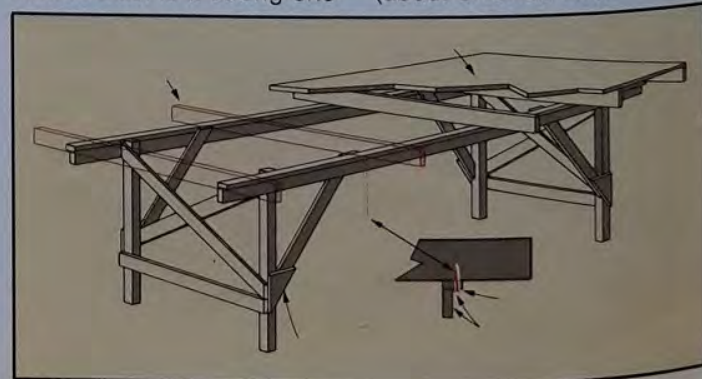
cellar, attic, shed, or in the garage. In all cases ensure that layouts are protected against dampness. Months or years of long work could be ruined in a very short time if water is allowed to contact the system.

Also ensure that the layout is kept free of dust and foreign matter. Dust is a strong ene-

my of electrical installations and can also damage landscapes.

### STARTING YOUR LAYOUT

Commence work with a timber baseboard, size 120x240 cm, mounted on wooden legs (about 5x5x80 cm).

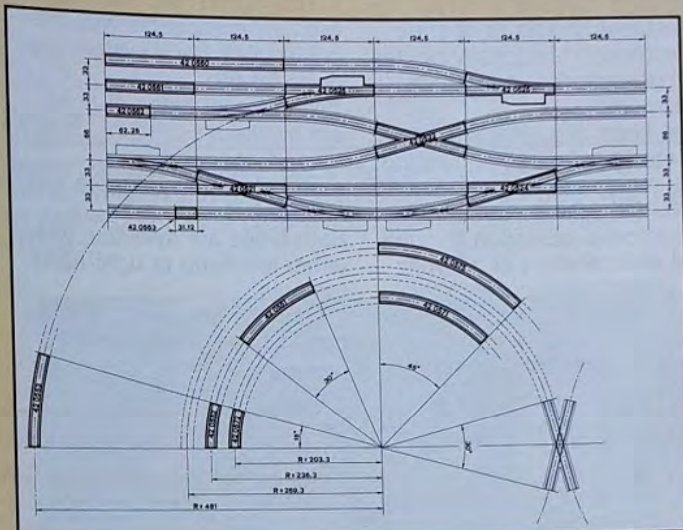




OO SCALE = 600062  
N GAUGE = 600063

parallel tracks is 71 mm, this distance allows the regular running of trains both on straight and curved stretches. The extending straight track and flexible track help when building gradient stretches and complex circuits when radii of curves differ from standard track.

The LIMA system for the 'N' scale is also with two radii of curve (406,6 mm and 472,6 mm) the wheelbase between track is 33 mm. In both cases compensating track (to be utilized for points) ensures easy alignment of the LIMA system.



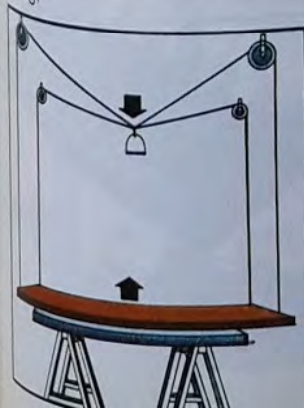
**N GAUGE**

In Lima "N" Gauge the critical measurement to be born in mind is the distance between tracks of 33 mm, maintained both in straight lines and through the curves. For instance the compensating curve 420533 when used with points 420525 and 420526 maintains this basic 33 mm spacing.

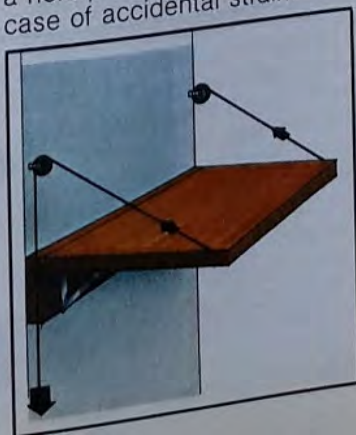
**Advanced Track Layouts.**

For advanced track layouts, including gradients, "extendable track" (item 403026) may be useful. This can be increased from half straight to three quarter straight length by means of a sliding section. Groups of point and crossing can be used to convert a double track main line into six tracks at the entrance to a station. In other cases, flexible track can be used to produce special curves and can be cut to size with an ordinary (finetooth) track-saw.

The wooden structure (which can be folding or mounted on legs) allows for the possibility of removing a panel from the layout enabling repairs to be made without dismantling the entire installation. Raising the baseboard on legs will help the operation and maintenance of electrical wiring.



To feed the track or to control points, signals and lighting, wiring must be hidden with care underneath the baseboard and run under the timber to come out to the surface where power is required. A small knot tied in the cable where the wire emerges from a hole prevents damage in case of accidental strain.



**HOW AND WHERE TO PLACE**

According to the size and space availability the baseboard on which a layout is built may be assembled on a folding frame or on wooden legs so that it can be easily dismantled and put away either as a whole or in panels.



To permit easy movement of the layout the baseboard may be mounted on small wheels to allow it to be stored under a bed.

A more complex system may be suspended from a ceiling by means of pulleys which avoids dismantling and allows space in the chosen location. Pulleys can also be used to run the baseboard of the layout vertically along a wall. Layouts of small dimensions can be built on panels hinged together and then folded or placed one upon another in suit-cases or containers. The imagination and the creativeness of a modeller has no limit and lack of space is a problem that one faces and solves in his own way.

# ELECTRIFICATION

Having completed your layout the next stage is to install the electrical circuits to operate the chosen electrically operated accessories, points, signals, etc.

The heart of a railway system is the transformer, converting the mains voltage to either 12 volts DC (direct current) for locomotive operation through rail and catenary or 12 volts AC (alternating current) for electrically operated accessories.

## LIMA POINT WORK WITHIN THE LIMA TRACK SYSTEM



502053

No layout is complete without points, the number one accessory. Add more realism to your circuit by utilising points to maximum advantage, faithfully reproducing real life situations.

Lima points are manufactured to the highest standard and are fully compatible with the entire LIMA track system (see page 58-59).

Two different types of point are available:

- hand operated
- and electrically remote controlled.

Both types are available with either left-hand or right-hand turnouts.

Electrically operated (or to be precise, electromagnetic) points have three terminals.

right or to the left, when operated through a point switch, ref. No 503065, directing a train in the desired direction. Two are connected to a point operation switch, the centre terminal is common. The point blade moves to the



503065

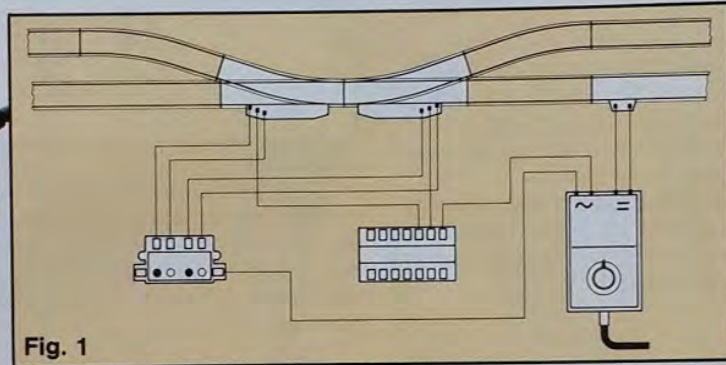


Fig. 1

Correct wiring of an electromagnetic point.

(The method of connecting transformer, switch and electric point is illustrated at figure 1).

To avoid overheating and subsequent damage to the coils, it is advisable not to press the button for too long. Just a light touch will be sufficient to change the direction of the point.

The LIMA control panel (see page 54) is of great assistance when operating points which are out of view.

Through this simple remotely electrical controlled device it is possible to re-route trains in any desired direction.

Operation is very simple:  
- when the button is not pressed there is no power to the isolated track. Once in that track section the train automatically stops;  
- by pressing the button you restore power to the section and the train can be operated normally in either directions from the controller.

Some simple electrical diagrams are illustrated at figures 2 and 3.

105x403020	17x403030
10x403021	1x403030C
8x403022	4x403031
4x403023	1x403033
7x403025	2x403035
2x403026	4x403036
30x403011	4x403050E
7x403051E	3x602953
6x503065	3x602954
1x503066	24x602960
2x502060	20x602961
24x602950	12x602962
24x602951	
1x602952	

**cm 355x175**

## ISOLATING TRACK SECTION

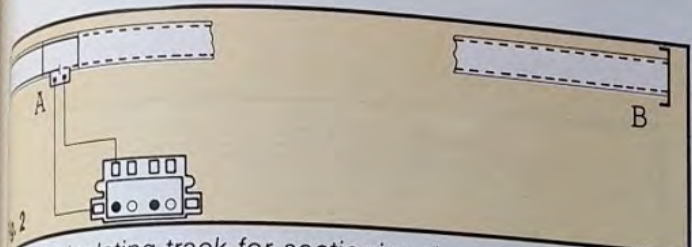
For complex circuits it is possible to run more than one train on the same section of rail or part of a rail. This adds greater realism and authenticity when re-creating rail traffic situations. It is very important to avoid collisions and to ensure that one train

stops clear of a point to allow another train to pass. To stop a train while another train is running, the simple method is to fit a section of isolation track (article re. 403034R) either placed in a siding (or at the beginning of a dead track section).



503066





Sketch of isolating track for sectioning the circuit. A train will run between A and B if the control box button is pressed (item 503065).

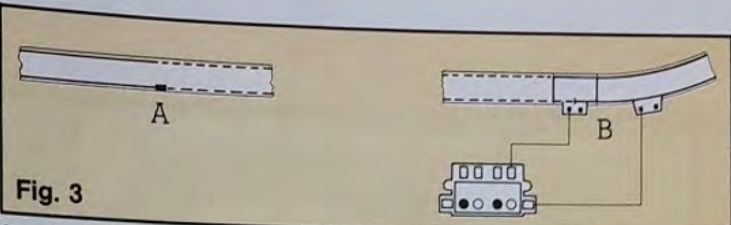


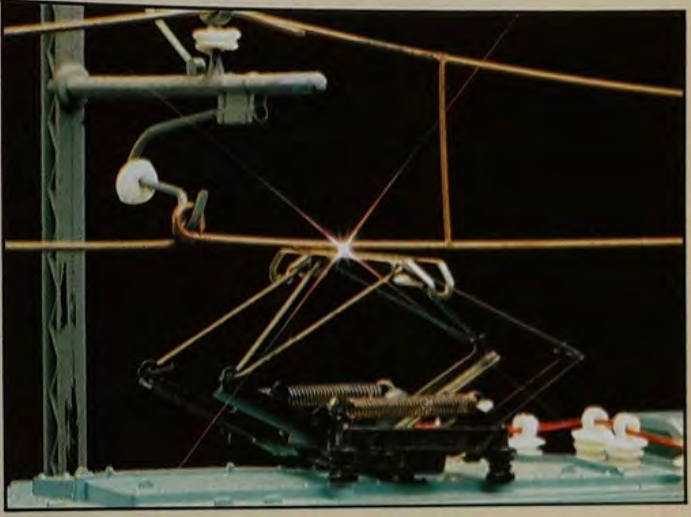
Fig. 3

Section of isolated track. Once the train has arrived in the section between A and B it will automatically stop. Power will only be restored once the control box button is pressed (item 503065).

**ELECTRIFICATION BY OVERHEAD WIRE**

already illustrated on page 41, further layout realism is obtained by installing an overhead "Catenary" wire which feeds electric current to the locomotives. Supported by a series of posts, the overhead wires follow the track system including points, crossings, etc.). Ensure

the electric current is unbroken to allow continuous train operation - unbroken transmission of power is ensured with the constant contact of the overhead wire and the locomotive pantograph which incorporates a special spring allowing the upper sliding block to adhere to the wire.



**INSTALLATION OF SIGNALS**



Correct signalling is vital to the safe running and regulation of any railway network. Sections to be controlled by signals need to be at least 40 to 50 cms long, and each should include an isolating track Ref. 403022A and 403024R.

The simple electrical connections are as follows:

- installation of a signal to control a single section (figure 4);
- installation of two signals to simultaneously operate two sections of track in either direction (figure 5).

You may reproduce sections of track as controlled by signal boxes in true railway tradition, giving the engine-driver all the necessary information to regulate the route of the train.

By placing additional signal boxes on the same layout it is possible to have two or more trains running at same time. This system allows as many signal boxes as one may wish to be placed along a circuit. The only attention required will be to the number of trains which must be at

number of signal boxes. One signal box must have a clear section before passing the next train on.

Track sections between signal boxes must be longer than the longest train in operation.

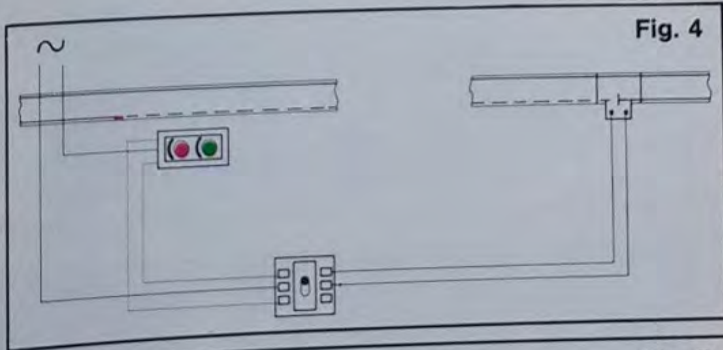


Fig. 4

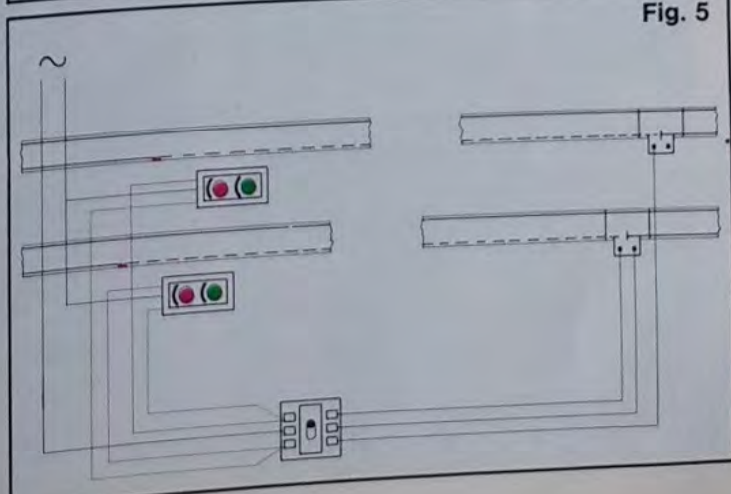
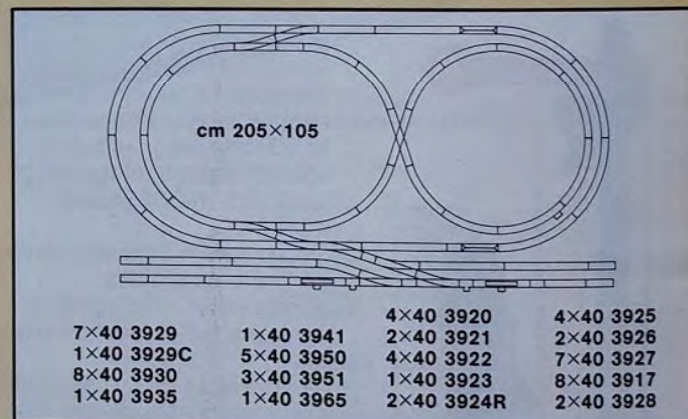
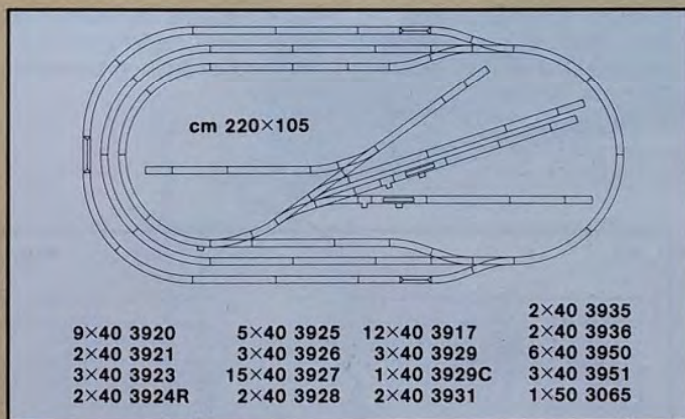
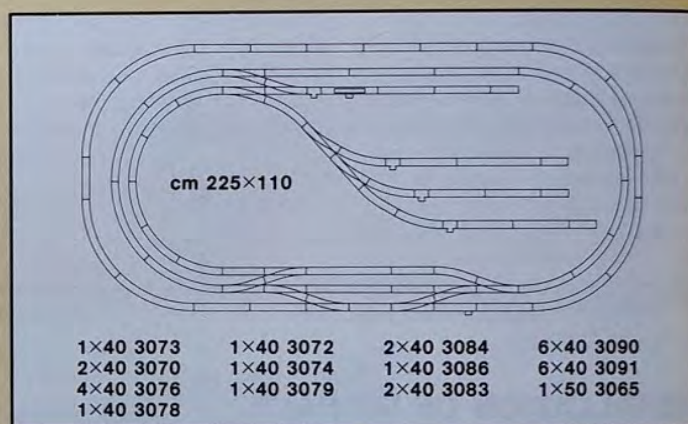
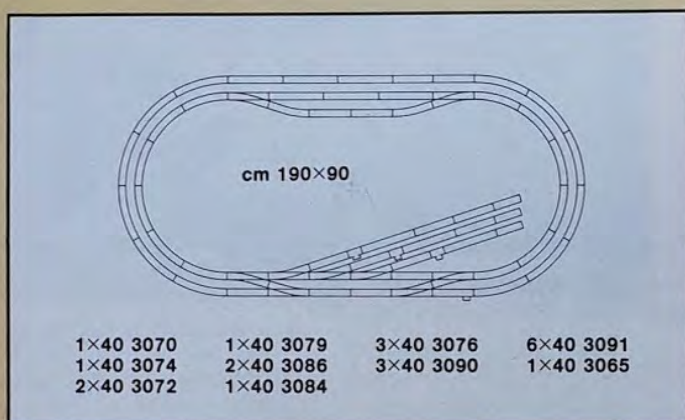
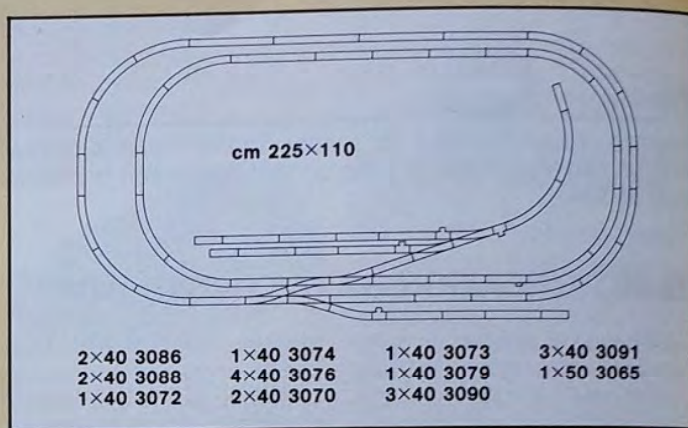
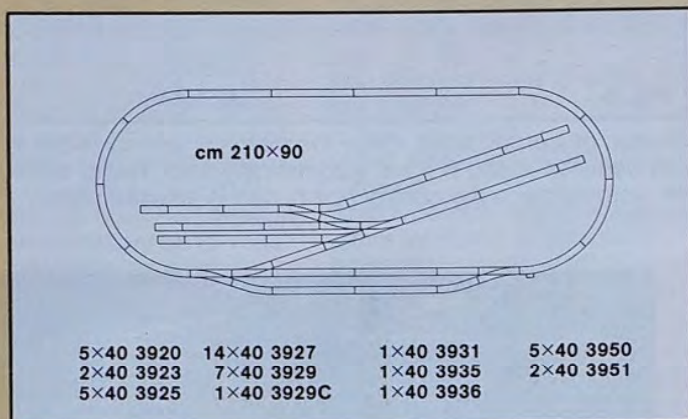
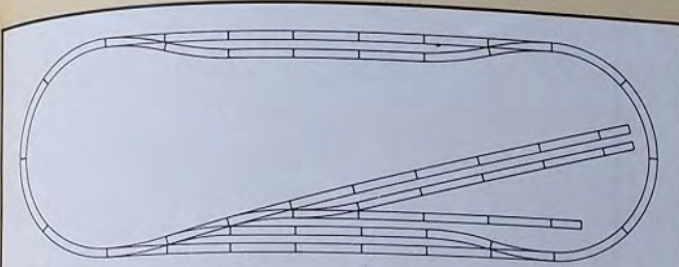


Fig. 5

# OO SCALE TRACK PLANS

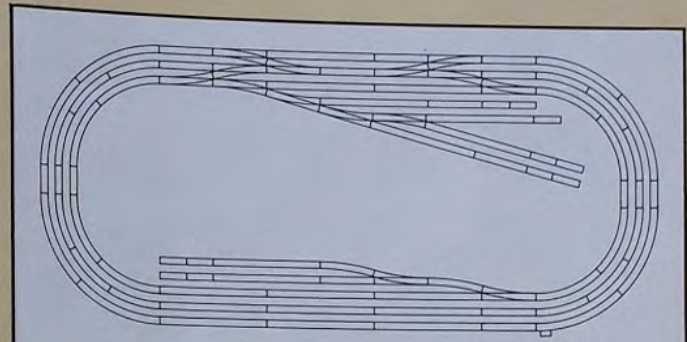


# N GAUGE TRACK PLANS



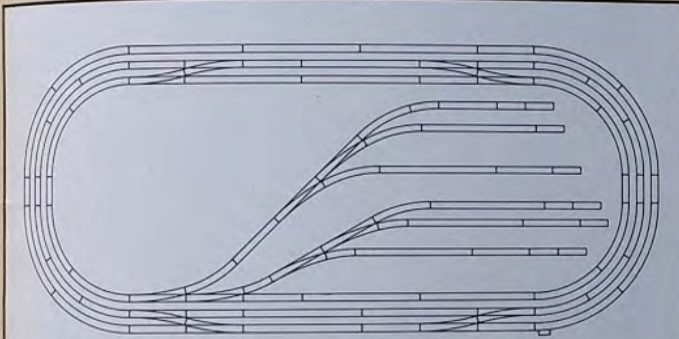
cm 135×45

- |           |          |
|-----------|----------|
| 7×420571  | 3×420553 |
| 1×420571C | 4×420525 |
| 28×420561 | 3×420526 |
| 3×420565  |          |



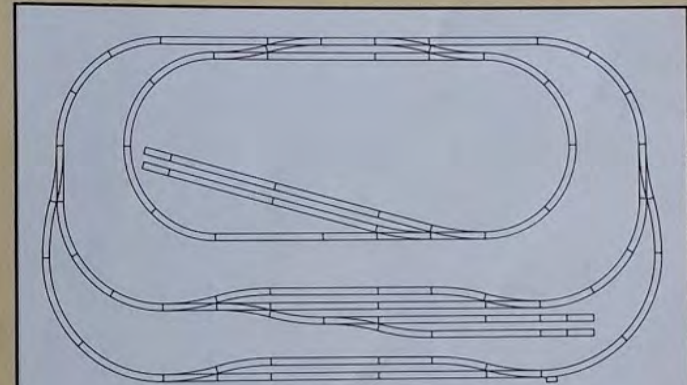
cm 145×65

- |            |            |            |           |
|------------|------------|------------|-----------|
| 16×42 0560 | 6×42 0565  | 8×42 0571  | 8×42 0525 |
| 15×42 0561 | 17×42 0551 | 7×42 0575  | 6×42 0526 |
| 9×42 0562  | 4×42 0552  | 1×42 0575C |           |



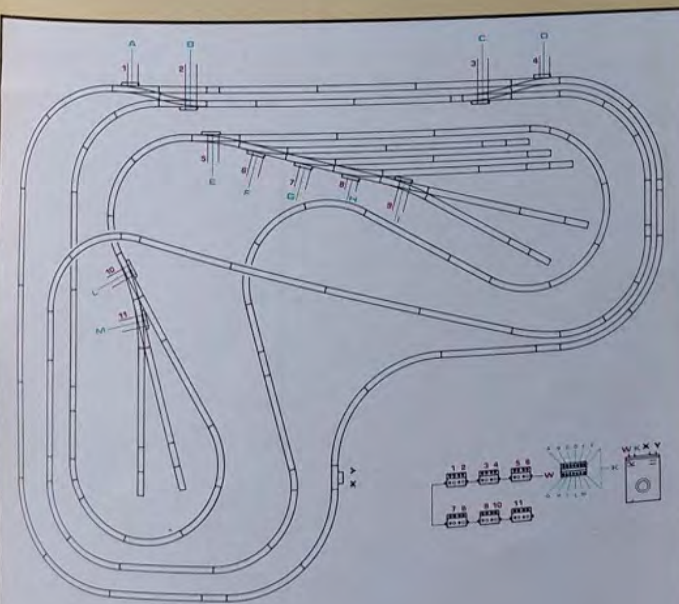
cm 145×65

- |            |            |            |           |
|------------|------------|------------|-----------|
| 18×42 0560 | 6×42 0565  | 8×42 0571  | 8×42 0525 |
| 11×42 0561 | 12×42 0551 | 7×42 0575  | 6×42 0526 |
| 11×42 0562 | 2×42 0553  | 1×42 0575C |           |



cm 145×80

- |            |            |            |           |
|------------|------------|------------|-----------|
| 16×42 0560 | 4×42 0565  | 8×42 0571  | 9×42 0525 |
| 8×42 0561  | 12×42 0551 | 3×42 0575  | 5×42 0526 |
| 2×42 0562  | 8×42 0553  | 1×42 0575C |           |



cm 175×135

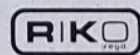
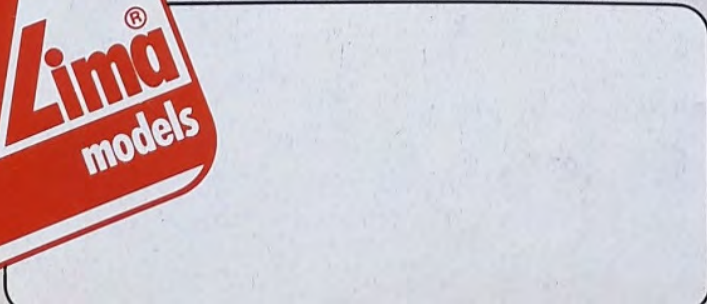
- |            |           |            |            |
|------------|-----------|------------|------------|
| 33×42 0560 | 1×42 0564 | 1×42 0553  | 12×42 0575 |
| 12×42 0561 | 7×42 0565 | 19×42 0571 | 6×42 0525  |
| 10×42 0562 | 9×42 0551 | 8×42 0572  | 5×42 0526  |
| 4×42 0563  |           |            |            |



BERTTIES  
2217



Your Lima stockist is:



Riko International Ltd.,  
13-15a High Street, Hemel Hempstead, Herts. HP1 3AD

Printed in Italy  
Imprimé en Italie

638400