The Class 101 British Rail Pack

1 Background

Class 101 Diesel Mechanical Multiple Unit

The British Rail Class 101 diesel multiple units were built by Metro-Cammell in Birmingham from 1956 to 1959. The 101 DMU went on to be the most long-lived and successful of BR's first generation DMUs with the last units being withdrawn from service on the 24th December 2003, meaning the oldest set was over 47 years old.

Running all over the UK on passenger services these units were a familiar everyday sight for many years and survived through many iterations of livery.

Originally, when TOPS classification was introduced only the DMBS (Driving Motor Brake Second) and DMCL (Driving Motor Composite, with Lavatory) were classified as Class 101s (AEC engines) or Class 102 (Leyland engines).

Specification (Driving Motors):

Builder:	Metro Cammell
In Service:	1956-2003
Operator:	British Rail
Length:	17.37m (57ft)
Width:	2.82m (9ft 3in)
Height:	3.77m
Weight:	32.5 tonnes
Transmission:	Mechanical: 4-speed epicyclic gearbox
Brakes:	Vacuum
Gauge:	1,435mm
Max Speed:	70 MPH

Numbers Built:

DMCL	97
DMBS	217
DTCL	120
TSL	41
TSLRB	6
TCL	18
TSBL	26

The other units were classified as different classes as follows:

TSL – Trailer Second, with Lavatory: Class 162.

TBSL – Trailer Brake Second, with Lavatory: Class 168.

TCL – Trailer Composite, with Lavatory: Class 171.

However, this later changed when all units were reclassified to be Class 101.

The Class 101 DMUs were most commonly driven in 2, 3 or 4 car sets, although combination of sets was not unheard of.

Due to the large quantities of units produced and their prevalence over much of the UK network several units have survived into preservation.

2 Rolling Stock

This pack contains the British Rail Blue and British Rail Blue/Grey liveries. Driving units DMBS, DMCL and DTCL appear in the "engines and tenders" filter in the scenario browser list whereas the TBSL, TCL and TSL and appear in the "rolling stock" list. In the description below, XXXX refers to any of the lettered units listed above:

2.1 British Rail Blue

This locomotive appears as "BR Blue Class 101 XXXX" in the train list.

2.2 British Rail Blue/Grey

This locomotive appears as "BR Grey Class 101 XXXX" in the train list.

3 Driving the Class 101 DMU

3.1 Cab Diagram

Reverser Handle
- Click the handle to set Forward or Reverse position (W & S on the keyboard)

Power Controller
- Pull the lever towards you to increase power (A on the keyboard)
- Push the lever away from you to decrease power (D on the keyboard)

Brake Valve
- Pull the lever left to apply the Train Brakes (' on the keyboard)
- Push the lever right to release the Train Brakes (; on the keyboard)
- Position the lever towards the left to 'Hold' the current brake pressure

Gear Lever
- Turn the lever to notch 1 (furthest) to engage 1st Gear (E on the keyboard)
- Turn the lever to subsequent notches to engage higher gears
- Move the lever away from you to select lower gears (Shift+E on the keyboard)
- Cycle the lever back to Neutral when stopped

Additional Controls
- Engine Off - Located on the left hand wall
- Headlights - Located to the left of the AWS daisy, right of the speedometer
- Parking Brake - Located in front of the second man position
- Horn - Use this to alert pedestrians and line side workers
- AWS Reset - Use this to react to signal warnings
- Signal Buzzer - Use this to communicate with the Guard on the train
- Windscreen Wipers - Use this to keep a clear view out of the cab
- Cab Light – Use this to light up the cab at night
- Instrument Light – Use this to switch on a backlight on the gauges

3.2 Driving Technique

Starting the Train

Move the Reversing Handle into the Forward position and set 15" vacuum in the Brake Pipe by moving the Brake Valve into the Release position until the gauge shows 15". Move the handle back into the Hold sector to maintain the vacuum level.

If the guard gives a 'Right Away' signal (two buzzes), acknowledge him by pressing 'B' twice and move the Gear Selector into 1st gear. Release the brake fully by moving the handle fully to the right and leave it there. Move the Power Controller to the Full position and let the train accelerate.

Changing Gear

The change up into 2nd gear needs to happen at around 15 mph. When you reach that speed bring the Power Controller back to Idling and wait a few seconds for the engine speed to fall, move the Gear Selector to the 2nd gear position wait 2 seconds for the gearboxes to respond and then apply power again. The speeds at which the other gear changes should be made are in the table below:

Speed Range (MPH)	Gear Ratio
0 - 15	1st
15 - 27	2nd
27 - 41	3rd
41 - 70	4th

When you've reached the desired speed, maximum permitted is 70 mph, ease back on the Power Controller. When coasting (Putting the Power Controller back to Idle), you must be in 4th gear to prevent damage occurring to the gearbox.

Gradients

If you come to an adverse gradient and speed can't be maintained with full power then it will be necessary to change down to a lower gear, for example if you're running in 4th gear and the speed drops below about 40 mph. To change down bring the Power Controller back to idling and immediately select the next lower gear, pause for 2 seconds and then re-apply power. The speeds for down changes in other gears can be deduced from the table show above.

Stopping the Train

To stop the train, return the Power Controller to Idle, select 4th gear, and apply the brake by moving the Brake Valve into the Apply sector. The vacuum will start to drop and the brakes will apply. The further you move into the Apply sector the faster the vacuum will drop and therefore the faster the brakes will come on. To hold the desired vacuum move the valve back into the Hold sector.

Keep 4th gear selected until you're almost stopped and then select Neutral.

4 Scenarios

4.1 Class 101 (BR Blue) Tutorial

This short tutorial will teach you the basics of how to get moving, how to stop and finally how to pick up passengers from a station.

- **Type**   Standard
- **Duration**   5 Minutes

4.2 Blue Monday

You are driving a Class 101 early commuter train from Darlington this Monday morning. You have an additional stop at Durham to allow an express to pass. You finish your shift at Newcastle.
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- **Type**   Standard and Career
- **Duration**   60 Minutes

4.3 Grey All Around

It is a stormy afternoon and the sky looks foreboding. However, you still need to drive the Newcastle to York stopping service, starting at Darlington.

- **Type**   Standard and Career
- **Duration**   60 Minutes

5 Using the Class 101 DMU in Custom Scenarios

Before you are able to use the Class 101 DMU in your own scenarios you must enable it in the object set filters for that scenario.
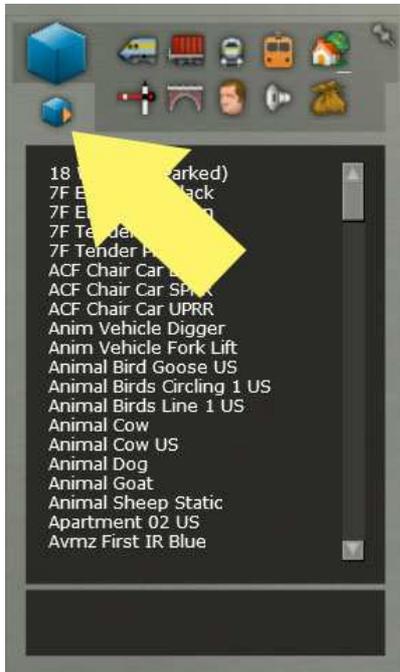
When you make your own scenarios, or edit existing ones, only the default object sets are enabled for that route (for example the Kuju/RailSimulator assets for European routes and Kuju/RailSimulatorUS for North American routes). To enable additional object sets (which could be for any downloaded or freeware content) ready for use they must be checked in the object set filter list in the editors.

When editing the scenario you wish to add the Class 101 DMU to, ensure you are in the **Scenario Editor** and click the small blue square on the middle left panel.

This opens a new panel on the right hand side of the screen (you may need to move your mouse over to the right hand side for the panel to fly out. You can pin it open if you wish).

This new panel has a drop down list off providers (usually the company name which produced the add-on) and a list off all products by that provider.

The Class 101 DMU pack is produced by Railsimulator.com so RSC needs to be selected as the provider. The rest of the panel is then populated by all other RSC products you have purchased.

To enable the content of the pack for use in this scenario, check the box next to "BritishRailClass101".

Now the Class 101 DMU will be available in the asset browser list for placement in the current scenario only.

If you want the DMUs to appear in the browser list for EVERY scenario on a route you must follow the same procedure but be in the **World Editor** and you can now check the first box.

The slight disadvantage of having content enabled for all scenarios on a route, even when that content may not be used, is increased loading times.

6 Using Custom Numbering

When placing a Class 101 DMU in custom scenarios you may want to change the vehicle number, set number, head code or destination board. All of these properties are controlled by editing the rail vehicle number which is accessed by double clicking the rail vehicle when editing a scenario within the scenario editor.

Different liveried Class 101 DMUs will have slightly different number set-ups due and are described in the sections below, with an example where the user can input his own 11 character or less destination and an example where he can opt to use one of the pre-defined destination boards which have more than 11 characters. The colours used in the codes are purely for illustrative purposes.

In all cases, a # represents a solid black character and @ represents a transparent character.

6.1 BR Blue with Head Code

These units have a vehicle number, head code and destination board which makes a 20 Character code. If the code is not exactly 20 characters then nothing will display.

Example of a code with a custom destination:
M123452B@##SHILDON##

Key:

M12345	Vehicle Number (Can also use 'z' for special Scottish region Sc)
2B	Head code (Capital letters and numbers can be used)
@	Transparent. (This is assigned a letter for pre-defined destination boards only, see below).
##SHILDON##	Destination name, # is Solid Black, can numbers and capital letters

Example of a code using a pre-defined destination board:
M123452Ba@@@@@@@@@@@

Key:

a	BISHOP AUCKLAND destination board (see pre-defined custom board list below).
@@@@@@@@@@@	As the destination board is a texture from the pre-defined set, these 11 characters are flagged as transparent.

6.2 BR Blue (no Head Code)

These units just have a vehicle number and a destination board, making an 18 character code. If the code is not exactly 18 characters then nothing will display.

Example of a code with a custom destination:

M12345@##SHILDON##

Key:

M12345	Vehicle Number (Can also use 'z' for special Scottish region Sc)
@	Transparent. (This is assigned a letter for pre-defined destination boards only, see below).
##SHILDON##	Destination name, # is Solid Black, can numbers and capital letters

Example of a code using a pre-defined destination board:
M12345a@@@@@@@@@@

Key:

a	BISHOP AUCKLAND destination board (see pre-defined custom board list below).
@@@@@@@@@@@	As the destination board is a texture from the pre-defined set, these 11 characters are flagged as transparent.

6.3 BR Blue/Grey

These units have a vehicle number, a set number and destination board which makes a 24 Character code. If the code is not exactly 24 characters then nothing will display.

Example of a code with a custom destination:
M12345101000@##SHILDON##

Key:

M12345	Vehicle Number (Can also use 'z' for special Scottish region Sc)
101000	Set number (Capital letters and numbers can be used)
@	Transparent. (This is assigned a letter for pre-defined destination boards only, see below).
##SHILDON##	Destination name, # is Solid Black, can numbers and capital letters

Example of a code using a pre-defined destination board:
M12345101000a@@@@@@@@@@

Key:

a	BISHOP AUCKLAND destination board (see pre-defined custom board list below).
@@@@@@@@@@@	As the destination board is a texture from the pre-defined set, these 11 characters are flagged as transparent.

6.4 Predefined Destination List:

a	Bishop Auckland
b	Birmingham New St
c	Charter Special
d	Cardiff Central / Caerdydd Canolog
e	Edinburgh (Waverley)
f	Barnard Castle.
g	Glasgow Central
h	Gatwick Airport
i	Chesterfield
j	Sheffield Midland
k	Kirkcudbright
l	Liverpool Lime St
m	Manchester Victoria
n	Middlesbrough
o	Stranraer Harbour
p	Manchester Piccadilly
q	West Hartlepool
r	Whitby West Cliff
s	Not in Service
t	Weston-super-Mare
u	Bristol Temple Meads
v	Warrington Central
w	Wolverhampton
x	Watford Junction
y	Kirkby Stephen
z	Sc

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