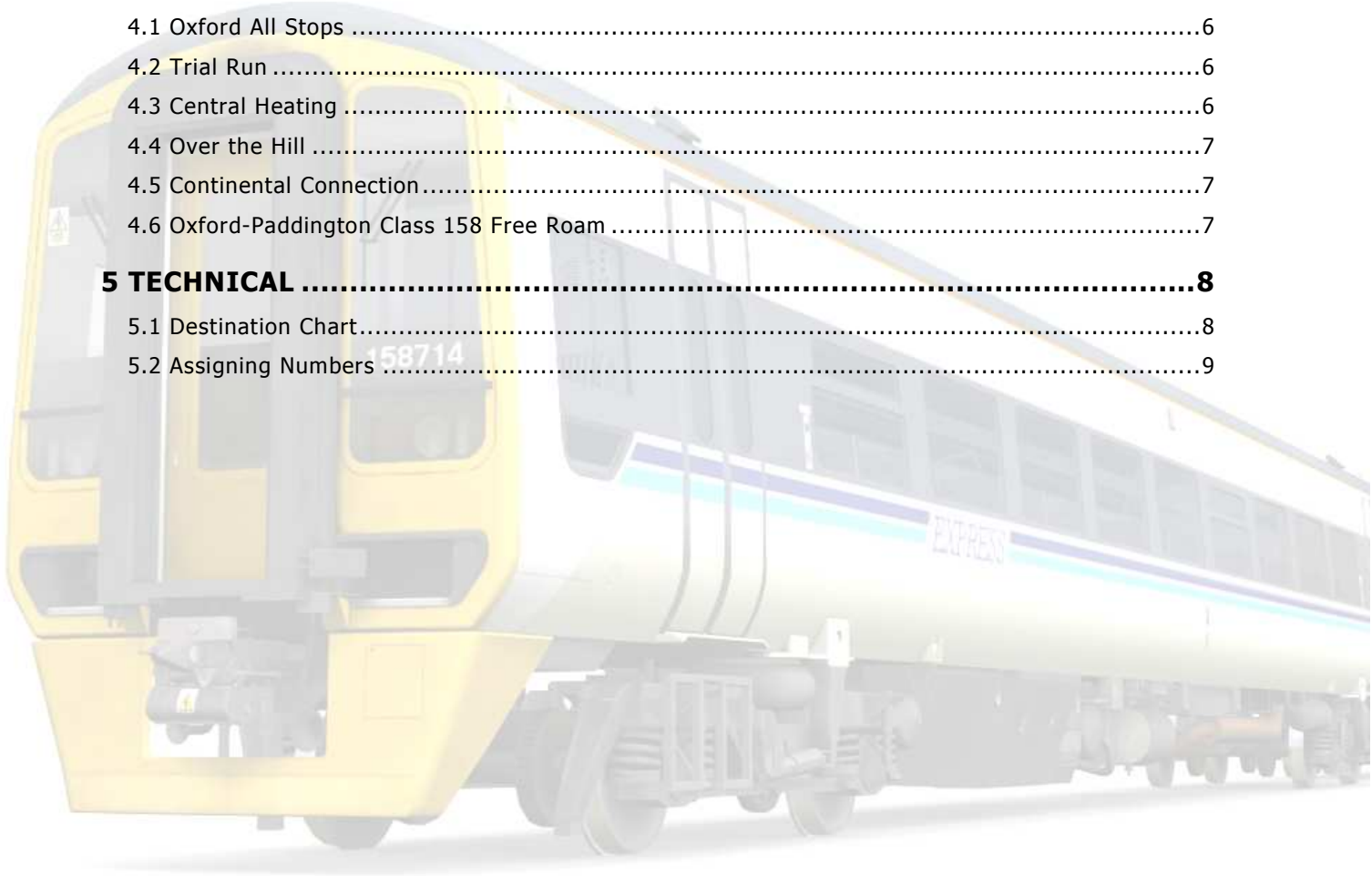




Class 158 Diesel Multiple Unit

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1 Introduction

Ben Laws, University student and avid train simulation fan is the force behind this project. The development of this 158 unit has been spread over the course of more than a year, first appearing on community websites as early as June 2007. Here is a short word from the man himself, giving an insight into his latest (and quite possibly greatest) creation.

My interest in the Class 158 began when I was young. I remember at the very young age of 4, standing at the station platform, hoping that the train I would be catching with my parents would be a Class 158. Back then I was not much of an expert on modern traction, but I could definitely tell the difference between a Pacer, a Sprinter, and a Sprinter Express.

This entire project has involved a tremendous amount of research and gathering of reference material. As a result, I have learnt so much more than I ever thought I would need, to finish this project.

Much of my time was spent searching the internet for any bit of data I could find. Measurements, operational functionality and refurbishments are just some of the areas I needed to cover to ensure the project reached the highest of standards.

The best part of the project, that is, the part I enjoyed the most, has to be getting the Class 158 in game and working. To see all that hard work pay off to be something I'm more than impressed with to this day is a very pleasing experience.

My favourite livery has to be the original, and I feel most pleased that it has turned out to be a very close resemblance to the real thing.

I would like to thank Derek Siddle and Adam Lucas for providing a lot of information on the functionality side of the project, writing scenarios, and testing. I would also like to thank those who have patiently waited for the Class 158 on community websites (www.uktrainsim.com), and to everyone who has encouraged me to keep going to the very end.

I would also like to give special thanks those who have helped in providing a vast amount of detailed reference material. Without them, the project would never have reached such a complete state.

- Ben Laws

2 Background

In the late 1980s the British Railway Board's Provincial Sector was in need of main line capable stock to operate long distance 'local' services. A new design of multiple unit was put forward and a sizable fleet ordered from the then BREL Works at Derby.

Classified 158, the trains began to appear in 1989. Called Sprinter Express, the name was based on British Rails wish to advertise the new acceleration ability the units had over older aging heritage DMU fleets. Their introduction saw a massive fall in journey times in the areas operated, with timetables quickly being updated to take advantage of these new trains.

With various follow-on orders and derivatives, a fleet of over 200 vehicles was eventually built between 1989 and 1992.

The Class 158 soon became common place across the UK, operating short distance domestic services as well as long distance cross country trains. With carpeting throughout, full air conditioning, and provision for a trolley service during travel, passenger comfort and relaxation was vastly improved and warmly welcomed by customers.

Today a large number of different interiors have been adopted as private operators each seek to tailor their trains to customer needs. Various qualities of first class accommodation also exist. All seating in standard class compartments is in 2+2 formation, with first class sporting 2+1.

2.1 Technical Data

Class	158/0 & 158/9
Manufacturer	BREL Derby between 1989 & 1992
Formation	DMSL(A)+DMSL or DMSL(A)+MSL+DMSL
Length	76ft 1¾in (23.21m)
Width	9ft 3¼in (2.82m)
Height	12ft 6in (3.81m)
Weight	77tonnes (2-car set) or 115tonnes (3-car set)
Seating	32 first / 170 second (3-car set)
Brake Type	Air, Electro-pneumatic Disc Brakes
Engine Type	Cummins NTA855R3, 400 hp at 1900 rpm per vehicle Or Perkins 2006-TWH, 350hp at 2100 rpm per vehicle
Maximum Speed	90Mph (140km/h)
Compatibility	BSI coupler allowing connection to Class 14x, 15x & 170 units
Operators	Alphaline, Arriva Trains Northern, Arriva Trains Wales, Central Trains East Midlands Trains, First Great Western, First North Western, First ScotRail, First TrainsPenine Express, Intercity, Northern, Regional Railways, South West Trains, Virgin, Wessex

3 The Class 158 Sprinter Express

The following Class 158 Multiple Unit sets are available in this Add On.

3.1 Sprinter Express



3.2 Maroon & Gold



3.3 Green & Black



3.4 Blue & Purple



4 Scenarios

4.1 Oxford All Stops

Constant station stops are the bane of train drivers as it can make time keeping very difficult. Test your skills on this run from Reading to Oxford aboard a Class 158 multiple unit, and see if you can arrive on time.

- **Date** October 1993
- **Rating** Easy
- **Duration** 45 minutes
- **Start Time** 09.55am
- **Season** Autumn
- **Start Location** Reading Station
- **158 Livery** Regional Railways

4.2 Trial Run

Take a specially arranged 158 on a high speed run into London. The rail authorities want to see if the train is a good contender to replace the aging High Speed Trains.

- **Date** May 1993
- **Rating** Medium
- **Duration** 60 Minutes
- **Start Time** 20.15pm
- **Season** Spring
- **Start Location** Maidenhead Station
- **158 Livery** Mixed

4.3 Central Heating

It's the depths of winter but the people living in the Mendips still need to do their Christmas shopping. This service will see you running a much needed return service over the Mendip Hills.

- **Date** December 1998
- **Rating** Medium
- **Duration** 60 minutes
- **Start Time** 09.34am
- **Season** Winter
- **Start Location** Radstock Depot
- **158 Livery** Green & Black

4.4 Over the Hill

Take charge of what might have been – You'll be driving a 3 car 158 unit over the Mendip Hills on a semi-fast service stopping at various stations on your way to Bath. The gruelling gradients require constant checking of throttle and brakes, with the added challenge of keeping to a timetable.

- **Date** May 1993
- **Rating** Easy
- **Duration** 20 Minutes
- **Start Time** 16.25pm
- **Season** Summer
- **Start Location** Templecombe Station
- **158 Livery** Green & Black

4.5 Continental Connection

Test out the feasibility of using a British built Class 158 Multiple Unit on this busy German mainline. Starting at Plettenburg, run the unit up to Hagen, stick as close to the timetable as you can.

- **Date** July 1994
- **Rating** Easy
- **Duration** 45 minutes
- **Start Time** 20.00pm
- **Season** Summer
- **Start Location** Plettenburg Yard
- **158 Livery** Blue & Purple

4.6 Oxford-Paddington Class 158 Free Roam

Pick a train by clicking on it, and then explore the route.

- **Date** June 1993
- **Rating** N/A
- **Duration** N/A
- **Start Time** 10:00am
- **Season** Spring
- **Start Location** Reading Train Care Depot
- **158 Livery** N/A

5 Technical

For developers wishing to make use of the unit in their own scenarios and routes, it is possible to customise the Destination Blind during creation of the scenario. This allows the train to correctly display an appropriate destination.

5.1 Destination Chart

Aberystwyth	A__	Loughborough	N__
Alton	_A_	Maesteg	_N_
Ascot	__A	Manchester Airport	__N_
Aylesbury	___A	Manchester Piccadilly	___N
Banbury	B__	Middlesbrough	O__
Basingstoke	_B_	Motherwell	_O_
Bath Spa	__B	Newport	__O_
Birmingham New Street	___B	Casnewydd	___O
Birmingham Snow Hill	C__	Northallerton	P__
Blackpool North	_C_	Northampton	_P_
Bournemouth	__C	Norwich	__P_
Bradford Forster Square	___C	Nottingham	___P
Brighton	D__	Oxford	Q__
Bristol Parkway	_D_	Paignton	_Q_
Bristol Temple Meads	__D	Paris Gare De Nord	__Q_
Cardiff Central	___D	Penzance	___Q
Caerdydd Canolog	E__	Plymouth	R__
Carlisle	_E_	Poole	_R_
Cheltenham Spa	__E	Portsmouth Harbour	__R_
Chester	___E	Preston	___R
Cleethorpes	F__	Reading	S__
Crewe	_F_	Redhill	_S_
Crewkerne	__F	Salisbury	__S_
Darlington	___F	Scarborough	___S
Derby	G__	Shrewsbury	T__
Didcot Parkway	_G_	Singapore	_T_
Doncaster	__G	Skegness	__T_
Dundee	___G	Southampton Central	___T
Edinburgh Waverley	H__	Stansted Airport	U__
Exeter Central	_H_	Stevenage	_U_
Exeter St Davids	__H	Stirling	__U_
Gatwick Airport	___H	Stratford-Upon-Avon	___U
GlasgowQueen Street	I__	Sunderland	V__
Glasgow Central	_I_	Surbiton	_V_
Gloucester	__I	Abertawe	__V_
Godalming	___I	Swindon	___V
Gt Malvern	J__	Taunton	W__
Guildford	_J_	Wakefield Westgate	_W_
Hartlepool	__J	Weston-Super-Mare	__W_
Heathrow Airport	___J	Weymouth	___W
Hull	K__	Windsor Riverside	X__
Inverness	_K_	Woking	_X_
Ipswich	__K	Worcester Shrub Hill	__X_
Leeds	___K	Worksop	___X
Leicester	L__	Yeovil Junction	Y__
Lincoln	_L_	York	_Y_
Liverpool Lime Street	__L	Peterborough	__Y_
London Kings Cross	___L	Grantham	___Y
London Marylebone	M__	Sorry Not in Service	Z__
London Paddington	_M_	Depot	_Z_
London St Pancras	__M	Special	__Z_
London Waterloo	___M	Blank	___Z

5.2 Assigning Numbers

In order to display a specific destination, the correct value must be placed into the vehicle properties window. This number consists of a 15 digit value containing both letters and numbers.

The 15 digit value is arranged like so: **DDDDVVVVUUUUUU**

DDDD = the Destination code (this is one of the 104 destinations listed previously)
VVVV = the Vehicle number (this is the number displayed on the side of the coach)
UUUUUU = the Unit number (this is the number on the front of the coach)

Example: *__N_57112158112* (where *__N_* is for Manchester Airport)

So the above number results in unit 158112, with vehicle ID number 57112, displaying "Manchester Airport" as the destination