



Virgin Trains First Generation Pack Class 43 HST & Class 47/8



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1. Background

1.1 Virgin Trains

Since March 1997 West Coast Trains Ltd. under the Virgin Trains brand has operated the Inter City West Coast franchise operating long distance passenger services on the West Coast Main Line.

1.2 Class 43 'High Speed Train'

The High Speed Diesel Train (HSDT) began its life in the early 1970s as a stopgap while British Rail developed their Advanced Passenger Train (APT). However, the revolutionary design changed high-speed rail dramatically.

Once work on the prototype was complete, and the name had changed to simply High Speed Train, British Rail put forward a proposal to the government for full introduction using “Inter City 125” branding. The initial order was for between 30 and 40 full trains to be constructed each year for a 5 year period, with the intention of totally modernising all UK trunk routes. The HST was ordered in batches according to the region where they would operate. Western, Eastern, South Western and Cross Country regions, accounted for 95 sets built in total.

The HST first ran on the Great Western Mainline in 1976, operating services between London Paddington, Bristol and South Wales. As the concept of semi-permanently coupled locomotives and coaches was new to the British network, the trains were initially referred to as Class 253, with sets allocated to the East Coast Mainline which featured one extra coach being called Class 254 .

When privatisation of the railways took place HST sets were utilised by Virgin Trains on the Inter City West Coast franchise to replace loco-hauled stock. They remained in service on the West Coast Main Line for almost 15 years until they were superseded by the introduction of Voyager trains.

Power Car Specification

Builder	BREL Crewe Works
Vehicle Weight	6970.25 tonnes
Vehicle Length	58ft 4in (17.79m)
Vehicle Width	9ft 00in (2.74m)
Top Speed	125mph (201km/h)
Brake Type	Air
Tractive Effort	17,980 (Maximum) 10,340lbs (continuous)

1.3 Class 47/8

The British Rail Class 47 is a class of British railway diesel-electric locomotive that was developed in the 1960s by Brush Traction. A total of 512 Class 47s were built both at Crewe Works and Brush's Falcon Works, Loughborough between 1962 and 1968, which made them the most numerous class of British mainline diesel locomotive.

Class 47/4 was the designation for standard locomotives fitted with ETH (Electric Train Heating) and therefore used for passenger, mail and parcels use. 133 locomotives had been fitted by the time renumbering occurred, and shortly afterwards the sub-class had settled down to 154 locomotives, numbered 47 401-47 547 and 47 549-47 555. Later, further class 47/0s were converted to class 47/4s and renumbered into the series from 47 556 onwards, which eventually reached 47 665.

The last of the original 47/4 conversions, from 47 650 to 47 665, were fitted with extra fuel tanks, giving them an extended range. Four earlier Class 47/4s were also converted. In 1989 it was decided to give these locomotives easy recognisability, and so these locomotives were renumbered into their own series from 47 801 to 47 820. At the same time, further locomotives were fitted with extra fuel tanks and renumbered; the series eventually reached 47 854. After the privatisation of British Rail, the locomotives in the 47/8 number range were mainly used by Virgin CrossCountry on cross-country work until the introduction of their Voyager trains. These duties have kept them maintained in serviceable condition, allowing them to remain operational longer than the majority of their classmates. As a consequence most of them received relatively recent overhauls. The locomotives in this number range are officially Class 47/4s under the TOPS system.

Specification

Builder	BREL Crewe Works and Brush, Loughborough
Wheel Arrangement	Co-Co
Locomotive Weight:	112 tons (114 tonnes)
Length:	63ft 7in (19.38 m)
Width:	8ft 10in (2.69 m)
Power Output:	2,750hp (2,050kW)
Maximum Tractive Effort:	55,000lb (245kN)
Brake Type:	Air
Maximum Tractive Effort:	55,000lb (245kN)

2. Rolling Stock

2.1 Class 43 HST



2.2 Class 47/8 Black Panel



2.3 Class 47/8 Yellow Panel



2.4 Mk2e TSO



2.5 Mk2e FO



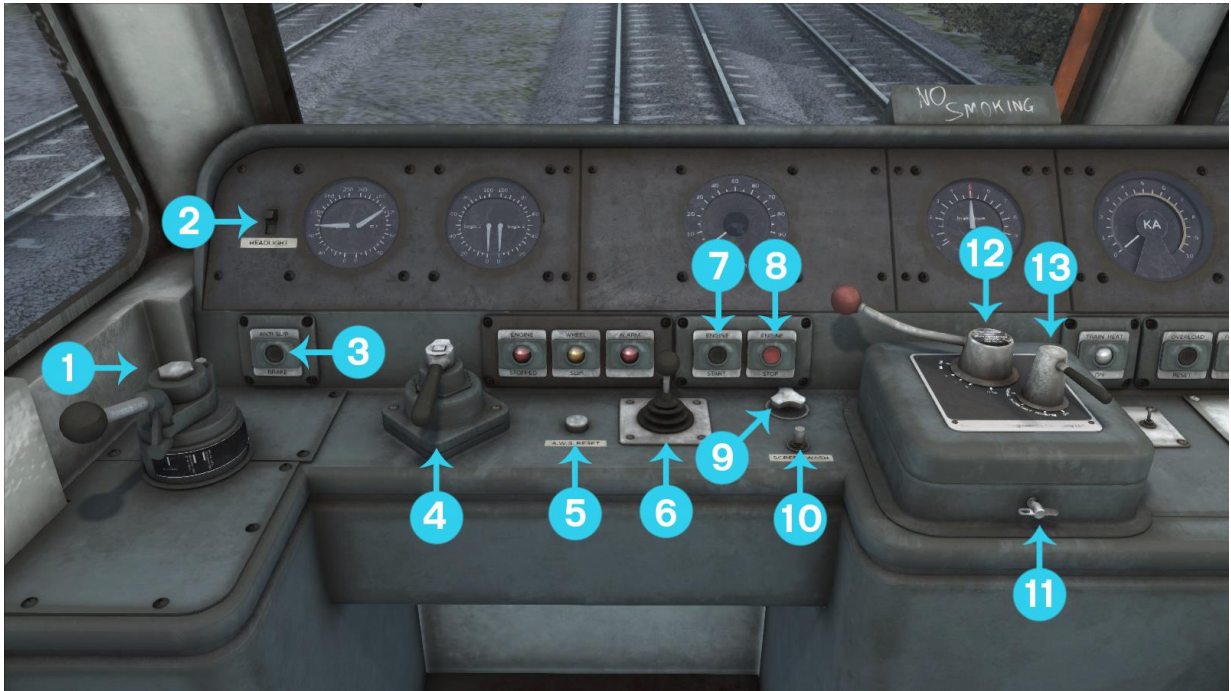
2.6 Mk2e RFB

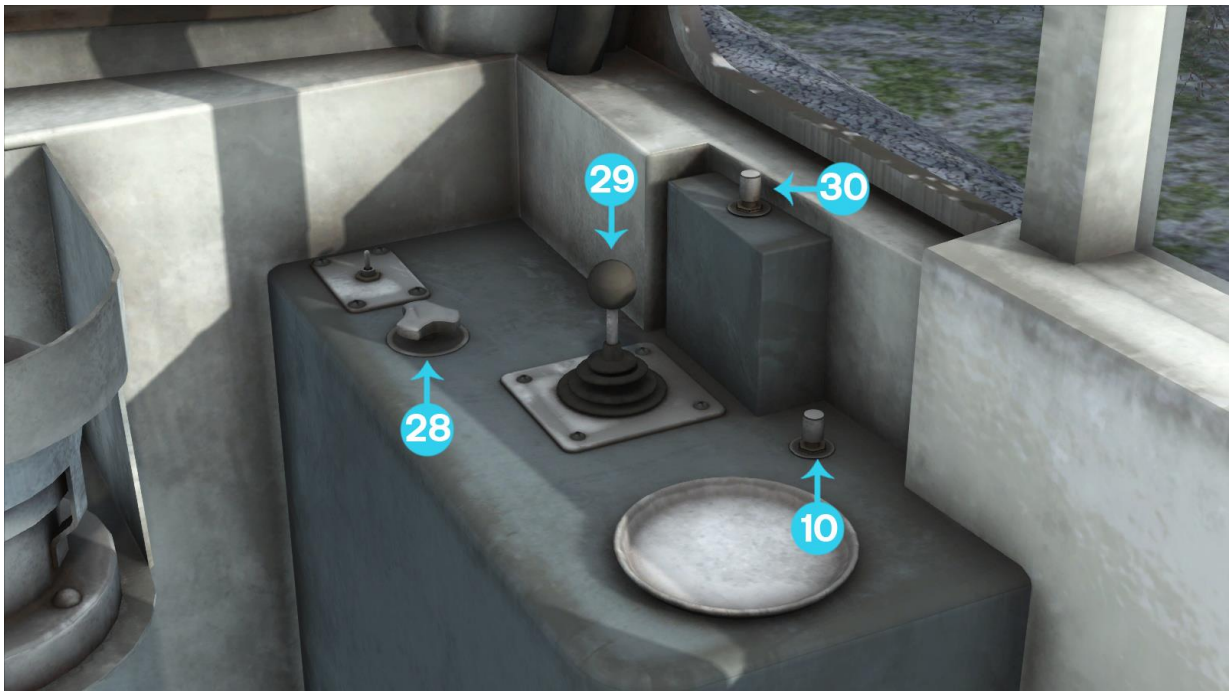
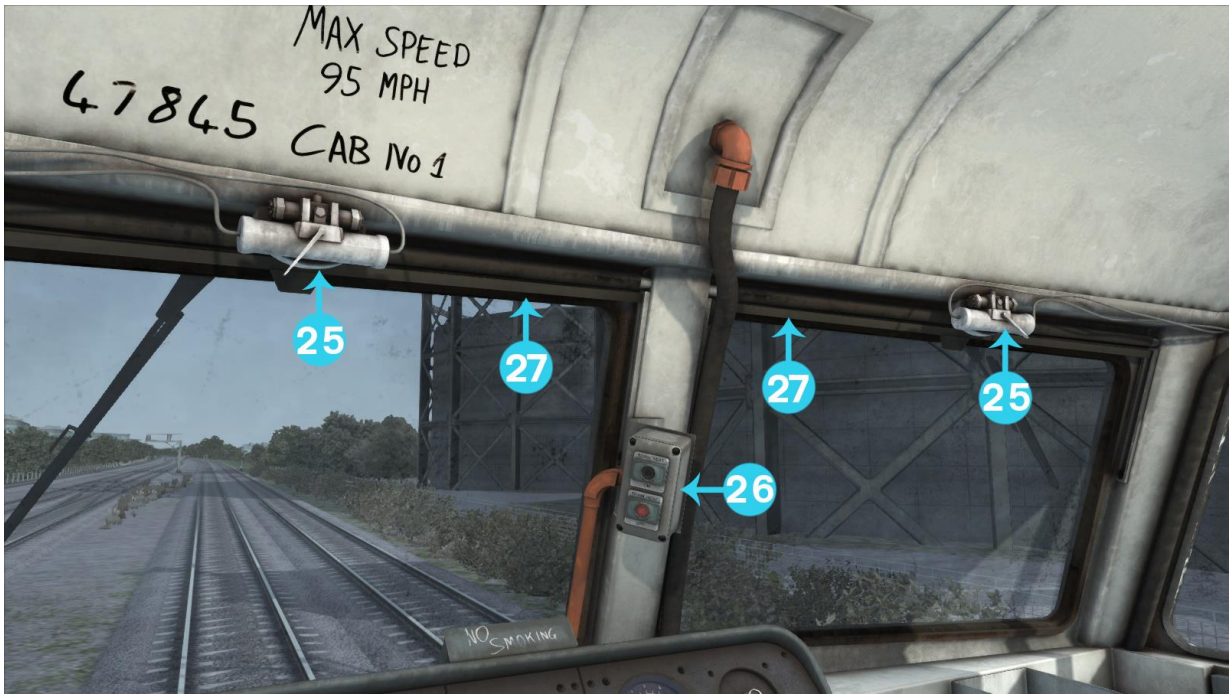


2.7 Mk2e BSO



3. Driving the Class 47/8







1	Train Brake (; / ')	17	Cab Light Switch (L)
2	Headlight Switch (Ctrl + 1)	18	Foot Warmer Switch (mouse only)
3	Anti-Slip Brake (X)	19	Cab Heater Switch (mouse only)
4	Loco Brake ([/])	20	Cab Heater Switch (mouse only)
5	AWS Acknowledge (Q)	21	Tail Light Switch (Ctrl +3)
6	Horn (low tone – H, high tone – B)	22	Demister Switch (mouse only)
7	Engine Start (Z)	23	Instrument Lights Switch (I)
8	Engine Stop (Z)	24	Marker Light Switch (Ctrl + 2)
9	Driver's Wiper control (V)	25	Manual Wiper Handles (mouse only)
10	Screen Wash (mouse only)	26	ETH Supply Controls (Y)
11	Master Key (C)	27	Blinds (mouse only)
12	Power Handle (A / D)	28	Secondman's Wiper Control (mouse only)
13	Reverser (W / S)	29	Secondman's Horn (mouse only)
14	ETH Light Dimmer Switch (mouse only)	30	DSD Holdover Switch (mouse only)
15	Overload Reset (R)	31	AWS Isolation Handle (Sealed Closed)
16	Fire Alarm Test (mouse only)	32	AWS Change End Lever (C)

3.1 Headlights

The head and tail light states on this loco can be cycled through using the H / Shift+H controls on the keyboard and the light controls on the F4 HUD.

Also, the individual lights can be controlled independently with their individual controls.

3.2 DSD (Driver Safety Device)

This loco is fitted with DSD. The pedal is automatically depressed when the player moves the Reverser into forward or reverse. If the loco is travelling above 6mph and the reverser is moved into Engine Only or Off, the pedal will be lifted and a 7 second timer will commence, resulting in an Emergency Brake application. This can be overridden by pressing the DSD Holdover Switch. An Emergency Brake application caused by the DSD will be reset once the train comes to a stand, or once the pedal is depressed again.

3.3 AWS (Automatic Warning System)

This loco is fitted with AWS. Upon entering the cab, the AWS system is already set up. When changing ends there will be an AWS self-test. Emergency Brake applications caused by the AWS will take 1 minute to reset.

3.4 Change-End Procedure

To change ends in this loco you must follow the change-end procedure. Pressing Ctrl+7 will give you a walk-through of how to shut down the cab you are in. Pressing Ctrl+8 will give you a walk-through of how to start up the cab you move in to. The C key on the keyboard will take out the Master Key and drop the AWS Change End Lever.

3.5 Faults/Overload Reset

The fault trip on the loco can be detected with an illuminated Alarm light on the main cab desk. This can be caused by one of two things:

- An amp overload of over 8000 amps.
- Putting the reverser into the opposite direction of travel whilst in motion.

To reset the fault the Power Handle must be placed in the off position and the Overload Reset button must be depressed until the Alarm light is no longer illuminated.

3.6 Wheel slip & Anti-Slip Brake

Wheel slip causes the load regulator to automatically run back (reduces power) until it is corrected, but it's still better and quicker to reduce power manually. The Anti-Slip Brake applies a slight loco brake application in an "attempt" to reduce wheel slip but they aren't always effective.

3.7 Traction Interlock

This loco has a traction interlock which cuts power if brake pipe pressure goes below 45psi and only reopens above 60psi.

3.8 ETH (Electric Train Heating)

ETH supplies the coaches with electricity to power heating and lighting. When it is activated will cause the engine to go into a high idle. The ETH load varies with train length and the ETH load does affect traction performance. When light engine the ETH will be automatically cut (no continuous circuit). The Train Heat On light will illuminate when ETH is in operation. This light can be dimmed with the ETH Light Dimmer Switch.

3.9 Wiper Controls

The wiper controls have 3 positions: Stop (halts wiper where it is and allows manual wiping; Run (wiper runs); Park (wiper moves to its park position).

4. Driving the High Speed Train



- | | | | |
|---|---------------------|----|----------------------------------|
| 1 | Throttle (A / D) | 6 | Headlight Selector (H / Shift+H) |
| 2 | Train Brake (; / ') | 7 | Windscreen Wipers (V) |
| 3 | Reverser (W / S) | 8 | Emergency Brake (Backspace) |
| 4 | Horn (Space Bar) | 9 | Handbrake (/) |
| 5 | AWS Acknowledge (Q) | 10 | Cab Light (L) |

5. Scenarios

For driving tutorials, please visit the Academy from the main TS2017 menu screen

5.1 [VP1]01. The Maiden Virgin

This evening is your maiden voyage at the controls of a Virgin Class 43 HST. Beginning your journey at Glasgow Central, you will travel down the West Coast Main Line to make one passenger stop at Motherwell, before making the return journey to Glasgow.

Duration: 45 Minutes

Difficulty: Easy

5.2 [VP1]02. The Virgin Heritage

Santa is coming to town, which means this will be your last service before Christmas. You will be driving a Virgin Class 47 from Lanark to Rutherglen making multiple passenger stops along the way.

Duration: 55 Minutes

Difficulty: Moderate

5.3 [VP1]03. The Virgin Knight

Welcome back aboard the Virgin Class 43 HST. On this high speed service, you will battle through the rain on your journey to Carlisle, making one stop at Lockerbie on the way.

Duration: 55 Minutes

Difficulty: Moderate

6. Acknowledgements

Dovetail Games would like to thank the following people for their contribution to the development of the Virgin Trains First Generation Pack:

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Beta Testers

