

BR CLASS 45 DIESEL No. 45108 [ex-D 120]

Built	BR Crewe Works
Traction Type	Diesel-Electric
Equipment:	Crompton Parkinson
Power Unit:	Sulzer 12LDA28-B
Power Output:	2,500 HP
Max Speed:	90 MPH
Train Brakes:	Air and Vacuum
Train Heating:	ETH
Weight:	132 tons 16 cwt in working order
Length:	67' 11"
Height:	12' 10"
Width:	8' 10½"
Livery	BR Blue (Repainted late 2020)
Maximum Tractive effort	55,000 lb ft (245 kN)
Max Axle loading - 18tons 16cwt	BR Route Availability 7

Crewe Works released D120 to traffic on 30th September 1961, the loco was a British Railways London Midland Region based engine but used throughout the country. Initially it was allocated to Derby Shed.

Delivery would have been in an all over Brunswick Green livery with the exception of the light grey roof, engine room grilles and a broad band between the cab doors just above frame level with the buffer beam painted red. Numbers were carried on each side below the cab side windows with the 'lion & wheel' emblem carried at the No.2 end between the roof access footsteps and the boiler room grille.

The Sulzer 12LDA28B engine was a marine-type, slow-revving diesel, with 12 bores each of 280 mm (hence the '12' and '28' in the engine designation). It provided 22 litres per cylinder with the unit being turbocharged and intercooled giving 2,500 hp overall at 750 rpm. The engine was of the double bank type with two parallel banks of 6 cylinders, geared together to a single output shaft.

The two huge plate bogies each carried four axles of which three were driven. The leading axle was a 'pony' axle intended to spread the weight of the locomotive. Class 45s were essentially uprated and slightly modified versions of the earlier Class 44, but with the Sulzer 12LDA28B diesel engine and enhanced Crompton Parkinson electrical equipment.

Initially, the Class 45 locos were air braked and fitted with vacuum train braking equipment as well as BR's Blue Star multiple working system. A Stone Vapor OK4625 steam

generator was also fitted to heat Mk I and early Mk II carriages. Class 45s were unusual in having a 220 volt electrical system, instead of the more normal 110v, to drive auxiliary machines and battery charging.

The loco's end design brought the two headcode boxes into the centre of each nose-end but retained a central break between what had been the original two separate headcode displays. The final production variant of the headcode panel was to bring the headcode panel together as one unit, with no central split in the display. This final variant became the standard, particularly when locomotives were refurbished, as happened with D 120 in 1973.

Class 45s became the main traction on Midland Main Line services from 1962. Their introduction allowed considerable acceleration of the previous (steam) timetables. They remained the main source of power on the MML for the next 20 years.

D 120 did not stay at Derby for very long being reallocated to Cricklewood West Shed during week ending 7th November 1964. On 16th January 1965, D 120 was allocated to the Line Power Controller at Derby although it has not yet been possible to identify the reason for this. On 18th May 1968 the loco was reallocated to the Nottingham Division and during August it's livery was changed to BR Blue with full yellow cab fronts.

D 120 was renumbered 45108 on 15th June 1973. The loco's original steam heat boiler was removed along with all the related pipework and water storage tank. An additional generator, and related electric train heating equipment, was installed along with train air braking equipment to make it dual braked. As a result, it became part of BR's Class 45/1 under the TOPS renumbering process. The ETH wiring was required to operate air conditioning installed in modern carriages entering service during the 1970s.

With the removal of the steam heat boiler and large water tank two large lumps of concrete ballast had to be fitted in the rest of the former boiler room. This maintained the correct weight ratios. Unmodified locos were allocated into the Class 45/0 series.

After the introduction of HSTs out of St Pancras, from 1982, the Class 45 fleet were relegated to secondary (stopping) services. There is a picture on the flickr picture site showing 45108 passing Wigston South Junction signal box on the Down Main line. It was seen hauling the [Saturdays excepted] 16:35 London St. Pancras to Nottingham (1D54) as recently as Monday 26th August 1985. From 1986, however, Class 45s had virtually disappeared from the MML altogether.

From the early 1980s, until their withdrawal around 1988, the Class 45s were regular performers on Trans-Pennine workings from Liverpool Lime Street to York, Scarborough or Newcastle via Manchester Victoria, Huddersfield and Leeds. They were also rostered on the Settle – Carlisle line where they proved capable of climbing hills at double the speed of the steam traction they had replaced. Class 45s also appeared on cross country services between the south west and the north east. These trains were generally formed of up to seven or eight early Mark 2 carriages.

The loco was withdrawn from service on 4th August 1987 and then purchased for preservation under the care of Waterman Railways. It was restored to run as D120 in BR Brunswick Green but, after a period out of use, 45108 passed into the ownership of the Peak Locomotive Company in 2008. It remains an active member of their fleet.

Since 2008 the loco has been thoroughly restored to operational condition. Repairs included renewing corroded air pipes and reinstatement of the ETH system amongst many

other works.

45108 arrived at the East Lancashire Railway (ELR) prior to the summer diesel gala in 2017 and is on loan to the ELR for a while. Electric Train Heat capability makes 45108 a versatile performer and is especially useful if ETH coaches are allocated and need to be heated during the winter.

Members of the Peak Locomotive Company continue to maintain 45108 in full working order. At the end of 2020 the opportunity was taken to undertake bodywork repairs after which a full repaint was necessary. 45108 retains BR plain Blue livery but with the addition of "Domino" head code panels.

45108 was announced as the first visiting loco for the Swanage Railway's 2023 Diesel Gala. It also proved to be the first time it had operated anywhere in Dorset. Swanage became only the third preserved railway that 45108 had operated at since restoration to revenue-earning service was completed in 2013.

During 2024 it ventured to the North Yorkshire Moors Railway for their Diesel Gala between 14th and 16th June. Other than occasional visits to heritage railways, 45108 remains available for service on the ELR. 45108 is something of a favourite amongst 'Peak' enthusiasts due to its incredible exhaust note and is reckoned to be the loudest of the currently serviceable examples.

45108 is scheduled to attend the Swanage Railway Diesel Gala & Beer Festival [9th - 11th May] along with 20066 and several other visiting diesels yet to be announced at the time of writing.

45108 attends courtesy of the Peak Locomotive Company.

Information collated and compiled by Peter Sykes 13th March 2025