

BR DIESEL (D 1945 then 47502) 47 715

The history of Class 47 locos began in the early 1960s with the British Transport Commission (BTC) deciding to remove steam locos from British Rail by 1968. This required a large build of Type 4 power but with an axle load of no more than 19 tons. BTC was not convinced that the future of diesel traction should be Western Region's hydraulic transmission and concentrated on diesel-electric designs.

BTC invited tenders to build 100 locomotives to the new specification. A consortium of the Birmingham Railway Carriage and Wagon Company, Associated Electrical Industries and Sulzer offered a production version of their D 0260 "Lion" prototype with both steam and electric heating

Brush Traction offered three options: 1) a production version of their twin-engined D 0280 Falcon prototype, 2) a single engine design using either a Sulzer engine or 3) an English Electric 16CSVT power plant. All to include a steam heating boiler with the option for electric heating; English Electric offered a design based on what was to become the DP2 prototype; whilst the North British Locomotive Company offered a Sulzer powered design with both steam and electric heating.

Of these bids, the BRCW/AEI/Sulzer bid was the preferred option, but before the prototypes could be assessed, the need to build a large number of locomotives quickly was deemed paramount. BTC decided on a new approach by cancelling the final order of twenty Class 46 locomotives and inviting bids for twenty locomotives of the new Type 4 specification. These would have to use the Brush electrical equipment intended for the cancelled order. Brush won this latter contract.

These initial 20 locomotives (Nos. D1500 to D1519) were mechanically different from the remainder of the type, using Westinghouse-supplied brake systems. They would be withdrawn earlier than the rest of the class which used Metcalfe-Oerlikon brakes.

Based on the success of these initial 20 locomotives a follow-on order for 270 was made. This was later revised upwards, a number of times, to reach the final total of 512. Ultimately, 310 locomotives were constructed by Brush in Loughborough with the remaining 202 at BR's Crewe Works.

The locomotives were ordered in 6 batches as follows:

D1500–D1519 on 28th February 1961; D1520–D1681 on 1st January 1962;

D1682–D1706 on 4th September 1962; D1707–D1781 on 28th September 1962;

D1782–D1861 on 22nd July 1963; D1862–D1999 & D1100–D1111 on 24th March 1964. D1945 was part of this latter order of course.

D 1945 left Brush Traction in Loughborough [Works Number 707] painted in two tone green livery with a small yellow warning panel on each cab front. It was equipped to operate with vacuum or air braked trains and had a steam heat boiler fitted for working winter season passenger trains.

On 30th June 1966, it went entered service at it's first depot allocation of Nottingham Division. It seems D 1945 was scheduled not to work out of Nottingham Division for very long as in October it moved [on paper only] to the Western Lines Division (LMR). On the same day this move was rescinded

There then followed a somewhat nomadic existence over the next 6 years. On 24th December 1966 it was transferred to London (Midland) but returned to Nottingham Division from 18th February 1967. In March it seems to come under the Line Power Controller at Derby but during October it was transferred to Western Lines (LMR).

On 17th June 1968, D1945 went to Birmingham Division for a while. 15th March 1969 it was transferred back to Nottingham Division although moved to Stoke Division from 9th May 1970. Whilst there it was reported that by 30th August it had it's boiler isolated.

On 19th August 1972 it transferred to Bristol Bath Road depot. Whilst there, it had Western Region's Automatic Train Control (ATC) fittings added during September. The following month saw it's steam boiler and associated pipework removed so that new Electric Train Heating equipment could be added. During February 1974 it was renumbered to 47502 under BR's Total Operations Processing System (TOPS).

May 1974 saw 47502 moving it's allocation to Landore Traction Maintenance Depot in Swansea. In September 1976, Western Region ATC equipment was removed from the loco as this was superseded by BR's standard Automatic Warning System (AWS) across the network.

In May 1977, 47502 moved back to Bristol Bath Road before moving back to Landore during November. During June 1986 a high intensity headlight was fitted to the cab front at each end. It remained at Landore for almost 10 years during which it was renumbered again, in April 1985, as 47715.

Some of these dates may not quite be as accurate as 47715 was photographed painted into ScotRail livery whilst engaged on Glasgow – Edinburgh push-pull services in May 1985. One record shows that on 4th October 1987 it had been transferred to Eastfield depot at Glasgow but it must have gone to Scotland much earlier. Haymarket Traction Maintenance Depot (TMD) has also been mentioned as another of it's allocations

Former Class 47/4 locomotives were converted for Push-Pull use on the Scottish Region becoming Class 47/7s (47701 - 47717) and gained the nickname 'Shoves' with many enthusiasts.. This conversion work included fitting RCH jumper cables to the cab fronts. These transmitted signals, using Time Division Multiplex, along coaching stock cabling to connect the loco's controls and the remote electrical driving controls fitted in the DBSO cab at the other end of the train. These locomotives were also fitted with additional pipework on the bodyside for the improved compressor cooling system.

The 47/7s were synonymous with Scotland throughout the 1980's, mainly working on push-pull services between Glasgow Queen Street - Edinburgh and Glasgow Queen Street – Aberdeen. However, they could also be found on other services within Scotland such as trains to/from Dundee, trips up the middle of the country to Inverness from Edinburgh/ Glasgow and over the top from Aberdeen – Inverness. However they did make it into England too, from time to time, on passenger services even going as far as the Western Region.

47715 was noted on a few of such workings. On 16th April 1985 saw it at the head of 1E52 the 06:12 Liverpool-Newcastle. After a break, this was followed by 1S15 service which was the 17:18 Newcastle-Edinburgh. Some records state that 47715 received it's "Haymarket" nameplates in August 1985.

It was not until 3rd July 1988 when it was noted hauling a non push-pull train when at the head of the 1730 Edinburgh-Kings Cross. 47715 hauled it as far as Newcastle where the train was terminated with passengers having to transfer to a waiting HST for the onward journey to the Cross.

In 1990 it received the later NSE livery after it was transferred away from Scotland. It is interesting that the "Haymarket" nameplates were retained.

On 19th January 1991, 47715 was photographed speeding through Pencoed (near Bridgend) with the 0917 Carmarthen to Cardiff Central additional service. This was the first day of 1991's Five Nations Championship. In Wales, focus was on the forthcoming match at Cardiff Arms Park, where Wales were entertaining England. Network SouthEast provided locos and coaches to operate several special trains along the South Wales mainline. They were provided from the Thames Valley fleet, using stock that was used on weekdays on Oxford/Newbury/Westbury commuter services.

Sunday 2nd August 1992, 47715 was photographed at St Denys hauling the 11:05 Plymouth - London Waterloo service. Both loco and Mark 2 stock were all painted in Network SouthEast (NSE) livery. This raises a query in that it must have been transferred south before then – but when? However, NSE services were transferred to Express Sprinter DMUs (Classes 158 and 159) operations from March 1993.

Many locos, including 47715, were moved elsewhere as a result. It was photographed in NSE livery at Stockport station with a Derby to Manchester Piccadilly empty Royal Mail stock working on 16th July 1996. It is reported that the last passenger working for 47715 occurred on Sunday 29th September 1966. It hauled 1A55 which was the 13:00 Liverpool Lime Street to London Euston as far as Crewe where an electric loco took over. Final withdrawal occurred on 1st March 1997 and remained stored out of use for some time.

It was noted at Crewe Coal Sidings Basford Hall yard in May 2001. By 17th January 2002 it had been moved from Crewe South Yard to Barrow Hill as 47715 had, by then, been purchased by Fragonset. A photograph was taken on 27th April 2002 showing 47715 in appalling exterior condition stored at Fragonset's Derby base on the premises of the former Railway Technical Centre (RTC) of BR.

In 2003 it was being overhauled, at Doncaster, prior to re-entry into main line service. Whilst there, during July 2003 the works hosted the "Doncaster Plant 150" and 47715 was one of many locos displayed. It was outshopped in Fragonset all-over Black livery with a wide maroon band along the bodysides. The ScotRail nameplates "Haymarket" were replaced with "Poseidon" nameplates.

In November 2004 it was spotted moving around the Derby area including the RTC, the station and Litchurch Lane Works. On 14th that month it travelled to the National Railway Museum (NRM) for a special event. During January 2005, Fragonset merged with Merlin Rail to form FM Rail. In August that year they also purchased the excursion trains business of Hertfordshire Rail Tours.

Fragonset ceased operations in December 2006 but, during September 2007, 47715 was

noted at the NRM again still in Fragonset livery complete with “Poseidon” nameplates. In January 2008 it was spotted at Leeming Bar on the Wensleydale Railway apparently awaiting fitment of On-Train Monitoring Recorder [OTMR] equipment. In February 2012 it was re-registered on TOPS so that it could resume main line duties in due course.

47715 was later photographed freshly painted in the livery of Network SouthEast livery, with “Haymarket” nameplates attached, at the Wensleydale Railway Beer Festival in May 2016. At this time the loco appears to have been owned by MTT Rail.

At some stage the Harry Needle Railroad Company (HNRC) purchased 47715 and moved it to their facility at Worksop. In August 2014 it was reported that 47715 would be the last Class 47, owned by HNRC, to be overhauled with new equipment installed so that it was available for main line spot hire along with their other Brush Type 4s. In 2021, 47715 appeared to have been pushed off the end of its siding at Worksop when some rolling stock was shunted into it. It was soon re-railed and seems to have suffered minimal or no damage.

Coming more up-to-date, by January 2025, HNRC was sold to Swietelsky AG, an Austrian railway construction and maintenance contractor. They acquired 100% of HNRC's shares with the deal announced publicly on 14th January 2025. This acquisition allowed Swietelsky to expand its UK operations in areas like locomotive repairs and fleet management.

Not all locos were part of the purchase however and 47715 was sold subsequently to Rail Engineering Services (RES). Founded in May 2021, RES is a fully accredited engineering business which is RISQS accredited and a Network Rail-approved supplier. It provides engineering consultancy services that specialise in providing customized technical solutions for traction and rolling stock engineering.

This year, RES made some announcements regarding this loco:

We're thrilled to announce the purchase of Class 47715, marking a significant milestone for Rail Engineering Solutions. This iconic locomotive is set to be restored to mainline standard—but that's not all.

As part of our commitment to innovation and railway safety, 47715 will serve as a test bed for the latest On Train Data Recorder (OTDR), Train Protection Warning System (TPWS), GSM-R, and European Train Control System (ETCS). This project will allow us to trial and refine cutting-edge safety and operational technologies, ensuring they perform at their best in real-world conditions.

Built in the 1960s, Class 47s were one of the most versatile and successful diesel-electric locomotives on the UK network. In the late 1970s and early 1980s, a batch of these locos was modified into Class 47/7 for use on push-pull services, particularly on the Scottish routes. Fitted with ETH (Electric Train Heating) and additional multiple-working equipment, these locos became an essential part of British Rail operations.

What's Next?

Our engineering team will begin work to bring 47715 back to its full potential, ensuring it meets modern operational and safety standards. Alongside its test bed role, this loco will be a valuable addition to our fleet, supporting various projects across the UK rail network.

The Chinnor and Princes Risborough Railway announced at the beginning of April 2025 that they had come to an agreement with RES for Class 47 No. 47715 to be based at the railway. The CPRR says that they have some exciting plans for the locomotive and

wouldn't be long before the locomotive is hauling the trains. At the time of writing, 47715 was scheduled to operate on Sunday 6th April at the CPRR Diesel Gala.

BRUSH TYPE 4 (D 1945/47715) BASIC FACTS AND FIGURES			
Introduced:	30/06/66	Brakes (locomotive):	Air
Wheel arrangement:	Co-Co	Brakes (train):	Vacuum and Air
Route availability:	6	Brake force:	61 tons
Engine:	Sulzer 12LDA 28C	Locomotive Length:	63ft 6in
Cylinders:	12	Width:	8ft 10in
Horsepower:	2,750hp at 850rpm Later reduced to 2,580hp	Weight:	112 tons
Main generator (as built):	Brush TG 160-60	Wheel diameter:	3ft 9in
Traction motor (as built):	6 x Brush TM 64-68	Maximum speed:	95mph
Train heat :	Steam - Spanner Mk 3	Fuel capacity:	810gallons
Maximum tractive effort:	55,500lbs	Boiler water tank:	1,250gallons
Continuous tractive effort:	30,000lbs	ScotRail Class 47 Push-Pull Working:	Fitted

ACKNOWLEDGEMENTS

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Information compiled by Peter Sykes 13th April 2025