BR TYPE 5 DIESEL No. 58023 "*Leicester Depot*"

The British Rail (BR) Class 58 is a diesel loco designed for heavy freight. The narrow body with full-width cabs at either end soon led to railway enthusiasts giving them the nickname "Bones". Their design represented a major departure from usual British conventions of construction. Amongst the innovations included adopting the American practice of modularisation.

The first locomotive of the class (58001) was delivered to BR in early 1983 and entered service later that same year. Despite expectations of a lengthy service life, during 2002, EWS decided to withdraw all remaining examples of the type in it's fleet after only a maximum of 19 years in service.

During the mid-1970s, BR operated several different diesel locos categorised as Type 5, these being relatively high-powered and suited to heavy freight trains, the newest of which being the Class 56. Initial experiences with the latter proved the type to be somewhat unreliable in service, a factor which had led to dissatisfaction amongst several of BR's freight customers.

BR officials also observed that the international market for a competitive freight loco could be quite lucrative. Thus there were pressures to enter the export market with a suitable design. Furthermore, BR had forecast the domestic rail freight sector was set to grow, and that the prospects for such growth improved - but only if more capable and reliable locos were available to service such trains.

Accordingly, by the late 1970s, there was considerable pressure within BR for the development of a new, low-cost, easily maintainable freight locomotive. Despite multiple follow-on orders for Class 56 being placed during the mid-1970s, BR also authorised a feasibility study into the development of a new freight locomotive by British Rail Engineering Limited (BREL) for the export market.

Export potential was an important consideration with pre-production drawings of the Class 58s referred to as "Standard Export Locomotives". BREL engineers were involved from the conceptual stage of development as well as bringing design and production planning into close alignment. During the concept phase, the loco incorporated features such as modularisation and recently developed manufacturing techniques to lower the costs of both manufacturing and maintenance.

Once the design for the new locomotive had been approved by the British Railways Board (BRB), the construction contract was awarded to BREL's Doncaster Works. Material ordering for the new Class 58 production line commenced during 1979. To accommodate this, BREL embarked on a major multi-million pound upgrade of 'E2' shop, which is where final assembly of the Class 58 would be performed.

BREL dropped traditional locomotive construction methods in favour of an entirely new approach – an innovative modular design. This offered savings on construction and maintenance compared to previous locomotive builds. The load-bearing underframe was fitted with exchangeable modules – number 1 cab, radiator, power unit, turbocharger,

electrical equipment and number 2 cab. If required, each module could be easily removed from the underframe and replaced.

Structurally, the Class 58 consists of a very strong underframe designed to bear all static loads imposed by the equipment in addition to the dynamic forces exerted during its service life. Basically, it was designed to have a zero possibility of fatigue failure across its anticipated lifespan of thirty-five years as well as to satisfy end-load requirements stipulated by the International Union of Railways (UIC).

All major apparatus and associated equipment on board used modular construction, which enabled the type to be fitted out on the shop floor away from the final assembly area, minimising workplace congestion as well as overall assembly time. Much of the wiring was pre-loomed to help reduce assembly time.

Each cab was a complete unit, having been designed to be fitted out with all required systems as a complete module. The cab is resiliently mounted and designed to satisfy the UIC requirements for both crashworthiness and strength. Allegedly, the Class 58 is the first design in Britain to meet these crashworthiness requirements. Much of this strength comes from a substantial hollow-rolled beam section running beneath the front windows, which is braced to floor level by two sections running diagonally down the inside of the cab's side-walls.

The rear bulkhead is also a strong structural element, designed to prevent the cab's collapse in the event of derailment as well as to serve as an anchoring point for lifting/righting the vehicle. Access to each cab is via a single central door set in the rear bulkhead, opening into a cross-corridor aft of the cab, there being no means of direct external access. The cab was so well received that its design later served as the basis for subsequent BR locos.

A Ruston Paxman 12RK3ACT engine, rated up to 3,300 HP, was the prime mover. While the same engine 'family' was used in the Class 56, the Class 58 engine was able to achieve a 5 to 6 percent reduction in fuel consumption, in part due to simplification measures such as fewer cylinders and the use of only a single turbocharger. A significant emphasis on component reduction and reliability measures was ever-present during the Class 58's design process. This was driven due to persistent reliability issues and poor availability suffered by the preceding Class 56.

The 12RK3ACT engine incorporated a silencer to lower noise emissions, which was in part necessitated to meet future standards being developed by the European Economic Community. This silencer was mounted directly to the engine (rather than the loco's body) and projected upwards, via a clearance hole in the roof, surrounded by a gutter to collect rain.

The superstructure was divided into sections by bulkheads, the placement of which was intended to optimise airflow. A relatively lightweight roof, being formed from removable sections, could be stacked manually on top of one another. A total of thirty-two identically sized doors line either side, which open in pairs, lift away to provide access for both the initial assembly process and later maintenance. They were composed of pressed steel construction for strength while remaining relatively lightweight. The underframe has a relatively low bending frequency, thus careful positioning of the bogies, in relation to the underframe, was required to minimise body flexing.

Electrical equipment consisted of a brushless three-phase main alternator coupled directly to the engine, along with an auxiliary alternator. The output was fed via a rectification unit to DC traction motors. Class 58 traction motors and alternators were interchangeable with those used on Class 56 locos. The principle control gear was accommodated within a transverse-mounted cubicle.

Brake control equipment was based on the Poussoir Bouton Locomotive (PBL) system, being less complicated and using cheaper control values than traditional alternatives. Incidents of wheelslip were observed during the type's initial operations with remedial adjustments made, including additional sanding equipment and softer primary vertical springs on the centre axle, to improve equalisation across all axles.

Further measures were examined, including revision of the slow-speed motor control system. This was important as Class 58 haulage was almost entirely confined to long coal trains between collieries and power stations. At both ends it was quite common to have merry-go-round workings with trains utilising long loops of track and running very slowly whilst loading/unloading took place.

On 9th December 1982, the first locomotive, 58 001, was handed over formally to BR at Doncaster Works. Within the first two years of operation, the Class 58 had reportedly proved to be considerably more reliable than the preceding Class 56. During January 1982, British Rail felt sufficiently confident in the project's progress to place an order for an initial batch of 35 locomotives. 58023 had been outshopped on 31st December 1984.

Earlier, during 1984, the construction of an additional 15 Class 58s was authorised to be a follow-on order. Deliveries of further locos continued until 31st March 1987, at which time the final example (58 050) was delivered. Despite initial hopes of obtaining export orders for the type, no overseas customers were forthcoming. The jigs at Doncaster were dismantled and 58 050 became the last diesel locomotive to be produced at 'The Plant'.

From new, all locomotives were outshopped in Railfreight grey, with yellow ends and red solebars. The introduction of Railfreight sector liveries from October 1987 saw 58 050 outshopped by Stratford in the new triple grey scheme, complete with the Trainload Freight coal sub-sector logo. Eventually the majority of the fleet were repainted in triple grey livery.

Upon shadow privatisation of the UK freight business, Mainline Freight became the owners of the 50 strong fleet, which saw a small number re-painted into the operator's aircraft blue and silver livery. 58023 was first repainted from her Railfreight large logo grey with white cantrail strips into Railfreight Coal sector triple grey at Doncaster Works in July 1989 during overhaul. During early 1991 58023 gained cast BR arrows and became the only Class 58 given the larger Toton depot plates.

The next overhaul at Doncaster occurred in May 1993, retaining the coal livery until the logo's were removed early in 1994. The next repaint was into Mainline blue and silver livery in May 1995. 58023 carried this latter livery when "*Peterborough Depot*" nameplates were unveiled on 2nd June 1995 by Dr Brian Mawhinney, Secretary of State for Transport, at a Peterborough 150 event at Peterborough Nene Valley station.

On 30th December 1995, D -Tours organised "The Christmas Pudding" using two 4VEP units (3500 and 3591). Various locos were used to haul them with 58023 taking over on the Tonbridge – Hastings – Sevenoaks and London Bridge. It had to come off there as

locos are not permitted at the buffer stops in Cannon Street station.

During the late 1990s, it was still considered almost certain that the entire Class 58 fleet would see service into the next millennium as working locomotives. Despite being quoted as EWS's most reliable and consistent Type 5s, during 1999, it was announced that a large number of Class 58s were going to be placed into long-term storage. 58 017 was the first to be stored, quickly followed by 58 022. Afterwards, the remainder of the Class 58s went into storage, initially at various sites around Britain. The type's withdrawal was hastened by the introduction of 250 Class 66 locos from North America. 58023 was withdrawn on 24th July 1999 and stored at Toton Depot.

Seven Class 58s were put on the DB Schenker [successor of EWS] April 2010 disposals list. This was the first time stored Class 58s had been put up for sale. One of these, 58 016, entered preservation at Barrow Hill with the Class 58 Locomotive Group (C58LG). A further five Class 58s were listed for disposal by DB Schenker on their October 2015 disposals list - these being 58 008, 58 012, 58 022, 58 023, and 58 048. During January 2016, it was reported that DB Schenker had disposed of its last Class 58s in the UK. Of these 58 012, 58 022, 58 023, and 58 048 were saved for preservation but 58 008 was scrapped by Raxstar.

In 2016, 58 012 and 58 023 were saved being purchased from Ron Hull Jr's scrapyard at Rotherham. Both were taken by road to the Shackerstone Railway ("The Battlefield Line") were much of this early work was undertaken. The team carried out extensive mechanical and cosmetic work to return the locomotive to operational condition in November 2016.

This was a significant milestone in the Class 58 story with the successful first run of 58 023 in preservation. The return of a Class 58 to operational condition for the first time in over 20 years in the UK. The Class 58 Locomotive Group has been proud to support and celebrate 58023's return to working order. However, it has been down to owner Ed Stevenson and the restoration work undertaken initially by Simon Powell and Adrian Lock of Heritage Transport Restoration and Supplies Ltd (HTRS).

58023 was later transferred to UKRL in Leicester, where further work was completed to prepare it for its first successful test runs on the Severn Valley Railway. Apparently, this included replacement wheelset/bogie parts sourced from scrap yards in Europe.

58 023 (023) made an historic journey on 14th September 2024, marking the first time a Class 58 locomotive moved on the UK rail network in nearly a decade. The locomotive was transferred from UK Rail Leasing, Leicester to the Severn Valley Railway (SVR) where it is based.

The train was the 12:18 from Leicester with the headcode 0Z58 and 58023 was 'sandwiched' between 50007 & 50049. It then operated crew training sessions over the SVR with 7 wagons and a brake van on 16th September. It hauled it's first passenger train on 4th October during the SVR's Autumn Diesel Bash. Class 20 (20142) was coupled behind it as brake translator [58023 is air brake only and SVR passenger stock allocated was vacuum braked].

It was one of the many exhibits at The Greatest Gathering held at Alstom's Litchurch Lane Works in Derby from 1st to 3rd August 2025. This event was the world's largest-ever gathering of historic and modern railway vehicles, showcasing over 140 trains to mark the 200th anniversary of railways in Britain.

The achievement of returning 58023 to working order is quite remarkable and a testament to the skill, persistence, and dedication of those directly involved in the project. The return of 58023 has inspired renewed interest in the Class across the heritage railway sector and demonstrated what can be achieved when knowledge, passion, and teamwork come together.

Congratulations go to Ed Stevenson, the HTRS team, and UKRL for their outstanding work in bringing 58023 back to life as well as permitting this loco to visit the Swanage Railway.

ACKNOWLEDGEMENTS

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