PROJECT CLASS 22 SOCIETY
6358
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"Rebuilding the past for the future"

81A

"LISTER"

Old Oak Common
OC

Old Oak Common

Class 22 & NBL/MAN Special Edition

2nd September 2017

Journal Overview

We need to acknowledge all the fantastic people who managed to take so many photographs of our railways over the years. Our project would have struggled without you allowing us to share your memories. THANK YOU!

Welcome to Project 22

Welcome to The Project 22 Journal "Lister" Each issue is numbered after a Class 22 with the view we will have D6358 build by the last issue. This special addition has been produced as an introduction to the Project and to celebrate 110 years of Old Oak Common, highlight the years 1962 – 1976 and the end of hydraulic traction in the UK.

Project 22 was established in 2014 and inspired by the successful new build steam projects drawing to completion in the UK. This is a relatively new project making steady progress in gaining the necessary drawings needed. We have purchased a Class 22 engine; 220 which will be on display at the Old Oak Common open day.

We know that our NBL/MAN engine has been here before many times. On 4th April 1969, power unit 220 was removed from Warship D850 'Swift' as it was throwing oil, this may have been its last run? Picture below while stored outside The Factory.

D6345 and D850 April 69. © G. Wareham

This is a brief glimpse into the Class 22 world, a loco that hasn't been forgotten but could have a chance to be re born with Project 22. We need as much support as possible, we need to attract Operational Volunteers.

Please visit our website www.class22newbuild.co.uk

Fill out a simple form today to become sponsor of "Baby Warship D6358"

The D6300s later to become the Class 22

D6326 Old Oak Common 08.03.1964. ©Keith long:

New to Laira, 16th May 1960 and the first Class 22 reallocated to Old Oak Common 28th September 1963. After 7 years' service in West London, she was reallocated back to Laira on the 22nd May 1967, only to be withdrawn 4 years later 0n the 3rd October 1971. Then being moved to Swindon for stripping and cut up by March 1972. (RIP)

Designed and built by the NBL Company in Glasgow. Formally known as BR Type-B or Type 2 mixed traffic locomotives introduced in 1959 and numbered D6300–D6357. The first six as a pilot scheme and fifty-two as production order, which was completed in 1962. The class was extinct by January 1972 none were preserved.

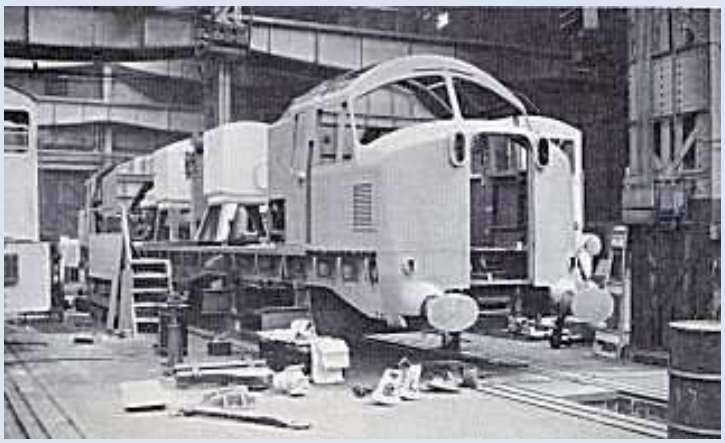
D6300 @ NBL Works Glasgow © Unknown.

The type B was designed as a smaller version of the Type C (A1A–A1A) twin engine heavy duty mainline D600 pilot scheme locomotive. The Type B was a smaller mixed traffic locomotive, intended for use in multiple to replicate the power of the larger D600s if needed. Type B later to become a Type 2 and subsequently 'Class 22.'

In 1955 the British Government embarked on a "Modernization Plan" with the primary objective of removing steam traction from British Railways. Diesel and Electric traction was becoming widely accepted around the world, and was more efficient. It was felt that Britain was behind in this area and a huge poorly thought out program was put in place.

The British Transport Commission was tasked with conceiving and implementing the Modernization Plan, which resulted in many pilot scheme Diesel and Electric locomotives being commissioned. The locomotives were ordered with a wide range of manufactures in Britain, as specified by the government, the policy then was firmly "Buy British."

The BTC was favouring a fleet of diesel electric locomotives, proving very successful in the USA and with some experience in Britain. The LMS Ivatt twins 10000/1 and the Southern Region Bullied 10201/2 were proving reliable prototypes that with development, could have



been purchased in bulk for the larger locomotive requirements. The LMS Bo-Bo 10800 had been designed for the lighter mixed traffic.

The plan was to electrify all the British Railways mainline routes, with Diesels being a 'stop gap' until this could be achieved. Before this, R C Bond was involved with the trials of a pair of NBL Diesel Hydraulics for Mauritius that took place in Scotland. He was so impressed that when the Modernisation Plan came along, he suggested that a trial with Hydraulics would be a good idea. NBL had already drawn up a Type C 2,000 hp loco and a 1,000 hp Type B. They offered 5 of the larger and 6 of the smaller. BTC took up the offer and the decision was made to use them on the Western Region as the mainline was totally contained within the Region. In addition, there were flat, fast sections and very steep parts as well; a very good place to trial a new transmission. Considering that they were 20% cheaper than an equivalent Diesel Electric, it was well worth the trial. What is often forgotten is that the only 2,000 hp Diesel Electric loco in Britain at the time was 10203, built in 1954 and this weighed 133 tons, so when the D600's came in at 117 tons, they were lightweight. This decision influenced the WR to look at the locomotive type with a different view point. They were of course, aware of the developments of the German Railways (DB) who were developing a lightweight high-powered Diesel Hydraulic locomotive. This became the V200 and was being used very successfully in Germany.

Having accepted the hydraulic transmission, the WR pushed for this type of lightweight locomotive. There were also plans by the BTC to phase out all lose coupled freight trains by the early 60's. This meant that the heavier locomotive for braking would not be required, making the lighter German design hydraulics a good option for WR. The BTC allowed the WR to order a pilot batch of locomotives based around the V200 as a further experiment as the WR made a good business case for them. Swindon had now gained an order for the first three D800 pilot scheme locomotives. The buy British policy was difficult for the WR, as all the experience was coming from Germany. Licensees for the body shell, Maybach Engines and Transmissions had to be arranged, as buying German was 'not Cricket.'

Pressure was building for the BTC to deliver the savings and advantages of diesel traction and replace the steam locomotives in service. In 1957 Swindon received and order for 30, D800's and NBL an order for 52 D6300's.

There were a number of design changes that NBL wanted to carry out with the D6306's as against the D6300's. At the time of the 1957 order for 52 locomotives the pilot order had not been delivered. In 1958 another order was placed with NBL for 33 Swindon designed D800s and an order for a further 5 Swindon ones would follow, these last 5 locos being built instead of 5 Westerns to keep Swindons production line going while the Westerns were prepared for production. This caused difficulties for NBL in Glasgow as not only did they have to learn the stressed skin techniques they also had to introduce the L630rV Voith transmission at the same time. This resulted in the production of the Class 22 to be put on hold for 18 months. The first D6300 was delivered to the WR in 1959.

D6332 at old oak common, 05-12-70 © Peter Foster

Pullman at OOC 1973 stored in the carriage sidings awaiting scrapping (RIP)
The Pullman Units were powered with the same NBL MAN Engine as the
Class 22 and NBL D800s: © Roger Goodrum

Class 22s to 81A, later to become OCC

An array of locomotives around the turntable June 1969 including no less than 5 Class 22s: © David Bapty

Old Oak Common is situated alongside the grand union canal and the Great Western main line. Built in 1906 by the Great Western Railway and designed by G.J. Churchward, to replace the West London sidings south of the line at Kensal Green.

The sidings terminated in separate sheds, one for carriages and the other for engines. The carriage shed, 4 bays in width each bay comprising of 5 roads of track. There were 12 reception and 41 stabling sidings, totaling 10.5 miles of track. There was a 50-foot turn table in the middle of the yard for tuning engines and carriages.

Old Oak Common is located a convenient 3 miles from the Paddington station with a pair of separate lines constructed so that movement of empty stock would not congest the main lines.

The introduction of longer trains and new coaching stock necessitated major changes in 1936-41 including an extension of the carriage shed and the building of a new carriage repair depot. At the mid-20th century Old Oak Common was the largest passenger marshalling yard in England and employed over 600 people.

The sidings were further modernised in 1960/62 with the reconstruction of the old carriage shed reducing covered accommodation from 30 to 15 roads. The repair depot was converted into a servicing shed for the newly introduced diesel engines, but returned to use as a repair depot in 1973

In 1976 a three-road servicing shed was constructed alongside the carriage depot for the newly introduced Inter City 125 sets, this was up graded in 1986.

D6354 Old Oak 12-09-1964 © David Christie

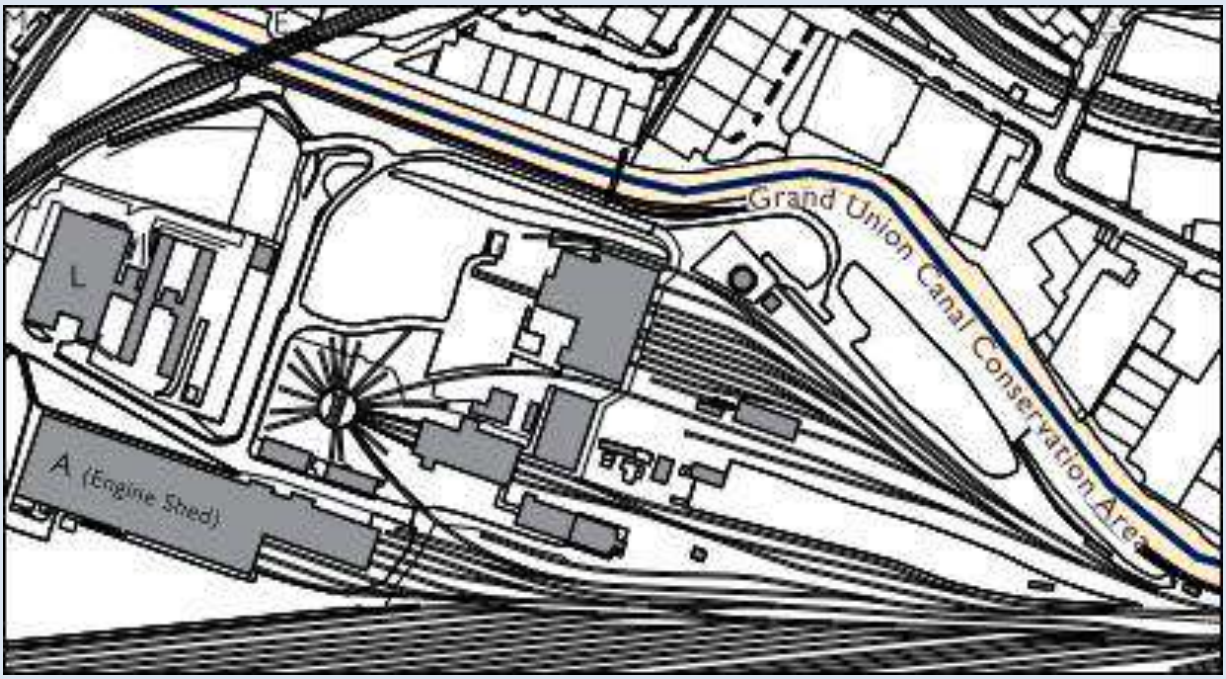
London Paddington: © Bob Masterton

The Servicing Shed:
This is first port of call for most locomotives arriving on depot, a four-road shed used for fueling and general service. The servicing shed provides access to the turntable for serviced locomotives to be turned and stabled.

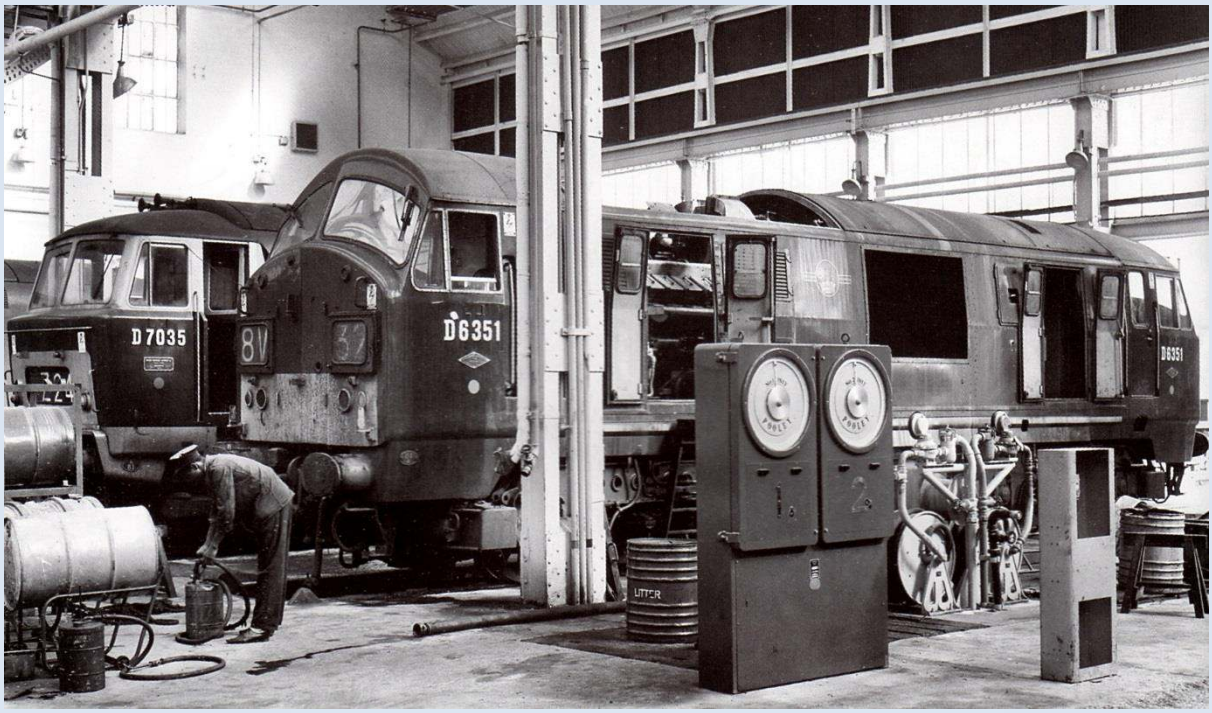
The Turntable:
By far the most notable, photogenic and famous land mark at the depot holding up to 15 locomotives at one time. The 70-ft. turntable was built in 1953 and is now preserved at The Swanage Railway.

The Factory:
The heavy maintenance center at OOC. Consisting of 7 roads where all classified examinations are carried out. The facilities include Jacks to lift locomotives for bogie and traction motor repairs. Many NBL engine changes took place here in the 1960s.

The Pullman Shed (marked as Engine Shed)
This is where the legendry Western Reign Pullmans were housed and serviced in the heyday of their operations. After their demise in 1973, the facility was used to house the prototype HST, 253 001 and the APTE. When the Inter-City 125s arrived in 1976, a purpose build HST depot was built leaving The Pullman Shed for storage of the break down crane and a carriage and locomotive painting facility.



D6345 Old Oak Common December ‘65: © G. Wareham



D6351& D7035 in the factory, October ‘65. © CJM

Diesels Come to Old Oak Common.

Old Oak Common has always housed the big Great Western engines as well as the more humble engines. The likes of the Castles, Halls and King Classes ran from here up until withdrawal in 1964.

A few prototype shunters came to Old Oak Common in 1948 and the prototype GT2 Gas Turbine in 1952. A number of early 08 shunters in 1953. The major influx of diesel started in from 1958 to 1961 with more Class 08 shunters.

The first mainline locomotive allocated to Old Oak Common was Class 52 D1040 Western Queen on the 20th September 1962, followed later that month by D1009 Western Invader. Over the coming 12 months a further 45 Westerns were allocated here.

Around the turntable at OOC mid 1960's: © Unknown

On the 3rd May 1963 the first new Hymeks started arriving in the form of D7048/76/78. Further Hymeks and Westerns were now being transferred from Cardiff Canton where they were delivered from new. This month also saw the first Diesel Electric Class 47s arrive in the form of D1682/83 October 1963. During this period Class 14, 35, 47 and 52 were being allocated to Old Oak Common.

The Hydraulic invasion continued with the first arrival of a Class 22, D6326 on the 28th September 1963. Reallocated form Laira. Staying at OOC for seven years before being sent back to Laira in 1971. D6326 was also withdrawn and cut up at Swindon by March 1972 same year.

With the decline in local rail traffic in the west country many Class 22s become surplus and were sent to Old Oak Common to replace the Panniers on the stock movements between Paddington and Old Oak Common, D6326 being the first to arrive for trails. The 22s suited this work with their comfortable ride and underpowered MAN engines.

Further 22s arrived at Old Oak Common in 1964. D6343, in June and D6335/51/52/54 and 57 transferred from Bristol Bath Road. Followed the year later my D6353/55 and 56.

The use for the Class 22 increased with the locos covering freight duties across the home counties, up to Oxford, High Wycombe and cross London Freights.

D6335, D6354 and D6340 1968: © Derek Everson

Class 22 allocated to Old Oak Common			
Loco	Date	Re allocated from	Withdrawn
D6326	28/09/63	Laira	03/10/71
D6335	12/10/64	Newton Abbot	14/09/68
D6343	22/06/64	Laira	01/10/71
D6335	12/10/64	Newton Abbot	14/09/68
D6351	12/10/64	Bristol Bath Road	30/11/69
D6352	12/10/64	Bristol Bath Road	02/05/71
D6354	12/10/64	Bristol Bath Road	22/05/71
D6357	12/10/64	Bristol Bath Road	21/12/68
D6355	01/11/64	Bristol Bath Road	14/09/68
D6356	01/11/64	Bristol Bath Road	03/10/71
D6353	15/11/64	Bristol Bath Road	23/09/68
D6345	07/11/65	Newton Abbot	14/09/68
D6347	19/09/65	Newton Abbot	31/03/68
D6348	19/09/65	Newton Abbot	27/04/71
D6349	19/09/65	Newton Abbot	14/09/68
D6350	19/09/65	Newton Abbot	14/09/68
D6342	07/11/65	Newton Abbot	21/12/68
D6346	07/11/65	Newton Abbot	03/05/69
D6327	15/01/66	Newton Abbot	22/05/71
D6328	15/01/66	Newton Abbot	17/07/71
D6332	15/01/66	Newton Abbot	22/05/71
D6340	01/05/66	Newton Abbot	22/05/71
D6341	01/05/66	Newton Abbot	30/11/68
D6336	25/01/69	Laira	03/10/71

On the 5th July 1967 D846 was the first Class 43 Warship to be allocated to Old Oak Common. Although they were regular visitors to the depot the first allocations started this year mainly being transferred from Newton Abbot.

By 1971 the Class 22s were all gone from Old Oak Common and the Hymeks were going the same way, as were the D800s and soon to follow the class 52s. Diesel Electric was now taking over. By 1972 the Class 31s were becoming established alongside the bigger Sulzer class 47s.

On the 11th May 1974, 5 class 50 locomotives were re-allocated from Bristol Bath Road to Old Oak Common: 50001/002/004/005/050 were the first to arrive. The only Hydraulic locos remaining in service, though being run down were the Class 52's which had now been reallocated to Laira.

D6340 April ‘69: © G. Wareham

7032 & 7011 at Old Oak Common 1972 © Stephen Burdett.

7026 1974: © Stephen Burdett

D6354 & D859: © Curly 42

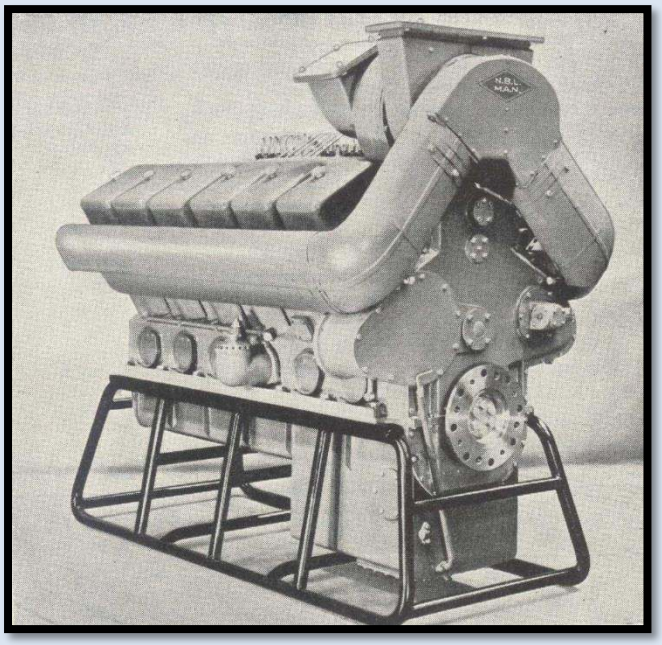
D7016 1974: © Stephen Burdett

Why were the Class 22's built in the fashion that they were?

The production batch of the Class 22 were the result of experience in designing and building the D600 Warships, the Pilot scheme 22's and the Pilot scheme 21's.

To understand the reasoning, we must look back to the situation when NBL started to design the D600's and the Pilot scheme 22's which was back in 1952 – 53. At that time, NBL understood that they must get into diesel manufacture in a big way and that to do that there were several necessities. We must remember that NBL had been selling diesels of up to 800hp successfully to railways abroad for a few years at this point using Paxman engines and GEC electric transmissions. The main thrust was to get mainline locomotives onto British Railways where they could be seen by other operators worldwide and hence draw more orders.

It was clear that the way to go was to bring as much as possible in house. This was driven by the fact that at the time, Paxman, NBL's preferred engine supplier, didn't make an engine of sufficient horsepower to support a 2,000hp locomotive, either single or twin engine.

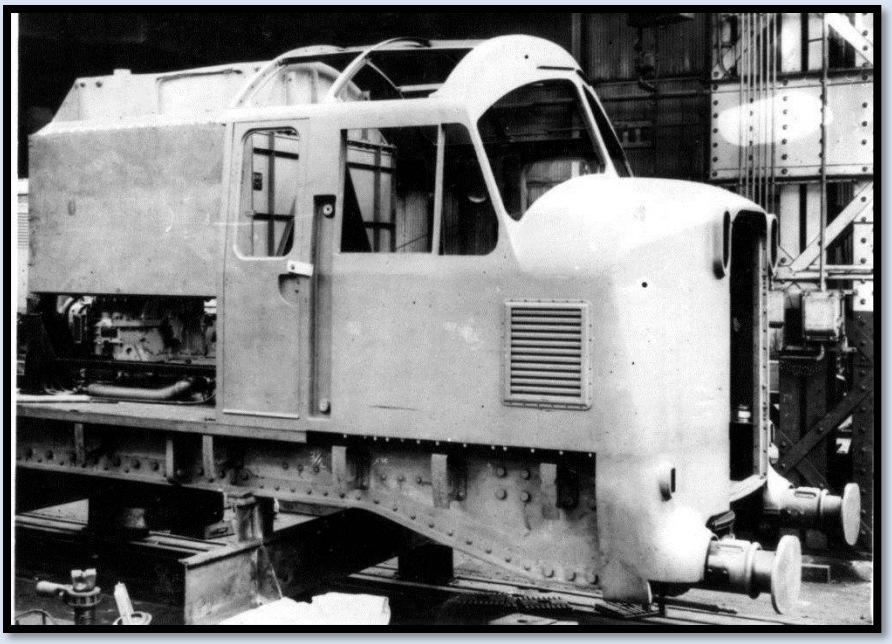


At that time, there were very few engines of that capacity available anywhere, English Electric had just increased theirs to 1,750hp for 10201/2 and wouldn't have 2,000hp available until 1954, in 10203. Sulzer could supply engines of the right capacity, but, were extremely heavy and expensive.

By this time, NBL already had the manufacturing rights for the Voith hydraulic transmission which were being used successfully in the 'Miner' locos that NBL built for underground working where electric transmission couldn't be used. Now, it just so happened, that Voith supplied the transmissions for railcars that the DB had put into service in Germany whose engines were supplied by MAN. These engines, the L12V 17.5/22A, were in the process of being cleared for use at 1,000hp. NBL realized that 2 of these engines plus the appropriate Voith transmissions would give them the 2,000hp that they needed for a mainline express locomotive and that they were lighter than the corresponding EE/Sulzer engines and GEC transmissions.

Therefore, NBL negotiated a deal to manufacture MAN engines. Interestingly this deal included an engine of 2,000hp, but, this came in the same category as the other 2,000hp engines, too heavy and would need a heavy electric transmission. Having now decided on the MAN L12V 17.5/22A engine and Voith L33 transmission combination in twin form for the 2,000hp loco and singly for a 1,000hp loco, the design work could start.

At the time, nearly all of NBL's experience was in steam locos, the few diesels that they had built were similar to the American 'Switcher' type as per No. 10800 and later Class 16's. The frames on these were very much steam style in the way that they were constructed, plate riveted together. The bodies were effectively the same as the shunters being designed at the same time. As far as main line locos were concerned, the best was those being built in America and therefore that style was the starting point for NBL, just the same as it had been for Ivatt on the LMS a few years earlier. So, we now have a design to crib from, an engine and a transmission.



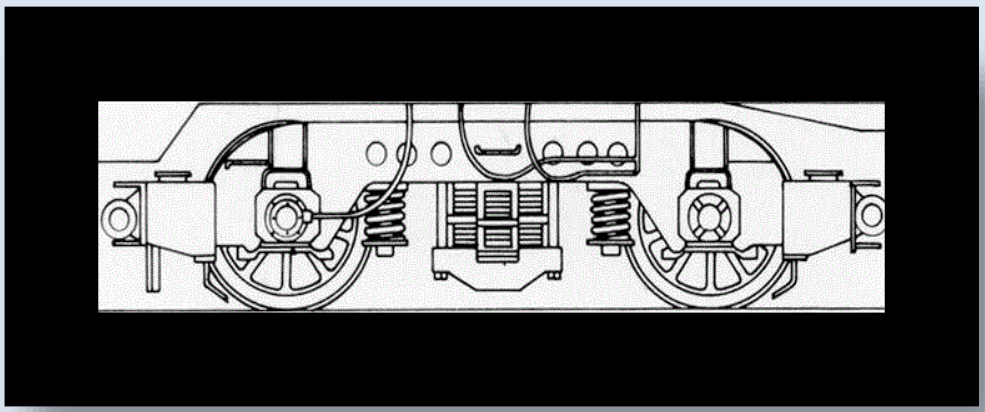
The next decision was how to manufacture the frames and body. As we have seen, the frame was to be built using steam technology as that is what the workforce was used to. The body, however, was a totally different matter. Steam engines generally didn't use much in the way of double curves, the dome cover and some of the cladding around the back of the firebox being the main parts, consequently fabricating the cabs was going to require major retraining of staff as there was an awful lot of double curvature involved. To get around this problem, it was proposed to cast the cab in Aluminum Alloy, not in one piece though, each cab consisted of 17 parts on the 22 and even more on the D600.The cabs were eventually bought in as complete units from Light Alloys Ltd and just bolted onto the frame at NBL. The rest of the body was to be flat or single curvature alloy sheet riveted and bolted to the alloy framework which itself consisted of standard sections cut and drilled at NBL, thus re training was kept to the minimum. Having now got the design down onto a drawing, an opportunity arose in 1954 to discuss it with a senior manager within the BTC who was convinced that the idea of a twin engine mainline diesel of 2,000hp that was cheaper than its electric transmission equivalent was worth trying out.

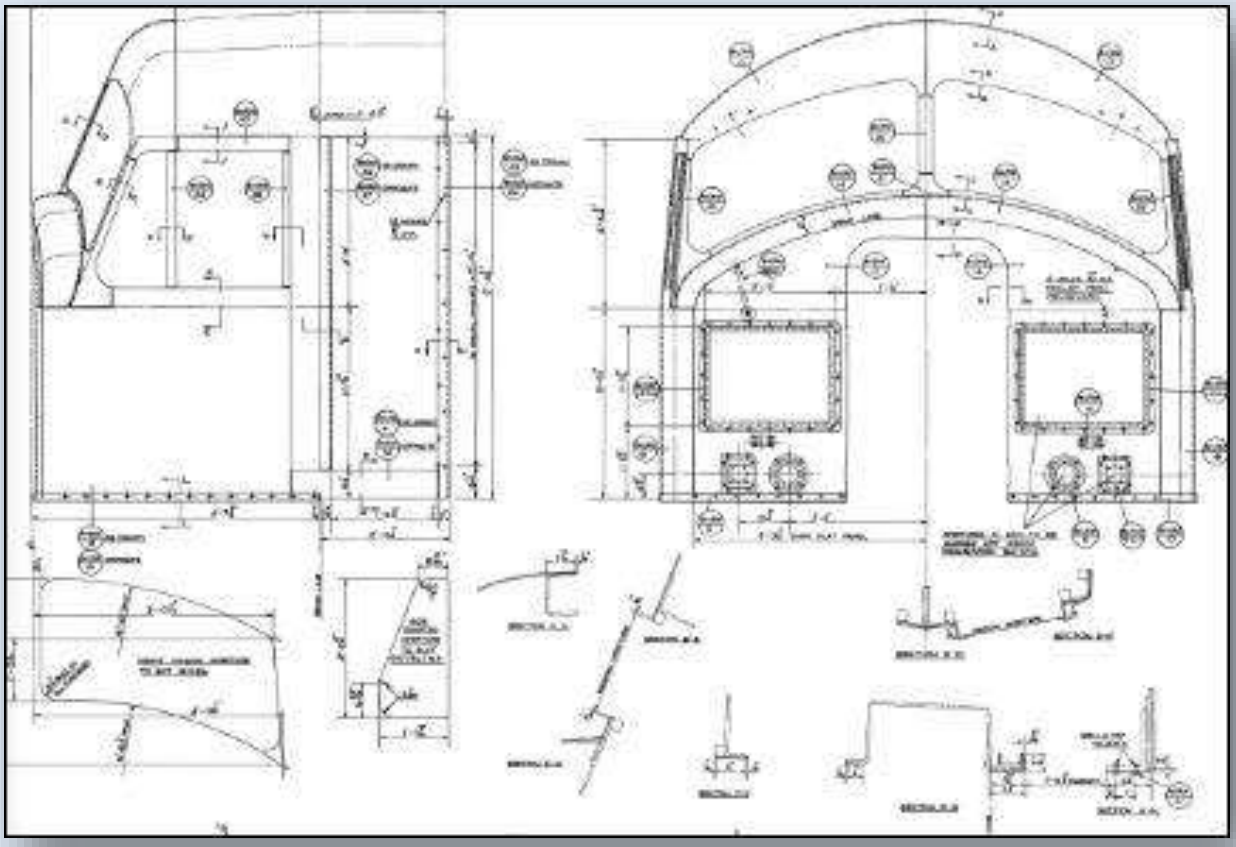
During the delay between the original design and the contract being issued, several changes were made, the engine being uprated to the L12V 18/21A (S in NBL terms) of up to 1,100hp and the transmission to the L306r which could absorb the increased power. As the BR order was for 2,000hp not 2,200hp then the engines were set for 1,000hp. The NBL manufactured engines were suffixed BS, for British Built Supercharged, all the engines, whatever the output being the same.

The modernization plan came out in 1955 and the 5 D600's and the 6 D6300's became part of that plan. In fact, the orders were placed before the plan was announced.

At some point, it was decided that there would be 10 Diesel electric versions of the 1,000hp locos added to the pilot scheme, presumably compare the transmissions. Now the original D600 and D6300 locos had frames that were mainly riveted together as the workforce was used to manufacturing steam loco frames and at the time of original design these were the workforce that were available to NBL, NBL were still building Steam locos for South Africa and New Zealand up till the late '50's. However, by the time that the D6100's was being designed a couple of years later, things had changed. Welding was now the preferred method of assembly, there were a lot of welders available from the shipyards that were neighbors of NBL, so the frame for these was constructed from steel plate welded together.

The Production 22's used a similar style of frame and were redesigned to take the lighter Voith LT306r transmission which would be fitted to the Class 43's at BR's request. They were also revised to be able to accommodate the Maybach MD650/Mekydro K104 combination that BR were building into the Class 42's at the time. As it turned out, BR never took advantage of this feature, something that we could perhaps do in the future.





Bogies for the 22's were a shortened version of the 6-wheel bogies under the D600's which in turn were an in-house version of those used on some American loco's. The fact that they looked very similar to the LMS Ivatt bogies is that they were both cribbed from the same source.
These bogies were all fabricated just like the frames themselves, ease of manufacture more than likely being the reason as all previous bogie mounted NBL diesel and electric locos had fabricated bogies.

Why the 21's had cast bogie frames is possibly down to GEC who supplied the electric transmissions. Interestingly, the works plates of the 16's & 21's had GEC's name as well as NBL, whereas the 22's only had NBL. We have also been advised recently that the 21's were initially to have had 22 style bogies, but were changed on request of GEC.

D6327 at OOC 1967. © Derek Jones

OOC ‘78 47231 47032 50 045 © Colin Marsden

Who are Project 22 and how can you help build a Class 22?

Let's not beat about the bush, we need lots of CASH and GOOD PEOPLE! This is where we are today. We are a small group who act as the Management Committee for "The Project Class 22 Society". This is about to change as we are moving forward. We are now working with The Heritage Railway Association to become a registered not for profit Charity. We will be called "Project 22 New Build" We will also set up a Management Company called Project 22 New Build Ltd. This arrangement will allow us to raise funds and allow us to draw contracts as a legal entity.

To build this locomotive we will need sponsors, people who can invest an amount of money on a regular monthly basis. This money will be paid into the Charity and held in trust until needed. The Company will trade and become self-sustaining and bear the costs of administering the project.

If you kind people would like to see a Class 22 built, please sponsor us by doing so you will be investing in a Class 22. When the locomotive is built all of the money invested towards the build will be transferred into company shares, so you are really buying a piece of history. This investment won't make you rich in money but it will make you rich being a part owner of D6358.

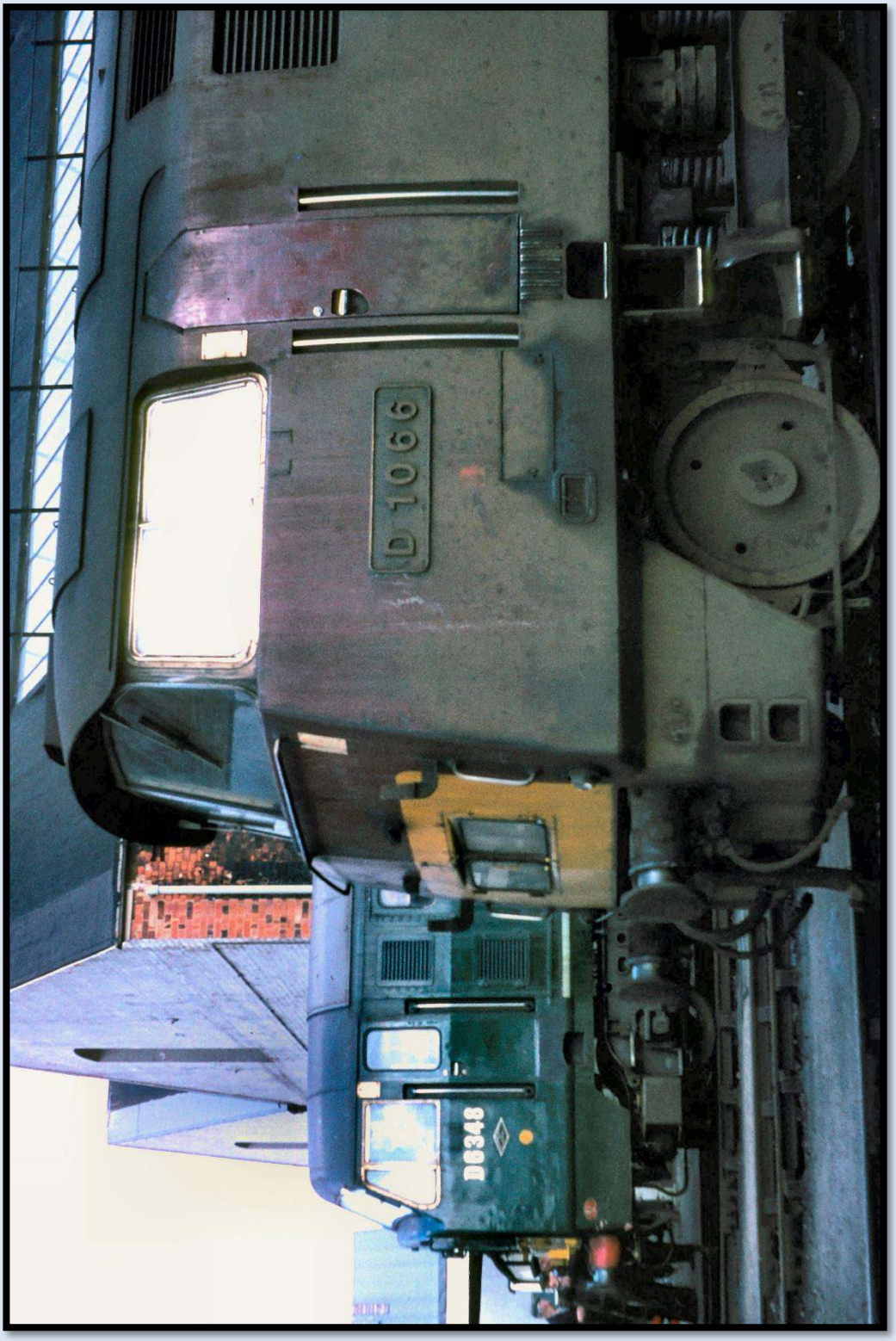
Being a charity forbids us from giving away charity money or assets, so we are going to nominate other Hydraulic Preservation Groups to be our benefactors in the unlikely event of Project 22 failing at any point in the future.

Building a locomotive is our primary aim along with protecting the investment of our sponsors.

Please go to the website now and become an investor and please come and join us in this exiting project. There will be an application form enclosed, you can contribute as little as £5.00 a month to be an investor and receive our "Lister" Journal. The more you can afford the better for us as it brings the project forward.

When will we build a Class 22? Our aim is to start bolting together in 2022, the year of the Baby Warships return.

www.class22newbuild.co.uk



D6348 & D1066 1970 © Jonatan Martin