60163 TORNADO

New Steam for the Main Line

2007 PRINCE OF WALES

Building Britain's Most Powerful Steam Locomotive

3403 HIGHLANDER

Recreating Gresley's last design

The Communication Cord

No. 75 Spring 2025

Mike Spencer

Reflecting the buoyant mood of the Trust, a paddle-boarder watches *Tornado* cross the Grand Union Canal at Glen Parva during a turning move on 23rd May.

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EDITORIAL *by Graham Langer*

I must apologise for the tardiness of this edition of *The Communication Cord*, we have been anticipating the good news that has now been delivered and are delighted to say that many of the articles that follow convey some of the sense of this activity as we successfully returned *Tornado* to traffic, tested the ETCS system 'live' and watched her become a 'very useful engine' operating a host of tours for The Railway Touring Company, including the prestigious 'Great Britain XVII' land cruise. I will let others fill in the detail on these momentous events but I think we can safely say that No. 60163 is back and as good ever!

This is going to be a notable year for Darlington, the bicentenary of the Stockton & Darlington Railway marks two hundred years of what might be considered 'fully formed' railway operations and we are proud that some of the original formation lies within the boundary of our own premises, indeed it once again carries an iron road as our amazing team moves to complete the tracklaying required to connect the Works to the Whessoe Road engine shed and the spur onto Network Rail. It is astounding to think that in less than two years more track has been laid at our site than some preserved railways have managed in a decade (or more!) and to a very high standard indeed. Your continued support has kept the delivery of track materials and ballast flowing and we are within sight of the final push completing the project in time for S&D 200 for which we thank you and encourage you to help us get it 'over the line'!

With so much to report, we have compressed news about the P2 to the essential minimum in the knowledge that the next edition of *TCC* will carry a very welcome update about the delivery of the boiler to Darlington Locomotive Works. Even though activity has to some extent been confined to Meiningen, preparations are in hand to receive the boiler at the Works and we now have the carriers on which to place it!

This edition of *TCC* carries advance warning of this year's Convention, a date that is sandwiched between the weekend of the S&D bicentenary celebrations on 27th September and the first model railway exhibition to be held at Hopetown, courtesy of the Gauge 1 Model Railway Association, on the weekend of 11/12th October. During all three weekends Darlington Locomotive Works will be very much be "front and centre" and the focus of much attention and we look forward to showcasing all that the Trust has achieved in the last three decades, none of which would have been possible without your continued loyalty and support. We hope you will feel rightly proud of this outstanding success when large numbers of the general public are exposed to the fruits of your generosity. TCC

Josh White

***Tornado* with 'The West Yorkshireman' at Appleby.**

FROM THE CHAIR *by Steve Davies*

The hugely successful return to operations of *Tornado* has undoubtedly changed the mood music within the Trust, with a palpable sense of happiness that the overhaul has been completed, and that we can now get back into a steady rhythm of main line and heritage operations. Our aim, as ever, is to rekindle our reputation for the kind of professional, drama-free and highly efficient performance that our customers, train promoters, operators and, importantly, Network Rail desire. Our new operating partnership with West Coast Railways is not an exclusive one, but the practical reality is that they will operate the vast majority of the trains we will head. To that end, as previously announced, we agreed to repaint the engine in BR Green to match the era portrayed by West Coast and the maroon coaching stock they operate, a decision which I know raised a few eyebrows but the finished result is excellent, exemplified by the magnificent vision of *Tornado* at the head of a full rake of maroon stock on the 'Great Britain XVII' rail tour. Allied to the West Coast arrangement is our agreement to work very closely with the Railway Touring Company, who by happy coincidence themselves work hand-in-glove with West Coast. We look forward to the harmonious cooperation of this triumvirate in the months ahead.

The successful testing of ETCS on a section of the Cambrian line was a world-first for a steam locomotive, representing a seismic advance in future proofing main line steam operations, and I am proud of the role the Trust has played in fitting this advanced digital signalling system while simultaneously conducting the mechanical overhaul. Not a task for the fainthearted! As *Tornado* gets into her stride, we now have the time and capacity to turn to other pressing matters, key being the completion of the P2. To underpin this forthcoming effort, we are in the process of recruiting a P2 design and build engineering lead and hope to have filled this post by the time of the next edition of *TCC* and will keep you updated. Likewise, we are reviewing the role and responsibilities of the office manager function and will set the recruitment wheels in motion soon.

The track infrastructure project moves ahead apace, bolstered by Network Rail's confirmation that the mainline connection will be installed in time for the Stockton & Darlington Railway bicentenary celebrations. It has been a real pleasure to watch the wonderful effort which has gone into delivering this essential project, through the combined efforts of our volunteers, staff, the Army, Darlington Railway Preservation Society, and the North Eastern Locomotive Preservation Group. Special mention must go James Hodge, our intrepid and indispensable track design and construction lead, and of course our very own Terry Graham whose determination to see this through has been infectious. Our many supporters have been incredibly generous already, but we are still in need of more materials (especially ballast) and I would ask that you dig deep again, if you can.

In summary we are in a much better place morally, physically and conceptually than we were only six months ago (but we still need lots of money!) and that is very much down to the support of great people like you. I look forward to reporting even more positive news as 2025 progresses. Finally, I would like to take this opportunity to say hello to a new key member of the A1 Trust team. I would like to welcome on board our new Workshop and Infrastructure Manager, Richard Snowdon. Richard is already known to many of our team in his capacity as a key member of the Darlington Railway Preservation Society team. He has extensive engineering experience and is currently working for GB Railfreight, so brings a wealth of 'big railway' operational experience to his new role. We wish him well in his new appointment. TCC

Ian Lane

'The West Yorkshireman' 31st May 2025 with *Tornado* on the S&C line approaching Garsdale enroute to Carlisle from Bradford.

***TORNADO* BACK IN TRAFFIC** *by Jorge Gorman*

No. 60163 stands ready for the off at Edinburgh Waverley.

We began on Sunday 27th April, where a small and dedicated team of support crew began to assemble in Carnforth depot, where *Tornado* was stabled, awaiting its first mainline passenger operations post overhaul. For the team present on Sunday, several less glamourous tasks were required to be undertaken, starting with cleaning the grate of ash, and included lighting a new fire, as well as cleaning the ashpan hopper located under the firebox – all of which are laborious, but essential tasks.

On Monday 28th April, our team worked to ensure *Tornado* was presented in an outstanding condition, which our supporters and members of the public have rightfully grown to expect over our previous years of operations. Coal and water were taken, with our support coach No. E21249 also being serviced and watered. Looking after No. E21249 is always essential for our team of volunteers and engineering staff, as the vehicle doubles as accommodation for our support crew team when undertaking operations.

On the morning of Tuesday 29th April,

***Tornado's* support crew with their charge.**

we set off from Carnforth depot, piloted by a class 37 diesel due to a high fire risk warning being issued in Network Rail's NW region. Our destination? Joppa Straight, which is a stabling siding located in a Network Rail site in Portobello, Edinburgh. Once fully serviced and reasonably prepared for the following day's operations, we stabled and were treated to a *healthy* Scottish fried fish supper before turning in for the night.

At Edinburgh Waverley station on

Under the high girders, *Tornado* crosses the Forth Bridge.

Wednesday 30th April, passengers were once again greeted by the welcome sight of a Class A1 Pacific awaiting the road during the morning peak. We set off, with our booked route taking us to Dunfermline City, being dragged to Stirling, before continuing with *Tornado* leading to Inverness via the magnificent Highland mainline. On arrival at Inverness, we were greeted by spectators, as well as delighted passengers who had managed to admire the sterling performance that the locomotive and crew had put in during the during the journey. After turning using the triangle available in Inverness, we shunted and stabled in Millburn yard.

Following the excitement of the previous day's operations, we had no time to rest, and we spent Thursday 1st May ensuring we were prepared for the following day's activities. Our tasks again included managing the fire and ashpan hopper, taking water and coal, and our engineering team inspecting *Tornado* with an independent fitness to run examiner. Once the examiner was satisfied, we continued with other tasks which included cleaning activities and oiling up, to try and get a head start on the next morning.

On Friday 2nd May we once again traversed the highland mainline, taking water at Aviemore and Perth on our journey back to Edinburgh. Once beyond Edinburgh Waverley, we uncoupled from the train and returned to Joppa Straight. We were due to be relieved by No. 34067 *Tangmere* at this point, but due to an engineering issue with *Tangmere*, the train continued through to Newcastle diesel hauled. We were required to service and stable at Joppa once again, but due to a short turn around between our arrival at 15:04hrs and our booked departure at 04:40hrs the next morning, our team focussed on the operationally essential tasks.

At 04:40hrs on Saturday 3rd May, we departed Joppa Straight with a right time start, making our way southwards along the ECML as the sun rose above the North Sea. We took water from a tanker in Chevington Loop, and continued southwards towards Newcastle, with a short stop for pathing reasons in the Heaton area. Once we had completed shunt movements, we were positioned on the train once again, waiting for the road to come off, to allow *Tornado* to stretch her legs on the ECML once again. We departed for Peterborough, running via Eaglescliffe, Church Fenton, Lincoln and Saxilby. On arrival at Peterborough, we bade farewell to the passengers who were onboard the 'GBXVII', and we split off from the train to head to Fletton Junction, where we joined the Nene Valley Railway. On arrival at Wansford, post running inspections were carried out by our duty engineer, along with further essential servicing. Due to the fire having been lit and relit for serval days, we elected to 'drop' the fire that was present, lighting a fresh one quickly as to not disturb any heat distribution within the firebox.

Sunday 4th May was our final day of operations, running four return trips on the Nene Valley Railway between Yarwell and Peterborough NVR for the railway's VE day celebration event. Following on from hundreds of miles of mainline running, a small army of resident volunteers from within the Nene Valley Railway assisted us in presenting the locomotive to the usual high standard. There was high footfall during the event, with many visitors taking an interest in *Tornado*.

Over the course of six days of operation, *Tornado* performed exceptionally well, and it was a pleasure for those of us lucky enough to look after her, to be back doing what we enjoy once again! TCC

***Tornado* bedecked with flags for the NVR VE Day celebrations.**

ETCS UPDATE *by Rob Morland*

Readers will recall from *TCC 74* that my report took us to the end of 2024, so we can now pick up the story from there, including the excitement of testing ETCS on the Cambrian.

1. Locomotive and Coach Axle Driven Alternators (ADAs)

Following the discovery last year that one of the coach ADA internal pulleys had shed one of its flanges, we procured new stainless-steel pulleys with stainless flanges. Alan Parkin arranged for Daniela Works to machine the pulleys and have the flanges TIG welded on, so they cannot come off in future. Alan visited the coach on 17th February and he and Ian Greenan fitted the new pulleys and replacement belt. The ADA with the new pulleys on was tested for the first time on the loco and coach move to Carnforth on 7th March and worked well. It has continued to operate correctly on all the runs since then.

The replacement ADA pulleys were the last outstanding action on certification documentation for Ricardo. The locomotive ADA broke a belt last year, which has also now been replaced. As recommended by Keith Nicholson, a choke has now been fitted to the tender air braking system, which should greatly reduce the chance of the rear tender wheelset picking up in future (the most likely cause of the belt breakage). A final Inspection Report was prepared, along with a set of notes describing rectification actions on both the ADAs and an update to our specification document. All the documentation was then sent off to Ricardo. On 20th February we were pleased to receive an email from Alistair Leach confirming that he was happy with all the electrical overhaul and ETCS-ready documentation. These final reports brought the total number of electrical system documents provided to Ricardo for scrutiny to 256.

On 26th February the locomotive was running on the NVR so the opportunity was taken to test the tender ADA in operation with its replacement belt. It worked correctly, cutting-in as designed at around 22.5mph and out again at 22mph. The ETCS batteries were almost fully charged, so the current demand was only about 6A. At this current, the turbogen took all the load when it was connected, confirming as expected that it has a very slightly higher voltage at the batteries than the ADA and GWH chargers.

2. Turbogen Speed Displays

With the locomotive in steam on 25th February, the opportunity was taken to test the new turbogen speedometer displays, located inside the Turbogen Switch Box. Both displays worked correctly, showing the speed of our old turbogen to be 3540-3560rpm and the new Meiningen one to be 3660-3750rpm. Meiningen sets the turbogens to 3750rpm on test following manufacture. The new displays will allow us to keep an eye on governor operation on both turbogens and provide early warning of the need for adjustment as the carbon disk thrust plate inside each governor wears.

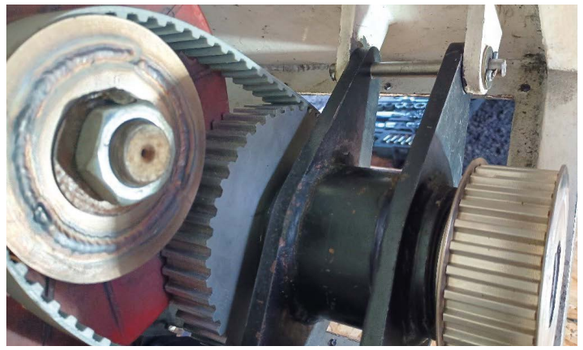
3. Cambrian Testing Preparations

In preparation for Cambrian testing, the two spare headlamps (which are required for tender-first running) were taken out of store on the coach and tested. One had a split covering to its flexible conduit, so this was replaced, and both headlamps were tested in-situ on the tender.

Preparations were made for measurement and logging of ETCS supply voltage and current during the Cambrian testing. One of the ETCS supply wires was brought out through the side plate to the ETCS I/O Panel. This allowed connection

Photos: Rob Morland

Above: New stainless steel ADA pulley with flanges welded on and right, new stainless steel pulley mounted to the layshaft assembly.



Layshaft assembly in place inside the ADA casing, before fitting the second belt.

Tender ADA charging ETCS batteries at around 6A.

Turbogen speedometer displays showing old turbogen running at 3560rpm and new one at 3660rpm.

Headlamps fitted to the tender in preparation for tender-first working back from Newtown.

of a Bluetooth-enabled clamp ammeter. A second meter was attached to the spare ETCS supply output to measure the delivered voltage. The measurements we take will enable us to calculate the power consumed under a full range of real operating conditions. We can then confirm the headroom that our power supply provides, and the endurance of the system when operating on batteries alone.

A final visit to Wansford on 5th March included a check that both the meters fit, whilst allowing the front cover of the ETCS I/O Panel to be closed over them for protection. Each of the two meters will record up to 10,000 readings. We shall set them to take readings every two seconds. This gives us 5.5 hours of recording – sufficient for a full night of testing between Coleham (Shrewsbury) and Newtown. The data can then be downloaded via Bluetooth to a phone. We will analyse the data between night sessions and may change the monitoring interval if needed to allow more detailed investigation of peak currents.

4. Coach Electrical Work

Electrical work on the coach during the period included completion of the No. 7 exam electrical jobs, working alongside Alex Williams. All electrical tests and inspections were passed.

Although they are all still working well, the smoke and heat alarms in the coach are now over their nominal lifetime of 10 years, having been installed in 2024. A phased programme of replacement has been agreed. It was decided to upgrade the current single carbon monoxide alarm to two alarms, positioned in the corridor so they provide good protection for any CO leaks from the two gas-burning appliances – in the kitchen and boiler cupboard. These alarms come with sealed 10-year batteries, so we will not need to worry about them until 2035. They also have a display to show percentage CO detected (and incidentally, ambient temperature).

We also took the opportunity to review the type of alarm in the boiler cupboard and Electrical Control Cabinet. These were originally fitted as multi-sensor alarms, featuring both heat and smoke detectors. However, since it entered service, the coach has suffered from false alarms when the engine and coach are travelling together tender-first and the drain cocks are open. We have not been able to conclusively prove which alarm is triggering, but crews have made sure that compartment windows are closed, and the problem still occurs. We believe that it may be caused by water vapour entering one of the floor vents, which are a feature of both cupboards. In consultation with Aico, the alarm system manufacturer, we have therefore decided to change the two cupboard alarms to heat-only sensors, as typically used in kitchens where steam may be present. These sensors are set to 58 deg. C, so they will provide very good protection against overheating or emerging fire in either cupboard, whilst being immune to triggering by steam or water vapour. If successful, this should prevent the system making the electrical team unpopular by waking all the support crew up when they are trying to get some more sleep during early-morning positioning moves. The remaining alarms are all working fine but will be replaced as a precaution later in the year.

The Cambrian testing (more details below) involved running tender first on all the return journeys. This included regular periods with the drain cocks open, and we were pleased to note that no false alarms occurred in the coach, so we think there is a good chance that we have correctly identified and solved this one.

5. ADAs In-service Experience Trial Preparations

The last electrical job to complete before going main line was provision of paperwork to support the ADA In-service Experience Trial. This important process is part of the scrutiny by Ricardo of our two new ADAs. The trial lasts for 2,000 miles, during which time the ADAs are operating under temporary Attestation Statements. To prove that they are fit for continued service we need to collect measurements of the performance of each ADA whilst in use. We have prepared forms for crews to use. Together with regular special inspections, the forms will provide evidence for Ricardo's final scrutiny on completion of the trial.

New heat alarm fitted inside Electrical Control Cabinet.

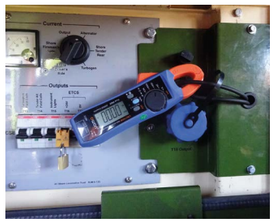
New Carbon Monoxide alarm fitted in coach corridor close to kitchen.

If they are satisfied with the evidence, we provide they will issue full Attestation Statements. These will allow both ADAs, and any more we make to these designs, to operate permanently on the main line on both locomotives and coaches.

6. ETCS testing on the Cambrian

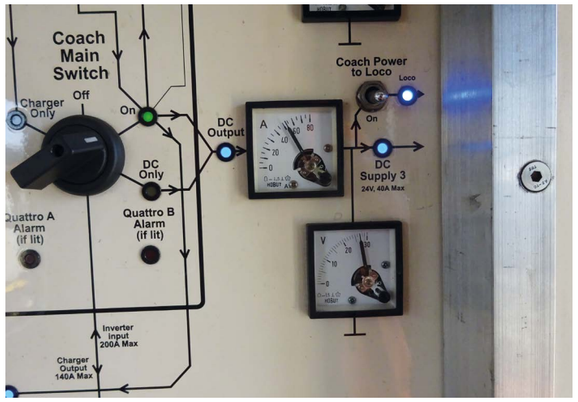
On 3rd April, we started work in Coleham Yard, Shrewsbury, to prepare for the ETCS integration testing on the Cambrian. This testing was the culmination of more than four years work on the Heritage ETCS project, and it is over 22 years since the first discussions were held between the Trust and Network Rail regarding the possible fitting of ETCS to steam locomotives. The Trust's primary role during the testing was to support the whole project team by providing a reliable locomotive, a comfortable coach and an 'always on' ETCS power supply to support the test programme. All the testing was carried out overnight, so it didn't affect operations on the railway. We worked under the terms of a Special Protection Zone (SPZ), which gave us full use of the line with no other movements permitted.

Work commenced by taking the locomotive out of Dormant Mode and booting-up the ETCS equipment to check that all was operating correctly. We also tested the ETCS power supply feed from the coach for the first time, and this worked correctly, supplying sufficient power to charge the batteries and power ETCS on a continuous basis. This was very convenient in the yard at Coleham, avoiding the need for an additional mains cable across the site to feed the Shore Power Supply. We then supported the Hitachi team in preparing for the first night of testing, which commenced late in the evening on 7th April, with the run itself taking place early in the morning of the 8th.



Above left: Bluetooth clamp ammeter trial fit, ready for recording ETCS current during Cambrian testing.

Above right: Coach-to-locomotive jumper in place between the vehicles.



Coach powering all the locomotive systems via the coach-to-locomotive connection.

Technologies coming together – an ETCS-fitted steam locomotive, nicely posed with some lower quadrant semaphore signals on the main line behind.

The testing went well for a first run, with communications established to the Radio Block Centre (RBC) at Machynlleth, ETCS Movement Authorities received and acted upon, and a number of ETCS-initiated brake applications made. We steamed from Coleham to Welshpool, ran round and then came back. Graeme Bunker-James fired the locomotive throughout, as he did on all the remaining test runs. On the Trust's side, we tested our turbogens' ability to power ETCS and keep the batteries fully charged throughout the test with no issues reported. In addition, our driver, John Rogers of WCR, reported that he was very happy with the cab instrument lighting, which gave him an appropriate amount of light to see all the controls whilst not impeding visibility of the ETCS Driver Machine Interfaces (DMIs).

Top: Preparing for the first test run on the evening of 7th April.

Right: West Coast Driver John Rogers at the controls.

Far right: Raymond Sturton of Hitachi inputting data to the forward ETCS DMI in preparation for the first run.

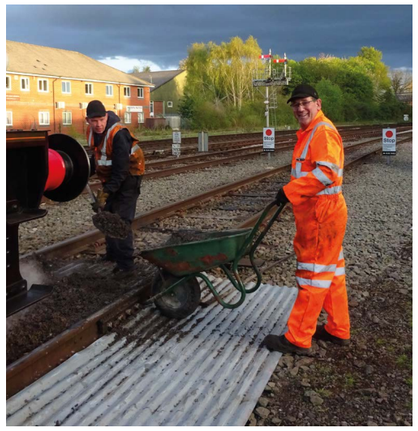
Above: Logging meters in place ready to record the ETCS voltage and current.

Centre: Ben Mason (ECDP) and John Rogers (WCR) with the locomotive shortly before departure on the first test run.

Bottom right: The locomotive and coach on arrival at Welshpool at 02:10hrs on 8th April, after the very first run of a steam engine under ETCS signalling.

Our current and voltage logging meters worked well, taking readings every two seconds as planned. These were downloaded over Bluetooth and input to a spreadsheet to calculate the consumed power throughout the testing. Graphs were plotted of power consumed and the performance was confirmed as being comfortably within the expected levels at all times. This was a very good result.

For the second night of testing, on 8th-9th April, John Rogers decided to take us over the full length of our permitted route to Newtown. Once again, the locomotive and all our electrical systems performed according to our design without any issues being reported.



Top left: Driver John Rogers (WCR) and Fireman Graeme Bunker-James (A1SLT and ECDP) with the locomotive on arrival at Newtown for the first time at 02:50hrs on the morning of 9th April.

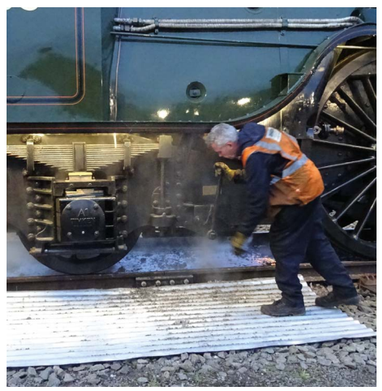
Top right: The less glamourous side of steam operations – Andy Morgan and Huw Parker clearing ash after the ashpan was dropped during preparation for the next run.

Having had a bit of time to rest over the weekend, we prepared for the second week of testing. This consisted of two nights of running, 14th-15th and 15th-16th April. With confidence in the system growing, John Rogers was able to increase operating speeds towards the maxima permitted in each direction, and all systems performed very well again on both runs. On the final return run to Coleham, we turned off the turbogen input to the ETCS supply to test the system's ability to operate on batteries alone (at low speeds) and powered by the ADA (at speeds above about 23mph). This also worked without any issues. Our voltage and current loggers recorded the whole trip and we were able to see the ADA coming online to charge the batteries and supply the ETCS load as we had designed it to do. This completed our ETCS power supply test plan for the Cambrian.

As far as we could determine from these four nights of running, our systems are doing what we designed them to do. We now need to see them operate over future test periods to confirm that they are able to withstand the harsh environment on the A1 and provide the reliable source of power that we need for the long term.

In terms of the ETCS equipment, the tests carried out involved a wide range of operating scenarios. The testing was successful in proving that the locomotive could be fitted and driven safely using the ETCS system in the harsh environment of a steam locomotive footplate. Network Rail will now be leading the team in analysing all the results and learnings gained from the programme so far.

Thomas Goulding and Raymond Sturton (Hitachi) with Amy Clouston (AtkinsRéalis) and Rob Morland (A1SLT) with the locomotive at Coleham during filming for Network Rail on 10th April, between the first and second week of tests.



Above: Raymond Sturton and Arther Bull of Hitachi after completing preparations for the third test run overnight on 14th-15th April, and right, Andy Morgan emptying the ashpan in preparation for the third test run on 14th-15th April.

Above left: The engineering and operations team with the locomotive before the third test run on 14th-15th April.

Above right: Raymond Sturton of Hitachi briefing Trust Chairman Steve Davies on the operation of ETCS before the third test run on 14th-15th April.

WCR Driver John Rogers in the cab after arrival at Newtown at 02:10hrs on 15th April.

Locomotive and coach ready to depart from Coleham for the third test run on 14th-15th April.

Coach No. 21249 patiently waits in the platform at Newtown for the return of the locomotive after running round.

The locomotive coupled to the coach, ready for the return run from Newtown to Coleham on 15th April.

Right: On return to Coleham at 04:20hrs on 15th April, the coach is uncoupled and moved to its parking position by one of the Class 97 diesels, before the locomotive drops back onto it in preparation for the final run the following night.

Above: Checking the voltage of each ETCS battery in preparation for the final test run on 15th-16th April.

Centre left: Trust engineers Ian Greenan and Andy Morgan in the coach during a brief stop at Welshpool at 01:12hrs on 16th April.

Centre right: Amy Clouston (AtkinsRéalis) with Andy Saunders and John Rogers (WCR) on the platform at Newtown, following our arrival with the fourth and final test run at 01:50hrs on 16th April.

The locomotive and coach in the platform at Newtown, having arrived with the final test run on 16th April.

The test team with the locomotive at Newtown before departure on the final return run on 16th April.

Above: Graeme Bunker-James and Ben McDonald (A1SLT) with John Rogers (WCR) relaxing at Newtown before the final return run to Coleham on 16th April.

Centre right: Preparing to depart from Newtown for the final time on 16th April.

Bottom right: The locomotive ready to depart from Newtown for the final time on 16th April.

Following completion of testing on 16th April we placed the locomotive in Dormant Mode, with all the ETCS equipment isolated, in preparation for its return to the main line. We now look forward to getting back to day-to-day operations for our electrical systems. We shall keep a careful eye on everything, especially all the new equipment and wiring which was installed during the overhaul, where 'early life' failures may still occur. **TCC**

TORNADO IN TRAFFIC

A1 SLT

On 26th March, *Tornado* pauses at Hellifield during her loaded main line test run, sporting newly applied BR green and a wreath in memory of Gordon Best.

John Toms

Another lovely shot of a sparkling A1 during the loaded test run.

Michael Denholm

Back in familiar Scottish territory, the A1 approaches the Forth Bridge on 30th April with the Edinburgh - Inverness leg of the Railway Touring Company's 'The Great Britain XVII'.

Mick Rogers

Above: *Tornado* runs through Hartford, Cheshire, en route to Shrewsbury on 3rd April.

Colin Middleton

Centre right: At the beginning of April No. 60163 was based in Shrewsbury in order to run a series of test trains over the Cambrian Coast route and is seen at her temporary base at Coleham depot.

A1 SLT

Botttom right: No. 60163 is seen at Carlisle on her way north to operate a number of legs of the 'Great Britain XVII' land cruise.

Michael Denholm

Tornado pauses at Stirling during its Edinburgh - Inverness 'Great Britain XVII' run on 30th April.

Martin Welsh

The locomotive put in many trouble-free miles during its Scottish sojourn.

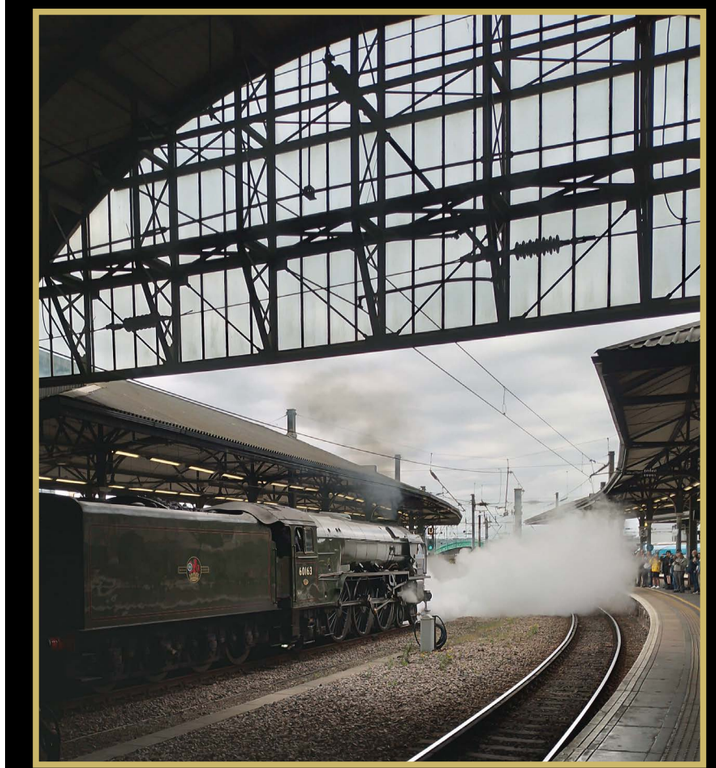
(continued on page 18)

Tornado **making her way up the final yards to Drumochter summit on Tuesday 29th April, 2025.**

TORNADO IN TRAFFIC

Ross Inglis

No. 60163 breasts Slochd Summit.



Michael Denholm

Left: On 3rd May *Tornado* makes a vociferous start from the trainshed at Newcastle Central with 'The Great Britain XVIII' bound for Norwich, which doubled as a positioning move to get the locomotive to Peterborough and the Nene Valley Railway.

Below: Fulfilling a commitment to return to the NVR, No. 60163 was the star of the railway's VE Day celebrations. TCC

Adam Cuddick

TORNADO TOUR DIARY 2025

We are pleased to announce the following dates, that we have agreed with The Railway Touring Company, which will feature *Tornado* on a range of interesting tours starting in Bristol, London and York taking the locomotive into Cornwall, over the Settle and Carlisle railway, onto the home ground of the East Coast Main Line and more! *Tornado* is scheduled to haul the following trains:

- **Saturday 26th June** Scarborough Spa Express- WCR
- **Saturday 12th July** 'The White Rose' – London King's Cross to York and return
- **Wednesday 23rd July** - 'The Dorset Coast Express' - RTC
- **Sunday 27th July** 'The Royal Duchy' – Bristol to Par and return
- **Sunday 3rd August** 'The Waverley' – York to Carlisle and return
- **Saturday 16th August** – 'The Atlantic Coast Express' – London Waterloo to Exeter and return
- **Sunday 31st August** 'The Royal Duchy' – Bristol to Par and return
- **Saturday 4th October** A1SLT Convention
- **Friday 17th / Saturday 18th / Sunday 19th October** - Bluebell Railway

We are working with partners to announce further tours for the rest of the year which will feature other itineraries, starting points and destinations.

Book online at www.railwaytouring.net, or through the booking office on 01553 661 500

SUPPORTER DISCOUNTS

We are extremely pleased to announce that any supporter of A1SLT (meaning a Covenantor, Founder or Club member) will be able to secure a ten percent discount on the above tours, or any other Railway Touring Company day trip, subject to availability. We are sure this will be a very welcome additional benefit of supporting the Trust and can be accessed by entering the code A1T when booking online or when speaking to The Railway Touring Company booking office on **01553 661 500**.

The A1T discount is limited to two trips per calendar year, the supporter must travel, and the maximum group size is four people. This discount expires on 31st December 2025, and cannot be used in conjunction with any other offer. The discount can be used in any class of travel. All bookings are in acceptance of The Railway Touring Company's terms and conditions.

We are aware that some supporters have outstanding credits and discounts owing from previous trips and we are taking steps to ensure these are resolved satisfactorily so that everyone can enjoy a wonderful trip on the main line with *Tornado*. If you are holding a discount, please contact the 21st Century Steam booking office on **01325 488215** or email **enquiries@21stcenturysteam.co.uk** so that we can update your record.

THE A1 STEAM LOCOMOTIVE TRUST - CONVENTION 2025

SAVE THE DATE

Saturday 4th October 2025

Bannatyne Hotel (Convention & Dinner)

ONE NOT TO BE MISSED!

Invitations will be issued soon.

Bannatyne Hotel, Darlington.

A1 PROFILE – No. 60146 *PEREGRINE* *by Phil Champion*

Darlington Works No. 2065 was the 17th Peppercorn A1 to be constructed at Darlington. It was about half-way through the building programme of the class; with the Doncaster examples, 27 A1s had already been built. The first record of what was to become No. 60146 was the boiler (No. 3948) being mounted on 28th February 1949. A pair from each works was completed in April, the other Darlington example being No. 60149 while the Doncaster-built ones were Nos. 60125 and 60126. Resplendent in LNER-style apple green with black and white lining and 'BRITISH RAILWAYS' in white on the tender it entered service on 11th April 1949 along with No. 60125.

Bill Reed

In the middle of its career, *Peregrine* arrives at Grantham with a Pullman train.

Initially allocated to Doncaster shed (DON), there are few records of its first months other than returning to Darlington for three days the next April for non-classified repairs. Work took it between Tyneside, west Yorkshire and London and 1st May 1949 saw it on Darlington shed. Ten days later it double-headed the up fish train past Heaton with Class B1 No. 61013. On the 28th No. 60146 worked a passenger train into King's Cross. It worked a Harrogate to King's Cross train on 18th June. The fish train working with No. 61013 was repeated on 11th August, then there was a 9th September turn, the 10:15hrs King's Cross to Leeds, and an up parcels into the 'Cross' on 7th January 1950 indicating that No. 60146 had worked quite a variety of turns. Sightings on shed covered much of its operating area including Doncaster, Darlington, Heaton, Copley Hill, Grantham and New England.

A short- lived move to Copley Hill (37B) came on 30th April 1950 but it was reallocated to York (North) shed (50A) on 4th June. It was seen between Newcastle and King's Cross on passenger turns like 9th August's 09:18hrs King's Cross to Newcastle 11 coach train. It left Stockton at 14:42hrs on an up passenger four days later. Our first record of No. 60146 on a named train was 'The Norseman' on the 19th. It reached the Border country on 30th September but was seen failed on Tweedmouth shed. No. 60146 returned to Doncaster in November 1950 for its first heavy intermediate overhaul, leaving the works bearing the name *Peregrine*. Naming was like its build date, just over half way through the class with 28 A1s already named when No. 60146 was one of four named that month. It was one of six A1s to be named after birds noted for swift or powerful flight, a suitable analogy for a powerful Pacific locomotive. Like three others, No. 60146's name had been carried by an A4, *Peregrine* had been carried by the A4 re-named *Lord Farringdon* in 1948. At the same time as naming No. 60146 had been repainted in BR express passenger blue, looking rather different when it exited Doncaster Works on December 15th from when it went in. The Durham coast route was covered with the light six coach 12:15hrs Newcastle to York on 16th February 1951. 26th March saw No. 60146 used on an up special passing Peterborough. A more taxing load for *Peregrine* was the 20 coach down passenger seen at Darlington on 19th June at 22:19hrs. Newcastle seems to have been its northern limit with many sightings there in 1951.

After only a year of its new guise *Peregrine* was outshopped from Doncaster on 4th December after general repairs but now in BR green, an overhaul which included the locomotive's first change of boiler, leaving with boiler No. 29859. Soon after a number of runs were made into King's Cross with one afternoon working from the capital to Leeds. Less auspicious was its arrival in King's Cross at 13:03hrs on 19th June 1952 when it was declared a failure. More prestigious was pulling the down 'Queen of Scots' on 17th January 1953 into Newcastle and taking it from Leeds to Newcastle on 8th April. A trio of goods workings now appear, up ones past Darlington on 8th December and 31st March 1954 and a down goods passing New Barnet on 7th October before the locomotive concluded the year back at 'The Plant' for a further general overhaul, including the fitting of boiler No. 29805. More goods workings were seen in the first nine months of 1955 with four at Newcastle, one each at Aycliffe in County Durham, Darlington, York, Doncaster and then arriving at King's Cross with the 02:00hrs goods ex-Niddrie. Other passenger workings during the mid-1950s include bringing York to Edinburgh trains into Newcastle at 12:20hrs, taking the 07:20hrs ex-Colchester forward from York to its Newcastle destination and bringing the ex-Liverpool round into Tyneside via the Durham coast. More unusual was for *Peregrine* to bring the 09:06hrs Ely to Newcastle into York on 28th July 1956 then double-heading back with Class V2 No. 60896 on the 14:35hrs from York to Cambridge. On 4th August it hauled the 08:20hrs down from King's Cross then went on to the 10:55hrs Skegness to York. A glut of named trains appears to have been handled in August and September including the up 'Norseman', the up 'Northumbrian' into King's Cross, the down 'Tynesider' and the 10:00hrs down 'Flying Scotsman' from the capital. The first four days of October found No. 60146 diagrammed on the 08:20hrs King's Cross to York/Hull and that November it underwent another 'General' at Doncaster, acquiring boiler No. 29849 in the process. On 5th January 1957 it was entrusted with the Newcastle to King's Cross parcels, arriving at 10:22hrs. That May the later BR crest was applied to the tender, presumably while in Doncaster Works for non-classified repairs. On the 31st it was seen being towed from the Works to the shed along with Class A1/1 No. 60113 *Great Northern*, Class K3 No. 61834 and Ivatt '4MT' No. 43130 by Class O2/3 No. 63969.

A few workings from August 1957 give some idea of the breadth of work. On the 3rd *Peregrine* worked two additional trains, an eight coach down passenger which passed Northallerton at 11:40hrs and returned through there at 17:35hrs with an up train which had run via the Durham coast. A week later a Newark observer saw it head north on the 09:40hrs King's Cross to Newcastle train to return later with the up 'Heart of Midlothian'. On the 22nd and 28th No. 60146 arrived at Newcastle with a passenger from York, returning at 12:10hrs for York with a parcels train. A 'Heavy Casual' repair at 'The Pant' that October saw the locomotive fitted with boiler No. 29872. More named trains were the up 'Flying Scotsman' on 14th November 1958 and the up morning 'Talisman' on 3rd February 1959. Possibly taking over from a diesel failure, No. 60146 took over the 23:20hrs ex-King's Cross from English Electric Type 4 1Co-Co1 D201 at York on 2nd February. *Peregrine* continued its range of passenger, parcels and goods workings across its territory, being seen on shed at Haymarket, Gateshead, Neville Hill, York, Doncaster and King's Cross. No. 60146 concluded the decade with a further visit to the works for a general repair, this time leaving with boiler No. 29868 fitted.

However, 1960 brought several more named trains associated with Yorkshire. 4th February had No. 60146 on the 09:20hrs down 'White Rose' from King's Cross, three days later it was on the down 'Harrogate Sunday Pullman' then two days later it was on the up 'Queen of Scots' into the capital on which it was also seen on the 13th and 20th. It was also seen arriving at King's Cross at 12:15hrs ten times from May to December on the up 'Tees-Thames Pullman'. Rather different was its load of five horse boxes and brake van seen at Killingbeck on 30th April. The locomotive received its final general overhaul and boiler change during April/May, leaving with its last boiler, No. 29865. Several visits were made to Scarborough; the first when it was seen in steam there on 16th June 1962, the second on 11th July when it was sent there for storage but recalled to York. On 18th August it brought the up 'Scarborough Flyer' into Grantham. Its mix of work plus extras continued with ➤

Nick Totty

No. 60146 runs through Doncaster on 1st August 1963.

Bill Reed

An undated view of *Peregrine*, in later condition, on York shed.

Roger Bastin

The locomotive at Normanton in 1965.

the Hebburn to King's Cross special on 21st September working back to Tyneside the next day with the down Anglo-Scottish Car Carrier. From October more goods workings featured than before, the 7S02 Gainsborough to Uphall Shell tanks on 6th October and 3rd November, the up seed potatoes on 23rd and 24th November plus a down Class C goods on the 27th and 28th. Meanwhile on 26th October it had been standby loco at York. From 18th March 1963 *Peregrine* was stored at York South shed until 28th July when it was transferred to Neville Hill (55H). It worked to Tyneside, being seen at Gateshead shed on the 30th. The 3rd August found a different sphere of operation as it worked the 06:35hrs ex-Birmingham to Glasgow St. Enoch forward from Leeds, later seen on Corkerhill shed.

After less than three months No. 60146 was back on York shed's books on 13th October. A few uncommon workings took place. On the 15th it hauled the 1V47 16:05hrs Newcastle to Bristol train to Derby. Next day it went light engine from Derby to Royston shed then took the 16:45hrs coal train to Normanton. *Peregrine's* last works visit was from 31st January 1964 to 14th March at Darlington Works. Most trains continued to be the usual mix on the East Coast route like the up fish from Edinburgh to Newcastle on 26th March, the up freight on the Leamside line at Tursdale on 18th April, 1st May's York to Newcastle parcels or the 11:28hrs Peterborough to Edinburgh on 18th August seen passing Newark. Several trips over the Waverley route were made, the 10:15hrs Edinburgh to St. Pancras taken by No. 60146 as far as Carlisle on 29th April and 29th May. A number of extras were worked such as 21st December's Newcastle to Edinburgh's parcels then Christmas Eve's additional 1M60 Newcastle to Manchester as far as Leeds returning with the extra 1N57 15:30hrs ex-Manchester into Newcastle. Sightings in 1965 are relatively few, two light engine turns passing Darlington and Newcastle, the last recorded passenger train being the 09:42hrs Newcastle to Liverpool from its starting point on 3rd March; the last parcels was a down one at 09:25hrs in Newcastle on 28th May and the final goods was on 4th June with a down train passing Ricknall. After that No. 60146 was seen at York shed a number of times from 5th June, being stored from 18th August. Withdrawal came on 4th October, one of ten A1s to go that month. They were some of the later A1s to be withdrawn as 36 had already gone by then. No. 60146 was seen lying withdrawn in York shed yard up to 13th November. It was sold to T.W. Ward of Killamarsh for scrap.

With a working life of over 16 years 4 months, No. 60146 beat the class average by more than a year. Had dieselisation not come so rapidly no doubt it could have done many years more service.

This history was compiled by Phil Champion based on a database compiled by Tommy Knox and with reference to the RCTS book "Locomotives of the LNER Part 2A" as background. Revised and updated by Graham Langer, July 2020. TCC

Alan Sharp

Shorn of nameplates, No. 60146 is 'stored' at York shed in August 1965.

• SHED NOTICES •

RECENT AUCTION NEWS

It's been a while since we had a round up of Peppercorn A1 name plates that have been sold at auction. This spring saw a couple come up for the first time, one of which has yet to go under the hammer at Great Western Railwayana Auctions.

Great Northern Railwayana Auctions handled the sale of a worksplate from No. 60160 *Auld Reekie*. Emerging to traffic December 1949, allocations included Haymarket, Polmadie, St Margarets. Withdrawn in December 1963. The plate was sold in April but we don't have a note for how much!

Worksplate from No. 60160 *Auld Reekie*.

Great Western Railwayana Auctions (GWRA) sold a plate from No. 60134 *Sir Walter Scott* for £7,100.00 in March. Built at Darlington in 1949 and allocated to Gateshead, Heaton, Tweedmouth and 50A York North from where it was withdrawn in May 1964 and scrapped at Drapers, Hull. This was the first time either plate had been offered for sale at auction.

GWRA are also offering a nameplate from No. 60135 *Madge Wildfire*, from the Pacific built at Darlington in 1948. Allocated to Gateshead, Copley Hill and 56B Ardsley from where it was withdrawn in November 1962 and scrapped at Doncaster Works. The first time either plate has been offered for sale at auction, it goes under the hammer in July.

A1SLT RECEIVES SILVER AWARD FROM THE ARMED FORCES COVENANT SCHEME

It has been announced that four North of England employers have been awarded a Silver Award for supporting the Armed Forces including the A1 Steam Locomotive Trust. The Ministry of Defence announced that, nationally, 307 organisations have been awarded the Defence Employer Recognition Scheme (ERS) Silver Awards for 2025.

They have been recognised by the Scheme for demonstrating exceptional support to the Armed Forces community, including Reservists, veterans and military families, and for having gone beyond their Armed Forces Covenant commitments to embed supportive HR policies, promote Defence values and advocate for Service personnel in the civilian workforce within their employment practice. The support they provide typically includes paid leave for reservist training and mobilisation, active veteran recruitment and retention policies, flexible support for military families and visible leadership endorsement of the Armed Forces Covenant.

ARMED FORCES COVENANT

Major General Jamie Gordon, Chief Executive of the Council of Reserve Forces' and Cadets' Associations, said, "These Silver Award winners are trusted allies of Defence. They don't just talk about support, they show it, every day, through flexible policies, visible advocacy and long-term commitment to those who serve. This is about more than good intentions; it's about practical, sustained support that strengthens our national resilience. It is very pleasing that they have been recognised for all that they do for our Reservists, Veterans and Cadets."

Brigadier Paul Baker, Chief Executive, North of England RFCA said, "There has always been great support for the Armed Forces within the North East of England but the growing number of companies prepared to publicly demonstrate this support is truly heartening, especially in such challenging times. These Employer Recognition Scheme awards are a recognition of the backing and encouragement these companies provide to their employees who are also Reservists, Adult Volunteers within the Cadet Forces, Veterans and their families. Thank you, and very well done to you all."

Steve Davies, Chairman A1SLT added, "As Chairman and a Veteran myself, I take huge personal pleasure on behalf of the Trust in the award of the Silver level of the MOD's Employer Recognition Scheme. The award reflects a huge amount of effort on the part of our whole team to value the skills that Service personnel - both Regular and Reserve - bring to the workplace and we will continue to play our part in promoting and recognising the invaluable contribution all three Services make to the Nation."

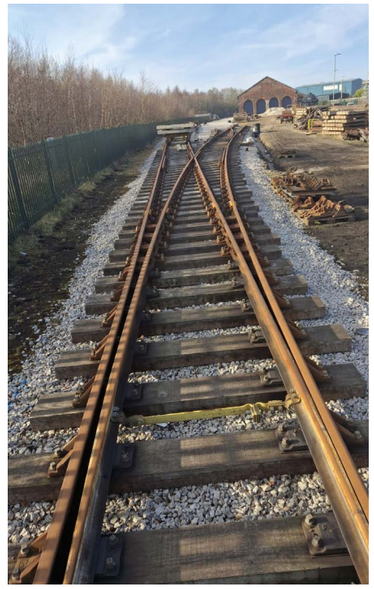
DLW2 UPDATE *by Terry Graham*

The following is a brief update on the progress with the track over the last few weeks carried out by A1, DRPS and for the last couple of weeks NELPEG volunteers as well. We've spent the funds raised to date so we need a big push on fundraising to keep us on track, no pun intended!

Above: In January the formation for the run round loop was finished and the ballast levelled by a GPS guided dozer before impact rolling.

Above right: The vegetation north of Honeypot Lane was removed before bird nesting season in preparation for the track extending over the bridge.

Above: Pit boards have been installed at the outside pit allowing rail traffic to run over them and allows us to maintain the pit. It also gives a rail access point (RAP) for the road rail vehicle (RRV).



Above: Turnout Number 4 is under construction. This is the turnout from the run round loop to the south end of the 1861 shed

Left:The tandem turnout into the north end of the 1861 was laid and is virtually complete.

Above: The level crossing for Network Rail to gain track access with vehicles was constructed over our running line and run round loop, this is also gives us a RAP for the RRV which is essential as the run round loop must be built from the running line.

We got three 60ft panels and one and a half turnouts from Darlington sidings. It was a difficult process as the material was tucked in a tight corner with very poor access, Corners did a great job using a tracked Hiab. The material was delivered to our site without incident and we started to assemble Turnout 10 which connects the run round loop to the north end of the 1861 shed. TCC

THE LAST YARDS

Laying down tracks for the future at Darlington Locomotive Works.

After two years of dedicated work by volunteers from A1SLT, with considerable support from DRPS and the Army, we are nearing the end of the project to connect Darlington Locomotive Works (DLW) to the main line railway. This connection will revolutionise the home of the Trust, allowing our locomotives to come and go by rail. This in turn reduces wear caused by road moves, and makes DLW a natural choice for all further maintenance and engineering work. What's more, the connection to the sidings around the works can offer stabling for visiting trains, providing a commercial opportunity for the Trust.

This September marks 200 years since the opening of the first public railway. The new sidingat DLW follows the original track bed, and links to the Bishop Auckland branch, all part of the Stockton and Darlington Railway which opened in 1825. As part of the bicentenary celebrations, we will bring our first new build locomotive, A1 Class No. 60163 *Tornado*, home by rail - but we can't complete this without your support.

"Help us to complete the final yards by sponsoring ballast and sleepers, or else making a ringfenced donation to further this project and reach our September deadline."

BALLAST

So far, we have laid around 3,000 tons of ballast. All bottom ballast is now in place, with plain line track and turnouts laid on top.

However, we require this amount again to lay as top ballast to secure the track. We have negotiated a remarkable rate for ballast from a local quarry. Could you chip in to help us reach our target?

Donate £22.50 to sponsor a ton

Please visit:
a1steam.com/sponsoraton
or scan QR code

Donate £630 to sponsor a 28ton wagon load

Please visit:
a1steam.com/pwayballast
or scan QR code

TRACK & TURNOUTS

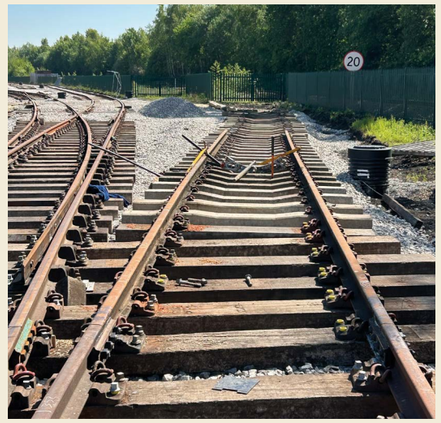
We have been fortunate to secure sleepers and turnouts (points) from different projects at significantly discounted prices, often paying more for the transport back to DLW than the components themselves. The site has four turnouts, all procured at favourable rates as opportunities have presented, using unallocated Group funds. Help us release that money into other areas of the Trust, such as the P2 build by helping us cover the cost.

Sponsor a sleeper for £50

Please visit:
a1steam.com/sponsorasleeper
or scan QR code

Make a ring-fenced donation to the P-Way Fund for any amount from £10 to £10,000

Please visit:
a1steam.com/donation
or scan QR code



SHOPPING LIST

Ballast	2,650 tons	**Total £59,625**
P-Way		
Fishplates and bolts		£3,000
Clips, pads and biscuits		£1,000
Turnout 2		£8,000
Turntable track		£10,000
Turnout 10 to 1861 shed		£10,000
Baseplates for Otley Terrace bridge		£500
Additional smaller items		£3,000
		Total £35,500

There are three main reasons why the track and a main line connection are needed at DLW.

1. A main line connection will allow both No. 60163 *Tornado* and, on completion, No. 2007 *Prince of Wales* to return to DLW for stabling and maintenance between operations on the main line, thereby reducing the requirement for road haulage. The constant movement of large steam locomotives on the back of road vehicles is not conducive to their health given the unnatural stresses placed on the frames from the loading and unloading process.
2. The main line connection directly onto the Bishop Auckland branch, on the route of the original 1825 Stockton and Darlington Railway, will allow DLW to offer servicing facilities for other locomotives visiting the area. This would be a commercial activity, generating income for the Trust, and also positively impact on local tourism.
3. The Trust would be able to offer live steam experiences at the Works.

" We have just three months to reach our goal. Our volunteers have a project plan which will see live steam running on site as the eyes of the world turn to Darlington for the Railway 200 celebrations, but we can't do it without your support."

Support this project by making a donation online at **a1steam.com/newhome,** scan QR code, or telephone the Office on **01325 460163**.

P2 PROGRESS *by Graeme Bunker-James*

Despite so much focus on *Tornado's* return to service and the exciting world first of ETCS, we have still been working quietly on moving the P2 forward.

As reported below we are making progress on the approval of the boiler, recognising the change of regulations on the continent and the impact of Brexit. It has been important to take the time to get this right, ensuring no problems when the boiler comes to the UK in the near future.

At Darlington we are now able to increase workload with the appointment of a new works manager (see page 3), although the opportunity of the 200th anniversary of the Stockton and Darlington Railway, with the world's eyes being focused in the north east, is one we will want to take and that limits work naturally due to capacity.

The priority areas for the P2 include a replacement cannon box casting for the pony truck. As previously mentioned, (in correspondence to supporters and highlighted at the Convention) the first casting has not remained true during the fitment of manganese liners. To avoid future complications our engineering team favour a replacement rather than attempting a repair and that work is now in hand with quotations being sought for the relevant components. We have the patterns in stock of course. Whilst it is a disappointment when a component has to be replaced during the build, the experience of *Tornado's* construction shows that this is something that can happen, albeit thankfully rarely.

Gresley Class P2 No. 2007 *Prince of Wales* outside DLW.

At Darlington, the team are awaiting final fixed price quotations for balancing the tender wheelsets, which will take place on Teeside as it did for *Tornado's* wheelsets, with dispatch expected in the coming weeks as soon as a slot is available.

Once the wheelsets return, the tender frames will be placed onto them, and the tender tank will also be trial fitted which will allow necessary marking up. The tank can then be removed to enable pipework to commence. It also improves workshop space if the wheels and frames are combined!

It is acutely recognised by the team that the impact of losing David Elliott from the P2 Engineering Team still requires action as we move forward. Our new works manager, alongside Alan Parkin in the design role, and Terry Graham as Project Manager will be undertaking a review of the project plan, components to hand and best strategies and suppliers for their completion as well as building momentum while team members focus in on the P2. These matters would have previously fallen to David to lead, highlighting the challenge of replacing such a critical team member. The target is to share the major elements of the new schedule and strategy at the Convention, which will build on what has gone before.

The above activity is alongside the request for quotation (RFQs) for the key components for the trial cambox and poppet valve gear components, facilitated by the generous support given to the valve gear club, which is where we ask for your donations to further the work on the P2. We are also investigating potential partnership opportunities with universities and industry in this area.

As touched on above, fundraising for the P2 continues with a good start to the year seeing a high level of positive cashflow. Recognising the need to balance our commitments, and ensure suitable reserves, the position gives confidence that we can maintain the momentum the arrival of the boiler will give, the last major component for this locomotive. TCC

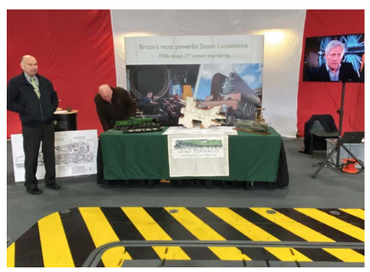
The P2's tender frames await the fitting of the balanced wheelsets.

HMS PRINCE OF WALES UPDATE *by Huw Parker*

UK MOD ©

HMS Prince of Wales arrives at Liverpool Pier Head.

Those who attend the A1 Convention will know of the A1SLT Bond of Friendship with the UK's newest aircraft carrier HMS Prince of Wales (HMS PWLS) and the Trust is proud to continue our affiliation with this great warship. Towards the end of last year, the Trust was delighted to support a STEM Day and public visits, when the ship made her second visit to the Port of Liverpool at the beginning of December. After an evening reception on board the Hanger Deck with other Affiliates and invited guests, next day, the A1SLT stand drew in students and youngsters from across Merseyside as they took part in a STEM Day visiting organisations that showcased technology and engineering. Graham Langer's impressive live steam Gauge 1 model of *Tornado* attracted much interest as we explained our connection with the ship and how engineering skills and education.



STEM Stand.

Throughout Saturday and Sunday, the ship was to be open to the public, but unfortunately, deteriorating weather meant that Saturday visits had to be cancelled as it was unsafe to board the ship from the Pier Head pontoons leading to disappointment for thousands of people who had pre-booked.

In March, Graeme Bunker-James and Huw Parker visited HMS PWLS in Portsmouth as part of their Families and Affiliates Day prior to their global deployment. We were hosted by our new Liaison Officer, Lt. Dan Basel who gave a fascinating tour of the ship, including the Ship's Control Centre, the bridge and the vast flight deck. The P2 nameplate we presented to the ship is in pride of place below the bridge window, in front of the Captain's chair – a talking point for all visitors to the bridge!

UK MOD ©

HMS Prince of Wales in the Indian Ocean.

The Commanding Officer, Captain Will Blackett, thanked families and Affiliates alike for their support as the ship prepared to sail as part of the UK Carrier Stike Group and we heard this month the ship and her escorts passed through the Suez Canal and into the Indian Ocean on their way to visit Singapore. We wish them fair winds and following seas for the next phase of their deployment into the western Pacific Rim demonstrating UK collective resolve with our allies and helping to showcase British trade and industry. TCC

P2 BOILER UPDATE *by Graeme Bunker-James*

A lot of work on certification and approval has been undertaken between DB Meiningen and TUV Thuringen. Whilst discussions have been ongoing it has not been possible to provide a public update, because it is not easy to provide clarity. A number of regulation changes have occurred since *Tornado*'s boiler was built, and also guidance on interpretation of standards. For a period of time only four items remained outstanding and we are now pleased to say that a way forward has been agreed on all of them.

The issues around the manufacturing of the regulator and specification for the foundation ring corners has been resolved positively. Methods of installation and materials used have been agreed and no major work will be needed in these areas.

Regulation changes have affected the manufacture of the Banjo Dome, and the fire hole door. This despite DB Meiningen having made hundreds of fire hole doors to the same specification! For both items it has been agreed that laboratory testing of equivalent samples will provide the data needed to enable approval to be given and it is not anticipated that there will be an issue.

Whilst this will take a little time the team have now finalised plans to visit Meiningen to witness the hydraulic test. Accommodation bogies for the boiler, kindly donated by Hitachi Rail, will arrive in Darlington shortly.

We will continue to progress the outstanding matters with the team in Germany and provide updates along the way. TCC

Above: The rather splendid accommodation bogies supplied by Hitachi.

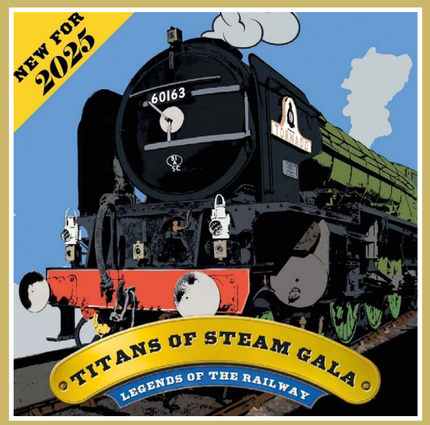
TITANS OF STEAM GALA *by Sophie Bunker-James*

The eyes of the world will be on Darlington this September for S&DR 200, and as part of the celebrations Hopetown will play host to a thunderous reunion of six iconic steam legends, including the first homecoming of No. 60163 *Tornado* to Darlington Locomotive Works (DLW).

Alongside *Tornado*, visiting locomotives include LNER A4 No. 60007 *Sir Nigel Gresley,* LNER K1 class No. 62005, LNER Q6 class No. 63395, LNER J27 class No. 65894 and BR Standard Class 2 No. 78018.

The Titans of Steam Gala takes place daily between Saturday 20th September – Sunday 5th October 2025. Further details and tickets available at: **hopetowndarlington.co.uk/titans**

It is planned that the A1, A4 and K1 will all arrive at the newly laid DLW sidings by rail, via the new main line connection which is being installed this summer. Fundraising for this project is on-going, read more on pages 26/27.



FROM THE ARCHIVES *by Graham Langer*

***Tornado* is seen at Woodthorpe during a visit to the Great Central Railway in March 2010.**

Spring 2005 – Wasting no time since signing the contract, Dampflokwerk Meiningen had started work on the new Diagram 118 boiler. The boiler was funded by a £500,000 bond issue and by this time over £300,000 had been raised. At DLW work continued to make and fit new sections of the front footplating over the valve gear whilst Ufone Engineering completed machining of the radius link components and the union links which then went to Holt Bros, Halifax for case hardening. A start on the tender had been made with the manufacture of patterns for the hornblocks and spring guard brackets.

Spring 2010 – Emerging from hibernation at the NRM, *Tornado* returned to main line duties and immediately started to make the headlines again. On 4th February No. 60163 worked the Royal Train to MOSI, the Manchester Museum of Science and Industry, conveying TRH The Prince of Wales and The Duchess of Cornwall. There followed a Valentine's special on 14th of the same month and trips to Wales and Cumbria. In its 20th Anniversary year the Trust announced a formal feasibility study into the construction of a Gresley Class P2, the aim of the study being to answer the question as to whether it was possible to successfully and commercially build, certify and operate a P2.

Spring 2015 – After a protracted winter overhaul at Darlington Locomotive Works which had seen No. 2007's frames skated to one side of the workshop, apple green paint was being applied to the big Pacific prior to her return to the main line. Meanwhile progress on *Prince of Wales* continued, with quotes being sought for the manufacture of the smokebox door and frame ring: It had to be decided how the door might be made, as a hot pressing or by hand forging over a cast iron former, or possibly by machining out of solid 8" thick plate using a large CNC vertical milling machine (the first option was chosen).

Spring 2020 – The Covid 19 pandemic was in full swing and, far from returning to traffic after her winter overhaul, *Tornado* was effectively mothballed at the National Railway Museum with no prospect of work in the coming months. The Trustees were dealing with the consequent financial implications and planning a strategy to cope with the uncertainties ahead. It was not all doom and gloom though, Darlington Locomotive Works is still busy, albeit with social distancing in place, and some adjustment had been made to the order of work but with the locomotive back on its wheels many of the smaller jobs could be completed and a start made on the byzantine piping, plumbing and conduit work that took up so much of the last year of *Tornado*'s construction. TCC

John Wilkinson

The cab is lowered onto the frames in Spring 2015.

The A1 Steam Locomotive Trust is pleased to display the logos of organisations giving us their ongoing support. Their contribution is gratefully acknowledged.

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*All information correct at the time of going to press late June 2025. For up-to-date information and dates please check the website www.a1steam.com.

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Darlington Locomotive Works is normally open to the public on the first and third Saturday each month (10am – 3pm).
Access to the works is in association with Head of Steam: Darlington Railway Museum where Covenantors are entitled to free entry (with Covenantor card). Charity registration No. 1022834.
The Trust respectfully requests that anyone wanting to see *Tornado*'s main line passenger trains follows the rules of the railway and only goes where permitted.