



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. 71 Autumn 2023



No. 2007's impressive monobloc juxtaposed against the locomotive it is destined for. An engineering work of art and a testament to David Elliott's design ability and Howco's manufacturing skill.

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EDITORIAL by Graham Langer



It is hard to believe that this edition of *TCC* will be with you less than a month before Christmas so I must wish you the compliments of the season from all of those at the Trust. It was a real treat to see so many of you at this year's Convention and a genuine pleasure to show many of you round the new Darlington Locomotive Works for the first time, as well as the refurbished Whessoe Road engine shed. There can be no doubt that the new works will be an important integral part of the Darlington Heritage Quarter and you can read more about progress on the overall project on pages 28 & 29. For anyone still wishing to look round our new premises, we have recommenced our regular open days on the first and third Saturday of each month.

Sadly, we have to record the passing of Peter Townend, a Trust Vice President for many years. Peter was one of the last living links with Plant Works at Doncaster and like Malcolm Crawley, Dick Hardy and Richard Harvey, was a Premium Apprentice there just before the Nationalisation. Theirs was an extraordinary time on the railway, embracing the creation of British Railways, the Modernisation Plan and the transition to diesel power. It was an honour to know these men, the like of which we will never see again. You can read a full obituary to Peter on page 12 followed by an article he wrote for us when *Tornado* first entered traffic.

A roller-coaster year overhauling No. 60163 has been balanced by some solid progress in the construction of No. 2007, particularly the completion and delivery of the monobloc by Howco who deserve nothing but praise for navigating the complex assembly and machining of this groundbreaking component. The ingenuity of the cylinder block's design is a reflection of David Elliott's remarkable skill as an engineer and those of us at this year's Convention were able to marvel at the elegant innovations applied to the original Gresley design to eliminate some of its known flaws, I particularly like the fact that the valve gear (with emphasis of the word "gear") within the block can be withdrawn as a complete cassette for maintenance. We cannot emphasise enough the importance of our industry sponsors who often undertake work for us at cost and we are delighted to carry an article by Sir Andrew Cook covering the casting of steel components for us on pages 20 & 21.

Jacqui Nicholson is settling into her new role as Office Manager and she and Janet have become a formidable team. She has brought an impressive set of skills to bear on many of the administrative challenges facing us and has drafted an impressive piece covering the role of volunteers on page 26. We are seeking to fill a number of vacant roles in the Trust, some of which have only recently become apparent as we have continued to grow as an organisation. The various 'job' descriptions are detailed and further information can be accessed via the website and Trust offices. The Trust stands or falls on the quality and commitment of its volunteers and we are incredibly lucky to have benefitted from the input of some incredible people over the years who have given thousands of hours of their time for little reward other than the satisfaction of watching a dream become reality.

With Christmas coming, why not consider giving a loved one or friend a dedicated donation? Truly a present that money cannot buy and one which will last a lifetime! In her column, Liz Gibson has a list of some of the tastier components still looking for sponsorship on page 27 although none will quite match the item that was gift-wrapped and waiting for Covenantors at Darlington Locomotive Works on 14th October! Finally, in one piece of unexpected news, the Trust's 'facilities' at the new works won a Platinum Award in the 2023 'Loo of the Year' Awards!

TCC



FROM THE CHAIR by Steve Davies



The light really is rapidly approaching from the far end of the tunnel, with *Tornado's* overhaul virtually complete. The very effective combination of the team at Locomotive Maintenance Services (LMS), and our own staff and loyal volunteers, is working hard to get the locomotive ready for testing with much burning of the proverbial midnight oil. At the time of writing, it is still to be determined if the engine will go straight to Melton Mowbray for European Train Control System testing, or to the Great Central Railway for initial running in but we will of course keep you, our wonderful supporters, fully apprised in close-to-real-time as to the emerging plan. Either way, it will be a wonderful moment to see *Tornado* move under her own steam once again. The greatest reward for all the hard work your management team, staff and volunteers put in is to see, hear and smell our magnificent namesake engine doing what she was designed to do, and I think my colleagues would concur that we have been deprived of these

sensory experiences for far too long! Preparation of the locomotive for its return to operation is not just about the mechanical and electrical overhaul but equally importantly includes the reassembly and certification of the team who will support it in traffic. It's amazing how two years away from the 'big' railway can erode competence and capability in this critically important area therefore much effort is being put into ensuring that the human dimension is attended to as well. We therefore look forward to renewing friendships with existing support crew members, offer our sincere gratitude and thanks to those who may not be returning, and look forward to meeting and welcoming fresh members of this great team.

I have been plain with you all about the sheer expense involved in completing the overhaul, and you have responded brilliantly, both in your understanding of the situation and in your further efforts to financially support us. This has been gratefully appreciated, and I can confirm that the Trust's entire Board is both thankful for what you have been doing, but also heartened at the team spirit and understanding being demonstrated by you all. The Convention was, as ever, a great moment to re-connect with our support-base and we came

away thoroughly refreshed by the opportunity to renew old friendships, and to establish new ones. I much enjoy my direct contact with you, and hope that the lack of opportunity to do it more often is more than compensated for by the wonderful personal service Janet Preshous provides you all as the principal supporters' point of contact. We are certainly a big family, united in our faith in the Trust's concept, and it genuinely helps spur us on to greater things knowing you are there. There can be no room for complacency though, and one of our key objectives is to restore the Trust's financial reserves to generate much-needed resilience. So, the message is clear – and unobtrusive! Please continue to do all that you can for us, including introducing friends, family members and other contacts to the amazing work we do.

In closing, I would therefore wish to reiterate our considerable gratitude for all that our supporters do in helping deliver the Trust's objectives. We will of course reward your loyalty with direct communication when *Tornado* moves under its own power!! Best wishes, take care, and given the timing of this edition of *TCC*, may I wish you all a Happy Christmas and a prosperous New Year.

TCC



A computer generated image of the finished Heritage Quarter site showing the various elements, our new works building and, in the distance, the Whessoe Road engine shed.

Peter Giroux

2023 CONVENTION by Graham Langer



The heart and soul of The AI Steam Locomotive Trust, the Covenants and supporters at this year's Convention.

This year's Convention differed somewhat from the last few held in Darlington. Firstly, we convened at Hall Garth Hotel, just north of the town which proved to be an ideal conference venue with all the facilities we could possibly require. Secondly, we were able to hold the afternoon session in our brand-new works building.

Chairman Steve Davies opened proceedings by welcoming some 140 attendees to Darlington. Steve briefed the audience about David Elliott's health, reassuring all present that David is continuing to "brain dump" his knowledge to Alan Parkin. He then introduced the team of Trustees and paid tribute to Paul Bruce who has recently stepped down as a Trustee before introducing the office staff and volunteers who have contributed so much to the Trust recently. Steve enthused about the new Darlington Locomotive Works and all the ancillary facilities that will make our future operations ever more viable, although this will be tempered until the funds are found to provide a turntable. Steve acknowledged that progress with the P2 had been temporarily impacted by the need to hasten *Tornado's* return to traffic and that the latter had reduced our reserves significantly although he pointed out the fact that the fitting of the European Train Control System (ETCS) makes the Trust a world leader in terms of signalling technology.

Following Steve's preamble, Huw Parker,

Operations Director, took over to assess the original overhaul strategy for *Tornado* and the predicted timeline had it gone to plan before a series of unforeseen occurrences deflected the scheme. The delays incurred, as recorded in the last few editions of *TCC*, caused the timetable to be extended by nearly six months and Huw had to deal with each major issue in some detail, from the initial finding of cracks in the star stay and consequent movement detected in its associated fitted bolts, through to the unexpected discovery that the fireman's side Cartazzi frame was out of true and required significant repairs. We also had to deal with the well-documented issues surrounding the slippage in the delivery of the first of Meiningen's two new boilers (destined for No. 60163), the decision to repair her existing pressure vessel and the problems found when the latter was delivered to Darlington. Two additional problems also added to the already complicated engineering programme underway to return *Tornado* to steam, namely the skimming of the bogie pintle to true it up which uncovered areas of porous casting, requiring a new one to be machined from solid steel billet (some 75% of the steel billet was machined away!), and, following the failure of one of *Britannia's* crossheads, the revelation that those fitted to the A1 were also showing signs of fatigue cracking which needed prompt remedial treatment.



Covenants and supporters listen to Huw Parker Hall Garth Hotel.

Turning to better news, Huw was able to expand on Steve's comments about the addition of ETCS to No. 60163, paying tribute to the extraordinary work by Rob Morland in installing this incredibly complex equipment. He also illustrated how the cab signalling system worked in practice before showing the now finished tender, complete with all the new ETCS lockers on the front bulkhead. Huw showed recent progress on the boiler, covering the steam test, lagging, cladding and painting of the A1's boiler before it was shipped to Locomotive Maintenance Services (LMS) where the grate was added and backhead fittings reunited with the boiler. He was also able to share the very latest news from Loughborough, showing some video footage of *Tornado* being rolled out with the boiler fitted and steam tested. After a brief update covering the two support coaches and anticipating the immediate plans for No. 60163, Huw handed over

to Graeme Bunker-James, Commercial Manager, who outlined provisional plans for the locomotive following a test run in late January or early February, which will include a mixture of preserved line visits, tours to the Midlands and West Country and to and from London. Summer tours will be focussed on the North and Scotland with the regular 'Aberdonian' series forming the backbone of planned trips. Huw then wrapped up this section by thanking the volunteers who have helped with *Tornado's* overhaul and the move from Hopetown Lane to Bonomi Way.

Richard Courteney-Harris, P2 Project Coordinator, then took the floor to review progress on the P2, opening with the caveat that although there wasn't much visual evidence of this at Darlington Locomotive Works a huge amount of work had been going on elsewhere, at such a pace that a funding gap had started to open up between the funds raised and the work paid for, made up from Trust reserves and, ultimately, reducing the potential rate of work until a significant increase in funding occurs. Richard also paid tribute to David Elliott and his dedication to the P2 project. Graeme took over with a detailed analysis of the engineering challenges already overcome and still to be faced, noting that lessons from the construction of *Tornado* had been learned and many of these will speed the pace of construction, which, again, entirely depends on the rate of income. Immediate targets include the fitting and finishing of the pony and Cartazzi trucks, fitting the monobloc, installing the boiler (due for delivery this winter), balancing and installing the wheelsets in the tender frames before adding the tender tank. The next step will be the launch of 'The Valve Gear Club' (in the Spring) and Graeme outlined how this will be progressed once the funds have been raised, working up 3D CAD drawings before building a prototype which can be bench-tested and, if successful, duplicated and installed. Graeme completed the new projects section by summarising plans for launching the V4.

At this point Graham Langer, Publications Director, took over to give an update on work at the new site in Bonomi Way, apologising for having to substitute for Paul Bruce who had injured his back. Illustrating his piece with slides of the construction of the new Works, he was able to reveal that the lovely, accessible facilities have been entered in this year's 'Loo of the Year' award, a first for a heritage railway organisation! Graham then described the move from DLW1 to DLW2 and showed a captivating piece of video (filmed by Ed Laxton and available on YouTube) covering the journey taken by No. 2007 to reach its new home before raising the question of tracklaying (now well under way). Apprising the

challenge ahead and how it still needs to be funded (around £450,000 is still required), he illustrated this with some slides of the Whessoe Road engine shed under restoration and the pegged-out site of the proposed turntable.

Richard Courteney-Harris now analysed the Trust's recent review of fund-raising and the role of a new fund-raising sub-committee which is solely focussed on generating the huge sums of money still required to complete *Prince of Wales* and fund future projects. He praised the role Covenants had played in raising the bulk of the money required for all that has been achieved so far but emphasised that they could help by introducing others to the work and ambitions of the Trust. Sophie Bunker-James, Marketing Director, now looked at some of the figures involved, praising Covenants and Club members for the extraordinary sums they have generated over the decades. She revealed that Trust merchandise will be re-launched before showing some graphs illustrating trends in Covenantor numbers for both A1 and P2 and reminding people that a five pound covenant taken out twenty years ago would now be worth nearly twelve pounds and encouraging donors to up their monthly contributions. Another set of graphs showed the difference between the amount raised by individual Clubs and the actual amount spent on those components, illustrating the sum that had to be made up from Trust reserves to ensure prompt delivery of these parts. Sophie also mentioned the new valve gear club (to be launched in the new year) and the importance of legacies to the Trust before introducing 'Top Link', the club for generous donors who wish to give the Trust a 'living legacy' and actually see the results. Sophie concluded by discussing the methods being used to recruit new supporters and exhorted all present to

help with this process as well as joining as volunteers. Richard added that the aim is to have regional 'ambassadors' to promote the work of the Trust and act as an advocate the organisation when one of our locomotives is running in their area.

Following a brief Q&A session, the meeting broke up for lunch before transfer by vintage bus to the new Works in Bonomi Way. There Covenants had the opportunity to view the new building and progress on the P2 before Steve Davies delivered an update, swiftly followed by the unveiling of the completed monobloc, hydraulically tested and ready to be fitted to the frames. The assembled company then walked, crocodile fashion, to the Whessoe Road engine shed to view the extent of the renovation of that historic building. Following a return to the Works and refreshments, buses transferred the guests either to Bank Top station or back to the Hall Garth Hotel for the annual Convention Dinner, a most enjoyable event attended by 50 or so supporters who were able to listen to our guest speaker, Paul Lewin (General Manager of the Ffestiniog and Welsh Highland Railways) talk about the challenges the railways have faced since Covid 19 and the solutions arrived at to keep the lines on an even keel. Paul also reminded his audience that the FR had been building new locomotives since the 1970s and had just completed their fifth, a double Fairlie named *James Spooner* and we were privileged to be shown the very first images of this lovely locomotive carrying its nameplates for the first time (prior to its official naming). An altogether excellent Convention, ably masterminded by the team in the Darlington office and our local volunteers for whom a vote of thanks was given. Save the date for next year's Convention, 12th October, Hall Garth Hotel and Darlington Locomotive Works! **tcc**



Having relocated to DLW, we were able to walk to the 1861 Whessoe Road engine shed, now beautifully restored and housing NELPG's J72, No. 69023 Joem.

AI OVERHAUL *by Ben McDonald & Huw Parker*

The major steps in the overhaul since the last edition of *TCC* have been reuniting the locomotive frames with all the wheelsets and finally the boiler! All the wheelsets had been carefully cleaned and painted earlier in the year, but as reported in *TCC 70*, work was required to fettle the hornguides and manganese steel liners prior to finally fitting the cannon boxes to the wheelsets. This was completed shortly after *TCC 70* went to press and the driving wheels were returned to the locomotive frames first.

As reported at the Convention, problems surrounding the RH side Cartazzi hornguides were solved following the fitting of a new section to the outer frame.. Once this had been replaced, the hornguides could be refitted and the Cartazzi wheelset finally returned to the frames. At the front of the locomotive, the main bogie pivot was discovered to be flawed, with several large blowholes discovered in the casting. As a time saving measure, it was agreed to replace the original with a new pivot which was machined from a solid billet of steel, 75% of the material ending up as swarf! Once this had been fitted, the bogie rejoined the frames and we had a Pacific once again!

This was what we had been waiting for and with the frames now a rolling chassis, the boiler was transported from Darlington and fitted to the frames at Locomotive Maintenance Services(LMS), Loughborough. The smoke box end of the boiler has been sealed and secured to the cylinder block, the newly refurbished ashpan fastened into place and a new concrete brick arch – if that is not an oxymoron – cast in the firebox.



The newly machined bogie pintle.



Above: The new brick arch in place.



Right: The locomotive's frames were then run out and the boiler carefully lowered.



Above: Tornado's boiler is loaded at DLW for transport to LMS.



Right and below: At LMS the boiler was unloaded.....



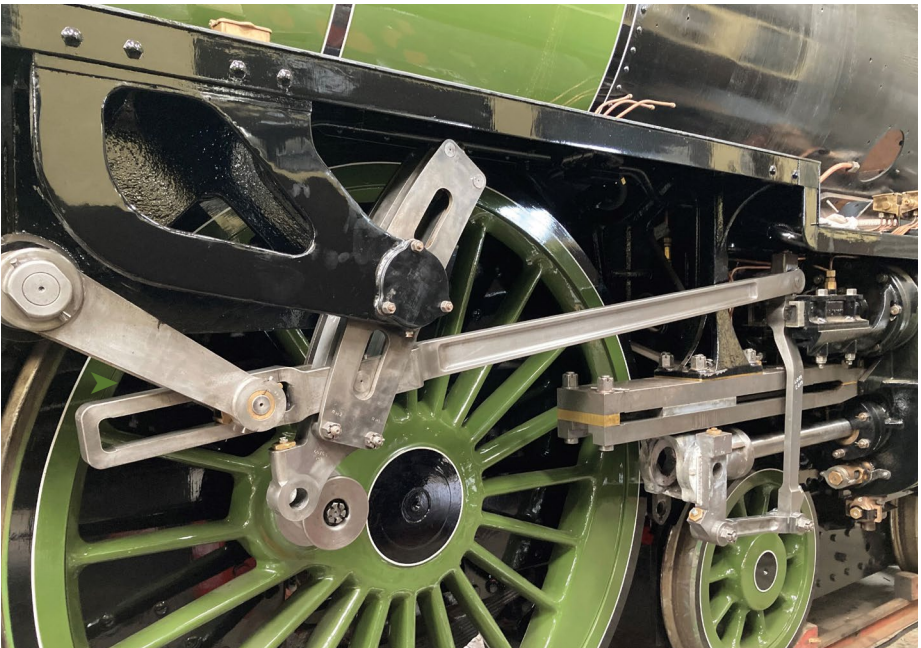
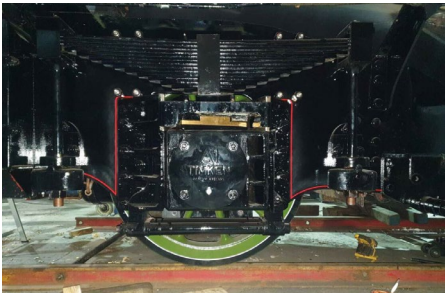
Above: ...and while still suspended the ashpan was fitted.

Centre left: Work underway to refit the cab pipework.

Centre right: The steam manifold in the cab and the repaired Cartazzi frame.

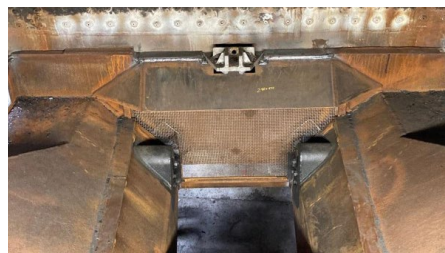
The newly fitted take-off for the second turbo generator, which shuts off steam direct from the boiler, fouls the cladding and will need adjustment. The injector clacks also require lapping to improve their seating. These are all the type of small jobs that must be completed before the locomotive is ready for operations, and invariably take longer than we would like! The next tasks saw the main steam pipes added and the smokebox furniture replaced. The backhead fittings are being refitted; some will need new pipework due to the addition of the second turbogenerator and its associated steam supply from the manifold in the cab. To achieve this, other supplies have had to be altered requiring changes to the pipe routes. Fitting of the ETCS pipework to the cab and brake box is now on the final straight and the cab will be temporarily fitted shortly to allow the new pipework mentioned earlier to be measured and shaped.

Amidst the race to reassemble the locomotive, the team briefly turned their attention to dismantle 'Crystal Palace'. This temporary storage shelter between its two ISO Containers has been a godsend as both stores and a covered working space. It was taken down and packed away in record time by a very wet, cold and wind-blown team in the middle of Storm Babet and our DLW volunteers have cleaned and repacked the shelter ready for sale to a new home.



Valve gear being refitted.

Inside the LMS workshop, some of the valve gear has been assembled. The coupling rods are due back from the Severn Valley Railway shortly and by the time TCC is released should be fitted to the locomotive. After two long years of overhaul activity, The Trust now looks forward to seeing *Tornado* in steam as the locomotive goes for running in and ETCS testing at the RIDC test centre shortly. The AI will then return to main line and heritage line operations from Spring 2024. **TCC**



Above: Refurbished ashpan in-situ.

Right centre: The main steam pipes refitted in the smokebox.

Far right: The right-hand main steam pipe.



Above: The cab back on the frames and work already underway to test the ETCS equipment.



“Before” and “after” photographs of the tender.

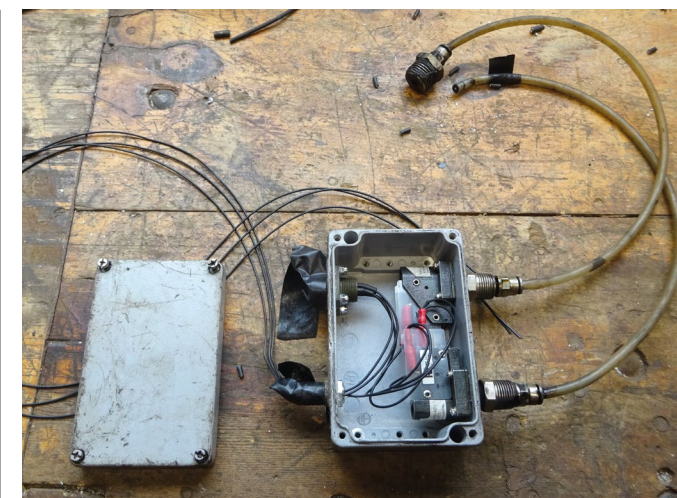
ETCS UPDATE *by Rob Morland*

A further visit to LMS enabled completion of a number of outstanding electrical tasks, including:

- Fitting a protective cover to the cable joints between the inside front left lighting frame lighting strips
- Installation of flexible conduits, wiring and LED strip for the front buffer beam lighting
- Survey around the reverser stand in preparation for refitting the sander indicator wiring, boxes and air pipes
- The refitted LED inside frame light strips beside the middle engine had an exposed joint at their coupling to the conduit system. This is an area that is prone to impact from tools, so a custom brass cover has been fabricated to protect it. This was fitted in place.

The job to install front buffer beam lighting was completed, apart from final fitting of the LED strip and connection to the system. This apparently simple task was made more complex because the underframe lighting circuit does not currently progress further forwards than the under-running plate box behind the cylinder on the fireman's side. This meant that we had to install new wiring in the original 32mm conduit that runs from this box, past the cylinder and down to the turbogen connection box. After trying three different styles of electrical wiring rods, a combination of a nylon one and a tubular steel affair got through the conduit and its four bends and the wires were successfully pulled in. A useful discovery was that, back in 2007, Paul Depledge had thoughtfully left spare terminals in the under-running plate box to connect the new wiring into the underframe lighting circuit, which simplified this part of the job. Finding these raised a smile. The next challenge was to get the wiring through the frame and finalise the location of the lighting strip. Fortunately, the front buffer beam umbilical wiring already passes through the frame on its way to the umbilical, so this conduit was used to gain access to the existing box behind the buffer beam. Discussion with DTW resulted in a simple arrangement for the LED strip which required minimal fabrication and no new holes drilled in the engine. A plate was made to sit above the existing flange that supports the buffer beam pipe connection brackets. This gives the lighting strip good physical protection behind the flange. The plate was drilled and tapped to take the LED strip trough. We were able to use the very last length of brass trough that we have in stock for this, which happened to fit the available space perfectly. The LED strip was made up and tested, together with the 10mm flexible conduit connection. LMS will now (as volunteers) paint the new plate, ready for installation during the next visit.

The sander indicator pressure switch box (which flashes an LED to remind the driver when the sanders are operating) used to be located in an unsatisfactory position under the floor on the driver's side. The rose box has corroded badly in the very unpleasant environment, and the small plastic air pipes that connect to its pressure switches were prone to being crushed and broken. In consultation with DTW a new location has been identified for the box on the left of the reverser stand. This will allow a much more satisfactory connection to the forward and reverse air pipes, close to the sander lever. It will also be easier to wire into the LED box and the rest of the electrical system. The new JRU has a channel to detect when the sanders are being used and additional wiring is being provided for this. A new box for the switches will be constructed and LMS will arrange for the fitting and making the air connections when they re-pipe the sander plumbing on the reverser stand. The existing LED box (which fits in the side of the straight air brake bracket) will be refurbished and reused.



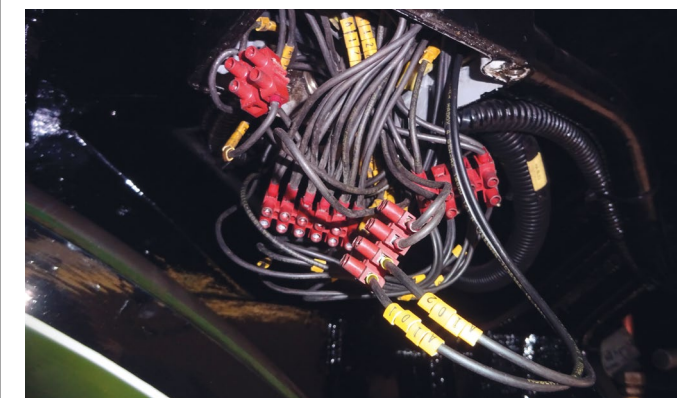
Existing sander indicator pressure switch box (to be renewed), showing pressure switches and electrical connections.



Existing sander indicator LED box (to be refurbished and reused).



Above left: Exposed wiring connections to driver's side front inside LED lighting strip and right, a new protective cover over wiring connections to driver's side front inside LED lighting strip.



New wiring for front buffer beam lighting, connected into existing frame lighting circuit under the fireman's side running plate.

The great majority of the complex and risky electrical work on the locomotive is now complete. Remaining electrical jobs to be carried out at LMS include:

- Final fitting, connection and testing of front buffer beam lighting strip
- Reconnection of Turbogren Switch Box wiring (currently disconnected for welding on the engine frames)
- Once the cab goes on, connection of all electrical systems between engine and cab (including final modifications to make everything fit in some very confined spaces)
- Making up the new sander indicator box and wiring, refurbishing the LED box, final fitting of boxes to reverser stand and air brake bracket
- Refitting and rewiring of the front top marker lamp (on the top of the smokebox)
- Refitting the front lower marker lamp (after the front buffer beam footplate goes on)
- Refitting the front right and left marker/tail luminaires

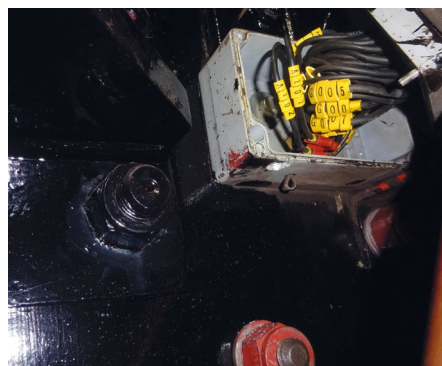


Above images: New front buffer beam LED lighting strip trough in place behind the buffer beam.



Right: New buffer beam lighting wiring in place in front buffer beam umbilical connection box, and access hole ready for 10mm flexible conduit to lights.

- Testing all the engine electrical systems as far as possible (without the tender)
- Making up and testing the new engine-tender umbilical cables (a Darlington Works South job, necessitated by the higher ETCS currents) **TCC**



AI FUNDRAISING *by Sophie Bunker-James*

The biggest advertisement for No. 60163 *Tornado*, is the locomotive itself. Taking passengers for days out, whether on the main line or on a heritage railway, and visiting new audiences around the country, *Tornado* draws crowds and never fails to impress.

The number of people supporting *Tornado* increases when the locomotive is in the public eye. Interestingly, the number of donations towards No. 2007 *Prince of Wales* also peaks when *Tornado* is busiest out on the main line!

In the coming year, *Tornado* will inevitably be busy running trains to make up for lost earnings and raising the Trust's profile once more. We will be intent on building Covenantor numbers through interactions at heritage lines and non-railway events such as air and classic car shows – the interest in engineering sustained across planes, trains and automobiles!

Over the last two years, our flagship locomotive has been behind closed doors whilst undergoing an extended overhaul. During this time fundraising opportunities have been reduced, as have revenue earning prospects, and we have been more reliant than ever on our loyal supporter base. We thank you for your continued support, and we very much look forward to celebrating with you when *Tornado* returns to steam. Fortunately, that time is not far away now. That is not to say we have been falling short in this area, raising around half a million pounds (excluding legacies) across both engines in the last year to the Convention.

As we approach the end of *Tornado's* overhaul, we ask our supporters to consider two things:

Firstly, many of our Covenantors rightly take immense pride in having supported the AI project for

a very long time. It is wonderful to have so many long-standing donors who, over the years, have contributed enormously to *Tornado's* build and maintenance. You'll remember the line "An AI for the price of a pint" - unfortunately, the cost of beer has gone up! It may interest you to know that your £5 covenant in 1990 would have the equivalent purchasing power of £11.82 today. We ask therefore that you consider turning your £5 donation into £10 to help us maintain this special locomotive.

The second consideration is that we need more volunteers, from Trustees to merchandise sales and archiving to on train stewards. With events and trains nationwide, and many tasks that can be done from home, could you donate your time? It's a great way to meet new people and make a difference to your favourite locomotive! From the Chairman downwards, volunteers help keep this organisation on the right track. Please email volunteer@alsteam.com to find your place volunteering for the Trust.

Following the development of the www.alsteam.com website, we are delighted to announce the opening of the online shop. The shop is stocked full of *Tornado*-branded goodies, perfect for wrapping up this Christmas - or simply treating yourself! From our new line of water bottles, to our trusted favourite mugs and sweaters, there's something for everyone!

When you shop with us, you are supporting the future of main line steam as all proceeds go towards building, maintaining and operating our locomotives. Discover more at www.alsteam.com/shop

Thank you all for your continued donations, we simply couldn't do it without you! **TCC**

Covenantors' Diary *by Jacqui Nicholson*



On the eve of the next great storm heading our way I am writing my very first Covenantors' Diary snug in the office overlooking the old

Hopetown Lane site and the re-building work happening at the Head of Steam Museum.

Janet, Jackie and I welcomed 140 covenantors and supporters of the Trust to the Hall Garth Hotel last Saturday for the Annual Convention. Many were transported to us from Bank Top Station by vintage buses courtesy of Aycliffe and District Bus Preservation Society. You can read more about them on their website Aycliffe and District Bus Preservation Society (aycliffebus.org.uk)

The presentations in the morning acted as a brilliant induction course for me to the charity as we were all brought up to date on *Tornado's* overhaul and the *Prince of Wales* build. This was followed by a buffet lunch, then back on board the buses for a trip to the Darlington Locomotive Works. The grand unveiling of the monobloc to the delight of the on lookers was followed by a visit to the 1861 shed. If you like playing Where's Wally? You can maybe spot me in the crowd. You can read a more in-depth report on the Convention by Graham Langer elsewhere in **TCC**.

Later that day we reconvened at the Hall Garth Hotel for a delightful dinner with a talk by Paul Lewin, the Director & General Manager of the Ffestiniog & Welsh Highland Railways, entitled "It's only narrow gauge!". The Trust has expressed our thanks to the Hall

Garth Hotel and passed on the positive feedback and compliments from the convention and dinner attendees.

I would like to take a few lines to thank our amazing volunteers. In the past I have seen dedication from volunteers in other organisations but never on the scale that the Trust invokes. In the office we are so lucky to have had the support of Jackie Morrice, practically fulltime, prior to, during and after the move, she has recently returned to her Wednesday slot. I personally wish to thank her for the support she has given me for the first few weeks in the job. Volunteers are the lifeblood of charities, and we are so grateful for each and every one. As you will all know I share the office with the wonderful Janet who is the first point of contact for the Trust's supporters. She delights in answering your questions and resolving any issues. Janet is such a bubbly character who keeps the office warm and welcoming to everyone who enters.

I had the great privilege of meeting many of you at the Annual Convention. I look forward to my interaction and correspondence with those of you I am yet to connect with. As the winter draws in, we will not be in hibernation, the team will be busily doing all the things that underpin a successful non-profit organisation and ensuring that the new building is kept in tip top condition. We are now settled into the new Darlington Locomotive Works on Bonomi Way. We welcome visitors to the Works daily. If you would like to take a tour, please contact the office on 01325 460163 or email enquiries@alsteam.com.

The bi-monthly Open Days are now underway the first and third Saturday of each month, hosted by Charles Tremeer and his team of volunteers. There will be merchandise and refreshments on sale. If you cannot come in person to shop for your branded clothing and gifts you can now visit the online shop. New lines are coming in stock soon so keep checking in. Shop at the Trust website (alsteam.com).

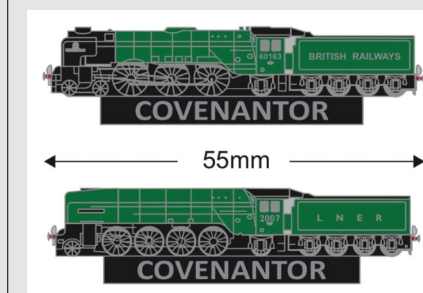
Dates for your diary: Darlington Locomotive Works Open Days

- 2nd December
- 6th January
- 16th December
- 20th January

Show your support for your favourite locomotive with pride!

Our fantastic new Covenantor badges, depicting either No. 60163 *Tornado* or No. 2007 *Prince of Wales*, have been exclusively produced by REV Gomm. They are traditionally made, hand finished and enamelled at their Birmingham factory and only available to purchase if you are a Covenantor!

Buy your exclusive Covenantor badge for £5 (+£1.20 p&p). Collection from DLW is available. Call today to secure yours on 01325 460163. **TCC**



New Covenantor badges.

TORNADO TOUR DIARY 2024

We are currently taking phone bookings for the following tours. More details will be published on www.21stcenturysteam.co.uk as trains are finalised.

- **Thursday 18th July** 'The Aberdonian' - Edinburgh to Aberdeen (via the Forth Bridge) and return
- **Saturday 27th July** 'The Aberdonian' - Edinburgh to Aberdeen (via the Forth Bridge) and return

- **Thursday 5th September** 'The Aberdonian' - Edinburgh to Aberdeen (via the Forth Bridge) and return

- **Saturday 7th September** 'The Clyde Aberdonian' - Glasgow to Aberdeen and return

- **Saturday 14th September** 'The Aberdonian' - Edinburgh to Aberdeen (via the Forth Bridge) and return

Tornado operates on the national network with West Coast Railways and DB Cargo and the Trust respectfully requests that anyone wanting to see *Tornado* follows the rules of the railway and only goes where permitted.

Book online at www.21stcenturysteam.co.uk, or call our booking office on 01325 488215

• SHED NOTICES •

PETER TOWNEND – A TRIBUTE by Graham Langer

Shortly after the 2023 Convention we heard the sad news that Peter Townend, one of our Vice-Presidents, had died at the age of 98. Peter's involvement with the Trust dates to the first AI Roadshow at the Great Northern Hotel, King's Cross, in Spring 1991, travelling up from his home in Torquay. He made a significant contribution at that meeting during questions, particularly when someone asked why we were building an AI when they had a reputation as rough riders. Peter replied that in his experience that while they didn't ride as smoothly as an A4, they were no worse than a Britannia or Black Five - adding that during his time at Top Shed they modified the springing which effectively sorted the issue.

Peter was born in 1925, and grew up in Doncaster before World War 2, his grandfather worked as a Foreman at 'The Plant'. Peter joined the works at Doncaster as a premium apprentice in 1941, moving to the locomotive drawing office before spending a further two years relieving Shedmasters at East Anglian depots before being appointed as Shedmaster to Hatfield and then Boston. In 1956 he moved to 'Top Shed' at King's Cross which brought with the responsibility for an ever-changing cast of Peppercorn AIs as well as Gresley V2s, A3s and A4s. During his tenure at 'Top Shed', Peter was responsible for fitting Kylchap double blastpipes to the fleet of A4s and A3s as well as half a dozen V2s and his own prescription of German type smoke deflectors for the A3s so equipped. Peter remained at 34A until 1961 before becoming the Traction and Rolling Stock Engineer, King's Cross Division. Following his retirement in 1984, he wrote a series of very successful books covering his time at 'Top



RAIL Magazine

Peter Townend in *Tornado's* cab during her first steaming at Darlington Locomotive Works in 2008.

Shed' and his experiences of working with East Coast Pacifics.

Peter was appointed a Vice President of the Trust and remained a staunch supporter of all we aimed to achieve, and we had the pleasure of repaying his contribution by giving him the opportunity to ride on *Tornado* in his home county, Devon, during one of her regular 'Torbay Express' trips in 2010. It is worth reprinting his thoughts on that day and they follow in the next article.

A DAY OUT WITH *TORNADO* by Peter Townend

Tornado had already arrived at Taunton when I alighted from the first Sunday morning train from Newton Abbot. The tender was taking water using the low-level filling point, no doubt essential when under overhead wires but how convenient (yet never available in the days of steam traction). I always remember occasionally visiting John Blundell, the District Motive Power Superintendent at Peterborough, when I was in the Head Office at Liverpool Street; as you walked round the shed yard of New England depot he would be dashing in all directions shutting tank lids! There was a serious point to this, as locomotive failures occurred due to tender sieves becoming blocked with debris – when I was at Top Shed there was a change of locomotives at Newcastle on 'The Elizabethan' because an engineman's sponge had been accidentally dropped into the tender when filling with water and this had partially blocked the supply to the sieve.

I was greeted warmly at the engine by Inspector Geoff Ewans of Barton Hill, Bristol, driver Graham Ward of Didcot, Peter Neesam of the AISLT and a trainee fireman, as well as several young ladies (*a hen party – ed.*) jumping on and off the footplate and enjoying the occasion. It was a pleasure to see the AI standing quietly in the station for around half an hour without blowing off and, for that matter, no one firing the engine. With the Pacifics in steam days it was usually the practice to fill the back corners of the firebox with the biggest lumps of coal available before leaving the shed and at Top Shed an outgoing engine would often go back under the coaling plant to fill the hole left on the tender, causing headaches for the Running Foreman if the engine was blocked in or was late off shed. The coal on *Tornado's* tender today was much smaller than Rossington or Harworth coal but of a very convenient size for filling

the shovel. Upon departing Taunton, the fireman set to work with some gusto to fill the 50 square feet of grate. The double Kylchap blast-pipe was doing its job and the exhaust cleared rapidly. The AI with its very large grate and short boiler barrel would always come round very quickly when you started away, particularly when compared to the single chimney Pacifics.

L. P. Parker, the Motive Power Superintendent of the Eastern Region, would have been delighted to see that driver Graham Ward of Didcot worked the engine with a full regulator, making frequent adjustments to the cut offs as we climbed to Whiteball summit. He said later that he had worked the engine between 20 and 40%. The tunnel seems very short nowadays when passing through in high-speed trains but its length could be appreciated more today with speed in the forties. I was reminded that R. D. Blackmore, the author of Lorna

Doone, also wrote a poem about the navvies who worked so hard building the tunnel. This is displayed in the nearby church of Sampford Arundel which stands out on the hill (but is better seen from the M5 motorway).

I had travelled in the cab over the G.W.R. West of England main line only once previously which turned out to be somewhat of an adventure as the diesel-hydraulic 'Warship' was losing power and had difficulty keeping the brakes off. When I got off at Newton Abbot the driver turned to me and asked what he should do. I said, "You're coming off!" and arranged for the standing pilot to work the train forward. Both faults had been booked for some time in the driver's repair book and I asked the Commercial Manager I was travelling with to ensure someone did the repairs. The next morning I had a call from on high at Plymouth to give me all the details of what was done to rectify the locomotive.

I had forgotten how curved the G.W.R. main line is, there seemed to be only one long straight section at Exeter, but it is passing through the short tunnels after Dawlish that the sharpest bends are experienced. It was something of a surprise to sit in the cab of a Pacific biting into moderately sharp curves without

slowing down, which I had also previously experienced from the cab of *Flying Scotsman* on the York to Scarborough line. I wondered what stresses the long frames and axleboxes were going through! The designed figure for the Pacifics was usually a minimum six chain curve and four and a half dead slow but after diesel classes 40 and 46's gave trouble with frame fractures it was found around King's Cross station that these are only average figures and curves were sometimes much less when checked on short sections. Of course, main line curvature is much better aligned with much higher figures than at King's Cross!

This time I had the unusual experience of passing through Exeter, Newton Abbot and Torquay without stopping. 'The Torbay Express' on Sundays is non-stop from Taunton to Paignton. In the past one feature of the AI which caused complaints was the riding. There were several reasons for this which were considered before *Tornado* was built but with No. 60163 today the ride was very good. Peter Neesam controlled the fire by adjusting the damper as necessary and I am pleased to record that the safety valves only once lifted for a short time. I was surprised the left-hand injector was mainly used however rather than the

right hand exhaust injector (*the exhaust injector needed some attention – ed.*). *Tornado* did its work excellently as an AI should and I had nothing to book against the locomotive!

However, there was one (literal) black mark, which I only ascertained when walking down the platform later at Kingswear. The friendly guard of the Torbay railway service train suggested I might like to get washed. When I looked in the mirror, I was somewhat surprised to see how black I had become on such a short journey (although the condition of Graham Langer should have been a clue when I took over from him at Taunton!). The coal was very dusty and although the tender water-sprays and the slacker pipe had been used throughout it had not kept the coal dust at bay. The cab of *Tornado* is now enclosed whereas at one time the tender front on the AI's was open and had been cut down to try and overcome a complaint about draughts. I had never understood how making the gap bigger worked but on No. 61063 with dusty coal much of the combustion air may now be drawn through the tender as the roof is sealed, a much safer arrangement under the wires but somewhat black for the crew on this occasion! **tcc**



Nigel Cockburn

***Tornado* leaves Kingswear with a returning 'Torbay Express' in 2011.**

AI PROFILE – No. 60142 EDWARD FLETCHER *by Phil Champion*

As Darlington Works No. 2061, No. 60142 emerged in December 1949 carrying boiler No. 2061. It was one of three to come that month, two from Darlington and one from Doncaster, joining the 20 already constructed. Livery was apple green with black and white lining and old gold for numerals and lettering. The tender carried the inscription 'BRITISH RAILWAYS' on its sides.



Bill Reed

Still sporting the early BR emblem, *Edward Fletcher* is seen at Haymarket shed.

Allocation was to Gateshead (GHD), entering service on 2nd February 1949, the sixth of what was to be an initial allocation of a dozen AIs there. The first train noted was the 14:12hrs Darlington-Leeds on the 10th. It travelled the length of the East Coast Main Line, sightings up to the mid-1950 covering a passenger train at Aycliffe, Co. Durham, at King's Cross and on Haymarket shed. Its first named train was 'The Flying Scotsman', the up thirteen coach train being taken from Newcastle on 24th June 1950.

Following its first general overhaul and boiler change (No. 29805 fitted), *Edward Fletcher* was named after the Newcastle and Darlington Junction Railway's then North Eastern Railway's Locomotive Superintendent from 1845 to 1882, the ceremony taking place on 30th October 1950 with naming by the Lord Mayor of Newcastle at Newcastle Central. The locomotive had also been repainted in BR blue with black and white lining. With

37 already in blue and No. 60142 one of three repainted that month, it was among the last quarter of the class to be so painted. On 28th July 1951 No. 60142 again hauled the up 'Flying Scotsman' but this time from Edinburgh to Newcastle. It was also seen at West Hartlepool on the Durham coast line.

Edward Fletcher was among the earlier ones to go into BR green with orange and black lining in December 1951 following a heavy intermediate repair at Doncaster; one of five so treated that December to follow the dozen already painted green. The next few years gave some noteworthy workings. Having started the year undergoing a general overhaul at 'The Plant' (boiler No. 29871 fitted), on 25th February 1953 *Edward Fletcher* departed King's Cross with the down 'Northumbrian' and returned with the up 'White Rose'. On 11th April it worked the first up 'Starlight Special' between Newcastle and York then did

its York-Newcastle working. The up 'Flying Scotsman' was brought into Newcastle on 11th June 1953 while a month later No. 60142 took the down 'Norseman' from York to Newcastle. This pattern of working between the North East and Scotland was shown in many loggings from late 1954 to late 1956 with No. 60142 bringing the up 'Flying Scotsman' into Newcastle, leaving that city with the up 'Heart of Midlothian' or the down 'North Briton'. Ordinary passenger trains were worked over the border such as the York-Edinburgh train of 26th November 1955 which No. 60142 took forward from Newcastle at 21:27hrs as it did to the York-Edinburgh parcels of 11th February and 17th March 1956. *Edward Fletcher* was back in the English capital when it departed King's Cross at 10:10hrs with a Glasgow train. It was back in the Scottish capital on 9th March 1957 when it pulled the 13:00hrs Glasgow-Edinburgh train.

The later BR crest was applied to the tender in March 1958 following another general overhaul at Doncaster which included fitting boiler No. 29823. A trip away from the East Coast Main Line came on 19th November 1958 when it was noted on Cambridge shed. While it was noted at Newcastle and Darlington in 1959 it also was seen on a number of overnight arrivals at King's Cross. During a further general overhaul during November 1959 the locomotive was fitted with a Diagram 117 boiler, No. 29782. At various times 16 AIs were fitted with these which had a round dome rather than a banjo dome and it was further forward (although the banjo cover was still used) and the barrel plates were thicker. Probably the furthest up the east coast No. 60142 had travelled came on 25th June 1960 when it brought a special train into Aberdeen at 11:50hrs.

A move to Heaton (52B) came in September 1960 to join the six AIs already there, however, it was often seen across the River Tyne at Gateshead shed being serviced. On 5th January 1961 No. 60142 brought a parcels train from the south into Newcastle platform 8 and was next recorded undergoing a general overhaul at Doncaster during June and July of that year, its last visit to 'The Plant' for a heavy repair, this one including the fitting of the locomotive's last boiler, No. 10595, a reversion to the diagram 118 type. Typical passenger trains were from Newcastle like its southbound run on 18th August 1961 plus the up 'Northumbrian' ten days later which it took to York where another AI relieved it. 'Namers' include hauling 'The Queen of Scots' between Edinburgh and Newcastle and bringing the down 'Flying Scotsman' from King's Cross to Newcastle. Other traffic included being on both up and down goods at Morpeth on 2nd June 1962 and taking over the 12:10hrs York-Edinburgh parcels at Newcastle on the 16th.

A transfer to Tweedmouth shed (52D) was made on 9th September 1962 with eight other AIs from Heaton. On the 17th it worked one of that shed's typical AI duties of the time, the 2G85 Berwick-Newcastle and Newcastle-Berwick stopping trains, which it would work from time to time. As with most AIs now, workings were a mix of traffic. As well as the Berwick 'stoppers' No. 60142 was in charge of the up 'Queen of Scots' into Newcastle on 22nd September and a special York-Edinburgh from Newcastle at 11:15hrs. Goods trains included the 4S21 King's Cross Goods-Niddrie Class C from Newcastle on 6th October and the Niddrie-Newcastle Class C of 1st December. Parcel trains hauled were York-Edinburgh ones. Again *Edward*



***Edward Fletcher* on Haymarket Shed in August 1963.**



Chris Nettleton

No. 60142 on a parcels train at Brafferton.

Fletcher ventured as far north as Aberdeen but this time on a number of days as it departed Aberdeen with the 20:40hrs to Carlisle on 1st, 2nd, 3rd and 4th April 1963 while on the 5th it left Aberdeen with an Aberdeen-Wembley special. A longer run further south was the 3E30 Delaval-Holloway ECS on 8th April. Summer 1963 featured a number of workings between Newcastle and Edinburgh like the down 'Anglo-Scottish Car Carrier' of 14th June and 5th July and it 22:20hrs Edinburgh-King's Cross which No. 60142 brought into Newcastle. A special train, 'The Northern Venturer' was brought into Newcastle by *Edward Fletcher* on 2nd August. After working the 3S46 York-Edinburgh parcels from Newcastle on 12th and on 13th September No. 60142 took the 08:26hrs Carlisle-Millerhill Class 4 goods.

Workings of No. 60142 in 1964 were generally between Edinburgh and the North East, the down Class C at Newcastle of 30th April, the Berwick

'stoppers' both ways on 11th June and the 2N83 Edinburgh-Newcastle of 17th August. However, it had been observed on Carlisle's Kingmoor shed in April.

No. 60142 was transferred back to Gateshead (now 52A) on 25th October 1964. Its last recorded working was an up Class 7 into Newcastle at 11:23hrs on 26th January 1965. Withdrawal came on 14th June. With 28 already gone this was one of eight AI withdrawals in June. It was sold to Hughes Bolckow of Blyth in July for scrap. On the morning of 5th August No. 60142 was seen being towed through Newcastle by Q6 No. 63366 along with fellow Gateshead AIs Nos. 60116, 60127 and 60132. **TCC**

This history was compiled by Phil Champion based on the RCTS book 'Locomotives of the LNER Part 2A', a database supplied by Tommy Knox of the Gresley Society, 'The Power of the AIs' by Gavin Morrison and various published photographs. Revised and updated by Graham Langer, July 2020.



Moody and magnificent! *Prince of Wales* stands over the illuminated inspection pit in the new works with the freshly delivered monobloc in front of the locomotive.

P2 ENGINEERING UPDATE by Terry Graham

General

Whilst the DLW engineering team work to return *Tornado* to steam, the main effort on the P2 is taking place off site. In October we achieved a major milestone with the delivery of the cylinder block from Howco. Weighing in at around six and a half tons, the monobloc will sit proudly in front of No. 2007's smokebox until it is lifted into the frames next year. The next large delivery due is the boiler in the new year, followed by the tender frames.

Boiler

We are waiting on imminent approval to proceed with tubing from the TÜV (German quality assurance body) then the tubes will be fitted, and the welds inspected before blanking off the boiler for the hydraulic test. We have sent the necessary items from DLW, such as regulator components and blanking plates, which are required for the hydraulic test. Delivery is anticipated in the new year.

Cylinder block

After a successful hydraulic test the cylinder block all internal passages were dried and the block was prepped for heat resistant paint. This was applied with the covers fitted to effectively mask the threads and joining surfaces from paint, and to paint the covers. All internal passages, valve chests and the cylinders were oiled to prevent corrosion before the cylinder block was delivered to DLW on 5th October

Tender Frames

These are substantially complete although work on the buffers is outstanding and the Philidas nuts are to be torque checked. However, an issue with the brake hangers has recently come to light which is currently under discussion. On delivery, there will be further work required on the tender as the P2 will follow the A1 in having ETCS equipment fitted, futureproofing work on the East Coast Main Line.

Valve gear

In 2024, work will begin on the Franklin-Lentz valve gear, and fundraising for this will launch Q1 with the initial £50,000 of the £300,000 total target being used for the completion of manufacturing drawings and the development of a prototype and test rig to prove the design. The design is broadly complete thanks to the work of David Elliott and Alan Parkin, and we are keen to start work in this area now that the monobloc has arrived.



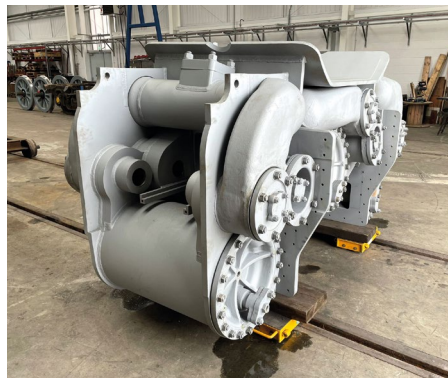
The tested monobloc at Howco.



The cylinder block being painted.



The cylinder block being unloaded at DLW.



Images left and above: The monobloc following delivery to DLW. TCC

THE ROLE OF CASTING IN STEAM LOCOMOTIVE CONSTRUCTION

by Sir Andrew Cook

Few people today understand the importance of metal casting in locomotive construction. Not only do the high-speed trains of the 21st century rely on metal castings for a host of highly stressed, safety critical components, but in bygone times the manufacture of steam locomotives would have been impossible without metal castings and the skills of the foundrymen producing them.



A casting is removed from heat treatment.

George Stephenson's *Locomotion No. 1* was built using cast iron wheels and cylinders, wrought iron rods and a riveted boiler of iron plates hammered to shape over wooden formers. The cylinders and wheels were machined, believe it or not, on a man-powered lathe, using Huntsman's crucible steel for the cutting tools, hardened by water quenching in the same way as had been the swords of warriors since ancient times.



Water quenching a casting.



The arc-air process underway.

naturally occurring loam sands found in riverbeds, the tooling often a simple 'strickle' (a form of template which allowed wheel moulds to be made with accurate roundness), the moulder using his specially shaped trowels to finalise the shape. The steel was produced in gas-fired open-hearth furnaces, clay crucibles or even by the famous Bessemer process. By these means thousands of craftsmen produced hundreds of thousands of tons of the steel castings required to build the fleets of steam locomotives which powered the railways of yesteryear.

Today science and technology has moved on, but the same castings are still required for the burgeoning 'new build' heritage railway movement. The steel is now made in high frequency electric induction furnaces. Moulds use chemicals to provide the bond in the moulding sand. Mechanical devices transport the castings through the complex heat treatment and finishing

processes, utilising sophisticated ultra-sound and magnetic particle inspection techniques to detect flaws. Remember, a steam locomotive wheel is a safety critical item. If it breaks, catastrophe occurs.

At the William Cook group we have created a bespoke unit which understands the requirements of the heritage railway industry and can supply its needs. Compromising nothing, those same castings which were once produced by a flat-capped craftsman on his knees in Dickensian gloom are now designed, manufactured and quality assured according to the latest modern methods and techniques. As we strive to preserve for posterity the great and wonderful era of the steam locomotive, there is at least one strong and dedicated manufacturing company still alive to support it: William Cook, of Sheffield, England. **TCC**

How the P2's wheels were cast:

1. The wooden mould prior to being packed about with sand in the mould.

2. The sand-mixer fills the mould.

3. Molten steel is poured into the mould.

4. The wheel mould after casting, being allowed to slowly cool.

5. The mould is broken open.

6 & 7. The casting being removed from the mould box.

8. The wheel with some of the sprues cut off.

9. The casting after being cleaned up and painted.

P2 FUNDRAISING by Sophie Bunker-James



Gresley class P2 No. 2007 Prince of Wales outside the new DLW.

As we reach the end of the year, we offer our heartfelt thanks to all our P2 Supporters who have continued to make regular donations whilst little progress has been visible on locomotive in Darlington. All that patience is now paying off as we gear up for three huge component deliveries in a short space of time, the first of which arrived safely in October.

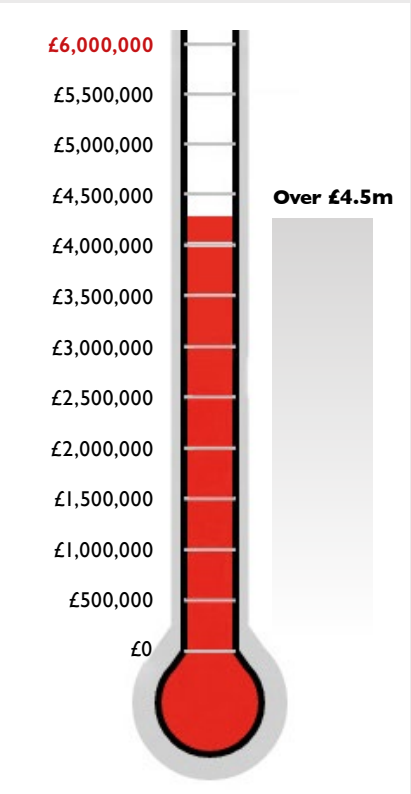
The monobloc arrived in Darlington and was revealed to our Supporters at the Convention in a significant milestone for the P2 project. All those who contributed to The Cylinder Club and the Monobloc Club should be exceptionally proud of their support of this groundbreaking component for No. 2007. We are planning a Club Day for the new year, and hope that many of you will join us in Darlington to see the monobloc up close and learn more about how it was made. Invites will be sent out in January. Don't miss out - The Monobloc Club will be closing soon, so please sign up today at www.a1steam.com/p2monobloc

The next big delivery is the boiler. We are tantalisingly close to hitting our target before No. 2007's boiler arrives in Darlington. If you are wondering where your donation is most needed, it is here. You can make your donation as a lump sum, or in monthly instalments. Find out more at www.a1steam.com/p2boiler

As with all of our Clubs, raising

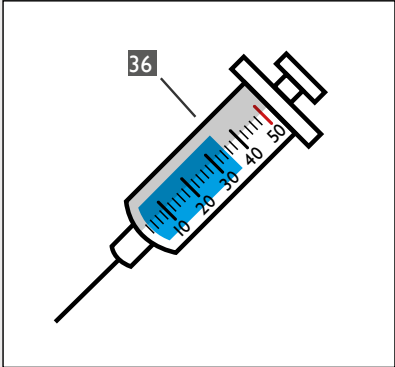
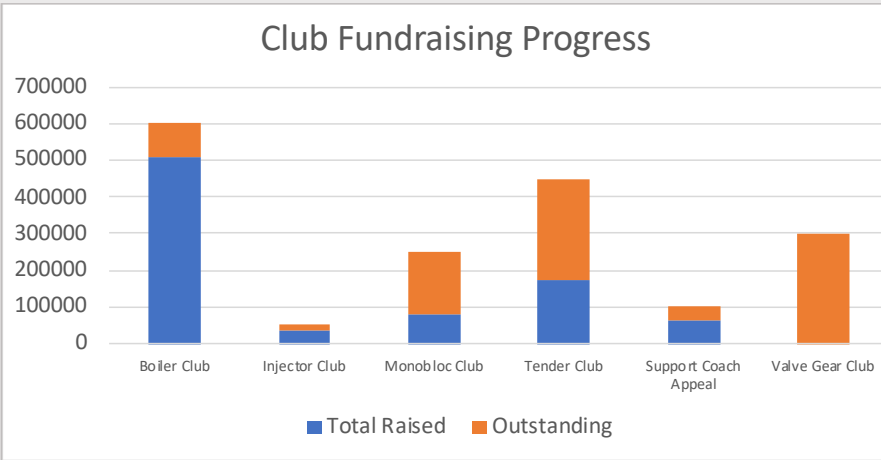
money for the various large and vital components for the P2, if we fall short of our target, the total is reached using covenanted income. This in turn directs those funds away from other aspects of the build project which inevitably slows overall progress. That said, each and every donation takes us that bit closer to steaming Britain's most powerful steam locomotive.

The new year looks bright for *Prince of Wales*, as the boiler, monobloc and tender frames take up space in Darlington Locomotive Works. Fundraising continues at pace to see this much anticipated locomotive steam in the next few years. Whilst the locomotive will soon look largely complete, with the monobloc,

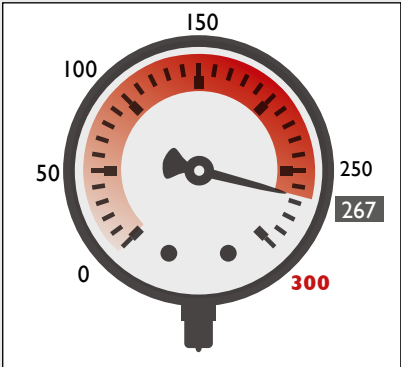


Donated to date.

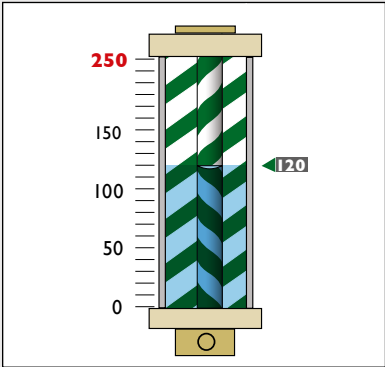
boiler and tender in place, those who followed *Tornado's* build, will know that there is still a huge effort required, including extensive piping and electrics. With a dedicated Club launching in the new year, the Trust seeks to fund the Lentz-Franklin Valve Gear which is the final large component required for *Prince of Wales*. The Valve Gear Club seeks to raise £300,000, the first £50,000 of which will enable the final manufacturing drawings to be completed and the manufacture of a prototype and test rig. To help get this Club off to a strong start, supporters may sign up ahead of the official launch at www.a1steam.com/p2valvegear



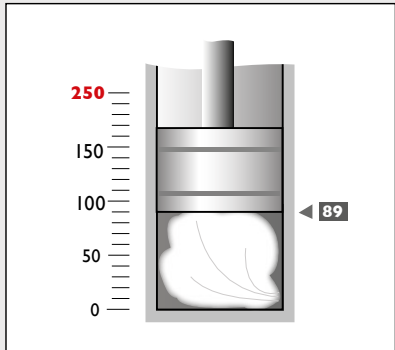
Injectors Club - 36 members.



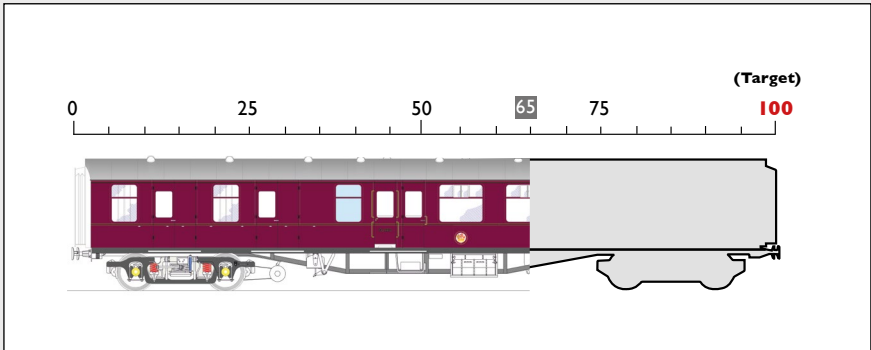
Boiler Club Gauge - 267 members.



Tender Club Gauge - 120 members.



Monobloc Club - 89 members.



The P2 Coach Appeal - 65 supporters.

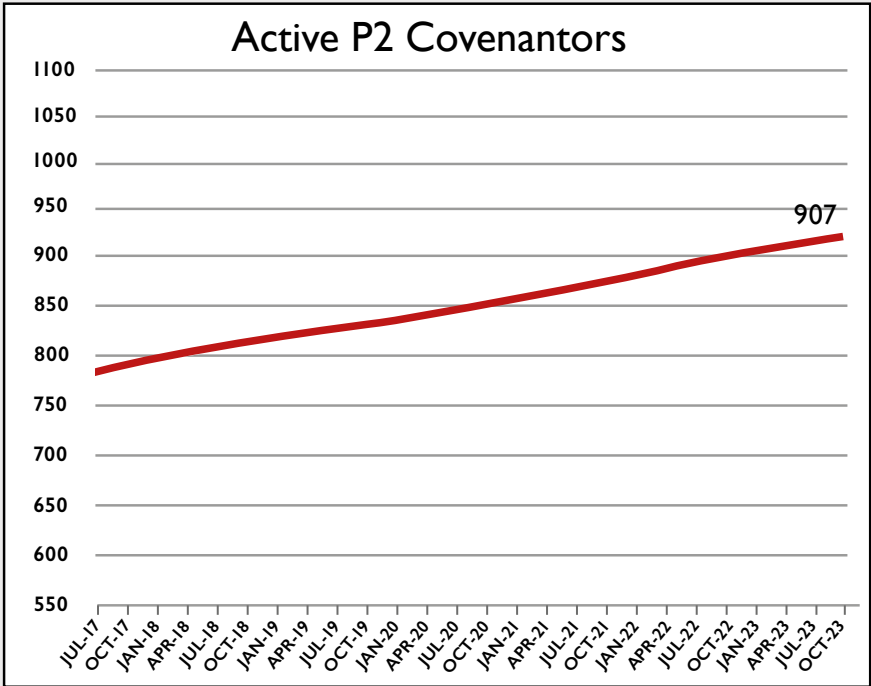
As we have always maintained, we can only build the locomotive as quickly as the money arrives to fund it and we rely on the generosity of our supporters to keep moving forward. We appreciate your donations to date and are grateful for your future contributions to help No. 2007 steam as soon as possible!

OTHER WAYS TO HELP

Legacies - This is not a subject that we like talking about, but the lasting impact from leaving a gift in your will is considerable. Leaving a legacy can help secure the P2's future for generations to come. See the article devoted to legacies. Please contact legacy.coordinator@a1steam.com or phone 01325 460163 for more information.

DLW Open Days - Open Days at the new site (Darlington Locomotive Works, Bonomi Way), have restarted on the first and third Saturdays of each month, 10:00hrs to 15:00hrs.

Covenantors - From as little as £10 per month, your regular donation makes a huge difference. If you haven't already done so, please consider joining us today and become a part of something special. Visit our website at <https://www.p2steam.com/support/regular-donations> for more information.



Social Media - We're social creatures so please do follow us on Facebook, You Tube and Instagram and like us on Twitter. Don't forget to like, share and comment on our posts too as this helps our content reach a wider audience. **TCC**

ROADSHOW ROUNDUP by Liz Gibson

Readers of TCC will hopefully remember that last year saw us trial our 'Roaming Roadshow' at a couple of airshows, which were remarkably well-received! This year we set forth again, hoping to achieve similar successes, and we weren't disappointed.

While we also took the stand to both the Warley and GIMRA shows in 2022, the effort and expense involved in getting there didn't produce the return needed to justify a repeat visit, and Graham Nicholas has very kindly agreed to take on this mantle in addition to his own display at events he attends in the future. Graham Langer is also routinely taking the P2 display to model railway shows he attends wearing his other 'hat' as Managing Director of Accucraft (UK) Ltd.

Looking forward into 2024 we are very much hoping to get out to more events and get even better at picking the ones where we are best received. If you have any suggestions for shows or events that might suit the Roaming Roadshow please do get in touch and we will happily investigate!

RAF Cosford

It was a particularly beautiful day (albeit a little sticky) when I arrived at RAF Cosford to set up the stand. Graeme



The P2 display on the Accucraft stand at this year's Large Scale Model Show in March.

Bunker-James met me there with our new gazebo (one which Covenantors may have seen at the Works this October if they attended the Convention). Wonderfully unflimsy compared to last year's model, we set to and had the main frame set up in good time. Sadly though, the weather had lulled everyone into a false sense of security, and it soon became apparent that it had vastly different ideas for the evening, and soon we were hanging on to

the structure for dear life while gale-force winds, rain and lightning lashed the airfield! We were immensely grateful to the five people from neighbouring stands that ran to our aid and prevented us from losing the gazebo completely, and in the aftermath there were several structures which had fared far worse than ours. The following day saw a return of the lovely weather and we were kept very busy with a steady flow of enthusiastic visitors



The new gazebo, having survived the storm, hosts visitors to the Cosford Air Show.

to the stand. Once again, the interest only slowed slightly during the afternoon's displays and Graham, Bea, Graeme, Andrew and I were kept busy. There was a great deal of interest from young and old, and we were very pleased to have a plentiful supply of the new postcards to give out to people unfamiliar with the Trust; these just contain a very brief overview and provide easy to access routes and link to our website where people can go and find out more. Graham had brought along his Gauge 1 model of Tornado which graced the display and was again a star attraction, and the small selection of some of the more transportable P2 parts we employ as handy paperweights were excellent for demonstrating the scale of the new locomotive.

Many flyers were handed out and we also attracted several new Covenantors! We are delighted to welcome new enthusiasts aboard and really glad that they've chosen to support us.

Gates closed to the public at 19:00hrs, by 20:15hrs we were packed up and all on our way home and in the nick of time too as the heavens were set for Round Two that evening! It was an absolute delight to talk to so many new people about the Trust, what we do and what we hope to do in the future, and to see the interest, delight and surprise on their faces as we chatted.

IWM Duxford Battle of Britain Airshow

Keen to make the most of our wonderful gazebo now we have it, we chose to employ it again at this year's IWM Duxford Battle of Britain Airshow. Setting up the evening before was a much less dramatic event than at Cosford, and I (with help from my Mum) got the structure up in no time. Jim Gosney, his wife Irene, Huw Parker and I were in position on the Saturday morning as the gates opened (somewhat earlier than last year) and we were soon engaging with a lively crowd – the atmosphere noticeably different to the year before when proceedings were understandably subdued due to the recent loss of Her Majesty just a couple of days' before. As with the Cosford visitors, many people were not familiar with the Trust and the locomotives so we set to putting that right with gusto! The visitors to the stand did thin out once the flying got underway, however, there was still plenty of interest to keep us busy.

Day Two started in fantastically theatrical fashion; if you have never experienced an airfield in a misty sunrise, silhouettes of Spitfires and Hurricanes and bombers just visible in the muted light I cannot recommend it enough, it really is quite magical. Once the sun had got a little



However, some distractions proved enough to clear the stand!



Same neighbours, different show! The stand at Duxford.

higher in the sky and the world had woken up, we started to gather ready for the off although Huw had morphed into Graeme and we had unexpectedly gained a camping chair! The day continued apace and was thoroughly enjoyable, and the number of flyers and introductory postcards given out was hugely encouraging. As with Cosford, we were delighted to welcome several more Covenantors to the fold, and hope that they enjoy the new journey that they're embarking on with us. By the end of the weekend we were tired but thrilled to have been there and happy to have been able to introduce the Trust to so many new people. TCC



The gazebo again proved its worth during the Convention – no chance of it being blown over there!

•WORKSHOP NOTES•

VOLUNTEERS by Jacqui Nicholson

A1 Steam Locomotive Trust thrives because of our volunteers. They play an essential role in the sustainability of the charity. From Jackie, a stalwart in the office, George in the Works to the stewards on the trains, everyone has their place, and they make a difference every day for the delivery of services and daily operations. Our volunteers have specialised skills and in-depth knowledge which are valuable assets to the Trust. From its inception, we have encouraged volunteers to do for the Trust what they do for a living, instilling an air of professionalism across the charity.

The other side of the coin is equally as important. Volunteering can help you make friends with similar interests, you can learn new skills, connect with the community and with the right volunteering position you can feel happier and healthier. It is widely reported that volunteering can reduce stress, combat depression, keep you mentally stimulated and provide a sense of purpose. The social contact aspect of helping and working with others can have a profound effect on your overall psychological well-being. Nothing relieves stress better than a meaningful connection to another person over a shared purpose. Watching the A1 come back to life or the P2 as it is built will give you a sense of pride and identity as well as ownership of these magnificent engines.

We understand that it can be hard to find the time to volunteer. Speak to us to find the right role and commitment level for you. Volunteering does not have to involve a long-term commitment or take a huge amount of time from your busy lives. The important thing is to volunteer only the amount of time that feels comfortable to you. Volunteering should feel like a fun and rewarding hobby, not another chore on your to-do list.

We welcome everyone to our Trust family, people with disabilities or chronic health conditions can still benefit greatly from volunteering. Whether due to a disability, a lack of transportation, or time constraints, you can choose to volunteer your time via 'phone or computer. In today's digital age you can help with writing articles, delivering video talks, emailing, and other web-based tasks.

We believe in investment in our volunteer team, you will be invited to training sessions, provided with a clear role description so you are aware of your duties and time commitments. You will be able to clearly see how your role contributes to the wider goals of the Trust.

We are currently recruiting for the following roles:

DIRECTOR – HUMAN RESOURCES AND FACILITIES MANAGEMENT

Based at Darlington Locomotive Works, the role leads Trust human resource (HR) and facilities' management activities in its hometown of Darlington. The incumbent will provide direct leadership to the Office Manager and admin team. They will also lead the HR work-stream, supported by the Trust's HR consultants, ensuring the Trust's companies' policies and procedures, covering employees, volunteers and contractors are in place and enforced. The Director will be required to be a Trustee of The A1 Steam Locomotive Trust and will report to the Council of the Trust.

DIRECTOR – FINANCE

The A1 Steam Locomotive Trust is seeking an experienced Finance Director. The Director will be required to be a Trustee of The A1 Steam Locomotive Trust and will report to the Council of the Trust.

The post of Finance Director is responsible for ensuring that the Trust's finance procedures are appropriate and are adhered to by both employees and volunteers and compliance with all finance legislation relevant to the Trust and its subsidiary companies. They are also responsible for ensuring compliance with the rules and regulations relating to the Charity Commission and Companies House.

DIRECTOR – STAKEHOLDER LIAISON & INFRASTRUCTURE PROJECT DELIVERY

Based at Darlington Locomotive Works, the role leads Trust activities in its hometown of Darlington. This includes leading on the relationship with Darlington Borough Council, the landlord, and other partners in the town's Rail Heritage Quarter project. The incumbent will also act as the Trust point of contact with Network Rail on site matters, particularly concerning interface arrangements for the track, infrastructure, and land. The Director will be required to be a Trustee of The A1 Steam Locomotive Trust and will report to the Council of the Trust.

OPEN DAY STEWARDS

Our Works are open to the public on the first and third Saturday of each month between 10:00hrs to 15:00hrs. There are a variety of roles available as Trust stewards welcoming visitors, offering refreshments, selling merchandise, giving insights into the work of the engineers and as Tour Guides explaining the history of our engines and the wider steam railway story, ensuring the safety and wellbeing of visitors. We look forward to welcoming you onboard.

P2 DEDICATED DONATIONS UPDATE by Liz Gibson



Now that the Convention is just a memory, it suddenly seems a good deal nearer to Christmas than I'm overly comfortable admitting! I don't know if all families are like mine, but it seems very hard to find things for people these days; we all seem to have so much 'stuff' the idea of another thing in the house is not something I look

forward to either giving or receiving. But on the flip side, not giving loved ones anything seems rather unappealing. Happy then, that I can offer a good solution to all us steam-lovers, by encouraging you to sponsor these parts (or any others) for the magnificent P2!

- For £15.00 you can sponsor a Leading Coupled Axlebox Bush for the Spring Hanger Pin
- Half a Crinoline Ring or Hoop is £120.00.
- The rather fancy-sounding Speedometer compensation unit is £550.00 while the Frame stay and boiler support casting can be sponsored for £2,250.00.
- For those who are feeling able to give rather more this festive season, the complete Exhaust steam injector could be a stocking-filler and a half at £15,000.00!

As always, there are many more parts available. If you're keener on process than function then how about narrowing things down by looking at a type of manufacturing method? Parts for the engine can be:

- Forged
- Welded
- Cast
- Laser cut
- Machined
- Rolled

...and all then expertly fitted together at the Works in Darlington. Now the new building is open for visitors, why not come along and see how all the wonderful contributions, sponsorship and donations come together to build an engine? Whatever the cost, size, placement or function, every sponsored item gets us one step closer to bringing this incredible locomotive to life. If you're interested in finding out more, please email Liz Gibson at

dedicated.donations@a1steam.com and ask for more information about the parts available.

If you know of a business owner or company who may be interested in sponsoring an item on No. 2007 *Prince of Wales*, please contact **dedicated.donations@a1steam.com**.

TCC

•WORKSHOP NOTES•

SOME UNUSUAL IMAGES OF P2 CLASS LOCOMOTIVES by Ian McCabe

Ian McCabe of the Gresley Society has recently digitally altered/enhanced a number of images before colourising them. We thought it would be fun to share them with you to see if you can work out what is 'real' and what has been modified.



Above: No. 2001 on the Forth Railway Bridge... perhaps...



Above: No. 2002 at King's Cross.... or maybe not....

Left: Cock o' the North on 'The Aberdonian'... or is it?

DARLINGTON LOCOMOTIVE WORKS UPDATE *by Paul Bruce*

As our supporters saw for themselves at the Convention, the 1861 Whessoe Road engine shed has been transformed from a semi-derelict, unloved building hidden by a mountain of scrap cars into a completely re-conditioned facility capable of storing a number of railway vehicles. The restoration work should guarantee another 100 years of life at least!



An aerial view of the Whessoe Road engine shed shows the roof trusses being installed.



Reinforcing steel mesh in place for the floor to be poured.



The concrete floor goes in.



The fully restored building with all the modern extensions removed and roller shutter doors in place.

The Army moves in! Events in Ukraine have shown that even in these times, railways can still play a key part in conflicts and both sides have been forced to move materiel to the battlefield by train. In the UK this support is provided by Nottingham based 507 Specialist Teams Royal Engineer (STRE), the British Army's railway warfare experts. Following the passage of storm Babet, they undertook the first major tracklaying exercise at the new works. The training exercise supports their readiness and helps the Trust reach the important milestone of a mainline connection next year. They made great progress, and we hope to welcome them back soon.



Prior to the military arriving, the first deliveries of ballast were made to the Bonomi Way site.



Above: Initial grading work on one of the shed roads.

Above right: The Army team are briefed inside the new works building.



Above: The first concrete sleepers are laid out.

Right: The initial rails are placed and clipped down.



We are close to reaching our target for the first phase of 'The P-Way Gang', which has allowed the progress to date. As with all our projects, we cannot do any of it without your support. This undertaking will change our capabilities, as a mainline connection makes it easier for both the A1, P2 and eventually the V4 to return to Darlington Locomotive Works for stabling and maintenance. We will also be able to service our own trains and those of other mainline operators, creating a new revenue stream for the Trust. To support this activity, please consider making a one-off donation or joining 'The P-Way Gang'.



Rapid progress was made over the weekend.



Napoleon Bonaparte is credited with saying, "An army marches on its stomach", in this case our friends from 507 STRE were fed by Mini Moo's Roasts, a local outside catering firm.

Elsewhere, the redevelopments and transformation of the Heritage Quarter continues apace. Here area selection of photos by Peter Giroux illustrating the extent of the work being carried out to make the site worthy of S&D 200.



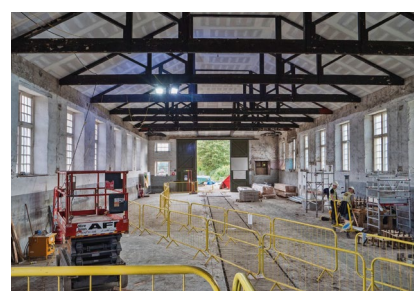
Our old home in Hopetown Lane.



By the close of play on the Sunday, this was the extent of the track laid.



The reopened, east-facing doorway.



Our original workshop where *Tornado* was born, now shorn of its internal offices and pattern store.

FROM THE ARCHIVES by Graham Langer

Autumn 2003 – The remaining valve gear forgings had been delivered for machining and Ufone completed the inside connecting rod and strap. The forging of valve gear components was now complete and they were due to be heat-treated. Meanwhile, Ufone started machining the inside connecting-rod and strap, now that we have been able to calculate the precise length to correct for the growth in the middle cylinder and the final position of the crank axle. A decision had also been taken to issue a Bearer Bonds to finance the construction of the boiler.

Autumn 2008 – Following her completion at Darlington, *Tornado* moved to the Great Central Railway for trials and running in. The GCR was chosen because it was cleared for 60mph running and this enable a number of dynamic tests to be carried out on the locomotive including checking the effect hammer blow. She then moved to The National Railway Museum prior to a series of main

line test runs. In his editorial in *The Communication Cord*, Nick Broderick stated, "Whatever happens in the future in terms of new builds, none will never have the same reaction as *Tornado* has had. That is by no means a criticism of any group building a brand-new locomotive from scratch – and indeed there are many that will succeed; it is quite simply the fact that No. 60163 is **the** pioneering locomotive."

Autumn 2013 – In her striking blue livery, *Tornado* continued to put down solid performances, not least on 'The Elizabethan' to Edinburgh. Whilst in Scotland No. 60163 ran a series of Fife Circulars for the SRPS before resuming her duties on a number of 'Cathedrals Expresses'. 'The Elizabethan' was also notable for the debut of *Tornado's* own, newly refurbished support coach, the removal of which from DLW allowed the works to be cleared for some much-needed maintenance. In other news, the Trust announced early

redemption of the £500,000 Bearer Bond issue but many bond-holders opted to waive the interest or 're-invest' their funds with the Trust!

Autumn 2018 – After a torrid summer of missed deadlines, the welcome news was that *Tornado* was up and running again, accumulating miles on the Nene Valley Railway while we awaited a date for a main line test run to be set. Better news was the placing of *Prince of Wales* on its completed wheelsets and rolling it out into the sunlight at Darlington Locomotive Works; we never had this opportunity at such an early stage during *Tornado's* construction and it was a thrill to be able to stand back from the locomotive and absorb its immense presence outside the workshop. Daniela Filová (our recently appointed Assistant Mechanical Engineer) was already making her mark at DLW and showing she was capable of innovation as well as sound engineering. **TCC**



A powerful image of No. 2007 after it had been lowered onto its driving wheels and rolled out of the old Hopetown Works building in 2018.

Mandy Grant

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 end of November 2023. 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.

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