



60163 TORNADO
New Steam for the Main Line



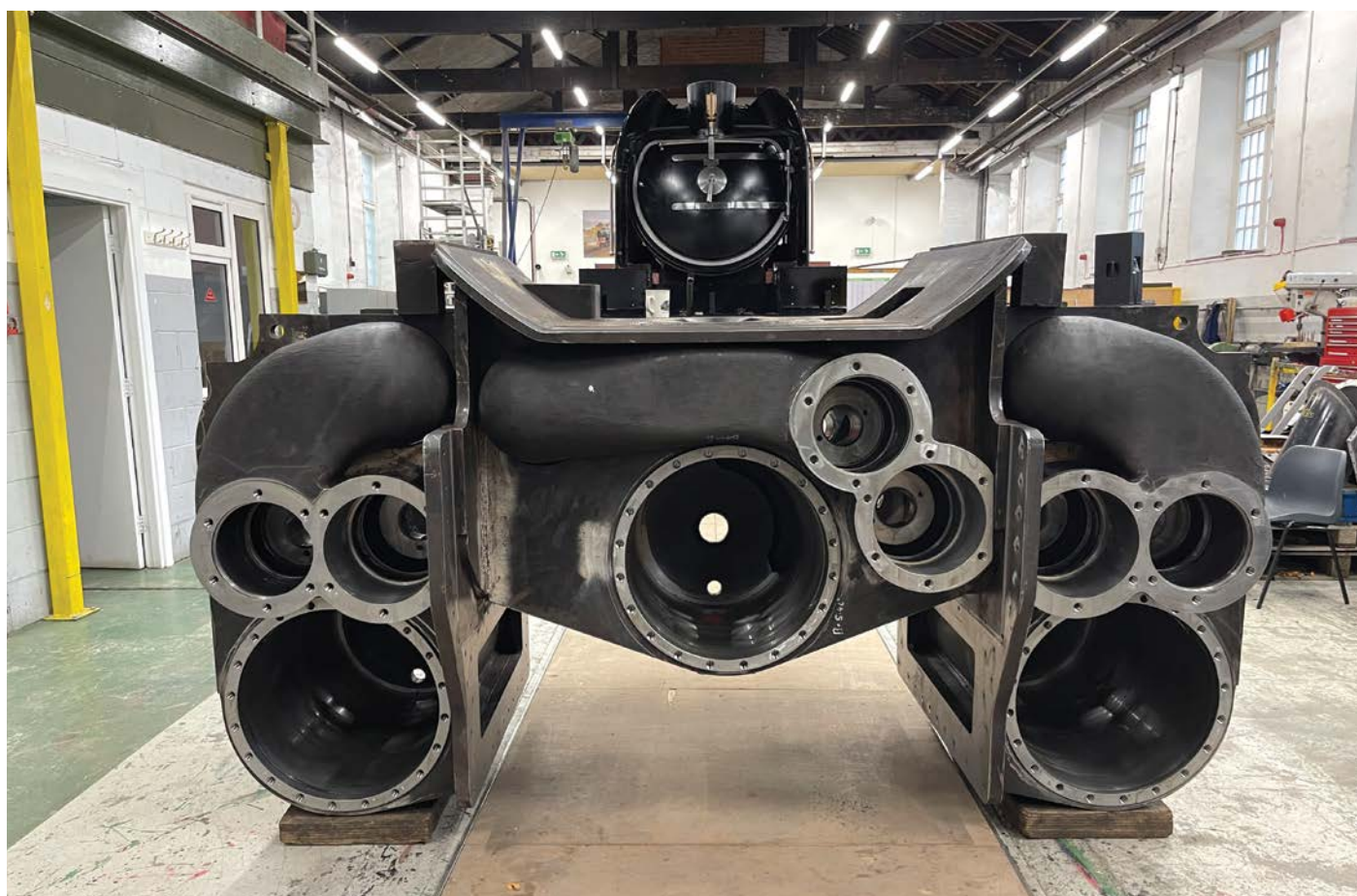
2007 PRINCE OF WALES
Building Britain's Most Powerful Steam Locomotive



3403 HIGHLANDER
Recreating Gresley's last design

THE COMMUNICATION CORD

No. 67 Autumn 2022



A/SLT

No. 2007's newly fabricated cylinder block sits in front of the locomotive for which it is destined.

2022 CONVENTION

by Graham Langer

This year's Convention was held at The Blackwell Grange Hotel, an historic building on the outskirts of Darlington. We held the Convention here some years ago and it was a pleasure to return to a recently refurbished and

much extended facility. In a sign that confidence in travel is returning after the Covid-19 pandemic, 178 Covenantors and guests attended this year, well up on last year's figure. Steve Davies welcomed attendees and

introduced the Council. Poignantly this will be our last Convention at the Hoptown Carriage Works building since next year we should be installed in the new Works building across the tracks at North Road. (continued P4)

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EDITORIAL by Graham Langer



No one could claim that the last few months have been anything but tumultuous, overshadowed in September by the death of Her Majesty the

Queen, her lying in state and funeral, events which cast a shadow over the autumn. Some pundits have asked whether the accession of Prince Charles to the role of King might cause the Trust to rename No. 2007 but we have always made it clear that the locomotive is named after the office rather than the individual and we hope that the new Prince of Wales will take the opportunity to familiarise himself and his young family with the engine. We now have a Coronation to anticipate next year and look forward to celebrating this with the rest of the nation.

On a happier note, this year's Convention was well attended, and Blackwell Grange proved to be a comfortable and welcoming venue. It was, as ever, a pleasure to see so many of our long-time supporters as well as representatives of the Royal Air Force and Royal Navy; David Champion was on ebullient form and it was good to see David Burgess, a former Trustee, who, living in Guernsey, had struggled to attend during the pandemic. However, we all missed David Elliott's presence and some were shocked to hear of his illness for which we send him our very best wishes and express our hopes for as good an outcome as possible – another good reason to double down and get the P2 built!

Those Covenantors who attended this year's gathering in Darlington can have been left in no doubt that we are entering a critical phase in the journey we embarked on over thirty years ago, with the Covid-19 pandemic having created a "perfect storm" in our funding streams, compressing our carefully planned cashflow projections into a much shorter timeframe whilst compromising our ability to continue fundraising for nearly two years. The pandemic severely reduced our ability to get work done on the P2 and led to significant delays in Meiningen with the construction

of the boilers which, in turn, led to the decision (and, alas, additional expense) of refurbishing *Tornado's* current boiler. Given the apparent scarcity of Euromillions lottery winners among our supporters (unless, of course, they'd like to make themselves known to us?) it behoves the rest of us to re-double our efforts to raise the necessary by all means possible and to continue to spread the word, encouraging like-minded people to come on board and join the pilgrimage.

Despite these challenges, the Trust continues to push forward and our railtours arm, '21st Century Steam', has started to plan *Tornado's* diary for 2023, based on a framework of regular 'Aberdonians' which have proved such a hit - keep watching the website for further announcements. The new works building in Bonomi Way is making startling progress, the full shape of the facility is now apparent, and groundworks are underway to permit tracklaying, to be funded by our 'P-Way Gang'. Given that this edition of TCC is somewhat later than usual due to the date of the Convention it is perhaps not too early to wish all our supporters a Happy Christmas and remind you that there are lots of P2 Dedicated Donations available for friends and loved ones and Tornado Team memberships for the youngsters. Have a great festive season and we look forward to seeing you in Darlington or aboard one of our trains next year. **TCC**



Lieutenant Sam Ellis and Petty Officer Isaac Inije from HMS Prince of Wales with Huw Parker at DLW.

FROM THE CHAIR by Steve Davies



As I put pen to paper, my colleagues and I are still reflecting on the outstanding success that the 2022 Convention undoubtedly was. A huge amount of effort went into preparing a really eye-catching and memorable gathering of many of our supporters, and it certainly paid off. The decision to change venue this year to the Blackwell Grange Hotel was an

inspired one and I'm sure that all who enjoyed the quality of the service would agree with that very positive sentiment. Under Dawn Phillips's expert guidance, the Trust's office team organised a superb event for which we are most grateful.

The annual Convention is a wonderful vehicle for direct communication – and there was much wonderful news for us to tell - but the key benefit from where I was sat was the powerful collegiate effect the event had on both those in attendance and on the reputation of the Trust as a whole. For those who were not able to join us I can assure you that you were very much in our thoughts, and steps are being/have been taken to apprise you of the key messages and presentation themes. The event opened with a pre-recorded personal statement from our long-serving chief engineer, David Elliott, informing the audience of the personal health challenges he faces, and this was followed by an appreciative and lengthy round of applause. I can confidently say that everyone in the room wished David well, and our thoughts and prayers are with him and his family.

Turning back to the main event, we did not shy away from highlighting the economic challenges we, in tandem with virtually all other sections of society, face, but neither did we allow this to negatively dominate the event. For there was plenty to be positive about. Updates on activity across the full spectrum of what we do were provided in detail, including the advanced nature of *Tornado's* overhaul and the fitting of European Train Control System (ETCS), No. 60163 being the first steam locomotive to receive it; the launch of our new '21st Century Steam' Railtours brand; the status of construction of the P2; progress with our new Works on Bonomi Way; and on many, many other projects, which, combined, serve to illustrate the intense nature of our current programme. So, there was much to cheer the heart, but I think the two moments which I found most memorable, amongst many, were the audience's excited reaction when the name of our future V4, *Highlander*, was announced, and when the sheets came off the new three-cylinder monobloc constructed by Howco of Irvine for the P2. The latter is an impressive piece of engineering representing a technical milestone not just for *Prince of Wales* but for railway heritage more broadly. The stage is therefore now firmly set for the next 12 months, and I genuinely believe that the additional news we will be able to present at the 2023 Convention will be even more impressive. In closing I would reinforce the obvious point that we can only achieve what we do with your enthusiastic support, both moral and most importantly financial. We are most grateful for all that you do for us. **TCC**



Covenantors gather round the front of *Prince of Wales* to admire the newly unveiled cylinder block.

2022 CONVENTION *by Graham Langer*

Steve Davie's opening preamble reflected on the difficulties the pandemic had caused the Trust and the need to regain impetus in order to focus on 2025, the bicentenary of the Stockton & Darlington Railway, despite the destruction of our ambition to have No. 2007 largely finished by the end of 2023, a significantly compressed timetable was now vital to hit our revised goals. Steve then introduced Council members and guests and flowers were presented to Dawn Phillips to acknowledge all the hard work involved in preparing her first Trust Convention. Returning to his earlier theme, the Chairman emphasised the need to return *Tornado* to steam as soon as possible and complete *Prince of Wales* which he described as "oven-ready" and on the home straight. Steve concluded his remarks by offering two sets of original Doncaster Works' drawings for sale (these later realised £1,250.00 for the Trust).

As would become clear in the first part of his video presentation, David Elliott was unable to attend the Convention, so Paul Bruce introduced a "virtual" P2 Head of Engineering delivering a piece to camera at Darlington Locomotive Works. In typical fashion, David didn't beat about the bush and commenced with a frank appraisal of his illness and prognosis, a statement that may have caught some Covenantors off-guard since, to all intents and purposes, David has been so busy recently. Leaving little time for his audience to digest this news, David immediately got stuck into his engineering piece saving the bulk of it for the video presentation at the Works during the afternoon session.

After this detailed analysis of A1 and P2 engineering progress, Huw Parker gave an appraisal of the end of the 2021 running season, the eventful 'Cheshireman' which effectively concluded *Tornado's* operations on the main line and precipitated her early withdrawal from operations on Network Rail. Huw then presented a summary of the overhaul at Locomotive Maintenance Services in Loughborough, re-tying the wheels at South Devon Railway (Engineering) and the protracted process of adapting No. 60163 to accept the installation of the European Train Control System (ETCS) which has involved considerable re-working of the tender front. Continuing the ETCS theme, Rob Morland gave the audience a detailed description of the differing types of ETCS and an explanation of how the technology works as well as taking a look at the way in which the signalling system will be rolled out along the East Coast Main Line.

Graeme Bunker-James proceeded to



Steve Davies addresses the assembled throng.



Covenantors and guests take their seats in the conference room at Blackwell Grange.

share our plans for the 2023 main line season with Covenantors, starting with the launch of the '21st Century Steam' brand for future AISLT operations on Network Rail. Graeme emphasised the importance of building on our partnerships with DB (Cargo), the Scottish Railway Preservation Society and Scotrail in further developing 'The Aberdonian' trains, but not to the exclusion of the rest of the country since there will be plenty of trains throughout the rest of the United Kingdom for supporters to enjoy, starting with a couple to the West Country in March and 'The



Council members prepare for their presentations.

Yorkshire Pullman' in April. Plans for 2023 include visits to a number of preserved lines including the Great Central, the Nene Valley and the Bo'ness & Kinneil railways.

Richard Courteney-Harris and Ben McDonald then offered a "double act" to present a P2 update, starting with Richard thanking Covenantors, supporters, sponsors and the engineering team for making so much progress in the face of challenging odds. Ben examined the results of work on the locomotive's cylinders and valve gear, camboxes, pony truck and motion before forecasting that work on installing ETCS on the engine and tender would be much simpler than the retro-fit being undertaken on *Tornado*. Ben also reported on plans for the P2 support coach, currently in service on the Great Central Railway.

Chris Walker presented a review of the Trust's finances, stressing the need to up our rate of income if we are to meet our targets in 2025. There have been considerable timetable shifts and cashflow interruptions caused by the Covid-19 pandemic. Graham Langer then appealed for volunteers to fill specific roles within the organisation before Paul Bruce gave an impressive presentation covering the construction of the new Works building in Bonomi Way, sharing some hypnotic drone footage taken along the considerable length of the site. Paul was able to reveal that a considerable quantity of track material had already been delivered for which the 'P-Way Gang' is now raising funds.

To conclude the morning, Graeme Bunker-James had the privilege of unveiling the name of our proposed Gresley Class V4, No. 3403. It will be called *Highlander*, an appropriate name for a member of a class that spent so much time in Scotland and one which gives us an Army connection to add to the Royal Air Force and Royal Navy. Graeme then unveiled a superb painting of the locomotive at work on the West Highland line by Chris Ludlow. The gathering was wrapped up with a question-and-answer session.

Following lunch at Blackwell Grange, Covenantors were conveyed to DLW by vintage buses and assembled to watch a further presentation by David Elliott on a big screen inside the Works. David gave a description of progress since the last Convention and a detailed examination of the cylinder monobloc, explaining how it had been assembled and how the valves will be driven from the camboxes. With the cooperation of Howco, the cylinder block had been brought to Darlington but hidden under wraps until, with a flourish, these were drawn off to reveal this magnificent component in all

its glory. It can be safely said that our Covenantors' reaction more than justified the decision to bring the block south for the weekend. Our assembled guests then had the opportunity to look round the workshop and sign up to some of the club memberships available.

With the afternoon presentations concluded, Covenantors and guests were able to disperse, although some eighty opted to stay on for the annual dinner at Blackwell Grange. Following a very

good meal, Jack Boskett, the well-known railway photographer, gave an extremely entertaining talk and slideshow on the subject of "Railways & Royalty", Jack having carved himself something of a reputation in both these fields. We hope to see much more of Jack and his amazing work in future.

A video of the Convention presentations is available on YouTube by following this link: <https://youtu.be/Kk389vEFbHk> **TCC**



Chris and Francoise Ludlow, helped by Graeme Bunker-James, unveil the painting of the V4 at work, photographed by Jack Boskett.



In the foreground Liz Gibson mans the sales stand whilst in the background the office girls sign up Covenantors and Club members.

AI OVERHAUL by Huw Parker

A pictorial synopsis of the overhaul progress was presented at the recent Convention at Blackwell Grange last month and is reprised here with some additional updates since that briefing.

The main items of noticeable progress have been the reuniting of the tender tank with the rolling chassis and this has enabled the team to focus on pipework and completion of the new wiring installed throughout the tender. Much of the ETCS fabrication on the tender front is complete and work is beginning to rebuild the tender brake cubicle to include the additional ETCS components required to enable ETCS control of the locomotive braking system. In addition to the work on the tender, the locomotive frames are now receiving their first coats of paint, and a great deal of work has been lavished on the driving wheelsets in preparation for painting. Unfortunately, the retyring process causes unavoidable damage to the wheels and spokes which requires much hand preparation work as the shape of the spokes prevents the widescale use of power tools. The bogie and Cartazzi wheelsets show the finish that we aim to achieve.

The bogie frames have been returned to the company that will complete the machining of the horns to receive the bogie wheelset cannon boxes, which can be fitted on return to Loughborough. This will then complete the corrective actions to restore the wheelsets to their correct position in the bogie frames.

The boiler is nearing completion, the work is complete, but the hydraulic test remains outstanding. This has been held up by shipping and customs delays of the washout and fusible plugs, which have only just arrived to be fitted to the boiler. This is delaying the return of the boiler to the UK and we are investigating other means of regaining time in the schedule. The long-term plan remains to deliver the boiler back to Darlington to enable DLW staff and volunteers to steam test and re-clad the boiler prior to returning it to the frames in Loughborough.

At the Convention, the issue of very small movements in one of the main frame stays was explained. The stay has been removed, shotblasted and carefully inspected. As a fabricated component, special attention was paid to the welds and minor cracks were ground out and repaired before final inspection. The stay has now been reassembled with new fitted bolts and cold-riveted back into position.



The tender tank re-united with its frames. The ETCS lockers on the left can be clearly seen, whilst on the right, the brake cubicle area is waiting for the components to be re-assembled.



Left and above: One of the bogie wheelsets after retyring, before and after painting and assembly, ready to return to the bogie frames.



Above left, a view of the boiler backhead showing stays replaced and new mud door apertures welded into place. The rectangular Firehole Door is the approved DBM design and is usually hidden by a blanking plate carrying the traditional LNER oval door and flap, and the image on the right is an overall view of the refurbished boiler showing the increased pattern of flexible stays.



Above left: Ian Matthews painstakingly filling and sanding between the driving wheel spokes to ensure a good finish.



Above right: The repaired frame stretcher temporarily bolted in position between the frames before the fitted bolts and cold rivets are driven home.



The cab has been shotblasted and primed prior to ETCS installation work and exterior painting.

Nemesis Rail continue to make good progress with the refurbishment of the replacement Commonwealth bogies for the support coach. The new pedestal liners have been welded into place and the axleboxes refitted to the wheelsets. Work has progressed on the refurbishment of the brake rigging, with the manufacture of new pins and missing components also complete, more details and some recent images are included elsewhere in TCC within the AI Engineering report. Once completed, the next upgrade to be made to No. 21249 is the fitting of the Controlled Emission Toilet (CET) to prevent effluent being discharged directly onto the track. This is a Network Rail change required to be implemented by March and the support coach will move to Carnforth for the CET fitting to be completed by WCR. This should be finished by the end of January to allow the coach to be reunited with the locomotive to begin ETCS testing at the Rail Innovation & Development Centre (RIDC) at Melton in Leicestershire. **TCC**



1 & 2. The hydraulic test on the superheater header has been completed. We started this job but we had issues with the test gauge, the gauge was sent away for repair and after its return we set about testing the header again. The test is done by filling the header with water and pressurising it to 500psi to check for leaks (doesn't it sound simple - if only!!), this test is done twice, once on the saturated side of the header and once on the superheated side, the photo shows the header, the test gauge and the water pump.



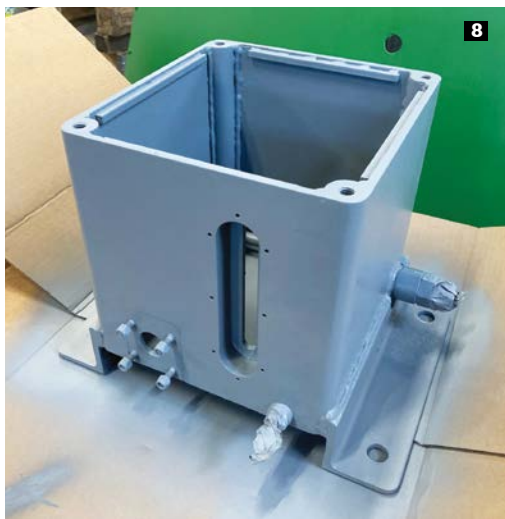
3 & 4. On completion of the hydraulic test the blanking plates were removed from the header, this image shows a colourful set of very squashed rubber dog balls, the hard rubber balls are used to seal the conical element seats on the header.



5. The new ECTS battery box brackets under construction, volunteer George Bee is seen setting them up on the radial arm drill ready for drilling a set of holes.

6. A very happy Steve Wood after completing the overhaul of the vacuum ejector, work on the ejector has included a full internal and external clean and inspection, lapping in of the clack valves, replacement of gaskets, and the fitting of new bronze drip valve ball.

7 & 8. The cylinder oil lubricator reservoir has been dismantled, cleaned, and inspected, the stains on the sight glass polished out (the paint on the inside had been lifting and contaminating the oil) so a full clean down and repaint was undertaken, the reservoir primed, and more paint applied before re-assembly. Now, other than the replacement of two screws in the sight glass brass surround it is now finished and ready to refit to the engine.



9. The new steam turbogen switch box, this box was built by Ian Matthews but while Ian was on holiday the workshop team completed some modifications and sent it for full welding.

10. This is a new battery box which will be mounted under the tender on the back of the sump, just above the trailing tender wheelset. Since taking the photo the box has had a modified gland plate fitted, two air vents made and fitted, and the lid has been modified.

11. A full set of sixteen new rocking firebar pins have been made, the picture shows one in position during a trial fit. They would normally be hidden under the fire grate and never seen.



All photos - Richard Pearson



14. Both outside steam pipe covers have received weld repairs to the top and bottom flanges, and they are waiting their turn in the queue for a repaint.

12 & 13. We have a number of pallets at DLW full of smaller items which have all been cleaned, examined, repaired where needed, and then repainted, the photos show some examples in before and after condition.



15 & 16. In the last few weeks before withdrawing the engine from traffic the steam driven turbo generator became quite noisy. The generator has now been stripped right down for a full inspection, and a fault with the bearings and the lubrication was discovered, new bearings have been acquired and the generator has now been reassembled. The first picture shows the generator before, and the second picture shows the component parts showing the bearing and the special purple high temperature grease.

The second (but not yet fitted to the engine) turbo generator is also at DLW, and this will now be dismantled to check this does not have the same fault with the bearings, and if the same fault is found then new bearings will be fitted. TCC

AI FUNDRAISING *by Sophie Bunker-James*

The most effective way to raise money for *Tornado* is having No. 60163 out on the main line and preserved railways across the country. Few could fail to be inspired by the magnificent machine as she delights passengers and enthral those at the lineside. This year has, therefore, been a challenge. Time away from running means that the engine misses out on income from ticket sales, hire fees and the additional donations they bring with them. Whilst we entered the overhaul with high hopes of a quick return to traffic, this has not been possible as the engineers have delved deep to ensure *Tornado* returns in top condition, seeking to ensure the locomotive is able

to run well for many years to come. The timing of the overhaul has coincided with the biggest hike in the cost of living in a generation, and this in turn affects the cost of materials. As an example, the gas prices associated with welding are eye-watering. We have said it before, but we are extremely grateful to our Covenantors for their continued support, and especially to those who have topped up their contribution by joining 'The Overhaul Club' or making a one off donation. If you are able to increase your monthly covenant by as little as £5, this will go a long way to help replenish the reserve funds for *Tornado*.

Looking to the future, costs will be minimised by undertaking routine engineering work at our own premises. It has been heartening to see almost 50 sign-ups to 'The P-Way Gang' to help support this initiative. Huge thanks to all who have donated. The rate of build for the new Works has been impressive, and we look forward to welcoming you all there once we move!

Each November 'Will Aid' gives a donation to nine of the largest charities in the country. We are not within that number, but we ask you to consider your Legacy by remembering The AI Steam Locomotive Trust in your Will. **TCC**

VOLUNTEERS! *by Charles Tremeer*

I have recently taken over the role of Volunteer Co-ordinator from Mark Grant and I would personally like to thank Mark for diligently undertaking this role for many years. During this time, he set up, among other things, the processes that allow volunteers to be matched with tasks and guidance on how to undertake them. He will be a tough act to follow but I will be endeavouring to do so by adjusting and refining our systems rather than wholesale change. Since I live in Darlington, something I will be hoping to do is to work with the DLW office to ensure that volunteering and its administration are viewed as being at the heart of the Trust's work.

Currently, there are two types of volunteering roles, the specialised (namely, locomotive support crew and workshop volunteers) and the general (for example, train coach hosts, assisting on merchandise stands at events and heritage railways, and acting as Works guides at open days). There may well be other opportunities in due course, including one off roles, but if you would like to get in touch with me about anything concerning volunteering, my email address is on the back page. With the editor's indulgence I would like to occasionally place future articles in *TCC*, specifically when there is news to share with all the Trust's supporters.

There are currently no on-train opportunities but there are already trains being promoted for next year on the '21st Century Steam' section of the Trust's website and these will be posted on Slack and Teamup in the New Year. It is also expected that *Tornado* will visit heritage railways in 2023 and there may be merchandise stands which need our support. In the meantime, you can communicate with me on Slack via a Direct Message or send an email to:

charles.tremeer@a1steam.com.

Finally, I must apologise for the length of this post; hopefully, future messages will be models of concision. Briefly these are some of the voluntary roles we need to fill:

- Company Secretary
- Generator & compiler of the Annual Report
- Tornado Merchandising Leader
- DLW Archivist
- Deputy Website Editor
- Work's Guides



Volunteers, the lifeblood of the Trust and all its activities. Steve Wood, Keith Martin and Nik Proctor with some of their work at DLW. TCC

SUPPORT COACH No. 21249 UPDATE by Richard Pearson

Work on Support Coach No. 21249 has continued at Nemesis Rail in Burton upon Trent, where they have been working to refurbish the spare set of bogies purchased several years ago. The wheelsets were retired last year, but the paint on the tyres is flaking off, it looks as though shortly after the new tyres were fitted the paint was applied on top of a greasy surface, this first coat has started to fail with the result that all the paint is coming off.



All photos - Richard Pearson

1. As you can see from the photo Nemesis are in the process of cleaning off the old paint, and degreasing and repainting the tyres, the white tyre/slip marker lines will then be reapplied on the outside of the wheelsets. The picture also shows an axle box in position as Nemesis have been fitting axle boxes to measure the side-to-side bearing clearances, and once the new stainless steel axle box shim plates arrive, they will be able to fit the shims to finally set and assemble the axle boxes.

2. The first bogie with its brand-new axle box pedestal liners welded into position.

3. Nemesis and their contractor Steve Andrews have also conducted a survey of the brake gear and suspension pins bushes, and Steve is now busy making new pins bushes to suit. The picture shows some of the items which need new bushes.

4. Refurbished brake block carriers and the pedestal liners for No. 2 bogie, which are still to be fitted.



A general view of No. 1 bogie with a replacement coffin rod on the top.

Nemesis have recently overhauled and dispatched two Bulleid bogies to another customer and now our bogies are occupying the No. 1 and No. 2 bogies assembly positions.

Once the axle box shims arrive, the hope is to lift the coach and fit the refurbished bogies after 7th November. While the coach is lifted from the bogies, Rob Morland and the electricals team will run a new ETCS power cable from the electrical cubicle in the brake compartment to each end to the coach to provide auxiliary power to the locomotive in the event of an electrical systems failure.

Following this electrical work and the fitting of refurbished bogies, No. 21249 will move to Carnforth to be fitted with a Controlled Emissions Toilet (CET) to comply with changing Network Rail rules to prevent effluent being discharged directly onto the track. Once the CET has been fitted, No. 21249 will rejoin *Tornado* to complete test running and recertification prior to recommencing mainline duties. **TCC**



A general view of No. 2 bogie.



No. 21249 in the yard at Nemesis.

• SHED NOTICES •

Earlier this year we presented the RAF Club in London with a *Tornado* nameplate, further cementing our relationship with the Royal Air Force. It is now displayed in the Running Horse bar at the Club in Piccadilly.



Above: The nameplate, proudly displayed in the Running Horse bar.

Left: Richard Courteney-Harris, Graeme Bunker-James, Rick Peacock-Edwards and Steve Davies at the RAF Club.

At the recent GIMRA 75th Anniversary Show at Bicester, Graham Langer, Managing Director of Accucraft UK Ltd, had the pleasure of handing over a cheque for £4000 to Steve Davies, Chairman the Trust. The funds were raised from sales of Accucraft's popular 1:32 scale model of No. 60163 *Tornado* which is in addition to the £10,000 already raised for the Trust from sales of the model and will be put towards the locomotive's current overhaul. Steve Davies said, "On behalf of the A1 Steam Locomotive Trust, it always gives me great pleasure to accept donations and gifts towards completion of our Gresley P2 Mikado and the overhaul of *Tornado*. On this occasion the pleasure is significantly enhanced by the fact the cheque has been so generously donated by one of my key fellow Trustees, Graham Langer, through his company Accucraft. I extend the Trust's considerable gratitude.", to which Graham added, "Accucraft UK has supported the railway heritage movement from the company's inception, and we are delighted to be making a further contribution to this incredible project. We'd like to thank all those Gauge 1 modellers who bought the model and thus, indirectly, contributed to the outstanding work of the Trust."



Steve Davies accepts the cheque from Graham Langer.

THE A1 STEAM LOCOMOTIVE TRUST IS YOUR LEGACY

You can ensure that Peppercorn class No. 60163 *Tornado*, Gresley class P2 No. 2007 *Prince of Wales*, our yet-to-be-named Gresley class V4 No. 3403 or any other on-going project at the Trust, has a secure future for generations to come by leaving a legacy to The A1 Steam Locomotive Trust in your Will. When writing your Will, if your wish is for the legacy to go to a specific initiative of the Trust, please specify this and we will of course respect your wishes.

Donations via legacies during the 30 years that The A1 Steam Locomotive Trust has been in existence have been relatively limited when compared to other types of donation – although the Trust has always been extremely grateful for any gifts received. If legacy donations to the Trust were to reach the same level as those for the top UK based charities – where it represents around 40% of fundraising income – the Trust would raise an additional £80,000 per year. This would go a long way towards funding a five-year overhaul for *Tornado* or *Prince of Wales*.

Many Trustees have already made provision for No. 60163 *Tornado* and No. 2007 *Prince of Wales* in our wills by leaving a legacy to The A1 Steam Locomotive Trust. If you would also like to support the Trust through a legacy, then please take a look at www.a1steam.com or contact our Legacy Coordinator who will talk you through the process on legacy.coordinator@a1steam.com or 01325 460163.

How has Legacy funding been used by the Trust?

Legacies helped the Trust during the construction of No. 60163 *Tornado* by funding specific components and equipment in Darlington Locomotive Works. Since completion, generous gifts have helped fund the conversion of BR Mk I E21249 into *Tornado*'s support coach and contributed towards the repayment of loans and the £500,000 bearer bond.

What will my Legacy go towards?

A bequest left in your Will will not be used for the general day to day expenses of running No. 60163 *Tornado* or No. 2007 *Prince of Wales* on the Network Rail main line and heritage railways. If you do not state a specific use, we will devote your gift towards the funding



Newly painted in apple green, Tornado outside Darlington Locomotive Works, 2015.

of *Tornado*'s next major overhaul. If, however you would like your legacy to be used for something more specific, you will need to talk to our Legacy Coordinator in order to realise your contribution and by doing this we will be certain that your gift will be used for a specific purpose.

To whom do I make my bequest?

If the value of your estate is above a nil rate band threshold value, then it will be liable for inheritance tax (IHT). Any gifts made to UK registered charities are exempt from IHT and further tax savings can be made if you gift more than 10% of your net estate to charity as the IHT tax rate reduces to 36%. A gift to The A1 Steam Locomotive Trust would be classed as a charitable gift and therefore, attracts the favourable tax rules. If your estate is chargeable to IHT, specialist advice should be sought. The A1 Steam Locomotive Trust is the organisation that holds the funds for fundraising projects and has trustees that can accept bequests for any purpose linked to it. The Trust is governed by a Council and its Trustees will ensure your wish is fulfilled.

How do I make a Will?

You could simply fill out a form from a major stationer or online but if your

affairs are a little more complex it would be much better to take advice from a solicitor. It costs between £150 and £200 to make a Will.

Can I update my existing Will?

Yes, you will need to produce a document called a codicil; it is not that complicated and suitable forms are available from www.a1steam.com or from our Legacy Coordinator.

What wording do I use?

It depends on how you wish to divide up your estate. Details are available on www.a1steam.com or from our Legacy Coordinator.

So, please remember The A1 Steam Locomotive Trust in your Will and you too can help to ensure that No. 60163 *Tornado*, No. 2007 *Prince of Wales*, No. 3403 *Highlander* and our subsequent locomotives have a secure future on the main line for generations to come. **TCC**



RAILTOURS by Sophie Bunker-James

We are excited to announce two new tours for Spring 2023, both taking us to the South West following the Great Western line along Brunel's sea wall on the way to their destinations. Please read on for full details of these superb seaside day trips. These tours will come before our 'Yorkshire Pullman' and springtime 'Aberdonian' trains which are available to book now. We will be announcing more tours for Spring and Summer 2023 very soon and will be distributing a tour brochure following their launch. If you are planning on joining us for 'The Aberdonians' or 'Clyde Aberdonians' next summer, we advise early booking as Premier Dining is selling out on certain dates.

'The Dartmouth Express' – Thursday 23rd March 2023

Join 'The Dartmouth Express' for a scenic trip with *Tornado* to Kingswear and Dartmouth. Hauled by No. 60163 from the outset, our train starts at Worcester's Shrub Hill station to head for Devon. We are then routed via Cheltenham, Bristol Parkway and Bristol Temple Meads to collect further passengers before heading south to a brief water stop at Weston Super Mare. Our train will then speed across the Somerset levels before passing the site of *City of Truro's* 102mph run at Wellington. Once through Whiteball Tunnel we emerge in Devon and descend to Exeter. On from Exeter we traverse one of the splendours of the journey, along the Exe estuary and Isambard Kingdom Brunel's famous sea wall along the Channel. At Newton Abbott we take the route for Torbay as we travel via Torquay to Paignton. It is here we join the Paignton and Dartmouth Railway which enables us to travel directly to the end of the line at Kingswear, passing the imposing Royal Navy College where naval officers are trained.

From Kingswear it is a short ferry trip across to Dartmouth, with its quaint pubs and shops to enjoy. There will be a few hours in Dartmouth and Kingswear before it is time to re-join the train, once more with *Tornado* leading the way. We retrace our outward route and are again able to enjoy Brunel's magnificent railway as we return to Bristol



Simon Lathorne

On 15th June 2019, *Tornado* races past Claypole with the return leg of 'The Yorkshire Pullman'.

Temple Meads. It is here we say goodbye to *Tornado* and a diesel locomotive takes our train on back to Worcester.

'The Cornishman' – Sunday 26th March 2023

Join us for a rare trip with *Tornado* to Cornwall, which takes in the scenic Newquay branch line as part of our tour. The train departs from Bristol Temple Meads with *Tornado* at the head as we strike out through Somerset. We pick up additional passengers at Nailsea and Backwell station before racing across the levels to Taunton where more passengers can join our train. After the long climb to Whiteball Tunnel we cross into Devon and on to Exeter where we take a short break so *Tornado* can take on water.

We then head along Brunel's famous sea wall before facing the very steep climbs over the South Devon Banks that guard the route to Plymouth. Beyond Plymouth we pass the Navy Yard before traversing another Brunel masterpiece, The Royal Albert Bridge, and on into Cornwall. Crossing soaring viaducts and with wonderful views all around we pause at Bodmin Parkway for those who wish to visit the preserved railway there. A short distance on we pause at Par station where there is the option to take an add-on tour to The Eden Project.

Beyond Par we traverse the steeply graded route to Newquay, on through the Luxulyan Valley and to Newquay itself. For those passengers choosing to travel to Newquay the return is via service train as *Tornado* and our train will depart back to St. Blazey depot in Par to be turned and serviced on the newly refurbished turntable. Passengers will return to Par via service train and join *Tornado* and her train there. Our return journey will retrace our outward route via Plymouth and Exeter as we head back to Bristol Temple Meads.

Please note, it is planned for our train to be steam hauled throughout, but if the turntable at St. Blazey depot is not available as intended a diesel will haul the train from Par to Plymouth. Due to the nature of the route, this will be a shorter train than *Tornado* usually hauls, so early booking is recommended.

Both of these tours are now on sale at 21stcenturysteam.co.uk or call the Booking office on 01325 488215. **TCC**



Michelle McDonald

Tornado enters Cornwall via the Royal Albert Bridge, Saltash.

Covenantors' Diary by Dawn Phillips



October ended with our 2022 Annual Convention. The convention went extremely well with 178 guests joining us on the 22nd of October at the Blackwell Grange Hotel. The day started at Darlington Railway Station with a pick-up of our guests, using local Heritage Bus Firm, The Aycliffe & District Bus Preservation Society, who transported those travelling by train to Blackwell Grange where they were welcomed with refreshments by our team of staff and volunteers. Personally, for myself and the team at DLW, it was lovely to finally meet the people who we regularly talk to by phone, and email. We met some great characters that day, all of whom can make our work really interesting.

Both presentations were received positively by guests and feedback to date is that the information was 'very interesting' and 'worth making the journey for.' As this would be the last convention at the Darlington Locomotive Works building, we hoped our supporters were able to take in the history one last time before our move to new premises in summer 2023.

The work that the Trust and its volunteers put in to make the day informative and above all enjoyable (we want you to return each year!) has been recognised, with supporters increasing their monthly donations, and also donating additional sums of money. The generosity of our supporters astounds me daily, and we hope we can continue to count on their support. From the team and I at DLW, a big "thank you".

I am also happy to confirm that the original No. 2007 *Prince of Wales* drawings were bought later that evening and we wish the supporter much happiness with their purchase and

to thank them for their support. We must make a special mention of our lovely visitors who popped in on Sunday before taking their long journey back to Herefordshire. It was lovely to meet you both and hope to see you again at our convention.

Finally, we are always looking at ways to improve the convention. Shortly our guests will receive a feedback form which we hope you will take a moment out of your day to complete. Your opinion does matter to us, and we will of course accommodate suggestions where possible.

The team at DLW are here to help and answer your questions so please email enquiries@alsteam.com, or if you have any specific supporter enquiries please email supporters@alsteam.com. **TCC**



ASILT

Dawn Phillips, Janet Preshous and Lorraine Heathwaite in charge at this year's Convention.

TORNADO TOUR DIARY 2023

Below are the future operations *Tornado* is confirmed to be involved in. More details will be published on www.21stcenturysteam.co.uk as trains are finalised.

- **Thursday 23rd March** – 'The South Devon Express' - Worcester, Cheltenham & Bristol to Kingswear & Dartmouth – bookings through 21st Century Steam
- **Sunday 26th March** – 'The Cornishman' – Bristol, Nailsea and Backwell & Taunton to Bodmin, Par (for The Eden Project) & Newquay - bookings through 21st Century Steam
- **Saturday 1st April** – 'The Yorkshire Pullman' – London to York & Harrogate - bookings through 21st Century Steam
- **Thursday 27th April** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Thursday 4th May** – 'The Clyde Aberdonian' – Glasgow to Aberdeen - bookings through 21st Century Steam
- **Thursday 20th July** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Saturday 22nd July** – 'The Clyde Aberdonian' – Glasgow to Aberdeen - bookings through 21st Century Steam
- **Thursday 27th July** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Saturday 29th July** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Saturday 19th August** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Thursday 31st August** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Thursday 7th September** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam
- **Thursday 14th September** – 'The Clyde Aberdonian' – Glasgow to Aberdeen - bookings through 21st Century Steam
- **Saturday 16th September** – 'The Aberdonian' – Edinburgh to Aberdeen - bookings through 21st Century Steam

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

AI PROFILE – No. 60138 BOSWELL by Phil Champion

No. 60138 was one of 23 Darlington-built AIs under issue 1/4 and December 1948 brought eight new class members, three from Doncaster and five, including No. 60138, from Darlington. There were already 12 class members in service, so it was completed about a third of the way through the class programme. The locomotive, with tender 758 and boiler No. 3928, was turned out in apple green with black and white lining and 'BRITISH RAILWAYS' on the tender.



A reasonably clean *Boswell* at York on 1st July 1961.

As with all Darlington AIs, when new, the numerals and lettering were in old gold rather than the light cream of the Doncaster built examples. It was new to York North shed (YK) and was one of the initial allocation of six there. What was notable was that along with No. 60121 *Silurian* and No. 60153 *Flamboyant* it remained York-allocated all through its service. While it was noted at Darlington that Christmas Eve its first recorded train was the seven coach Newcastle-York passenger which left Stockton at 13:32hrs.

Following a 'Light Casual' at Doncaster, No. 60138 was one of the earliest AIs to appear in blue with black and white lining, leaving the works on 27th September. Four had emerged in this colour scheme from new but in 1949 No. 60138 was the first to be repainted from apple green. During August and September 1950, the locomotive was again recalled to Doncaster, this time for its initial general overhaul which included its first boiler renewal with boiler No. 29801 fitted. It

was named at the same time, one of a trio that month, although 20 AIs had already been named. *Boswell* was one of thirteen AIs named after racehorses, *Boswell* having won the 1936 St. Leger. Most of the locomotive's running was between the North East and the capital. On 3rd October 1950 *Boswell* left King's Cross with an express passenger train. A regular run seen a number of times between December and October 1951 was calling in at Stockton at 13:38hrs or 13:33hrs with a Leeds-Newcastle working. Loads were usually five or six coaches but eight were pulled on 29th December. On 9th February it had a lunchtime Stockton call with the nine coach Newcastle-York train. Its first recorded named train was the down 'Northumbrian' brought into York on 19th January 1952. *Boswell* spent April of that year at 'The Plant' undergoing another 'General' and left carrying boiler No. 29817 and BR express passenger green, lined black and orange, repainted halfway through the class with 29 already in BR green.

York did not have any top-class passenger work and diagrams mainly covered turns to Newcastle and back via Darlington although its allocation of AIs did cover locomotive failures and some specials. Later York acquired a regular through turn to London in the morning with the locomotive concerned returning on a parcels train shortly after 19:00hrs, a duty on which No. 60138 became a frequent performer. Football specials also featured, one into King's Cross on 3rd May 1952 while another on 19th February 1955 took it to new territory in Nottingham. The period was interrupted by general overhauls at Doncaster during July 1953 (boiler No. 29812 fitted) and March 1955 (boiler No. 10636). Other workings of note were the up 'Northumbrian' of 26th February 1955 and leaving Leeds at 17:30hrs with the Scarborough train on 13th April. Over the next couple of years it was noted many times being serviced on Gateshead shed. *Boswell* was seen bringing trains from Liverpool and Colchester

Richard Greenwood



No. 60138 at Doncaster on 21st August 1962.

into Newcastle but no doubt it took over the trains late in the journey. Between November 1956 and January 1957 AI workings shifted slightly south and No. 60138 was recorded some 20 times on the 08:20hrs King's Cross-York/Hull plus the 17:00hrs King's Cross-Peterborough on 29th December.

The later BR crest was applied in June 1957 following another general repair at Doncaster which included the replacement of its boiler with No. 29833. A rare trip to Scotland came when just a day after being seen at Peterborough when it hauled a Glasgow-Edinburgh ECS on 27th July. It was soon working back in the North East then on 10th December left King's Cross with the 10:20hrs to Leeds. *Boswell* spent most of April 1959 at 'The Plant' having a general overhaul which included the addition of boiler No. 29819 and once back on duty workings of note were the down 'Queen of Scots' into Newcastle on 22nd May 1959 and the down morning 'Talisman' from King's Cross-Newcastle. It appeared in Cambridge on 8th May 1960 on the diverted 16:35hrs King's Cross-York express passenger. On 9th July 1960 it arrived in Scarborough at 14:12hrs with a train from Newcastle then worked light engine back to York to turn (the Scarborough turntable was then too short for an AI). *Boswell* was seen on a Class C goods for York Dringhouses in the summer of 1960 in a shabby condition, leaking steam as it tackled the gradient south of Durham. In fact, photos of *Boswell* during the early 1960s show it in a dirty condition even when on a turn such as the down 'White Rose' of 8th June 1961, York clearly took less care of their charges than, say, Haymarket.

Christmas 1961 was spent at Doncaster having its final 'General' and getting its last boiler, No. 29816, fitted and during 1962 a mix of different workings were seen, goods and parcels and passenger. On 15th September (and again on 5th October) No. 60138 was seen on the 7502 Gainsborough-Uphall cement at Newcastle while on the 19th, at 12:15hrs, it passed through there with the up BP tanks. 21st September found it at Newcastle with the Dover car carrier. At 13:07hrs on



An undated image of *Boswell* in the roundhouse at York.

8th October it was seen with just a brake van. Four days later it was on a 'namer', bringing the down 'Heart of Midlothian' into the Tyneside city. The mix of work was exemplified by leaving Tyneside with the up seed potatoes on 12th November then returning with the down 'Heart of Midlothian' from York to Newcastle. The York-Newcastle parcels was hauled by *Boswell* several times in November and December.

The mix of work went into 1963 between the North East and the capital. Passenger trains included the 'North Briton' being pulled into Newcastle on 22nd January, hauling a down express through Huntingdon on 24th February and bringing the 1A10 ex-King's Cross into Newcastle which a Gresley tank would take forward onto the Tyne Commission Quay, goods trains were the 15:00hrs Heaton-Thornaby Class F on 22nd February and bringing in the ex-Millerhill goods into King's Cross on 20th September.

The last recorded workings of No. 60138 are passenger runs, the down 1A08 'Anglo-Scottish Car Carrier' was taken forward from Newcastle on 15th May 1964 though No. 60138 was seen later light engine at 18:04hrs going onto Gateshead shed. A York-Newcastle passenger featured on 18th May with 15th August running the other way. A working which attracted the attention of enthusiasts at Birmingham New Street was its arrival on the 09:20hrs Newcastle-Bristol on 24th October. On 2nd March 1965 *Boswell* took the 3S46 York-Edinburgh parcels forward from Newcastle.

It was seen travelling up light engine at Newcastle on 9th March and 18th June 1965. It was seen at York station on 16th August then on the 30th on York shed.

No. 60138 carried seven boilers, the class average, all to diagram 118. By September 1965 the name and worksplates had been removed and withdrawal came on 4th October, one of ten AIs withdrawn that month, leaving just three in traffic. *Boswell* had lasted sixteen years ten months, a good deal longer than the class average of 15 years 2½ months. Sale for scrap at T.W. Ward came in November 1965.



A sad and neglected *Boswell* at York in 1965.

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 and various published photographs. Revised and updated by Graham Langer, June 2020. **TCC**

Bill Reed

Roger Bastin



With Hopetown Carriage Works in the background, the new Darlington Locomotive Works rises above Bonomi Way.

P2 ENGINEERING UPDATE by Terry Graham

Progress on the P2 over the last year has been severely affected by restricted finances and the diversion of scarce resources onto the heavy overhaul of *Tornado*. The continuing hangover of the effects of Covid-19 on our suppliers and other parties has also affected headway. However, we have managed to take significant steps forward in the following areas:

Cylinder block

An order was placed on Howco at Irving in August 2021. To date the components have been cut and formed and the fabrication has been welded together and heat treated with machining now underway. The remaining work is to shrink fit the cylinder liners and valve seats then final machining. After which the whole block will be hydraulically tested, which requires many unique covers to be manufactured and associated fasteners fitted in order to seal the block. The final operation is the application of a high temperature paint. We expect the finished article to be back with us in early 2023, ready to lift onto the frames.

Cambox and valves

The design is mostly complete and once signed off, a single prototype cambox will be manufactured, then tested, to confirm function, strength and durability.

Tender Frames

Currently being manufactured at I. D. Howitt of Crofton near Wakefield, the frames are substantially complete, with the remaining work to the axle boxes and spring planks before a final coat of primer.

Boiler

This major component was due to be delivered mid 2022 but Covid-19 induced delays, plus work required on the A1's boiler, have delayed the P2's boiler delivery until 2023.

Pony Truck

This is complete, but replacement liners need to be welded to the cannon box then machined at Triple T to suit the pony truck. This is also awaiting suitable welding resource, currently fully occupied with the mechanical modifications to *Tornado* for the Network Rail project to fit the European Train Control System (ETCS) cab signalling.

Motion

The leading, trailing and connecting rods have been bushed and are fitted on both sides of the locomotive. They have been successfully driven by the rotator to establish that there is no binding or interference. The inside rod and strap have also been delivered and polished.

Brake Gear on locomotive

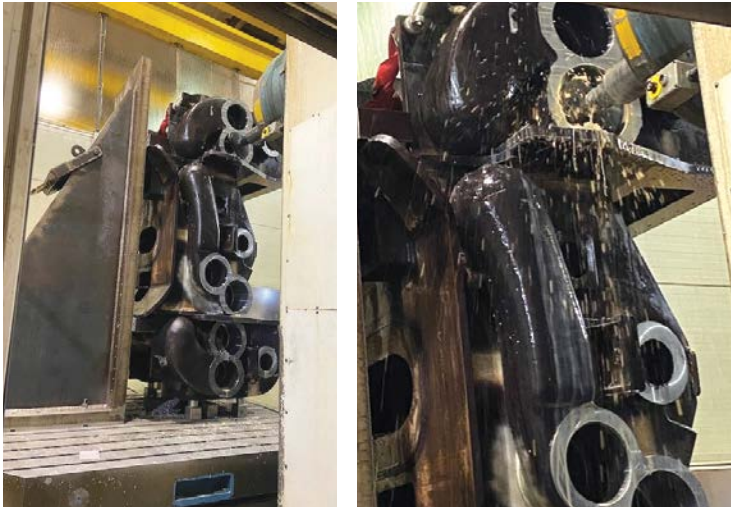
The brake cross stays are finished, and the pull rod lengths are being set to suit actual dimensions of the brake gear prior to final welding.

Pipework

Further progress has been made with air, vacuum, water and steam pipework. However, diversion of resources onto *Tornado* has limited the degree of completion.

ETCS

The similarity between the A1 and P2 in many critical areas is such that most of the large amount of detailed



The monobloc is machined at Howco.



In Ian Howitt's workshop, the tender frames are nearing completion.

design work (both electrical and mechanical) for *Tornado* will read across directly on to the P2. Once the *Tornado* ETCS test programme is completed successfully in the new year, the design will be replicated on the P2. Mechanically, the largest area of work will be the modification of the front of the tender to accommodate the electronic cubicles for the ETCS control equipment.

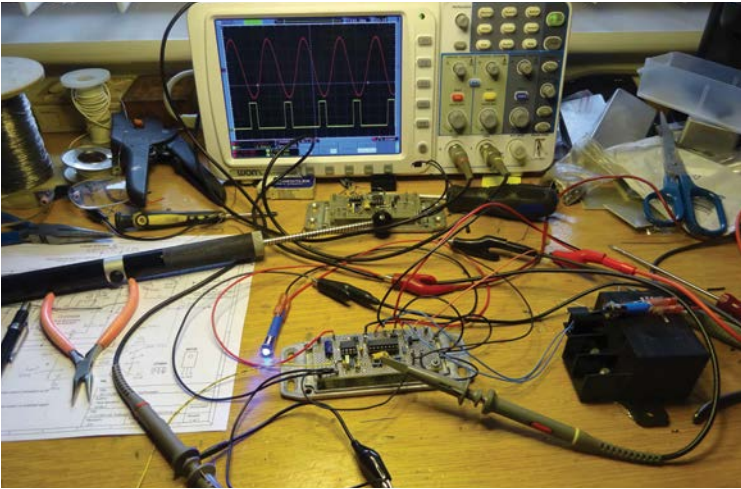
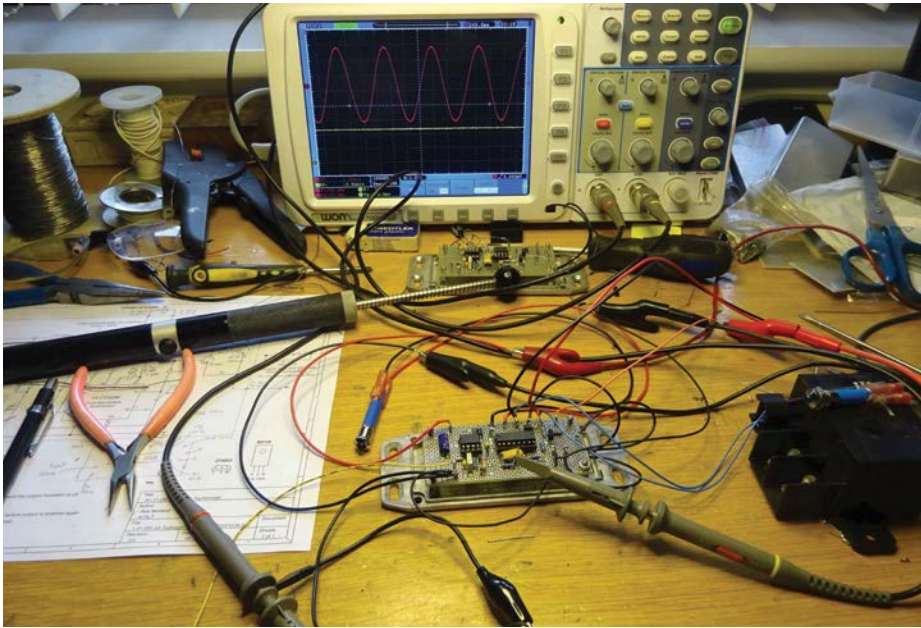
P2 Support Coach

No. 35457 is currently in traffic with the dining train at the Great Central Railway in lieu of any stabling charges. This means that the coach is being regularly inspected, maintaining its current mainline certification. We are currently drawing up the plans that would convert it for use behind the P2 on the mainline. The coach is usable as it is, once we have added the dual air brake components, but when funding becomes available, we would wish to improve it to similar standards achieved in the refurbishment of No. 21249. TCC

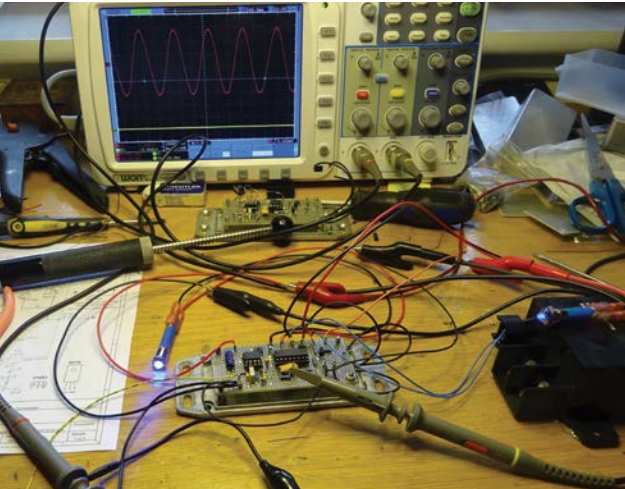
P2 ELECTRICAL ENGINEERING UPDATE by Rob Morland

The new tachometer circuit that will hopefully allow a more controlled start-up of each of the two turbogens is now built and working, see photos attached. It includes a delay feature so it only connects the full load once the turbine speed has been above 3100rpm for at least 30 seconds. If the speed drops (say due to high load and low steam pressure) it won't try to connect again until speed has been consistently above 3100rpm for at least 30 seconds. It also includes hysteresis to prevent instability if the turbine is running at a borderline speed – we don't want to connect the load under these conditions, however long they go on for.

Right: The circuit with an input of under 3100rpm, so the left LED (tacho output) and the right one (load connected) are both off.



The circuit with the turbine simulated at a borderline speed (tacho output on the scope), so the left (tacho) LED is partly on but the relay and LED on the right are off.



The circuit after the speed has been above 3100 rpm for more than 30 seconds, with the relay and right LED on.

The circuit now needs to be cleaned up, boxed and soak tested. I then need to build a second one (the prototype is visible at the back in the photos) and assemble both into the new Turbogenerator Switch Box. TCC

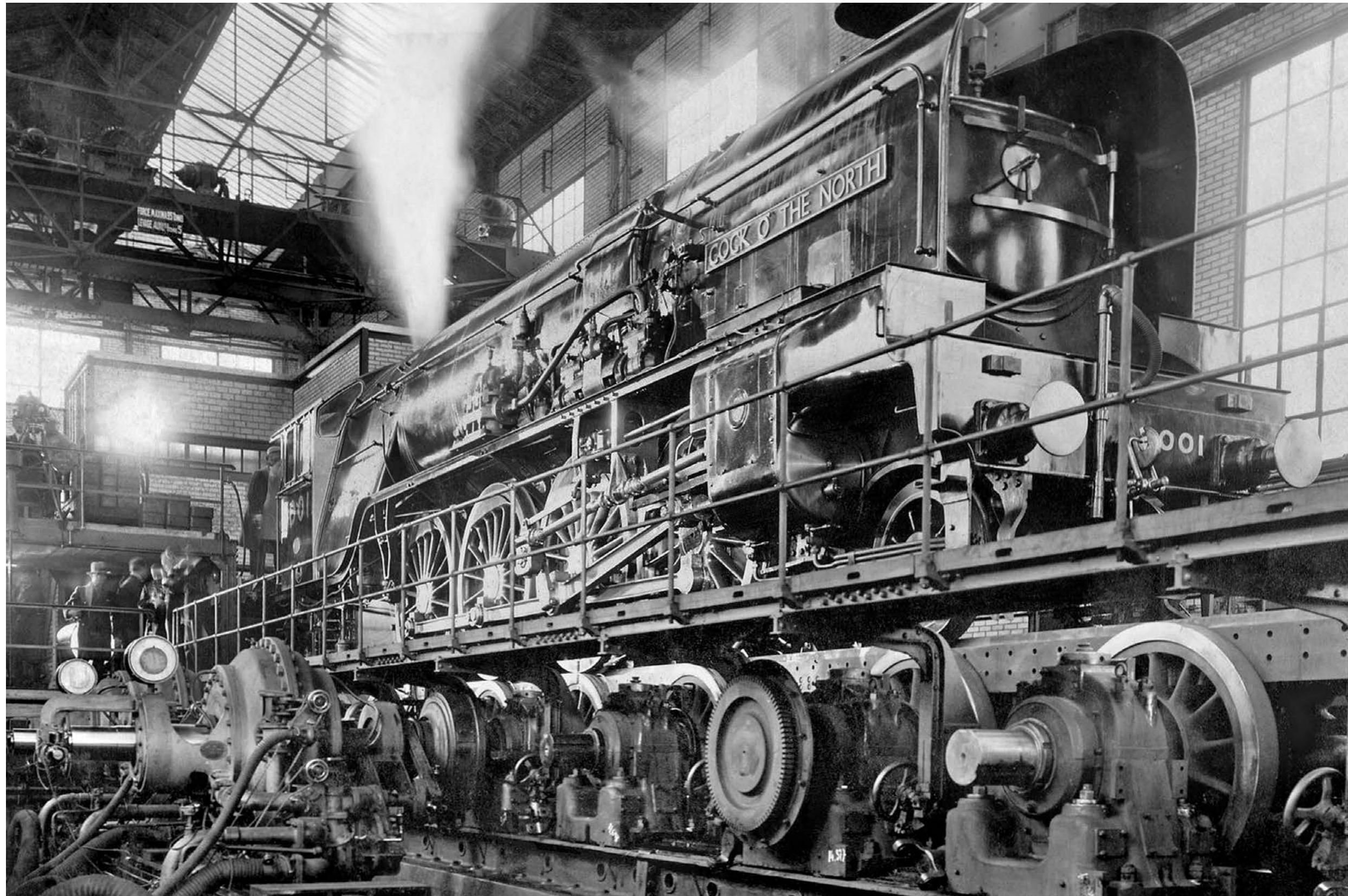
Attention all Club Members! - Exclusive badges are available to purchase -

The Boiler Club, The Mikado Club, The Cylinder Club, The Motion Club, The Tender Club

All Club Badges £5.00 each (Badges shown actual size)

To purchase your badge please send a cheque for the relevant amount made payable to 'The P2 Steam Locomotive Company' and send to The A1 Steam Locomotive Trust, Darlington Locomotive Works, Hopetown Lane, Darlington DL3 6RQ.

COCK O' THE NORTH ON TEST IN FRANCE *by Andy Hardy*



On the 22nd May 1934 the LNER's newest locomotive, No.2001 *Cock o' the North*, rolled out of Doncaster works. The new engine was unlike anything seen before and was the first 2-8-2 express passenger locomotive to be built in the UK and included Lentz rotary cam poppet valves, a double chimney and Kylchap blast pipe, ACFI feed water heater and semi-streamlined front end and cab. The engine gained considerable interest with many people keen to see how the locomotive would perform. This was eagerly anticipated by Gresley himself who wished to scientifically put the locomotive through its paces, however, the lack of facilities in the UK made this difficult.

Gresley had first expressed an interest in a locomotive testing plant in 1927 and used his Presidential address to the Institute of Locomotive Engineers to advocate the building of a national "locomotive experimental station", not only for the use of the Big Four companies but also

for the private manufacturers for all of whom testing of a locomotive and its sub-assemblies in a scientific manner would be of great benefit. At the time the only testing facility in the UK was a small plant inside Swindon works of the GWR which was not big enough for many of the larger

Cock o' the North on the test plant at Vitry.

express passenger and freight locomotives then being built. The Government later adopted the plan and a committee was set up to examine the proposal. The report in June 1930 recommended that such a facility should be built but the economic situation of the early 1930s caused the report to be shelved and nothing was moved forward, much to Gresley's frustration. However, a similar idea had been developed in France, and in 1933 a locomotive testing plant was opened in Vitry-sur-Seine near Paris, funded entirely by the French Government. Gresley was present at the opening ceremony and was greatly impressed by the facilities.

Due to this lack of a suitable testing station in the UK, one of Gresley's French counterparts, Andre Chapelon, arranged a visit for *Cock o' the North* to the newly opened locomotive test bed at Vitry. The pair had met whilst Chapelon was in the UK in 1926 visiting Davey Paxman, at the time the licensee holder for the Lentz poppet valves and associated gear in Western Europe. Gresley had already started experimenting with the Lentz gear on several locomotives and it seems that the technical director at Paxman arranged for the pair to meet at their works in Colchester to discuss the valves and their uses. From this early meeting a fruitful friendship blossomed with Chapelon and Gresley sharing ideas and theories between each other.

Cock o' the North had already undergone a series of tests based out of Doncaster and King's Cross hauling various trains whilst equipped with an indicator shelter (see TCC 66). Prior to leaving for the Continent the locomotive as returned to Doncaster and entered the paint shop to be spruced up along with three 40-ton bogie coal wagons which were also painted with 'London and North Eastern Railway Best Yorkshire Coal Yorkshire Main Colliery' on their sides. These vehicles along with a standard box van containing lubricating oil, spare parts including axleboxes, coupling rod brasses, gauge glasses and other consumables and a 20-ton brakevan, formed the train that left Doncaster bound for Harwich and the Continent. The engine also had some minor work to ensure that the tests in France were as accurate as possible including the tyres being turned to ensure they were within a 0.5mm accuracy and adjustment to the horn blocks to ensure that the axles were perfectly parallel. The locomotive also had stepped



No. 2001 with its train of LNER wagons at Amiens on its way to Vitry.

cams fitted in place of the infinitely variable cams, the poppet valves reground, safety valves and other gauges tested and the regulator quadrant marked with ten equal divisions. Finally, a new drawbar pin without any clearances was produced for coupling the locomotive to the testing station dynamometer.

The engine and its train were worked to Harwich and on Wednesday 5th December where the consignment was loaded onto the train ferry before departing for Calais at 20:30hrs. The following morning the ferry docked at Calais, however the locomotive and its train was not disembarked until the afternoon due to Customs formalities. Once unloaded, the engine had its fire lit and was taken to Calais Locomotive Depot under its own power by its LNER crew. The crew selected to travel with the locomotive was Driver W. Trower and Fireman W. Gant of Doncaster. Driver Trower had started work on the railway in 1893, passing as a driver in 1911 and was a regular driver on Royal Train duties. Another fireman, J. Bradley, also travelled over from Doncaster to assist for a short period.

Gresley attended on several occasions but seems to have left O.V.S. Bulleid to take charge and organise the work required on the locomotive whilst Gresley remained in his office at King's Cross. Bulleid had been involved in the design work on the locomotive and it seems was instrumental in the adoption of the Lentz poppet valves and experimental items of equipment fitted to the locomotive. The team was also supplemented by Teddy Windle, Chief Draughtsman, J. Boulby, Chargeman Erector and his assistant Mr. Horsfull all from the Doncaster Works.

Leaving Calais Maritime the next day at

just after 07:30hrs the engine proceeded along the French mainlines via Amiens, Montdidier, Le Bourget, Villeneuve St. Georges, Juvisy and Ivry before arriving at Vitry around 18:30hrs. Throughout the engine was worked by its Doncaster crew with a French conductor/driver and Inspector riding on the footplate. For its journey the locomotive was equipped with a large French pattern headlamp. Upon arrival at Vitry the engine was taken to the Ouest locomotive depot before being taken to the test plant the following morning so that the rollers could be set for the locomotive. That evening a trial run of the engine was made for the first time under its own power.

At the time the testing station at Vitry was the most sophisticated in the world. The facility could handle the largest of locomotives. The building housed eight sets of adjustable rollers on which a locomotive, minus its tender, could be placed and run at speed. The rollers were coupled to water brakes built by Heenan and Froude in Worcestershire which allowed a predetermined load to be placed upon the locomotive as it worked. The drawbar of the locomotive was also coupled to a hydraulic dynamometer to allow the drawbar horsepower to be recorded. Coal and water could also be measured scientifically and connections for pyrometers and other sensors were also provided. Finally, a 'stroborama' was provided for the stroboscopic examination of the motion whilst it was moving at high speed. The facility was also equipped with a laboratory to fuel analysis and determination of calorific values of coal plus calibrating the gauges and equipment used.

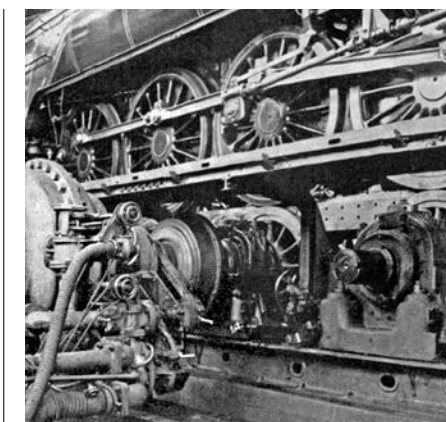
The main control room was equipped

with a dynametric recording table overlooked the open cab of locomotives on test from a raised view. A total of 90 sets of wires were installed for relaying signals from the testing equipment to the control room. The recording table was fitted with six main pens to record, time, distance travelled, speed, draw bar power, total effective work at the draw bar and the draw bar horsepower. These pens recorded their information on a sheet of moving paper controlled by the rollers under the locomotive. Scientific analysis of these factors, combined with measurements of coal and water allowed for reliable readings of efficiency, power and many other factors to be measured under scientific conditions and for direct comparisons to be made between locomotives. The first day of operation was handed over to publicity, with several journalists present for both the English and French newspapers and television. Bulleid gave short interviews about the locomotive and its testing in both English and French as required.

Almost as soon as runs on the test bed commenced the engine started to suffer from problems. The driving wheel axleboxes ran hot and showed signs of melting the white metal on the bearings, a coupling rod bush ran hot and an uneven exhaust beat was heard. The coupling rod bush was quickly replaced with a spare and caused no further problems. However, the uneven exhaust beat was not easy to diagnose. Representatives from the Dabeg Company looked at the locomotive and suggested modifications but could not solve the problem. It was later suggested that the variation in clearance volumes in the cylinders could be causing it. On its return to the UK some work on these were carried out but the engine never gained a perfectly even exhaust.*

The biggest headache for the engineers, however, were the axleboxes. On several occasions the wheels were dropped and the axleboxes inspected and white metal replaced and both the spare axleboxes fitted in place of ones that had overheated. However, the problem persisted, and a theory began to develop that the lack of vibration on the test plant was, somewhat bizarrely, causing the oil film to rupture and localised heating to occur. On the 21st December the final run was made and the men returned home the following day to England to spend Christmas with their families before returning to France on New Year's Eve. During its three weeks in France, it had been impossible to undertake any serious testing of the locomotive.

With the New Year came preparations for further attempts at testing. At Bulleid's



Above: Detail of the rollers at Vitry with No. 2001 in place.

Left: Driver Trower and fireman Grant at work with the engine on test.



Cock o' the North is coupled to four counter-pressure locomotives and readied for a run on the French main line.

request, the opportunity was taken to remove the back plate of the ashpan, to see if the vast amounts of black smoke that the engine had been known to produce could be eased. Unfortunately, this modification made little difference and Bulleid later joked that when he was travelling to the testing plant by motorcar he could tell if the engine was already in steam due to the black smoke being emitted from the building's extractors. No. 2001 was again placed on the test plant after the rollers had been reset owing to a French locomotive undergoing testing during

the Christmas period. Great care was taken to ensure the rollers were perfectly aligned and that the wheels did not move on the rollers, another theory for the axleboxes overheating. However, the engine ran hot again, and the Paris office of the Wakefield Oil Company were summoned to check over the engine's lubrication system. No faults were found but a new oil was specified for the tests, this making no difference with the engine, again overheating.

On the 26th of January the engine was given a short run on the mainline at 25mph

to help bed in the bearings that had once again been white metalled. No signs of overheating were found, and the engine returned to the test bed but not long after the bearings started overheating again. As the Paris workshops had limited lifting facilities a decision was made to send the engine along the French mainline to Tours where the engine could be lifted and fully examined. This was arranged for the 31st January. However, on arrival at Tours the bearings on the engine were found to be completely cold and the French engineer who examined it recommended that the

engine did not need lifting. After conferring with the English engineers at Vitry it was decided not to lift the engine and also to arrange two trips to Orleans, a distance of 72 miles in each direction, for the following day. These journeys were carried out non-stop at an average speed of 60mph over the two trips, with a top speed of 82.8mph recorded on the footplate. During the trips there were no signs of the bearings overheating.

With the engine now seemingly settled down a new shortened set of tests were proposed to and agreed by Gresley. Five tests would be carried out, four being consumption tests at 90kph with drawbar horsepower between 750 and 2250 horsepower and a maximum power test at 90kph with full regulator and 35% cut-off. However, before the engine returned to Vitry it was arranged for the locomotive to work three test trains with a French dynamometer car and three out of steam 4-cylinder compound engines to provide resistance. During these tests the maximum power was recorded as 1910 Horsepower at an average of 80.7kph. During these tests the opportunity was given to the French crews to operate the loco. The fireman found the boiler pressure hard to maintain during the tests, with one driver commenting that the firehole door was not large enough and that the standard issue LNER shovel provided was half the size of a French shovel requiring undue effort from the fireman, although he did concede that, overall, he found the locomotive 'magnificent'.

The engine was returned to Vitry and placed on the test plant and the testing commenced. The engine performed better at first although it was found that maintaining the boiler pressure for increased periods of time was troublesome and some of the axleboxes started to get a little warm. By good fortune Bulleid was stood at the side of the engine as it was undergoing its testing when he noticed the right-hand side leading driving wheel was showing 'the familiar signs of incipient heating'. He immediately stopped the tests and examined the bearings and axleboxes and found them to be cold, but rather than continuing the test he withdrew it for examination, finding that a piece of white metal about the size of a five-shilling piece had been torn off the face in line with the centre of the frames. Examination of the other axleboxes showed similar failures occurring. He later said that 'for the first time we had clear evidence that the failure was due to the rupture of the oil film and all theories could be discarded. In view of this I decided to return the engine to England.' Interestingly it was later discovered that French engines suffered the

same faults when tested for long periods on the Vitry plant, the lack of vibration by the ultra-modern scientific facility causing the previously unseen phenomenon.

With the locomotive's testing completed, arrangements were put in place for the locomotive to be exhibited at Paris Gare du Nord station. The engine left Vitry at 10:30hrs on the 14th February with its train of British rolling stock and proceeded to the Nord locomotive shops at La Chapelle. Whilst on route at Villeneuve St. Georges two of the LNER coal wagons were removed from the train. Their contents, approximately 80 tons of Yorkshire coal, were then taken on by the P.L.M. Railway who wished to carry out trials with it on their own locomotives. The train then continued via Le Borget arriving at 16:30hrs. The following two days were spent cleaning and preparing the locomotive for exhibition, including the interior of the smokebox and the locomotive cab. On Sunday 17th the engine was placed on display in platform 1 of Paris Gare du Nord station, accompanied by the saloon coach of M. Besnerais (the deputy chief operating officer of the Chemin de fer du Nord) and a Nord super Pacific No. 1268. The exhibition was open to the public from 11:30hrs until 19:00hrs and it is reported that several thousand people visited, the event having been advertised in the local newspapers.

During the exhibition one of the Maybach diesel-electric streamlined railcars arrived in platform 2 and took part in the exhibition and seemingly impressed the English crew and engineers present. At the end of the exhibition the locomotive was returned to La Chapelle. On the following

Wednesday the engine was prepared for its final working over French metals, returning to Calais via Montdidier, Amiens and Etaples. The engine and train of (now empty) coal wagons, stores van and brakevan were worked by its English crew accompanied by a French pilot driver and inspector riding on the locomotive with the journey taking a little over eight hours. The following day was spent completing Customs formalities and loading the engine and stock onto the train ferry before it left for Harwich in the evening. With the locomotive back on English soil a relieving crew worked the engine back to Doncaster whilst the men that had worked the engine in France were allowed to return home as passengers.

Overall, the ambitious test program could be viewed as a mixed success. As far as the LNER were concerned the tests were a success, but when compared to similar French locomotives the engine was inferior. Bulleid was noted as saying that the tests proved the engine was economical when working within its design parameters, something, sadly, the locomotive did not achieve much of in its later life due to the traffic patterns it was expected to work. Shortly after returning to England the engine was transferred to Scotland and took up regular duties over the arduous Edinburgh to Aberdeen line putting in many great performances.

**Note: Subsequent examination of the original monobloc cylinder design by David Elliott identified a significant variance in the clearance volumes (the cause of the uneven exhaust beat) leading him to redesign the monobloc for No. 2007. TCC*



No. 2001, sporting French headlamps, is seen in immaculate condition in France.

P2SLC Collection

Help Britain's most powerful steam locomotive to build a head of steam

Join The Boiler Club today and help us to complete No. 2007 Prince of Wales in record time!



The boiler is the beating heart of a steam locomotive and to keep the construction of No. 2007 Prince of Wales on schedule for completion within two years, we placed the order for the boiler in 2019. We established The Boiler Club to fund the construction of Prince of Wales' boiler. Therefore our aim is to raise at least £600,000 for The Boiler Club from 300 supporters each donating £2,000 to the project (in up to 16 payments of £125 by standing order) - we are more than three-quarters of the way there, having pledges of over £475,000 (excluding Gift Aid) so far!

Special benefits for members of The Boiler Club:

- Opportunity to buy a ticket (seat already reserved) on one of No. 2007's first main line trips
- Reasonable access to No. 2007 at all times
- Opportunity to buy exclusive Boiler Club badge
- First choice of other components to sponsor
- Special limited edition version (signed/numbered) of the first official painting of No. 2007 Prince of Wales with No. 60163 Tornado
- Special supporters' day with Tornado.

Together we can build this remarkable locomotive - join The Boiler Club today!

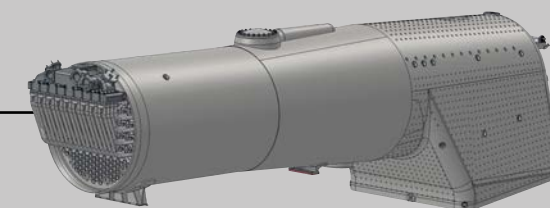


Diagram 118b boiler drawing shows fitted with Melesco type superheater header as used on Tornado.

No. 2007's boiler in detail

- Use of the diagram 118a Tornado boiler with detailed modifications to improve life between overhauls
- Interchangeable with Tornado's boiler
- Tornado's boiler is 17in shorter than P2 boiler - No. 2007's smoke box will be extended within the cladding
- 250psi of No. 60163's boiler will be retained to improve economy and increase maximum power.



2007 PRINCE OF WALES
Building Britain's Most Powerful Steam Locomotive

For further information please visit www.p2steam.com email enquiries@p2steam.com call **01325 460163** or write to The Boiler Club, P2 Construction Fund, Darlington Locomotive Works, The A1 Steam Locomotive Trust, Hopetown Lane, Darlington DL3 6RQ

Visit: www.p2steam.com
Follow us on

P2 FUNDRAISING PROGRESS Sophie Bunker-James

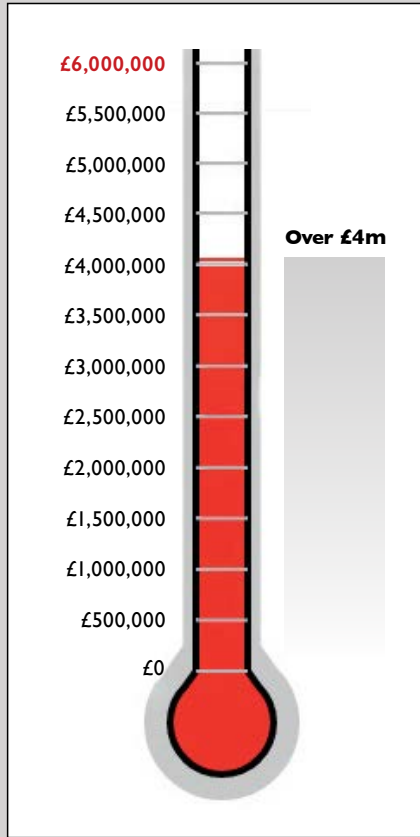


Mandy Gent

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

The Convention helped to boost funds for No. 2007, raising over £15,000, and we are delighted to have so many new Club members! One-off donations are continuing to trickle in to supplement Covenanted income and it all helps to edge closer to the P2 steaming. However, it's evident from the graphics on this page that we are not yet striking our targets for funding the build of the P2 to meet a 2025 completion. Covenanted income, one off donations and legacies all help to boost our funds, with Clubs covering the big-ticket items, the largest of which is the beating heart of the P2, the boiler. We are within striking distance of reaching “working pressure” (250psi),

and with delivery due in the new year it's not a moment too soon. Could your donation be the one to hit our target? We have just over two years of the build remaining, but this is conditional of whether we have the funds. We can only build No. 2007 as quickly as the money comes in and we really don't want to stop now. The cylinder block, boiler and tender will all be arriving imminently and the last thing we wish to do is slow that momentum. Christmas is coming, and with that in mind, you may wish to support our Dedicated Donation scheme and give a gift to *Prince of Wales*. A simple way to help the P2 raise more



Donated to date.

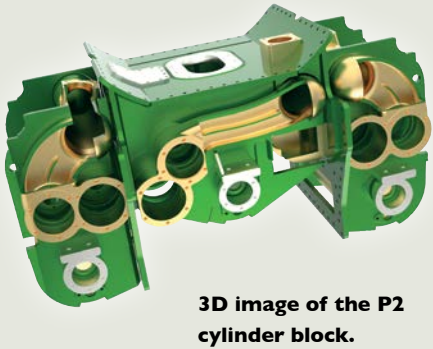
money, without breaking the bank, is to let us know if you are a UK taxpayer and can gift aid your donations. This allows us to claim 25% of the value of your donation from HMRC, making a £10 donation worth £12.50. It soon adds up! If you are eligible, but haven't let us know, please drop a line to the office.

CLUB FOCUS

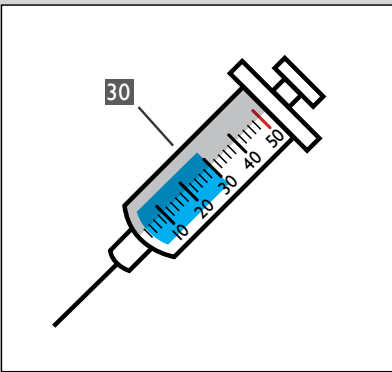
The Monobloc Club

Launched in July 2021, 'The Cylinder Manufacturing Club' has been now been renamed 'The Monobloc Club'. This is a shift in focus to draw attention to this unique fabrication and raise the profile of this bold undertaking. Machining of the cylinder block is well underway at Howco in Irvine, Scotland, and delivery is expected later this year. Whilst we are pressing forward with the manufacturing of the monobloc, donations are now needed to help fund the work. We do not want to slow the pace of the P2 build, so all contributions towards *Prince of Wales* are greatly appreciated. To-date, over £4m has been spent of the estimated £6m required to complete No. 2007 *Prince of Wales* within the next three years. This is testament to the generosity our loyal supporters. In order to keep to this schedule, we must complete the cylinder block by the winter. Please consider joining 'The Monobloc Club' today and help us to complete Britain's most powerful steam locomotive in record time – we have a way

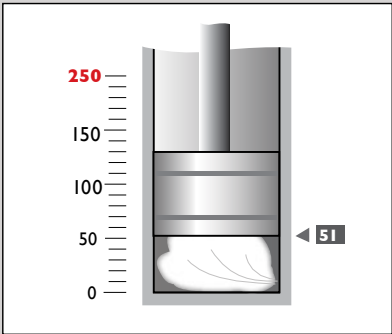
to go to reach our £250,000 club target! Donations of £1000 can be made as a lump sum or in four or eight smaller monthly payments. Thank you to those who have already donated. Find out more about 'The Monobloc Club' on the p2steam.com website or contact the office by 'phone on 01325 460163, or email enquiries@p2steam.com. 'Monobloc Club' members have already visited Howco and further exciting days are planned for supporters, perhaps a little further south next time! If this interests you, sign up today!



3D image of the P2 cylinder block.



Injectors Club - 30 members.



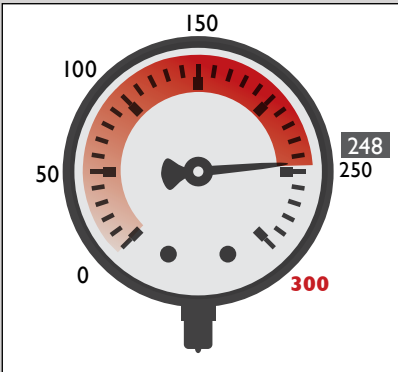
Monobloc Club - 51 members.

OTHER WAYS TO HELP

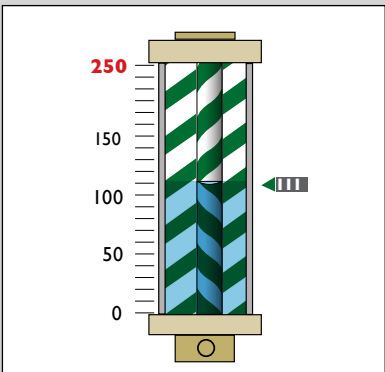
Legacies - This is not a subject that we like talking about, but the lasting impact from leaving a gift in your will is considerable. Leaving a legacy can help secure the P2's future for generations to come. See the article devoted to legacies on page 15. Please contact legacy.coordinator@alsteam.com or phone 01325 460163 for more information.

DLW Open Days - Darlington Locomotive Works is open on the first and third Saturday of each month. Why not come in and see first-hand the progress we're making and bring a friend too? Please note our new opening hours, 10:00hrs until 15:00hrs.

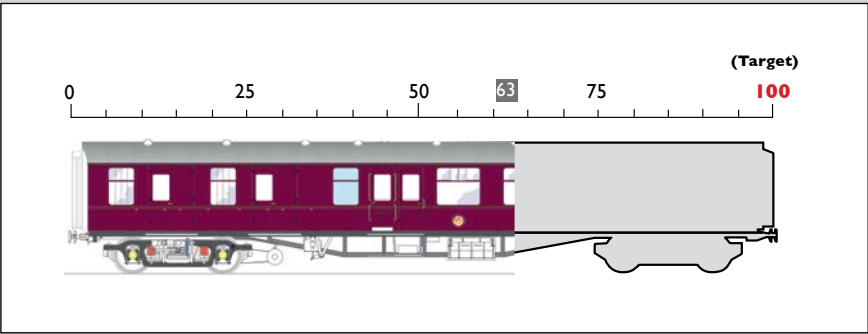
Covenantors - From as little as £10 per month, your regular donation makes a huge difference. If you haven't already done so, please consider joining us today and become a part of something special. Visit our website at <https://www.p2steam.com/support/regular-donations> for more information.



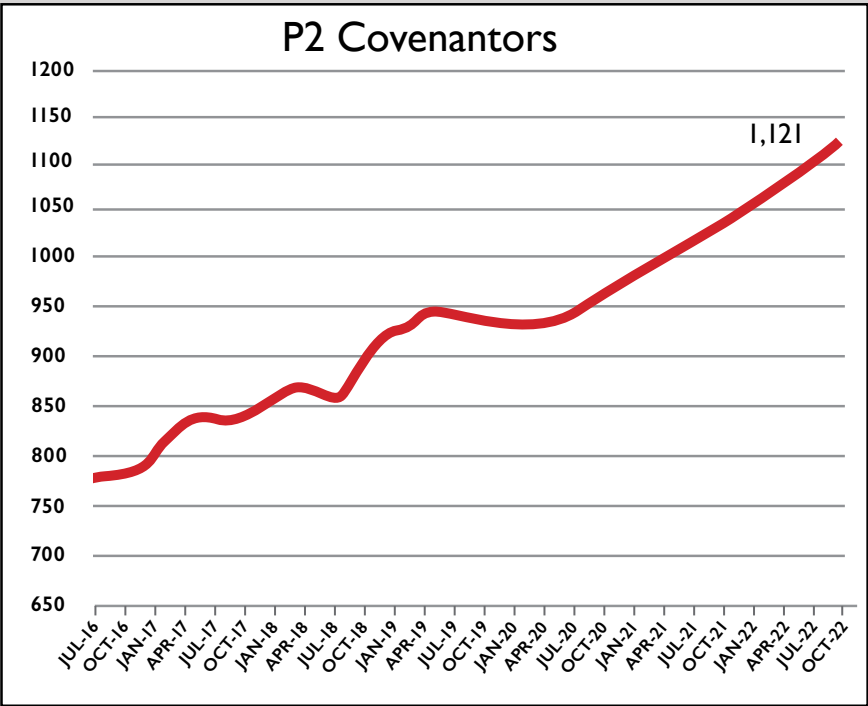
Boiler Club Gauge - 248 members.



Tender Club Gauge - 111 members.



The P2 Coach Appeal - 63 supporters.



Social Media - We're social creatures so please do follow us on Facebook 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](#)

BACK ON THE ROAD *by Liz Gibson*

“Roaming Roadshows” or “Travelling Trade Stands”?

This year has allowed the full resumption of P2 Roadshows and our hard-working volunteers have been out and about, spreading the word. If you would like the Trust to attend a show or gathering or make a presentation to a club or society, please get in touch with the Darlington office. Liz Gibson reviews some of the activity at shows this summer.

Readers of *TCC* will all hopefully know the joys of being a Covenantor, and are well acquainted with *Tornado*, *Prince of Wales*, the newly named *Highlander* and the A1 Steam Locomotive Trust in general. Sadly there are huge swathes of the population who are not so blessed, and as a way of addressing this imbalance we took a trade stand to the airshow at RAF Cosford in June, the Battle of Britain airshow at IWM Duxford in September, the Gauge 1 Model Railway Association Show at Bicester in October and, by the time you read this, the Warley Show Model Railway Show at the NEC in November.

RAF Cosford

I met Trust volunteer Andrew Taylor at RAF Cosford on Saturday afternoon to set up – despite the favourable forecast, the weather was a little less mild-mannered than expected. After emptying the car, we set to erecting the gazebo and pretty quickly realised that the feeble construction wasn't going to last long; cue a dash to Screwfix and Halfords for rope, ground anchors and leg weights!

Surprisingly and with great relief the reinforced structure survived the night and with our stall set out Andrew, Graham Langer and I were open for business at 08:00hrs on Sunday. We had a steady stream of visitors throughout the morning, only slightly decreasing during the afternoon when the air displays were taking place. There was a great deal of interest; a few people confused *Tornado* with the other famous green locomotive (which we soon corrected), and around half our visitors hadn't heard of us at all before stopping at the stand! Most people who had heard of us knew only about *Tornado* and didn't know about the P2. Graham had brought along his Gauge 1 model of *Tornado* which caused quite a stir, and the small selection of some of the more transportable P2 parts we used as paperweights were great talking points.

Many flyers were handed out and we also attracted four new Covenantors! We are delighted to have new enthusiasts aboard and wish them a very warm welcome.

Two of the more memorable visitors from the day were a lady who talked to me about sandwiches and the Red Arrows throughout the entirety of the deafening Dassault Rafale display, and a little lad who told Graham quite emphatically that *Tornado* was an A3! Gates closed at 19:00hrs, by 20:15hrs we were packed up and all on our way home. 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.



All photos by Liz Gibson



Top: Volunteer Andrew Taylor with our reinforced gazebo.

Centre: All set up, ready for the crowd!

Left: Graham Langer and a visitor to the stand, deeply engrossed in conversation, while a Typhoon does it's best to distract!

Imperial War Museum, Duxford Battle of Britain airshow

Happily this time the pitch fee included the use of a pre-built (and very robust) marquee, so there was very little in terms of set-up to be done. Jim Gosney, his wife Irene, Ian Matthews and I were in position on the Saturday morning as the gates opened and we were very soon welcoming a steady flow of guests to the tent! As with the Cosford crowd, many people were not familiar with the Trust and *Tornado* so we did our best to set that right.

The visitors to the stand naturally waned once the flying got underway, however there were still enough coming through to mean we couldn't sit back and watch the fantastic display (good for the Trust of course!)

The airshow was, of course, taking place in the immediate wake of Her Majesty the Queen's passing. While Saturday was noticeably quieter than usual Sunday was sadly far quieter still and it was felt across the event. Even getting cups of tea was no issue at all, and if you've ever been to a heaving airshow at Duxford you'll know how remarkable that is. Still, there were plenty of lovely people to talk to; Andrew Taylor, Rob Morland, Ian and I were kept quite occupied by interested visitors.



Irene, Jim and Ian deep in conversation with visitors.

We were delighted to welcome on board seven new Covenantors, we wish them a very warm welcome indeed.

By the end of the weekend we were all tired but pleased to have been there, and interestingly had been completely cleaned out of tea towels!!

Right: Overspill! Too many visitors to fit in the marquee.



Gauge 1 Model Railway Association 75th Anniversary Show, Bicester

October saw the Travelling Trade Stand make its way to Bicester for the weekend. A naturally smaller and considerably quieter event than the airshows, the stand still welcomed a steady flow of visitors. Huw Parker and Andrew Taylor were kept busy answering lots of questions and we were superbly placed near to the largest layout in the Hall which had a Gauge 1 *Tornado* whizzing around, looking very impressive – it even managed to entice Steve away from the stand for a while! **TCC**



Above: The newly unveiled Aster Gauge 1 model of No. 2001 Cock o' the North stands in front of the photo of No. 2007 Prince of Wales.

Above left: Beautiful in any scale! Our Chairman gets distracted by a mini-Tornado.

Left: Huw talking with assembled admirers.

P2 DEDICATED DONATIONS UPDATE by Liz Gibson



Christmas is in the air! With *Tornado* coming together nicely after her major overhaul but unable to fill our senses with wonderful sights, sounds and smells, why not bring a little of the railway world into your home this festive season or give someone a truly unique present by sponsoring a part for *Prince of Wales*!

There are still hundreds of items that can be sponsored, with prices ranging from £15 up to £15,000!

With the Christmas holidays fast approaching, why not take the opportunity to pop along to Hopetown Lane, see the progress at one of the Open Days and maybe take some inspiration for a part that you're particularly fond of or intrigued by?

- For £15 you can sponsor an axlebox bush for the spring hanger pins
- Steady as she goes...? A buffer beam air brake hose comes in at £100
- If you want 'your' part to help keep those amazing wheels turning when steaming up the main line, maybe consider sponsoring one of the sandboxes for £200
- Keeping with the festive spirit, work to machine the amazing chimney can be sponsored for £900 – maybe it will encourage Father Christmas to leave us some coal! (as long as he doesn't get stuck in it! Ed.)

Rather than think about the part itself, maybe you'd be more interested in certain type of fabrication – there are so many manufacturing techniques used to build a locomotive that there's bound to be something that tickles your fancy! Manufactured items can be

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

...and with prices from £400 up to £12,000 there are a many to choose from.

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



Some of the P2 components available to sponsor.

JOIN 'THE P-WAY GANG' by Sophie Bunker-James

By next summer we will have a brand new, purpose-built locomotive works within the Darlington Railway Heritage Quarter (DRHQ). Owned by Darlington Borough Council and funded by the Council as well as TVCA and Central Government grants, the £4.5m building will provide many of the facilities that we require for building and operating our steam locomotives. For the new building to reach its potential, The A1 Steam Locomotive Trust has agreed to contribute to the project.



3D illustration of the new site for the A1 Steam Locomotive Trust.

This scheme will ensure that the site has a main line rail connection, running track, inspection pits and more. Such features will future-proof the activity of the Trust. There will be three phases for fundraising, the first for the running line, allowing movement around the site and live steam rides. With the Stockton & Darlington bicentenary fast approaching, we ask that you consider supporting this project as its legacy will ensure the future of new build steam in Darlington and ensuring that the DRHQ functions as a live steam destination for the UK, as well as a national and international visitor centre.

To cover the cost of materials and transport we are looking to raise £75,000. Any contributions are welcome, but for full club membership of 'The P-Way Gang' the minimum donation is £500, with £750 sponsoring a full 60ft rail with your name going next to that section on the track plan displayed in the new building. TCC



Sleepers being delivered to the new site.

Sign up online, or download forms at: a1steam.com/tornado/support-us/a-new-home-for-the-trust



DLW2 UPDATE *by Paul Bruce*

Darlington Borough Council have been making great progress with our new works building and have also started the restoration of the 1861 ‘Peachey’ shed. The rails have been installed inside the new shed ahead of the installation of the pit this month and the concrete floor is being poured. Windows are now in place in the accommodation block making it look the finished article.



An aerial view of the new works building taken at the beginning of October.



A closer view of the end of the building showing its proximity to Bonomi Way.



A view of the office end of the building.

Another key feature of the RHQ is the turntable planned to be installed adjacent to the new works. Funding is being sought by Darlington Borough Council for this and other elements of the RHQ and positive meetings have been held with potential funders. Our new home is scheduled to be ready in May 2023 and planning for the final fit out and the move itself has now begun. With the track not scheduled to be in place until the summer, the most challenging element of the move, the P2, is likely to be craned into position to minimise disruption to the construction.

All photos A/SLT.

Top left: The inspection pit under construction on one of the internal roads.

Top right: The newly poured concrete floor at first floor level.

Lower left: The car park adjacent to North Road station.

Lower right: The office suite taking shape.

With the 1861 shed restoration starting, the removal of fencing and years of foliage provides a taster of the real potential of what is acknowledged as one of the world's oldest locomotive sheds. The shed will be split into two with the Darlington Railway Preservation Society taking the northern half and the Trust having the Southern end. In the short term it is planned one of these roads will be used by the North Eastern Locomotive Preservation Group who currently occupy the other half of our existing Works building.



The original Peachey shed at the Whessoe Road site, visible for the first time in many years.



One of the roads in the shed that the Trust will have access to.



Rails delivered for the tracklaying.

Another major milestone was the delivery of 3.6 km of flat bottom rail, recovered from the Northumberland Line Project. Secured at half the rate for scrap steel this discharges our commitment for plain line for the new site. This volume of rail hints at the full extent of the site and the supporters attending the Annual Convention saw an aerial view of our new home to appreciate the size of our new operation. Sourcing of the remainder of the track, including eight sets of points, continues and alongside finalising the track design for the site. This is ahead of engaging potential track laying partners early in the New Year and laying beginning in the early Summer. If you are able to support the ‘P-Way Gang’ with any size of donation, it is hugely appreciated. The drive to raise the £75k to cover the initial components and delivery is now underway and has reached £23k so far. **tcc**

V4 NEWS

Announced at the AISLT Annual Convention on Saturday 22nd October, following consultation with supporters, the name *Highlander* has been met with wide approval. At its Silver Jubilee Convention in October 2015, The AI Steam Locomotive Trust revealed that it would follow its Peppercorn class A1 No. 60163 *Tornado* and Gresley class P2 No. 2007 *Prince of Wales* with the construction of further extinct LNER steam locomotives, to include a Gresley class V4.

AISLT Chairman, Steve Davies MBE, commented, “The name *Highlander* perfectly matches the history of the V4 class, and we look forward to enjoying an emotional and spiritual rapport with Scotland’s railway scene and with the country’s proud people, as well as operating in all other parts of Great Britain”.

Following the tradition of our locomotives having proud military links, the Trust looks forward to a strong relationship with the Highland Regiments, who have already responded positively. Sir Nigel Gresley’s last design, once described as ‘Gresley’s Rolls-Royce’, the V4 will be a locomotive that can travel almost anywhere on the UK rail network, something our other locomotives cannot do due to their size. A versatile and economical locomotive, No. 3403 *Highlander*, will be the third LNER V4 Class locomotive and will be adapted to run on today’s railway.

No. 3403 *Highlander* will benefit from:

- Roller Bearings on all axles
- Air braked with vacuum capability
- All welded boiler
- Electrical system as per other locomotives
- Increased water capacity

Original drawings have been scanned to enable 3D computer aided design to start, and the Trust has started to acquire materials for the project. Subject to review

by the Council of Trustees it is hoped to officially launch the new project with a Founders Club in Spring/Summer 2023. Although there is currently no specific appeal open for *Highlander*, any donations made towards it will be ring-fenced for the project. The next step will be to launch ‘The Founders’ Club’ to fund the early stages of the project. More announcements will be made over the next few months as the project builds up steam. **TCC**



At the Trust’s Annual Convention, renowned railway artist Chris Ludlow unveiled a superb painting of No. 3403 *Highlander* at work in Scotland.

•WORKSHOP NOTES.



In September DLW was visited by two splendidly dressed railwaymen from Belgium. Jan Van Frausum and Gyula Fekete are hosts at Belgium’s new railway museum, ‘Train World’ in Brussels. Coming from a railway family (his daughter now works for SNCB), Jan started as a tracklayer with SNCB in 1977 before becoming a guard in 1979, a role he filled until he retired in 2014. Gyula started in 1981 as guard in Brussels Midi Station, always working morning shifts spending a lot of time on the Luxembourg and Aulnoye route. In 2013 he started working for Thalys, the high-speed trains between Brussels - Paris - Köln - Dortmund - Amsterdam. He retired in May 2018. Both had become involved in running main line steam trains in 2012 before starting as volunteers at the newly opened ‘Train World’ Museum in 2015, they now fill the role of roving ambassadors for the museum, donning SNCB uniforms from the 1930s and 1950s.

Belgium’s railway network is the oldest on the European continent. Located in the old Schaarbeek railway station, ‘Train World’ is home to many treasures: from the oldest steam locomotive conserved in Belgium, the *Pays de Waes*, to the Type 12 streamlined steam locomotive. Visitors can also gaze upon genuine and sumptuous royal cars or enter one of the stainless steel TEE cars, the predecessor of the high-speed trains that now travel through Europe. **TCC**

FROM THE ARCHIVES by Graham Langer

Autumn 2002 – In September an order was placed with the well-known and highly experienced firm of John Hesketh & Son, Castlecroft Ironworks, Bury, Lancashire, for some £8,000 worth of motion parts, the most expensive items being the two eccentric rods. Also ordered were the six trunnion plates and sets of three of combination levers, union links and radius rods. The axleboxes were finally bolted together, under the eyes of representatives of Timken and The Engineering Link, our VAB. At the same time the bogie manganese steel liners were permanently fitted.

Autumn 2007 – By the autumn *Tornado*’s boiler cladding was largely complete, the hopper ashpan was trial fitted both to the frames and the firebox foundation ring which gave us a sporting chance that it would go onto the locomotive with the boiler fitted without fouling anything. North View Engineering in Darlington had finished the tender tank, Riley & Son at Bury had completed assembly of the wheelsets and our major sponsor William Cook Cast Products had delivered the finished axleboxes. Ian Howitt was making the rest of the spring gear, with material changes and small design changes agreed to eliminate forgings, which, with the demise of Heskeths, had become very difficult to obtain.

Autumn 2012 – Having completed 58,000 miles of main line work, *Tornado* had retired to Southall for winter maintenance and repainting into BR express passenger blue. In an echo of the current overhaul, part of the work prescribed included the fitting of GSMR radio equipment, requiring a lot of work by Rob Morland. At that year’s Convention we marked the passing of Malcolm Crawley, a key figure in the early days of the Trust but were also able to report a healthy financial situation, despite the country’s economic woes, covenanted income was steady at £200,000 per annum and the bond, issued to pay for the boiler, was being steadily paid off. The Convention was also significant for the presentation by Owen Evans of Delta Rail, who had built the computer model of *Tornado* and was now developing the P2 model. Owen explained the process

and how his company had used data obtained from *Tornado*’s test runs and the Network Rail track recording train to facilitate this and contrive a computer model of the P2.

Autumn 2017 – In TCC 48 we were able to announce that October had been a record-breaking month for fundraising, with over £115,000 donated, following a very successful Convention and the launch of ‘The Cylinder Club’ which had shot to over 50 members in a couple of weeks. In other news, we had started to forge our very strong relationship

with HMS Prince of Wales and members of the ship’s company visited DLW and attended the Convention. *Tornado* had continued to make headlines since ‘PADDINGTON 2’ had been released in cinemas and we were able to reveal some of the work that enabled our A1 to play a starring role in the film, even if most of the footage had been shot in Leavesden Studios without the locomotive turning a wheel! The current Prince and Princess of Wales had also been introduced to our locomotive when she hauled a special train to launch the film. **TCC**



Jonathan Brown (Samuel Joslin) and Mrs. Brown (Sally Hawkins) set out to save Paddington in the film.

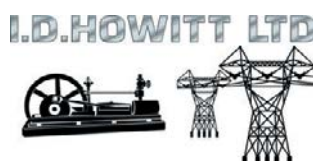


The Prince of Wales (then Duke of Cambridge) talks to passengers on the train.

The AI 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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Darlington Locomotive Works is normally open to the public on the first and third Saturday each month (10am – 3pm).

Access to the works is via 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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