



60163 TORNADO
New Steam on the Main Line



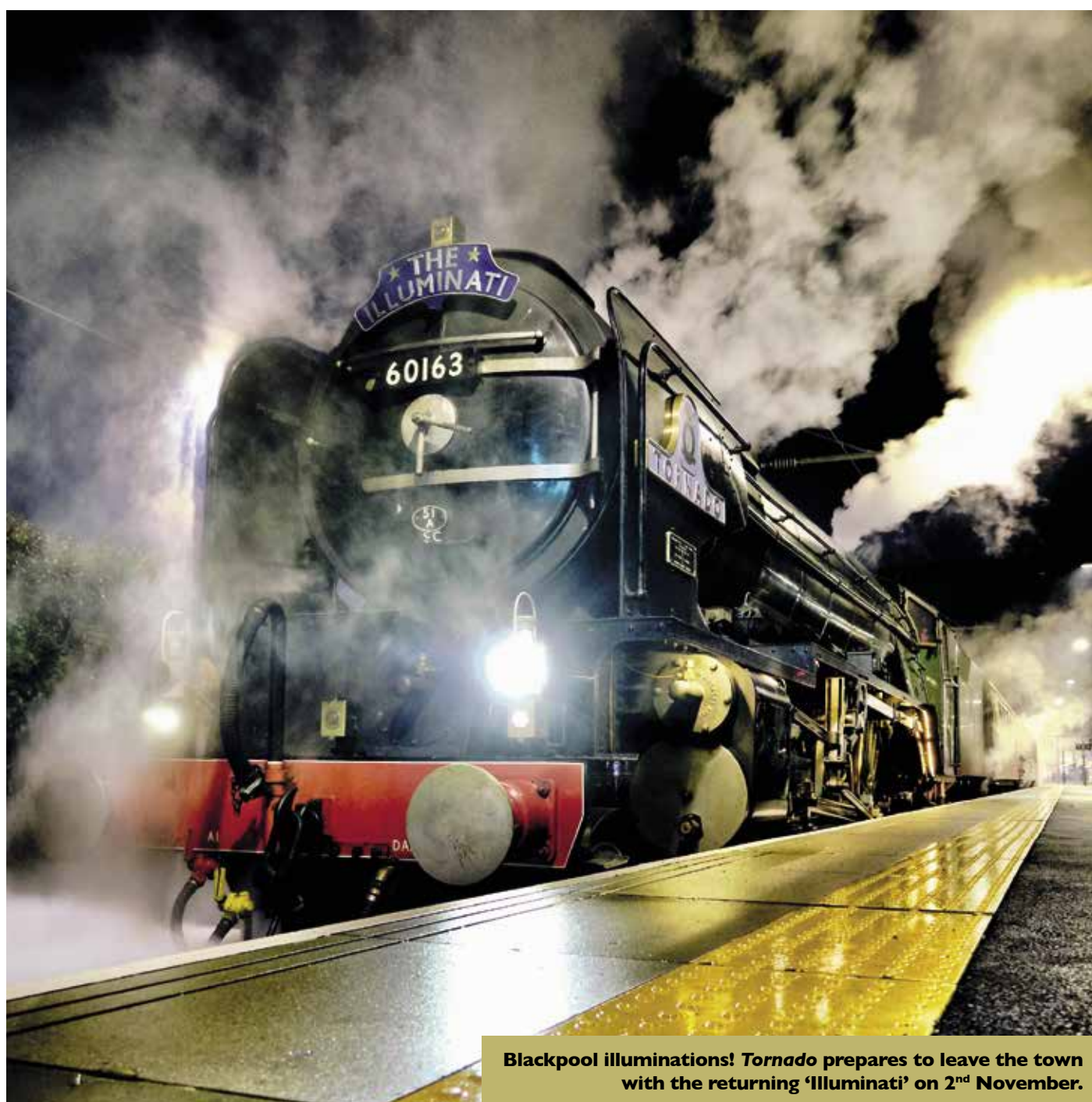
2007 PRINCE OF WALES
Basingstoke's Most Powerful Steam Locomotive



3403 ANON
Recreating Gresley's last design

THE COMMUNICATION CORD

No. 55 Autumn 2019



Blackpool illuminations! *Tornado* prepares to leave the town with the returning 'Illuminati' on 2nd November.

Warren Hamabuss

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2019 CONVENTION

by Graham Langer

The AI Steam Locomotive Trust's 2019 Convention was again held at the Kings Hotel in Darlington and was, as ever, very well supported with over 180 people able to attend. President of the Trust, David Champion, opened proceedings, welcoming Covenantors and introducing the team before announcing the appointment of Steve Davies, MBE, to the Board as a new Trustee (see separate news item on page 6).

Huw Parker then updated the assembled company with a review of recent tours and activity with *Tornado*. Despite some small challenges it has proved to have been a successful summer season for No. 60163 and he highlighted the continuing close relationship with the crew of HMS Prince of Wales, some of whom have been able to join us on 'The Aberdonian' this year. The year started at the Nene Valley Railway



Huw Parker.

and following *Tornado's* resumption of main line tours the locomotive performed well, despite the vagaries of operating on Network Rail which threw up more than a few challenges during the season.

Graeme Bunker-James then conducted a commercial review of tour operations, emphasising the usefulness of repeat itineraries such as 'The North Briton' and 'The Aberdonian' and concluding that while the latter was a great success the former needed further refinement. We managed to include some surprises during the year, not least of which was 'The Mad Hatter' which proved to be a real crowd-pleaser and we will try to ensure that we continue to break new ground with future tours. A big development on the tours side has been the opening of our own booking office in Darlington. Graeme thanked UK Railtours for their help and cooperation in the past and predicted that running this facility 'in house' would be cost effective and further enhanced by a new ticketing system and further website developments. Graeme took the opportunity to announce some new tours for 2020 as part of a programme that



David Champion.

will continue to evolve over the coming months including our first outings with The Railway Touring Company and a return to running with Steam Dreams as well as visits to preserved lines such as The Wensleydale Railway, Barrow Hill and The Nene Valley. Tours for 2020 will include runs from York to Edinburgh and Stirling, Darlington to Liverpool and Birmingham to Glasgow.

Turning to the question of providing our own train in future, Graeme revealed that delays in the cascade of Mk3s had enabled a review to take place, noting that our association with the likes of West Coast Railways has broadened the supply chain and reduced the pressure on the Trust to make its own arrangements. So, the objective remains and work on funding this continues with a decision expected in the next twelve months. Touching on merchandising, Graeme paid tribute to



Graeme Bunker-James.

our team who have weathered the period when the locomotive was out of traffic with stoicism and who are improving the service and range continually – expect to see new products soon including dedicated Covenantor/Supporter exclusives!

Mark Allatt took over from Graeme to look at marketing and fundraising (see his detailed report on page 30) as well as media relations and advertising, noting that



Mark Allatt address the audience at the 2019 Convention (David Champion pictured right).

we continue to gather good press coverage for both *Tornado* and *Prince of Wales*, as well as the on-going development of our own websites and social media platforms, the production of our own tour brochures and a lot of direct marketing. Trust events have featured our annual Convention, a Spring Day Out for Covenantors, some heritage railway visits and for the P2, numerous Roadshows and open days at Darlington. In addition to targeted mailings and eshots, we have continued to deliver *The Communication Cord* quarterly and the monthly ebuletins *The Tornado Telegraph* and *The Mikado Messenger*.

Looking to the future Mark noted that we have 1050 Covenantors generating an annual income of over £170,000 but insisted that we cannot afford to be complacent and need to keep adding new Covenantors, a key ingredient of which is the Tornado Team for younger supporters which now numbers around 100 members – don't forget that a Tornado Team membership is an ideal Christmas present! Legacies are plying an increasing role in generating funds for the Trust and Mark was able to tell his audience that major UK charities raise about 40% of their income this way (about £200,000 per annum if extrapolated in terms of *Tornado* fund-raising) although he was able to reveal that we have received over £100,000 from this source in the last year. The 'I ♥ 60163'

appeal is still open with 47 places out of an anticipated total of 100 already filled. In conclusion Mark urged supporters to recruit more Covenantors by talking to a friend, travelling behind *Tornado* or signing up to the 'I ♥ 60163' appeal.

Turning to fundraising for *Prince of Wales*, Mark reflected that we had already raised over £5m for *Tornado* and the support coach so raising a similar sum for No. 2007 should be well within our scope, especially given that of the various 'clubs' launched to finance sections of the construction 'The Founders Club' had raised over £450,000, 'The Mikado Club' and 'The Cylinder Club' fully subscribed, the boiler and motion clubs well on their way and 'Dedicated Donations' having raised around £400,000. The project now has around 920 signed-up Covenantors but if we are to get it over the line in the next couple of years we may have to look at other sources of funding such as a bond issue or grants. In conclusion over £2.1m has been spent, £2.7m raised and £3.4m pledged of the required £5m total needed but this can be accelerated if Covenantors bring a friend to a P2 Roadshow and enable them to join, help complete 'The Motion Club' and sign up to 'The Tender Club'.

David Elliott now took the floor for his usual 'Tour de Force' concerning the engineering aspect of the construction of No. 2007. A lot has been achieved in the



David Elliott.

past year given that we maintain a project plan running into 890 lines and several feet long when printed! The plan presently shows that substantial completion by the end of 2021 is theoretically possible but requires access to resource levels which are presently not available, this, coupled with the fundraising profile suggests that completion by the end of 2022 is more realistic. In the past twelve months the boiler has been ordered, the tender frames and tank build are well advanced, coupling and connecting rod manufacture is under way, the engine electrical trunking design is almost complete and the steam and air pipework is under way. Many parts for brakes and spring gear have been delivered and fitting, casting and machining are progressing. The design of the pony truck is complete and it is now out for quotation, the tender wheelsets are almost complete, there has been further detailed design

of fittings and pipework to support shop floor activity which has included fitting the handrails dismantling the boiler cladding.

Of the targets set at the 2018 Convention, this is the current status:

- Pony truck complete – design complete, ready for manufacture
- Boiler ordered – ordered for delivery in July 2021
- Tender tank and frames substantially complete – tank 30%, frames 60%
- Electrical trunking designed – approximately 85%
- Two air pumps overhauled for fitment – done, one lent to *Tornado*
- Pipework layout designed – around 60%
- Heavy motion partially delivered – delay in manufacture, four forgings made
- Cylinder block design complete and under construction – design around 80% complete some detail parts made or ordered
- Valve gear in manufacture – not yet started.

Some of the reasons for the apparent slippage includes *Prince of Wales* requiring a much greater amount of re-design work than *Tornado* and David being diverted to *Tornado* on several occasions, in consequence Daniela Filová has been managing the workshop and Alan Parkin has taken on more detailed design work – the design work is proving more demanding on resources than originally envisaged! David hoped that next year would see the following progress:

- Pony truck complete
- First boiler delivered, P2 boiler substantially complete
- Tender structurally complete
- Electrical trunking approaching completion
- Brake linkage complete
- Pipework layout complete, installation well under way
- Heavy motion fully delivered, coupling rods fitted
- Cylinder block fabrication nearing completion
- Valve gear in manufacture

David then conducted a detailed reprise of much of the work that has been carried out on No. 2007 including illustrations of a lot of the CAD design and Finite Element Analysis going into producing finished components, even including a movie of the workings of the internals of one of the cam boxes. Following an appraisal of the current state of the electrical installation (pun intended!) by Rob Morland and Alan Parkin and an update on the construction of the tender David gave way to Chris Walker to run through the Trust's financial position. The full engineering and electrical reports can be found on pages 24 to 29.

Chris was able to report that the financial state of *Tornado* operations had improved significantly since the locomotive had returned to traffic and that the P2 was doing well. Huw Parker and Mark Grant now took the opportunity to pay tribute to the volunteers and support crew who have made the railtour operation so successful,



Rob Morland

along with the office staff and team from the works and Tornado Steam Traction who keep the show on the road.

Graeme Bunker-James and Mark Allatt followed this with a further double-act, covering future developments such as the provision of a spare boiler and 'DLW2' as the Whessoe Road project has morphed into an integral part of the 'Heritage Quarter' development by Darlington Borough Council. Mark went on to cover planning for the V4 project, outlining the timetable and funding schedule for construction as detailed later in this edition of TCC. The morning was concluded with a question & answer session before the Convention adjourned for lunch and transfer to the afternoon section at Darlington Locomotive Works. After a fascinating tour of the Mikado conducted by David Elliott and a further opportunity to ask questions, the Convention broke up to allow 79 participants to wash and brush up for the increasingly popular dinner held at the Kings Hotel. **TCC**



Covenantors assemble with No. 2007 at Darlington Locomotive Works on the afternoon of the 2019 Convention.

EDITORIAL by Graham Langer



After a successful season with *Tornado* on the main line I am sure I am not the only one who is relieved that we have haven't been thrown too many 'curve balls' this year, even though the big railway continues to produce some interesting challenges, not the least of which was the failure of the Class 90 on the first leg of 'The North Briton', especially given that the locomotive was 'just' ten years older than No. 60163! The engineering side of our main line operations has been bolstered with fitter Ian Greenan joining Richard Pearson in looking after *Tornado* while she is away from 'home'. The team running our own railtours are getting into their stride and developing an exciting variety of tours for next year, involving new starting and finishing points as well as less well travelled routes. Please make sure you join us to experience the joy of travelling with the locomotive you helped build, remember, vouchers are available for our tours, the perfect Christmas present for those close to you!

In addition to Ian, I'd like to welcome Steve Davies to the Board. Steve probably needs little introduction and his appointment is covered in detail on page 6, I am sure he will bring a new dynamic to the Trust. The office team has been

further strengthened by the arrival of Amelia Smith as Leigh's assistant and all these additions to the team clearly show that the Trust means business and expects to grow. Obviously we are focused on the completion of No. 2007 in the next couple of years but some of us are looking beyond to 2025 and the bicentenary of the Stockton & Darlington Railway. With funding available our position in the 'Heritage Quarter' of Darlington will place the Trust centre stage when this great anniversary is commemorated and we will be proud to play a role in the celebrations.

Thinking of Christmas, please remember that numerous Dedicated Donation parts are available to sponsor. The 'DD' programme has raised a huge amount of money towards the construction of *Prince of Wales* and I am sure the team would be happy to arrange one as a present for a loved one or a friend this year. No doubt a list of new components will soon be released. No. 2007 continues to make amazing progress, especially the tender which is under construction at North View Engineering, so much so that the Tender Club is struggling to keep up with the rate of work so please ensure it is well supported. The Motion Club, however, is just 19 places from completion and it would be a terrific way to end the year if we could close that club as well. **TCC**

RAF 25TH ANNIVERSARY DINNER – Thursday 9th January 2020

We are pleased to announce a special dinner to mark the 25 years of affiliation between The AI Steam Locomotive Trust and the Royal Air Force. Join Trustees, supporters, RAF personnel and VIP guests to commemorate this special landmark.

The Anniversary dinner will take place in the Sovereign's Room at The RAF Club in London, which celebrated its centenary last year. After pre-dinner drinks we will take our seats for a fabulous meal prepared by the Club's award winning chefs. We are delighted to announce that our after-dinner speaker is writer and TV presenter Jonathan Glancey, a long-time friend of the Trust and author of the definitive work on the locomotive's construction. He is also the author of books on the *Spitfire*, *Harrier* and *Concorde* as well as seminal works on world-wide steam locomotion, architecture and travel. It is sure to be an interesting discussion on both aircraft and steam locomotive lines.

Various events have taken place with the two organisations in the last 25 years. When it was decided that the new Peppercorn class A1 would be named *Tornado* in honour of the crews and aircraft flying in the first Gulf War, a small symbol of that affiliation was the preparation and painting of the nameplates for the new locomotive and the affixing of the crests for RAF Cottesmore and the Tri-National Tornado Training Establishment which was based there. These were handed over to the Trust on 4th January 1995 at Tyseley Locomotive Works where the frames of *Tornado* were being erected, a long and beneficial relationship has endured ever since. From flypasts for *Tornado*'s naming ceremony and overflying the locomotive during the Tornado GR4's farewell event, to force development days where RAF colleagues could get their hands on the locomotive, the relationship is set to remain strong. The TTTE was closed in 1999 and RAF Cottesmore became the base for Joint Force Harrier. The Trust therefore decided to replace the crest on the driver's side nameplate with that of RAF Leeming, which at the time was the closest RAF station to Darlington where *Tornado* was being constructed. As the Tornado GR4 aircraft were being drawn down and RAF Cottesmore had been transferred to the Army, and renamed Kendrew Barracks, the Trust decided to commemorate

RAF Marham as the last base of the Tornado Force and its crest is now carried on the right hand smoke deflector. With RAF Marham now the home of the UK's F35 Lightning Force for both the Royal Air Force and the Fleet Air Arm, soon to embark on HMS Prince of Wales (affiliated to our second new steam locomotive Gresley class P2 No. 2007 *Prince of Wales*), our continued affiliation with the RAF will be a critical relationship moving forward. Working together it is not only an opportunity to bring pleasure to the public, friends and family it is also a chance to reach out to the next generation through STEM initiatives to inspire future engineers and operators crucial to both of our organisations.

Prices for this unique event are £65 for Covenantors or Club supporters, £75 for the general public. Tickets are available to Trust supporters, RAF Club members, the general public and their guests.. **Call 01325 460163 for further details and to book.** Space is limited so please ensure to book early.

We look forward to welcoming you to this celebration.

NB – Please note at time of booking dietary requirements must be provided and please bring photo ID (eg Driving Licence or Passport) with you on the evening. **TCC**



Members of the RAF with *Tornado*'s original nameplates at Tyseley in 1995.

NEW TRUSTEE APPOINTED TO THE BOARD *by Graham Langer*

Steve Davies, MBE, joins board of Trustees of the AI Steam Locomotive Trust.

The AI Steam Locomotive Trust is delighted to announce that Steve Davies MBE has been appointed to its Board of Trustees. A former Colonel in the British Army, Steve has been a lifelong railway enthusiast, and is involved in a significant number of heritage railway projects both on a professional and voluntary basis. His Army career saw him serve in a wide variety of countries, many on operations. He rose to become the Commanding Officer of his Regiment.

Steve enjoyed two tours in the Ministry of Defence in London engaged at the military/political strategic level, and his final military appointment was as Chief of Staff of a Division with responsibility for military planning across almost half of the UK. It was whilst on secondment to the Republic of Sierra Leone Armed Forces that he exercised his personal initiative to create the Country's National Railway Museum, in close cooperation with His Excellency President Kabbah, which continues to thrive today and with which he remains closely associated as President of the British charity The Friends of The Sierra Leone National Railway Museum.

On retirement from the Army, Steve subsequently served as Director of the Museum of Science and Industry in Manchester – site of the world's oldest surviving railway terminus (circa 1830) – then as Director of the National Railway Museum in York, during which time he devised, negotiated and implemented the repatriation of class A4 Pacifics No. 60008 *Dwight D. Eisenhower* and No. 4489 *Dominion of Canada* from North

America to take part in an Award-winning exhibition marking the 75th anniversary of No. 4468 *Mallard* achieving the World Record for Steam Traction of 126 mph.

Steve, who lives in North Yorkshire, is the Founder and Managing Director of The International Railway Heritage Consultancy Limited which provides a one-stop-shop for railway heritage organisations internationally, in order that they might access the skills they need to support their respective operations. Amongst its many projects, Steve's company is supporting – *Pro Bono* – the extension of the Bala Lake Railway and was heavily involved in planning and delivering a Channel 4 TV programme focusing on carriage restoration. He has also just returned from an advisory visit to Nigeria to report on improving the Railway Museum in Lagos, including an assessment of the potential to return British-built 'River Class' 2-8-2s to working order for main line use. Steve also recently visited DB Meiningen as a member of the team negotiating the purchase of two new boilers for The AI Steam Locomotive Trust.

Commenting on his appointment, Steve said, "It's a great honour be joining the Board of The AI Steam Locomotive Trust. I've worked closely with the organisation for many years and was delighted to welcome Their Royal Highnesses, The Prince of Wales and The Duchess of Cornwall on board The Royal Train to the Museum of Science & Industry in Manchester, hauled by *Tornado*, on my final day as Director. I look forward to working with the other Trustees, Staff, Volunteers and Supporters



Steve Davies.

to deliver on the Trust's promises – keeping No. 60163 *Tornado* operating successfully on the main line, completing the construction of No. 2007 *Prince of Wales*, starting work on Gresley class V4 No. 3403, and expanding the Trust's base in Darlington. I have always been attracted to exciting, ambitious and very professionally delivered projects and organisations, and in that respect I know I am going to feel very much at home with The AI Steam Locomotive Trust."

The Board of Trustees, The AI Steam Locomotive Trust, added, "We are delighted to welcome Steve Davies MBE as a Trustee. Steve is an internationally recognised and respected leader in the world of heritage railways and we are honoured that he has agreed to serve as a Trustee of The AI Steam Locomotive Trust. Steve's vast knowledge and experience will help us to continue to transform our organisation as we move towards the completion and operation of our second new main line steam locomotive, the commencement of the project to build our third, and the development of our facilities in Darlington."

TCC

AI ENGINEERING REPORT *by David Elliott*

Tornado has continued to put in some excellent performances on the summer 'Aberdonian' trains and subsequent English tours. Apart from routine examinations, there have been a few out of course repairs. During the northbound 'North Briton' train, the front air pump was noted to be "double beating" which whilst still producing air, suggested that there was a problem with its internal valve gear. To prevent possible damage to the pump, the rear pump was used on the return journey. The front pump was changed for an overhauled spare during the following week at the NRM at York. The 'old' one has since been returned to Meiningen for overhaul.

Whilst at Barrow Hill after 'The Pennine Explorer' the opportunity was taken to remove the cylinder covers to ascertain whether the liners are in a suitable condition to see us through to the overhaul in 2020/21. The good news is that they are generally in good condition and less than half worn. This has removed a significant unknown for the forthcoming winter maintenance programme.

Meanwhile work is in hand to produce a detailed plan for the

winter maintenance of both *Tornado* and the support coach which is scheduled to be carried out at Leeming Bar on the Wensleydale Railway. TCC



The refurbished air pump which was fitted to *Tornado* after 'The North Briton'.

Richard Pearson

Featuring new
100mph steam locomotive
No. 60163 *Tornado*
Star of Top Gear and Paddington 2

THE
ABERDONIAN

NEW DATES ANNOUNCED FOR 2020

- Thursday 23rd July
- Thursday 30th July
- Thursday 13th August
- Thursday 20th August
- Thursday 3rd September
- Thursday 10th September

Departing Edinburgh Waverley station
at around 09:30hrs for Aberdeen,
returning at around 20:30hrs

Bookings taken via telephone
or online on 01325 488215
or alsteam.com/aberdonian

Stephen Millership

TORNADO ON TOUR *by Huw Parker*

‘THE ABERDONIAN’ – 7TH SEPTEMBER 2019



Glyn Lewis

With skies clearing *Tornado* crosses the Arbroath Basin Viaduct.

The last of our 2019 ‘Aberdonian’ Series ran on Saturday 7th September. Since arriving in Scotland, *Tornado* had been stabled at the Scottish Railway Preservation Society Headquarters at Bo’ness and we are indebted to both staff and volunteers for their support and assistance in helping to ensure the locomotive was maintained and serviced throughout our stay.

The Edinburgh-Aberdeen route is certainly spectacular and crossing the Forth Railway Bridge early after departing Edinburgh sets the scene for the wonderful scenery to come. Despite not being able to cross the Tay Bridge due to *Tornado*’s axle loading weight, the alternative route via Perth and Invergowrie offers stunning views of the Firth of Tay and its long bridge spanning the estuary. Beyond Dundee, the railway line is rarely far from the coast and the scenery just continues to inspire. There have been some outstanding photographs



Michael Denholm

Tornado arrives at Perth in the pouring rain on 31st August with ‘The Aberdonian’.

and videos of *Tornado* working hard throughout the route and we are already looking forward to bringing *Tornado* back to Scotland next summer.

At Aberdeen, we have been equally well supported by the volunteers of the Ferryhill Railway Heritage Trust. Our frequent visits to Aberdeen this summer have enabled them to fine tune the servicing and turning of the locomotive at Ferryhill. Watering using a vintage Green Goddess fire engine and turning *Tornado* on their refurbished turntable has become a popular spectator activity, with many passengers making their way from the station to watch.

On our last run, a new batch of coal had left the fire full of ash and clinker, leading to a decision to bail out what was left and relight it in preparation for the return run. With volunteer help, the ash and clinker were removed and taken away by wheelbarrow and dry wood scavenged to relight the fire. Despite



John Come



Michael Denholm

Above: *Tornado* pictured here at Arbroath - approaching and getting ready to leave the station.



Roger Esson

the additional work involved at Ferryhill, *Tornado* was ready in good time to set back into the station and whilst the departure was slightly delayed, we arrived back into Edinburgh Waverley a few minutes early. That evening, *Tornado* and her support coach were stabled at Polmont Depot at Joppa, before heading South to Doncaster the next day.



Roger Esson

Above centre, and above: *Tornado* passes Newmill.

TORNADO ON TOUR *by Huw Parker*

'THE NORTH BRITON' – 28TH SEPTEMBER 2019

Tornado remained at Doncaster Roberts Road after her light engine move from Scotland to run 'The North Briton' at the end of September. Three days ahead of the tour, her Support Crew began to prepare the engine. After cleaning the remains of the previous fire from the grate, the fire was lit and left to slowly warm the boiler overnight. Throughout the second day, the locomotive was cleaned and inspected ahead of the fitness to run exam on the third day. Despite exceptionally damp weather over the two days, work on the engine and support coach were finally finished and the exam completed.



Tornado slows for the speed restriction over Ribbleshead Viaduct.

The locomotive was booked to take the train north from Doncaster to Carlisle and on to Tyne Yard, with a fast leg from London hauled by an electric locomotive. We were ready in good time at Doncaster and moved the locomotive and support coach over to the station to await the arrival of the train from London. Unfortunately, it was soon evident that the Class 90 electric had developed a fault, eventually arriving over 70 minutes late at Doncaster. After some brief fault finding, the 90 was declared a failure and after a frustrating delay, we eventually removed it with *Tornado*, but by the time we were able to back onto the stock and complete the necessary brake tests, we were over two hours late leaving Doncaster.

Driver Pete Sheridan chipped away at the delay, slowly clawing back time after a pick-up at Leeds. By the water stop at Long Preston, we had made up almost 30 minutes and after losing a few minutes on the climb up over Ais Gill, we reclaimed this and more back during the dash down the other side and into Carlisle, now 97 minutes behind schedule.

Servicing at Upperby Yard could best be described as being more like an F1 pit stop with everyone focussed on turning the locomotive round in as short a time as possible. The original time allocated was already tight, but we shaved a few minutes off that and were able to return to the station smartly to depart again for Tyne Yard 95 minutes late. Unfortunately, and despite our best endeavours, we ended up following a local service from Hexham to Low Fell, adding minutes to the delay. Arriving at Tyne Yard, the Class 90 electric had been replaced by a Class 67 diesel for the return to London and *Tornado* drew forward as the delayed train headed away on its journey south. Soon afterwards, *Tornado* and her Support Coach followed as far as York, where we stabled at the Railway Museum. Sadly, we watched from a distance as a failed ballast train in the



'The North Briton' passes Lazonby.



The train passes Blea Moor.

Doncaster area further delayed the train on its journey back to London resulting in a very late arrival. We were clearly out of favour with the railway gods that weekend!

KEEPING TORNADO ON THE TRACKS *by Mark Allatt*

Keeping No. 60163 *Tornado* in tip-top working order is an expensive business as we are constantly being reminded! Whilst the profit from operating our programme of main line tours and *Tornado*'s hire fees from heritage railways and working for other rail tour promoters currently covers her day-to-day and year-to-year maintenance costs, they do not at present generate a sufficient surplus to fund her five and ten year overhauls, conservatively estimated at around £500,000 each. Therefore, it is vital for us to continue to maintain (and hopefully grow) *Tornado*'s on-going Covenant income.

The last few months have seen our net number of Covenantors continue to grow a little. Hopefully the positive profile generated by our excellent 2019/20 railtours programme will continue to help to grow this number. I would therefore urge all our existing AI



'The Yorkshire Pullman' passes Retford.

Covenantors to help us to recruit new supporters and for P2 Covenantors (around two-thirds of whom are not also AI covenantors) to come on-

board if they are able to. And perhaps each of our existing Covenantors could pledge to recruit a friend or colleague?

TCC

For more information on how you can help to keep Britain's only new-build main line steam locomotive on the tracks visit www.alsteam.com, email enquiries@alsteam.com or call 01325 460163.

TORNADO TOUR DIARY - 2019 / 2020

Below are the future operations *Tornado* is confirmed to be involved in. More details will be published on www.alsteam.com as trains are finalised. Contact details for tour companies are below.

- **Saturday 7th December** – 'The Christmas Bath and Bristol Express' – West Midlands to Bath and Bristol Christmas Markets – bookings through Tornado Railtours
- **Sunday 8th December** – London to Lincoln Christmas Market – bookings through Steam Dreams
- **Saturday 14th December** – 'The Christmas White Rose' – London to York and return (*Tornado* from London to York, Union of South Africa from York to London) – bookings through The Railway Touring Company

2020

- **21st March** – 'The Edinburgh Flyer' – York to Edinburgh and return with pick-ups at Durham and Newcastle – bookings through The Railway Touring Company
- **Saturday 4th April** – 'The Fen and Fells Flyer' – Cambridge to Carlisle – bookings through Tornado Railtours
- **Saturday 2nd May** – 'The Cumbrian Explorer' – Darlington to Carlisle – bookings through Tornado Railtours
- **Saturday 9th May** – 'The Jorvik Express' – Liverpool to York – bookings through Tornado Railtours

- **Saturday 6th June** – 'The Pennine Explorer' – Leicester to Carlisle and return – bookings through Tornado Railtours
- **Saturday 18th July** – 'The Caledonian' – Birmingham to Glasgow and return – bookings through Tornado Railtours
- **Thursday 23rd July** – 'The Aberdonian' – Edinburgh to Aberdeen and return – bookings through Tornado Railtours
- **Thursday 13th August** – 'The Aberdonian' – Edinburgh to Aberdeen and return – bookings through Tornado Railtours
- **Thursday 20th August** – 'The Aberdonian' – Edinburgh to Aberdeen and return – bookings through Tornado Railtours
- **Thursday 3rd September** – 'The Aberdonian' – Edinburgh to Aberdeen and return – bookings through Tornado Railtours
- **Thursday 10th September** – 'The Aberdonian' – Edinburgh to Aberdeen and return – bookings through Tornado Railtours
- **Saturday 12th September** – 'The Queen of Scots' – York to Edinburgh and Stirling and return – bookings through Tornado Railtours
- **Saturday 19th September** – 'The Ticket to Ride' – Darlington to Liverpool and return – bookings through Tornado Railtours

The Trust respectfully requests that anyone wanting to see *Tornado* follows the rules of the railway and only goes where permitted.

Tornado Railtours
01325 488215
www.alsteam.com/railtours

Steam Dreams
1483 209 888
www.steamdreams.co.uk

The Railway Touring Company
01553 661 500
www.railwaytouring.net

TORNADO ON TOUR *by Huw Parker*

'THE PENNINE EXPLORER' – 5TH OCTOBER 2019



The outward run nears Garsdale.

Tornado delivered a 'spirited' performance over Ais Gill for her final run over the S&C this year, with a lively departure from Doncaster and an encouraging start away to Settle Junction after the stop for water at Hellifield. Despite the late departures from Doncaster and Hellifield, the train arrived outside Carlisle ten minutes early and only increased congestion in the station area due to ECML diversions preventing an early arrival into Carlisle.



A location that doesn't often feature in our itineraries, Leeds.



Tornado makes a rousing start from Doncaster.



Tornado arrives at Carlisle.

David Robinson

Jordan Holliday

Michael Denholm



WCRC Traction Inspector Peter Kirk at Carlisle.



Paul Jameson greets passengers at Carlisle for the return leg.



WCRC driver Chris Cubitt at Carlisle prior to working the train back to Doncaster.



Colin Vickridge and Paul Davies on duty on 'The Pennine Explorer'.



The smart interiors of the coaches ready to receive passengers.



Paul Davis discusses the route with travellers.

Another swift servicing period followed, not quite the 'North Briton' pitstop of the previous weekend as the condition of the fire demanded extra attention from Support Crew members to ensure a good start for the return leg. Carlisle station was exceptionally busy, which delayed the southbound departure by 18 minutes and hopes of a good run back were further dashed by the departure of a local service over the S&C in front of us. The southbound run was therefore checked on several occasions before reaching the scheduled water stop at Hellifield. We gained some time here and were soon away again, managing to gain time back against the schedule, arriving just seven minutes late at Barrow Hill to hand the train over to the waiting Class 47 for the trip back to Leicester.

Her duties complete, *Tornado* and support coach retired onto Barrow Hill Roundhouse where a brief period of maintenance preceded her next turn of duty with the planned 'Illuminati' to Blackpool.



Happy passengers!

Right: Colin Vickridge chats to passengers aboard 'The Pennine Explorer'.



All crew and on board photos: Mandy Grant

TORNADO ON TOUR

'THE ILLUMINATI' – 2ND NOVEMBER 2019



Mike Tollett

Tornado passes Norton Bridge with 'The Illuminati'.

THE SEVERN VALLEY RAILWAY: 8TH – 10TH NOVEMBER 2019



Paul Jameson



David James

Above: No. 60163 with Remembrance Day garland at the SVR.

Left: Tornado at Bridgnorth on the Severn Valley Railway on the 9th November. TCC

• SHED NOTICES •

MICHAEL DENHOLM'S PHOTO IS USED FOR NEXT YEAR'S RBF CALENDAR

You may be interested to know that an image Michael took of *Tornado* entering Darlington Bank Top with the southbound 'Mad Hatter' on 11th May this year has been chosen for the cover of the Railway Benefit Fund's 2020 Calendar. A bit more publicity for the A1!

The R.B.F. is a charity founded in 1858 to support railway workers and their families in times of hardship, primarily providing financial support to widows and orphans to those killed on the railway. Today, the mission remains the same; although the scope and scale of the charitable work has changed to reflect the needs of current railway employees.



MASON ATTENDS THE ANNUAL AISLT CONVENTION by Peter Ritchie

Mason had been looking forward to attending the annual convention since he was invited back in the summer. Any opportunity to meet his friends and heroes at the A1 Trust is a real treat. Leigh was very kind in making sure that Mason was given every opportunity to make the most of his special trip including making sure that he spent time talking to Graeme Bunker-James. Leigh also made sure that Mason got a front row seat to listen to all of the presentations and we have never seen him concentrate for so long! We drove from Torquay on the Friday which was the day before the convention. We stayed in Piercebridge and then drove to the convention in the morning.

Here are some of the highlights from Mason in his own words, "I loved the tour of the Darlington works. I walked around with David Elliot as he gave a tour around the works pointing out all the components! I loved seeing everyone from the works again and especially liked seeing Leigh, Huw, Graeme, David and Mark who made sure I had a great time. The lunch was very tasty and we met a man called Peter who knew a lot about engineering. I was really sad when it was time to go but I'm looking forward

to seeing *Tornado* again soon. I'm also working on new fundraising plans for the P2, especially after hearing how much more money is needed to get *Prince of Wales* up and running. And after I got back home and was still missing my Darlington friends I had a surprise in the post - a *Tornado* cap! Whenever I can get it off my mum I get chance to wear it!"



Mandy Grant

Mason Ritchie with his parents.

JOHN HARRATT – AN OBITUARY by John Rawlinson

AISLT



John Harratt.

I am sorry to have to inform you of the death of John Harratt (Big John) on 1st Sept 2019. He joined the A1 covenanters early in the 90's and attended most of the conventions up to last year and was known to many in the AISLT. He used to help me prepare and give my A1/P2 presentations that I gave all over the Midlands in the past 12 years. When *Tornado* was completed, he volunteered to join the support crew whilst *Tornado* was on test at the GCR in Loughborough as well as helping to sell merchandise in the early days.

He was a keen and very good railway modeller and we built several layouts together to exhibit he also was treasurer for Lutterworth Railway Society for many years where AISLT held a road show in the early 90's which we organised.

He leaves a wife, family, friends and a big green engine.

KING'S COURIER NAMEPLATE - AT GREAT CENTRAL AUCTIONS

KING'S COURIER

Great Central Auctions

A nameplate from No. 60144 *King's Courier* recently came up for auction at Great Central Auctions. Built at Darlington, Works No 2063, in March 1949 the locomotive was named in January 1951 after the racehorse, owned by Mr J.A. Drake which won the 1900 Doncaster Cup. Allocated new to Doncaster on 8th March 1949 and later Copley Hill, Kings Cross, Ardsley and Grantham with a final five years or so back at Doncaster from where it was withdrawn on 30th April 1963 and cut up at the nearby Works. The plate failed to make its reserve and may still be unsold – contact Great Central Auctions if you are interested.

THE A1 STEAM LOCOMOTIVE TRUST IS YOUR LEGACY

You can ensure that Peppercorn class A1 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 almost 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 have the 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



Bob Hughes

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

use, we will devote your gift towards the funding 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 and our subsequent locomotives have a secure future on the main line for generations to come. **TCC**



Mandy Grant

I ♥ 60163: TORNADO'S 10TH BIRTHDAY APPEAL by Mark Allatt

It's hard to believe that No. 60163 *Tornado* has now been in traffic for over 10 years – and what a decade it has been! Throughout these years we have had many highs and a few unfortunate lows; we have travelled the length and breadth of Great Britain, hauling main line charters and Royal Trains, visiting dozens of heritage railways & centres and making countless appearances in the press, on TV and even in a movie! The nation – and indeed people way beyond our shores – seem to have taken *Tornado* to their heart.

As we all know, *Tornado*'s 10th Birthday year didn't quite work out as planned and although much of the repair costs to our locomotive and loss of earnings were covered by our insurance, unfortunately not all of these costs could be recovered. In response to the many offers of help we received, we decided to establish the 'I ♥ 60163' appeal to help close the funding gap and raise £60,163 from 100 people each donating £601.63 in up to six payments. We have already reached nearly 50% of this initial target. By donating £601.63 to our 'I ♥ 60163' appeal, you will receive:

- An exclusive 'I ♥ 60163' car sticker
- Access to view *Tornado* at all reasonable times
- The Trust's newsletters on a regular basis
- The opportunity to attend the Trust's Annual Convention
- A special 'I ♥ 60163' day with No. 60163 *Tornado*
- Your name inscribed on the Roll of Honour at Darlington Locomotive Works.

As you will read in the last issue of *TCC*, in June 2019 The A1 Steam Locomotive Trust placed a £1m order for two new diagram 118a boilers – “an heir and a spare” – for its new Gresley class P2 No. 2007 *Prince of Wales* and a spare for both it and No. 60163 *Tornado*. This will reduce the time out of traffic for each locomotive by around four months, increase the potential revenue earned during each operational cycle and reduce the cost of their overhauls. And by ordering both boilers at once, the Trust has saved a six-figure sum. The first new boiler, to be fitted to *Tornado* during her next overhaul, will be delivered in September 2020 with the second, to be fitted to *Prince of Wales*, scheduled to be delivered from DB Meiningen in July 2021. We have therefore decided to extend the 'I ♥ 60163' appeal to fund *Tornado*'s share of the spare boiler acquisition costs.

Below you can find the form required to donate towards the 'I ♥ 60163' appeal.

Since our 'I ♥ 60163' appeal was launched at our 25th Annual Convention on Saturday 13th October 2018, 47 supporters have generously donated to the fund. With the recent 10th anniversary of *Tornado*'s legendary appearance on *BBC Top Gear*'s 'Race to the North', we would encourage those who have yet to support this appeal to consider coming on board.

For more information, please visit www.a1steam.com, email enquiries@a1steam.com or call 01325 460163.



Let's shift the speed from a sedate 47mph to *Tornado*'s historic 100mph!



Jack Bossett

TEAM GRANTHAM IN THE GREAT MODEL RAILWAY CHALLENGE

Graham Nicholas is the Trust's Professional Head of Engineering but he is also a talented model-maker, having dedicated a huge amount of time to 'Grantham - The Streamliner Years', an exhibition layout he has created to reproduce the LNER in its heyday. This year he took part in 'The Great Model Railway Challenge' on Channel 5.



Heat Finished.

I suppose it was the word 'challenge' that did it. Like many keen railway modellers, I'd watched the first series of Channel 5's 'Great Model Railway Challenge' with a mixture of intrigue and frustration. Intrigue at the whole concept of the programme – and frustration at the too often mediocre standard of modelling on show.

What persuaded me to get involved was the marked increase in attendance at subsequent model railway exhibitions, people new to the hobby coming along to see what it was all about, the presence of younger faces and families being particularly welcome. Time to play my part in promoting the hobby. Fortunately, some members from the team around my model railway 'Grantham – The Streamliner Years' were of a similar mind. We threw our hat into the ring under the name 'Team Grantham' and were fortunate enough to get selected as one of the 15 teams for 2019's Series 2.

That, it turned out was the easy part! Before long, a comprehensive set of rules was supplied together with the 'theme' for our participation in Heat 5 of



Graham Nicholas - seen here during Semi-Final Day 3 filming.

the competition – 'The Sky's the Limit'. Thereafter, there was a strict sequence of producing a design for a model railway based on the theme, the production company agreeing to it, ordering a list of equipment from the series sponsors (to defined limits), taking delivery of the equipment and undertaking a certain amount of pre-building in accordance with the rules – all in all a process that occupied about two months.

Actual filming took place at the McAlpine's Fawley Hill estate in June and



Team Grantham Heat Day 2.

July. My only apprehension in terms of working with a TV crew evaporated within minutes of arriving – the production company (rejoicing in the name KnickerbockergloryTV) could not have been more welcoming and helpful and looked after us splendidly throughout. The format for filming took place over three days, two long (10 hour) days for 'Day 1' and 'Day 2' of the build, with a final two hours of building on 'Day 3' before the arrival of family and friends for the filming of the demonstrations.

Other than the pre-build work already mentioned, all work on building the model really does take place on site and in the three days allowed. Having spent over 10 years building the 'Grantham' layout, this has the potential to be a major shock to the system! However, we got ourselves as prepared as we could be, centred around a detailed hour-by-hour plan showing what each member of the team was working on, taking into account what was practical in the time available. We were clearly working well outside our normal comfort zone.

Much to our surprise and delight, we won our Heat with our Swiss mountain-inspired layout 'Per Ardua Adastra'. Surprise that we actually managed to complete what we all considered to be an ambitious build within three days; delight that it clearly impressed the judges and audience alike – it subsequently transpired that we were the highest-scoring Heat layout, only dropping two points out of a possible 30 available, including a perfect 10 for both build quality and functionality.

And so on to the semi-final. What the TV didn't show was that we were actually back at Fawley Hill the very next day, owing to the configuration of the filming schedule! Although we had already pre-submitted a design for the theme 'Monsters, Myths, Fables and Legends', we therefore only had the previous evening to work out all the details (no time to celebrate our Heat win!). Yet somehow, we all felt super galvanised and motivated.

This time, we went for something that was about as far removed from a conventional model railway as it was possible to get. Having decided upon the legend of King Arthur and Knights of the round table as our response to the theme, we reasoned that, as that was ostensibly 700 years before the invention of the railway, there was little scope for any trains per se and so we used the basic 'trainset' railway provided as a theatre set, with the trains as 'stage hands', propelling the knights in armour in order to present a sort of miniature theatre portrayal of the legend. If anything, this received an even more rapturous reception from the judges and we won our semi-final by an even bigger margin than the previous round.

We did however come a little unstuck in the final. Choosing yet another different approach in response to the theme 'Surprise, surprise', our fairground / rollercoaster design finally proved just a little ambitious and we were piped to the post by just one point. We did however find a role for *Tornado*, masquerading as a 15" gauge Romney-esque miniature train ride.

All in all it was a fantastic experience, a once-in-a-lifetime to do something



Heat layout back at base.



Final layout complete.



Semi-Final Day3 Scene3.



completely different within the hobby. But after all being part of the AI Trust is all about challenges, isn't it?

(If you missed the series, then the episodes are available to watch on My5 catch up <https://www.my5.tv/the-great-model-railway-challenge/season-2>. Graham's 'Team Grantham' feature in episodes 5, 6 & 8

'Team Grantham' can be seen in more normal mode, exhibiting 'Grantham - the Streamliner Years' at the Southampton Model Railway Exhibition 25th/26th January 2020) **TCC**



Final layout - Tornado.



With the low evening sun casting long shadows, *Tornado* returns from Aberdeen on 7th September.

AI PROFILE - No. 60126 SIR VINCENT RAVEN by Phil Champion



Brand new at Doncaster on 1st May 1949.

The 31st AI to enter service, No. 60126 was based on the North Eastern Region throughout its life – very appropriate considering the name it was to carry. It was first noted unpainted in the Doncaster works paint shop on 15th April 1949. It emerged as works No. 2042 (and the 12th AI built there) in lined LNER apple green which one commentator has described as a startling sight in post war Britain. Indeed, it was the last Doncaster-built AI to be painted in this colour from new.

Working life for No. 60126 began from Heaton on the 27th; Heaton AIs were used on traditional workings to York, Leeds and Edinburgh. The East Coast Mail Line was traversed on most of these runs. However, we know that No. 60126 could often be found on trains using Durham coast line. On 11th June it passed Eaglescliffe at 08:58hrs with a Sunderland-King's Cross train of 14 coaches. On 29th March 1950 it left Stockton with an 11 coach Newcastle-Liverpool working. It travelled further south: back on 24th June 1949 it was seen hauling the 07:53hrs Saltburn-King's Cross through Doncaster while on 9th September the same year it arrived at King's Cross at 18:00hrs with a train from Newcastle.

Repainting into BR express passenger blue took place in July 1950 while No. 60126 was in Doncaster works for general repairs, one of four so treated that month. Previously 17 AIs had been painted in the new colours. Naming after an eminent North Eastern Railway engineer, and its final one, was performed by the Mayor of Darlington on 3rd August. This was one of six AIs named after chief mechanical

engineers of two constituents of the LNER: three from the NER and the others from the GNR. Other changes around this time were the replacement of the plain chimney by a lipped one and the removal of the Flaman speed recorder. For much of the time *Sir Vincent Raven* worked much as before with a few visits to new destinations. The first named train recorded was the up 12 coach 'Northumbrian' from Newcastle on 17th January 1951. No. 60126 was one of the earlier ones to receive BR green livery; only six had been repainted earlier and it was one of a quartet done in October. The following 3rd March found it at Sheffield Victoria. Trips down the main line were evidenced by sightings at Doncaster shed on 6th April and at Hitchin shed on 13th December. Visits further north included the 07:30hrs Edinburgh-Aberdeen train on 15th August 1953 returning with the up ECS from Aberdeen at 14:10hrs. *Sir Vincent Raven's* first logged goods working was the following month when it headed west through Newcastle on Heaton sheds class D duty. While heavy repairs were carried

out at Doncaster works there were several instances of work at Gateshead such as casual light repairs from 20th – 24th April 1953.

During general repairs at Doncaster in March 1954 tender No. 745 off No. 60126 was swapped with No. 60122's tender No. 740. The first trains to Leeds on record were the 11:00hrs on 17th September and 24th 1955. Two instances of double-heading occurred in 1956, on 16th June it hauled the 13:03hrs Newcastle-Birmingham with No. 60116 *Hal o' the Wynd* while on 8th September it brought the 08:05hrs Birmingham-Newcastle into Newcastle with A2/3 No. 60511 *Airborne*. About this time the smoke box handrail and number plate were transposed while in 1957 the later BR crest was applied to the tender. While there are a few records of named trains hauled by No. 60126 in print, a photo dated c.1958 shows it leaving Edinburgh with the up 'Queen of Scots'. Trains via the Durham coast were still worked as shown by a Newcastle-King's Cross passenger on 7th September 1958. No. 60126 hauled the Up Highlands

car sleeper on 22nd August 1959 between Newcastle and York, the train having left Inverness behind a pair of Black 5s. Main line diversions on 18th September 1960 and 23rd April found No. 60126 working through Lincoln.

After a dozen years at Heaton No. 60126 was re-allocated to York on 10th September. By now the Smith-Stone speedometer was fitted. Most workings tended to be between the capital and Newcastle such as the 17:35hrs down train on 4th April 1962. Earlier, the down 'Heart of Midlothian' was hauled from King's Cross on 13th January; 23rd June's taking of a Peterborough-Edinburgh train forward from Newcastle to its destination showed that *Sir Vincent Raven* could still travel over the border; specials and non-passenger workings began to feature as much as regular passenger turns.

Specials seen included a Brandon-Walker train on 16th June 1962 and a CTAC train at Newcastle on 3rd September. Non-passenger workings were the up seed potatoes seen at Newcastle on 3rd December; a down parcel train noted at York on 23rd March 1963 and a Healey Mills-Forth Yard goods arriving at Newcastle on 11th June. The last recorded passenger was the IN30 Glasgow-Scarborough from Newcastle on 6th July 1963 while the final goods noted was an up train seen at Pillion (Sunderland) at 19:16hrs on 8th August. The only record for 1964 was a sighting in York shed yard on 2nd May.

Withdrawal for *Sir Vincent Raven* came on 18th January 1965. In March it was sold for scrap to A. Draper of Hull. Its working life of 15 years and nine months was slightly longer than the average. It had carried seven different boilers.

This history was compiled by Phil Champion based on a database compiled by Tommy Knox and with reference to the RCTS book "Locomotives of the LNER Part 2A" as background with additional information from Richard Arden. TCC

Michael Denholm



No. 60126 at York on 4th October 1964 with No. 60143 Sir Walter Scott and Class K1 No. 62063.



No. 60126 storms away from the 'Cross on 1st August 1962.



Sir Vincent Raven, dead on York shed 2nd April 1964.



Sir Vincent Raven on shed at Gateshead, New Year's Day 1964.

Peter Townsend

Nigel Kendall

John Arnott-Brown

P2 ENGINEERING UPDATE *by David Elliott*

General

Further substantial progress has been made across the piece, with particular emphasis on the tender.

Frames

With delivery of the rectified LH slidebar bracket, both slide bar brackets and the leading boiler support have been set up in the correct positions and permanent bolting is in progress. This is not as straightforward as usual as several of the bolts pass through the flanges of the slide bar brackets and the boiler support. The presence of flanges and structure in all three components prevents location of the magnetic drill in positions to open out the holes and ream them in one operation. The solution has been to temporarily remove the boiler support and drill and ream the holes in the frame and slidebar brackets from between the frame plates. The boiler support is then re-instated and the slide bar brackets removed. The holes in the boiler support are then opened out and reamed using the holes in the frame plates as a drilling jig.

The other event has been delivery of the six single and two double spring brackets which are also being prepared for permanent fitting.

Boiler

Further design queries from Meiningen have been answered and Meiningen has started manufacture of major components for the boiler(s) including the inner and outer firebox throat plates.



Inner and outer firebox throat plates.

Cylinders

Further work on the detailing of welds on the cylinder block is underway. Patterns for the valve chest covers have been received from patternmaker John Hazlehurst and quotes for castings are being sought.



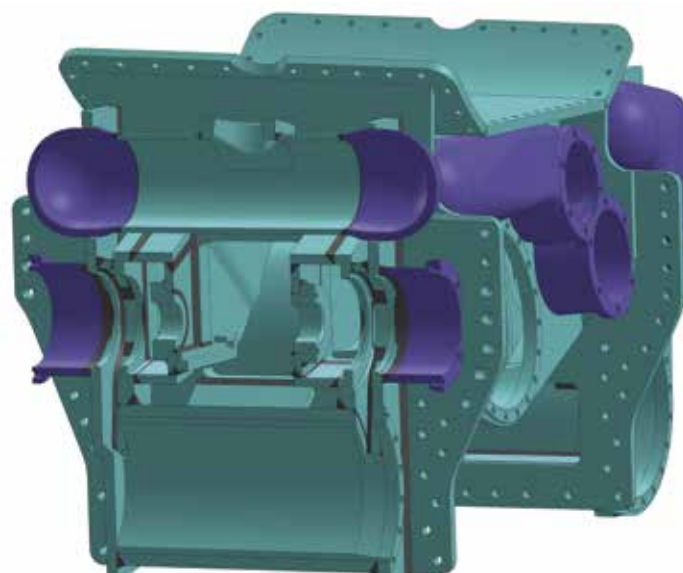
Above: LH slide bar bracket as delivered showing bolting flange onto frame.



Left hand slide bar bracket.



Driving and intermediate spring hanger brackets.

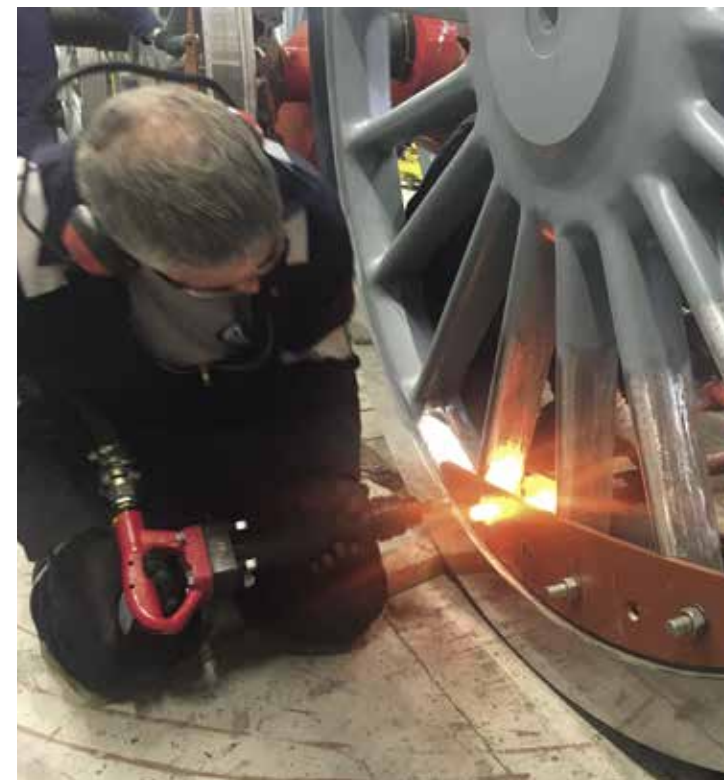


The cylinder block designed for Lentz-Franklin 'B' valves with a section through the exhaust ports showing the weld details.

Daniela Flood

Wheelsets

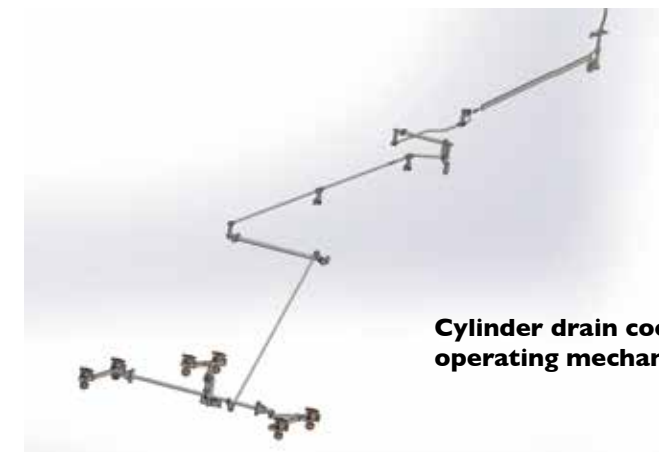
The main activity has been the temporary refitting of the wheelsets to the frame to create space for our Covenantors during the convention on 12th October. They will be removed again after the P2 Roadshow on 2nd November as they make access between the frames difficult. Work has continued on riveting the balance weights in place.



Wheelset photos: Leigh Taylor

Cylinder drain cock gear

The original P2 cylinder drain cock gear was cable operated. Whilst a simple solution, the reliability of Bowden cables is not perfect, and given the trouble-free operation of the rod system on *Tornado*, the decision has been taken to use this arrangement on 2007. Some of the components on *Tornado* can be used directly but given the differences in the cylinder layout and location of frame stays, the rodding between the cab and cylinders has had to be redesigned. Alan Parkin has been busy on this task and illustrated right is the overall layout. Profiles have been ordered and this should keep our DLW staff and volunteers occupied for some time.



Cylinder drain cock operating mechanism.

Spring gear

The coupled spring bolts, spring links and pins have been received from I D Howitt. Work is in hand with Owen Springs to design and test the modified coupled springs required for No. 2007 as the use roller bearing cannon and axle boxes with their correspondingly larger hornblocks precluded use of the original 42" long springs. 48" springs used on A4 and A1 locomotives are too long given the tight space between the axles on the P2s so a new 45" long spring is required.

Meanwhile North Bay Railway Engineering Services in Darlington have completed machining of the Cartazzi spring planks (which transmit the load from the Cartazzi axleboxes to their springs). These have been machined out of solid steel profiles rather than the original steel castings, as with them being handed, they would have required two separate patterns.



Above: George Maudsley machining oil ways in Cartazzi spring guide.



Right: Turning Cartazzi spring guide.

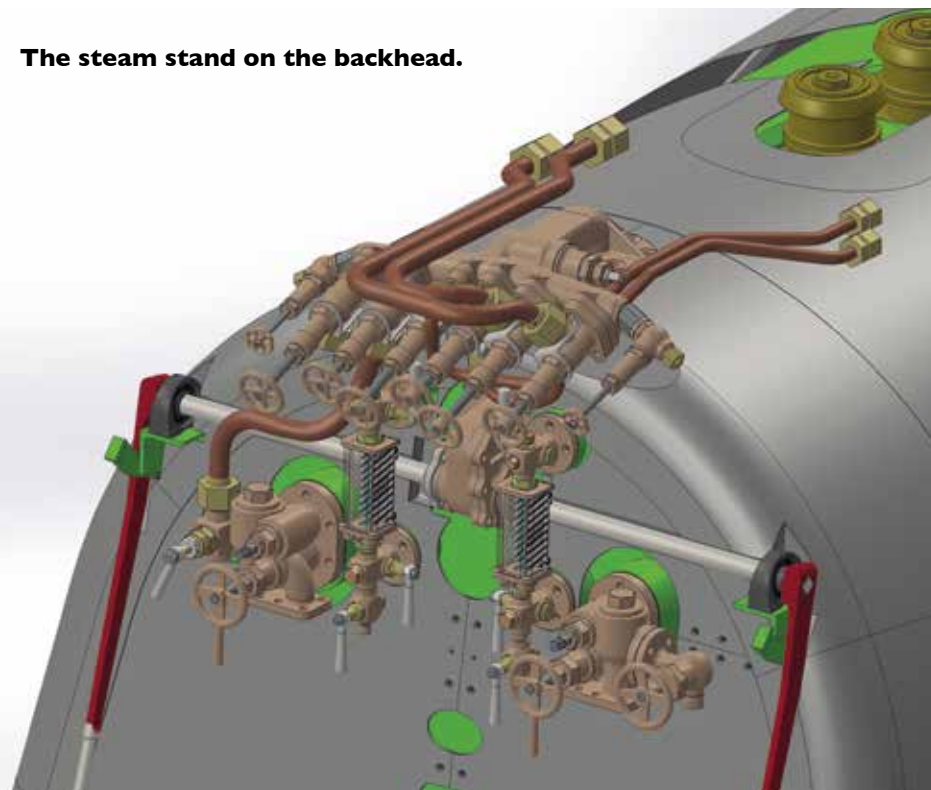
Fittings and pipework

Alan Parkin is approaching completion of the layout of steam and air pipework between the frames and around the steam stand on the back of the firebox

Following three unsuccessful attempts to appoint a manual machinist to machine the large number of fittings and small components “in house”, we have taken on Edward Laxton as apprentice machinist. Edward spent a period at DLV earlier this year as part of a one-year Heritage Lottery funded training package at Boston Lodge Works on the Festiniog Railway. He has since enrolled with Darlington College for the academic part of his apprenticeship. We have recently purchased a Cate universal milling machine with power feeds and digital readout to replace our (very) life expired Bridgeport milling machine and will shortly be replacing our large lathe to give Edward a sporting chance of producing precision work. In the meantime a call-off contract has been set up with North Bay Railway Engineering Services in Darlington for the more complex machining work. A variety of LNER style cone joint pipe fittings have been made to adapt the German threads on the air pumps.

Thanks to some good work by Graeme Bunker-James and assistance from his wife Sophie, we now have the 71000 *Duke of Gloucester* Davies and Metcalfe class K injector pattern equipment at DLV – it is shortly being sent to John Hazlehurst for refurbishing prior to having castings made.

The steam stand on the backhead.



David Elliott

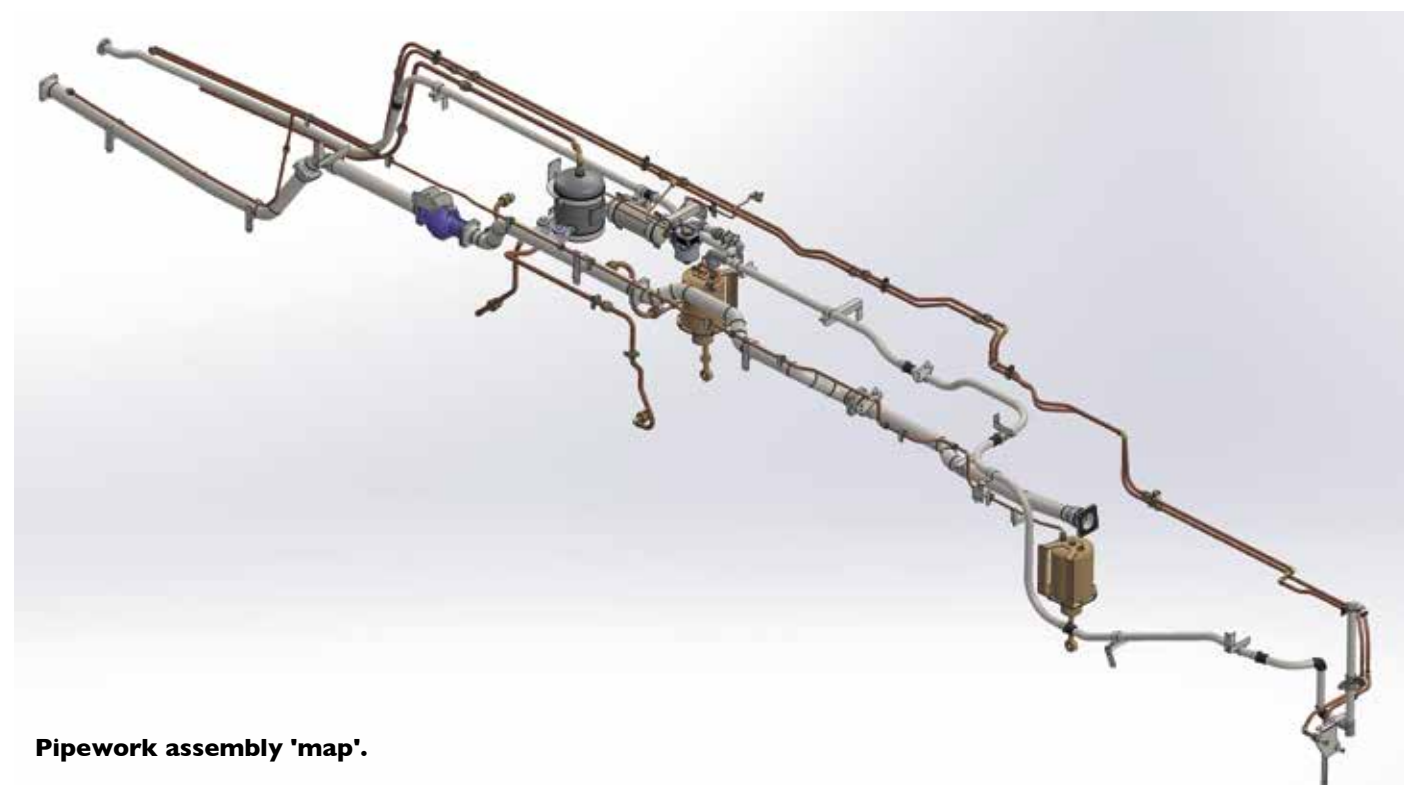


Above: Class K injector. pattern.



Right: Pipe fittings for air pumps.

Daniela Floud



Pipework assembly 'map'.

David Elliott

Tender

The pre-fitting of the tender tank baseplate to the tender frames has been completed at Ian Howitt's works at Crofton near Wakefield where a total of 96 blind nuts have been welded to the baseplate. The baseplate has since been returned to North View Engineering Solutions in Darlington where the erection of the tender tank is proceeding rapidly.



Above and top right: Erection of wash plates on baseplate.



Loading baseplate on to wagon.



South Devon Railway Engineering has delivered the tender wheelsets which will now have cartridge roller bearings fitted and then be sent for balancing.



The wheels are loaded at SDR(E)...



...delivered to DLW....



...and unloaded.

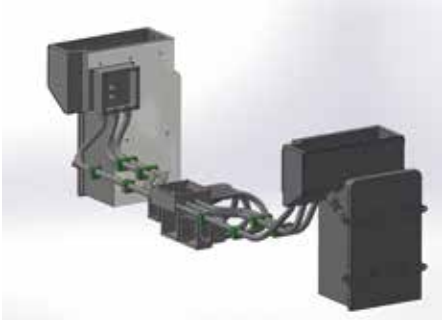


Tender wheelsets inside.

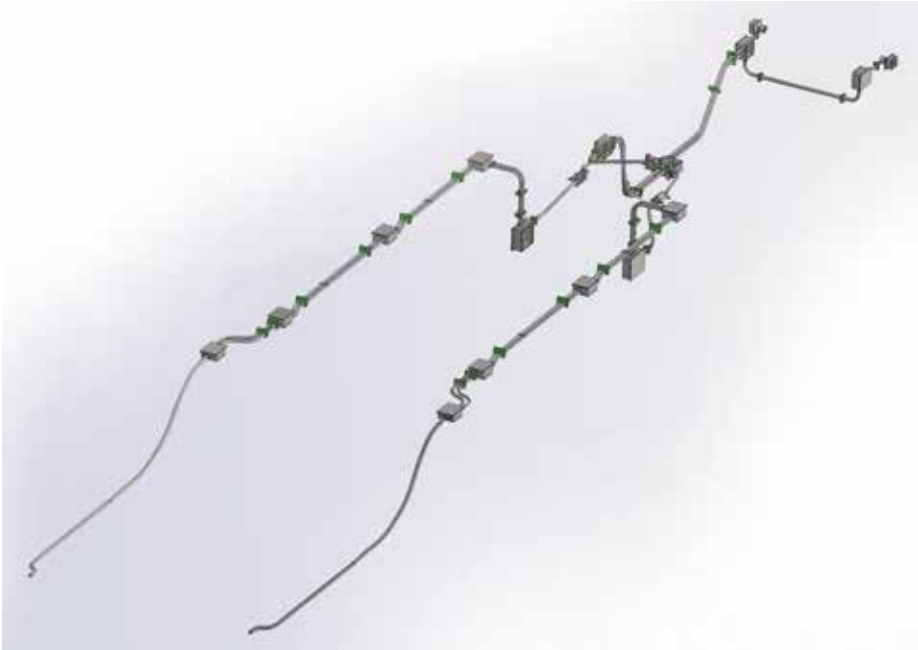
Tender Wheelsets - photos Leigh Taylor

Electrical

Following a design review with Rob Morland, Alan Parkin, Paul Depledge and Daniela Filová we have now effectively frozen a large part of the electrical system design for 2007. Alan has almost finished the trunking layout on the engine – the tender comes next. Rob is now moving on with detailed design of the power supply systems. The battery boxes have been fully welded and will shortly be trial fitted to the engine.



Main battery box assembly.



Electrical trunking assembly.

The last of the detail parts for the axle driven alternator are being delivered which will enable assembly and testing, which will involve setting it up under power for EMC (Electro Magnetic Compatibility) testing before it is to be given practical service testing under *Tornado's* 21249 support coach.



Toothed belt tensioning mechanisms.



Intermediate shaft carrier.



Alternator housing.

Workshop Management

With Richard Pearson moving over to fulfill the role of Locomotive Manager for *Tornado*, Daniela has stepped in as Workshop Manager (in addition to her Assistant Mechanical Engineer role) and is making strides in improving organisation of the workshop and planning the workload.

Accommodation Bogies

Whilst *Tornado* was based at Crewe Heritage Centre earlier this year, it came to my attention that they were in the process of scrapping some old accommodation bogies. Accommodation bogies are typically used to support vehicles undergoing overhaul whilst their own bogies are being repaired. We had been on the lookout for a set of bogies to support major components of steam locomotives for some time, and a pair of bogies from Crewe were bought for what is effectively their scrap value. Having brought them to DLW, stripping and repairing is in progress in time for their first major role to carry the tender tank when it is delivered towards the end of this year.

On dismantling the wheelsets and axleboxes, several components have CLR stamped on them and one axle has 1920 stamped on it. This would suggest that the bogies are from very early Central London Line (now Central Line) tube carriages which makes them historically interesting in their own right. They are in the process of being cleaned and painted to enable them to survive being kept outside for most of their lives. **TCC**



Accommodation bogie after grit blasting.



Above: Accommodation bogies at Crewe.



Right: Bearing brass from accommodation bogie.

P2 DEDICATED DONATIONS UPDATE by Mandy Grant

The period from Mid-August 2019 to 31st October 2019 has seen a huge increase in component sponsorship, with 40 individual components being sponsored, raising a further £61,069.00 before gift aid. This brings the total number of components now sponsored to 580! Components sponsored during this period include:

- Eight Tender Wheels
- Four Tender Axles
- Eight Tender Wheel Tyres
- Tender Duplex Vacuum Gauge
- Engine and Tender Drawhooks
- Speedometer
- Speedometer Cable
- Speedometer Generator
- Speedometer Generator Return Crank
- Cylinder Exhaust Valve Tappet Rear LH
- Leading Coupled Axlebox Castellated Nut 7
- Driving LH coupled wheel casting and proof machining - Spoke 12
- Front Pony Truck Side Control Spring
- Cladding sheet 5 RH (firebox front)
- LH Cylinder Front Cylinder Drain Cock Copper Outlet Pipe inc Bronze Pipe Union Fitting (Nut and Cone)
- LH Cylinder Rear Cylinder Drain Cock Copper Outlet Pipe inc Bronze Pipe Union Fitting (Nut and Cone)
- Locomotive Buffer beam Air Brake Hose Red
- Locomotive Buffer beam Air Brake Hose Yellow
- Various Hornblock Nut/Bolt Sets

We are most grateful to all of our supporters who have responded to the Dedicated Donations campaign so far! Now is the perfect time to be thinking about Christmas gifts, with prices ranging from one of over 1,000 driven bolts & nuts for £25, to the complete exhaust steam injector for £15,000. Why not treat the railway enthusiast in your family to something different and help us to complete this iconic locomotive! We have recently released over **200 Brand New Components** which are available to sponsor! These include the Vacuum Brake components, Air Brake Items, Super Heater Header components, Brake Shaft Items, Crosshead Oil Boxes, Exhaust Injector Pipework, Vacuum Ejector Pipework, Alternator and associated components, Cylinder Drain Cock components. Please email Mandy at dedicated.donations@p2steam.com for more information.

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@p2steam.com **TCC**

FUNDRAISING FOR No. 2007 PRINCE OF WALES REACHES TWO-THIRDS PLEDGED *by Mark Allatt*

Over £3.4m pledged, £2.7m donated and £2.1m spent of £5m target

Bob Hughes



Gresley class P2 No. 2007 Prince of Wales at Darlington Locomotive Works under construction.

Our project to build Gresley class P2 No. 2007 Prince of Wales continues to make solid progress on all fronts and we are still on target to complete the new locomotive within three years provided we can turn up the wick on our income growth. A huge thank you to all our supporters who continue to give most generously to the project.

Pledges towards building No. 2007 Prince of Wales have passed £3.4m just over five years after assembly officially started at Darlington Locomotive Works. Public interest in seeing a new Gresley class P2 become a reality sooner rather than later remains high and almost 920 people have already signed up to the 'P2 for the price of a pint of beer per week' (£2.50 per week or more) Covenant scheme since its launch in March 2014. The average monthly donation is now over £17 per Covenantor (including Gift Aid) and the projected monthly income for our P2 project from the monthly Covenant scheme is now running at around 120% of that of *Tornado* – a remarkable achievement in such a short period of time and all thanks to the generosity of our supporters. What is even more striking is that only around 30% of AI Covenantors (36% of P2

Covenantors) are regular donors to both locomotives, meaning that the overwhelming majority of the funds are being given by new supporters of the Trust.

In addition to this core scheme, funds have been raised through The Founders Club with over 360 members donated £1,000 each plus Gift Aid – target 100 people, now closed; The Mikado Club, launched in March 2016 with an initial target of 160 members to wheel the engine and extended in May 2017 to 200 members to also wheel the tender - now fully subscribed with 200 supporters pledging £1,000 each plus Gift Aid and therefore potentially raising £250,000; and The Cylinder Club, only launched at our Convention in October 2017, is now also fully subscribed with 100 people having already pledged £1,000 each plus Gift Aid and therefore potentially raising

£125,000. The Gresley Society Trust has sponsored the locomotive's distinctive front-end for which we are most grateful. You can read elsewhere in this issue of TCC where these funds have already been put to good use.

Our order in June 2019 for two new boilers – an heir and a spare – from DB Meiningen makes it more important than even that we reach our 300 members target for The Boiler Club as soon as possible. We have already recruited almost 181 people to The Boiler Club, each of whom have pledged £2,000 each to fund the boiler meaning 75% of the £600,000 target is now pledged. With the delivery of the boiler for No. 2007 scheduled for July 2021 we need five new members a month – please do consider becoming a member of The Boiler Club if you are able.

April 2018 saw the launch of The

Motion Club, established to fund the manufacture of the heavy motion for No. 2007, where we have set ourselves the challenge of raising £210,000 from 175 supporters each donating £1,000 plus Gift Aid. In just ten days we had already signed up 24 members of The Motion Club, potentially worth £30,000 including Gift Aid – a remarkable achievement thanks to the generosity of our supporters. As of the end of October 2019, we had recruited over 155 members to The Motion Club, with almost £190,000 pledged. Although somewhat delayed through no fault of our supplier, you can read elsewhere in TCC where work now underway on the heavy motion and the first motion forging was available for inspection by supporters at this year's convention. Let's get this Club over the line by Christmas!

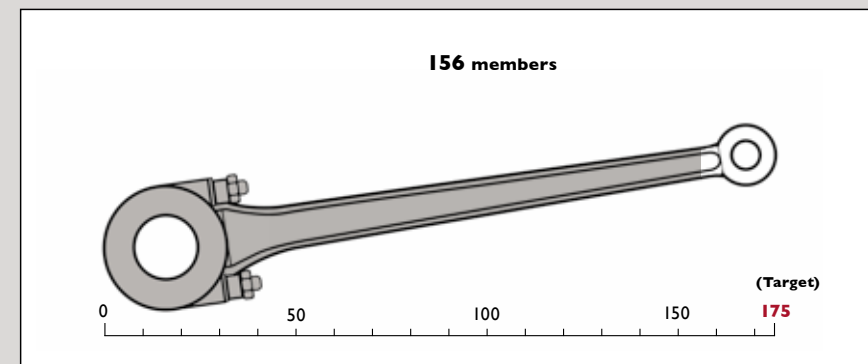
We launched The Tender Club on 8th April 2019 to raise the funds to manufacture No. 2007's tender. We set ourselves the challenge of raising £450,000 through The Tender Club from 250 supporters each donating £1,500 (plus Gift Aid) to the project in up to 15 payments of £100 by standing order. The Tender Club got off to a rather slow start but has now recruited 45 people as of the end of October which is still in stark contrast to the tender's construction! As you can read in David Elliott's engineering update, work is progressing rapidly on the tender tank, frames and wheelsets. With a fair wind we should have an almost complete tender behind the engine in DLW in the new year. However, to make this happen we need many more people to get on board The Tender Club.

Our Dedicated Donations initiative continues to generate substantial income for the project, with around £400,000 to-date from existing supporters sponsoring a variety of components. There are still a considerable number of wheeling-related Dedicated Donations still available for sponsorship, ranging from a driving wheel spoke at £600 (or from £25 per month for 24 months) to a Cartazzi axlebox casting at £1,300 (or from £50 per month for 26 months) to and driving wheel casting & proof machining at £12,000 (or from £200 per month for 60 months) – the ideal Christmas present for Mikado lovers!

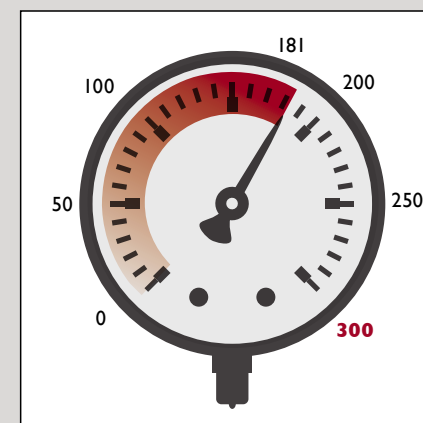
We are delighted with the level of support that the project to build Britain's most powerful steam locomotive has received since its launch. This means over £2.1m (over 40% of the total required) converted into metal, over £2.7m (54%) raised and £3.4m (over two-thirds) pledged.



No. 2007 stands outside Darlington Locomotive Works.



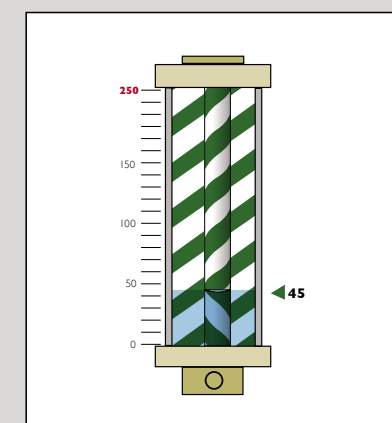
Motion Club gauge - 156 Members.



Boiler Club gauge - 181 Members.

We now have a rolling chassis and we remain on-track for completion of the new locomotive within three years. However, to maintain this rate of progress we need to raise more than £700,000 per year, which given the nature of the regular donation scheme becomes more challenging as each year passes. Last financial year we didn't quite achieve our budget of £500,000 and so we will have to work harder this year to maintain our momentum.

We would encourage all our supporters who haven't yet contributed to this exciting project to help us to



Tender Club Gauge - 45 Members.

meet these deadlines by becoming a monthly 'P2 for the price of a pint of beer a week' Covenantor, joining The Boiler Club, subscribing to The Motion Club, becoming a member of The Tender Club or taking out a Dedicated Donation. It's time to get on-board!

For more information on how you can help to build Britain's most powerful steam locomotive visit www.p2steam.com, email enquiries@p2steam.com or call **01325 460163. TCC**

David Elliott/SLT

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!**

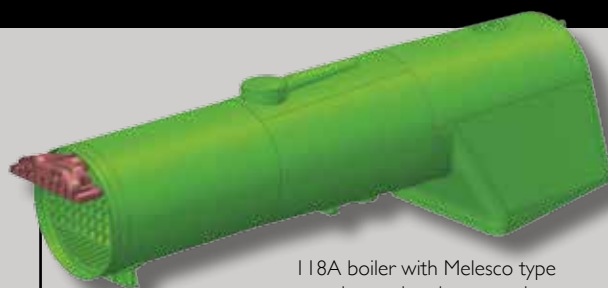


The boiler is the beating heart of a steam locomotive and to keep the construction of No. 2007 Prince of Wales on schedule for completion in 2021, we need to place the order for the boiler in 2019 for delivery in January 2021. We have established The Boiler Club to fund the construction of Prince of Wales' boiler. It is our desire to leave No. 2007 Prince of Wales debt free upon completion and 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 40 payments of £50 by standing order) – we are over half way there, having raised £440,000 so far!

Special benefits for members of The Boiler Club:

- Opportunity to buy 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
- Opportunity to join one of the teams building No. 2007
- 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 Boiler Club day with Tornado.

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



118A boiler with Melesco type superheater header as used on Tornado

No. 2007's boiler in detail

- Use of diagram 118A Tornado boiler with detailed modifications to improve overhaul life
- Interchangeable with Tornado boiler
- Tornado 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, FREEPOST RTJS-XECR-XARL, The A1 Steam Locomotive Trust, Hoptown Lane, Darlington DL3 6RQ

VOLUNTEERS! by Mark Grant



At this year's Convention, I talked about our volunteers. Obviously, not everyone reading this edition of TCC will have been at that Convention, so I thought I'd give you an insight.

Did you know that on average 20 million people a year in the UK – a third of the population, volunteer in some form or another! That's quite a remarkable number.

Within our organisation, we have volunteers in various roles. Stewards (Carriage Hosts), merchandisers, support crew, works guides, train managers, roadshow hosts, people who go out and do presentations and our Trustees. What a fantastic job they all do, without them we would simply not be able to function. Long hours and hard graft does not faze them.

I look after over 70 volunteers, mainly our on-train, works guides & events personnel. They are an absolute credit to both myself and this organisation.

We do have a good time together - particularly when things go to plan. However, life is rarely like that and at times our job can be difficult. But the way we all gel together to resolve issues is extraordinary and incredibly professional.

I still need more help, particularly on the trains and in certain areas of the country. At the moment, I really could do with people in Scotland, so if you fancy giving it a go, please let me know. We use the latest software to make signing up to trips and events easy, and also a great instant communication system. **TCC**

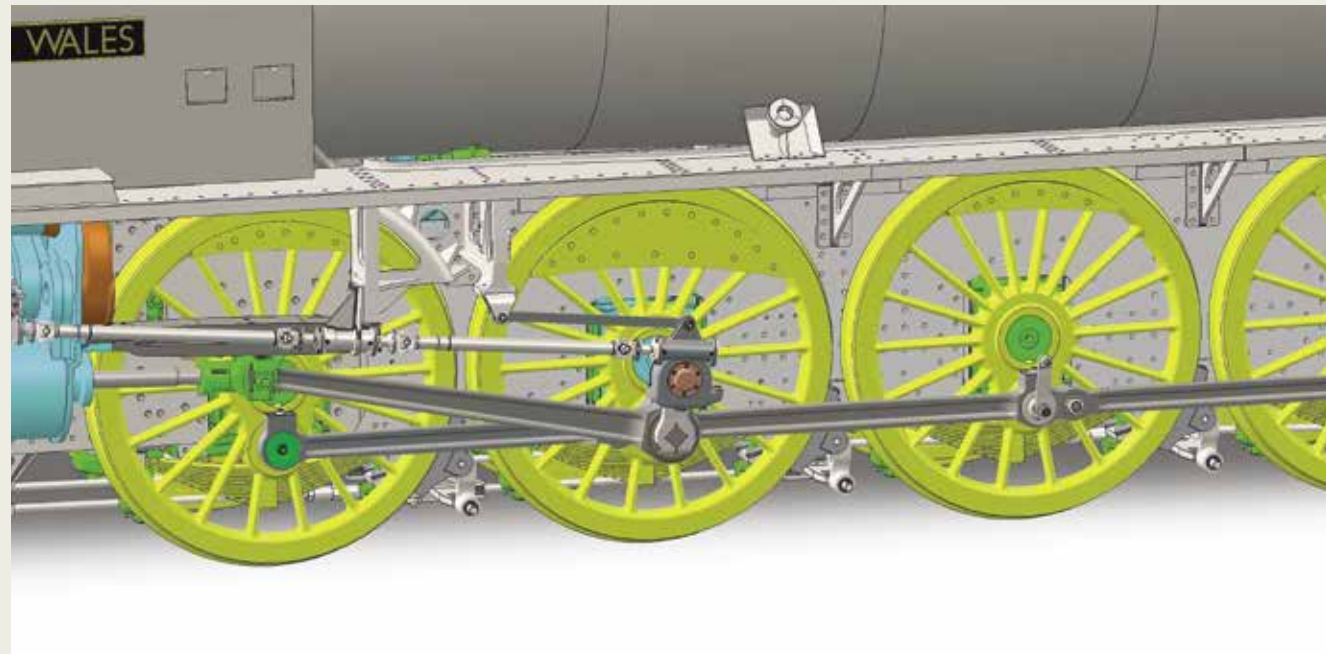
Mark Grant, Volunteer Coordinator - contact:
mark.grant@a1steam.com



Pictured here are some of the many volunteers helping to keep The A1 Steam Trust's wheels turning.

COME ON, COME ON, DO THE LOCO-MOTION WITH ME!

by Mark Allatt



3D diagram of No. 2007's outside motion.

In April 2018, The A1 Steam Locomotive Trust launched a new appeal to raise the funds to manufacture the motion for new Gresley class P2 No. 2007 *Prince of Wales*. The Motion Club was established with the aim of raising £210,000 from 175 supporters each donating £1,000 (plus Gift Aid) to the project in up to eight payments of £125 by standing order. In just seven weeks the appeal had already reached over a quarter of its £210,000 target and by the end of October 2019 we had recruited 156 members to The Motion Club, with almost £190,000 pledged.

In May 2018 we were delighted to announce that we had placed a £181,000 order with Stephenson Engineering Ltd of Atherton, Manchester for the heavy motion No. 2007 *Prince of Wales*. The order included the forging, machining and heat treatment of the nine heavy motion rods - intermediate coupling rod LH/RH, trailing coupling rod LH/RH, leading couple rod LH/RH, outside connecting rod LH/RH and the inside connecting rod assembly (including strap, gluts and strap nuts and washers) - and the combined piston and rod. Following a delay due to lack of resources our supplier, the first heavy motion forgings - the two middle coupling rods - were completed in October and one was exhibited at Darlington Locomotive Works during the convention. These are expected to be machined over next 2-3 months with the rest of the heavy motion following over the next 12 months. Orders are to follow for the motion include rod bushes, oil box covers and miscellaneous components.

In return for supporting this appeal, special benefits for members of The Motion Club include:

- Opportunity to buy ticket (seat already reserved) on one of the first trains hauled by No. 2007 *Prince of Wales*
- Reasonable access to No. 2007 at all times
- Opportunity to buy exclusive Motion Club badge

- Opportunity to join one of the teams building No. 2007
- First choice of other components to sponsor
- Special Motion Club day with *Tornado*
- Special limited-edition version (signed/numbered) of Stuart Black's drawing of No. 2007 *Prince of Wales*.

The work involved in designing and manufacturing the motion includes:

- Redesign of coupling and connecting rods to use modern material (pre-war nickel chrome steel alloy proved prone to fracture)
- Incorporation of late-pattern BR-type continuous white metal lined crank pin bearing bushes
- Use of the late-A1 design of inside connecting rod which overcame the tendency for the original design of inside connecting rods on LNER 'Pacifics' to big-end failure
- Open die forging of six coupling rods, two outside connecting rods and the inside connecting rod and strap
- CNC machining of all rods
- Manufacture of oil box lids, coupling rod knuckle pins, nuts and washers and bearing bush keys
- Casting of leaded gunmetal and phosphor bronze castings of crank pin bearing bushes
- Machining and white metalling of bearing bushes
- Fitting oil box tops
- Assembly of bearing bushes to rods
- Polishing rods.

With fewer than 20 places still remaining in The Motion Club, now is the time to come on-board and help No. 2007 to locomote!

To become a member of The Motion Club, email enquiries@p2steam.com, call 01325 460163 or visit www.p2steam.com for more information. **TCC**

Covenantors' Diary by Leigh Taylor



We welcomed 180 Supporters and their guests to our 2019 Convention at the Mercure Kings Hotel and DLW. Thank you to all who came to see how well *Tornado* has been performing and the build of *Prince of Wales* is progressing.

How we keep in touch with you: We send *The Tornado Telegraph* and *The Mikado Messenger* as monthly email newsletters and *The Communication Cord* by email and/or by post on a quarterly basis. If you wish to update your preferences about what you hear about and how you hear from us, please inform us by 01325 460163 or enquires@alsteam.com.

Covenantor Cards will be sent out in January 2020. So that we can send them we would appreciate you informing the office if there have been any address changes - call 01325 460163 or enquires@alsteam.com.

SAVE THE DATE:

Saturday 26th September 2020 - Annual Convention. Invitations will be sent out in July 2020.

Annual Convention 2019 raffle prize draw winners:

1st Prize - Table for two in First Class Dining on a *Tornado* Railtour - Mr Robinson

2nd Prize - 2 x First Class tickets Non-Dining on a *Tornado* Railtour - Mr Myles

3rd Prize - 2 x Standard Class Tickets on a *Tornado* Railtour - Mr Wolsey

5 x Prizes - 'Tornado 10 Years in Steam' poster - Mr Wakefield, Mr Findley, Mr Marter, Mr Irons, Mr Holdsworth

5 x Prizes - 'A Giant Resurrected' poster - Mr Cooper, Mr Osborne, Mr Cook, J Day, Mr Kiddie **TCC**

P2 ROADSHOWS 2020 by Mark Allatt

Following on from the success of our 2018 and 2019 Roadshow programme, we are continuing the Roadshows in 2020 with a series of presentations on the project to build new Gresley class P2 No. 2007 *Prince of Wales*. Each presentation will feature key team members including Mark Allatt and/or David Elliott and will cover the background to the project, progress to-date, future plans and details of how to get involved. We would encourage you to attend one of these Roadshows and bring along some friends and family members who would be interested in hearing about the project. The two hour presentations will start promptly at 11:00hrs and run until 13:00hrs* on each of the days listed here and are open to existing supporters and interested members of the public.

NEW 2020 ROADSHOW PROGRAMME

- **18th January** - Darlington Locomotive Works
- **29th February** - London Transport Museum, Covent Garden, London
- **21st March** - Great Northern Hotel, Peterborough
- **18th April** - Darlington Locomotive Works
- **16th May** - Barrow Hill Roundhouse, Chesterfield
- **23rd May** - Nene Valley Railway, Wansford
- **6th June** - Hallmark Hotel, Carlisle *Please contact the office for timings.
- **4th July** - Darlington Locomotive Works
- **23rd July** - Jurys Inn Aberdeen, Aberdeen *Please contact the office for timings.
- **22nd August** - Darlington Locomotive Works
- **3rd October** - Darlington Locomotive Works
- **10th October** - Great Northern Hotel, Peterborough
- **21st November** - Darlington Locomotive Works

For more information on the P2 roadshows visit www.p2steam.com, email enquiries@p2steam.com or call 01325 460163. **TCC**

THE RACE IS ON TO GET UP STEAM! by Mark Allatt

In June 2019 the starting gun was fired with the order of two new boilers from DB Meiningen - and we now have just 24 months to raise all of the funds necessary to pay for No. 2007's boiler - that's more than one new member recruited to The Boiler Club every week for two years! By the end of October 2019, The Boiler Club fundraising campaign had recruited 60% of its target membership with pledges of over £440,000. Launched in October 2014 to raise the £600,000 needed to pay for the manufacture of the boiler, The Boiler Club now has over 180 members who have each donated or pledged £2,000 (plus Gift Aid).

Reaching the 60% point in the funding of No. 2007 *Prince of Wales*' boiler through The Boiler Club marks a significant milestone in the project to build Britain's most powerful steam locomotive. 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 three years we need to take delivery of the new boiler in July 2021.

To become a member of The Boiler Club, email enquiries@p2steam.com, call 01325 460163 or visit www.p2steam.com for more information. **TCC**

PROJECT TO BUILD OUR THIRD NEW STEAM LOCOMOTIVE GETS UP STEAM

by Mark Allatt

The A1 Steam Locomotive Trust has placed an order on its Darlington Locomotive Works for the construction of the third yet-to-be-named Gresley class V4 No. 3403. This will be the third new LNER-designed steam locomotive to be built by the Trust. It also announced that it had made significant progress in the pre-launch phase of the project which is planned to take place in spring 2020.

The order for new Gresley class V4 No. 3403 was placed with the Trust's Darlington Locomotive Works on the 80th anniversary of the original order No. 355 for two class V4s which was placed on the LNER's Doncaster Works in October 1939. If the design had been perpetuated by the LNER it is likely that significant numbers of class V4s would have been built at the original LNER Darlington Locomotive Works, which went on to construct 60 of the replacement Thompson class B1 4-6-0s.

The A1 Steam Locomotive Trust has started the process of scanning 366 original Gresley class V4 drawings from microfiche into the Trust's CAD system. These drawings were recently acquired from Malcolm Barlow, a Doncaster scrap dealer who launched the now defunct Gresley V4 Society in 1994 to build a new example of the class.

Component acquisition in advance of the start of construction continues on an opportunistic basis. The Trust has taken delivery set of cab side window frames made for use on No. 3403 by Colin Vickridge, a long-standing supporter and volunteer with the Trust. Colin also provided the cab side window frames for *Tornado* and *Prince of Wales*. A speedometer from ex-LMS Jubilee No. 45657 *Tyrwhitt* (withdrawn in 1964) has also been acquired by the Trust for eventual use on No. 3403.

Other progress to date now includes: Trustee agreement to fundraising strategy and proposed project timeline: it closely follows that used to fund the building of No. 60163 *Tornado* and No. 2007 *Prince of Wales*, which will hopefully leave the latter debt free on completion

Sign-off of the high-level specification for No. 3403 - although just two in number, the class V4s were very successful in traffic with no known design and development problems

Acquisition of 366 original Gresley class V4 drawings - Graham Nicholas has made significant progress reviewing and cataloguing these drawings in advance of their scanning into the Trust's CAD system

Purchase of a complete set of fully-certified tyres for the new Gresley class V4's pony, Cartazzi and 5ft 8in driving wheels from David Buck, owner of Thompson class B1 4-6-0 No. 61306 *Mayflower*, along with a chimney, two BR class 08 shunter

speedometer drive generators and two air pumps of Finnish origin for use on No. 2007; the tyres were originally manufactured in South Africa in the late 1990s for Malcolm Barlow and the other components salvaged from Doncaster Works on its closure

Delivery of 12 Tender Spring Hooks from a closed die forging to an original LNER drawing; this was part of a much larger order placed by Network Rail with Unilathe of Stoke-on-Trent for replacement components for its LNER 4,200-gallon tender-based snowploughs which has been piggybacked on by AISLT for its new Gresley class V4 and the project building a new Gresley class B17, therefore considerably reducing the unit costs.

Collaboration with The Gresley Society Trust - which funded the smokebox for No. 2007 *Prince of Wales* as part of the fulfilment of legacy request - to manufacture the shared 5ft8in driving wheel pattern for the new Gresley class V4 No. 3403 and the Gresley Society's Great Northern Railway Gresley class N2 No. 1744; the class N2, which is 100 years old in 2021, is currently under overhaul and requires two replacement driving wheels; the production of the pattern will be project managed by AISLT and funded by the Gresley Society, with its first use being for No. 1744.

The creation of a new subsidiary, The V4 Steam Locomotive Company Limited, of The A1 Steam Locomotive Trust to carry out the building of new Gresley class V4 No. 3403 as part of the preparations for the formal launch of the project

Although there is no specific fundraising appeal open for No. 3403 yet, any donations made towards it will be ring-fenced for the project. It is currently anticipated that the formal launch of the V4 Project will be in Spring 2020 when The Founder's Club will be established to raise the first £350,000. This will be used to acquire all of the components needed to assemble the engine's frames so that when No. 2007 *Prince of Wales* leaves Darlington Locomotive Works in around three years' time, everything will be in place to rapidly assemble the frames. This will then be followed by the launch of the 'V4 for the price of a pint of beer a week' covenant scheme and other specific clubs familiar to those who have supported the building of No. 60163 *Tornado* and No. 2007 *Prince of Wales*. In this way, the V4 Project can capitalise on the momentum built up to complete the new class P2 with sufficient funding to keep staff and contractors busy. It is hoped that the new locomotive will take five to seven years to build depending on the rate at which the funds are raised.

For more information on how to help, visit **www.v4steam.com**, email **enquiries@v4steam.com** or call **01325 460163**. **TCC**

The London and North Eastern Railway (LNER) class V4 was a class of 2-6-2 steam locomotive designed by Sir Nigel Gresley for mixed-traffic use. It was Gresley's last design for the LNER before he died in 1941. The class V4s had similarities in their appearance and mechanical layout to the class V2s of which pioneer No. 4771 *Green Arrow* is preserved as a part of the National Collection. The class V2s, introduced in 1936, had limited route availability and the class V4 was a lightweight alternative, suitable for use over the whole of the LNER network.

Two locomotives were built at the LNER's Doncaster Works in 1941. The

first locomotive, No. 3401 *Bantam Cock*, had a scaled-down version of the Gresley Pacific boiler with a grate area of 27½ sq ft. Its tractive effort of 27,000 lbs was produced by boiler pressure of 250 psi and three cylinders of 15in diameter. The second locomotive, No. 3402, incorporated a fully welded steel firebox and a single thermic syphon for water circulation. It was not named but was known unofficially as *Bantam Hen*. The class was tried on the Great Eastern section of the LNER, and was well received, with more power than the existing Gresley class B17 4-6-0s and better riding qualities. It was anticipated that many more would be produced,

but after the sudden death of Gresley in April 1941 and his succession by Edward Thompson, no more were built. Instead, the simpler two-cylinder Thompson class B1 4-6-0 was adopted as the LNER's standard mixed-traffic locomotive and 410 were built between 1942 and 1952. The two locomotives were sent to Scotland for use on the West Highland Line, although their wheel arrangement was not particularly suitable for the line's steep gradients. The two class V4s were renumbered Nos. 1700/1 in 1946 and later became British Railways Nos. 61700/1. Both locomotives were scrapped in 1957 when their boilers became due for renewal.

VISIT TO DB MEININGEN

When we first built *Tornado*'s boiler we undertook a visit for Covenantors to see the construction at the DB Meiningen works in Germany.

For the two boilers now ordered we are also developing plans for a trip to Germany in the company of several Trustees. The provisional date is Friday 4th September 2020. This should allow a chance to see one almost complete

boiler and one well on its way. It is also the Friday before the annual DB Meiningen open weekend so it allows a chance to extend your stay. With a potential main line steam journey in the mix it will be a special weekend.

Full details will be announced next year so for now save the date and look out for further information. **TCC**

THE TENDER CLUB SLOWLY FILLING UP

by Mark Allatt

On 8th April 2019, the project to build Britain's most powerful express passenger steam locomotive announced a new £450,000 appeal to fund the manufacture the tender for new Gresley class P2 No. 2007 *Prince of Wales*. The A1 Steam Locomotive Trust has set itself the challenge of raising £450,000 through The Tender Club from 250 supporters each donating £1,500 (plus Gift Aid) to the project in up to 15 payments of £100 by standing order. At the same time, the Trust was also pleased to announce that the order to manufacture the tender tank has been placed with North View Engineering Solutions of Darlington.

At the Trust's annual convention in October, we were delighted to be able to announce that substantial progress has been made on the tender with the erection of the tender frames by ID Howitt of Crofton (now around two-thirds complete and expected to be delivered to Darlington in the new year), the construction of the tender tank by North View Engineering Solutions Ltd of Darlington (now around half complete and expected to be delivered to DLW before the end of year) and the assembly of the four tender wheelsets at South Devon Railway Engineering Ltd in Buckfastleigh (now substantially complete and expected to be delivered to DLW in November).

Following the success of The Founders Club (to get the project to the point of cutting the frames), The Boiler Club (to fund the construction of the boiler), The Mikado Club (to wheel the locomotive), The Cylinder Club (to make the cylinder block), The Motion Club (to fund the heavy motion) and the Dedicated Donations scheme the Trust has decided to establish The Tender Club to raise an estimated £450,000 required to manufacture No. 2007's tender.

- Opportunity to buy exclusive Tender Club badge
- Opportunity to join one of the teams building No. 2007
- First choice of other components to sponsor
- Special Tender Club day with *Tornado*
- Special limited-edition print of Stephen Bainbridge's 'Locomotives of the future' painting.

The tender for No. 2007 *Prince of Wales* is based closely on the tender built for A1 class No. 60163 *Tornado*. The original P2 tenders were to the 1930s non-corridor design built for the new A3 'Pacifics' being built at that time.

The water capacity of the original design was 5,000 gallons, which at a typical consumption of 45 gallons per mile would provide a range between water stops of 80 miles (with as safety margin). The tender for *Tornado* was re-designed to increase the water capacity to 6,250 gallons which increases the range to about 110 miles. The additional water capacity is at the expense of a reduction in coal capacity from 9 tons to 7½ tons.

The tender tank will be a fully welded structure made from weathering steel (as used on motorway bridges and the Angel of the North) to provide improved resistance to corrosion. The main visible differences with the new tender when compared to that of *Tornado* will be the curving inwards of the side sheets at the front to match the shape of the cab sides, and the extensive use of half round beading along the front and top of the sides and the top of the back of the tank.

We now need the fundraising for the tender to keep pace with its construction if we are to remain on-track for completion of the new locomotive within the next three years. By the end of October, The Tender Club had recruited 45 members of its 250 members target meaning that almost £85,000 of the required £450,000 has already been pledged. To become a member of The Tender Club, email **enquiries@p2steam.com**, call **01325 460163** or visit **www.p2steam.com** for more information. **TCC**

In return for supporting this appeal, special benefits for members of The Tender Club include:

- Opportunity to buy ticket (seat already reserved) on one of the first trains hauled by No. 2007 *Prince of Wales*
- Reasonable access to No. 2007 at all times

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

- The Mikado Club (£5),**
- The Boiler Club (£5),**
- The Cylinder Club (£5)**
- The Motion Club (£6).**



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.

PROFILE – STEVE DAVIES
 by Graham Langer

A former Colonel in the British Army, Steve has been a lifelong railway enthusiast, and is involved in a significant number of heritage railway projects both on a professional and voluntary basis. Born in 1959 and raised in Darwen in Lancashire, his youth and formative years were spent in the heart of industrial Lancashire in the dying days of steam on the main lines of British Railways, with his railway interests heavily influenced by his grandfather, a former driver at Lower Darwen engine shed. Later in life he was to become the last Director of the NRM to have remembered and experienced main line steam.

Steve joined the Army at 16 as an electronics apprentice but the Army spotted a spark of latent leadership talent in him and he was soon to pass the officer selection Board, entering Sandhurst at the age of 18. Commissioned into The Queen's Lancashire Regiment in 1978, his Army career saw him serve in a wide variety of countries, many on operations. He rose to become the Commanding Officer of his Regiment. He enjoyed two tours in the Ministry of Defence in London engaged at the military/political strategic level, and his final military appointment was as Chief of Staff of a Division with responsibility for military planning across 45% of the UK land mass.

It was whilst on secondment to the Republic of Sierra Leone Armed Forces

that he exercised his personal initiative to create the Country's National Railway Museum, in close cooperation with His Excellency President Kabbah, which continues to thrive today and with which he remains closely associated as President of the British Charity *The Friends of the Sierra Leone National Railway Museum*. On retirement from the Army he subsequently served as Director of the Museum of Science and Industry in Manchester – site of the world's oldest surviving railway terminus (circa 1830) – then as Director of the National Railway Museum. During his time at the NRM, Steve achieved possibly the most incredible and imaginative project ever seen in the history of railway preservation by bringing together all six survivors of Sir Nigel Gresley's record-breaking A4 Class Pacific steam locomotives, two of which were resident on the other side of the Atlantic. This allowed the 75th anniversary of *Mallard's* world record-breaking 126 mph run to be celebrated in considerable style, attracting literally hundreds of thousands of visitors to York and Shildon, some from the other side of the World.

A natural leader, organiser and communicator, Steve has had wide experience on TV and radio, notably appearing in the 'Caravan Train' episode of *Top Gear*, and his railway heritage consultancy recently managed the development of the Channel 4 carriage



Steve Davies on his last day at MOSI, escorting the Prince of Wales, who had just arrived in the The Royal Train, hauled by *Tornado*.

restoration series fronted by Peter Snow. Steve has been working alongside the Trustees at The A1 Steam Locomotive Trust in an advisory capacity for some time, and recently formed part of the negotiating team at Meiningen resulting in the placement of the order for two new boilers. He has now decided that he likes what he sees. In his own words, he is attracted to exciting, ambitious and very professionally delivered projects so he knows he is going to feel very much at home with the AISLT! **TCC**

Steve Davies



Steve on duty in the Gulf.

Steve Davies

FROM THE ARCHIVES
 by Graham Langer



Tornado at Barrow Hill for the 2014 Convention, surrounded by her supporters. The headboard was a tribute to the late Mike Notley, train timing recorder.

Autumn 1999 – The sixth Annual Convention took place at the Dolphin Centre, Darlington on Saturday 9th October. The centrepiece of the day was the unveiling of the wheeled locomotive chassis at Darlington Locomotive Works for the first time. *Tornado's* six 6ft 8in driving wheels had to be moved from Bury to the Severn Valley Railway's workshops at Bridgnorth for turning, returning to Bury for the tyres to be fitted, before again visiting the SVR for the newly fitted tyres to be turned. The steel tyres had already been fitted to the two 3ft 8in Cartazzi (trailing) wheels by the Trust's contractor, Ian Riley of Riley & Son (Electromech) Ltd of Bury and the tyres turned, followed by the four 3ft 2in front bogie wheels.

Autumn 2004 – The coupling rods had been fitted to the locomotive by the end of 2004. Each of the four 7ft 6in rods weighs around two hundredweight and after forging, extensive machining and heat treatment, the four cost around



With the coupling rods fitted, *Tornado* could be lifted onto a set of rollers to allow the wheels to be rotated.

Rob Morland

£22,000 to manufacture. These rods were vital additions to the £150,000 valve gear and motion assemblies, which were now the focus of work on *Tornado* at the Trust's Darlington Locomotive Works. The Trust had also started work on the fitting of the rest of the outside motion. The bushes for the connecting rods were machined at Ian Howitt Ltd and one side of the locomotive had been fitted with a mock-up of parts of its valve gear.

Autumn 2009 – *Tornado* continued to break new ground, travelling to Plymouth in August, appearing at Didcot, home of the Great Western Society in September, breasting Shap for the first time in October before heading to Barrow Hill for an open day and visiting the Severn Valley Railway. *Tornado* was also the star of GMTV as she was prepared for runs over the Settle to Carlisle line with 'The Waverley' during the weekend of 3rd and 4th October. Otherwise the locomotive continued to operate 'The Cathedrals Express' on behalf of Steam Dreams.

Autumn 2014 – Wearing British Railways' express passenger blue livery, *Tornado* made her first visit to, appropriately, the Bluebell Railway. *Tornado* moved to the Nene Valley Railway at the beginning of October in order to take part in that railway's Autumn Gala. In addition to working 'Le Train Bleu', No. 60163 was also available for driver experience courses. *Tornado* moved from the Nene Valley Railway to Barrow Hill Roundhouse, initially for 'Barrow Hill Live' and then the 2014 Convention. No sooner than the convention was over, the process of stripping the locomotive for her intermediate overhaul commenced with the boiler being sent to Meiningen and the frames to Darlington. At Darlington an impressive pile of components was gathering for the new P2, *Prince of Wales*. **TCC**

David Elliott

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

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● e-mail: enquiries@a1steam.com ● website: www.a1steam.com ● tel: 01325 460163

Darlington Locomotive Works is normally open to the public on the first and third Saturday each month (11am – 4pm).

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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