



**60163 TORNADO**  
New Steam for the Main Line



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



**3403 ANON**  
Recreating Gresley's last design

# THE COMMUNICATION CORD

No. 58 Summer 2020



Richard Pearson

Still awaiting the return of her nameplate and the fitting of some small parts, *Tornado* basks in her new paintwork in the sunshine at Carnforth.

## TORNADO - GORGEOUS IN (DARK) GREEN!

by Graham Langer

Given the the need to 'freshen up' its apple green livery and likelihood that *Tornado* will be running with maroon coaches for much of the foreseeable future, The A1 Steam Locomotive Trust took the decision to repaint No. 60163 in BR locomotive green, an opportunity to do so having arisen at Carnforth. This year marks the 30th Anniversary of the

Trust so, with Steam Railway magazine's encouragement, we also replicated the condition of No. 60145 *Saint Mungo* when it ran a now legendary railtour in the North East at the very end of 1965. The loss of the last A1 in 1966 was one of the principal reasons that a small group of people decided to build another, new one. This historic livery will be carried by

the locomotive until her next overhaul which is now scheduled for 2022. We are grateful to Craftmaster Paints for their continued sponsorship of the painting of *Tornado* and to David Smith and West Coast Railways for completing such a fantastic job of repainting *Tornado* into BR locomotive green in such a short time.

TCC

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## EDITORIAL by Graham Langer



When we started formulating this edition of *The Communication Cord* it seemed that there would be a shortage of news and little to mention in this editorial. Everything was locked down, the future of railtours looked fragile and *Tornado* was trapped at the NRM until better conditions prevailed. What a difference a couple of months make!

Sadly not all the news has been good and the tragic derailment of an HST at Stonehaven on the Aberdeen

route has had an impact on our plans to return *Tornado* to main line tours on 'The Aberdonian'. Our hearts go out to the families of the victims of the accident and to the wider railway community who were working so hard to keep services running despite the terrible weather that has affected the railway network during the last few weeks. Please keep an eye on the railtours section of the Trust website for further updates. Passengers who had booked on trains that have had to be re-scheduled will have been contacted and we will do our very best to accommodate them on alternative tours.

By now many of you will have heard that No. 60163 has been re-painted in BR locomotive green livery at Carnforth. How did this come about? During the locomotive's enforced sojourn at the National Railway Museum (whom we thank for their hospitality) a review of the condition of the paintwork suggested that it might need considerable 'freshening up' before the next major overhaul. We are extremely grateful to David Smith and the team at West Coast Railways for fitting us in and allowing a little extra 'tinkering' for a *Steam Railway* magazine cover shoot. You can read more about this on pages 11 and 12.

The *Steam Railway* cover story was to honour Peppercorn Class A1 No. 60145 *Saint Mungo*, one of the last A1s in service. No. 60145 hauled an 'end of steam' tour in the North East from York to Newcastle and back on New Year's Eve, 1965, during which it attained at least 100mph on the return leg, winning many friends in the process. The late Geoff Drury attempted to preserve the locomotive after it was withdrawn but it seems that Peppercorn Class A2 No. 601532 *Blue Peter* was in better condition and he opted for that locomotive instead and thus the last A1 went to the breakers. However the opportunity to see an A1 preserved and the frustration at its loss was the spur that united a small group of people in the area who vowed to build a new one, *Tornado*, a locomotive that in many ways owes its existence to *Saint Mungo*. It is even more extraordinary that the organisation that group spawned, The A1 Steam Locomotive Trust, is still going strong, building new locomotives, thirty years later – please help us continue this work by supporting our 30<sup>th</sup> Anniversary Appeals.

A source of real pride has been the way in which the team at Darlington Locomotive Works has been able to keep going and continuous steady progress is being made on the construction of No. 2007 *Prince of Wales*. You only have to read David Elliott's engineering report to discover how much has been achieved at multiple locations to move the project forward. We are, however, reaching a pinch point in the build when further progress is going to result in some substantial bills! Key to getting this locomotive over the line is completing the 'Club's and continuing to add more Covenantors – if you know anyone who might like to be part of the most exciting locomotive build this century please ask them to join us.

Like any mature organisation, the passing of time sees changes in the core team and our supporters and sadly we have recently had to say farewell to two outstanding figures in the history of the Trust, Bob Alderman, long-time Trust supporter and helper and skilled railway modeller, who lost a long battle with a debilitating disease, and Jim Smith, DB Cargo Traction Inspector, who had been associated with *Tornado's* main line work from the outset, after a brief illness. The other side of this coin is that we continue to welcome new talent and Covenantors and have recently been able to add two new names to the panel of advisors to the Board, Richard Courteney-Harris and Terry Graham, the latter joining us as P2 Project Manager – welcome gentlemen. **TCC**

## FROM THE CHAIR by Steve Davies



And still we are in partial Lockdown! Many of us were hoping that matters would have eased more than they have since last time

I contributed to TCC, but the green shoots of restriction-lifting are now with us, preparations are in place for the return to traffic of our beloved *Tornado*, and the majority of our furloughed staff have returned to full-time work. These have been a hectic few months, with your Council's minds dominated by contingency planning and a microscopic focus on the essential business of managing our money. There has been an interesting consequential irony to the extensive use of video conferencing in that it has been so easy to set up that both the Council and its advisers have probably been communicating far more often than before the lockdown, and there have been times when I have had to remind myself on more than one occasion of the considerable workload your representatives take on for no reward other than the love of the job. Although we are keen to return to a degree of physical meetings (not least to enjoy the camaraderie of the team) I am pretty certain that video and 'virtual' conferencing will now become a regular feature of the way we do business. So where has this national crisis left us?

Thanks to your loyalty to the cause, income has remained broadly stable, punctuated by some really impressive responses to the various funding clubs, with the very successful Pony Truck Club a case in point. Engineering has continued apace with particular emphasis on the P2, and much burning of the midnight oil has gone into ensuring that our management and processes are sufficiently polished to keep the completion of *Prince of Wales* on track for 2022/3, including bringing additional project management expertise to the fray. *Tornado* was successfully reactivated at the NRM in York and enjoyed a very pleasant run to Carnforth where the locomotive has been repainted and the support coach has also received some attention and TLC. Our new boilers are progressing well at Meiningen with the first on track for delivery in December, and this one will eventually

replace *Tornado's* current boiler when the locomotive has a major overhaul at the end of 2021. The second new boiler is of course destined for *Prince of Wales*. We have also recently completed the purchase of a further support coach for use behind the P2, BR Mk I BSK No 35457, which until recently was resident at the North Norfolk Railway. The coach is in excellent condition and has the benefit of already being main line registered so the opportunity to acquire this vehicle was too good an opportunity to miss. Our plans are to operate the A1 and P2 simultaneously so owning two support coaches is essential.

Although we are experiencing challenging times, this has not deflected us from our determination to commemorate the fact that this is the Trust's 30<sup>th</sup> Anniversary. I suspect that very few of those involved at the birth of our organisation would have imagined the quite extraordinary way in which it has grown in scale, stature, dignity and ambition, and even brighter prospects lie ahead as we look forward to occupying new premises in Darlington, playing a central role in the forthcoming Stockton & Darlington Bicentenary celebrations, and of course becoming a three-locomotive operation with the construction of the Gresley V4. Exciting times indeed, and it would have been wonderful to discuss all these objectives and more in the convivial surroundings of our annual Convention, planned for Saturday 26<sup>th</sup> September. But as you will hear from elsewhere, we have decided

that in this period of considerable uncertainty it would be reckless this year to convene the Convention along traditional lines. This will be a blow to many, including I and my fellow Board members, but it is the sensible thing to do in the circumstances. However, it is our intention to hold a 'virtual' conference on-line which I am sure will be an exciting and ambitious departure from our normal format, and details of how it will be delivered will be circulated soon.

At the expense of being viewed as a stuck-record, I would like to close by reinforcing the obvious message that turning our collective dreams into reality is an expensive business and we need every penny we can raise in order to both build our locomotives and then to maintain them in traffic. We will be launching a series of 30<sup>th</sup> Anniversary appeals via a number of railway magazines and other media outlets, and we hope to benefit significantly from the publicity accruing from a major series of articles in one of the leading sector monthly magazines. Times are tight financially for many, but how about this for a cost-neutral and imaginative request? We could raise a significant sum if everyone who had planned to attend the Conference in person donated to the Trust the money they would have spent on travel, accommodation and other personal expenses. What a great way to trigger our 30<sup>th</sup> Anniversary celebrations that would be! **TCC**



**Tornado and a somewhat tired Union of South Africa at the NRM.**

Charlotte Graham

## NEW BOYS ON THE BLOCK! by Graham Langer

The AI Steam Locomotive Trust has a justifiable reputation for good governance and being well-managed something you don't achieve without access to some of the best people in the business. However, no organisation can afford to stand still and we are always on the look out for talented and willing individuals to add to the team to further strengthen it. In line with the Trust policy of "putting square pegs into square holes" we are pleased to welcome two further recruits to become advisors to the board, Richard Courteney-Harris and Terry Graham.



**Richard Courteney-Harris** hails from a military family, attending boarding school in Kent 1966-1971 and Stonyhurst College in Lancashire 1971-1976. Richard then went up to University College, London in 1976 and graduated with an honours degree in Archaeology in 1979. After training at the Royal Military Academy Sandhurst, was

commissioned into the Queen's Lancashire Regiment in February 1980. Having served in various theatres at home and abroad until 2017, he then retired from the Army. Richard completed an in-service MBA at the Cranfield School of Management in 1992 and a Marketing Diploma at the Institute of Marketing in 1993, he was invested as a Military Member of the Order of the British Empire in 2004, for military service.

On retirement from the Army Richard was employed as a consultant for his son's business. A lifelong, if peripheral fan of all things steam, the opportunity to contribute to the work of the Trust was extraordinarily good fortune and one in which he is very honoured to be involved. Richard is married to Karen and he has two children, Catherine and Edward.

**Terry Graham** left school in 1980 and joined Whessoe in Darlington as a Technician Apprentice, leaving to do a four-year degree in Mechanical Engineering at Teesside Polytechnic as it was called then. After graduating he joined Royal Ordnance at Birtley as a Graduate Engineer, eventually working on the design and development of tank ammunition. After six years Terry joined TRW, who supplied dashboard switches to the automotive industry, as a Project Engineer, then two years later joined Talent at Newton Aycliffe, now part of international automotive supplier Gestamp, who manufacture pressed and welded chassis parts to the automotive industry. Terry started as a Project Engineer, progressed to Project Manager and was involved in many international projects working with Ford, Volvo and Jaguar Landrover. The role involved frequent meetings with customers and suppliers. He eventually moved to managing the prototype manufacture for project throughout Gestamp, leaving the company in 2017.



Terry has volunteered at Darlington Locomotive Works for the last two years and has also assisted with maintenance of *Tornado* at several locations. He enjoys the unique challenge of the construction of the new P2 and is looking forward to managing the project. **tcc**

## SUPPORTING OUR 30<sup>th</sup> ANNIVERSARY APPEALS by Steve Davies



It's hard to believe that it is now 30 years since The AI Steam Locomotive Trust was formed to build a new Peppercorn class A1 'Pacific'. The original A1s were built by British Railways in 1948/49, however all were scrapped by 1966. The last survivor No. 60145 *Saint Mungo* was the subject of a failed preservation attempt which left the final development of East Coast Main Line's famous steam locomotive classes unrepresented in preservation.

The formal launch of The AI Steam Locomotive Trust was held at the Railway Institute in York on 17<sup>th</sup> November 1990. To loud applause it was announced that the 50<sup>th</sup> Peppercorn class A1 would carry the running number 60163 – the next in the sequence. The organisation was established with a clear mission: "To build and operate a Peppercorn class A1 'Pacific' steam locomotive for main line and preserved railway use."

After 18 years of construction and fundraising with the support of principal sponsor William Cook Cast Products Ltd, the £3 million locomotive was completed in August 2008. *Tornado* was named by TRH The Prince of Wales and The Duchess of Cornwall at York station in February 2009 and in April 2017 became the first British steam locomotive to reach 100mph for 50 years.

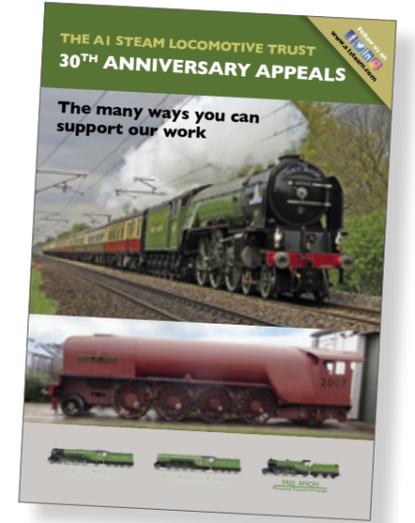
Since completion, No. 60163 *Tornado* has steamed over 100,000 miles the length and breadth of Great Britain. Following her unveiling in works grey, *Tornado* has worn all of the historic Peppercorn class A1 liveries – apple green, BR locomotive green (with emblem and

crest) and BR blue. In celebration of the Trust's 30<sup>th</sup> Anniversary, *Tornado* is being temporarily returned to the BR locomotive green livery of No. 60145 *Saint Mungo* which inspired the organisation's formation.

Following the completion of *Tornado*, the overhaul & conversion of its support coach E21249 and the repayment of the £1m of loans taken out to speed completion, the Trust launched its project to build a second new main line steam locomotive in 2013. The Gresley class P2 2-8-2 'Mikados' were the most powerful express passenger locomotives to operate in the UK. Sadly, the design was never fully developed, and they were rebuilt as 'Pacifics' in 1943/4 before being scrapped by 1961.

We set ourselves a new challenge: "To develop, build and operate an improved Gresley class P2 'Mikado' steam locomotive for main line and preserved railway use." The project to build the seventh Gresley class P2 'Mikado' is using the latest computer design and modelling techniques to enable it to deliver its true potential. We estimate that No. 2007 *Prince of Wales* will cost around £5m to build over a 7-10 year period and with your continued help the locomotive is on track for completion within the next three years.

With your generous donations of time and money, we've come a long way since those humble beginnings in York 30 years ago. With your continued support, the next few years will see the first of the two new boilers delivered and fitted to No. 60163 *Tornado* during her next overhaul; the acquisition and overhaul of E35457 for



use as a support coach for No. 2007 *Prince of Wales*; the completion, testing and operation of our new Gresley class P2; the relocation of the Trust's operations to a new, larger main line connected site in Darlington where we can build, maintain and operate new steam locomotives; and the start of the construction of our third new ex-LNER steam locomotive, yet-to-be named Gresley class V4 No. 3403.

As part of our 30<sup>th</sup> Anniversary we are asking our existing supporters to consider the different ways in which they might help us to protect what we have achieved to-date and realise our ambitious plans for the future. This edition contains details of some of the ways in which you can continue to support No. 60163 *Tornado*, in particular the very real need to raise funds for her next overhaul, and build No. 2007 *Prince of Wales*. As an aside I sometimes sense in some quarters a view that once a new steam locomotive is built it requires little further support. Nothing could be further from the truth and both *Tornado* now, and *Prince of Wales* in the future, require additional support to remain in traffic. *Tornado* in particular at the moment as the impact of Covid-19 has significantly impacted on railtour revenue.

It only remains to thank you in advance for your support. You can find further information on the ways in which you can support 30<sup>th</sup> Anniversary Appeals by visiting [www.a1steam.com](http://www.a1steam.com) emailing [enquiries@a1steam.com](mailto:enquiries@a1steam.com) or calling 01325 460163. **tcc**



### TORNADO TOUR DIARY - 2020

Below are the future operations *Tornado* is confirmed to be involved in. More details will be published on [www.a1steam.com](http://www.a1steam.com) as trains are finalised. Contact details for tour companies are below.

- **Saturday 12<sup>th</sup> September** – 'The Queen of Scots' – York to Edinburgh via Carlisle and return – bookings through Tornado Railtours
- **Saturday 19<sup>th</sup> September** – 'The Ticket to Ride' – Darlington to Liverpool and return – bookings through Tornado Railtours
- **Saturday 3<sup>rd</sup> October** – 'The Easterling' – London King's Cross to Lowestoft – bookings through The Railway Touring Company
- **Saturday 14<sup>th</sup> November** – 'The Cheshireman' – Bristol to Chester – bookings through The Railway Touring Company
- **Saturday 21<sup>st</sup> November** – 'The Cheshireman' – London Euston to Chester – bookings through The Railway Touring Company
- **Tuesday 24<sup>th</sup> November** – 'The Gloucester Christmas Market and Cardiff' – from London – bookings through The Railway Touring Company
- **Saturday 28<sup>th</sup> November** – 'The Yuletide Express' – Ealing Broadway to York (*Tornado* on outward journey only) – bookings through The Railway Touring Company
- **Saturday 12<sup>th</sup> December** – 'The Edinburgh Christmas Market' – York to Edinburgh – bookings through The Railway Touring Company
- **Thursday 17<sup>th</sup> December** – 'The Christmas White Rose' – London to York (*Tornado* on return only) – bookings through The Railway Touring Company
- **Saturday 19<sup>th</sup> December** – 'The Christmas White Rose' – London to York (*Tornado* on outward journey only) – bookings through The Railway Touring Company

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  
[a1steam.com/railtours](http://a1steam.com/railtours)

**The Railway Touring Company**  
01553 661 500  
[railwaytouring.net](http://railwaytouring.net)

## TORNADO ON TOUR by Huw Parker

### THE MOVE TO CARNFORTH



Tony Jackson

On the move again! *Tornado* heads for Carnforth and is seen at Bingley. – Tony Jackson

It was good that *Tornado* was able to stretch her legs on the main line once more, albeit only for a short move to West Coast Railways at Carnforth, where our support coach was to receive some bogie maintenance. This had been scheduled for our brief visit to 10A between railtours earlier in May, but Covid-19 put a stop to that. Subsequently the opportunity to repaint the locomotive also presented itself and so *Tornado* was booked into the paintshop at Carnforth at the same time.

Following a prolonged period out of traffic in the preparation bay at The Railway Museum, a very small team completed a full inspection of the locomotive prior to the light engine move. This involved an A Exam+ and a boiler washout even though we had completed few steaming days, elapsed time and the prospect of re-starting our mainline programme in September meant this was a sensible opportunity to finish this maintenance and reassure ourselves that nothing untoward had occurred whilst the locomotive was out of traffic. All of this was completed whilst having to observe the new social distancing and Covid-19 protection

rules, which made some tasks slightly more challenging, but luckily not impossible! Thankfully, all was well and No. 60163 and the support coach travelled across to Carnforth on Friday 24<sup>th</sup> July without incident and running very nicely, well ahead of booked timings.

With the locomotive and support coach now safely at Carnforth, we had to await the outcome of an inspection by the Carriage and Wagon team there. They have been busy preparing their own stock to return to traffic and once the outcome of their inspection of the bogies was known the scope of work to be completed could be agreed. In the meantime, the team cleaned *Tornado* ahead of the planned repainting ready for the now postponed, 'Aberdonian' duties at the beginning of September. One disadvantage of the A exam is the fresh grease applied to the axle boxes on the loco continues to exude from the seals, coating the frames and motion with the excess! We are watching the developing Covid-19 restrictions situation carefully but hope to be ready to meet the first of our railtour commitments in September. **TCC**

## RAILTOURS by Sophie Bunker-James

For those in search of a change of scenery and a superb day out following months of confinement, there's no doubt that a day trip with *Tornado* this September offers a much-needed change of pace. With both trains starting in the North East and stopping for passengers in Darlington and York, you're guaranteed a wonderful day out whether chugging along cliff tops with spectacular sea views en route to Scotland or steaming through the fabulous Peak District landscape on the way to Liverpool.

On Saturday 12<sup>th</sup> September you are invited to join us for 'The Queen of Scots' - Our destination of Edinburgh offers something for everyone. The outward journey with heritage diesel traction from York to Carlisle via Newcastle. We traverse the beautifully scenic Tyne Valley route following Hadrian's Wall as we head west. We arrive in Carlisle where *Tornado* will be waiting to head our train onto Edinburgh our route is via the Scottish lowlands through Lockerbie before tackling the arduous ten mile climb to Beattock summit. The return route is via the East Coast Main Line and Berwick. This train will pick up passengers from York, Darlington, Durham and Newcastle.

The following week you can step aboard the 'Ticket to Ride' on Saturday 19<sup>th</sup> September for *Tornado's* first ever trip to Liverpool. Taking on the steep

climbs and stunning scenery of Copy Pit, this train will steam into the heart of the city at Lime Street. Passengers will have ample time to visit the iconic Cavern Club, the Royal Albert Dock with its many eateries and museums, or even indulge in some retail therapy at Liverpool One. The train returns along much of Stephenson's Liverpool and Manchester Railway before heading back to Darlington via the beautiful Calder Valley. A superb day out for all! Starting in Darlington, this train will stop for passengers at Darlington North Road, Darlington Bank Top, Thirsk, York and Wakefield Kirkgate.

On board our trains we offer a luxury experience where passengers can marvel at the scenery as the train steams along a pace. Those travelling in

Premier Dining can enjoy silver service at their tables for breakfast and a sumptuous four course supper on the return. For those who prefer the simple things in life, Standard Class offers seats at a table (ideal for a picnic!) adjacent to a large window, ideal for watching the scenery slip by with the window ajar to hear the sounds and smells of yesteryear. Prices start at £109 for a return day trip.

For tickets and more information please see [a1steam.com/railtours](http://a1steam.com/railtours) or call our booking office on 01325 488215.

Government guidelines on social distancing, PPE and best practice to avoid the spread of coronavirus are being reviewed regularly and will be implemented on board our trains for the safety of all passengers and crew.

**TCC**



Alan Weaver

*Tornado* crosses Lydgate Viaduct, Todmorden in the Calder Valley.

## Covenantors' Diary by Leigh Taylor



Our Annual Convention on Saturday 26<sup>th</sup> September 2020 will be a little bit different this year. This year's Virtual Convention will run from 10:30hrs to 12:00hrs on The A1 Steam Locomotive Trust's YouTube channel. This is the link for the channel - <https://www.youtube.com/channel/UC1qGYIL2vDP7cjuidkfSqwQ>. It will then be available for viewing via [www.a1steam.com](http://www.a1steam.com) after the event. If you have any questions that you would like addressing in the presentations, please submit them via [enquiries@a1steam.com](mailto:enquiries@a1steam.com). There will also be an opportunity to submit further questions following the presentations.

We have enclosed a data collection form with your Virtual Convention invitation and would be grateful if you could return it so that we can keep any gift aid records, contact

detail and communication preferences up to date.

The closing date for returning stubs and payment for the September Draw 2020 (raffle) is Thursday 17<sup>th</sup> September; many thanks and good luck to all those who have entered so far.

We are continuing to follow Government guidelines with regards to Covid-19, with our office-based staff predominantly working from home and our workshop staff are working at Darlington Locomotive Works where they are taking all of the necessary precautions. We hope to recommence Open Days and Roadshows at DLW as soon as it is practically possible. We are reviewing all our activities on a frequent basis to protect everyone involved with the Trust and to secure our long-term future. Please keep an eye on our website and Facebook pages for updates or call 01325 460163 or email [enquiries@a1steam.co.uk](mailto:enquiries@a1steam.co.uk) if you have any questions. As a small charity we value your continued support and patience. **TCC**



Montage and photo Mandy Grant

**JIM SMITH** by Graeme Bunker-James

It is with the greatest of sadness that the Trust learned that one of its firmest friends had passed away. Jim Smith has been a friend of the Trust for around 20 years, and for many of our team somewhat longer. His association with *Tornado* is unique.

On almost every special occasion he was with us. The first main line test runs operated under Jim Smith's supervision, including the legendary run from Newcastle to York in 2008. He was with us on a variety of trips after that, the length and breadth of the country and most happily in the north east. It was Jim who took charge of the 100mph run in April 2018. He even drove the engine on occasion away from the main line to ensure her care.

Always referred to as 'Gentleman Jim' his kindness and generosity to the Trust will be massively missed by all of us. He continued to guide those new to the main line in our team right up until operations were curtailed due to lockdown. Building confidence, tutoring firing technique or just an understanding of how the locomotive worked, Jim was at his best when teaching and his legacy is a broad group of people who will carry main line steam forward.

On behalf of the Trust, Graeme Bunker-James said, "We have lost one of the key people in *Tornado's* history and someone with a unique position in ensuring the locomotive's success. Jim led the footplate team at the very beginning in 2008, and at 100mph in 2018, with many superb and memorable runs in between. We will all miss him greatly and we extend our sympathies and kind wishes to his family and friends. God speed Jim and thank you from us all."

**Jim Smith pictured here with Tony Jones at the end of the night after a trip on 'The Border Raider' back in April 2019.**



**BOB ALDERMAN** by David Elliott

It is with considerable sadness that I came to hear of the death on Friday 10<sup>th</sup> July of Bob Alderman, friend of the AISLT and superb railway modeller.

Born in Northampton in 1947, Bob was destined to become an engineer. I first encountered him after joining Westland Helicopters at Yeovil in 1979 where Bob was a gearbox designer. A mutual interest in railways and railway modelling quickly led to me joining the Yeovil Model Railway group in which he was a leading light.

The group had been drifting somewhat, but as a result of a recent move to the attic of the minor stately home of Coker Court at East Coker we did not have to pay rent (apart from maintaining and decorating the three rooms we occupied and one of our members who was a vet maintaining the owner's dog). As a result, the group were now more affluent and under Bob's overall guidance we built a 27' x 12' "tail chaser" main line layout in EM gauge called South Junction which subsequently visited a number of high profile model railway exhibitions.

Bob was a highly competent modeller, both of locomotives and scenery. He had developed an interest in and great ability in producing "industrial grot" which, following a move to the larger O gauge, resulted in a superb little railway called "Gas Works".

My work took me away from Yeovil in 1983, but Bob and I kept in contact. When in 1992 I was looking for a team to search for the AI drawings in the National Railway Museum at York (they were not catalogued or indexed in those days) Bob was an obvious candidate and to my relief provided considerable assistance in identifying and listing the drawings we needed for *Tornado*. By this time Bob and his wife Sheila, son David and Daughter Ruth moved to Montacute to the



**The O gauge model of *Tornado*.**

west of Yeovil. Bob's role in the Trust grew to take on position of Lectures Coordinator which he successfully carried out for several years.

With retirement, railway modelling became almost a full-time career with a number of professional builds in O gauge. One of these is a splendid model of *Tornado* commissioned by our own Graeme Bunker-James. He also staged training sessions for the Gauge O Guild and wrote a number of books on his craft.

By 2016 Bob was having a problem of balance which in 2017 were diagnosed as motor neurone disease. This gradually worsened which curtailed his modelling. However, in spite of the continuing deterioration of mobility and speech, he remained cheerful and entertaining. Once he could no longer use a conventional keyboard he mastered a virtual keyboard using an eye tracking device and continued to write.

My last encounter with Bob was at his 70<sup>th</sup> Birthday party in Montacute. I was acting as duty engineer on *Tornado* for a series of tours based out of Bristol and having received an invite from Sheila, gained a half day pass out from Huw Parker (who was Responsible Officer for the trips) and attended the party. Although by this time Bob had lost the power of speech, his computer equipment could voice his thoughts. His son David had provided the "artificial" voice and it was uncanny when what sounded like Bob himself came from his loudspeaker "Can I have some food? A man could die of starvation over here!". The sense of humour was intact. As can be seen from the photo, the birthday cake resembles his favorite locomotive.



**Bob at his 70<sup>th</sup> Birthday party.**

Bob has asked that his ashes are disposed of in *Tornado's* firebox which we hope to fulfil on the way back to Stirling on 12<sup>th</sup> September. Our condolences go out to Sheila, David and Ruth on the loss of a fascinating and clever man who through his work on railways of various scales has brought joy to many.

David Elliott

## 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 of 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](http://www.a1steam.com) or contact our Legacy Coordinator who will talk you through the process on [legacy.coordinator@a1steam.com](mailto: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 1 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](http://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](http://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

## A BLAST IN THE PAST! by Richard Peck

As a young lad just turned 14, I was a regular visitor to York shed in 1965, seeing with sadness the growing lines of V2s and A1s being set aside out of use. A couple of us lads heard, at quite short notice, about the proposal to run a train from York to Newcastle and back to mark the end of steam on the East Coast Main Line on the evening of 31<sup>st</sup> December 1965. The route was to be York–Darlington–King Edward Bridge–Newcastle–High Level Bridge–Darlington–York with eight coaches. The locomotive was to be Peppercorn Class A1 No. 60145 *Saint Mungo*.

Our pocket money in those days wouldn't stretch to going all the way to Newcastle, but we reckoned we could just about manage Darlington and back. I don't remember much detail about the outbound run, but I do recall getting off at Darlington, and peering over the wall at the back of Darlington Works to see J21 No. 65033 looking rather forlorn. This locomotive is currently receiving a thorough overhaul at David Wright's LMS works in Loughborough. I do however remember the return journey. After leaving Darlington, we just kept on accelerating. Those were the days before long welded rails, and the clackety-clack of the rail joints were quite exciting as they got faster and faster. I was checking the speed by counting the number of rail joints in 41 seconds, and I reckoned we reached 105 mph. Quite a last trip!

On arriving at York, I joined the crowds around *Saint Mungo*, and noticed Geoff Bird on the footplate. I muscled through the crowds to congratulate him on achieving 105 mph. I still remember his words. "Oh no, we weren't going as fast as that". As he was the Shedmaster at York, and I was a 14 year old lad, I of course believed him. But I did also wonder a little bit whether that was what he ought to say, as the man with the responsibility....

It was over 40 years later that I was sitting with Geoff Bird behind No. 45690 on a 'Scarborough Spa Express', talking over tales from the past. One subject that came up was *Saint Mungo's* run from Newcastle to York on 31<sup>st</sup> December 1965. He recalled with great excitement how we had done over 100 mph! **TCC**



Steve Davies

After its arrival at Carnforth, *Tornado* was specially prepared for the cover of the September edition of *Steam Railway* magazine, replicating *Saint Mungo's* down at heel appearance at the end of 1965.

## 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! 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 normally covers her day-to-day and year-to-year maintenance costs. However, not only do they not at present generate a sufficient surplus to fund her five and ten year overhauls, conservatively estimated at around £500,000 each, due to the impact of coronavirus *Tornado* hasn't been able to generate these fees or be the greatest advert for becoming an 'A1 for the price of a pint of beer' (£2.50 per week) Covenantor. Therefore, it is vital for us to continue to maintain (and hopefully grow) *Tornado's* on-going Covenantor income.

The last few months before we were impacted by the coronavirus saw our net number of Covenantors grow a little

– with the new supporters coming on board just about managing to replace those leaving us – mostly for their final shed allocation.

However, without the positive profile generated by our planned 2020 railtours programme and the opportunity to meet new potential supporters on our trains and at the lineside who are captivated by *Tornado's* main line magic, our number of A1 Covenantors has started to gradually decline once more. I would therefore urge all our existing A1 Covenantors to help us to recruit new supporters and for P2 Covenantors (around two-thirds of whom are not also A1 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.a1steam.com](http://www.a1steam.com), email [enquiries@a1steam.com](mailto:enquiries@a1steam.com) or call 01325 460163.

**And now for something completely different! We normally spend an inordinate amount of time trying to keep *Tornado* clean but for a cover shot for *Steam Railway* magazine we were asked to mock up the front of No. 60163 so that she resembled her long lost classmate No. 60145 *Saint Mungo*, as a photographer was booked to take some publicity pictures.**

We were given a picture of No. 60145 to work from, which showed a fairly grubby engine with some interesting white smokebox details, and we were put in touch with Iain Ross who had done this sort of thing a number of times before and for which he was regarded as the industry expert. Following Iain's advice we bought several litres of poster paint, some brushes and some rollers and set about re-creating the grubby looking condition of No. 60145. We first cleaned down the front of No. 60163 to remove all the old dirt and grease from the paintwork before mixing up the poster paint, after several failed attempts we eventually discovered that a mix of about 90% black and 10% brown worked well. The authentic dirty engine look was best achieved by applying the paint using the small soft roller; this left the paint with a stippled effect which once dry looked like dirt, and after applying several coats the final desired effect was achieved.

For areas that needed to be solid black we applied black spray paint on top of a layer of poster paint, this technique would then allow easy removal, and the red lining on the cylinder and white lining on the buffer beam was covered using red and black tape. I have to confess, the finished result looked most convincing!

Preparing the locomotive for repainting in BR locomotive green, we have initially concentrated on cleaning below the running plate and additionally have removed the nameplates, the smokebox number plate and other small brass plates. Following this we started cleaning above the running plate and started removing other small items such as the turbo generator steam supply pipe and the cylinder cock operating rod which both pass alongside the firebox. With the locomotive cleaned and stripped and rubbed down it could be moved into Carnforth's paint shop for masking up in preparation for spray painting, the first time *Tornado* has been painted in this way. During the times when West Coast were painting the locomotive we have kept ourselves busy with other things – including cleaning and painting the oil bottles, painting the footplate tools, and cleaning, polishing and repainting all the locomotive plates.

TCC



**The engine was rubbed down and filler applied as required before masking all areas that shouldn't be green.**



**After sanding the tender tank, everything is masked off and two coats of primer/undercoat are applied.**

**A nice coat of primer!**



**Above: The engine in its green undercoat.**

**Right: And now in gloss!**



**Before and after.**

We are now enjoying our second decade of operating *Tornado* across the UK, and we will soon have the majestic site of *Prince of Wales* taking to the rails. Both of these locomotives offer high end express passenger performance, being powerful class 8 locomotives.

With the introduction of the V4 around the end of the decade we will be seeing a very different set of options opening up for us. The A1 has a heaviest axle load of 22.5 tonnes, bringing with it a Route Availability classification of RA9 under the current Network Rail standards. The V4 is a much smaller locomotive with an axle weight of only 17 tonnes bringing a Route Availability of RA5.

Why does this matter? Well if we look at Scotland it's fair to say *Tornado* has been further than any LNER Pacific before. In 2015 when the locomotive ran to Brora on the Far North Line it was a unique event, and probably not one to be repeated. The locomotive was easily the heaviest vehicle ever to run over the route and was limited to 35mph!

Whilst the P2 is slightly better than the A1, being an RA8 locomotive with a 20 tonne axle weight, both the large engines have limits on where they can go due to their overall weight approaching 170 tonnes. The V4 weighs 114 tonnes so represents a very different level of challenge for the civil engineer to be comfortable with.

The V4 therefore opens up Scotland for the Trust beyond the central belt routes and north to Inverness via Perth and either Aviemore or Aberdeen. It will be able to go on these routes, but also across the Tay Bridge, sadly no longer cleared for the large engines. It can go north to Wick and Thurso on the Far North Line and visit the stunningly scenic route to Kyle of Lochalsh.

Of course, the V4s spent several years on the West Highland Line from Glasgow Queen Street to Fort William. This dramatic railway, one of the finest journeys anywhere in the world, is not possible to negotiate with either the A1 or the P2 (and yes, the question has been asked!) but would be absolutely perfect for the V4. Similarly, the West Highland Extension to Mallaig, the Iconic 'Road to the Isles' would also be a great route to choose for the locomotive.

Away from Scotland there are many routes barred to the big engines, due to weight or curvature, where the V4 will be very much at home. Perhaps hauling trains from Whitby, or maybe in the

west of the UK working over former Cambrian Lines and Barmouth Bridge. The stunning Central Wales line will also be an option for the locomotive, as would be some of the Cornish branch lines where the A1 and P2 are too heavy. There are even parts of London where the big engines are prohibited but the V4 is clear to go.

The V4 has a power classification of Class 5, similar to an LMS Black 5, a GWR Hall or a Thompson B1. Whilst a smaller locomotive than many other Class 5s, this belies the punch offered from Gresley's last design. When introduced they were noted running on the Great Northern from Doncaster to Leeds happily hauling 495 tonnes over the route. In simple terms that's a 13 coach train! Similarly, when running on the Great Eastern the locomotives handled 12 coach trains with no issues and remarkable economy.

So how does it translate into commercial operations? There will be one off trains, and the V4 could take a turn on 'The Aberdonian' allowing a re-route via the Tay Bridge for variation. Perhaps the most interesting is the ability to give passengers a wonderful weekend in Scotland. Imagine the A1 heading a train from London along the ECML to York. After a break in York the train then heads north to Newcastle where there is an engine change with the P2 taking over for the next section to Edinburgh. After a stay in the Scottish Capital the P2 then takes the train forward over the challenge of the Highland Main line to Inverness. The V4 would be waiting



**Colourised photograph of Gresley class V4.**

to run an optional excursion to Kyle of Lochalsh for those who fancy that, with other options being Loch Ness or perhaps Culloiden if there is such a thing as too much train mileage! A nice return to Edinburgh, perhaps via Aberdeen, allows a break in the Capital and then the P2 and A1 share the duties back to London. Now this will be in 2030 or so, but it's entirely feasible once the locomotives are built. A long weekend with new build steam all the way there and some of the best scenery that this island has to offer. There are many other options, perhaps the A1 on a light load to Edinburgh and then the V4 to Fort William, or the P2 over the steeper LMS West Coast route before the V4 heads to Fort William.

There is no doubt that the V4 will add to the interest and capability of the locomotives in the Trust's fleet. Able to deputise for the bigger locomotives when necessary, and a star turn all of its own. Happy working on the quieter parts of the network, or on the main lines, it will make travel by new steam on the main line more accessible and interesting. TCC



**No. 3401 Bantam Cock, by then carrying British Railways No. 61700.**

All photos - Richard Pearson

Colour Rail

## AI PROFILE - No. 60129 GUY MANNERING by Phil Champion



Peter Townsend

**An unusual sight, an AI double-heading. Here No. 60129 pilots Britannia Class No. 70035 Rudyard Kipling away from York on 16<sup>th</sup> August 1958.**

**The Edinburgh University Library website tells us that Guy, an enthusiastic amateur astrologer, after whom the Walter Scott novel is named, predicted the future of the new-born 'hero' of the book and was later his colonel when he enlisted in the army in India in adulthood. The novel was an immediate success, the 1815 first edition selling out on the first day. The name paints a picture of an upstanding, resolute man, and if it can give a persona to a locomotive (and the steam engine has been called 'a living machine') then this was one to be reckoned with. With such a name and a number of sightings this became a favourite AI seen from the platforms of Newcastle Central.**

No. 60129 was ordered in November 1945; the last of six in Engine Order No.383, and the last of the initial Doncaster batch of 16 AIs. As Doncaster Works No. 2046, it was the only one turned out in June 1949 (Darlington completed Nos. 60150/1 that month) and was noted complete at the Works on the 11<sup>th</sup> and 12<sup>th</sup>.

It moved to York shed as part of its allocation of six AIs, joining Nos. 60121/38/40/41 with No. 60153 arriving a couple of months later. Resplendent in BR express blue with blue, broad black and narrow white lining, double white lines on the outside cylinders and a lion straddling the wheel on the tender side, the plain-chimneyed No. 60129 entered service on 15<sup>th</sup> June. Most work was on the NER part of the Main Line with some workings by the Durham coast. The first sighting was at Newcastle on 21<sup>st</sup> June; it was then seen hauling the 10:05hrs King's Cross-Glasgow into Newcastle on 20<sup>th</sup> July, passing Stockton with nine carriages at 13:43hrs with the Liverpool-Newcastle train on 18<sup>th</sup> August and five days later taking the

12:15hrs Newcastle-York via the coast. After three months it was transferred to Gateshead to join No. 60151 which had earlier moved from Heaton. Eight days later, on 12<sup>th</sup> September, No. 60129 hauled what seems to be its first named train, the up 'Tees-Tyne Pullman'. Not surprisingly, there were many sightings of it at Newcastle that winter. On 18<sup>th</sup> March 1950 it was seen at Edinburgh Waverley, on 22<sup>nd</sup> April it was on Haymarket shed. On 5<sup>th</sup> May the locomotive was stopped at Gateshead Works for a 'Light Casual' repair and was next seen on the up 'Flying Scotsman' from Newcastle-Grantham on 17<sup>th</sup> May. Double-heading with Class B1 No. 61237 on the Delaval-Holloway ECS, No. 60129 was seen passing through Stockton with 13 coaches and one six-wheeler on 30<sup>th</sup> May then with No. 61069 and seven coaches, three six-wheelers and four four-wheeled vehicles on 2<sup>nd</sup> June (the B1s were added merely for a positioning move) and noted passing Barnet on 14<sup>th</sup> August.

Naming as *Guy Mannering* took place in November, along with No. 60128, presumably when it was undergoing

heavy intermediate repairs at Doncaster Works, having been called in on 11<sup>th</sup> October. Not long after naming a lipped, cast chimney was fitted. The 'Flying Scotsman' was again worked from Newcastle on 24<sup>th</sup> March 1951 while on 15<sup>th</sup> May *Guy Mannering* took it into King's Cross. No. 60129 made a further visit to Doncaster on 28<sup>th</sup> January, during the course of which it acquired boiler No. 29814. No. 60129 was one of a trio repainted into BR green with orange and black lining in February before its release from 'The Plant'. Another call at Doncaster from 1<sup>st</sup> June saw it leave with boiler No. 29800 on 8<sup>th</sup> July. Sightings at Edinburgh predominated but it hauled the down 'Heart of Midlothian' from Peterborough to Newcastle on 18<sup>th</sup> July 1953. Earlier that year it was one of 10 AIs hurriedly fitted with a modified form of Automatic Train Control after the Harrow disaster. A prestigious working came on 12<sup>th</sup> September when *Guy Mannering* hauled the down Royal Train into Doncaster then later took it back south. Travelling further, No. 60129

departed Dundee with its portion of the up 'Heart of Midlothian' on 16<sup>th</sup> April 1954 while on 2<sup>nd</sup> December it arrived at King's Cross at 11:25hrs from Leeds. On October 5<sup>th</sup> the locomotive again visited 'The Plant' to be fitted with boiler No. 29862 and having the smokebox numberplate and handrail transposed in a similar manner to No. 60116.

Named trains hauled during the next couple of years included occasional runs noted at Newcastle on the up 'Flying Scotsman', 'Queen of Scots', 'Tees-Tyne Pullman' plus the down 'North Briton'. The first recorded non-passenger working was the York-Edinburgh parcels from Newcastle on 24<sup>th</sup> September 1955. Following an overhaul at Doncaster from 11<sup>th</sup> April to 16<sup>th</sup> May which included attaching boiler No. 29836 the first goods turns recorded were the Colwick-KX goods on 6<sup>th</sup> November 1956 and 1<sup>st</sup> January 1957, an up fish at Little Benton on 25<sup>th</sup> June 1957 followed by the 00:10hrs Aberdeen-Edinburgh goods on 8<sup>th</sup> October after working the 18:45hrs passenger from Waverley the previous day – the later BR crest had been applied to the tender in July 1958. *Guy Mannering* was back at Doncaster for a 'General' at the end of October which found it leaving with a Diagram 117 boiler (No. 29779) at the end of November. In contrast to some of its previous turns, 2<sup>nd</sup> August 1958 had No. 60129 hauling the 'Cambridge Buffet Express' from Cambridge to King's Cross while a fortnight later it double-headed 'Britannia' class No. 70035 on the 12:05hrs Newcastle-Colchester from York. More 'namers' hauled were 'The Talisman' ('up' morning) from Newcastle on 6<sup>th</sup> April 1959 and a couple more times in the following nine months plus the down 'Night Scotsman' from King's Cross on 18<sup>th</sup> February 1960, interrupted by a 'General' at 'The Plant' during August when a Diagram 118 boiler (No. 29828) replaced the 117 pattern one. Going even further afield in 1960 were an up special from Aberdeen-Edinburgh on 4<sup>th</sup> January and the 14:15hrs Glasgow-Perth of 10<sup>th</sup> September. After 11 years No. 60129 moved across the river to Heaton in September 1960 just as Nos. 60124/32/37/42/47/ 51/55 were similarly transferred. Workings continued along the Main Line including odd forays on 'The Northumbrian' and 'The Tees-Tyne Pullman'. Following a 'General' overhaul in February and March which included the fitting of boiler No. 29780 (another Diagram 117 boiler) some more unusual trips were noted; in 1961 it was stand-by loco at York on 8<sup>th</sup> June for the Royal Train; it ran via Lincoln on an ECML diversion on 5<sup>th</sup> November; and on 28<sup>th</sup> December it hauled the 12:00hrs



**Guy Mannering waits at Alnmouth station on 21<sup>st</sup> May 1964.**

Edinburgh-Carlisle via the Waverley route. A mixture of workings characterised 1962 ranging from arrival at KX on 3<sup>rd</sup> March; pulling the 15:30hrs Edinburgh-Berwick a fortnight later; bringing the up CTAC passenger special into Newcastle on 16<sup>th</sup> June and hauling an up goods past Longhoughton (Northumberland) on 7<sup>th</sup> July. With Heaton's nine AIs move to Tweedmouth, *Guy Mannering* duly transferred in September 1962 for use on a mixture of goods and regular passenger trains plus covering for diesel failures on expresses. Typical of these was No. 60129 seen on the 2G85 07:28hrs Berwick-Newcastle stopping train. Uncommon was the sight of No. 60129 seen at Newcastle on the morning of 19<sup>th</sup> December towing V2s Nos. 60818/36/44 southbound probably on a positioning move. Expresses hauled included the Down 'Aberdonian' from Newcastle to Edinburgh on 12<sup>th</sup> April. Three days later it departed the granite city with the 18:25hrs extra for KX. Clearly of importance to some was the arrival at Newcastle with the up Class C pigeons on 10<sup>th</sup> June. No. 60129 received its last general overhaul at Darlington, the works there having taken over responsibility for the AIs, during an extended visit from 25<sup>th</sup> September until 7<sup>th</sup> December which saw the Diagram 117 boiler changed for a Diagram 118 example, No. 29870.

A move back to Gateshead beckoned in December 1964, meeting other AIs moved from Tweedmouth and Ardesley. These are reputed to have been active on special goods trains but there are no specific records of this for No. 60129. On 11<sup>th</sup> March 1965 it moved back to Tweedmouth for storage where it was seen until 13<sup>th</sup> June. Next month it was reinstated at York. By this time it was grubby and missing worksplates and

nameplates. Workings included the arrival into Newcastle of the IN74 from Great Yarmouth on 23<sup>rd</sup> July, then coming off York shed the next day to pull the 3S46 parcels from York to Edinburgh and an up passenger at Darlington on 20<sup>th</sup> August. Exactly a month later it worked a Down unfitted goods into Newcastle. It was towed through that city on 7<sup>th</sup> October, being withdrawn from traffic four days later; one of nine taken out of service that month. This twilight period of No. 60129's life closed on 4<sup>th</sup> December when Brush Type 4 No. D1536 was seen towing it through Peterborough, en route to R.A. King at Norwich to be the only AI scrapped at that yard.

With a working life of some 16 years No. 60129 lasted a year longer than the average for the rest of the class. It is 40 years since it has gone but the memory of this competent, impressively named machine lives on!



**By 24<sup>th</sup> April 1965 No. 60129 was stored at Tyne Dock shed in the company of other AIs. Shorn of its nameplates the locomotive was in its twilight year.**

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

Michael Denholm

Dick Morton



Photographer Charlotte Graham has been following the P2 build and recording some outstanding images - here Ian Matthews works on the wheelsets.

## P2 ENGINEERING UPDATE *by David Elliott*

### General

Covid-19 is still with us and having various effects on the progress of *Prince of Wales*. However, with the worst of the pandemic hopefully over and some relaxation of the lockdown conditions, a degree of normality is returning to Darlington Locomotive Works (DLW). Enhanced hygiene and social distancing are in force, but we are learning to work with these limitations. Some of our younger and fitter volunteers have been able to return which is helpful. Daniela has moved back into her office where she is on her own most of the time but is able to better guide and control shop floor activity. His medical treatment has reached a stage where David Elliott is out of shielding, which enables visits to suppliers and DLW although with the use of masks, gloves and spray disinfectant.

### Frames

Ian Matthews with assistance from Terry Graham and James Heginbottom have now fitted the cold turned rivets to the areas of the spring hangers where bolt threads and nuts would foul the spring gear and make it difficult to fit or remove springs. Ed Laxton made the various sizes of rivet require using the Colchester lathe. The principal of fitting is similar to driven bolts used elsewhere in the frame structure where the rivets are turned to be a slight interference fit in their reamed holes and a hydraulic jack or copper mallet used to press them into their holes. Each rivet was then cut to the correct length projecting from the countersunk hole, the end heated to red heat and a head formed with the pneumatic riveting gun. The reason for using cold turned rivets rather than conventional hot rivets (where the hole is made oversize and the whole rivet heated to red heat before fitting) is that a hot riveted joint is very good in tension, as when the rivet cools it shrinks and pulls the two plates tightly together. However, as the rivet cools it becomes a "loose" fit in its hole, so is not so good at resisting shear forces between the plates. Spring hanger brackets are subjected to significant shear forces and the interference fit of a cold turned rivet is better at resisting shear although the manufacturing and fitting process is more involved than hot riveting.

The remaining driven bolts have also been fitted which completes the process of fitting the spring hangers.

A further piece of "finishing off" work has been to fit the last three bolts holding each of the outside motion brackets to the frames. The difficulty here was that



**Special countersinking tool devised.**



**James Heginbottom reaming a hole.**



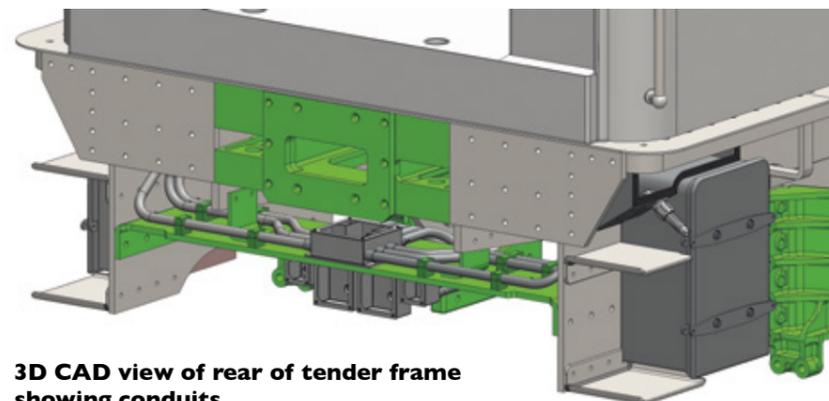
**Spring hanger with bolts and rivet fitted.**



**Custom countersunk bores.**



**...and after the bolts are fitted.**



**3D CAD view of rear of tender frame showing conduits.**

they have to have countersunk heads to avoid possible contact with the leading coupled wheel tyres. Due to the shape of the motion brackets, countersinking the holes was not straightforward and involved making a special countersinking tool which was driven through the hole by the magnetic drill, whilst Ian used a special

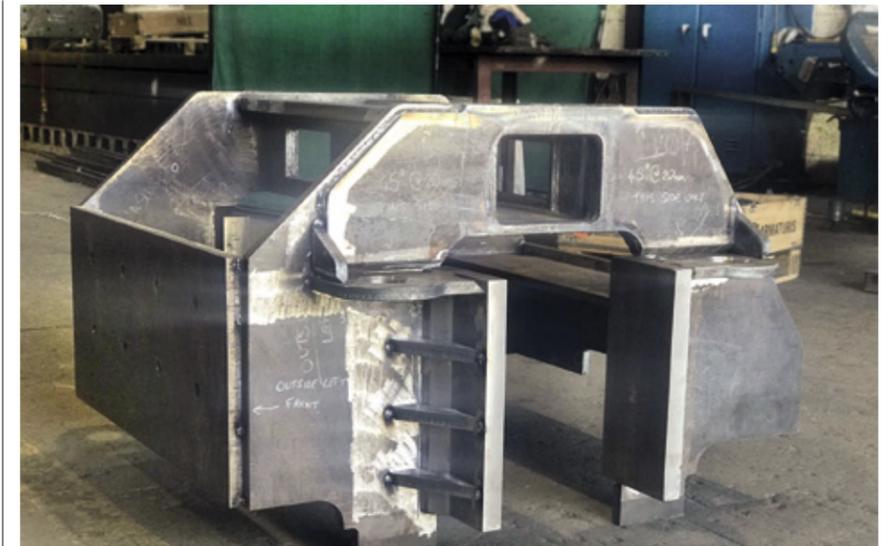
screw device to apply the feed from the outside.

The very last part of the frame structure – the 'shelf' under the back of the cab (which we held off making until a final decision was made about where to fit the live steam injector was made) is now been drawn and will be profiled shortly.

### Pony Truck

Although delayed by Covid-19, the pony truck frame is making progress at North View Engineering Solutions in Darlington. The main elements (frame and steering arm) have been fabricated and parts for the crosshead machined. (photos of frame, steering arm and crosshead).

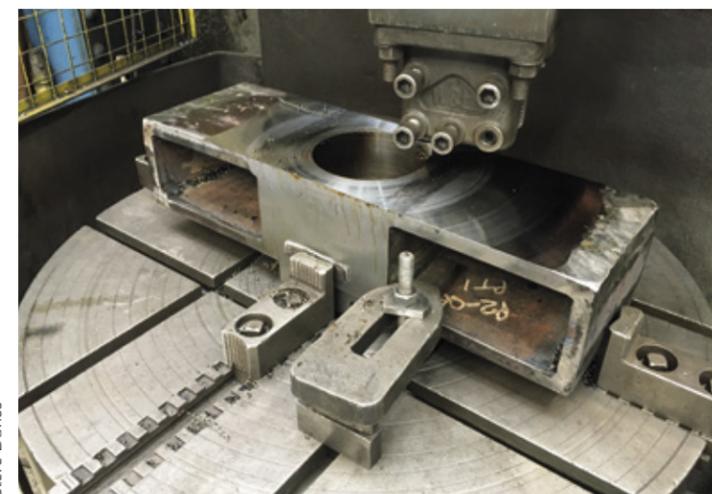
The modification of the pony truck from the original swing link side control to the later V2 class type of spring side control represents a significant design change in a safety critical part of the locomotive. Whilst we have done a considerable amount of work to ensure that the new design will be stable and safe, to certify the locomotive it will be necessary to have an independent review of the design. Ricardo Rail has been retained to carry out this work building on the Vampire ride and track force model which was commissioned from the Resonate (formerly DeltaRail) before the P2 project was formally launched and provided the basis for the new pony truck design.



**Above: Two images of the pony truck frames tack welded together.**



**The pony truck steering arm.**



**Machining the pony truck crosshead and the finished article.**



## Wheelsets

When the spring links were offered up to the coupled axle and cannon boxes, it was apparent that the castings were a bit oversize and required some material removing. After an expensive quote from one of our local engineering companies, it was decided to do the work in house using our "new" milling machine. Although the areas requiring work were small the cannon box halves are not and are very heavy. A jury rig was devised using the cast iron marking table, some brass plate and rollers made of pipe to support the outer end of each cannon box half in such a way that it could move with the milling table. The milling machine had its head rotated to enable a ball ended tool to get in and remove the surplus metal. Finally Ian ground the area to remove sharp edges and corners. This will enable final assembly of the cannon boxes to the axles.



**Above: The milling machine set up for the job.**



**Top right: Ian Matthews uses the milling machine on the cannon box.**



**Right: The finished result! The machined cannon box.**

## Boiler

On Tuesday 14<sup>th</sup> July 2020 Graeme Bunker-James, and Daniela Filová visited DB Meiningen Works, Germany to for a progress meeting on the two new boilers. Daniela provided this report.



**Taper and parallel boiler barrel sections.**

"We were briefed on an update of the construction process. There were various technical aspects discussed in detail but most importantly as the assembly of the main boiler barrel rings is ready to commence, we identified and discussed the required critical dimensions and tolerance standards used. This is to ensure that the boiler, when fitted to the engines will comply with the UK loading gauge.

We enjoyed a guided tour of the works which is always a treat for steam locomotive engineers, given the wide variety of work performed by DB Meiningen Works in support of the heritage railway sector and beyond.

Further details of dates for the various stages of boiler manufacture were agreed. As a result of these discussions, DLW will send a batch of blanks for the various flanges where fittings are to be attached and which need to be blanked off for hydraulic testing. We will also be sending two complete regulator cross shaft and stuffing box assemblies which will be married up to the regulator and its linkage which has been installed in each boiler as part of the contract.

Thanks are due to DB Meiningen for maintaining our delivery schedule for both boilers despite the limitations imposed by the Covid-19 pandemic."

## Motion

The two middle coupling rods are approaching completion of machining at Arthur Stephenson Engineers Ltd at Atherton. It is hoped that the relaxation of Covid-19 rules will enable resumption of forging of the other rods in the near future.



**Above: Coupling rods being machined at Stephenson's.**



**The coned section with the steam collector (banjo dome).**



**Steam dome covers.**



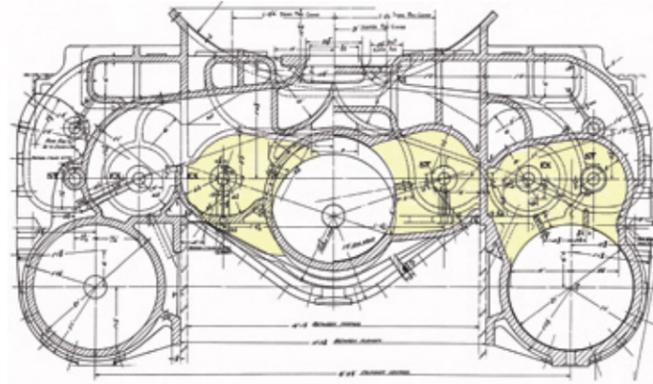
**A firebox tubeplate.**

## Cylinders and valves

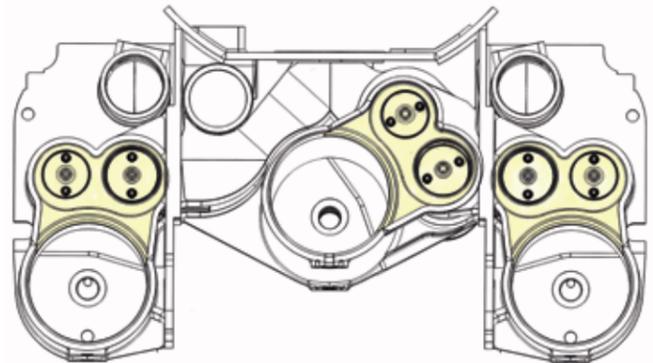
Whilst Alan Parkin is developing manufacturing drawings for the cylinder block, David Elliott has resolved one of the more tricky design issues with the poppet valve gear. One of the unsatisfactory features of the original No. 2001 cylinder block was having the inlet and exhaust valves on opposite sides of the middle cylinder. As a result, separate ports were required from the cylinder to the valve chests which gave rise to excessive clearance volume. Clearance volume is the space in the cylinder and its associated ports that is left when the piston is at the end of its stroke and is usually expressed as a percentage of the total volume for the cylinder when the piston is at the other end of its stroke. This space is not good for efficiency as for each power stroke of the piston, the clearance volume has to be filled with steam which does little work on the piston. The best figures achieved with poppet valves are around 10%. The original P2 design middle cylinder had clearance volumes of around 14% at one end and 16% at the other – the difference being due to the slope of the cylinder in the block to enable the connecting rod to clear the leading coupled axle whilst the valves were almost horizontal to be in line with those on the outside cylinders.

To overcome this problem, the layout of the valves has been changed to mimic the outside cylinders with the inlet and exhaust valves together and in line with the centerline of the cylinder. This does create a challenge, as whilst the exhaust valves can be driven directly from the Driver's side cambox (as on 2001), the inlet valves are on the other side of the engine compared with the cam driving them. After several iterations a pair of rocking shafts have been designed to transfer the movement of the inlet valve cam tappets on the Fireman's side of the engine across to the inside cylinder inlet valves.

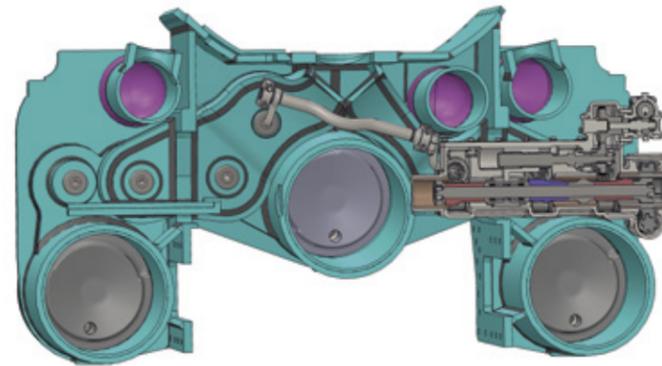
**Right: Cylinder block section showing rocking shaft drive to inside cylinder inlet valve.**



**No. 2001 cylinder section drawing showing the clearance volume.**



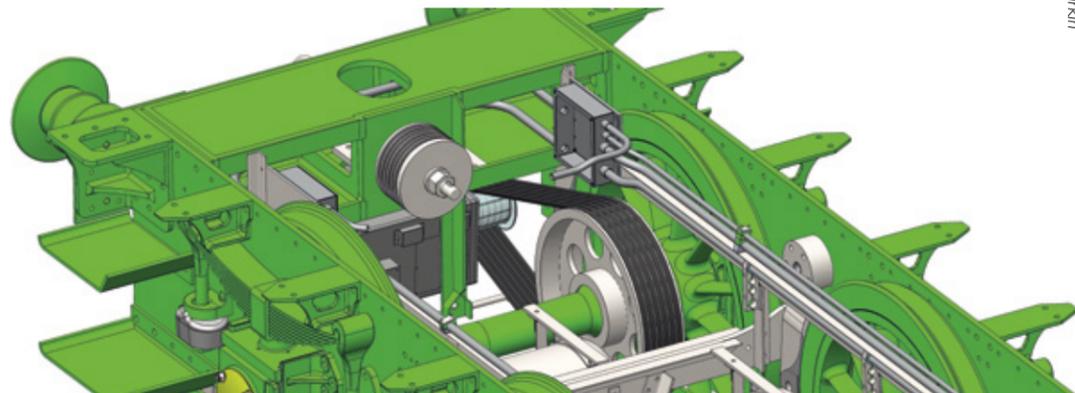
**No. 2007 cylinder section drawing showing the clearance volume.**



## Pipework and fittings

Alan has continued with laying out pipework and electrical conduits and junction boxes on the tender frames.

**3D CAD view of rear of tender frame showing conduits.**



Graphics - David Elliott

Alan Parkin



David Elliott

## Tender

Further progress has been made with the tender frames, however the conspicuous progress has been with the tank. Ian has completed the filling and following priming and much rubbing down has applied undercoat to the back and sides and black gloss to tank top, coal space and underside. Grey topcoat has been applied to the front in the cab area for protection pending some significant modifications in this area to accommodate the new European Train Control System (ETCS) cab signaling equipment which will be required for operating on the southern end of the East Coast Main Line by the time the locomotive is finished.

The tender tank has been wheeled outside and sheeted over to enable the wheelsets to be withdrawn from under the engine to facilitate installation of pipework and electrical trunking.

It was also found necessary to modify the tender lamp brackets to accommodate the electric lamps, a job that also required an electrical conduit to be routed through the tender water space.



David Elliott

**The tender tank ( above) in primer and seen here sheeted for protection.**



Ian Matthews

**The prefabricated conduit.**



**The conduit in place.**



Daniela Floyd

**The modified lamp brackets.**

## Electrical System

Rob Morland has continued to work on the electrical system design in his home workshop near Cambridge. The Essential Services System electronics design is now substantially complete and the mapping of this onto the engine conduit system is also finished. A total of 21 wiring looms have been defined. All wiring nets have had their IDs and connector pins allocated.

The Auxiliary Services System electronics design is also nearing completion. All that remains are some of the minor circuits, for example cab lighting controllers. These will be based on the circuits that have proven successful on *Tornado*. The Auxiliary Services engine wiring has also been mapped – another 18 wiring looms have been defined. Once Alan Parkin has completed the tender conduit arrangements, both the Essential and Auxiliary Services tender systems and associated wiring looms will be added.

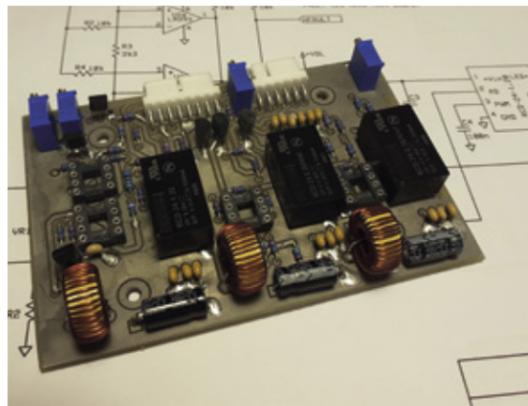
We have identified a new design of bulkhead lamp fitting for the P2 cab. The fittings on *Tornado* have been satisfactory but, being based on an aluminium casting, the fixings have become difficult to use over time. Some screw holes have had to be drilled out and re-tapped to maintain a secure fixing for the cage and glass. The new fitting is made of brass and is substantially built. It also has wingnuts to secure the cage and glass, which will make removal for cleaning more straightforward, with less chance of dropping and breaking the glass.

Work on our new combined LED head/tail/marker luminary is proceeding well. Roger Millington has completed and tested the prototype optical system. Alan Green (who designed the LED luminaries for *Tornado*) has kindly offered to design and build the drive electronics. The photo shows the first prototype printed circuit board (PCB) assembled ready for test.

The Trust is supporting the East Coast Digital Project which plans to install ETCS on two steam locomotives as a pathfinder project prior to more extensive rollout. *Tornado* has been selected as one of these locomotives and we are working with Network Rail's Rolling Stock Integration Partner for the project, SNCL-Lavalin, to plan the necessary modifications to the A1 to enable the fitting of ETCS. We are taking the opportunity to incorporate several of the P2 electrical system design improvements into the design for *Tornado*, especially around the arrangements that permit cab removal.

## 3D printing

David Elliott has recently acquired a 3D printer (something to do as a hobby in these Covid-19 days when there is not



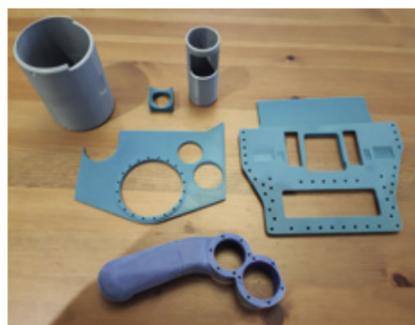
Alan Green  
**Prototype LED lamp driver PCB.**



Photo courtesy of 'The Worm That Turned'  
**The new cab bulkhead light fitting.**



David Elliott  
**3D printing of regulator stuffing box cover.**



David Elliott  
**3D printed cylinder parts.**

much happening outside the house!)

The first work undertaken is to reproduce all the individual parts of the cylinder block at 1:8 scale to ensure that the proposed weld sequence will actually work with sufficient access to achieve all the welds. It will also help prospective fabricators to understand the design when quotes are sought.

Shortly after the printer was first set to work, we were sorting out patterns for



David Elliott  
**The printed patterns for the stuffing box.**

the regulator stuffing box that is needed to test the new boilers in Meiningen and were reminded that the cover pattern was missing. The 3D model was rapidly modified to include machining allowances and add "draft" to the edges and a pattern printed. This took the printer about 56 hours altogether – fortunately, provided it does not run out of plastic filament or suffer loss of power, it happily proceeds on its own until finished! **TCC**

## ASK DAVID ELLIOTT

We have received the following question from Graham Russell, a P2 Founder and Covenantor.

**“Why fabricate the cylinders? Metallurgy compatibility across the range of components and weld specification incorporated in the cylinder assembly is of interest. If you could take some time in describing any differences and challenges relative to this subject, especially with reference to the following and any others I haven't recognised, would be appreciated:**

- Cast steam and exhaust passages
- Drawn tube for cylinders and steam/exhaust passages
- Forged blank and machined profiles
- Rolled plate profiles
- Weld type/specification.”

David replies as follows.

The basic logic for the cylinders on 2007 is as follows:

- 1) To maintain as much similarity as possible (or desirable) with the original P2 design we have decided to retain the three-cylinders-in-one monobloc design.
- 2) The need to reduce the overall width of the cylinder block to keep it within an acceptable structure gauge, has pointed us to using steel as opposed to cast iron to compensate for the resultant reduction in thickness of the outside cylinder wall and stiffeners.
- 3) We approached the foundry industry (including Wm Cook) and there was no appetite to take on such a complex one-off structure as a steel casting
- 4) In the latter days of steam, the Germans and USA were making significant use of fabricated steel cylinders (Meiningen is still making them for the Harz 2-10-2 locos).

The fundamental principles used elsewhere on the locomotive where castings have been replaced with fabrications, is to use materials that are stronger than the original and to employ full penetration welding to boiler standards where possible. Following appropriate weld NDT, the whole fabrication is stress relieved. The resultant structure will be stronger than the equivalent casting. Where the design has been significantly changed, high stress areas are subjected to FEA.

For the cylinder block, the final choice of materials has not been confirmed. First it is necessary to decide whether the cylinder block is primarily a structure or a pressure vessel. Traditionally cylinders have been treated primarily as structural, on the basis that the thickness of elements is decided by the ability to resist the forces applied through the frames and of the pistons added to a generous allowance for corrosion which results in proportions that are significantly in excess of those that would be required to resist pressure alone.

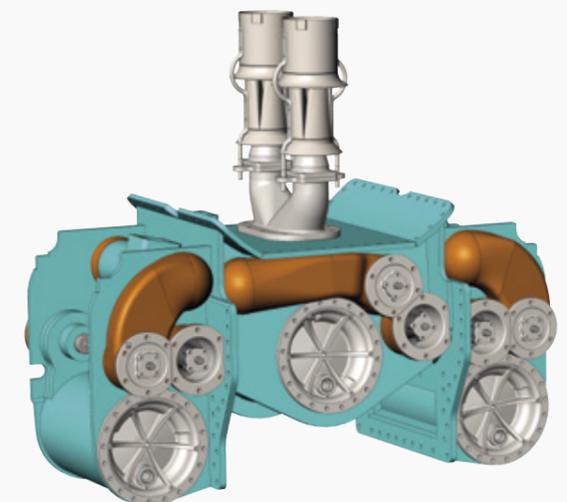
On this basis my initial thoughts were to use BS EN 10025 S355J2 material, on the given that it is the highest spec material that can be welded easily and reliably in ambient conditions and is readily available in a wide range of thicknesses and sections. However, to improve the high temperature performance and to increase corrosion resistance, I am now veering towards BS EN 10028 P355GH, which is the modern equivalent of boiler plate. The individual components will be profiled and rolled or press-braked as required. Some elements will be pre-machined prior to fabrication.

The tubular elements (cylinders, valve chests) would ideally be of similar specification. P355 seamless tube appears to be available in the sizes we require. Other shapes such as the steam pipe flanges will be machined from solid bar. The more difficult areas are the cast steam ports. The reason for choosing casting is the complexity of the shapes, particularly as they all require mid feathers to provide sufficient strength against pressure in rectangular sections. These items will be subject to significant thermal shock as they will be rapidly heated from ambient to steam temperature when the regulator is first opened whilst the rest of the block is cold. As the block catches up, the steam chests and ports will become hotter still as superheat builds up. I reckon that the differential temperature will peak at around 200 degrees C.

Daniela has spent a fair amount of time subjecting the steam port castings and the adjacent steam chest tubes to FEA - both for pressure and temperature and refining the design to minimise stress concentrations. My initial thought was to use BS3100 grade A1 which is fairly mild steel with good ductility, however it has a yield strength at around 230N/mm<sup>2</sup> which is well below P355. Also, there are no published elevated temperature figures. We are still looking into the best steel spec with reference to yield strength at elevated temperatures, ductility, corrosion resistance and weldability.

Welds are full penetration in almost all cases, either from both or one side according to accessibility. The eventual manufacturer will be requested to supply detailed weld specifications and NDT requirements as part of his proposal to be approved by our designated body prior to start of construction. Whilst a significant amount of work has gone into the basic strength of the structure, to carry out a comprehensive analysis of the whole thing is beyond our FEA capability and to do it thoroughly using a specialist consultancy would be very expensive and time consuming.

One significant advantage of a welded fabrication steel fabrication as opposed to traditional cast iron is that it is readily repairable by conventional welding (which we are well used to with *Tornado's* boiler!). **TCC**



David Elliott/ASJT  
**A CAD of the cylinder block with the Kylchap blastpipes in place.**

## POWERING NO. 2007 TO COMPLETION WITH THE TURBOGEN CLUB *by Mark Allatt*



Rob Morland

### Turbo-generator assembly.

In August 2018, the Trust placed a £350,000 order for a state-of-the-art electrical system for new Gresley class P2 No. 2007 *Prince of Wales*. The electrical system, based on that which has operated successfully for the past 12 years on No. 60163 *Tornado*, includes systems that generate and store electricity, together with lighting and instrumentation systems. Also included are all current railway safety and communication systems, plus new systems that will soon be needed on the Network Rail main line.

The Electrical system for No. 2007 *Prince of Wales* will be based on the following key principles:

- Dual redundant power supplies and electronic battery management
- Steam turbine and axle-driven generators
- Structured trunking system for wiring and optimised equipment locations for minimum wiring
- Military specification components for reliability and all LED lighting.

Power will be generated by the Trust's new design for an axle-driven alternator, based on an off-the-shelf truck product, and new turbo-generators, based on the German design fitted to *Tornado*. No. 2007 will be fitted with two turbo-generators, each with an output around 25A at 27V DC (675VA).

In order to keep on schedule to complete No. 2007 within

the next three years, we need to have the two turbo-generators delivered to Darlington Locomotive Works in 2020. We estimate that each turbo-generator will cost around £40,000 to complete and install.

Spurred on by the success of The Pony (Truck) Club, in early July we launched The Turbogenerator Club – the second of our new mini-clubs to fund specific areas of construction that are beyond the reach of most people to support as a Dedicated Donation.

It is our desire to leave No. 2007 debt free and therefore our aim is to raise at least £40,000 with The Turbogenerator Club from 40 supporters each donating £1,000 plus Gift Aid (in up to four payments of £250).

Members receive the following special benefits:

- 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
- First choice of components to sponsor as a Dedicated Donation
- Special supporters' day with *Tornado*
- Exclusive certificate signed by the electricals design team of Rob Morland and Alan Parkin
- A limited-edition turbo-generator coaster
- Invitation to the first official run of the new turbo-generator.

By the end of August, the fundraising campaign for The Turbogenerator Club had already 'generated' 14 members of the initial target of 40 members, each contributing £1,000.

To become a member of The Turbogenerator Club, email [enquiries@p2steam.com](mailto:enquiries@p2steam.com), call 01325 460163 or visit [www.p2steam.com](http://www.p2steam.com) for more information.

The AI Steam Locomotive Trust is raising funds for the acquisition of two turbo-generators for the new Gresley class P2 No. 2007 *Prince of Wales*. If there are surplus funds left over following the acquisition of the two turbo-generators, we will use the money to buy other components for the Gresley class P2 that the charity would not otherwise have. **TCC**



Turbogen Coaster.

## P2 DEDICATED DONATIONS UPDATE *by Mandy Grant*

25<sup>th</sup> April 2020 – 1<sup>st</sup> Aug 2020 has seen a steady increase in component sponsorship, with 11 individual components being sponsored, raising a further £7095.00 before gift aid. This brings the total number of components now sponsored to 617!

We are most grateful to all of our supporters who have responded to the Dedicated Donations campaign so far!

Looking for an unusual gift? With prices ranging from one of many driven bolts & slotted nuts for £30 to the complete exhaust steam injector for £15,000. Why not treat the rail enthusiast in your family to something different and help us to complete this iconic locomotive!

Whatever your budget, please email Mandy at [dedicated.donations@p2steam.com](mailto:dedicated.donations@p2steam.com) for more information.

Components sponsored during this period include:

- Headlamp No.2 - Including all Design Work, 3D CAD Drawings, Manufacture of Lamp Housing, Optics, Testing and Certification
- Return Crank Gear Box LH
- 4x 1" BSW Driven Bolts and Slotted Nuts - Leading LH Hornstay
- RH Cladding Atomiser Valve Pocket
- Brake Lever Pin 10
- Vacuum Pipe 6
- Hose Cock Adapters for Engine Buffer Beam Bracket 1
- Reinforced Cut Out for Boiler Registration Plate

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](mailto:dedicated.donations@p2steam.com) **TCC**

## THE TENDER CLUB STEADILY FILLING UP *by Mark Allatt*

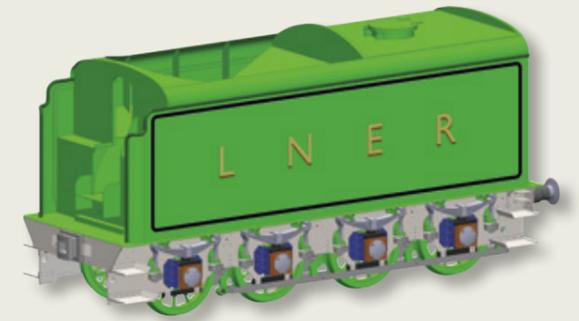
In April 2019, the project to build Britain's most powerful express passenger steam locomotive announced a new £450,000 appeal to fund the manufacture the tender for new Gresley class P2 No. 2007 *Prince of Wales*. The AI Steam Locomotive Trust has set itself the challenge of raising £450,000 (including Gift Aid) 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. Substantial progress has been made on the tender with the erection of the tender frames by ID Howitt of Crofton (now over two-thirds complete), the construction of the tender tank by North View Engineering Solutions Ltd of Darlington (structurally complete, delivered to DLW in March and primed & undercoated) and the assembly of the four tender wheelsets at South Devon Railway Engineering Ltd in Buckfastleigh (now complete and in DLW where they have been filled and painted and await balancing).

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
- 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 supporters' 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



David Elliott

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 is 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* is 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 urgently need the fundraising for the tender to keep pace with its construction if we are to remain on-track for completion of No. 2007 within the next three years. By the end of August, The Tender Club had recruited 78 members of its 250 members target meaning that only £117,000 (excluding Gift Aid) of the required £450,000 (including Gift Aid) has already been pledged – that still leaves us with a lot of work to do!

To become a member of The Tender Club, email [enquiries@p2steam.com](mailto:enquiries@p2steam.com), call 01325 460163 or visit [www.p2steam.com](http://www.p2steam.com) for more information.

PS The AI Steam Locomotive Trust is raising funds for the manufacture of the tender for the new Gresley class P2 No. 2007 *Prince of Wales*. If there are surplus funds left over following the manufacture of the tender, we will use the money to buy other components for the Gresley class P2 that the charity would not otherwise have. **TCC**

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



**The Boiler Club, The Mikado Club, The Cylinder Club, The Motion Club, The Tender Club - All Club Badges £5.00 each** (Badges shown actual size)

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

# WE ARE HALF-WAY THERE! *by Mark Allatt*

**£2.5m spent – £3m raised, and 3.7m pledged of the £5m target**



**Gresley class P2 No. 2007 Prince of Wales outside Darlington Locomotive Works.**

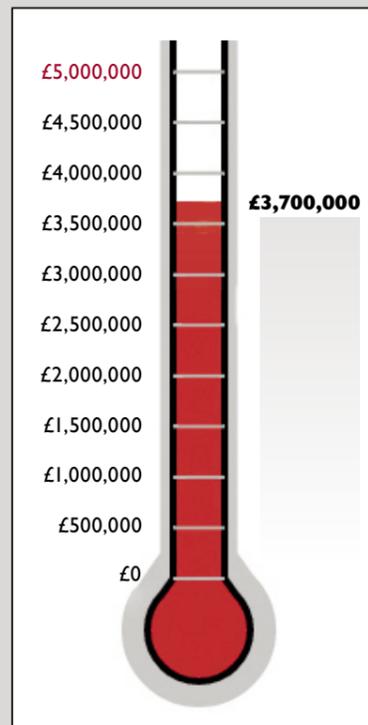
As you will have read elsewhere in this edition of TCC, even in these difficult times our project to build Gresley class P2 No. 2007 Prince of Wales continues to make solid progress on all fronts. It's still difficult to ascertain at the time of writing what the long-term impact of the coronavirus will be on our fundraising efforts, but we are carefully monitoring our financial position and building as much flexibility into our project plan as possible. As we know, our fundraising works as a virtuous circle, with donations generating progress which encourages supporters new and existing to support the next phases of construction. A huge thank you to all our supporters who continue to give most generously to the project. At this time, we are still on target to complete the new locomotive within three years provided we can turn up the wick on our income growth.

Public interest in seeing a new Gresley class P2 become a reality sooner rather than later remains high and over 930 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 £15 per Covenantor (excluding Gift Aid) and the projected annual income for our P2 project from the monthly Covenant scheme now well in excess of £200,000pa – a remarkable achievement in such a short period of time and all thanks to the generosity of our supporters. However, due to the coronavirus we have had to suspend our programme of Works Open Days and P2 Roadshows and so are not getting the face time with potential new supporters. Whilst we are doing what we can do raise our profile digitally and in the print media, I would encourage all of our existing supporters to try to recruit a friend to come on board and a covenantor or if possible, consider increasing your Covenant.

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 200 people to The Boiler Club, each of whom have pledged £2,000 each to fund the boiler meaning that £400,000 of the £600,000 target (excluding Gift Aid) is now pledged. With the delivery of the boiler for No. 2007 scheduled for December 2021 – and the spare boiler for both of our locomotives expected to be delivered in December 2020 - we need an average of six new members a month – please do consider becoming a member of The Boiler Club if you are



**Total sum pledged to date.**

able. If you are already a member of The Boiler Club, please do consider joining a number of Club members who have taken out a second membership to fund No. 2007's share of the spare boiler.

April 2018 saw the launch of The Motion Club, established to fund the manufacture of the heavy motion for No. 2007, where we 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. Although somewhat delayed through no fault of our supplier, you can see elsewhere in TCC that good progress is now being made with the heavy motion and the coupling rods are expected to be delivered to DLW in the autumn. As of the end of July 2020, we had recruited 175 members to The Motion Club, with £175,000 pledged excluding Gift Aid – at last reaching the initial target, proof indeed that visible progress really does drive donations.

We launched The Tender Club in 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 progress has been steady, and we have now recruited 78 people as of the end of August which is still in stark contrast to the tender's progress! As you can read in David Elliott's engineering update, work has progressed rapidly on the tender since the last edition of TCC. We still have a long way to go to be able to fully fund the tender and will therefore need to more closely align its pace of construction with the availability of funds over the coming months. Please help us to close the gap and get on board The Tender Club.

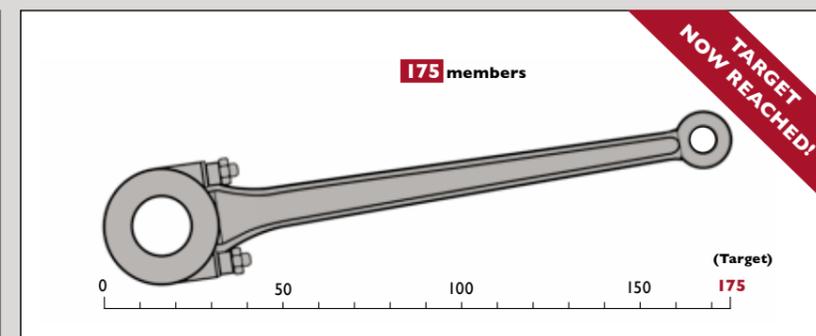
As you will read elsewhere in TCC, in April we launched our first smaller – or bite-sized – fundraising club to provide the funds required to complete the pony truck. With The Pony (Truck) Club – apologies for the pun - we are seeking to raise the necessary £20,000 (plus Gift Aid) from 20 supporters each donating £1,000. This club got off to quite a gallop and within a few days 30 supporters had signed up enabling us to also fund some of the required certification.

Spurred on by this success, we launched The Turbogen Club in July and by the end of August the fundraising campaign has already 'generated' 14 members of the initial target of 40 members each contributing £1,000.

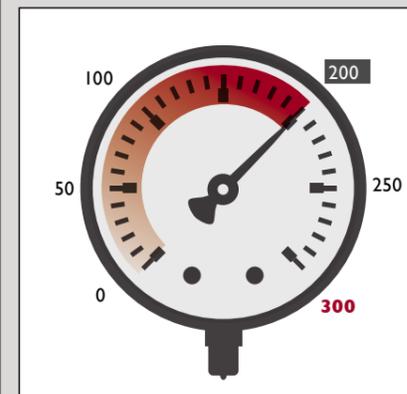
Our Dedicated Donations initiative continues to generate substantial income for the project, with over £400,000 to-date from existing supporters sponsoring a variety of components. There are still a considerable number of wheeling-related Dedicated Donations still available for sponsorship, ranging from 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). We have also released some very visible Dedicated Donations related to the painting of the locomotive, with sponsorship of the LNER lettering on the tender available for £1,000 per side and the lining of the tender at £1,000 for each side and £500 for the rear.

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 £2.5m (over half of the total required) converted into metal and over £3.0m (60%) raised.

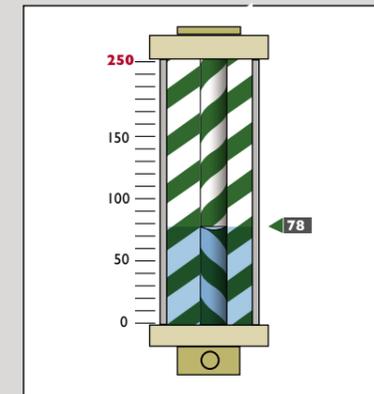
We now have a rolling chassis and we remain on-track for completion of the new locomotive within three



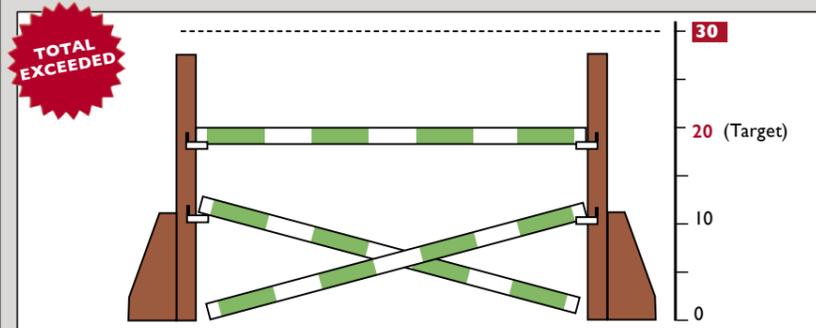
**Motion Club gauge - 175 Members.**



**Boiler Club Gauge - 200 Members.**



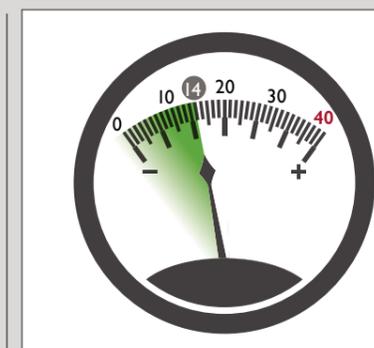
**Tender Club Gauge - 78 Members.**



**Pony (Truck) Club - 30 Members.**

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 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!



**Turbogen Club - 14 Members.**

For more information on how you can help to build Britain's most powerful steam locomotive visit [www.p2steam.com](http://www.p2steam.com), email [enquiries@p2steam.com](mailto:enquiries@p2steam.com) or call 01325 460163.

## 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!



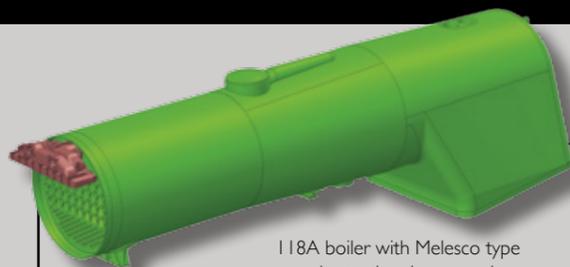
The boiler is the beating heart of a steam locomotive and to keep the construction of No. 2007 Prince of Wales on schedule for completion in 2021, we placed the order for the boiler in 2019 for delivery in January 2021. We have established The Boiler Club to fund the construction of Prince of Wales' 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 16 payments of £125 by standing order) – we are over half way there, having raised £475,000 (including gift aid) 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 supporters' day with Tornado.

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

For further information please visit [www.p2steam.com](http://www.p2steam.com) email [enquiries@p2steam.com](mailto: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



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

## 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 16 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! By the end of July 2020, The Boiler Club fundraising campaign had recruited almost two-thirds of its target membership with pledges of £400,000 excluding Gift Aid. Launched in October 2014 to raise the £600,000 needed pay for the manufacture of the boiler, The Boiler Club now has 200 members who have each donated or pledged £2,000 (plus Gift Aid).

Following the success of The Founders Club, which was designed to get to the P2 Project to the point of cutting No.2007's frames, the Trust established The Boiler Club to fund the construction of Prince of Wales' boiler. It is the Trust's desire to leave No. 2007 Prince of Wales debt free upon completion and therefore its 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). In return for this commitment, members of The Boiler Club receive these special benefits::

- Opportunity to buy ticket (seat already reserved) on No. 2007's first main line train
- 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 – 'Dream Team' by renowned railway artist Chris Ludlow
- Special supporters' day with Tornado.

Reaching the two-thirds point in the funding of No. 2007 Prince of Wales' boiler through The Boiler Club will mark 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 2021.

To become a member of The Boiler Club, email [enquiries@p2steam.com](mailto:enquiries@p2steam.com), call **01325 460163** or visit [www.p2steam.com](http://www.p2steam.com) for more information.

The A1 Steam Locomotive Trust is raising funds for the manufacture of the boilers for the new Gresley class P2 No. 2007 Prince of Wales. If there are surplus funds left over following the manufacture of the boilers, we will use the money to buy other components for the Gresley class P2 that the charity would not otherwise have. **TCC**

## •WORKSHOP NOTES•

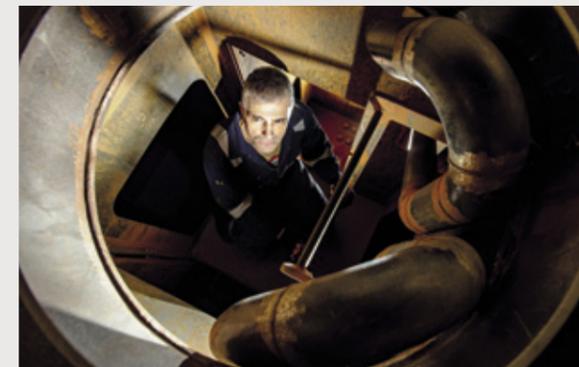
We were delighted to hear that on 25<sup>th</sup> June, Councillor Chris McEwen, a long-term friend and supporter of the



Chris McEwen

Trust, was appointed Mayor of Darlington. Alas the actual ceremony had to be live-streamed owing to Covid-19 restrictions but we wish Chris well in his new role. Apart from continuing to support the efforts of the Trust, Chris will also be raising awareness of the 200<sup>th</sup> anniversary of the Stockton to Darlington Railway in 2025 as we move towards the 195<sup>th</sup> Anniversary in September.

As part of an article for The Yorkshire Post, photographer Bruce Rollinson came to Darlington Locomotive Works to record Ian Matthews and Edward Laxton working on the new P2. Naturally, like all of those with an artistic bent, he asked the boys for some unusual images and seen here on the right are a couple of the results!



Bruce Rollinson

**Ian Matthews found himself being 'snapped' in the bowels of the newly delivered tender tank. Both A1 and P2 tenders have a 'manhole' rather than just a filler cap, allowing access to the interior of the tank for inspections and maintenance.**

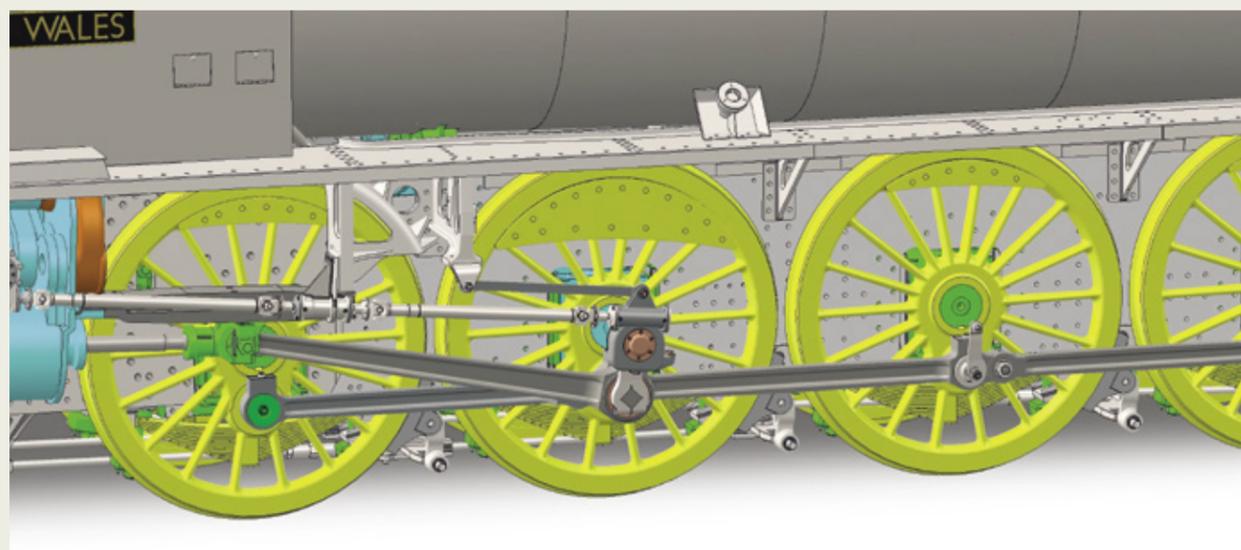


Bruce Rollinson

**Ed Laxton is seen working on one of the tender wheelsets.**

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

by Mark Allatt



David Elliott / A1S1T

### 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 July 2020 we had recruited all 175 members to The Motion Club, with £210,000 pledged including Gift Aid.

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 for 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 last year's Convention. These were joined by two more coupling rod forgings and as you will read elsewhere in this issue of *TCC* all four are being machined over next few 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:

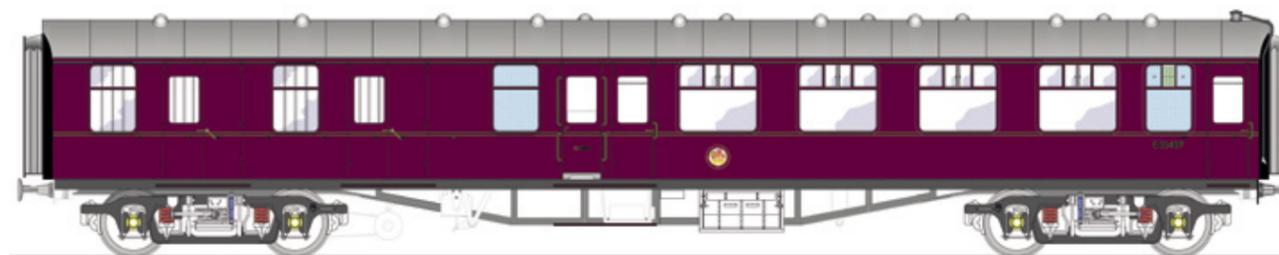
- Opportunity to buy ticket (seat already reserved) on one of the first trains hauled by No. 2007 *Prince of Wales*
- Reasonable access to No. 2007 at all times
- Opportunity to buy exclusive Motion Club badge
- Opportunity to join one of the teams building No. 2007
- First choice of other components to sponsor
- Special supporters' 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.

We have reached the initial target of 175 members of The Motion Club but there is still an opportunity to come on-board if you haven't already whilst the motion is being manufactured. To become a member of The Motion Club, email [enquiries@p2steam.com](mailto:enquiries@p2steam.com), call **01325 460163** or visit [www.p2steam.com](http://www.p2steam.com) for more information.

P.S. The A1 Steam Locomotive Trust is raising funds for the manufacture of the motion for the new Gresley class P2 No. 2007 *Prince of Wales*. If there are surplus funds left over following the manufacture of the motion, we will use the money to buy other components for the Gresley class P2 that the charity would not otherwise have. **TCC**

## THE P2 SUPPORT COACH APPEAL by Mark Allatt



Graphic - Gordon Best / A1S1T

### Colour illustration of the completed BR Mark I support coach.

A unique opportunity has arisen for The A1 Steam Locomotive Trust to acquire BR Mark I BSK E35457 for eventual use as the support coach for No. 2007 *Prince of Wales*.

A support coach and crew are an essential part of the operation of steam locomotives on Network Rail. Since British Railways steam operations ended in 1968, much if not all of the static infrastructure and paid staff required to support them no longer exists, requiring the use of support coaches and crews to travel with the locomotive.

Support coaches are usually drawn from passenger brake coaches of the BR Mark I era, taking advantage of the existence of the guards/ parcels van space for ease of conversion to workshop and store functions. The passenger area will provide mess room, seating and/or sleeping accommodation.

Brake Corridor Second (BSK) E35457 was built at Wolverton in 1963, is fitted

with Commonwealth bogies and was most recently used as the support coach for BR standard class 4 No. 76084.

In surprisingly excellent condition, E35457 will require minimal work other than the reinstatement of its dual-brakes and the addition of a similar electrical system to that fitted to E21249, No. 60163 *Tornado's* support coach.

The A1 Steam Locomotive Trust is seeking to raise £100,000 from 100 supporters to each donate £1,000 (in up to eight monthly payments of £125 by standing order) towards the acquisition, overhaul and conversion of BR Mark I BSK E35457.

In recognition of their support, donors will receive:

- Exclusive certificate signed by David Champion (President) and Steve Davies (Chairman) of The A1 Steam Locomotive Trust
- The opportunity to buy a ticket (seat

already reserved) on one of the first trains hauled by No. 2007 *Prince of Wales*

- Reasonable access to No. 2007 and No. 60163 at all times
- Special supporters' day with *Tornado*
- Two tickets (booked in advance) to travel behind *Tornado* or *Prince of Wales* in E35457 on a heritage railway and commemorative photograph with the locomotive and coach.

For further information on The P2 Support Coach Appeal, please visit [www.p2steam.com](http://www.p2steam.com), email [enquiries@p2steam.com](mailto:enquiries@p2steam.com) or call **01325 460163**.

The P2 Support Coach Appeal is raising funds for the acquisition and overhaul of BR Mark I E35457. If there are surplus funds left over following its acquisition and overhaul, we will use the money to purchase or manufacture other components for the Gresley class P2 that the charity would not otherwise have. **TCC**

## P2 ROADSHOWS, DARLINGTON LOCOMOTIVE WORKS OPEN DAYS AND PRESENTATIONS by Mark Allatt

In the light of Government advice to prevent the spread of the coronavirus, we have suspended our P2 Roadshow programme, Open Days at Darlington Locomotive Works (usually held on the first and third Saturday of the month) and ad-hoc Presentations to external groups.

We will be reviewing whether or not to go ahead with each planned future roadshow and are also investigating an on-line substitute - please keep an eye on our website for the latest updates. We hope to be able to restart the programmes as soon as it is safely possible - thank you in advance for your patience and understanding.

When they re-start, the presentations in 2020 will feature key team members including Mark Allatt and/or David Elliott and cover the background to the project to build new Gresley class P2 No. 2007 *Prince of Wales*, progress to-date, future plans

and details of how to get involved.

We would encourage you to attend and bring along some friends and family members who would be interested in hearing about the project. The two-hour presentation will start promptly at 11:00hrs and run until 13:00hrs and is open to existing supporters and interested members of the public:

At the moment the following P2 Roadshows remain in the diary:

- **3<sup>rd</sup> October** - Darlington Locomotive Works
- **21<sup>st</sup> November** - Darlington Locomotive Works

For more information on the P2 roadshows visit [www.p2steam.com](http://www.p2steam.com), email [enquiries@p2steam.com](mailto:enquiries@p2steam.com) or call **01325 460163**. **TCC**

## PROFILE – DANIELA FILOVÁ by Graham Langer

It was anticipated at the outset of the project to build the P2 that extra resources would be required as the build developed and the decision was taken by the Trust in September 2017 to recruit an Assistant Mechanical Engineer to expedite production of manufacturing drawings. Daniela Filová was appointed following a recruitment process carried out in collaboration with Teesside University.

Some people naturally gravitate towards areas of interest which are close to their heart, even when life sometimes takes unpredictable turns, and it might be said that Daniela is a living proof of this rule. Daniela has a childhood recollection of one of her toys being a nice wooden train set hauled with a proper main line steam locomotive at the front. During holidays she often went to different spa towns in the Czech Republic with her grandparents. These trips almost always used her preferred mode of transport, otherwise where would be the fun? Using his hidden talent, her grandad always managed to sneak her into a cab of the local train service on the last leg of these journeys where she was introduced to the train driver and allowed to sound the whistle when approaching a railway crossing. One of her treasured memories during these little adventures was when walking by the river, close to a grain silo site. There was always that little green diesel shunter. It had a nice poetic railway jargon nicknamed 'tree frog' due to its colour and size. Luckily on that day the driver was present and her grandad managed to get her into a cab for a short cab ride around a marshalling yard.

This affinity to railways and locomotives probably came from her father, as he started his career as a train dispatcher in a small town. Later on, when working for a state-owned company distributing agricultural substrates and grains, he became a man in charge of the little railways on each storage site ensuring that the goods wagons had the correct loads and were making their way to the right stations at the right time.

Daniela was encouraged to study fine arts by her parents but was always more inclined to the engineering field. This desire culminated in her setting up her own workshop and to start building a lathe from scratch. The original thought behind these efforts was a need to design and build a Stirling engine to generate electricity. Starting with patterns and a home-built coke furnace, which was made of brick clay from a local clay pit, she produced her first castings. Realising the sheer length of this job compared to her own life span she then capitulated and purchased her first lathe instead! As the years passed and the workshop gradually filled up with all sorts of machinery including milling machines, an additional lathe, outer diameter grinder, many new furnaces with appropriate descriptive names such as Golem (based on Jewish folklore from 16<sup>th</sup> century Prague) and Vulcan. Even with six furnaces in total it was still not enough... she managed to develop her own refractories for crucibles and moulded them to shape using slip cast techniques. She even experimented with different refining and protective cover salt compositions for aluminium. That is how her first steam engine was born, built from scratch using her own patterns and castings, the result of her continued passion for engineering.

However, as one needed a job from time to time, Daniela became an intellectual property advisor in a small company



Daniela at her desk at Darlington Locomotive Works.

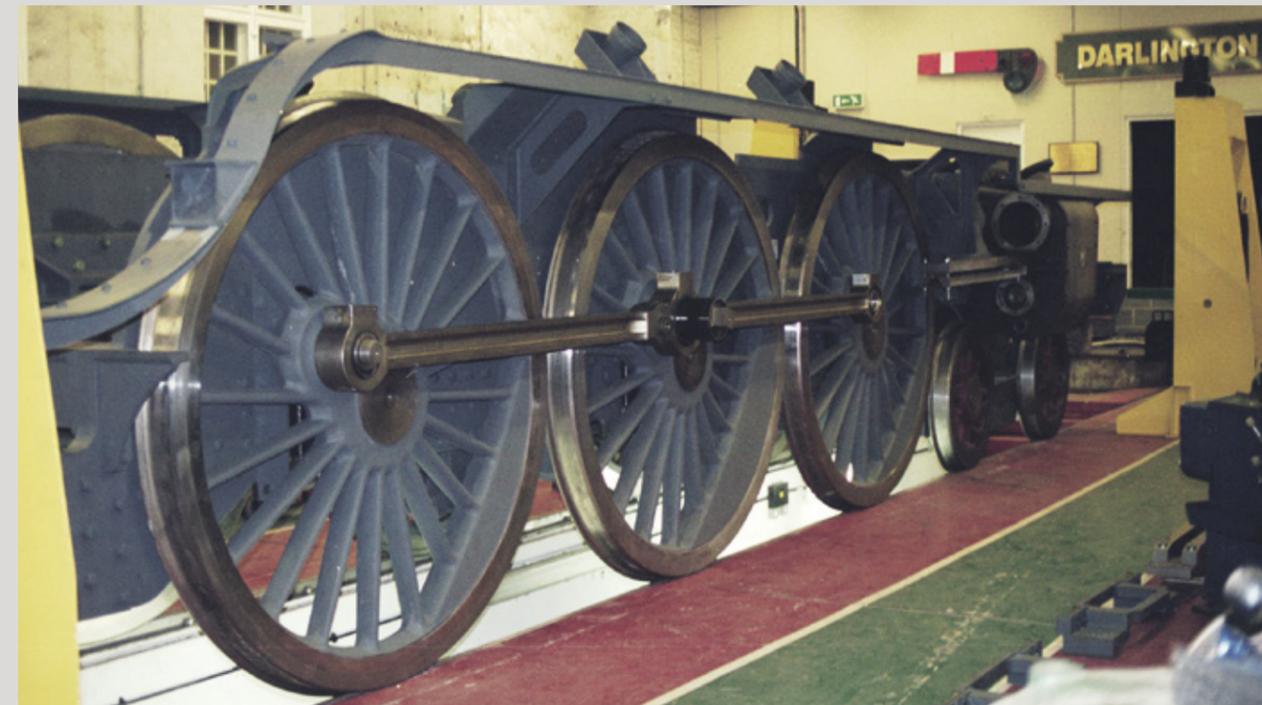
in her hometown in East Bohemia and working in a workshop became a hobby. This job involved patent and patent portfolio analysis, analysis of technical solutions, statistical approaches to technical trend scouting in particular fields, advisory work and a lot of travelling to different countries around Europe. She made a lot of like-minded friends and actively participated at different conferences organised by the European Patent Office (EPO) firstly as a participant, then as a presenter and in a later stage as a member of the organising committee. Her efforts, not only in the patent field but also in a field of methodical innovation and as a member of the board at Czech Union of Inventors & Rationaliser, culminated in the EPO recognising Daniela as an expert in the intellectual property field. She then frequently participated as an expert lecturer, coaching various attendees from EPO member states on the 'Reading and Understanding of Patent Documents'. As a natural progression she then became a president of a company she worked for.

Life is full of surprises and if life gets tedious we start longing for a change, so Daniela decided to move into more 'hands-on' engineering and to change surroundings completely. Receiving advice from a friend from Ireland, who saw her steam engine advertised on a model engineering website, he suggested that there was a job opportunity for her in Darlington. Although Daniela doesn't usually like others to tell her what to do (*really? Ed.*), in this instance she took it as well-meant advice. She successfully applied for the job at the AI Steam Locomotive Trust as David Elliott's under-study and moved to England at the beginning of 2018. She joined the engineering staff at Darlington Locomotive Works and has become a valued member of the team, a role that now includes the day to day operation and management of the workshop. Her design engineering tasks involve performing Finite Element Analysis on various components as required and a production engineering input when required. To further develop her academic skills she was given an opportunity to join a Degree Apprenticeship scheme. She is hoping to complete the first part of the course this year which will result in her being awarded an HNC followed by an application to become a registered Engineering Technician with iMechE whilst working toward her undergraduate degree.

Once Covid-19 restrictions have been further lifted, she is eagerly looking forward to visiting various railways in South England with the Trust's Director of Engineering, David Elliott.

TCC

## FROM THE ARCHIVES by Graham Langer



By 2000 the coupling rods had been machined and fitted to the locomotive.

**Summer 2000** – By the middle of the year engineering progress was evident on multiple fronts. Hardy Non Ferrous Metals Ltd of Middlesbrough had cast all the coupling and connecting rod bushes from Leaded Gunmetal and Phosphor Bronze as appropriate to the application. Machining of the coupling and connecting rods, pistons and crossheads continued at Ufone Precision Engineers in the West Midlands. At DLW the bogie frame was being assembled using fitted bolts made in the Locomotive Works. In other news David Champion, who had steered the Trust from the outset, stepped down as Chairman to care for his late wife, Gill, who had cancer. Mark Allatt, who had been a member of the management team since 1991, replaced him.

**Summer 2005** – William Cook Cast Products, principal sponsor of the new-build, showed their commitment to, and confidence in, the project and offered to sponsor the construction of *Tornado's* tender. The work on completing the £200,000 tender would proceed in parallel to that on the locomotive, enabling the locomotive and tender to reach final completion at approximately the same time. The Trust also announced that once complete, the new locomotive would be tested and run-in on the Great Central Railway in Leicestershire.

**Summer 2010** – *Tornado* continued to fulfil her main and preserved line duties throughout the summer which included attending 'Railfest' at the National Railway Museum that June and hauling numerous 'Cathedrals Express' trains as well as visiting the Nene Valley Railway and the West Somerset line. The Trust continued to raise funds for the conversion of a support coach to accompany No. 60163, work on which was proceeding well at DLW, with much of the re-skinned bodyshell now beginning to sport carmine & cream undercoats.

**Summer 2015** – Following a great day out with 'The White Rose', *Tornado* moved to Bristol to work a short series of the ever popular 'Torbay Express' trains and even if the weather wasn't always up to Riviera standards some brisk running was recorded on the revised route through Bath. After these three outings, No. 60163 moved to Stewarts Lane to work several turns on the 'Belmond British Pullman' before heading to Peterborough to fulfil her duties on the Nene Valley Railway and then on to haul 'The Silver Jubilee Talisman', an AISLT tour celebrating the Trust's 25<sup>th</sup> year. TCC



2005 saw the completion and finishing of the safety valves.

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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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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