

MERCHANDISE UPDATE by Gill Lord



Mandy Grant

Andrew Taylor and Diana Hurfurt at the Severn Valley Railway.

Sales over the Christmas period were up slightly on last year, which is very good. Once again it is clothing that is the biggest seller; it is pleasing to know that people wearing our hats, caps fleeces and sweatshirts are advertising *Tornado* all over the world!

Over the past four years we have been selling our merchandise on trains using an 'At Seat Ordering Service'. Now that we are running our own trains, the decision has been made to use a trolley service through the whole train, not just in the non-dining coaches. This is the way we did it in the 'good old days' well, five years ago that is, and working this way does actually mean that the potential customer can have a good look at the merchandise they are purchasing. From the volunteering point of view, it does mean that the volunteers will manage to have a couple of hours away from the train and able to have a look around the city that *Tornado* has taken them to.

With the charge for carrier bags now in force, we have decided to sell reusable bags that can be kept zipped up in a handbag or trouser pocket for the times we go into a shop, get to the checkout only to find the bags are in the car! So look out for these on-line, at events and on the trolley.

Whilst I am mentioning events, we are unfortunately having problems with logistics, i.e. getting our merchandise tables, stock, till, boxes etc. to events. So if you think you can help with this or if you would like to be part of the merchandise volunteers please contact me on gill.lord@alsteam.com

About twenty of the merchandise volunteers attended a Christmas get

together in Derby. We met at midday and all had departed by 16:00hrs. We all had a jolly good time, chatting about *Tornado* naturally, but also about other connected items, such as what to sell, what to discontinue, who is doing which trip and are we having a training session in 2016? The answer to the last question is yes we are although no date decided as we go to press but it will happen. **TCC**

60163

FOR SALE

SMOKEBOX NUMBERPLATES

as carried by No. 60163 *Tornado*

- **20th June 2015** 'The Highland Rambler' – Sterling to Inverness
- **22nd June 2015** 'The Highland Caledonian' – Inverness to Stirling
- **27th June 2015** 'The Border Reivers' - Carlisle - Glasgow-Carlisle
- **5th July 2015** 'The Fife Circle' - Edinburgh return to Edinburgh

- **26th July 2015** 'The Torbay Express' - Bristol to Kingswear and return
- **26th September 2015** 'The Silver Jubilee Talisman' - London Kings Cross to Newcastle

Note – 'The Highland Caledonian' plate was carried by *Tornado* for The Prince's Trust special on the Forth Bridge.

Each smokebox numberplate is for sale for £200 including postage & packaging. Please email shop@alsteam.com for more details. Smoke box number plates available as at 14th January 2016.

'THE HARWICH PULLMAN' by Peter Hedderley

On 31st December 1938 a 29-year-old stock broker, Nicholas Winton, boarded a plane to Prague, having just taken a decision to cancel a two-week skiing holiday to Switzerland. This decision - and the events that followed - has resulted in there being around 5,500 to 7,000 people alive today who, were it not for the actions of this 29 year old and others, would almost certainly not be here today.

Sir Nicholas Winton MBE is credited for saving the lives of 669 Czech children, though in reality it was very much a team effort. This enterprise was part of a much larger operation which brought a recorded 9,354 unaccompanied mostly Jewish children to the UK between 2nd December 1938 and 2nd September 1939. They came from mainly Nazi Germany and Nazi-occupied Austria in an operation which has become known as the 'Kindertransport' and the vast majority are believed to have arrived via the LNER's Hook of Holland to Harwich ferry service.

Winton passed away on 1st July 2015 at the age of 106 on the 76th anniversary to the day of the arrival in Harwich and London (on 1st July 1939) of his largest single transport of 241 children. On Friday 1st July 2016, the first anniversary of his passing and the 77th anniversary of the arrival in Harwich of his largest single transport, the annual Harwich children's carnival will feature more than 1,000 local schoolchildren with an appropriate theme. A Service of Thanksgiving and Remembrance will be held in the St Nicholas Church in Harwich and an RAF fly-past has been requested. Winton worked for the RAF for five years during and after WW2.

A number of special trains are planned to run to Harwich,

one of which, provisionally named 'The Harwich Pullman' is proposed to comprise *Tornado* hauling the 'Belmond British Pullman', the only train still certificated for the main line which includes carriages actually in service in 1938/9 at the time of the Kindertransporte. There is a bitter irony that Sir Nicholas passed away at a time when Europe is challenged by its worst refugee crisis since WW2 and this irony was not lost on the great man himself. All proceeds from the special trains and events of 1st July 2016 beyond operational costs will go to help those - especially children - who find themselves displaced or uprooted



by discrimination, war or threat of war in the 21st Century, of whom there are sadly far too many. The Nicholas Winton Foundation is supporting specific projects to help refugee children, including Theirworld - www.theirworld.org.

Sir Nicholas Winton is no longer with us, but his words still ring loud: "Don't be content in your life just to do no wrong, be prepared every day to try and do some good." **TCC**

For more information or to support this project please visit www.papyrus-rail.com.

ACCUCRAFT GAUGE 1 TORNADO by Graham Langer

Now available!

In 2014 Accucraft and The A1 Steam Locomotive Trust were delighted to announce the production of a live steam, Gauge 1, model of *Tornado*. Accucraft's model faithfully captures the elegance and power of the Peppercorn class A1 design and features all the unique details carried by *Tornado*. The model is gas-fired with slide valves and has all the features the Gauge 1 fraternity have come to expect from an Accucraft locomotive. The cylinders are fitted with drain cocks. The fully sprung chassis is constructed from stainless steel. The boiler is copper; the cab and tender are constructed from etched brass. The UK RRP is £2,895.00 and the model is available in apple green, blue and BR green. The model is available from The A1 Steam Locomotive Trust, Accucraft UK and selected retailers. The retail profit from sales of this superb model will go to The A1 Steam Locomotive Trust towards the purchase of *Tornado's* tender. **TCC**



THE 163 PACIFICS CLUB - IT'S TIME TO GET ON BOARD

by Mark Allatt

Last year was our 25th anniversary year and we decided to focus our fundraising for *Tornado* on the purchase of her tender – with considerable success!

Tornado's tender is currently owned by William Cook Cast Products, the company owned by Andrew Cook and the Trust's Principal Sponsor. Andrew kindly offered to fund the construction of the tender in 2006, allowing funds being raised at the time to be spent on the engine.

The tender is leased to the Trust under a fifteen year loan agreement which will come to an end in 2021. *Tornado's* tender is a development of those built for the original Peppercorn class A1s with changes mainly down to the different operating environment on the modern Network Rail main line. Due to the lack of surviving steam infrastructure, water capacity is at a premium and so *Tornado's* tender carries 6,200 gallons (as opposed to 5,000 gallons) and 7½ tons of coal (rather than nine tons in the original A1s). The tender is also the home for many of *Tornado's* other unique features including an alternator, Timken cartridge roller bearings (pre-greased sealed self-contained units which do not have to be fitted in enclosed axleboxes), Train Protection & Warning System (TPWS), National Radio Network (NRN) radio, Global System for Mobile Communications - Railway (GSM-R) radio, GPS tracker and of course the mobile phone charger!

We need to raise £200,000 by 2021 to purchase *Tornado's* tender – thereby making the Trust debt-free - and finally completing the project we embarked upon 25 years ago. Following the success – thanks to your generosity – of our Regular and Dedicated Donation schemes for the construction of *Tornado* and the 'Use Your Loaf' appeal for the support coach, the Trust has decided to follow a similar route for the purchase of *Tornado's* tender. However, instead of "an A1 for the price of a pint" and "use your loaf", we've decided to raise the funds in a different way, The 163 Pacifics Club:

- We need to raise £200,000 to purchase *Tornado's* tender.
- Although *Tornado* carries the number '60163' - the next in the Peppercorn class A1 series following No. 60162 *Saint Johnstoun* – her pre-



The newly overhauled tender in Darlington Locomotive Works.

nationalisation LNER number would have been '163'

- There have therefore existed 163 ex-LNER express passenger pacifics with 6ft 8in driving wheels - the Gresley class A3s/A4s, Thompson class A1/I and Peppercorn class A1s.
- A numbered certificate (1-163) will record the details of your donation and the number/name of your favourite pacific.
- If 163 people were to donate £10 per month over the eight years until we need to purchase the tender (or alternatively make a one-off donation of £960) with the addition of Gift Aid (£2.50 per month or £240 one-off) this would raise £195,600.

As with the previous schemes, this initiative comes with special benefits for those who generously take part:

- A numbered certificate (1-163) recording the details of the donation and the number/name of your

favourite ex-LNER express passenger pacific from the Gresley class A3s/A4s, Thompson class A1/I and Peppercorn class A1s.

- Name inscribed on the official Roll of Honour in Darlington Locomotive Works which will detail the pacific sponsored.
- Entry into a draw for a main line footplate ride on No. 60163 *Tornado*.

Forms to join 'The 163 Pacifics Club' can be found on www.a1steam.com in the 'Supporting Tornado' section. Membership of The 163 Pacifics Club has grown steadily since its launch and has now reached 79 of the available 163 ex-LNER express passenger Pacifics have already received new 'shed allocations'. It really is that simple! Sponsor your favourite Pacific today and make *Tornado* debt free with her paid-for tender behind her by 2021. Thank you.

TCC

60002 Sir Murrough Wilson	60069 Sceptre	60121 Silurian
60005 Sir Charles Newton	60079 Bayardo	60130 Kestrel
60023 Golden Eagle	60082 Neil Gow	60136 Alcazar
60037 Hyperion	60094 Colorado	60141 Abbotsford
60052 Prince Palatine	60098 Spion Kop	60143 Sir Walter Scott
60056 Centenary	60111 Enterprise	60153 Flamboyant
60066 Merry Hampton	60112 St Simon	

Here are some of the names still looking for 'allocations' – there are some surprisingly popular ones still left!

P2 ROADSHOW by Mark Grant



Mark Grant, Gemma Braithwaite and Mandy Grant at Leeds.

Following on from a successful event last year, we decided to exhibit at Leeds Model Railway Exhibition again. Gemma Braithwaite (one of our volunteers) made her way down to Leeds on the Friday night to help Mandy and I set up the stand. Gemma was staying with us that evening rather than travelling down on the Saturday morning. We arrived at the Grammar School where we also met up with Graham Nicholas. Graham had brought us the N gauge model railway that we were to have on display at this and, where possible, future roadshow events. We had a different location this year and we found ourselves in the main hall, last year we were placed a little bit out of the way!

Saturday morning arrived, a foggy day to boot, and Charles Tremeer joined us to help out. The model railway was soon up and running with two *Tornados* in different liveries running round the track. It proved to be very popular, especially with the younger visitors, as they could get up close and even sit down and watch! There was a lot of interest in the P2 and we handed out plenty of leaflets. I think we signed someone up within the first hour! A retired LNER Fireman came to talk to us around lunchtime. He sat and spent quite a time with us, recounting some of his experiences of firing A1s. He also fired A2/2s (which he said were ungainly at best!). The afternoon seemed to fly by and very soon it was closing time. We said our

farewells to Gemma and Charles and we returned home.

Fog greeted us once again as we set off to the venue on Sunday morning. Andrew Taylor and Keith Crabtree were helping us this day. It was another popular day for the exhibition and although we had plenty of interest, we had no further sign ups! However, we have hopefully 'planted the seed'. It's quite amazing how many people were not aware of the project. They knew of *Tornado* but not *Prince of Wales*. Just goes to show how important it is to publicise things!

The day drew to a close and after we had packed up and said goodbye to Andrew and Keith, Mandy and I retired home. This was the final event of the year. TCC

Covenantors' Diary by Sophie James

The 2016 AISLT Annual Convention is set to be as informative and enjoyable as ever. On Saturday 1st October, you are welcome to join us to hear from our Trustees about No. 60163 *Tornado's* year in action and to view the progress being made on No. 2007 *Prince of Wales*. Held again in Darlington, at the home of the Trust, the day will be hosted at the Mercure Darlington Kings Hotel,

followed after lunch by bus transfer to Darlington Locomotive Works. The Convention Dinner will be held at the Mercure on the Saturday evening, where we are sure to be entertained and enlightened by our guest speaker Nigel Harris, managing editor, *RAIL* magazine. Due to popular demand, this year's Convention Dinner has no limit on ticket numbers, so it would be wonderful

to see as many of you there as possible. Tickets should be available to buy online (a first!) closer to the date. Look out for updates!

Details are also being finalised for a number of special days for our Covenantors and other supporters centred around our heritage railway visits – look out for more information in due course. TCC

MEMORIES OF DOROTHY *by David Champion*

As far as I remember, Dorothy came into our lives in the early nineties when Gerard Hill was researching people who had a connection with the original Peppercorn class AIs and tracked down people such as Freddie Harrison (Arthur Peppercorn's Chief Technical Assistant and later CME of British Railways). And when talking to Geoff Drury, then the owner of Peppercorn class A2 No. 60532 *Blue Peter*, Geoff revealed that he was friends with Dorothy Patricia Mather, formerly Dorothy Patricia Peppercorn.

In 1993 we had hoped that construction of No. 60163 *Tornado* would take place in Doncaster and arranged a ceremony and press conference in the Mansion House there. Dorothy was contacted, she was intrigued that we intended righting a famous wrong, the scrapping of all her former husband's AIs, by simply building another. Would she lend us her support and come along to the event? She said she would be delighted.

It was arranged that Geoff Drury would pick her up and bring her to Doncaster. Other than Gerard and Geoff, none of us had yet met her. What did we expect? We expected a little old lady, perhaps struggling in with a walking stick. Instead, in she breezed, impeccably dressed with an indisputable air of English elegance. We all thought 'Wow!' Sharing a glass of wine with her at the reception afterwards I complimented her on her outfit. She courteously thanked me and then said it was a miracle she had got to Doncaster with it in good order, as Geoff hadn't made too great a job of cleaning out his car before picking Dorothy up... his first task that day had been transporting hay to feed a pony!

Very quickly Dorothy became an essential, and very much loved, part of the AI team, a great bunch of new friends. For me it was particularly special as she formed a close friendship with Gillian, my late wife, and with my parents, all of whom too thought she was wonderful.

By 1994 when we asked her to ceremoniously start the frame profiling machine at BSD Leeds to mark the commencement of *Tornado's* construction, she was our undoubted figurehead, deeply interested in everything we did, and the finest ambassador we could have had. She loved what we were doing and the way

we were doing it. She often would say, "Arthur would be so proud of you all", and was personally responsible for signing up a number of Covenantors who would otherwise not have heard of the Trust.

Starting in 1994 Gillian and I were lucky enough to be frequent guests for dinner or lunch at her home in Hutton Rudby, North Yorkshire. Over a meal that usually began with her famous champagne cocktails (which she fairly speedily trained me in the production process so that I clearly understood that it was my first duty when we visited) usually followed by smoked salmon with brown bread (crust cut off, of course) and then a main course of beef olives, we learned more of the incredible character that was Dorothy.

Her father was the LNER Senior Hydraulics officer and as a young girl she remembered being introduced to Sir Nigel Gresley. Arthur Peppercorn (known affectionately as 'Pepp') was a friend of the family, and later during the war, a secret romance grew between her and Arthur, long since a widower. Conscious of their age difference and the social sensibilities of the time, it became more difficult to hide their relationship when after working for the wartime Coal Authority she was seconded to the LNER's Doncaster Drawing Office. At that time Edward Thompson reigned supreme and Arthur Peppercorn's promotion to CME was some time in the future. Much as Dorothy tried to hide the relationship, it would become difficult when Arthur would wander into her office and leaning on her drawing board announce, "Where do you think we should go for dinner my dear?"

Despite these slips, the secret was very effectively kept. Among those 'in the know' were certain stationmasters, who, when she was travelling to meet Arthur if he was working away, would lock her in a first class compartment to ensure she wasn't disturbed on the way.

The romance eventually reached the ears of Edward Thompson, who assured Arthur, "You will never become CME if you marry that woman!" When Dorothy would relate this with a smile, she would always temper it with the observation that after they were married, they would often meet Edward



Nick Brodick

Thompson at social gatherings, where, in addition to being immaculately attired, he would be perfectly charming to her.

Behind the public face of Arthur as a high ranking Railway Engineer and Officer, the picture that emerged of Arthur was of a good and very kindly man, much intrigued and amused by the vivacity of his younger companion.

They decided they should wed, and did what many courting couples did in the days when the experience of living through war made the elixir of life much sweeter - without telling anyone they just went away and did it. They secretly travelled to Herefordshire and announced when they returned that they were now man and wife.

When Arthur became the LNER's last CME Dorothy entered a dazzling social life. Dinner Guests would include Andrew K. McCosh, or Sir Ronald Matthews (names that before had only meant an Gresley class A4 locomotive to me), Oliver Bulleid or William Stanier, all of whom they counted as personal friends. An Inspection Saloon would perhaps find itself in Scotland with its Senior Railway Officer passengers de-trained and showing more interest in fishing for salmon than inspecting railway facilities.

Weekends away from Doncaster would often find parties of Senior Railway Officers and their wives at a country hotel, and Dorothy related the story of one weekend party when the wives decided that if their staid husbands were more interested in talking 'shop', then they were more interested in dancing. Having persuaded the hotel proprietor to lay on the



Dorothy with David Champion and the new cylinder castings at Tyesley in 1996.

current 1940s big band 'swing' music, Dorothy suggested to the other wives that it would be such fun to dance on the large table. Leading the troupe, Dorothy was the first to step it out. One can imagine the reaction of many of the gentlemen, but Arthur just held his sides in uncontrollable mirth at the antics his young wife had organised.

Talking of 1940s social events, Dorothy had a photograph in her living room of herself in the most fabulous evening gown during this time. It is no exaggeration to say that she looked like a Hollywood Movie Star of the period. Absolutely stunning. I hope the photograph has survived and will appear someday.

Arthur, while kindly, could exhibit humbleness of spirit. Dorothy related the occasion when the CME and Dorothy (whom he always called by her middle name 'Pat') had arranged a railway journey from Doncaster. Arthur as usual went to see what was to pull the train and came back very emotional

with tears rolling down his cheeks saying, 'Pat... they've named it after me!' It says much for the way 'Pepp', a Gresley Man, was held in affectionate esteem by all ranks. The rostering of the class A2 with those brand new nameplates was a deliberate and affectionate surprise.

Arthur, without fail, would go up to the engine at the end of a journey to have a few words with the crew. Once, returning from King's Cross they alighted at Doncaster and as usual Dorothy and 'Pepp' went forward to ask the crew how the engine had performed. On this occasion the engine was one of the new class AIs with its massive, (for the time), 50 square foot firebox.

Addressing the crew Arthur asked how the run had been, and before the driver could reply, the fireman... without taking a break from his task of re-building the fire for the onward journey said, "I picked up this bloody shovel when we left King's Cross and I haven't



Dorothy starts the cutter to profile *Tornado's* frames in 1994.

put it down yet".

But tragedy was to make an early entrance. It was the days when doctors would often not tell a patient how gravely ill they were, but instead inform the relatives. Not long after they were married the family doctor called to see Dorothy and informed her that the niggling health problem Arthur had mentioned was in fact very serious



Dorothy with the newly unveiled nameplates at Tyesley in 1996.



Always well turned-out!

heart disease. He could not be expected to have a long life. And so it proved. They scarcely had two years married life together, Dorothy acting as nurse in his final months.

After some time, life began a new normality. She met Bill Mather, who had once been a senior member of the Doncaster Engineering staff, and eventually she re-married. Bill Mather had left the LNER for the wider world of Engineering, and became Managing Director of the famous firm of Head Wrightson of Stockton. Something of the glamour of her former life returned

coast hauled by steam all the way.

Colonel Bill Mather had served in the Army during the war. He was a senior officer with the unit which discovered and liberated Belsen concentration camp. The horrors he witnessed haunted him throughout his life – when he returned to England for a time he would not sleep without his service pistol under the pillow. Even decades later, Dorothy told of the terrible nightmares he still endured. Dorothy and Bill set up home at Faceby Manor in North Yorkshire where after a longer and very happy marriage she again found herself a widow.

And in the early 1990s the AI Trust came into her life and brought with it a whole new circle of friends (if not ardent admirers).

She could always be relied upon to join us at any AI event, we never thought of her as significantly older than us, she just became 'one of the gang'. She had an easy way with people, despite her relatively privileged background, she made people from all levels of society feel important and when she talked to them, they got her 100% attention.

This was brought home to me vividly in early January 1994 when Gillian and I picked her up about 06:30hrs to drive to Birmingham to discuss the forthcoming laying the frames ceremony. Dressed immaculately as always, she chattered all the way from North Yorkshire to Birmingham. Meeting with Mark Allatt, Rob Morland and Bob Meanley, we showed her the frames (in the sub-zero temperatures), and went to the 'bothy'. There in the Stygian mid-winter gloom

she positively enjoyed the bacon and egg butties by the coal fire. We had to get a photograph of her in front of the frames, and as she posed with Bob and myself, she pinched Bob's grease-top cap and stuck it on her head at a rakish angle. That girl could wear anything and look good. We got back to Hutton Rudby late that January night. I was exhausted – Dorothy was still raring to go.

There were many more occasions at Hutton Rudby, many of them after an AI Trust 'do' and with others of the AI team invited. I recall one in particular where Geoff and Gill Drury, Mark, and perhaps some others were there. She was immaculate as usual in a beautiful blue and white dress, the girls admiring the 'heels' she was wearing. At such occasions little glimpses of her life with Arthur would emerge. At one such occasion near to Christmas she was discussing the gift she was sending to Sir Nigel's secretary, whom she had kept in touch with since her railway days in the 1940s and was then close to 100 years old.

Dorothy always avoided the frequent questions from journalists about her age, and in the Trust we would not think to ask. In any event we just treated her like one of the team – age seemed irrelevant.

Then one night in 1999 Gillian and I were there again for dinner, and as the evening mellowed Dorothy quietly said to us, 'My age has always been a 'state secret', but I will tell you provided you keep the secret'. We, of course, gave our word, and then she told us that she was 83 years old. It would not be an exaggeration to say that our jaw-drop



The first steaming of the boiler in 2008.

now. As head of a world-renowned firm, Bill had much international travelling in the era before transatlantic air travel. Dorothy talked of voyages on the Cunard 'Queen' liners, visiting Niagara Falls and riding across Canada coast to



The 'bon vivant' with the team in 2004.



Dorothy with Bob Meanley, Mark Allatt and Gill Champion at Tyesley in 1994.

would have measured ten on the Richter scale.

And so she continued to grace many AI Trust events, anniversaries, unveilings, events at Darlington Locomotive Works and the NRM, interviews with journalists and so forth. She used to say to me at first "I hope I live to see *Tornado* steam", and then later "I hope I am not using a zimmer frame by the time it steams". History now records her graceful presence at both the first steaming of the boiler, and then *Tornado's* first moves in front of the world's media in 2008.

In the 22 years she was involved with the Trust she gave so much and an ever-widening band of AI people came to enjoy her company. And I think it is fair so say



Dorothy with the team at Darlington Locomotive Works in 2000.

that we, the Trust, gave a lot to her. In what could have been a relatively lonely evening of her life she was surrounded by a new circle of friends from younger generations who gave her companionship and a sense of purpose.

And for myself, I look back to my youth when my brother and I would be standing by the East Coast Main Line, and in between trains we would pore over the short descriptions of each

class in the Ian Allan ABC. How could I imagine when scanning the A1 and A2 class details commencing "Designed by A.H. Peppercorn", that his young wife would later shine such a light on all our lives?

We have lost a few stars in our journey over the last 25 years. Dorothy was a star that shone particularly brightly. It would be nice to think that somehow, somewhere, sometime, we could all meet up again. What a party that would be... **TCC**

P2 ENGINEERING REPORT by David Elliott

Design and construction of No. 2007 *Prince of Wales* is proceeding well. With some delay in being able to finalise the design of the crank axle, the opportunity has been taken to bring forward other parts of the locomotive including the footplating, cab and smokebox.

Frames

The last of the cast steel frame stays (the Pony Truck Top and the Front Boiler Support) have been machined and trial assembled to the frames

The first of the large frame stays which have been re-designed as fabrications is presently being manufactured by North View Engineering Solutions in Darlington. This is the Frame Stay and Inside Motion Bracket. Apart from holding the frames together, it also supports the inside cylinder slide bars. On the original P2 design it also had a saddle incorporated to support the front of the boiler where it joins onto the smokebox. Apart from the decision to use *Tornado's* shorter boiler causing the saddle to be in the wrong place, firmly attaching the back of the smokebox to the frames, in addition to bolting the front of it to the saddle on the top of the cylinder block gives the potential for cracks in the smokebox. This arises from the smokebox becoming much hotter than the frames when the locomotive is operating setting up severe stresses due to the smokebox expanding more than the frames.



Above: Pony truck top centre trial fit.

Right: Trial fit of frame stay and front boiler support.



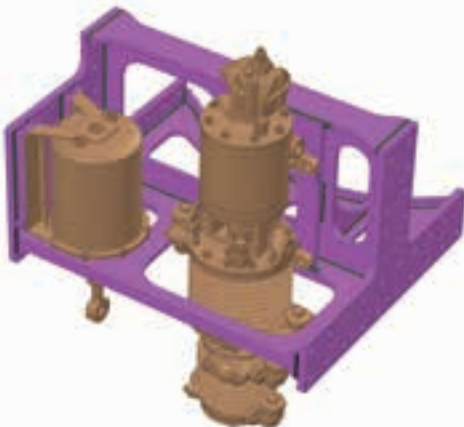
Left: Frame stay and motion bracket combined as fabrication.



Boiler support and motion bracket combined.



Boiler support and motion bracket modified.



Above: Intermediate frame stay as fabrication with pump and brake cylinder.

This problem was avoided with the AI design by supporting the front of the boiler (and hence the rear of the smokebox) on a sliding foot to permit expansion. We are using the same arrangement for *Prince of Wales*. Meanwhile the next of the large frame stays, the Intermediate Frame Stay which as well as being redesigned as a fabrication has been modified to carry one air brake cylinder and an air pump instead of the original two vacuum cylinders has been ordered from North View Engineering Solutions Application of the Finite Element Analysis simulation package recently acquired to use in conjunction with Solidworks 3D CAD has indicated that the revised design has similar strength margins as the original, even with the addition of a 370 kg air pump. The horn block machining is almost complete so by the time you read this, fitting them to the frames should be underway.

Wheelsets

The pony truck, Cartazzi and tender wheels have all been proof machined by Multi-Tech Engineering at Ferrybridge and will be delivered to Darlington shortly.

The Finite Element Analysis study of the crank axle undertaken by Mott MacDonald at Derby has been delivered, and while it demonstrates that our improved Timken based design is significantly better than the original, there is not a sufficiently comfortable margin of strength. We have asked Mott MacDonald to re-run the study with the axle with the bearings increased in diameter from 9.625" to 10". Timken can supply bearings of this diameter which will still fit in our axleboxes.

Meanwhile, Timsons Engineering at Kettering has been contracted to machine all the axle and cannon boxes along with the spacer, seal, grease thrower and abutment rings required to fit the bearings to the axles and axleboxes. In order to move the manufacture of wheelsets along, axles have been ordered for all the engine wheelsets except the crank axle.



Tender wheels following proof machining.



Pony truck and Cartazzi wheels following proof machining.

Smokebox

The smokebox platework kit has been profiled and shaped by S M Thompson at Middlesbrough in CorTen corrosion resistant steel (as seen on unpainted steel bridges and the Angel of the North

sculpture). Formers to assist in maintaining the egg shaped section of the smokebox during erection have also been profiled. Following grit blasting the components are being erected and cut to the finished shape. Meanwhile South Lincs Foundry

has almost completed the pattern for the Kylchap double chimney and Timsons has started machining the door frame. Manufacturing drawings are in preparation for the door hinges and fittings.



Above: Wesley Atkinson working on half the P2 chimney pattern at South Lincs Patterns.



Below: Smokebox plate kit.



Cab side trial fit.

Cab

The plate kit has been profiled and rolled by S M Thompson at Middlesbrough. Following delivery to Darlington, Mick Robinson made a cradle to assemble the roof an upside down. This included forming the front angles between the roof and spectacle plates which was quite a difficult job as they involve compound curvature. We started with straight oblique angle strips which were press braked to the average angle between the flanges. These were then blacksmithed to conform with the curve of the roof and maintain the flat profile for the spectacle plate.

Once the structure was considered strong enough temporary braces were fitted between the bottoms of the side sheets and at roof level. The cab was then turned the right way up and following some more adjustments, set up on the footplate at the back of the engine. This enabled the holes between the bottom cab angles and the footplate to be drilled. The cab was then taken off, dismantled and all the parts grit blasted and primed. Final assembly will be done using approximately 500 3/8" and 1/2" countersunk rivets. It would be possible to weld the cab together, however from the experience gained with *Tornado*, the large un-braced area of the cab sides are very prone to distortion during welding, so the original riveted construction has been perpetuated.

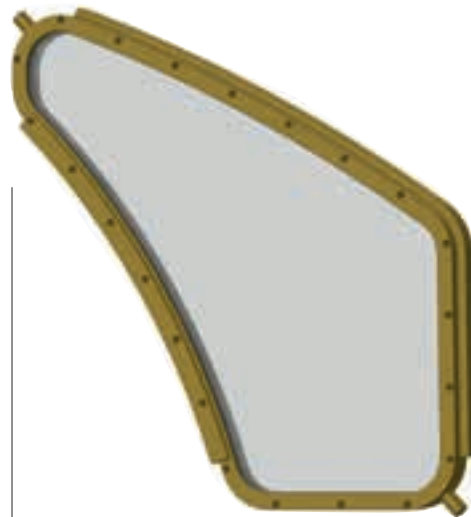
In the meantime, 3D models have been produced for the cab side and spectacle windows. The latter have required modification to accommodate the modern



Cab trial fit.

standard 20mm thick multiple laminated glazings with an anti-spall plastic coating on the inside. Long term A1 and now P2 covenant Colin Vickridge who, with the aid of his East Anglia colleagues organised manufacture of *Tornado's* cab side windows and wooden floor has kindly offered to do the same for *Prince of Wales* so is sourcing teak and iroko respectively for these items.

The brass beadings which retain the side window glazings have been ordered and quotes are being sought to CNC machine bronze castings for the spectacle windows, and also the complex compound curved sections of the beading on the rear edge of the cab side sheets. Most of it can be made from straight sections of 2" diameter half round beading (which is no longer "off the shelf" and is made by machining away just over half the diameter of 2" round bar).



Cab spectacle window.



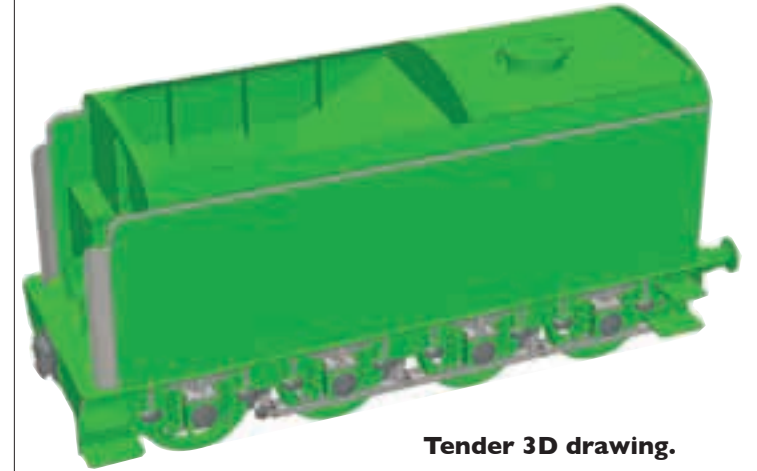
Tender frames.

Cylinders and valve gear

Work is continuing to produce a one piece cylinder block with improved steam and exhaust passages combined with the Franklin/Lentz rotary cam poppet valve gear.

Footplating

The footplating has been dismantled and grit blasted enabling Ian Matthews to prime it and start to refit it permanently.



Tender 3D drawing.

Tender

Boro' Foundry has completed machining and drilling the tender frame plates and by the time this is published will be at Darlington. Whilst *Tornado* was being overhauled at Darlington, we had asked Boro' to hold off work on the tender frames to avoid further storage problems in Darlington Works until *Tornado* had been moved out.

Thanks to local volunteer Phil Johnson for drawing most of the tender components as 3D models, we now have an almost complete 3D Solidworks model of the tender. **TCC**

FUNDRAISING FOR No. 2007 PRINCE OF WALES by Mark Allatt

Pledges towards building *Prince of Wales* have already reached £2m just two years after project's launch.

Public interest in seeing a new Gresley class P2 become a reality sooner rather than later is high and over 730 people have already signed up to the 'P2 for the price of a pint of beer per week' (£10 per month or more) covenant scheme since its launch a year ago. In addition to this core scheme, funds have been raised through The Founders Club (over 360 people have donated £1,000 each – target 100 people, now closed), The Boiler Club (101 people have pledged £2,000 each - target of 300 people), Dedicated Donations (£160,000 from existing supporters sponsoring a variety of components) and the sponsorship of the locomotive's distinctive front-end by The Gresley Society Trust. This means that the project has already received pledges of £2m (including gift Aid) of the £5m needed over the next seven years.

We are delighted with the level of support that the project to build Britain's most powerful steam locomotive has received since its launch. Thanks to our supporters' continued generosity £2m has now been donated or pledged which has

been converted into over one third of the new locomotive being now in existence by weight.

We are hopeful that we will have completed the rolling chassis for No. 2007 *Prince of Wales* this year and we remain on-track for completion of the new locomotive in 2021. However, to maintain this rate of progress we need to continue to raise in excess of £700,000 per year, which given the nature of the regular donation scheme becomes more challenging as each year passes.

We would encourage all of our supporters who haven't yet contributed to this exciting project to help us to meet these deadlines by becoming a monthly covenantor or joining The Boiler Club. It's time to get on board!

This year will see further major announcements as the construction of new Gresley class P2 No. 2007 *Prince of Wales* gathers pace.

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

TCC

P2 CERTIFICATION UPDATE by Graham Nicholas

With construction of *Prince of Wales* coming on in leaps and bounds, what about the situation regarding certification and approvals? Perhaps not a topic that immediately springs to mind but rest assured that this important aspect is proceeding quietly in the background.

In fact, the Trust has been looking at the situation with regard to certification and approvals for some time now. The earliest record of a discussion with the ORR (the regulatory authority for the UK railways) goes back to 2010 with a formal letter on file (dated October 2011) endorsing the approach to the feasibility study that was undertaken prior to the formal launch of the project.

Whilst the very fact that we were able to secure the requisite certification and approvals for *Tornado* counts massively in our favour, the intervening years have seen the prevailing rail industry legislation evolve. This has included a clearer interpretation on how new-build ‘heritage’ locomotives should be dealt with; there has also been some new European legislation introduced in the last few years, notably the Common Safety Method for Risk Evaluation and Assessment (not exactly a ‘snappy’ title; it is generally abbreviated to CSM-REA). To this end, it has been necessary to spend some time confirming the most appropriate approach to certification to ensure we meet the intent of the current legislation.



The cab also came under scrutiny.

Happily it appears that, despite the changes indicated above, the core information can be assembled in much the same way as it was for *Tornado*. This consists of a large summary spreadsheet, detailing all the reference information for each component from the locomotive; the original paperwork versions being kept in indexed paper files. P2 administrator Gemma Braithwaite is assisting David Elliott in collating and compiling this information.

Using this information as a basis, we then have to compile a risk assessment which



Eddie Draper and Alastair Leach of Ricardo examine No. 2007 with David Elliott (centre).

follows a process outlined in the CSM-REA. This revolves around establishing a hazard record and demonstrating that the associated risks are either eliminated or controlled to an acceptable level. Graham Nicholas will be undertaking this work, adopting an arm’s length arrangement with the actual design and construction work of David Elliott and his team. As Graham specialises in this sort of work in his professional capacity within the railway industry then he is in an ideal position to do this for the project – a classic example of people volunteering their professional expertise in their work for the Trust.

As a general rule, risks are regarded as being greater where aspects of the design are being changed. Consequently, such design changes (otherwise being made for the right reasons) are subject to careful consideration to ensure that they don’t inadvertently introduce risks of their own – unexpected side effects, if you like. This arrangement is already beginning to work well; internal reviews between David and Graham have already identified a number of improvements and alterations to the design process.

We have always used an independent, accredited Certification Body to undertake the certification work itself and to that end, some years ago we had discussions with our existing certification body Lloyds Register Rail (LRR) to do this work and this is now confirmed on a contractual basis. More recently, LRR was sold to the Ricardo Group and are now known as Ricardo Rail.

In accordance with the CSM-REA, Ricardo Rail are working for us as an Assessment Body. This means that they



Eddie Draper, Alastair Leach and David Elliott.

examine the risk assessment work we have done and confirm that it is suitable to meet the requirements of the legislation. At the conclusion of the project (assuming they are satisfied with what we have done), Ricardo will issue a Safety Assessment Report which will then enable us to place the locomotive into service.

On 29th January, we invited representatives of Ricardo to Darlington Locomotive Works to both carry out a first formal inspection of the locomotive and to discuss the proposed arrangements. This was a very productive and positive session, giving confidence that the manufacturing and assembly of the locomotive can continue to forge ahead, safe in the knowledge that the paperwork will both keep pace and be on the right track to support the ultimate approval of the locomotive when complete.

It is recognised that this can be a rather ‘dry’ and unexciting aspect of the project. Nevertheless it is important that it keeps pace with the construction of the locomotive to ensure a smooth introduction to service. Further updates will appear to TCC in due course. TCC

LET’S GET UP A HEAD OF STEAM WITH THE BOILER CLUB

by Mark Allatt

Following the success of The Founders Club, which was designed to get the P2 Project to the point of cutting No. 2007’s frames, we have decided to establish The Boiler Club to fund the construction of *Prince of Wales*’s boiler. We set an initial target for The Founders Club of at least £100,000 from 100 ‘Founders’ but due to the overwhelming generosity of our supporters we actually raised £460,000 from 370 donors. It is our desire to leave No. 2007 *Prince of Wales* debt free upon completion and therefore our aim is to raise at least £600,000 for The Boiler Club from 300 supporters each donating £2,000 to the project (in up to 40 payments of £50 by standing order). We are delighted that 101 people have already signed up as members of The Boiler Club.

Special benefits for members of The Boiler Club:

- Opportunity to buy a 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*.
 - Special Boiler Club day with *Tornado*.
- For more information on how to join The Boiler Club visit www.p2steam.com, email enquiries@p2steam.com or call 01325 460163. Thank you. TCC

P2 DEDICATED DONATIONS UPDATE by Mandy Grant

December got off to a flying start following the launch of our ‘Twelve Days of Christmas Campaign’. Starting on 1st December, for twelve consecutive days, we listed a selection of new components on our website, Facebook page and Twitter feed.

For the first time since the launch of the project, during the month of December only, members of the public and not just regular supporters were able to sponsor a

component on No. 2007 *Prince of Wales*. The sponsorship could also be dedicated in the name of a friend or loved one, making it an ideal Christmas gift for those enthusiasts in the family.

Since its launch in 2014, around 180 components have been sponsored as part of the Dedicated Donations Scheme and over 30 of these were snapped up during our December campaign! TCC

December/January components sponsored so far include:

Rear foot step LH upper	Firebox lower handrail RH
Rear foot step LH lower	Fire box lower hand rail knob rear LH
Kylchap cowl set front	Fire box lower hand rail knob rear RH
Kylchap cowl set rear	Cab side horizontal hand rail knob rear RH
Cab roof panel set (five pieces including bending)	Cab side horizontal hand rail knob front LH
Upper slide bar LH (machining)	Cab side horizontal hand rail knob front RH
Chime whistle isolating valve on side of boiler handwheel casting	Cab side horizontal hand rail LH
RH water gauge handle casting (lower)	Cab side horizontal hand rail RH
LH water gauge handle casting (lower)	Boiler band - five
Blower valve handle casting	Wash out door escutcheon crownsheet - five (rear in cab) RH
Cab Side Panels and Spectacle plates	Main reservoir/reservoir pipe duplex gauge
Footplate alongside cab LH	Brake pipe/brake cylinder duplex gauge
Footplate alongside cab RH	Brake cylinder gauge (tender)
Plain footplate over driving and intermediate coupled wheels LH	Brake ejector control valve (complete)
Vertical plate over buffer beam	LH Cartazzi oil box
Fire box lower hand rail knob front RH	RH Cartazzi oil box
Fire box lower handrail LH	SSJ vacuum ejector (refurbished)

As always, if you would like to sponsor a component that has already been listed or express an interest in sponsoring one which hasn’t yet been listed, please contact dedicated.donations@p2steam.com. You can also visit our Dedicated Donations Facebook page at <https://www.facebook.com/p2steam>.

PROFILE – CHRIS WALKER by Graham Langer

Chris has had various responsibilities since he became an active volunteer with the Trust in 2008. He was born in Leeds to a Lancashire father and a Yorkshire mother. The result of that was that his father was an LMS man and his other relations were all LNER! His father worked at Farnley Junction and later Holbeck shed until retirement. His favourite uncle was a signalman at Holbeck Junction and Beeston Station ‘boxes and visits to see him at work were the start of interest in Peppercorn class A1s. The sight of them lifting the Leeds to King’s Cross expresses out of Leeds Central Station and up the bank was not to be forgotten. They were generally worked by the Peppercorn class A1s shedded at Copley Hill. The Apple Green livery had gone but he does recall them looking magnificent in the BR Express Passenger Blue, recently carried by *Tornado*. Chris can recall being told that Holbeck Junction didn’t accept trains approaching Leeds offered off the ‘Lanky’ (Lancashire & Yorkshire Railway) branch from Bradford (an LMS train) until the last minute in case a train was approaching from the Beeston direction (an LNER train)! His uncle used to visit relations in London and one of Chris’s fondest memories is returning home to Leeds in style on the Yorkshire Pullman. He is still hoping for the trip to be repeated using *Tornado* so he can relive the memory.

Having finished school he spent time at Leeds Technical College. During this time he had a Saturday job at Boots in Leeds on the chemist counter. After finishing at the technical College, he got a full time job in the chemist stockroom at the Boots shop. This was the start of involvement in inventory management that was to stand him in good stead when he took over managing *Tornado*’s merchandise stock. Chris left Boots in 1963 and started a career in the bus industry. He went to work at what was then Leeds City Transport (LCT) as a schedules clerk. This involved compiling timetables and duties for all of the LCT garages and producing the associated documentation for drivers and garage staff. LCT was one of the first (if not the first) operators to have radios fitted to buses and Chris was transferred for a spell in the radio control room so was one of the earliest radio operators.

After a spell back in the schedules office, he was offered the chance to go on the Municipal Passenger Transport Association’s (MPTA) Executive Training Course. This involved working at four different bus operators for six months each. He visited SELNEC PTE at Bolton and Leicester City Transport for experience in all aspects of Traffic Operations, West Bromwich Corporation for engineering and SELNEC PTE at Manchester for commercial and finance aspects. He has many memories of these times but in particular engineering. At that time, West Bromwich Transport carried out maintenance on all Corporation vehicles. The downside was having to deal with refuse collection wagons whose tipping mechanism had failed (and could not therefore be emptied!) and the upside was that he got to drive a fire engine (not to a fire though). Whilst at Manchester, he learned to drive a bus and got his Public Service Vehicle driving licence. This allowed extensive opportunities for practical driving and conducting at Leicester and West Bromwich as, in the late sixties, there was a chronic shortage of platform staff and volunteers to work over were welcomed with open arms. It also came in useful later in his career as part of his full time job.

After finishing the MPTA course, Chris returned to Leeds in the planning office but was then offered a job with what

was now West Midlands PTE at Wolverhampton. Starting there as District Road Officer on 1st April 1970, he was responsible for all route operations. His first task was to merge the old separate trolleybus and motorbus routes into a more efficient network. In 1976 he moved to Walsall as District Traffic Superintendent and in 1980 became Operations Manager responsible for the largest site in the PTE

as it included not only the operating garage and bus stations but also the northern area workshops and the section that looked after all the street furniture as well as a canal boatyard.

With privatisation in 1986, his early interest in computers was called into use and he was seconded to the Information Technology Department on a temporary basis to develop systems that would be essential for viable commercial operations. As is the case with many temporary secondments, this one lasted until Chris left the PTE in September 1993. He was asked to set up a UK subsidiary company for a Canadian firm dealing with computer scheduling software for transport operations. In the UK it was an entirely bus-related operation, although the present parent company does have several rail operating companies as customers, including DB Regio, a sister company to DB Schenker, the UK freight operator that provides crews for the operation of *Tornado*.

His first involvement in merchandising was when *Tornado* started running at the GCR at Loughborough. He volunteered for the sales stand at the station, selling a very basic selection of *Tornado* items. Chris was then approached to be merchandise volunteer co-ordinator, ensuring that teams of sales volunteers were available in the right place at the right time. This developed, as the operation grew, into looking after the merchandise inventory and liaising with his colleague Gill Lord to ensure that stock was replenished as required. Chris also looks after the Trust’s internet shop and keeps it up to date, collects items ordered from the merchandise store at Cannock, despatches the orders, etc. An extension to these duties was to look after the book-keeping for the *Tornado* Merchandising subsidiary.

Chris has done spells on the support crew and in 2010 project-managed the reassembly of *Tornado* after the boiler had been back to Germany for repair of the firebox. With the retirement of Barry Wilson as Finance Director, Chris was asked if he could take over the book-keeping role for the remaining parts of the Trust, which he agreed to try. Some years later he is still doing it!

In 2014, Chris was approached about becoming a Trustee and was appointed to this position, which he still holds, in April of that year. **TCC**



Chris Walker in 2009.

A/SLT

FROM THE ARCHIVES by Graham Langer

● **Winter 1996** - Work on the locomotive’s main frames continued to progress rapidly at Tyseley Locomotive Works (TLW), Birmingham, overseen by Bob Meanley. A delivery of round and hexagonal steel bars from long-term sponsor Macreadys was put to a variety of uses in the manufacture of fitted bolts for the star stay, drag box, hornblocks, hornstays and rear frames. Lloyds of Burton-upon-Trent completed the casting of the drag box, bogie bottom centre and inside motion plate. A considerable number of frame stretchers and other components, including the spring hanger brackets, front and rear firebox support brackets, bogie top centre and bogie frame stays had been dispatched to Brookside Engineering, Tutbury for machining and many were already completed and returned to TLW.

● **Winter 2001** - Due to a number of external pressures, progress during 2001 unfortunately slowed. Following an approach by Darlington Council, the Trust relinquished the southern, unrefurbished half of the Hopetown building to give the North Eastern Locomotive Preservation Group (NELPG) a base in the city. Although not required for the construction of *Tornado*, it had been hoped to attract sufficient contract work to keep this part of the works busy but this, alas, had proved hard to achieve. All the machinery and facilities were consolidated in the northern, refurbished half of the building and work continued on fitting this out for the final assembly of the locomotive.

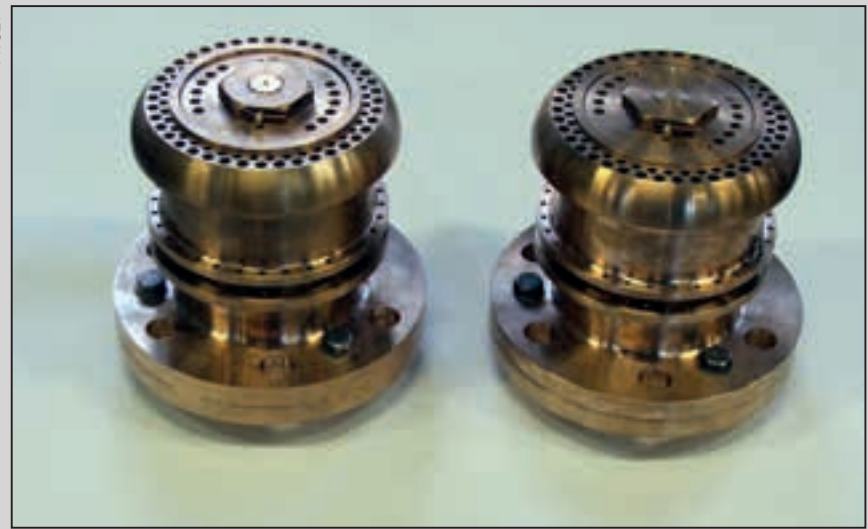


1996 started with more progress on the A1 frames at Tyseley, Bob Meanley supervising the fitting of the hornguides.

● **Winter 2006** – Following approval by HMRI and the go-ahead being given to Meiningen, significant progress was being made on the construction of the boiler. In the UK North View Engineering was making progress on the valve heads and spindles, Steve Wood completed machining valve spindle crosshead guides

and started on the Cartazzi spring hanger brackets. In mid-February, the remaining outside motion parts went to Holts Bros, Halifax for hardening. Despite the replacement of Deeds of Covenant by Gift Aid Declarations, the Trust decided to retain the title ‘Covenantor’ for its many individual financial supporters who subscribe monthly towards the cost of *Tornado*’s construction.

● **Winter 2011** – In a disappointing turn of events, winter 2011 found *Tornado* in a dismantled state at the National Railway Museum, the boiler having been removed and sent back to Meiningen for rectification. Better news was that work on the support coach was progressing well at DLW and almost a third of the money required had been raised for this. One event worth noting was the brief transformation of No. 60163 into No. 163 with ‘LNER’ on the tender at the NRM, made possible using vinyls ahead of *Tornado*’s planned repaint into BR green. **TCC**



In 2006 *Tornado*’s safety valves were fully finished and ready to send to Meiningen for fitting to the newly constructed boiler.

A/SLT

A/SLT

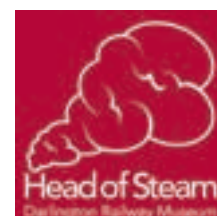
The A1 Steam Locomotive Trust is pleased to display the logos of organisations giving us their ongoing support. Their contribution is gratefully acknowledged.



PRINCIPAL SPONSOR



The Gresley Society Trust



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Darlington Locomotive Works is normally open to the public on the 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. 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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