

The Communication Cord



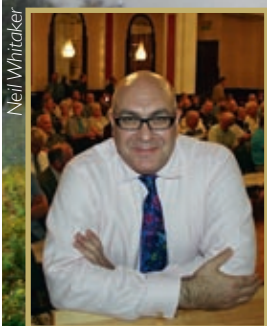
60163 TORNADO

New Steam for the Main Line

No. 24 Autumn 2011

Right: *Tornado*, in the teeth of a gale forges ahead en-route to Glasgow.

Below: CONVENTION 2011...AI Trust's finances robust despite nearly £385K of expenditure; P2 project progresses; *Tornado* dedicated donation scheme to close and 'The Tornado Team' is launched. Full report inside.



Neil Whitaker



Gordon Edgar

THE PERFECT STORM

Billed as the most miles covered behind a steam locomotive, in preservation, in one day, HF Railtours' 'Caledonian Tornado' was a triumph against adversity for both men and machine. **Peter Shakespeare** and **John Wilkinson** report

Sailing through its fitness to run exam (FTR) on Tuesday September 20th, 60163 was about to haul a 500-ton load over 535 miles; climbing two of the UK's most demanding rail ascents, both ways; and would need to complete these feats,

including: water stops, turning move and servicing stop, in under 24 hours.

Three DB Schenker loco crews and an 8-man support crew would work in shifts to ensure the many hundreds of passengers on this 13-coach train would

be picked up and delivered back to whence they came with the minimum of fuss and in complete safety. On the ground, making this all possible was team of water tankers from Bells & Two Tones and that equally important resource, a 26-tonne grab lorry ➤

carrying 10 tonnes of coal.

Conspiring to make this already ambitious rail tour even more challenging were the elements, a faulty tender water gauge and less than ideal rail conditions, made worse by gales and continuous pouring rain.

The Responsible Officer (RO) and man charged with *Tornado's* operational well being for the duration, John Wilkinson, takes up the story: 'Although *Tornado* passed an exacting FTR it became clear that the tender water gauge was faulty. On safety grounds we had to know how much water we were using between stops so I asked Duty Engineer Pete Neesam to rig up a temporary gauge. On the front of the tender tank is a small water valve. A clear plastic pipe was attached to this and rigged up the side of the crew lockers, much like a level gauge on a domestic heating oil tank. As luck had it Trust Engineering Director, David Elliott, had joined the support crew at short notice. Knowing the tender tank dimensions, David did some complicated calculations and gave us good indications of the amount of water remaining at different levels in the plastic pipe. Satisfied we had a reliable method of calculating water consumption we were good to go.

'Leaving Crewe the weather was fine. Our first DBS crew, Driver Pete Sheridan, Fireman Graham Ward and Traction Inspector, Gareth Jones soon had *Tornado* on song and we made good progress, picking up passengers at Stockport, Manchester Victoria, Bolton, Leyland and Lancaster. Running in the high 60s and low 70s between stations we arrived at our first water stop at Oxenholme.

AI 60163 *Tornado* pauses at Carlisle with the return 'Caledonian *Tornado*'.



Gordon Edgar

With a 3,500-gallon tanker on hand we were able to confirm accuracy of the temporary gauge. With 3,500 gallons re-filling *Tornado's* 6,200 gallon tender tank, this confirmed that we were getting proper indications which we continued to interpret cautiously for the rest of the day.

'By this stage the weather had deteriorated and we were in the teeth of a storm that had blown in off the Irish Sea. We now faced the climbs up the top half of Grayrigg bank and Shap Fell. The expansion joints on continuous welded rail have automatic greasers and in wet conditions easily trip up the big driving wheels of steam locomotives. Driver Sheridan knew where they were and did well to momentarily back off the power preventing high-speed wheel slips. Steaming very well, we made steady progress up Grayrigg and recovered

sufficient speed to make a successful assault on Shap. Over the top we made rapid progress to Carlisle arriving right time for the first crew change. Taking over the driving and firing responsibilities Brian Grierson and Steve Hanczar took us on to our second water stop at Lockerbie.

'The DBS crews had handled *Tornado* very responsibly and excellent boiler management meant that they minimised water consumption. Full to overflowing again we set off on time. With only 15 minutes between us and the 10-mile 1:75 Beattock bank, Fireman Hanczar set about building up his fire on the favourable gradients leading up to the climb. With the weather still driving horizontal rain at us, concern mounted as we realised much of our sand reserves had been used up on Shap Fell and on the gradients from Gretna to Lockerbie. Again dodging

From the chair by Mark Allatt



How much difference a few months of successful operations can make to the Trust. Our support crew and merchandise team are back into their stride, delivering a well turned out locomotive for our passengers and some record breaking sales.

As you will read elsewhere in *TCC* we have just had a very successful and up-beat Convention with a thoroughly enjoyable after dinner talk by Tom Ingall of *Absolutely Chuffed* fame. If you weren't able to make it this year, do try to join us next time.

I know this is a little early, but this is likely to be the last *TCC* before Christmas. You will see from Gill Lord's report and the enclosed form that there is a suitable Christmas present for almost everyone available from our shop, including used smokebox numberplates, the new Hornby 00 gauge model, the Graham Farish N gauge model, the Haynes manual and the new and extended version of *Absolutely Chuffed*. We have also decided to close the Dedicated Donation scheme at the

end of the year after raising almost a quarter on a million pounds towards the construction of *Tornado*, so this is your last opportunity to sponsor a component.

As usual we are still looking for volunteers across all disciplines. It takes a lot of people to keep *Tornado* on the rails, not just those who travel with the locomotive as support crew or merchandise team 'trolley dollies' but also those in the back office. At the moment we are seeking people to help with on-train sales, events, merchandise logistics, marketing, giving presentations, archives, works guides, engine cleaning, engineering, support crew and works housekeeping. There is always so much more that we could achieve with the right volunteer with the right skills and a can-do attitude. We are especially short of team leaders who will take some form of managerial responsibility within their discipline. Please email volunteer@alsteam.com if you think you can help.

And finally, thank you all for your support throughout this year. Your kind letters and emails always help to keep the team motivated. I hope to see as many of you as possible out on our trains over the next few months. **TCC**

the rail greasers, Driver Grierson did a brilliant job on the climb up Beattock with limited use of sanders and in appalling rail conditions. We crested the summit at 25mph, which is more than acceptable for a steam hauled 500-ton 13-coach train.

'On time into Glasgow Central, we were greeted with a civic reception, organised by tour promoter, Hayden Fortune. The Lord Provost was introduced to the loco and support crews and there was plenty of media attention to deservedly raise the profile of our fine engine.

'Allocated 4-hours to turn the train and service the locomotive, this was completed without any snags. Pete's water gauge was doing its job and thanks to the quality engineman ship of the DBS crews, we still had a ton of coal to spare following the turning move. We set off from Glasgow on the return leg at 18:23 as booked. Brian Grierson and Steve Hanczar were joined by Traction Inspector Bob Hart and expertly piloted *Tornado* back to Carlisle arriving 20 minutes early.

'The final crew change saw Driver Keith Murfin and Fireman Chris Wallwork take over *Tornado's* reigns. Very aware of the need to conserve water, Driver Murfin handled the engine very sympathetically allowing speed to build gradually on the approach to Shap Fell. The weather had improved significantly, but railhead conditions were still far from ideal and the ever-present menace of grease meant we couldn't afford to lose momentum on the return climb. The gradients are not as severe on the southbound run and limited slipping meant we passed the summit marker at 40mph. The crew controlled the boiler pressure very well and with *Tornado's* inherent efficiency, underlined by its water economy on this demanding trip. This meant that on the 116 mile run from Lockerbie we arrived at our Preston water-stop with 1,500 gallons of water left in the tender tank. Having dropped our load of happy passengers at their stations our return time at Crewe was 40 minutes later than booked, but this was down to pathing issues and not the loco.

'By the time we arrived back on shed, everyone on the support crew was in need of a well earned rest; the team having covered 23 hours of operations. Working in shifts the support crew did an excellent job and we would like to thank our chef, Ellie Hughes for keeping us, and the DBS crews, so well fed and watered. This tour was a great achievement. At times it was hard work, but the challenges were met by the professionalism of all involved, both up front and behind the scenes and without this expertise and dedication, a steam hauled rail tour of this scale, simply



Dove Felton

Above: AI 60163 Tornado approaches Bolton in early morning sunshine.

Below: The weather has changed for the worse as Tornado climbs Shap later that morning.



Gordon Edgar

would not be possible. Finally I would like to thank the DBS footplate crews for their sympathetic handling of the engine and for the excellent job done by our water suppliers, Bells & Two Tones and our coal suppliers...fantastic job lads.'

The support crew:

Responsible Officer: John Wilkinson
Deputy RO/Eng: Jon Pridmore

Duty engineer: Pete Neesam

Crew: David Elliott, Chris Walker, Graham Pearce, Tony Watson

Chef: Ellie Hughes

Merchandising team:

Ken Grubb, Janet Hill, Diana Hurfurt, Tony Lord and Gillian Lord. **TCC**

A KIND GESTURE

At the Annual Convention in Chesterfield, two Bondholders, Bruce Robinson and Richard Smith, announced to the meeting that they were giving back their Bonds to the Trust, thereby reducing the ultimate cash that has to be repaid by 2016.

Roger Dye, who was standing in for Barry Wilson, the Trust's Finance Director, accepted the Bonds on behalf of the Trust, acknowledging Bruce and Richard's generosity. He identified that these early notified redemptions, and any other ones that are made, help the Trust plan its future financial strategy.

To date, Bonds totalling £12,000 have been passed back to the Trust. These have come from Bondholders who are now deceased and holders like Richard and Bruce.

BACK ON TRACK – THE 2011 CONVENTION by Graham Langer

The AI Steam Locomotive Trust's annual Convention was once again held in Chesterfield with *Tornado* stabled at Barrow Hill especially for the weekend. Mark Allatt addressed a packed room and started proceedings by sharing that he had now been involved for twenty years as had fellow trustees David Elliott, Barry Wilson and board advisor Roger Dye. Mark thanked all those Covenantors present who had also been on board since then. Summing up the previous twelve months, Mark noted that prior to her extended winter maintenance, *Tornado* had completed a trip over the newly illuminated Royal Border Bridge, started a tour from Scotland for the first time, visited the East Lancashire Railway and hauled an Armistice Day special as well as what you might call more 'routine' work. Following her spell in the workshop at the beginning of this year, *Tornado* had been unveiled to Covenantors wearing her new Brunswick green livery before being run in on the North Yorkshire Moors Railway and had started a new season on the mainline, which included: a month working the Torbay Express; numerous Cathedrals Expresses; and culminating in an epic run from Crewe to Glasgow and back over both Shap and Beattock banks. Other preservation centres visited during 2011 included Didcot, the West Somerset Railway and the Severn Valley Railway. Mark then handed over to Roger Dye to cover Barry Wilson's financial statement (Barry sadly could not attend the revised

Convention date as it clashed with his 40th wedding anniversary celebrations).

Roger was pleased to announce that despite the loco spending and extended time under repair, covenants still numbered over 2,500 and Covenantor income had again increased allowing the Trust to show a 'profit' or retained income, of over £88,000 despite having spent £136,000 on the support coach and nearly £250,000 on maintenance and repairs (the expense on the boiler is subject to an insurance claim). He said: 'Finances remain robust and we can now start planning to complete the support coach and ring fence funds to repay the bonds. The legacy drive has produced nineteen pledges including two railway collections and one painting, allowing a "Guild" to be set up for those who have considered helping The Trust in this way.'

Roger also acknowledged the generosity of the family of Mr. G. D. Speight who gave £10,000 to the cause, noting, however, that this had actually been raised to £12,500 through Gift Aid!

David Elliott then took the floor to deal with what he described as an 'interesting' year. He reported on the cylinder re-bore, the replacement of the Class 86 sanders with Class 66 units and sundry changes made during the winter overhaul period. Coming to the issue of the boiler, David emphasised that no stays had actually broken in service and that it was the cracks in the foundation ring corners that decided the matter of returning it to

Meiningen. The causes of the problems were manifold and included the number of heating cycles, water treatment, brick arch design and firing technique, all of which have now been addressed. With new sides fitted to the firebox and 1,230 replacement stays in place he felt that the boiler had been returned to full health. David also covered progress with the support coach and, while acknowledging that this had been set back by the work required on the locomotive, reported that progress made been made with the air braking system, the doors and their locks, the vacuum cylinders and body insulation; he hoped completion by May 2012 would be possible.

Graeme Bunker carried on from David, dealing with operations of the locomotive. Graeme told those present that the support crew were vital to the safe use of the locomotive on the mainline and progress had been made with further training and crew competencies. Dealing with *Tornado's* rejection by West Coast Railway Company, he assured the audience that all the proper procedures had been followed and the job audited thoroughly and passed as entirely satisfactory by the necessary bodies, noting that the 'unapproved' contractor had completed work on a number of the WCRC locos currently operating on the national network. Graeme quickly covered the operating highlights of 2011, remarking that the trip to Glasgow had involved a record-breaking 535 mile round trip (all in



After the Convention, Covenantors made their way to Barrow Hill where *Tornado* greeted them bathed in autumn sunshine.

Ken Horan

a day's work for an A1!) before mentioning some of the proposed operations for 2012. These include two trains to be run by the Trust, the 'Fab 4' event at Barrow Hill in April, our attendance at the NRM 'Railfest' in June and a visit to the Llangollen Railway. Wrapping up, he touched on the subject of 90mph running, noting that revision of the Group Standard, GO/RT3440, which must have been devised by a GWR man, requires a lot of additional, new, data.

Alexa Stott and Gill Lord took over from Graeme to cover merchandising, volunteering and donating. Gill revealed that the merchandise team had covered two shows, twenty-two heritage railway days and twelve mainline trips, generating an incredible £47,000 since May this year. Online sales are up and each mainline run generates an average of £1,800 in sales and £400 in photo sales but these statistics were eclipsed by the 'Ladies Day' in August when an all-girl crew took £2,800! Training days have been arranged and proved successful. Alexa unveiled a long list of volunteers needed, from trolley-dollies to marketers, presenters to engineers. In terms of donations, she said that the dedicated donation scheme was being closed (for *Tornado* at least) having raised an amazing £242,400 to pay for components on the engine. New methods of fund-raising are being developed (and covered elsewhere) but The Trust currently has 2,509 covenants. Alexa announced that the Trust is launching 'The *Tornado* Team'. This scheme is aimed at recruiting 5 - 15 year olds with benefits such as a welcome pack, a newsletter and special access to the locomotive on suitable occasions. The cost is £25 per annum, so surely this is an ideal Christmas present?

During 2011 Covenantors have enjoyed the unveiling at York, a special day at Didcot, discounted tickets for two trains and free entry to the 'Head of Steam' museum in Darlington. Concluding Alexa said we still need to find sponsors,

Neil Whitaker



Covenantors await the start of the 2011 Convention at the Chesterfield Hotel.

particularly a hotel chain, and thanked all those who had donated money towards getting *Tornado* to Barrow Hill. An incredible £1,603 was raised.

The final speaker was Graham Nicholas who dealt with progress on the design and development work on the P2. Although 60163's troubles had slowed progress, Delta Rail's Owen Evans had inspected *Tornado*'s frames at York, while the boiler was out, to fine-tune the computer model they had generated. In September the Board agreed to proceed with the feasibility study and Delta Rail kindly agreed to honour the rates from their 2010 quotation. The Vampire programme is already producing schematics for an A1 and Graham showed some illustrations of these diagrams. Although much of this work is pertinent to the P2 project it will also be very useful in seeking 90mph derogation for *Tornado*, as well as offering a solution to improving the ride of the locomotive.

Mark Allatt wrapped up the meeting by paying tribute to the engineering team for affecting the repairs so quickly, in particular Chris Walker's role as project manager. Before concluding the meeting with a question and answer session, Mark said that 2011 had been a successful year and he hoped that 2012 would be even better. **TCC**

ENGINEERING

by David Elliott and Graeme Bunker

General

Tornado has been performing well since the return to traffic last May with relatively few maintenance issues. Judging by the comments from DB Schenker crews and our own footplate representatives the modified drafting arrangements appear to have made boiler management and firing easier.

Scheduled maintenance

An A exam was carried out at Bristol's Barton Hill depot towards the end of July and a B exam at Bishops Lydeard during the 3rd week of August. Both of these involved boiler washouts, a further washout being undertaken at Bishops Lydeard on September 6th.

Water Treatment

One of the key factors in managing a steam locomotive boiler is avoiding scale formation as this can cause the inner firebox to overheat, as scale is a good insulator.

When water turns to steam in the boiler, the dissolved salts in the water remain behind in the boiler (steam is effectively pure water). As the concentration of these salts increase and under the influence of heat, they start to precipitate into solids. As anyone with a kettle living in a hard water area will know scale will quickly form on the inside of the kettle. The measure of the concentration of these salts in the water is known as Total Dissolved Solids (TDS) and is expressed in Parts Per Million (PPM) and can be easily measured and is on a daily basis, with an electronic instrument. Another downside to water is that it tends to encourage corrosion of steel due to the carbon dioxide and oxygen dissolved in it.

The means of reducing corrosion is to make the water alkaline to the point

HOW TO HELP TORNADO WITHOUT SPENDING A PENNY MORE

There are two ways in which Internet users can contribute to *Tornado* without spending a penny more than they would otherwise do. They are by using **www.easysearch.org.uk** and **www.easyfundraising.org.uk**. The A1 Steam Locomotive Trust is registered with both of these organisations so that it can benefit from funds donated by advertisers and suppliers who support the sites.

Easysearch is a search engine, similar to

Google, Bing, ASK, Yahoo, etc. It uses the combined results from the Bing and Yahoo search engines to present the results. To contribute funds raised through use of the search facility to the A1 Trust, go to **www.easysearch.org.uk**. The first time that you use the site, the home page will give you the opportunity to select the cause that you wish to support:

Type A1 Steam into the cause name box then click on "Find". Select A1 Steam

Locomotive Trust from the possible list of causes (it should be the first entry) and the window will change to confirm that searches that you make now will raise funds for the Trust:

You only need to do this once. Don't forget to add the site to your Favourites list. You can also make it your default search engine and/or home page. If you are a Facebook or Twitter user, there are also links to these. **TCC**

where it will not react with the steel. To increasing the pH to 9 or 10 (alkaline) we add sodium carbonate powder.

This was the degree of treatment recommended initially by Meiningen, however this only works properly with relatively soft water. Following discussions with the Severn Valley Railway water treatment expert Mike Heintzman, and then further dialogue with Meiningen, we have now increased the treatment to achieve a pH of 11 to 11.5.

We also add Tannin to the water as a powder. Tannin is a naturally occurring plant extract and acts as an oxygen scavenger, mopping up the dissolved oxygen in the water before it can cause corrosion. It also coats the interior surfaces of the boiler to form a protective layer and as the solids in the boiler precipitate it coats the tiny crystals and prevents them sticking to one another. Thus when the boiler is washed out the bulk of the solids are in the form of brown mud.

When the boiler is washed out, and refilled, water treatment is added and is topped up for each 4000 gallons of water pumped into the tender. The actual amount of treatment added is varied to maintain the correct pH and tannin levels in the boiler.

The limiting factor for boiler washouts or water changes is the TDS. Once the TDS reaches 2500 to 3000 PPM the risk of the water foaming on the surface in the boiler increases, resulting in priming (carry over of water into the cylinders) which can be destructive and at best tends to wash the oil off the pistons and valves.

Unfortunately the treatment chemicals contribute to the TDS. This can be alleviated by blowing down the boiler, which removes highly concentrated boiler water and some of the mud and replaces it with less concentrated water from the tender. However it is not always possible to do a full blow down as the process involves blasting water and mud out of a valve on the front of the foundation ring and is not popular in the modern railway environment.

During our visit to the North Yorkshire Moors railway in May we started using their anti-foam additive. This enables us to operate to a TDS of 5000 to 6000 without priming in extremis. Our normal maintenance regime doesn't require this but it is a useful contingency when water quality is poor.

Normally we add the chemicals through the water tank lid on the top of the tender, however when we are under overhead electrification this cannot be done. When we are operating on the main line we make extensive use of the excellent Bells and Two Tones watering service which is



A Bells and Two Tones water tanker replenishes Tornado's tender when out on the main line.

Ian McDonald



Left: So far after two runs the pig has been deemed a success even if it has an unfortunate nickname!

David Elliott

like a Formula 1 pit stop with 4000 gallons being transferred to the tender in as little as 5 minutes via two fire hoses connected to large fire pumps on the water tanker. There is often insufficient time to charge a hose with chemicals.

To overcome this problem a dosing device (christened the 'pig') has been designed and made which enables the chemicals to be added on main line water stops, thus reducing the need for large doses before departure. The device comprises a thick walled aluminum tube with fire hose connections at each end and a branch with a large screw cap in the middle. The chemicals are measured into the filler cap in the support coach just before a water stop and a member of the support crew rapidly connects the pig to one of the tender filler points with a short fire hose as soon as we stop. Bells and Two Tones then connect one of their hoses to the other end of the pig and internal swirl plates ensure rapid and thorough mixing of the chemicals as soon as the water is turned on.

Other Modifications GPS Tracker

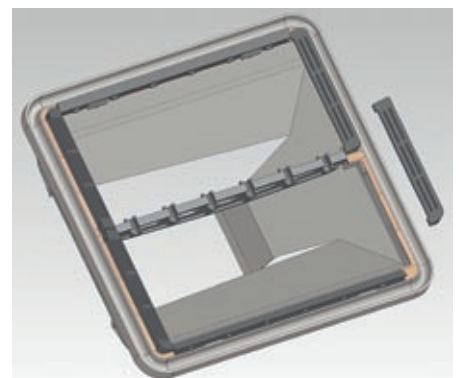
Last year Rob Morland fitted a GPS tracking device to the locomotive and on proving that it worked with the aid of Paul Depledge, made the installation permanent during the winter maintenance period. It is:

- Used for engineering and operational purposes only
- Measures location, speed and mileage covered

- Reports every 10 seconds
- Has a Web interface so we can download tracks and data for analysis
- Geofences operating areas - sending an SMS if the engine moves outside a prescribed area
- Monitors a set speed limit - sending an SMS if speed exceeds a threshold

Foundation ring draft excluder

After the suggestion from Uwe Sprengholz, the TÜV boiler design engineer for Meiningen, steel strips have been made to sit under the front and rear fixed firebars to close off the gap between the outer edge of the firebars and the foundation ring to prevent drafts of cold air being drawn up and cooling the inside faces of the foundation ring corners when the engine is working hard. The extract below from the 3D CAD drawing illustrates the arrangement - the draft excluders being coloured pink. **TCC**



TOURS DIARY

Below are the future operations *Tornado* is confirmed to be involved in. More details will be published at: www.a1steam.com as trains are finalised. Contact details for tour companies appear at the bottom of the page.

2011 Tours Diary

- **Friday 11th November** - 'The Cathedrals Express' - Northampton and London to Canterbury and return - promoted by Steam Dreams
- **Thursday 24th November** - 'The Cathedrals Express' - London King's Cross to York and return - promoted by Steam Dreams
- **Saturday 26th November** - 'The Cathedrals Express' - London Paddington to Ludlow and return - promoted by Steam Dreams
- **Monday 12th December** - 'The Cathedrals Express' - Guildford to Ely and return - promoted by Steam Dreams
- **Wednesday 14th December** - 'The Cathedrals Express' - London to Haslemere & Sherborne and return - promoted by Steam Dreams

- **Saturday 17th December** - 'The Cathedrals Express' - Ashford to Bristol and return - promoted by Steam Dreams
- **Monday 19th December** - 'The Cathedrals Express' - Basingstoke & London to Norwich via Broxbourne and return - promoted by Steam Dreams

2012 Tour Dates

- **Saturday 25th February** - Help for Heroes (full details to follow) - promoted by Steam Dreams
- **Thursday 29th March** - 'The Cathedrals Express' - London to York and return - promoted by Steam Dreams
- **Saturday 31st March** - 'The Cathedrals Express' - London Paddington to Paignton and return - promoted by Steam Dreams
- **Wednesday 4th April** - 'The Cathedrals Express' - Peterborough to Salisbury and return - promoted by Steam Dreams
- **Friday 6th to Tuesday 10th April** - Nene Valley Railway, Peterborough
- **Friday 13th to Sunday 15th April** - A1, A2, A3, A4 event at Barrow Hill Roundhouse, Chesterfield
- **Saturday 21st to Sunday 29th April** - Llangollen Railway, Llangollen
- **Friday 18th May** - 'The Cathedrals Express' - London Victoria to Durham (one-way) - promoted by Steam Dreams
- **Saturday 26th to Monday 28th May** - Preston Guild
- **Wednesday 6th June** - York - Settle & Carlisle Line - York, A1SLT (bookings not open yet)

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

The following tour operators and preserved lines are involved with the operations listed above:

Steam Dreams

Web: www.steamdreams.com Tel: 01483 209888
Email: info@steamdreams.co.uk

Pathfinder Tours

Tel: 01453 835414 Web: www.pathfindertours.co.uk
Email: office@pathfindertours.co.uk

HF Railtours

Telephone Pathfinder Tours: 01453 835414
Web: www.hf-railtours.co.uk
Email: office@pathfindertours.co.uk

Torbay Express Ltd

Web: www.torbayexpress.co.uk Tel: 01453 834477
Email: contact@torbayexpress.co.uk

Didcot Railway Centre

Web: www.didcotrailwaycentre.org.uk
Tel: 01235 510621; Email: info@didcotrailwaycentre.org.uk

West Somerset Railway

Web: www.west-somerset-railway.co.uk
Tel: 01643 704996
Email: info@west-somerset-railway.co.uk

Mid Hants Railway

Web: www.watercressline.co.uk
Tel: 01962 733810

North Yorkshire Moors Railway

Web: www.nymr.co.uk Email: info@nymr.co.uk
Tel: 01751 472508

Severn Valley Railway

Web: www.svr.co.uk Tel: 01229 403816

VSOE 'British Pullman'

Tel: 0845 077 2222; Web: www.orient-express.com

Barrow Hill Roundhouse

Web: www.barrowhill.org Tel: 01246 472450
Email: project_man@barrowhill.org.uk

Nene Valley Railway

Web: www.nvr.org.uk Tel: 01780 784444
Email: nvrorg@nvr.org.uk

Preston Guild

Web: www.prestonguild2012.com Tel: 01772 903605
Email: guild2012@preston.gov.uk

Llangollen Railway

Web: www.llangollen-railway.co.uk Tel: 01978 86097
Email: llangollen.railway@btinternet.com
on-line ticket sales: www.sales.webticketmanager.com/llangollenrailway

Amid a riot of willow-herb in flower, A1 60163 *Tornado* is seen near Crowcombe on the West Somerset Railway.





OUT AND ABOUT *by Graham Nicholas*

'The Cathedrals Express', 4th August Ely to Bath & Bristol 1Z66 charter for Steam Dreams 634 miles run

In a departure from the usual format, this working for Steam Dreams did not feature a London departure; the otherwise appropriate cathedral town of Ely being the origination point on this day. This made it a long day for the hard-working support crew and merchandising team.



Ian McDonald

'The Cathedrals Express', 6th August London (Euston) to Worcester 1Z88 charter for Steam Dreams 359 miles run

Two days later came an assignment involving one of Europe's busiest pieces of railway - the southern end of the West Coast mainline. Yet so exemplary was *Tornado's* running on the outward leg, that there was not a single minute of late running posted against the train whatsoever, 60163 being either right time or early at every reporting point on the route.



Neil Whitaker

'The Cathedrals Express', 13th August London (King's Cross) to York 1Z57 charter for Steam Dreams 427 miles run

Tornado returned to her trademark route for the first appearance of a Brunswick Green A1 in and out of King's Cross in 45 years. 60163's performance lived up to the occasion, arriving at York 5 minutes early and 1 minute early back at the London terminus in the evening. While at York a team from Colas Rail kindly helped with servicing on the York triangle.

Eyewitness reports from the footplate reveal that the loco was driven in classic LNER style - full regulator and variable cut off, allowing the A1 to cruise for mile after mile at its maximum permitted speed.



Ian McDonald



Geoff Griffiths

'The Cathedrals Express', 17th August London (Victoria) to Weymouth 1Z90 charter for Steam Dreams 349 miles run

In utter contrast to the other runs described so far, operating problems from the very start dogged this day. The trouble started before *Tornado* had even left London as the inward bound stock was delayed by a failed locomotive en route. A further setback was waiting at London Victoria as the booked DB Schenker fireman was not available and the tour had to be piloted by a Class 67 diesel as far as Eastleigh.



Ian McDonald

West Somerset Railway, 27th August to 4th

September 719 miles run

Tornado returned to the West Somerset Railway for a further visit to cover the final week of the summer holiday, leading up to a starring role in the line's late summer gala event. The loco's stay at the line coincided with another milestone moment as she clocked up her 40,000th mile since entering traffic.



Tony Lord



James Billingham

'The Cathedrals Express', 10th September

London (Euston) to Lichfield & Chester 1Z61 charter for Steam Dreams 401 miles run

Tornado returned to mainline action with another run over the West Coast Mainline. This tour gave its participants a straight choice of two cathedral cities (Lichfield or Chester). Another virtually model outward run was unfortunately not matched by the return as the train got caught up in a signalling failure north of Watford.

'The Cathedrals Express', 15th September

Woking to Lincoln 1Z88 charter for Steam Dreams 497 miles run

Another Steam Dreams working originating outside London, this trip fell hapless victim to further spate of operating difficulties. Unlike the run from Ely the previous month, this time *Tornado* was unable to recover from some delays early in the day and what should have been an interesting trip along the GN/GE joint line through Spalding turned into a crawl.



Peter Lovell

Model Rail Live at Barrow Hill roundhouse, 17th and 18th September

Tornado was 'top of the bill' at this event and gave rides along Barrow Hill's demonstration line all weekend.



Dave Tillotson

'The Caledonian Tornado', 21st September

Crewe/Manchester to Glasgow 1Z53 charter for HF Railtours 535 miles run. See lead story page 1.

Severn Valley Railway, 23rd to 25th September 285 miles run

Tornado made a welcome return to one of the UK's premier heritage railways to take up another starring role, this time in one of the highlights of the UK steam calendar - the Severn Valley Railway Autumn Steam gala.



lan McDondil

Covenantors' Diary by Alexa Stott

Much of the talk in this issue of *The Communication Cord* has of course been about our Convention and I am pleased that those Covenantors who were unable to attend have received such a comprehensive report on it. As Covenantor Care Director may I thank all those Covenantors and their guests who were able to attend the Convention and make it such a success and a particular thank you on behalf of the Trustees for your magnificent contribution of £1666.25 towards the cost of *Tornado's* light engine move to Barrow Hill. On behalf of us all, a big thank you must once again go to Barrow Hill Roundhouse for making us so welcome. I can't think of any other railway centre that would close its doors to the public for a private event such as ours and this underlines the friendship and mutual co-operation between our two organisations.

I am delighted that we have a wonderful photograph to commemorate the day, taken by Ken Horan. Copies may be ordered using the enclosed order form. I believe this may be the first Convention group photograph taken outside AND in magnificent sunshine.

I made two announcements at the Convention that I would like to remind you of here in the Diary. Firstly, the dedicated donations scheme - sponsorship of *Tornado's* constituent parts - is coming to an end on 31st December 2011. The Trust has raised nearly £250,000 in this fundraising scheme and there are still some interesting parts to be snapped up before its conclusion. Further details can be found on the Trust's website in the "How you can help" section. Secondly, the Trust is setting up the 'Tornado Team', a club for 5-15 year old supporters and fans of *Tornado*. I believe we have already recruited our first members at the Convention and application forms will be available shortly. Members of the 'Tornado Team' will receive a *Tornado* goody bag on joining, have their own bi-annual newsletter to which I hope they will contribute and opportunities to spend time with *Tornado* on her visits to preserved railways around the UK. There will be an annual £25 fee, payable by standing order; an ideal Christmas present for your children or grandchildren!

Just a couple of days before the Convention I was honoured to be asked to cut the ribbon to open the new *Tornado* exhibition at Head of Steam Darlington Railway Museum. This is the first exhibition to detail the history of the project and I would encourage you to visit it between now and next March if you are in the Darlington area. It has incorporated artefacts, photographs and commentary that many of you - and I - have

The 'Tornado Team'!
A new club is being created for 5-15 year-old fans of Tornado.



Ken Horan

probably not seen or heard before. All Covenantors are of course entitled to free entry to the Museum, should you require any extra encouragement. The other good news is that plans are already being made for a permanent display in the Museum after the exhibition finishes next March. And if you time your visit to coincide with the third Saturday of the month you will be able to see our own support coach undergoing restoration in the Works at Hopetown Lane.

In my last Covenantors Diary I reported on the Help for Heroes train on 8th October that the Trust was proudly supporting. You will be aware that for reasons beyond the Trust's control, this tour has now been moved to 25th February 2012. Despite this disappointing news I do hope that you will be able to join us on the new date.

I would like to finish by thanking all Covenantors, old and new, for your unstinting and invaluable support over the past twelve months. The positive news we were able to impart at this year's Convention would not have been possible without it. Thank you! **TCC**

David Elliott



NEW SUPPORT COACH REPORT

Progress has been limited due to the major engineering exercise with the locomotive diverting resources, however some progress has been made including further work on:

- Fitting of air brake equipment
- Installing the electrical system
- Installation of a central heating system
- Overhaul of the windows

Chris Walker and David Elliott are working up a detailed plan to completion and Tony Lord has agreed to become Works Manager at Darlington, which will make day-to-day operations smoother. We hope to make greater use of volunteers to keep costs down.

Design work and procurement has re-started

with practical work on coach scheduled to get under way in mid October. Completion anticipated Spring 2012.

● PLEASE HELP US MAKE PROGRESS BY SUPPORTING THE 'USE YOUR LOAF' APPEAL AND/OR, BY VOLUNTEERING AT DARLINGTON **TCC**

Left: Gordon Wells assembles the support coach window frames at Darlington.

MERCHANDISE UPDATE *by Gill Lord*

Bochmann Europe Plc.



Neil Whicker

Far left: The first Graham Farish N scale model of the new build locomotive No. 60163 Tornado to leave the production line was presented to Gill Lord at the annual International N Gauge Show held at the Warwickshire Exhibition Centre near Leamington Spa. Left: Gill Lord and volunteers manning the well-stocked merchandise store at Barrow Hill.

The Merchandise team has had a very busy time since the end of June.

There have been 11 mainline tours and 12 days at Heritage Railways, and at each event the teams have turned up early, worked hard, played hard and finished late!

The most spectacular was the HF Railtours' Crewe - Glasgow 'Caledonian Tornado' on 21st September. A long day began with a team meeting at 05.50 on Crewe railway station, with arrival back at Crewe at 02.00...some 20 hours later! Not all our tours are as long as this one but all are just as enjoyable.

We had an all girls 'Trolley Dolly' team on the 13th August, 'Cathedrals Express' from London King's Cross to York and it was one of the best days for train sales revenue we have had this year.

The days spent at the West Somerset Railway in late August and early September and the Severn Valley Railway in late September showed that *Tornado* still draws the crowds three years on, and remarkably we had very little rain, which for Minehead is quite something!

Now on to the latest items for sale. I have introduced bottle green into our clothing range. Fleece, sweatshirts and polo shirts are now available in bottle

green as well as navy. Children's t-shirts are now available in smaller sizes due to demand, ages 1-2 and 3-4 in royal blue.

Christmas cards have been delivered and are now on sale, packs of four different photographs of *Tornado* in the winter wonderland with a choice of two sizes this year, normal and large letter size. Our 2012 calendar is now available at £10.

Graham Farrish has introduced an 'N' Gauge *Tornado* in Apple Green. These will be on sale later this year.

The Hornby models have been selling well, especially the Special Edition Rail Road. The production of this model was only 1,200 and the final few can only be purchased from the Trust. The Train Pack would make a fantastic Christmas present for children both young and old.

All these items can be purchased online, from our stands at Heritage Railways and

on main line trains hauled by *Tornado*.

We are still looking for volunteers to help with merchandise. We are particularly in need of volunteers who are able to help with the transit of stock to events and to set up the stand on the first day and then return the stock to our store in Cannock once the event is finished. Transit of stock to the support coach for a mainline trip can also be difficult especially the heavy mugs and books. These cannot easily be transported in a suitcase by a volunteer who is travelling to work on the train or on the support crew, so we need people who can bring them to us. Team leaders are also in short supply and those of you who attended the training day in May will be aware of the duties involved. If you think you would like to help in either or both of these areas, please contact me at gill.lord@a1steam.com **TCC**



FOR SALE - 13 TORNADO SMOKEBOX NUMBER PLATES

All have been carried by *Tornado* and are available at £200 each.

Dates available:

- 'The Cathedrals Express', King's Cross York and return 16/08/10
- 'Purbeck Tornado', Victoria - Swanage - Waterloo 29/10/10
- East Lancashire Railway - 23 to 31/10/10

- Barrow Hill Convention - 9 to 10/10/10
- 'The Christmas Coronation', King's Cross to Edinburgh 18/11/10
- 'The Canterbury Tornado', Willesden - Canterbury - Willesden 18/06/11
- Didcot Railway Centre 11/06/11
- 'Torbay Express' 03/07/11
- 'Torbay Express' 10/07/11
- 'Torbay Express' 31/07/11



- 'The Cathedrals Express', Cambridge - Bristol and return 04/08/11
- 'The Cathedrals Express', Euston - Coventry and return 06/08/11

- 'The Cathedrals Express', King's Cross - York and return 13/08/11

To secure your number plate Email: shop@a1steam.com

50-YEARS ON

AI Trust Vice President and the former master of the King's Cross Top Shed knows a thing or two about AIs and the workings of their footplates. Having recently re-acquainted himself with 60163's, **Peter Townend** reflects

Tornado had already arrived at Taunton when I arrived on the first train from Newton Abbot. Heading Sunday's 'Torbay Express' from Bristol, the tender was being filled from a road tanker, using the low level filling points - essential when operating under overhead wires and so convenient yet never available in the days of steam traction.

I always remember my occasional visits to John Blundell, the District Motive Power Superintendent at Peterborough, when I was in the Head Office at Liverpool Street. As you walked around the extensive shed yard of New England depot with him he would be dashing in all directions shutting tank lids! There was a serious point to this as locomotive failures occurred due to tender sieves becoming blocked with debris and when I was at Top Shed there was a change of locomotives at Newcastle on the non-stop Elizabethan due to an engineman's sponge cloth having been accidentally dropped into the tender when filling with water. This had partially blocked the water supply at the sieve. Water troughs were also the source of much debris particularly from train toilets.

I was greeted warmly at the engine by its DB Schenker crew; traction inspector Geoff Ewans of Barton Hill, Bristol, driver Graham Ward of Didcot together with

Peter Neesam of the AI Trust. Recently passed out fireman Steve Matthews was supervising some young ladies visiting the locomotive's footplate, who were obviously enjoying the experience. It was a pleasure to see the AI standing quietly in the station for around half an hour and not once blowing off.

During the steam days it was usually the practice with Pacifics to fill the back corners of the firebox with the biggest lumps of coal available before leaving the shed. Once on their train in the platform the damper was opened to help increase boiler pressure and this 'big' coal would sustain steaming rates during the acceleration away from the station. At Top Shed an outgoing engine would often go back under the coaling plant to fill the hole left on the tender, causing headaches for the running foreman if the engine became blocked in and consequently late off shed. The coal on *Tornado's* tender was much smaller than that of Rossington or Harworth, which King's Cross used on the main line but of a very convenient size for filling the shovel. Upon departing from Taunton, fireman Steve Matthews was assisted by Peter Neesam, one on each side of the cab, and they set to work with some gusto to fill the 50 square feet of grate. Something I had not seen before.

The double Kylchap blast-pipe was doing its job however and the exhaust cleared very quickly. In my experience an AI, with its very large grate and relatively short boiler barrel, would always come round very quickly when you started away, particularly when compared to the single chimney Pacifics which needed much more careful attention.

LP Parker the Motive Power Superintendent of the Eastern Region would have been delighted to see that driver Graham Ward of Didcot worked the engine with an almost fully opened regulator, and used the reverser to make frequent adjustments to the valve cut off as we climbed towards the summit of Whiteball bank. He told me later that he had worked the engine between 20 and 40%.

The Whiteball tunnel seems very short nowadays when passing through on HSTs but its length of just under one kilometer can be appreciated properly when passing through it with speed in the 40s. I was reminded that RD Blackmore, the author of *Lorna Doone* also wrote a poem entitled 'The Whiteball Tunnel'. This is displayed in the nearby church at Burlescombe, which stands out on a hillock, easily seen as you drive along the M5 motorway. The last verse reads:

*Before us yawns a dark browed arch
Paved with a muddy runnel,
A thousand giant navvies march,
To delve the White Ball Tunnel.*

The tunnel, designed by Brunel and built in 1842, was built to accommodate the Great Western's broad gauge. Its wider bore has enabled strengthening of the original wall's deteriorating brickwork to be carried out without restricting the present loading gauge and much of the work was carried out with trains running.

I had travelled in the cab over the GWR West of England main line from Westbury only once previously. I had forgotten how curved the GWR main line is, there seemed to be only one long straight section before Exeter, but it is while passing through the short tunnels after Dawlish, that the sharpest bends are experienced. After the relatively straight East Coast mainline I was used to, it is something of a surprise to sit in the cab of a Pacific biting into moderately sharp curves without slowing down. The last



A ride on 4472 started Peter Townend thinking about how frame stresses affect Pacifics negotiating tight curves at speed.

time I had experienced this was from the cab of Flying Scotsman on the York to Scarborough line. I wondered what stresses the long frames and axle boxes were going through? The designed figure for the Pacifics was usually a minimum six chain curve and four and a half dead slow but after diesel class 40 and 46s gave trouble with frame fractures it was found around King's Cross station these are only average figures and curves were sometimes much less when checked over short sections. Of course main line curvature is much better aligned with much higher figures than around King's Cross station years ago.

Today I had the unusual experience of passing through Exeter, Newton Abbot and Torquay without stopping. The down Torbay Express is non-stop from Taunton to Paignton. In the past the one feature of the AI class, which caused complaints was the riding. There were several reasons for this, which were considered before *Tornado* was built. But on this day with *Tornado* today the ride was very good. I was sitting in the fireman's seat, which is too high for me to comfortably look out of the side window but on the original AIs if you were not prepared for it every time the engine lurched you could hit your head on the top window runner. The original Peppercorn AIs were fitted with a different bogie design to that used on the Gresley Pacifics, which were not so sensitive to this lurching. This occurred every time you passed over a set of points or crossing but today the track is much better maintained and most of the points on the main line have been eliminated. Of those remaining we passed over the points at the old Tiverton Junction with speed in the low 70s but *Tornado* held firm. Some of the earlier Thompson and Peppercorn Pacifics also suffered from a continuous side oscillation at speeds over 60mph, which has been eliminated on *Tornado* with more tension on the bogie side control springs.

The five original AIs fitted with roller bearings eliminated much of the wear from the axle boxes but the Gresley practice of using wedges on the horns ceased on the Thompson designed engines. Manganese liners were used on some of the post war built engines instead. The liners would work harden and delay excessive wear but the ordinary AI could give the impression of being run down with the vibration when wear developed in the axle boxes. *Tornado* is fitted with roller bearings and manganese liners to the horns.

With some guidance from Peter Neesam, fireman Matthews did an excellent job in controlling the fire on *Tornado* by adjusting the damper as



Ken Woods

On the original AIs if you were not prepared every time the engine lurched you hit your head on the top window runner.



Nigel Curtis

AI 60163 *Tornado* approaches Teignmouth with 'The Torbay Express.' 17 July 2011.

necessary and I was pleased to record the safety valves only lifted once very briefly. But otherwise *Tornado* did its work excellently as an AI should and I had nothing to book against the locomotive!

Generally it appears to me that *Tornado*, and all mainline steam locomotives, are worked somewhat harder today than many of their predecessors were. The design criteria were given in 1948 as 600 tons at 50mph, or 500 tons at 60mph. But these were intended for the LNER main line from King's Cross to Newcastle. When track speed limits were raised in the 1950s to 90mph, many AIs had an easier time with loads of only 8 coaches making up trains such as the 'Talisman'. 'The Torbay Express' is usually 11 coaches worked up steep gradients along the coast to Kingswear which *Tornado* took today extremely well at line speed albeit on a dry rail.

However there was one black mark,

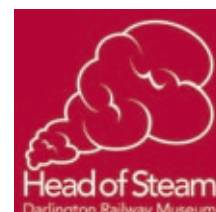
which I only ascertained when walking down the platform later at Kingswear. A friendly guard suggested I might like to get washed! When I looked in the mirror I was somewhat surprised to see how black I had become in such a short journey. The coal was very dusty and although the tender water sprays and the slacker pipe had been used throughout it had not kept the coal dust at bay. The cab of *Tornado* is now enclosed whereas at one time the tender fronts on the AIs were open. On *Tornado* there were no complaints about draughts but much of the combustion air may now be drawn through the tender coal space as the roof is sealed. A much safer arrangement for running under the wires but somewhat dirty one for the crew on this occasion.

● I would like to thank David Burgess and *Tornado's* DB Schenker crew for making this cab ride possible. **TCC**

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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THE A1 STEAM LOCOMOTIVE TRUST CONTACTS

President **Dorothy Mather**

Vice Presidents **Malcolm Crawley** (malcolm.crawley@a1steam.com)

Peter Townend

Board of Trustees

Mark Allatt Chairman (mark.allatt@a1steam.com)

Graeme Bunker Operations (graeme.bunker@a1steam.com)

David Burgess Company Secretary (david.burgess@a1steam.com)

David Elliott Director of Engineering (david.elliott@a1steam.com)

Gill Lord Merchandising (gill.lord@a1steam.com)

Rob Morland Electrical (rob.morland@a1steam.com)

Graham Nicholas Quality and Certification (graham.nicholas@a1steam.com)

Alexa Stott Sponsorship & Events (alexa.stott@a1steam.com)

Barry Wilson Finance (barry.wilson@a1steam.com)

Advisers to the Board

Roger Dye Special Projects (roger.dye@a1steam.com)

Richard Peck Commercial Manager (richard.peck@a1steam.com)

Chris Walker Project Management (chris.walker@a1steam.com)

Editor

Peter Shakespeare (peter.shakespeare@a1steam.com)

Designed by Debbie Nolan

* All information correct at the time of going to press on 17th October 2011. For up-to-date information and dates please check the website www.a1steam.com.

● The A1 Steam Locomotive Trust, Darlington Locomotive Works, Hopetown Lane, Darlington DL3 6RQ

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

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 (the newly refurbished 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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