

# THE COMMUNICATION CORD



## 60163 TORNADO

New Steam for the Main Line

No. 26 Summer 2012

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Malcolm Crawley

Bearing floral tributes to Malcolm Crawley and Alan Pegler, A1 60163 Tornado storms through Newark Northgate.

## A TRIBUTE TO MALCOLM CRAWLEY

By Mark Allatt

It is with great sadness that we heard of the death of Malcolm Crawley, one of the Trust's Vice Presidents, on Sunday 19th February 2012 – coincidentally the third anniversary of *Tornado's* naming by TRH The Prince of Wales and The Duchess of Cornwall at York station. His funeral took place on Friday 2nd March at St James' Church, Hexthorpe, Doncaster and was attended by several hundred mourners including many of our trustees and covenantors.

Malcolm was a Doncaster Works premium apprentice 1947–52 under Arthur Peppercorn, *Tornado's* designer. A retired BR engineer,

Malcolm worked on the design, construction and maintenance of the original class A1s. He was also Chairman of The Gresley Society Trust and President of The LNER Society.

A true gentleman, Malcolm was an inspiration to all those involved in the building and now operation of *Tornado* and was always available to share his wisdom and experience. He will be greatly missed by all who knew him.

In memory of Malcolm, *Tornado* carried a wreath on her trip from London King's Cross to York and back on Thursday 29th May. We were delighted that his widow Marian could join us for part of the day. ➤

# SCHEDULED WINTER MAINTENANCE *by David Elliott*

The start of 2012 has been dominated by the annual maintenance work which this year has included tyre turning.

*Tornado* in common with all main line certificated steam locomotives is required to have an Engineering Acceptance (EA) certificate issued by an approved Vehicle Acceptance Body (VAB). This certificate lasts for a maximum of one year. January and February are traditionally quiet months in both the main line and heritage railway sectors, so we plan the EA renewal work for this time of year.

The maintenance schedule is based principally on operating days and is the same whether operation is on a heritage railway or main line. The daily S exam as its name implies is carried out every day that the locomotive is in operation. The next inspection is the A exam which coincides with a boiler washout, normally every 14 steaming days. Every third inspection after two A exams is more intensive and is styled a B exam.

The C exam is carried out annually, and whilst it does not have to coincide with the EA renewal, for convenience we use it as preparation for the EA work.

The exams are cumulative, so a B exam includes all the A exam tasks and a C exam includes B and A exam work.

The C exam is significantly more work than the B and A exams and includes:

- Piston and valve exam
- Motion off and inspected
- TPWS and OTMR annual testing
- Tender tank inspection
- Spring setting and weighing

***Tornado's leading bogie wheelset is aligned on the lathe.***



Phil Marsh

## ● Speedometer calibration

Additionally this year we have had the axles and crank pins subjected ultrasonic and magnetic particle inspection to check for freedom from cracks. This has to be carried out every four years.

The injectors and safety valves were overhauled.

It was also decided to remove all the mechanical brake linkage for inspection and to change the leaf springs on the whole locomotive as we had two cracked tender springs during 2011.

During the work, our VAB Lloyds Register Rail, carried out a cold inspection of the locomotive and an inspection in steam including conducting a full brake test similar to those we carry out at

each B exam. In parallel the VAB's boiler inspector (John Glaze) undertook cold and hot examinations of the boiler.

In addition to this, our insurance company Aviva require a separate boiler inspection for which they use the Bureau Veritas inspection agency.

As described in TCC 25, the annual maintenance work has been carried out at Ropley on the Mid Hants Railway using the MHR staff and our contractors and volunteers. In general it has gone well although there were some issues as described below.

The piston and valve exam showed that the valves and rings are in good condition although the bearings which support the front of the valve spindles in the valve

## From the chair *by Mark Allatt*



It's great to be back in action on the main line and on heritage railways after our scheduled winter maintenance – thank you to all of our contractors and volunteers who worked so hard to complete the job.

It was a very sad start to the year to hear of the death of our Vice President Malcolm Crawley – and then a few weeks later the death of the legendary Alan Pegler who amongst many achievements was instrumental in the saving of Gresley class A3 *Flying Scotsman* from the scrapman's torch. For those of us too young to remember pre-1968 (never mind pre-1948!) steam this is a reminder that we have so much still to learn from our friends and colleagues of that generation and that we need to redouble our efforts to ensure that their memories, knowledge and wisdom is not lost forever when they make their final departure.

As you will read elsewhere in this edition of TCC, our support crew and merchandise team are already working exceptionally hard, with packed forward diary of main line trains and heritage railway visits, delivering a well turned out locomotive for our

passengers and some record breaking sales.

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 engineering team in Darlington and elsewhere. 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 (especially on the support coach), 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](mailto:volunteer@alsteam.com) if you think you can help.

And finally, in celebration of Her Majesty The Queen's Diamond Jubilee, the Trust is promoting 'The Elizabethan' from London King's Cross to Edinburgh and return using Deltic 9009 *Alycidon* to Edinburgh and 60163 *Tornado* on the return to London King's Cross. With all profits going to the Trust we hope that you will be able to join us on the memorable occasion. **TCC**



chest covers were worn, allowing the front valve heads to rub on the liners (normally the valve heads are clear of the liners with only the rings making contact). Frank Boait, the mechanical foreman at the MHR bored out the bearings and applied white metal to restore them which is an accepted form of repair.

The pistons and cylinder bore are showing significant wear and on the present basis the liners will need renewing in 2013. New liner castings have been procured. The piston rings were renewed as part of this year's work.

The motion was found to be in good condition which is not surprising given the relatively short operating period in 2011. The only item requiring attention was the right hand crosshead which had excessive side clearance. Frank Boait was able to build up white metal on the side surfaces without affecting the top and bottom faces which saved a significant amount of time and machining.

The brake rigging was in good condition with the exception of the large pivot pin in the bell crank which transmits the force from the air cylinders on the engine to the brake rigging. This had seized into its bearing on the bell crank and was now turning on the smaller bearing surfaces on its mounting bracket. Despite several attempts it would not budge, and eventually it proved necessary to remove the bell crank/bracket/spring assembly and bore the pivot pin out on a horizontal borer and then make a new pin. The opportunity has been taken to incorporate grease lubrication as the previous external application of oil by oilcan has obviously been inadequate.

The spring replacement proved to be difficult, with the new tender springs requiring some fitting work. The plan had been to replace the coupled wheel springs using the wheeldrop at Ropley. However just before we arrived the motor burned out and was still away for repairs when we left the MHR, thus the decision was made

## TYRE TURNING

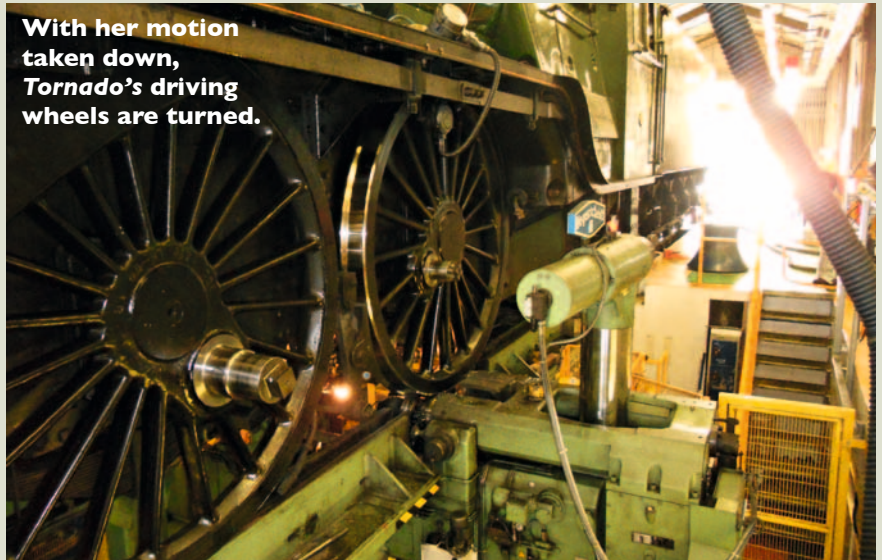
As a rail vehicle accumulates miles, the wheel rims wear with treads becoming hollow and the flanges become thinner. There are limits to acceptable wear, and whilst *Tornado* was some way from the limits, it is good practice to restore the wheel tread profile before the limit is reached as overall this minimizes the amount of material removed.

Thanks to the recommendation of the MHR, we were able to use the services of South West Trains Wimbledon depot to turn the tyres. Wimbledon has a Hegenscheidt under floor wheel lathe which is able to turn wheels without removing them from the vehicle, however we did have to remove the coupling and connecting rods. The work went well apart from a minor lathe problem which took a couple of days to sort out, after which the motion rods were refitted, the springs adjusted and the speedometer re-calibrated. *Tornado* was back at Southall in time for the York train on 29th March.

One interesting aside is that Wimbledon has no shunting locomotive – it is an Electric Multiple Unit (EMU) depot. In order to move us around, the preserved 4VEP unit was used as the modern EMUs do not have conventional coupling hooks. In and around the wheel lathe shop, capstans are used to move vehicles as for obvious reasons, conductor rails are not practical.

I would like to thank the management and staff at Wimbledon for making us most welcome and going out of their way to help us.

**With her motion taken down, *Tornado's* driving wheels are turned.**



David Elliott

to postpone this job until later in the year.

The additional work resulted in our running in period on the MHR being delayed by one week to 25/26th February when the loco ran well and made possible a special 29th February romantic event on

the railway for Mills & Boon.

Our sincere thanks go to Frank Boait and the staff and volunteers at Ropley, and our own staff Jon Pridmore and Mick Robinson assisted by our volunteers to making it all happen. **TCC**

Phil Marsh



**Left: Wimbledon Depot staff, Joe Awauh, Richard Faithfull and Chris Buckland.**

**Right: Three new cylinder liner castings.**



David Elliott

## MERCHANDISE UPDATE *by Gill Lord*

Those of you with children and grandchildren will have heard of Bigjigs who have a superb range of toy wooden trains, all compatible with any wooden railway, and now they have a new model, our very own *Tornado*. Available now on our web site, at events where we have our stand, on trains pulled by *Tornado* and at other retail outlets throughout the world! Price: £10.00.

Another addition this month is the Bachmann '00' gauge *Tornado* in Brunswick Green, also available online and trains and events, priced at £150. A nice edition to the other Bachmann models we have sold in the past.

By the time you read this, we should have taken delivery of our new pewter 'N' gauge *Tornado*.

We are due to have a very busy time over the next few months; it started 31st March with our annual stock take at our store room in Cannock, a lovely day spent counting, each item, not once but twice, a very necessary part of merchandising!

Easter sees us at the Nene Valley Railway. This is our first visit to this part of the country and I am sure that we will have an excellent few days, I just hope that the weather is kind as we are on the platform, under cover, but sometimes the wind and rain is too much at these events, but the teams always put on a brave face and get on with the job in hand. "We had an excellent Easter weekend, the weather was a bit cold but this did not stop visitors to the

railway turning up in their thousands. Merchandise sale were at record levels and we enjoyed a lovely warm welcome from all the staff at the NVR."

A two-day respite, then up to Barrow Hill for the Fab 4 event. Barrow Hill is a venue I always enjoy; the atmosphere is amazing, all the steam and smoke from the locomotives in the roundhouse makes for a very special if grubby day!

Move forward five days and we pack up our merchandise boxes to attend Steam Steel and Stars III at the Llangollen Railway. We are to be based in a marquee (undercover hurrah!) at Glyndyfrdwy, I hope that the weather is as good as it was on the day I visited earlier in March, I like to visit new sites to meet the people arranging the event and have also have a look to see how and where we can set up our stand. This is necessary to ensure a professional image when we arrive on our first day, we do not want to run around looking lost!

So the year goes on, the logistics of merchandising can at times be very challenging but we do have a good system in place.

New items for the new season: felt bags for children to keep their *Tornado* goodies safe, different colour pens, new jigsaws, adult body warmers and Stuart Black locomotive cards.

If you do attend any of our events this year, please come along and say hello, it is very nice to meet others with a special interest in *Tornado*. **TCC**

## FOR SALE I I TORNADO SMOKEBOX NUMBERPLATES



**All have been carried by *Tornado* and are available at £200 each – an ideal Father's Day present!**

### Dates available:

- 9th October 2010 Annual Convention, Barrow Hill
- 4th December 2010 'Bath Christmas Market Special, Bedford to Bath & Bristol
- 3rd July 2011 'Torbay Express', Bristol Temple Meads to Paignton & Kingswear
- 10th July 2011 'Torbay Express', Bristol Temple Meads to Paignton & Kingswear
- 17th July 2011 'Torbay Express', Bristol Temple Meads to Paignton & Kingswear
- 6th August 2011 'The Cathedral Express', London Euston to Worcester
- 26th August - 10th September 2011 West Somerset Railway
- 12th December 2011 'The Cathedrals Express', Chertsey to Ely
- 14th December 2011 'The Cathedrals Express', London Victoria to Sherborne
- 10th March 2012 'The Cathedrals Express', London Paddington to Plymouth
- 4th April 2012 'The Cathedrals Express', Peterborough to Salisbury

**To secure your number plate (all profits to *Tornado*) email [shop@alsteam.com](mailto:shop@alsteam.com). Please allow 28 days for delivery.**

## MORE EASYFUNDRAISING *by Chris Walker*

Easyfundraising have now made it easier to remember to use it when shopping on the Internet. Called "Find & Remind", it seeks to remind you, if you access sites forgetting to go through Eastfundraising, that the site is registered with Easyfundraising. It then gives the opportunity to swap to "giving" mode for that retailer. To get the toolbar, go to <http://www.easyfundraising.org.uk/find-and-remind/> and click on the GET FIND & REMIND NOW link. There is also a short video on this page to show you how it works.

Also part of the function is a neat tool that, when you search for an item using Google, Bing, Yahoo, etc., the results that can be used with Easyfundraising are highlighted:

Search from thousands of **books** & have them delivered to your door ...

**easyfundraising** - click here to raise funds with Tesco Entertainment

Buy **books** online from Tesco.com, where you can search from thousands of **book** titles, preorder the latest **book** releases and have them delivered to your door.  
[www.tesco.com/tescobooks](http://www.tesco.com/tescobooks)

Of course, better still if you use Easysearch, as the Trust will get a small contribution for every search made as well. This displays things slightly differently and more clearly.

**HELP WANTED:** If any reader is qualified in trademark law and would be willing to help The A I Steam Locomotive Trust on a voluntary basis, to advise us on our legal rights now that *Tornado* has become a registered trademark, please contact Tony Lord, Merchandise Licensing Manager on either [tony.lord@alsteam.com](mailto:tony.lord@alsteam.com) or 07875 527133.



## SUPPORT COACH UPDATE *by David Elliott*

The annual maintenance work on the loco has had an effect on progress on the coach as it has absorbed some of the resources, however useful progress has been made. Mick Robinson has completed attaching the external doors and made progress on the gangway refitting. Mick has also completed installation of the frame for the diesel generator including the ducting for the cooling air to its radiator. He has also finally fitted the new battery boxes although the doors still need to be made.

We have secured the services of a cabinet maker/joiner, Peter Beaumont, to work on restoring the interior. To date he has individually fitted 14 new curved door liners from Sapele wood, has lined out the luggage area in plywood and built most of the walls for the merchandise store mostly using materials from the former guard's compartment and cross passage walls. He has also stripped and repaired two toilet doors, one corridor dividing door and has refitted the gangway sliding door at the van end.

The problem of the defective wheelset appears to have been solved thanks to the Mid Hants Railway being able to sell us a serviceable Commonwealth bogie wheelset. Whilst Serco were at Ropley to test the locomotive axles and crank pins, the new coach wheelset was tested and found to be free of defects. It is now at Rampart at Derby for bearing inspection, painting and fitting the bogie which will complete the protracted bogie overhaul.

Meanwhile our small regular band of volunteers at Darlington have completed fitting the support battens for the window liners, and have received instruction from the North Yorkshire Moors Railway carriage and wagon department on window fitting. So far two windows have been installed in the van area.

The efforts of our electrical volunteers with the alternator and regulator finally demonstrated that it worked by powering it in the lathe and using the fork lift truck battery as a load. However having sent the alternator to have the stator windings re-impregnated, it has been discovered that the windings are short circuit to the casing which will require a rewind. Quotes are being sought.

Meanwhile Paul Depledge has made further progress with the vehicle wiring and has started to assemble equipment and to wire the electrical control cubicle.

Unfortunately our appeals for additional volunteers to work on the coach has had a disappointing response which means that the cost of the work has risen significantly as we are using contractors for most of it. We are presently reviewing the project to see if we can find cheaper ways of finishing the vehicle.

We would greatly appreciate help from those with woodworking, painting and fitting skills.

### Support Coach Fundraising

**There is still an awful lot of work to be done to complete the coach, and there are a number of ways that you can help.**

- Volunteers to help with the work are always welcome, but you need to be available at the works during normal working hours. Please email [volunteer@alsteam.com](mailto:volunteer@alsteam.com) for more information
- Make a personal subscription to 'Use Your Loaf'
- Introduce Friends & Family to 'Use Your Loaf' and more people hooked on *Tornado*.

**Use Your Loaf:** Following the success of our dedicated donation scheme for the construction of *Tornado*, "an AI for the price of a pint" we've decided to raise the bread for the support coach in a different way: 'Use Your Loaf':

The coach is 63ft 6in in length – 762 inches – or 1524 'slices' at ½ inch each.

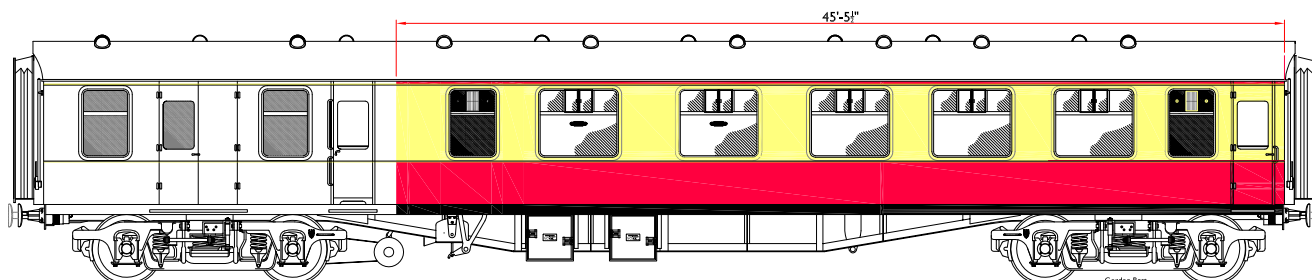
Each 'slice' can be sponsored for £50; £100 for a 'doorstep'; £1,000 for 'half a loaf'; and £2,000 for a 'loaf';

If all are sponsored, it would raise £76,200; if we assume 80% of the donations come with Gift Aid, this rises to over £93,000

**And, as with the dedicated donation scheme, our 'Use Your Loaf' initiative comes with benefits for those generous enough to take part:**

- A certificate recording the details of the sponsorship and a copy of a drawing of the coach noting which slice(s) have been sponsored
- Name inscribed on the official Role of Honour carried on the coach which will detail the slice(s) sponsored
- Entry into draw for main line footplate ride on *Tornado*
- Exclusive opportunity to order Bachmann model of E21249 (a perfect companion to the new model of *Tornado*) with appropriate one of 1524 certificates produced for sponsors. The model is expected to cost about £25.

As of 31st March 2012 the 'Use Your Loaf' campaign has raised £54,500 which translates to 45ft 5½in of the coach's length, an increase of £850 since the last TCC was published, as illustrated on the diagram. Good progress but we still have a very long way to go. We look forward to reporting progress in future Trust communications as coloured section grows to the full length of E21249. **TCC**



**Your support for 'Use Your Loaf' has now reached 45ft 5½in or £54,500. Your help is urgently needed to help us to complete the job.**

# TORNADO ON TOUR *by Graham Nicholas*

**Mid Hants Railway, 24th to 29th February 2012**  
184 miles run

Having spent her winter in hibernation at the Mid-Hants Railway (actually undergoing annual maintenance), it was an ideal opportunity for *Tornado* to stretch her legs at the railway, operating a weekend of service trains. There was however a rather more high profile booking on leap year day. This day (29th February) is of course the one occasion every four years when a lady is 'allowed' to propose marriage to her beloved. Romantic book publisher Mills & Boon duly ran a competition to find the most imaginative suggestion for such an event and Fiona Boubert was the winner with her entry to propose to the love of her life whilst dining on a steam train. The stage was thus set for *Tornado* (the love of all our lives!!) to perform the honours, the lucky hubby-to-be being a possibly not-completely-



WJP Photography

Edward J Dyer

surprised Neil (actually an employee of thetrainline.com and evidently a bit of a railway person himself) who did the manly thing and accepted. The inevitable

flood of 'chuffed to bits' and 'hot and steamy' headlines ensued as our locomotive once again enjoyed some prime time TV news coverage.

## 'The Cathedrals Express', 10th March 2012

London (Paddington) to Plymouth IZ29 charter for Steam Dreams 477 miles run



Robert Sherwood

Believe it or not, the original specification for this train was for two GWR King class locomotives double-heading! Through various iterations and failures this eventually became *Tornado* and a class 66 diesel! The diesel dutifully reserved its efforts solely for the South Devon banks otherwise leaving the AI in sole charge for the day. Timekeeping was generally good during a long and tiring day – several spells of late running were arrested by some spritely running to ensure the tour kept out of trouble. 48 hours after the trip, *Tornado* eased onto the unfamiliar surroundings of Wimbledon depot for her first spin on a wheel lathe.

## 'The Cathedrals Express', 29th March 2012

London (King's Cross) to York IZ60 charter for Steam Dreams 422 miles run

With freshly turned wheels and tyre profiles returned to as new condition, *Tornado* reeled off her trademark ECML working, all operational personnel remarking on the improved ride of the locomotive. However, the day was notable for a rather different reason. Respectfully sporting wreaths for both Malcolm Crawley and Alan Pegler, there was a moving (sic) moment as *Tornado* accelerated purposely through Doncaster station and past the place where Malcolm served his premium apprenticeship. Running at 45mph with the regulator wide open, exhaust loud and crisp, chime continuously sounding, the locomotive that Malcolm contributed so much to strode through the centre road under clear signals to pay a most appropriate tribute. A gesture especially appreciated by Malcolm's widow Marian who was a special guest for the day.



Jack Beeston



## **'The Cathedrals Express', 4th April 2012** Peterborough to Salisbury 1Z56 charter for Steam Dreams 451 miles run

*Tornado* unintentionally took on a formidable performance challenge as, due to the failure of DB Schenker's generator car, a class 67 locomotive was added to the formation (but for train heating purposes only) giving an equivalent load of some 16 coaches. *Tornado's* cause wasn't helped any further when an operational misunderstanding at Staines resulted in a 40 minute delay before the train was allowed into the loop to take water! A late arrival at Salisbury was somewhat inevitable after that. The return leg was altogether more satisfactory as *Tornado* whirled her monster train along the traditional LSWR racing stretch in fine style before making her way up the ECML via the Hertford loop to arrive home less than 10 minutes late.



Peter Lovell

## **Nene Valley Railway, 5th to 9th April 2012 430 miles run**

Ian McDonald



A frenetic five day schedule at the Nene Valley Railway saw the return of the *Tornado* effect writ large. A combination of Easter Bank Holiday and the improbable pairing of *Tornado* and *Thomas* saw the railway besieged as enthusiasts young and old descended upon the railway. Not even the indifferent weather could deter the mass invasion as trains, platforms and café/shops were overwhelmed. Never could the most optimistic promoters of the erstwhile Northampton and Peterborough Railway of 1845 have ever envisaged quite so many people using their railway!

## **Barrow Hill 'Fab Four' Gala, 13th to 15th April 2012**

Well, this was either the not-so-Fab Three or the Mega-Fab Dozen Gala, depending on your point of view, the much publicised continued delays to the already protracted overhaul of 4472 *Flying Scotsman* putting pay to the planned A1, A2, A3 & A4 line-up. In compensation, the NRM released three other ECML icons in the shape of 4468 Mallard, 4771 *Green Arrow* and large-boilered Atlantic No.251. Together with 4464 *Bittern*, resident A2 60532 *Blue Peter* and an assortment of other LNER locomotives, the result was a stunning array of Eastern Region motive power that a visit to Top Shed in the 1950s would have struggled to match.



Jack Beeston







**With a DB Schenker Class 66 substituting  
for No. 71000 *Duke of Gloucester*, A1  
60163 *Tornado* passes Combefishacre.**

Robert Sherwood



# 2012 TOURS DIARY

Below are the future operations **Tornado** is confirmed to be involved in. More details will be published on [www.a1steam.com](http://www.a1steam.com) as trains are finalised. The contact details for tour promoters and heritage railways appear at the bottom of the page.

- **Friday 18th May** - 'The Cathedrals Explorer' - London to Durham (one way) - promoted by Steam Dreams
- **Saturday 19th May** - 'The Cathedrals Explorer' - Perth to Inverness (one way) - promoted by Steam Dreams
- **Wednesday 23rd May** - 'The Cathedrals Explorer' - Inverness to Edinburgh (one way) - promoted by Steam Dreams
- **Saturday 26th to Tuesday 29th May** - Preston Guild at the Ribble Steam Railway, Preston
- **Thursday 31st May** - 'The Cathedrals Express' - Preston to Carlisle and return - promoted by Steam Dreams
- **Saturday 2nd June to Sunday 10th June** - Railfest at the National Railway Museum, York
- **Saturday 16th June** - 'The Cathedrals Express' - Southend to Gloucester and return - promoted by Steam Dreams
- **Tuesday 26th June** - 'The Cathedrals Express' - Westbury to Canterbury and return - promoted by Steam Dreams
- **Thursday 28th June** - 'The Cathedrals Express' - Salisbury to Worcester and return - promoted by Steam Dreams
- **Saturday 30th June** - 'The Cathedrals Express' - London to Durham and return - promoted by Steam Dreams
- **Thursday 5th July** - 'The Cathedrals Express' - Lewes to Oxford and return - promoted by Steam Dreams
- **Wednesday 25th July** - 'The Elizabethan' - London King's Cross to Edinburgh Waverley and return (Deltic 9009 *Alycidon* from King's Cross and 60163 *Tornado* from Waverley) - promoted by AISLT with Pathfinder Tours as ticket agent. See page 11 for more details
- **Saturday 18th August** - 'The Cathedrals Express' - London to York and Scarborough and return - promoted by Steam Dreams
- **Sunday 26th August** - London to Ely and Norwich and return - promoted by Steam Dreams
- **Wednesday 29th August** - North Norfolk Railway for their gala - Friday 31st August to Monday 3rd September
- **Thursday 13th September** - 'The Cathedrals Express' - Norwich to Winchester and return - promoted by Steam Dreams
- **Saturday 29th September** - 'The Cathedrals Express' - London to Kingswear and return - promoted by Steam Dreams
- **Saturday 20th - Tuesday 30th October** - East Lancashire Railway, Bury
- **Saturday 24th November** - 'The Cathedrals Express' - London to Shrewsbury and return - promoted by Steam Dreams
- **Thursday 6th December** - 'The Cathedrals Express' - Redhill to York and Peterborough and return - promoted by Steam Dreams
- **Monday 10th December** - 'The Cathedrals Express' - Peterborough to Winchester and return - promoted by Steam Dreams
- **Wednesday 12th December** - 'The Cathedrals Express' - Peterborough to York and Broxbourne and return - promoted by Steam Dreams
- **Saturday 15th December** - 'The Cathedrals Express' - Ashford to Norwich and return - promoted by Steam Dreams

**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](http://www.steamdreams.com) Tel: 01483 209888  
Email: [info@steamdreams.co.uk](mailto:info@steamdreams.co.uk)

## Pathfinder Tours

Web: [www.pathfindertours.co.uk](http://www.pathfindertours.co.uk) Tel: 01453 835414  
Email: [office@pathfindertours.co.uk](mailto:office@pathfindertours.co.uk)

## National Railway Museum

Web: [www.nrm.org.uk](http://www.nrm.org.uk)  
Tel: 08448 153139 Email: [nrm@nrm.org.uk](mailto:nrm@nrm.org.uk)

## North Norfolk Railway

Web: [www.nnrailway.co.uk](http://www.nnrailway.co.uk)  
Tel: 01263 820800  
Email: [enquiries@nnrailway.co.uk](mailto:enquiries@nnrailway.co.uk)

## East Lancs Railway

Web: [www.eastlancsrailway.org.uk](http://www.eastlancsrailway.org.uk)  
Tel: 0161 764 7790  
Email: [admin@east-lancs-rly.co.uk](mailto:admin@east-lancs-rly.co.uk)



# 'THE ELIZABETHAN' by Graham Bunker



**Deltic D9009 Alycidon and A1 60163 Tornado will both haul 'The Elizabethan'.**



The A1 Steam Locomotive Trust is proud to present a unique railtour showcasing *Tornado* at her best, and also allowing near 400 miles of travel behind an iconic Deltic class locomotive. In this Diamond Jubilee year we pay homage to 'The Elizabethan' express, the premier train on the route in the post war period.

On Wednesday 25th July Deltic 9009 *Alycidon* will set out from London King's Cross station and head north along its former home route, the East Coast Main Line, heading for Scotland. Pausing to collect passengers at Peterborough, York and Darlington the Deltic will cover the 393 miles to Edinburgh cruising at its

design speed of 100mph.

After a break in Edinburgh it is time for *Tornado* to take up her position at the head of the train as we depart the Scottish Capital and head for London. This will be the first time a Brunswick Green A1 will have departed Edinburgh Waverley since the 1960s and to complement the train we are pleased to confirm that the rolling stock for this tour will be the Royal Scot Mark 1 set in carmine and cream.

*Tornado* will head the train south covering the 393 miles to London setting down as on the outward journey. Although we aren't allowed to operate her at 100mph we expect there to be much

fast running at the permitted maximum of 75mph and with this being a summer tour we anticipate wonderful views of the Scottish coast and the Northumberland and Yorkshire scenery with the long daylight hours.

This tour is likely to rate as one of the best ever and will certainly be a highlight of the year. Tickets are available from our booking agent Pathfinder Tours on 01453 835414/834477. The tour can also be booked online through [www.a1steam.com](http://www.a1steam.com). We look forward to welcoming you on this tour supporting *Tornado* and her continued operation on the main line.

## Provisional Timings and Prices for this tour are as follows...

### The Elizabethan – Wednesday 25th July 2012

STATION	DEPART	RETURN
London Kings Cross	0700	2300
Peterborough	0800	2115
York	0915	1915
Darlington	1000	1830
Edinburgh	1230	1430

*Terms and conditions are available on request.*

Class	Adult	Junior
Standard Class	£99	£49
First Class	£149	£119
Premier Dining	£225	£195

Tables for two in first class and premier dining are available for a supplement of £25.

In order to celebrate the Coronation of Queen Elizabeth II, British Railways renamed 'The Capitals Limited' to 'The Elizabethan'. The first runs of 'The Elizabethan' were made on Monday 29th June 1953, and then resumed for each summer season, until at the end of the 1961 season on Friday 8th September, when the last steam hauled runs were made. Being non-stop between London and Edinburgh in both directions, only corridor tender fitted Gresley class A4s could be used, the sheds at King's Cross and Haymarket being those to provide them. Other classes of steam locomotive deputised for the A4s, including A1s, A2s, A3s, B1s, D49s and V2s. Some of the occasions when A1s deputised are 60121 *Silurian* 24th & 25th July 1954, A1/I 60113 *Great Northern* on 25th August 1954 and 60155 *Borderer* 12th September 1954. The inaugural time for

the journey was 6¾ hours but in 1954 that was reduced to 6½ hours or only 390 minutes start to stop for the 392.7 miles.

From 1962, Deltics took over and whilst nominally non-stop to passengers, they halted briefly at Newcastle for crew changing.

'The Elizabethan' was immortalised in *Elizabethan Express*, the 1954 British Transport Film that follows the non-stop service from London to Edinburgh along the East Coast Main Line. Although originally intended as an advertising short, it now acts as a nostalgic record of the halcyon years of steam on British Railways and the ex-LNER class A4. It was directed by Tony Thompson, with a poetic commentary written by Paul Le Saux. It is also notable for its music by Clifton Parker, who wrote the score for several other British Transport Films. **TCC**

# IN HIS OWN WORDS *by Malcolm Crawley*

As many of you will already know I was a career railwayman. I started paid railway life in May 1947 with the LNER as a Premium Apprentice in Doncaster Locomotive Works. Following National Service with a Royal Engineers Transportation Squadron, mostly doing leave train inspection in Hamburg, I returned to Doncaster to be offered either to become an erector in the Crimpsall shops, now sadly demolished, or to enter the Locomotive Drawing Office. I will give you no guesses which I chose. I had a wonderful time in there. My section leader was one who had been involved with many of the Gresley designs and of course those which followed. He had laid out the wedge front for the streamlined locomotives and was responsible for the design of the Thompson B1. He told me that, as one who modelled GWR locos in 3½in gauge, that he had been intent to adopt as many features from the Hall as he could get away with. Look at the B1 and think about it. At this time of course, steam was at its end so far as design was concerned so my work was, after an introductory period, largely involved with diesel and electric locomotive design. The highlight of this and my last job before I moved on was to design the body structure for the AL5 electrics, to be known as class 85. You may have seen in the NRM, a model in the former gallery display, of this structure. The model was made in Doncaster works in the tinsmiths shop so that there was a clear idea of how it would appear so that the Production Office could plan its construction, so different was it from anything they had seen before.

Following this I became a Head Office Mechanical Inspector and spent three years riding around on the railway, a schoolboy's dream. I was responsible along with others for the acceptance testing of the new fleet of diesel electric locomotives from type 2 to type 5. On many of these occasions I had with me a large stopwatch. You can see this watch in the hand of Sir Nigel Gresley on p30 of David McIntosh's new book *Mallard and the A4 class*. I chose to have this watch with me whenever I could.

I moved into management grade after this and rather lost sight of the working railway, being involved mainly with the Works in the North Eastern Region. Then our work seemed to be disappearing and we found that the Workshops Division was being set up and we needed to look for other posts. Training looked a useful move and for some years I was Training Officer until I escaped to a job in the new Divisional Maintenance Engineer's organisation at Newcastle, involved mainly with footplate staff management. This was at the end of steam and I was able to use my training



**Above: As well as *Tornado*, Malcolm was also involved with The Gresley Society Trust N2, No. 1744.**

**Below: Malcolm shovels the first coal into *Tornado*'s firebox in 2008, prior to the lighting of the first fire.**



experience in ensuring that there were sufficient men trained on the various traction types. I was involved also in the planning process and staff consultation to close several of the steam depots and to change staffing levels for the lesser needs of the new age.

Now a total change, I think I worked myself out of a job. There were two of us, Albert Nichols and I in similar jobs, nominally for the Tees and Tyne areas, basically the old Middlesbrough and Newcastle districts, though we worked together very well using our own particular knowledge and experience to good advantage. Clearly there was no longer enough work for us both so I was moved on to the Divisional Operating Manager's team. I found myself looking after the passenger services in the division, monitoring performance, timetable planning along with the HQ people and all the peripheral things that went into that. I was passed out on the block, signalling

regulations; not too many Chartered Mechanical Engineers have done that. Then an opportunity came to apply for an operating job back in Doncaster and I became Movements Assistant. The main task at that time, 1974, was the development of the Doncaster Resignalling Scheme. I was once again out and about for some of my time. Whilst the major planning for the scheme was worked out by the staffing the various HQ departments, there was much to do locally, involving ourselves in Gresley House the Area Managers and the Civil and Signals people. I found myself one day around the Conference room table in Gresley House with Clarry Alderson from the Chief Planning Officer's office with a drawing of the intended panel for the new signalbox. Unfortunately the drawing was about twenty feet longer than the space within the building that the Regional Architect had allowed. Clarry and I set about the drawing with scissors and cello tape. These panels are built up of small sections known as "dominos". We had to remove as much of these as we could without destroying the integrity of the arrangement. The panel which was ultimately installed was the direct result of our efforts. While I was in this post I took on the operating class. This was a voluntary arrangement both for the Instructor and the students and dealt, one evening each week with a range of topics to equip the students with a greater understanding of railway operating practices and procedures. I did not feel that I would wish to stay on this sort of work for the whole of my career. When a chance came to return to engineering arose, and with some encouragement from the Divisional Maintenance Engineer, I moved to Area Maintenance Engineer at Doncaster, about



25 years to the day after I left Carr Loco as an apprentice. I was pleasantly surprised to see how many people were still there and that some remembered me. This was a total change of life; I had direct management of footplate staff for the first time. I was involved with not only locomotives but with carriage, wagon and plant also. There was much to learn. I had, in addition to Doncaster, a MGR maintenance depot at Worksop, a loco servicing depot at Shirebrook and wagon inspection and plant responsibilities across the area. I had C&W Examiners in four power stations. After a about a year I lost the footplate staff to the Area Manager, always the intention and I could concentrate on the engineering. The footplate staff representatives could be very demanding of my time, I was glad to see them go.

Finally I moved back into CM&EE headquarters at York into a job that involved planning, the work study and training sections. Later I took on the new computer section and even the administration. One of the most satisfying parts of this job was my involvement in the development of our graduate and sandwich course student engineers, guiding them through the IMechE's Monitored

Professional Development Scheme. It was in this capacity that I became involved with the legendary Richard Hardy. Reorganisation was to disturb all this. I was to some extent involved in my own demise as it were. My job and similar posts in the other Regions was to be encompassed in the structure at BRB. The Regional Engineer's depts. were to go and many people's lives were to be disturbed. I could not see anything in the new organisation that appealed, especially as it would almost certainly involve a move away. When the boss asked me to compile a list of those who might be prepared to take redundancy, I suggested that my name be put on the top. In consequence I took my money and ran in March 1988 after almost forty one fascinating years. Never did I think then that after twenty years I would be so involved with railways, quite a few Societies and two steam locomotives which are at opposite ends of the spectrum, The Gresley Society's N2 in its overhaul at Loughborough and The A1 Steam Locomotive Trust's A1 now completed and undergoing its trials also at Loughborough. **TCC**

*Reprinted with the kind permission of The LNER Society (formerly The LNER Study Group) from its newsletter no. 186 of 2008.*

**With sadness we report the deaths of two longstanding supporters of the Trust.**

## Joan Dodgson and Roger Burbidge

Joan and with her late husband, Alan, were closely involved with the Trust from the early 1990s until Alan's death in 2004. Joan continued to maintain her links with the Trust as a Covenantor.

Roger was a loyal and enthusiastic Covenantor and supporter of the Trust over many years and we would like to take this opportunity to acknowledge his generous bequest to the Trust of £100.

Joan and Roger will be sadly missed and we pass on our sincere condolences to both families.

## Covenantors' Diary *by Alexa Stott*

*Tornado's* 2012 operating season is now well underway and I hope some of you have already taken the opportunity to travel behind the engine on a main line tour or watch her at slightly lower speeds at the Mid Hants and Nene Valley Railways.

By the time you read this *Tornado* will have made a return visit to Barrow Hill for the 'Fab Four' steam gala, lining up alongside her LNER sisters - *Mallard*, *Bittern*, *Blue Peter* and *Green Arrow*. This event also provides us with an opportunity to thank our great friends at RAF Leeming. As you will be aware, the RAF provided the nameplates for *Tornado* and on a couple of occasions - the engine's naming in February 2009 and most recently during the 2011/12 winter maintenance period - have helped with minor repairs to them. A small party representing the RAF will visit Barrow Hill during the Gala to re-affirm the strong links between the Trust and the RAF.

I was privileged to be on *Tornado's* Kings Cross to York run on 29th March. Not just because it was *Tornado's* first East Coast main line run of 2012 but because we had a VIP on board! Marian Crawley, widow of our late and much missed Vice President Malcolm Crawley, came out with us on the day *Tornado* carried wreaths in Malcolm's and Alan Pegler's memory. In fabulous sunshine, we enjoyed an outstanding performance by the locomotive on her home territory, the highlight being the run through Malcolm's home town of Doncaster on the through road, the regulator fully open and the whistle loud and long. At York Marian was welcomed on *Tornado's* footplate for the very first time. Amazingly, although Malcolm had that honour on several occasions. Marian hasn't until now!

Arrangements for the 2012 Convention are now underway



**Streak sandwich – *Tornado* stands at Barrow Hill with *Bittern* (l) and *Mallard* (r).**

Mick Rogers

and I will be announcing details shortly. I hope you will be able to join us for our ever popular get together and review of *Tornado's* year.

We now look forward with great anticipation to our first Trust tour for a couple of years – 'The Elizabethan' on 25th July. Starting in London and with pick-ups further north at Peterborough, York and Darlington, we hope this tour will be supported by Covenantors the length and breadth of the country. I'll be selling tickets for the headboard raffle on the train so please do say hello - and please buy a ticket too!

As always, thank you for your support, it is very much appreciated by everyone at the Trust. **TCC**

# P2 PROGRESS *By Graham Nicholas*

About ten years ago, I attended a three day training course entitled 'an introduction to railway vehicle dynamics', given by AEA Technology Rail (now DeltaRail, a UK railway engineering consultancy whose genealogy goes back to BR's Research & Development department). In amongst the copious course note hand outs, a somewhat surprising picture leapt out at me – a computer generated diagram of a Class P2 2-8-2 steam locomotive, which sought to demonstrate the locomotive's poor curving performance.

At the time, I found this mildly amusing. The P2s had this supposed reputation for spreading the track and here was someone within the modern railway, using a state of the art technique to somehow prove this.

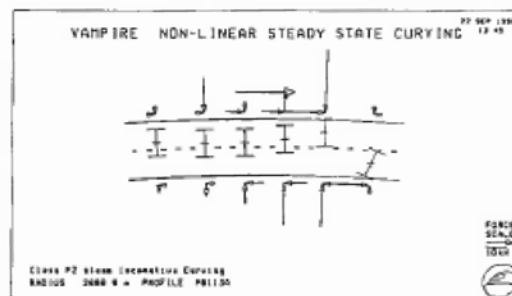
More recently, as talk of a P2 as the Trust's Lot 2 has gathered pace, it has occurred to me that many of today's current railway engineers are unwittingly being taught that a steam locomotive called a P2 had a reputation for spreading the track!

Unfortunate? Well, perhaps, but make no mistake about it – we are starting from a rather different place when it comes to considering the engineering design and ultimate acceptance for a P2.

Despite the above, there appears to have been no recorded instances of any of the original P2s derailing of its own accord on the main line whilst working a train. However, as may be well known, the P2s were fitted with the same 'swing link' leading pony truck design as was originally fitted to the V2s, and there were no less than four recorded mainline derailments

Vehicles with multiple axles rigidly connected together, as for example with some locomotives, can cause very significant gauge spreading forces.

An extreme example of this is shown here. This is a diagram of the behaviour of a Class P2 2-8-2 steam locomotive and shows a very large gauge spreading force at the first driving axle. It can also be seen that the leading pony truck is not assisting with the curve negotiation but is actually attacking the inside rail.



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CURVING 8

of the latter:

- 4844 – Newark 13th March 1944
- 4878 – Thirsk 24th February 1946
- 3645 – Hatfield 15th July 1946
- 905 (4876) – Marshmoor 10th November 1946

It was the latter two accidents that led to the front pony truck design being changed (the first two accidents had originally been put down to other causes but were subsequently determined to be due to the pony truck).

Meanwhile, the P2s did suffer mechanical failures on the main line with no less than four instances of crank axle failure during

their comparatively short working lives. Such things were more common in those days, with a general live and learn level of tolerance towards them. Nowadays, an axle failure on the main line is unthinkable and all rolling stock engineers live in fear of such a thing happening on their watch. As if to emphasise the seriousness of such occurrences, a particularly unlucky combination of circumstances (oil tank wagons passing through a station) led to multiple fatalities when an axle failed in Italy two years ago. Changes to railway legislation at European level have been rushed through as a result.

Thus it is that the P2 feasibility study has a very clear purpose: to evaluate whether such issues can be addressed before deciding to embark on building a new P2.

As was announced at last year's convention, the study is now underway. This work is being undertaken by none other than DeltaRail themselves, based around the internationally recognised vehicle dynamics computer modelling package VAMPIRE®.

Computer modelling using VAMPIRE is a recognised technique in the UK and is usually used to optimise the design of new or modified rail vehicles and to demonstrate that they will be safe (i.e. not fall off the track!) before they are actually tested out for real. This poses a slight problem for us as all modelling assumptions in VAMPIRE are based on testing undertaken with modern vehicles (e.g. passenger vehicles fitted with air suspension); there has been no fully validated modelling of a vehicle



**Above: The track is instrumented at the GCR, ready for Tornado's operational testing.**



**Above: A1 60163 Tornado stands at Newcastle after a memorable test run, 18 November 2008.**



type characterised by a rigid frame chassis, different size wheels and coupled wheelsets – until now!

The first phase of the project has therefore been to develop a fully validated model of a steam locomotive within VAMPIRE. This has to be based on an existing locomotive – and *Tornado* is the obvious choice! Without doing this first it simply would not be possible to undertake an accurate study on the P2.

A fully validated model is one whereby the predicted and actual ride performance of the vehicle have been compared and agreed to be a sufficiently close match. Fortunately we were already aware of all this when the time came to undertake the testing of *Tornado*. We were asked by Network Rail to undertake some ride testing anyway, but we arranged for a few extra measuring devices (accelerometers) to be fitted as the incremental cost was minimal. Thus as she roared through the night from York to Newcastle and back as part of her own testing on that memorable evening of 18th November 2008, *Tornado* was also helping to pave the way for her future stablemate.

So the current work (phase one of three) involves building a detailed computer model of *Tornado* within VAMPIRE – and this is what it looks like! Doesn't look that exciting does it? But the work behind this is considerable; a particular challenge has been to build a working representation of the Cartazzi rear axle, with its inclined slides.

Currently the process of validation is being undertaken – and this involves simulating the York-Newcastle test run. The additional data required is the measured track data for the piece of railway she ran over (specifically the 'up fast' road from Tyne Yard to Tollerton).

But here another wonder of the modern railway lends a hand. Network Rail's New Measurement Train (NMT) – the yellow HST – regularly roams the length and breadth of the country's rails, measuring the track quality (why, I even saw it pass through Garsdale on the Settle & Carlisle line a few weeks ago!).

The data so recorded can be fed into VAMPIRE to allow a vehicle model to be run over any stretch of track. The memory bank has been searched and the set of data nearest to 18th November 2008 over the Newcastle-York stretch found to ensure that the model simulation is as accurate as possible. By comparing the ride performance predicted by VAMPIRE with the actual ride performance measured on the night, the model can be tweaked until a good match is achieved. The modelling assumptions can then be confirmed as validated.

This then is the current activity. The next stage is to use the now validated modelling assumptions to build a model of the P2 as originally designed (with the swing link pony truck). We should then expect VAMPIRE to predict that the ride of the P2 will be worse (than *Tornado*). The final phase will be to use VAMPIRE to its full extent, i.e. to modify the P2 design (and fitment of the later V2 pony truck design is an obvious starting point) until an optimum configuration is achieved (but without noticeably altering its visual appearance!). Provided this redesign can be shown to be a noticeable improvement on the original P2 (and ideally as close to *Tornado*'s ride performance) then all should be well with the concept of embarking on the build of an Improved P2.

P2/4 anyone? **TCC**

(to be continued)

## LOCOMOTIVE MANAGER'S REPORT

By John Wilkinson

I am delighted to have been appointed as Locomotive Manager for *Tornado*. As Mark Allatt has said, most of my adult life has been spent with an involvement with LNER Pacifics and its great to become so involved with newest one.



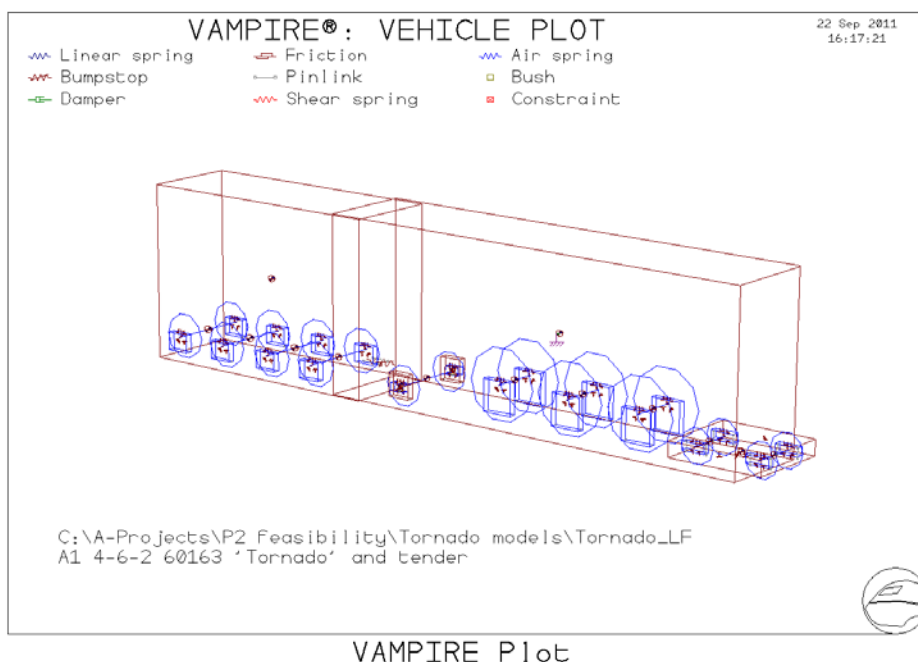
Phil Wright

As always, the start of a new role is exciting and this has been no exception with new processes and procedures to get under my belt and at the same time the locomotive is coming towards the end of its annual maintenance. Having done this with other locomotives it was no surprise that we were finishing off up against deadlines. These were achieved and thanks to the efforts of the MHR and our own engineers, 60163 passed her first fitness to run exam of the year to allow her to move back to Southall ready for 'The Cathedrals Express' on 10th March.

Once back at Southall we were back into the usual routine of cleaning and preparation and a further fitness to run examination. Domestic duties are just as important and the support coach was hoovered and washed followed by a trip to Tesco at Osterley to fill the coach kitchen up with sufficient food to feed three meals to fifteen people. Chef Ellie Hughes was with us again to ensure that we all ate a balanced diet!

A great run followed on Saturday which makes all the hard work worthwhile, 60163 acquitted herself very well with 14 coaches in tow and accelerating into the tunnel at Whiteball summit. It was all new railway for me west of Exeter with steep grades, sharp curves and some fabulous scenery and our friends at DB Schenker handled the loco very well throughout the day.

A major part of my new role relates to the development of our support crew volunteers, I have started work on this too and will have more to say in my next report. **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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Designed by Debbie Nolan

\*All information correct at the time of going to press on 25th April 2012. For up-to-date information and dates please check the website [www.a1steam.com](http://www.a1steam.com).

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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 covenants 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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