



The "WHITE ROSE" is one of Britain's newest titled trains and works between London (Kings Cross) and the industrial cities of the West Riding of Yorkshire, in our picture it is leaving Leeds for the south with "A1" Pacific 60149, now named *Amadis*.

*(Colour blocks by courtesy of the Meccano Magazine)*

*All-new express steam  
is on its way!*

# Top Link

Issue 10  
Spring 2004

*Is this the million-pound part?*



*Bonds  
issue  
goes  
public*



*Journal of The A1 Steam Locomotive Trust*

Charity regd no. 1022834

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Works normally open to the public 2nd Saturday in the month 11 00–15 00; you need first to buy entry to Darlington Railway Museum next door. Covenantors can visit at other times by arrangement, if open. Ring 07790 012410 (mobile).

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## Top Link

Issue 10

Spring 2004

Editor: Gerard M-F Hill

JOURNAL OF THE A1 STEAM LOCOMOTIVE TRUST

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I am writing to you from the intensive-care unit of the Egg-on-Face Dept, where I am gradually recovering. The Safety Valve in *TL9* reprinted some letters from the previous issue and this was no-one's fault but mine. What goes into *Top Link* is the Editor's responsibility: the buck stops here and I can only apologise for this lapse. As for p. 3 last time, it was 60161 when it left the depot. The printer renumbered it.

The A1 Project keeps moving ahead, with new motion, valvegear and more. The Chairman brings you the latest word on the Bonds issue and boiler (*see p. 16*). Some selfless souls sent donations instead of buying bonds; that money has been allocated to buying dedicated covenants in their name for boiler tubes.

Inside the back cover are some special offers on dedicated covenants, starting at £15! The leaflet exchange with the Wensleydale Railway also brought us several anonymous donations. I've asked the Editor of *Relay* to pass on our thanks.

The feature in *TL5* asked Why a Pacific? This time it's Why three cylinders? There is a bumper bundle of letters, on topics from S&D days to the specification of the latest A1. In History, John Daykin logs a run by 60145 and Peter Beet tells us why 60161 was at Carnforth (*TL9*, p. 3). He ends: "P.S: We have five oil-fired Pacifics, with steel boxes, for you to study in Heilbronn. Two are working!"

*Top Link* reaches you only because some generous soul has packed it for you. I would like to acknowledge the work of Gordon Best, Marjorie Black, Alan and Joan Dodgson, Terry Greaves and Barry Thompson in packing recent issues.

If you could spare a Saturday morning just four times a year to stuff magazines into envelopes, it would be a real help. Clean indoor work, no heavy lifting!

I would like to thank David Elliott for supplying the works news and photos, despite being so busy, and to Paul Ambler for all his help in uploading electronic versions of *Top Link* which you can find at our website [www.a1steam.com](http://www.a1steam.com). I am also very grateful to those who have entrusted me with books and photographs.

Since I work full time and have no secretary, please be patient if you have to wait for a reply or return of photos. This is my last issue as Editor, but I wish my successor good luck and thank you all for your support and kind words.

*Gerard M-F Hill*

*The Chairman writes:* I'd like to thank Gerard for the enormous improvements that he made to our in-house journal over the ten issues that he edited. If you think you have what it takes to make *Top Link* even better, then please contact me at [mark@a1steam.com](mailto:mark@a1steam.com).

*Why 'Top Link'? The top link was the group of drivers on the most responsible jobs, the express passenger turns. It came also to mean the locomotives allocated to those jobs. Tornado will be in main-line steam's top link for years to come.*

## BONDS ISSUE LAUNCHED

The Bonds Issue has now been opened to the general public and first signs are that the response has been good.

After six weeks, the Issue was rapidly heading towards the first £100,000. This is a very promising start by the standards of other, comparable bond issues. Money is coming in steadily.

## BOILER BIDS

The trust was not disappointed in the responses from those invited to tender for an all-welded, oil-fired boiler, slightly modified to meet Network Rail requirements. Our specialist panel has examined the proposals and spoken to the bidders to clarify some points.

As a result, the boiler procurement team met and formulated further questions for all the potential manufacturers. We are looking for greater detail from the bidders on a number of aspects of their proposals, by way of groundwork for more substantive discussions.

## RAILFEST

It is 200 years since Richard Trevithick proved at Pen-y-Darren, Glamorgan, that steam traction on iron rails would work.

Railfest celebrates this bicentenary at the National Railway Museum, York, from 29 May to 6 June.

It promises to be a big event and the trust has a stand. If you can give two or three hours one day to help staff it, contact John Larke (*see p. 2*).



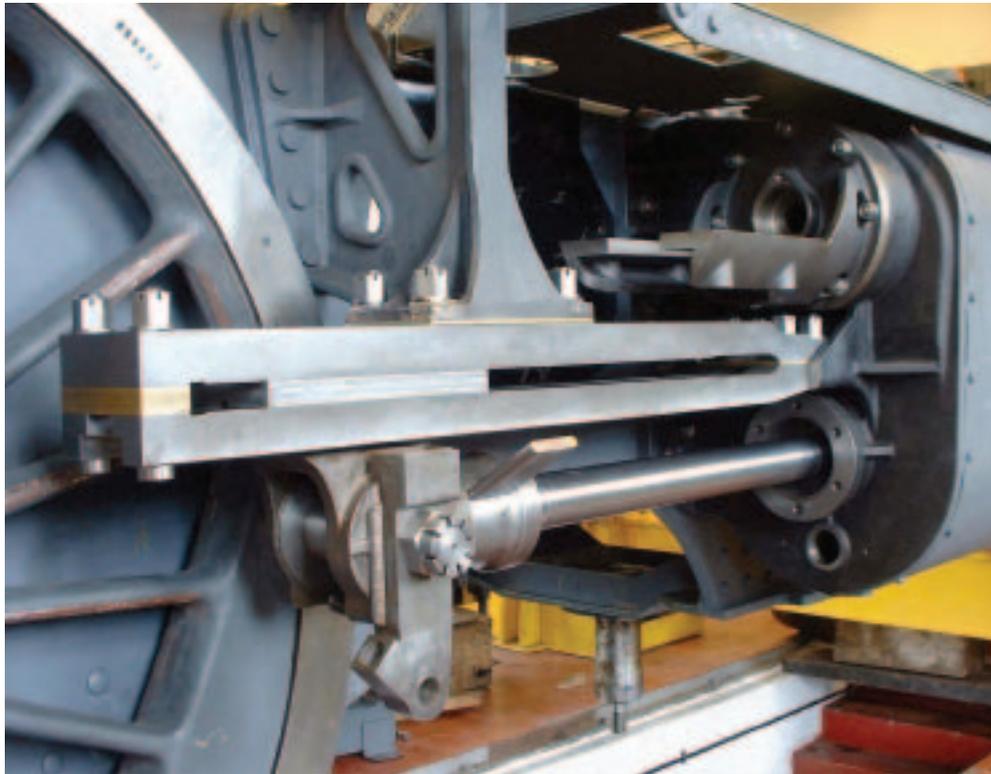
## Spring Day Out

This year's Spring Day Out on 24 April took us to the Nene Valley Railway, who looked after us. The sun shone, the food was good and everyone seemed to enjoy themselves.

The organisation of this trip was Alan and Joan Dodgson's last before retiring. Our thanks go also to John Larke, who took over on the day.

## Annual Convention

The trust's Annual Convention is on 9 October at Darlington. Details will be sent to all covenantors several weeks beforehand.



*Above: The right-hand crosshead, as fitted. Even more progress has been made since this picture was taken. See the engineering news (page 8). Right: Nut or mug? I'm sure there's a pun in there somewhere. One of the retaining nuts for the inside big-end strap, with coffee mug for size and morale boost. (photos: David Elliott)*



*Right: Sculpture in steel: Still in its packing case, this is the inside connecting rod on the day of its arrival at the Works. Alongside it in the case is the modified socket spanner (size 3<sup>9</sup>/<sub>16</sub>" across flats) and tommy bar, made to fit the strap nuts.*

*(photo: David Elliott)*

#### **Ties**

A1 covenantors' ties are now available again in green woven polyester.

To buy one, write a cheque or postal order for £15.00, payable to The A1 Steam Locomotive Trust and send it to Darlington Locomotive Works (see p. 2 for address). The price includes post and packing.

#### **Steam World**

Look out for the May issue of the retrospective magazine *Steam World*, which features an article on the Peppercorn Pacifics in the 1960s, with several fine colour photos.

#### **New Year's Eve 1965/6**

If you have a good picture of 60145 *Saint Mungo* that night, please get in touch with the Editor.



## WORKSHOP REPORT

## 02 Cylinders and valves

A specialist firm is going to use liquid nitrogen to shrink the liners into the valve chests – in late April, we hope.

With slidebars fully fitted, we have installed the crossheads and inserted the pistons plus rods into the cylinders. Using a temporary cotter, the crossheads were pulled part-way onto the piston rods and the gudgeon pins installed.

North View have finished work on the cylinder covers, enabling us to trial-fit them, but were unable to thread the holes in the covers. Ian Howitt is arranging for another company to do this.

With the cylinder covers on, it was possible to do what professionals call

the ‘clang-clang’ measurements. These check the piston clearance at each end of the stroke (clang!) and also they measure the distance between gudgeon pins and crankpins, with the pistons fully forward and fully back, and with the crankpins on top and bottom dead centres. The now-complete wheelset rotator has been a great help in all this.

We have measured the outside rods. When the inside one has been measured, we can calculate the required length for each connecting rod. If the required and actual lengths differ, we will bore the small-end bushes off-centre.

First results show that about  $\frac{1}{8}$ " needs to be machined off the insides of the cylinder covers, as the unmachined



**Left:** Yes, it's the left front coupled wheel, but the point is to picture the coupling-rod retainer. Is the Director of Engineering worried that some giant might pick up a wheelset and twiddle it around? He's not that big.

(photo: David Elliott)

**Right:** J.J. is seen using the special spanner to tighten the reverser cross-shaft nut. They do say it's the nut behind the wheel that you have to worry about.

(photo: David Elliott)



parts of the castings came out a bit thick. This will allow the required  $\frac{3}{8}$ " clearance at each end of the outside cylinders and  $\frac{1}{2}$ " at each end of the middle one. This machining will be done when the relief-valve holes are threaded.

## 04 Motion

A high spot has been the delivery of the inside connecting rod. The photo (p. 7) cannot do full justice to it, but it is a magnificent piece of work.

We are now on the cusp of placing a large order with Ufone to machine the outside valvegear. We still need to fix precise dimensions for certain parts, as explained in *TL9*, but we are finalising processes for hardening and grinding or

spark-eroding the working surfaces. Production drawings are being finished.

Special spanners have been made, by laser profiling, for tightening the nuts holding the reversing die-block forks onto the cross-shaft. This has enabled Ian Howitt to hand-fit the forks onto the shaft. The joint is made by a tapered square on the shaft fitting in a tapered square hole on the fork hub, with a large nut holding it all together.

Once again the press gear was used to assist the fitting process carried out on the bench. A final fitting force of 5 tons was settled on and metal was removed by filing and scraping the flats of the slightly oversized taper square on

the end of the cross-shaft until the forks were up tight on the shaft. This force was determined as the maximum that could be reasonably achieved by the assembly nut without risk of overstressing the threads.

### 05 Coupled wheels and axles

After turning the crankpins, North View Engineering returned all three coupled wheelsets. They are back under the locomotive and the crankpin centre-to-centre measurements have been rechecked.

When the hornblock liners were fitted last year, considerable effort went into ensuring that the axle centres were the correct distance apart. It is essential for smooth running that the length between coupling-rod bearings matches the distance between the axle centres.

With all the crank throws between 13.000" and 13.005" – and coupling-rod centres within similar limits – we shall now be able to machine the coupling-rod bushes truly concentric.

#### How elastic are your frames?

As a final check, the wheels were set up with the crankpins in line with the axle centres, with the aid of a useful tripod-mounted laser level bought in a sale from Focus DIY. Distances between crankpins were then measured with the long inside micrometer.

After some calculations to account for the sizes of the crankpins, the distance between the crankpin centres

was calculated and compared with the known distance between wheel centres.

On one side the results correlated well, but on the other side a difference of 0.020" was found. With the locomotive supported on jacks at each end and frame stands halfway along, the frames had been checked in several places for longitudinal and lateral level before the measurements were taken. To measure the other side, we had to lift the locomotive slightly to turn the wheels, so as to have the crankpins in line with the axles.

It was lowered back to the same position, but one of the packing pieces on the frame stands had moved, unnoticed. We replaced the packing and redid the spirit-level checks, and the crankpin-to-crankpin readings now corresponded with those on the other side.

This just goes to show how elastic locomotive frames are and how vital it is to set them up straight and level.

#### Securing the motion

The rod-retaining devices have been fitted to the front crankpins – long bolts through the crankpins, holding on large, shaped washers – and the right-hand rear crankpin nut.

On the left-hand rear, the speedo drive return crank acts as the retaining device. Quotes are being sought for this.

Work is also in hand to make and fit the bolts and tapered pins that hold the valvegear return cranks on the driving crankpins.

*Below: Ian Howitt guides the crankpin honing device as it rotates. (photo: David Elliott)*



#### Honing the crankpins

There is one last important process before we can start in earnest fitting the coupling rods. Honing the crankpins involves fine, flat grindstones being dragged over their bearing surfaces. It seems tool merchants can't help when

you ask for a portable honing machine for a steam locomotive.

Ian Howitt has come to the rescue with a cylindrical device that carries four spring-loaded honing stones, driven by a low-speed electric motor and gearbox through a telescopic drive shaft and

universal couplings. It requires a continuous supply of honing fluid (a type of light oil) fed onto the workpiece, or the stones get clogged with metal particles.

The original idea was to use the component washing tank and recirculating pump, but the oil proved too thick for the feeble pump, so a simpler jury rig was devised (see photo on p. 11).

Three versions of the honing device are needed. One will do the front and back crankpins, but a larger-diameter housing is required for the driving crankpins, and an even larger split-ring type for the inside-cylinder crankpin.

### WORKS ACTIVITY

#### Filming

On 19 March a film crew came to the Works for some background material for a BBC documentary on *Tornado*.

Among the activities filmed were the wheel rotator working, the inside connecting rod being unpacked and the locomotive being lowered on the jacks.

In preparation, the smokebox and cab were refitted in their rightful places and the bogie wheeled underneath.

#### Lifting gear

For several years we have used the 5-ton manual hoist and gantry and it has proved effective, but it is very slow and labour-intensive.

This becomes expensive when we are using paid labour. There is also a

#### 07 Running gear

Further progress has been made as Mike Wood and the volunteers continue to make components for the cylinder draincock gear (photo: p. 13). Quotes are being sought for manufacture of the relief valves and draincocks, so Mike and team have something to which to attach the far end of the operating gear.

#### 10 Platework

An acceptable quote has been received from the NYMR to complete riveting of the cab. It is expected to move to Grosmont for this work by the end of April.

safety issue when lifting large objects, as this involves standing rather too close for comfort to pull the chains.

We are trying to obtain a 2-ton gantry and electric hoist for everyday use. We will keep the manual hoist for the few occasions when we have to lift items that are very heavy or need two lifting points. We are investigating whether local business development funding might pay for new equipment.

#### Works visits

Covenantors are welcome to visit Darlington to view progress on *Tornado*. Please check that the works will be open on the day and at the time you intend to visit, and that there is no engineering work to preclude your visit: ring David Elliott on 07790 012410 (mobile).



**Above: Really know your draincocks!** The picture shows how busy the Draincock Gang has been, led by Mike Wood, our Works Manager. This pull-rod assembly opens the valves that release condensate from the cylinders before starting.  
(photo: David Elliott)





The last few months have been very hectic for the trust's core group of volunteers. The now-launched Bond Issue took an enormous effort to get off the ground – and, on the trust's behalf, my sincere thanks go to the whole team who worked on it, especially to Barry Wilson, our finance director, who bore the brunt of the work.

You will by now have received a copy of the Bond Issue Prospectus. I cannot stress enough how important it is to *Tornado* that this £500,000 Bond Issue is a success. Covenantors and others have already applied for some £100,000-worth of bonds, and funds continue to come in but, bluntly, without it we cannot order the boiler. So I urge you all to invest what you can and encourage friends and family to do the same. Further copies of the Prospectus can be obtained from the office (01325 4 60163 or [bond@alsteam.com](mailto:bond@alsteam.com)) or downloaded from [www.alsteam.com](http://www.alsteam.com).

And now to the boiler. I would especially like to thank Andrew Dow for all his hard work in leading the boiler procurement team – Graham Nicholas, Tony Broughton and John Glaze – who met in Derby in March, to draw up questions for those who responded to our Invitation to Tender. We hope to hear from these soon and we will make an announcement in May. However, we cannot order the boiler until we know we can pay for it; for that, we need the Bond Issue to be successful.

Now to another of my hobby-horses: volunteers. Over the years we have had a steady trickle of new hands, as others have chosen to retire. Recently we said goodbye and a very big 'Thank you' to Paul Ambler (webmaster), Marjorie Black, Alan and Joan Dodgson (administration); and new people have come forward, just where we need them. I am delighted to welcome Duncan Ross in administration, David Bedding in marketing and George Norrie in engineering. We are finalising other appointments, but we need more people, especially in project management, fund-raising and administration, the focus areas of the core group of volunteers. If you think you have what it takes, please contact me on [mark@alsteam.com](mailto:mark@alsteam.com).

Last time I mentioned that the trust had raised over £1m. We are now about to place orders that will bring the book value of *Tornado* over £1m. Although we still have a long way to go, we can all give ourselves a pat-on-the-back, before steeling ourselves for the final push. Thank you all for making this possible.

Mark Allatt

### *The Big Picture* (pp. 14–15)

The driver of Peppercorn A1 60126 *Sir Vincent Raven* looks at the camera; the fireman, satisfied with a clean exhaust and a trace of steam at the safety valves, is watching the rear of the 11-coach Newcastle–King's Cross train negotiate the low-speed crossover under Holgate Road bridge, just out of York station, on 30 June 1961. (photo: R. G. Warwick)

Almost all American locos had two cylinders. That is enough to be sure of restarting; so why bother with more? Well, by and large, railways didn't. Most of their steam engines had only two cylinders; the exceptions were mostly designed for very low speed or high speed, or for compound – usually dual – expansion.

In the 1880s, compounds were all the rage. Many had three or four cylinders; few showed the economy that was meant to justify the cost. The NER built lots of compounds with two (very unequal) cylinders, but in the 1890s fashion moved on.

Even in engineering, novelty had publicity value. Most US main-line engines were designed by firms like ALCO or Baldwin, but in Britain each railway had a drawing office, keen to show its worth. As Bulleid said to Arthur Peppercorn, "If you design an express locomotive with five driving wheels, your name is made!"

In 1898, the NER produced a 3-cylinder compound to the design of its Chief Draughtsman. Smith's design was multiplied from 1901 by the MR and LMS. If three sets of valvegear were too many, why not try two sets for four cylinders?



Above: Raven B16/1 61411 at York depot on 25 June 1960.

(photo: G. W. Morrison)

## WHY THREE CYLINDERS?

## WHY NOT?

The GWR did. In 1903 it bought a French 4-cylinder compound, *La France*, and Churchward compared it with his equivalent simple, *Albion*. The test results suggested that compounding was not worth its complexity, but four cylinders gave a smooth ride that was worth having. That was not concern for the crew's comfort!

Locomotive engineers who had spent much time in running sheds, as Churchward had, were aware that axlebox wear increases exponentially with speed, along with questions about downtime, workshop time and fleet size. The 1906 Salisbury accident raised the question of stability at speed, and a smoother ride meant less uplift from hammerblow too. That year the GWR adopted four cylinders for its top express types and over the next 40 years the Vatican christened over 250 of them.

In Yorkshire, though, they started using three cylinders to go at walking speed. In 1907–8 Robinson built four 0-8-4Ts for the GCR Wath yard. The slightly more even torque of three cylinders helped to ensure these hump shunters gave a steady push with no slipping or stalling. For the NER's Erimus yard, Wilson Worsdell – no copycat, he – turned this round in 1909 to produce a 3-cylinder 4-8-0T.

Tickled by its success, he adapted it to produce a neat 3-cylinder 4-6-2T. In 1911 appeared the first of Raven's successful 3-cylinder types – express passenger (Z), mixed traffic (S3) and heavy goods (T3). Many were still at work in the early 1960s. All had unified drive on the first axle, which was kind to the civil engineer.

In bigger locos, hammerblow was a problem. Designers began to look at the natural balancing possible with three or four cylinders. It reduced not just axlebox wear and frame cracking, but also bridge stress and track damage.

Gresley first tried four cylinders. With inclined cylinders all driving the second coupled axle, his 1915 rebuild of Atlantic 279 proved it could include unified drive without being longer and heavier. In 1918 he devised a system of levers to make two sets of valvegear serve a third cylinder, first using it on the O2 2-8-0 in 1918.

Harry Holcroft showed him a far better conjugated gear, which he had patented in 1909. Gresley adopted it and within a few years Holcroft's gear was being called Gresley's. There was little Holcroft could do about this, as the patent belonged to the GWR, his erstwhile employer. E. S. Cox told the story in *Speaking of Steam*.

Gresley built big engines, but at first their big boilers were not high-pressure by the standards of the day; that was another reason to use three cylinders. But, like Raven, he used three cylinders for all kinds of engines, wherever two might not do.

A pick-up goods or a local passenger was not expected to slip much and it was seldom a big problem if it did. But a main-line goods engine with 1,200 tons behind it, or a hump shunter that could block the entire yard, had to start reliably and keep

moving, or the job would be stopped. The operational mess and bad publicity of a crack down express getting stuck in Gasworks Tunnel were not a pleasant thought.

In wartime, Gresley's 'big engine' policy was further vindicated by V2s and A4s being used turn and turn about. His successor, Thompson, went on using three cylinders for express types, but not for his maid-of-all-work, the free-steaming B1.

Bert Symes said Thompson aimed to prove that a 2-cylinder loco need have no more hammerblow than 3-cylinder types. He did this by balancing only 36 per cent of the reciprocating parts. When the bearings began to wear, things got very rough: E. S. Beavor told of a B1 driver who saw a single yellow signal as a double yellow.

Arthur Peppercorn used the fine boiler and divided drive from Thompson's A2 but set about much redesign to produce his A1 and A2. They went straight to work, with no fuss. They did big mileages. The crank axle and inside big-end were strong enough for the job. With good design and maintenance, as Peter Townend showed, 3-cylinder engines could be as reliable as any. And why not?

K. R. M. Cameron gave Peppercorn A1s the finest accolade when he said "We always used this type for Royal trains". Wouldn't Arthur be proud if we did it too!

*Below: Peppercorn A1 60159 Bonnie Dundee on shed at Edinburgh St Margaret's, early 1960s – named after the viscount, not McGonagall's home town! (photo: A. R. Cockburn)*



*The Editor welcomes letters or e-mails from covenantors, especially if they are succinct and polite, but reserves the right to edit for length and content.*

Anlaby, East Riding

Dear Editor,

During World War Two, an appeal to collect aluminium pots and pans raised money to buy aircraft. It struck me that a modern-day equivalent would be to collect aluminium drinks cans for a *Tornado* appeal. I have therefore been collecting (through friends, at work and whilst walking the dog) such cans with minimal effort.

I took them to a scrap merchant taking part in the national can recycling scheme. Please therefore find enclosed a cheque for £15. The activity also has environmental benefits.

Note the name of the scrap merchant – Albert Draper, the company that scrapped the last A1, 60145 *St Mungo*, in August 1966. In some small way, they are contributing to its replacement.

If the locomotive were ready for traffic in 2006, perhaps the date at which 60145 was scrapped might be an appropriate date for the official launch of *Tornado*, 40 years to the day. Food for thought!

Yours sincerely,  
Bruce Robinson

*Ed: I like the idea of Drapers helping to fund the new Peppercorn A1!*

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Luing, near Oban

Dear Gerard,

Congratulations on another splendid issue of *Top Link*, which continues to give great credit to The A1 Steam Locomotive Trust.

The colour print that you recently reproduced from a 1950s book was of particular interest as I believe that many of these drawings or pictures, especially from children's albums, are surprisingly accurate and useful in historical terms.

One of my interests is the shade of BR Blue used for express locos in the early 1950s. I have a publication by Ian Allan, *The Boys' Book of British Railways* put together by O. S. Nock, which has a very nice painting of the White Rose leaving Leeds behind A1 Pacific 60149, not yet named *Amadis* and painted blue. Should you want to use it, just let me know.

Best wishes,

Nigel Dyckhoff

*Ed: The picture is on the back of this issue; I put Nigel's book alongside the reproduction there, to match the shade.*

*by e-mail*

Dear Gerard

The letter from Beresford Dickens in *TL9*, in which he expressed concern about the firing method being adopted for *Tornado*, must have struck a sympathetic chord with the many covenantors who, like myself, have supported the

project from the start. The original idea was to build a prototypical A1 with the capability of changing to oil firing should circumstances dictate. We are now apparently building a primarily oil-fired locomotive.

I have little doubt that most covenantors would support the long-term view needed to ensure that *Tornado* has a viable future but, to promote and maintain a 'feel-good' factor, people need to feel that they are involved beyond just their financial contribution.

This is especially important in such a long-haul project as this one, when few people can volunteer hands-on help.

Rest assured that I have every confidence in the board to make the right decisions, but an old saying keeps coming to mind that "When you are up to your neck in water fighting alligators, it is easy to forget that you came to drain the swamp" – or something like that!

Regards

Brian Collins

*Ed: I have passed your comments to the board. I took Beresford's central point to be similar to your 'prototypical A1' – but what was possible in 1948, or even 1990, may not be feasible now. We didn't know then how long it would take to build the fiftieth A1 nor how much the railways would have changed. That is why the board wanted to speed things up; and 60163 will take some years to pay for itself. The board must also be*

*certain that 60163 can still earn its living on the main line in, say, ten years' time. We are all trying to get the very best result – the fiftieth A1, soon, but not a replica.*

*by e-mail*

Dear Gerard,

I thought I might entitle this letter 'Praise' as you conceivably receive letters that are not like that!

What an excellent article about Mrs Dorothy Mather that was. Many have wondered, I'm sure, at the detail of her connection to the illustrious designer of the A1s, and about her life after her tragic bereavement. She is, indeed, quite a woman! Let us hope fervently she will be spared to see no. 163 in steam.

May I thank you once again for the really excellent job you do on *Top Link*. I guess the editorship is not without strain. I do hope you will not have to consider giving it up for ages. (I'd far rather read a letter by Allan Garraway twice!) Keep up the good work.

I am greatly looking forward to receiving details of the Bonds issue and parting with some of my money for the good of the cause.

Yours sincerely

John Gilbert (*notorious now from the 2003 Convention photo, in which Elizabeth was just able to squeeze in as well – being but 5ft 2in. – at the back*)

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*Gordon Best kindly passed this to me:*  
Leatherhead, Surrey

Dear Gordon,

Very many thanks for those superb prints of Hopetown-built locos. I am surprised the last bore the name *Oswald Gilkes*. One-time Secretary to the S&D, in 1849 he was shunted off to Shildon Works, in what capacity I don't know.

Gilkes was succeeded by Thomas MacNay, Secretary and General Manager until his death in 1869. He was brother to my great-grandfather.

Thomas must have been well regarded, since Darlington and Saltburn have streets named after him. Another brother, William, was Works Manager to William Bouch at Soho Works.

Kindest regards,  
Howard MacNay

*Following Tommy Day's letter, asking for drawings to help build an 0-gauge A1, Kenneth Beattie and Keith Crabtree offered to supply copies of original OPC lists. Doncaster's drawing register has not survived, so we may never know if there was an A1 GA. However, the 'A1 General Arrangement' drawings that were listed by OPC are either Gresley A10 or Peppercorn A1 Pipe & Rod.*

*by e-mail*

Dear Gerard,

Gordon refers to OPC. In effect they acted as agents for NRM drawings on microfilm. The NRM still use the list and, at a cost, will supply lists (several parts: Big Four plus others), copies from microfilm or prints of original drawings.

The NRM has catalogued all its drawings; they are now on a searchable database. Their e-mail address may be useful:

mailto:nrm.library@nmsi.ac.uk.

The trust can define most A1 drawings; Pipe & Rod Q132/Q133 are the nearest we have to an A1 General Arrangement.  
Regards,  
Bob Alderman

*Left: The right-hand rear crankpin nut, seen being fitted in early April 2004.*

*(photo: David Elliott)*

Peter Beet of Hest Bank, Lancs., writes: Dear Gerard,

Thank you for your work on the journal. Re *TL9*, p. 3, photo of 60161, I can illuminate. In 1954 the 11.15 am Birmingham–Glasgow was hauled by four different A1s, viz 60147, 60156, 60161 and either 60118 or 60157.

They blew the Staniers off the road, passing Oxenholme at 60mph with 14 on after climbing Sedgwick Bank. Alas, by Peat Lane or Hay Fell speed dropped to 30mph or less. 71000 fell to 20mph!

One Tuesday when I was on leave from Ashville School, Harrogate, sitting on the bank engine, the job was stopped: 60161 failed alongside with a hot tender axle, left-hand front. Kenneth Cottam, fresh out of Crewe Works, was sent by Carnforth to fettle it. The bearing was

done at 10A and replaced after Ken had made the engine fit to move.

His name was made among fitting/footplate personnel. Ken was my fitter at Steamtown Carnforth from 1971 until he retired. He then went to Lakeside to fetch the Fairburn 2-6-4Ts for the Mahers.

Returning from a day enjoying himself there in December 2003, he was hit by a car and died a week later. Sadly missed.

So that is why 60161 was on shed. I rode about on it. See my report in *Railway Magazine* Aug/Sept 1954, age 17. The bowler hats were stalking and muttering that week!

Fine engines on the level but lacked the ability to plod like a Stanier but built for a different job. Yours aye,  
Peter Beet



*Above: Peppercorn A1 60146 Peregrine seen flying through Hatfield Station at 4.40 p.m. on Tuesday 28 June 1960 with an Aberdeen–Kings Cross train. (photo: R. A. Mills).*

## 4 September 1965

John Daykin wrote in with a photograph and log of 60145 *Saint Mungo* hauling the Lincolnshire Railway Society's Pennine Ltd railtour on 4 September 1965.

“She worked the train from Duddleston Road, just outside Birmingham New Street, to Leeds City and back, 4472 taking over there and running from Leeds via the other Clapham Junction, Low Gill and Shap to Carlisle, returning via Settle. On the outward run, 60145 gave a very creditable account of herself as far as Sheffield, but thereafter colliery slacks precluded any real running. The return run was quite unremarkable.”

Readers who have never tried to log a train journey may like to look at John Daykin's model example (*opposite*).

“The log to Derby speaks for itself, a rapid acceleration downgrade from the start to a maximum of 77mph before a signal check at Kingsbury, recovering smartly to 72 before further severe checks after Tamworth. After Burton, *Saint Mungo* raised the echoes on the level track, accelerating from 37½ through the restricted platform lines at Burton to 74mph just six minutes later at Sawston Junction. The continuation to Sheffield Midland was equally creditable, but with no excessive speed.”

A shot by John Tuffs (*Top Link* 2, p. 25) showed 60145 accelerating northbound past Burton, after that slack. John Daykin's log has the reporting number, 1X20. Can anyone explain that headcode? (Doh, id's dot a dasty chill.)



Miles		M	C	location	PTT	Sch	m	s	mph	average
				BIRMINGHAM WILKINSON		0	0	00	(15L)	
40	16			SALTLEY		2	55	30		
				WILKINSON HM SLOPS N°3		3	23	53		
38	39			BREMFIELD BRIDGE		4	20	60		
37	00			CASTLE BEOMLICH		5	46	64		62.4
34	52			WATER ORTON		7	44	72 / 77		71.7
29	20			KINGSBURY		12	00	45 stop		57.9
				CLIFF SHANTS		14	05	60		
25	47			WILNECOTE		15	53	66½		
23	56			TAMWORTH		19	17	32	69 / 72	
19	34			ELEVED		21	46	21 stop / 20½		
16	21			WICKHAM JUNCTION		28	43	10 stop / 20½		
						29	25	stop		
						29	43	stop		
				BARTON & WILKINSON		33	34	35 / 35 stop		
12	20			BEAUMONTE JUNCTION		37	27	42		
10	66			BURTON - ON - TRENT		33	39	31	37½ stop per	
9	50			LEETMORE SIDINGS		41	17	53		
8	54			CLAY MILLS JCT.		42	16	60		
6	12			REPTON		44	32	70½		72.2
4	50			STENSON JCT		45	53	74 max		67.6
1	70			SUNNY HILL		48	08	63		73.3
1	27			WALBOURNE JCT		48	38	62		
0	00			PARTRIDGE & WOLMANTON		48	46	62		
118	23			DERBY 'ALDEMAN'		50	52	03		

Above: Log of the Pennine Limited railtour, Birmingham–Derby section. Distances are in miles and chains (22 yds = 1 chain, 10 chains = 1 furlong, 8 furlongs = 1 mile)  
 Left: Peppercorn A1 60145 *Saint Mungo* at Sheffield Midland, 4 September 1965 with an LMR crew: Driver, Castello; Fireman, Bevan. (photo and log by courtesy of: J. Daykin)

## NEW, IMPROVED INJECTOR



*Above: Sculpture in bronze:* A brand-new Davies & Metcalfe LM-type 12mm injector, one of two the trust has bought. As mentioned in *TL9*, these Lifting Monitor injectors are preset and then need no further adjustment when they are turned on. They were proved in everyday service on Bulleid Pacifics and Thompson B1s. *(photo: David Elliott).*

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PS357	RH trailing crankpin: nut & locking pin	£120
PS385	Bogie LH fr. manganese-steel liner for hornguide	£60
PS426	LH crosshead arm (machining and hardening)	£1,500/£25 pm
PS447	RH Cartazzi axlebox cover: casting	£150
PS459	Cab LH spectacle: safety glass	£450/£7.50 pm
PS480	Draincock gear: front pull-rod	£170
PS506	RH front piston valve: nut, cotter pin & parallel key	£50
PS515/20	Centre cyl. fr. cover: stud, bolt & nut (1 of 20 sets)	£15

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### White Rose for a blue lady

*Back cover:* A painting of Peppercorn A1 60149, not yet named, from O. S. Nock, *The Boys' Book of British Railways*, 1951. *(reproduction: Ian Allan, courtesy Nigel Dyckboff)*