



Top Link

Issue 15
Summer 2007



*Ready to
receive....*

*received,
thank you!*



Journal of The AI Steam Locomotive Trust

by Mark Allatt

Recent issues of Top Link have seen a spate of major milestones being passed by The Trust, but there has been none more dramatic than the most recent – the fitting of *Tornado's* boiler to her frames on Thursday 28th June. Not only does this mark the end of what must be the last 'it can't be done' comments by the doubters but it has significantly changed the whole atmosphere in Darlington Locomotive Works – *Tornado* now looks like a locomotive, albeit with lots of detailed components yet to be fitted. The locomotive now completely dominates one end of the works, casting an enormous shadow across it.

It was a very funny feeling walking into our Works on the morning of 28th June knowing that within hours the basic outline of *Tornado's* frames that we had seen change gradually over time with the addition of many components would, within hours, change forever. And this sense of dramatic change continued throughout the day as *Tornado's* frames slipped into the daylight outside of the works for the first time in almost 10 years and, for the second time in a year, an enormous crane was swinging our boiler into the sky. But this time was different as the boiler was gradually lowered into the frames, filmed by 3 camera crews and photographed by many members of the press. To the relief – but not surprise – of all, the boiler was a perfect fit. As we pushed *Tornado* back into the works there was a huge sense of pride in what had been achieved and a realisation that the next time *Tornado* slips into the daylight will be to have her fire lit for the first time.

This latest milestone wouldn't have been possible without all of the hard work over the preceding weeks by David Elliott and his team, often working 7 day weeks in order to hit our deadline. Thank you gentlemen for your dedication and especially keeping your sense of humour during those hectic times! And the boiler lift and fitting went without a hitch, testimony to all of the planning and care that goes into every aspect of *Tornado's* construction.

There is a report of our Open Weekend on page 23 but it was a great pleasure to see so many of our covenants and other supporters – almost 300 – come to see *Tornado* with her boiler in place. Our Works was a very happy place that weekend, with so many smiles from young and old at the progress that we have made. I took particular delight in meeting a number of young children who were already covenants in their own right and were trying to locate the components that they had sponsored. The future of mainline steam in the UK isn't just about new locomotives like *Tornado* but it is also about passing on our enthusiasm to those whose parents aren't even old enough to remember steam in everyday service. So please do encourage your children, grandchildren and even great grandchildren to take an interest in *Tornado*.

As you will read in David Elliott's article, there is significant progress taking place across all aspects of *Tornado's* construction. One of the most dramatic, and currently unseen as it is taking place away from our Works, is the construction of the tender. Thanks to the sponsorship of William Cook Cast Products the erection of the tender continues to make progress in parallel with that of the locomotive and it won't be long until we have another looming shadow at the other end of Darlington Locomotive Works!

We are now clearly on the final stretch of the project to build *Tornado*, with not much over a year until she is scheduled to enter mainline service. Thanks to your continued support and generosity our funding gap has fallen from £136,975 when I wrote my last column for Top Link to £84,562 at the time of writing. However, we do need to fill this gap as soon as possible to ensure that the project remains on-track. As detailed elsewhere in this issue, we are keen to encourage as many arms-length supporters as possible to come on-board by either becoming a Covenantor, making a donation, taking out a dedicated donation to purchase a part of the locomotive and/or subscribing to our Bond issue, so if you know anyone who wants to become part of our winning team please encourage them to come on-board. And when you look at the list of components now available as dedicated donations, I am sure that you will find one that grabs your interest and suits the size of your pocket.

We still have a huge amount to do in 2007 if we are to steam *Tornado* by the end of the year – and even more in order to enter mainline service in autumn 2008 – but with your continued support I have every confidence that we can achieve these objectives.



The boiler sitting between the cab and the smokebox
© David Elliott

by David Elliott

INTRODUCTION

With Darlington Locomotive Works working 5 (and sometimes 7) days a week with 3-5 people on the premises, progress has been substantial with work going on simultaneously on several fronts. In addition much work has been completed on the tender in several locations and on making patterns, casting and machining for boiler fittings. Two major milestones – balancing the coupled wheelsets and lowering the boiler onto the frames have been completed.

FRAMES

The main activity on the frames has been painting to finished coats the surfaces between the frames in red, and the outside of the frames black in the area of the coupled wheels. Ian Matthews from Great Northern Steam has made an excellent job of this work after much rubbing down and preparation of the various layers of primer and undercoat previously applied.

COUPLED WHEELS

The major task on the coupled wheelsets has been balancing.



Balancing the Trailing wheelset
© David Elliott

LNER practice was to cast in oversized balance weights in the wheel centres and drill out material to achieve the desired state of balance. Briefly, as explained in the last issue of Communication Cord, the mass of all the motion parts was measured and for connecting and eccentric rods the pendulum period determined. From this calculations were made as to the actual mass required on each crank pin

to achieve the desired balance and 14 assorted weights made. The balancing was done by Dowding and Mills at Middlesbrough using a large machine normally used to balance electric motors. After some discussions as to how to achieve the required balance, and with an excellent suggestion from Ian Howitt, more material than required was removed from each balance weight by drilling large numbers of holes of different sizes. The balancing was done by fitting steel plugs into some of the holes as dictated by the results from the machine. These plugs have been subsequently permanently welded into the holes. The drilling of the holes was a protracted affair with the larger holes up to 3" diameter being drilled out in stages with Ian Howitt's No 5 Morse taper air drill. Thanks are due to Andy Meyers of M Machine and Great Northern Steam who lent us a diesel compressor to power the air drill as its consumption was way in excess of the capacity of the works electric compressor. Thanks are also due to Dowding and Mills, particularly to Stuart Gibson whose skill with the balancing machine facilitated a difficult job.



The result (from previous picture)
© David Elliott

The final results got us to less than 2lb error in balance on each wheel which with each wheelset weighing over 12,000lb is a high degree of accuracy. Whilst hole drilling and other preparation work was done, Ian Matthews needle gunned the spokes back to bare metal and has filled, primed and undercoated the wheels. When this was complete the wheelsets were refitted under the locomotive for what is hoped will be the last time before the locomotive moves under its own power.

MOTION

With almost all the valve gear components to hand, Ian Howitt has trial fitted the outside valve gear and GN Steam the inside gear. It is generally satisfactory and is being dismantled for the taper pins, which hold the motion pins into the rods, to be fitted. The motion pins will then be sent for induction hardening. The mounting of

the inside reversing cross shaft was completed, and the lever which drives it on the main reversing cross shaft welded on. This enabled the reversing cross shaft to be fitted to the frames for the last time before the engine is completed. The reversing shaft clutch assembly (photo at page 19) has been assembled and fitted to the frame.



Trial fit of the inside connecting rod and eccentric
© David Elliott

PIPE WORK AND FITTINGS

John Haydon and David Hurd have continued to fit up pipework with particular emphasis on the unwieldy items between the frames which needed fitting before the boiler went on. A considerable number of non-ferrous boiler fittings have been cast and several are in the process of being machined by Great Northern Steam. After our earlier experiences with porous castings for the regulator stuffing box and water gauges, a decision was made to have all castings that take steam pressure X-rayed before machining. This has proved to be a wise move as 3 castings have failed and are being re-cast. Otherwise casting defects only show up when the components are hydraulic tested after machining, which means the cost of machining is wasted. Almost all the steam pipe fittings have been made and are gradually being used as the pipework installation proceeds. The ex-Sir Nigel Gresley exhaust steam injector (photo at page 22) has been delivered to Metcalfe Railway Products for dismantling and assessment and an order has been placed for the grease trap which is fitted in the exhaust steam line, for which, amazingly, Metcalfe still has the pattern. (Most of the Davies and Metcalfe patterns were destroyed in a factory fire in the 1980s). The new Davies and Metcalfe Monitor live steam injector has been mounted between the inner and outer rear frames on the Driver's side.

BRAKE AND SAFETY EQUIPMENT

A successful visit to T J Thomson & Son Ltd's scrapyards at Stockton resulted in the acquisition of 2 class 08 shunter brake distributors (which are the correct operating pressure for the locomotive) along with other smaller parts. A Smiths-Stone speed set was also taken from a former EWS post office PCV (Propelling Control Vehicle – a parcels van with a cab in one end). Further research has shown that the wheelset compensator unit may be OK but the generator is different from the steam loco type. Further efforts have been made to source class 08 shunter speedometer generators which can be modified to the correct design for steam locomotive use. Great Northern Steam has almost finished the cab under-floor cubicle and has made brackets and installed several pieces of brake control equipment.



Cab floor and seat cubicle
© David Elliott

Pipe work for the brake system is about to start in earnest. The Westinghouse M8 drivers brake valve has been positioned in the cab. The locomotive brake cylinders and air brake pump installation was completed ready for the boiler fit. By the time you read this, the TPWS (Train Protection and Warning System) equipment will have been ordered and the OTMR (On Train Monitoring and Recording equipment) will have been delivered. We are also on the verge of ordering the air receivers to form the main and brake reservoirs and a "wet tank" which separates oil and water from the compressed air.

BOILER ANCILLIARIES

The hopper ashpan was trial fitted both to the frames and the firebox foundation ring which gave us a sporting chance that it would go onto the locomotive with the boiler fitted without fouling anything, and this proved to be the case. The boiler

clothing is substantially complete except for the back in the cab area which can be fitted now the boiler is on. The superheater elements and clamp fittings have been ordered from Thorne International Boiler Services in Birmingham, who have expertise in making MeLeSco type elements for the heritage movement.

BOILER

Following removal of the cladding the boiler was successfully fitted to the locomotive on 28th June and went on without the aid of an angle grinder! The ashpan, which had been previously lowered onto the frames, was jacked up and fitted to the foundation ring immediately afterwards. Since then work has been undertaken to make the boiler fit properly such that it lines up with the smokebox and fits the cab. This has involved the expected minor adjustments to the mounting brackets, and has enabled an 8mm shim to be ordered to bring the front of the boiler up to the correct height to meet the smokebox. Also on order is the ring which joins the smokebox to the front of the boiler and the diaphragm plate which secures the back of the foundation ring to the frame. In the mean time Mick Robinson is machining the Meiningen supplied bronze “shoe” on the middle boiler support to



the correct clearance. The only areas where the boiler is significantly different to the original type is the front lower sides of the firebox which has resulted in the need to shave a small amount off the inside edges of the reverse curved section of the running plate to clear the cladding.

Mick cuts the footplate with a modified chop saw © David Elliott

Overall, the effort to produce a detailed interface specification has paid off in ensuring that the boiler is such a good fit on the engine.

SPRING GEAR

Quotes have been sought for the engine and tender leaf springs, and an order placed with Polytec in Shildon for the large number of rubber springs on the engine. Polytec has previously made tooling and springs for (NELPG engines), some of which are suitable for the A1. Ian Howitt is making the rest of the spring gear, with material changes and small design changes agreed to eliminate forgings, which, with the demise of Heskeths, have become very difficult to obtain.



Turbo Alternator © David Elliott

ELECTRICAL SYSTEM

Rob Morland has made substantial progress with the design of the electrical system, Ian Howitt has fitted the former Post Office sorting van alternator to the tender and David Elliott collected the steam turbine alternator from Meiningen following a short

holiday with Ian Howitt, and Darlington staff Peter Neesam and Steve Wood on the Harz railway in Germany. Great Northern Steam is nearing completion of two BR type AWS battery boxes which will hold respectively the essential and auxiliary services batteries. Peter Neesam successfully bid on E-bay for an original A1 type Stones cast bronze electric marker light which means that we have 4 in total for the front of the locomotive. We still need four more for the back of the tender.

TENDER

North View Engineering in Darlington has nearly finished the tender tank, Riley & Son at Bury has completed assembly of the wheelsets, our major sponsor William Cook Cast Products has delivered the finished axleboxes. Ian Howitt is nearing completion of the mechanical brake rigging and has fitted the brake cylinders to the tender frame. He is also in the process of making and fitting the total of 11 pipes which run from the front to the back of the tender (4 electrical conduits, 3 pipes to

air receivers, 2 air brake pipes, 1 vacuum brake pipe and the steam heat pipe). These need to be fitted before the tank and wheelsets are fitted as access will be difficult afterwards. The tender wheelsets will go shortly to Dowding and Mills for balancing – which should be much easier than the coupled wheelsets.



The tender tank
© David Elliott

*Tender wheels being
pressed on to the axle at
Ian Riley's Bury works*
© David Elliott



Publications Editor, John Hartley, writes:

Those Covenantors and Supporters who made it to the Open Weekend at the end of June will have seen the clear evidence of just how tantalisingly close we are to completing the dream of seeing a Peppercorn A1 Pacific in steam and on the main line. A report on the Weekend is at page 23. The closure of 'The Gap', as we had referred to the space between the cab and the smokebox, is now truly bridged, but completion of that milestone event serves only to give huge prominence to the other 'Gap' we face – the matter of raising the remaining £85,000 needed to complete *Tornado* ready for testing, running in and preparation for regular use. The improved income we have enjoyed since the boiler was delivered to Darlington a year ago has allowed the pace in Darlington Locomotive Works to be significantly increased, and barely a day or two now passes without something worth reporting. Even since the recent rash of articles about *Tornado* in the Railway Press many things have progressed. This issue of Top Link has, therefore, been largely given over to Financial and Engineering matters – the former of vital importance and the latter of great interest as you will see from the large number of photographs included. Top Link 16 will revert to the more usual format with, hopefully, a profile of the first Darlington A1, 60130 Kestrel from the pen of Phil Champion. I look forward to seeing you on the Talisman in September and at the Convention on 20 October.

Marketing by David Bedding

Events like the Open Weekend following the lifting-on of the boiler are much enjoyed by all who come, but take a lot of organising – in this case by John Larke – and would not be possible without the help of you, the Trust's supporters. So a special vote of thanks to Charles Tremeer and his team of guides: Chris Calver, Phil Champion, David Lowther, Trevor Mumford, John Perry, John Pryce, Norman Raine and Tony Woodger. "Behind the scenes" as usual were Gordon Best and Terry Greaves. Unfortunately, the 2007 Spring Draw was postponed, but we hope to run one before Christmas, and thank all who suggested alternative prizes to make our Draws more attractive to non-railway enthusiasts! We continue to make steady progress elsewhere in Marketing: sales of prints and cards kindly produced for us by Prof Dugald Cameron – *North British* is this edition's centre spread – have been above expectations and we are looking at further prints for later in the year (See Note at p 26). Our web-site is generating an ever greater number of "hits" and we are finding that an increasing proportion of the first contacts with The Trust comes from this source. We hope to be able to further develop the site later this year.

Overleaf : 'Night Scotsman' (60161 North British) © Professor Dugald Cameron



As *Tornado* approaches its public debut, it is necessary to remind ourselves about the need to maintain and enhance The Trust's income stream up to **and beyond** the locomotive's completion. The ways in which support can be given – becoming a Covenantor, making a donation, taking out a dedicated covenant to purchase a part of the locomotive and/or subscribing to the Bond issue - are recapped below.

Covenantors

The basis of The A1 Trust's income is the large number of Covenantors who subscribe £5 or multiples thereof to The Trust each month. The money thus donated may be enhanced by 28 pence for every pound without additional cost to the Covenantor if a Gift Aid Declaration is completed (see section on Gift Aid at page 21). Existing Covenantors who wish to increase their monthly amount should call the day hotline (01325 4 60163), give their name (and covenantor number) and ask for the appropriate paperwork. It would also help keep records up to date if their address could be quoted. **Please encourage non-covenantors to come on board now as their opportunity to be part of the *Tornado* project is now time-limited. To join this crucial band of supporters, they should simply call the daytime hotline (see above), give their name and address and ask for the necessary forms which will then be sent to them (if visiting Darlington Locomotive Works the personal details may be left with the duty guide).** Names of Covenantors are recorded in the appropriate section of the Trust's Roll of Honour. *It is important to point out that The A1 Steam Locomotive Trust is a company limited by guarantee with charitable status and not a traditional society with a membership-based structure.*

Donations

The Trust welcomes single and repeat donations large and small. **To make a donation simply contact the hot line as above or pass details to your guide if visiting the Works.** Donors are recorded in the appropriate section of The Trust's Roll of Honour.

Dedicated Covenantants

Tornado, when complete, will be made up of thousands of component parts all of which may be 'purchased' by way of a Dedicated Covenant. The 'purchase' may cover the initial manufacture and/or machining of the part concerned. Many such covenants have already been taken and there are plenty more awaiting acquisition as a personal 'trophy' part or as a birthday, wedding, christening, Christmas Day or other present. Dedicated Covenant Holders are recorded in the appropriate section of The Trust's Roll of Honour.

Components (cost and numbers as shown) are still available in the following areas of the locomotive:

Boiler Firebox

Plain Stay (numbered)	£25	17 still available
Flexible Stay (numbered)	£50	17 still available

Grate Components

Double Rocking Bar (numbered)	£35	43 still available
Treble End Rocking Bar (numbered)	£40	17 still available
Back Fixed Firebar Pattern (repair)	£60	One only
Rocking Firebar Retaining Bar (no'd)	£80	12 available
Carrier Bar Casting (centre)	£180	One only
Carrier Bar Casting (L and R)	£190	One of each
Rocking Grate Fulcrum Pins (set)	£200	One only
Side Carrier Bar Support	£220	4 available
Trunnion Rocking Firebar Carrier (no'd)	£280	12 available
Front Fixed Firebar Pattern (new)	£300	One only
Firebar Retaining Bolts & Nuts (set of 36)	£360	One only
Centre Carrier Bar Pattern (new)	£600	One only
Rocking Grate Lever Bracket (no'd)	£650	2 available



Boiler cladding sheets trial-fitted to the boiler © David Elliott

FINANCIAL MATTERS

Boiler

Reinforced Cutout	£50	26 still available
Crinoline (lettered)	£60	3 still available
Cladding Sheet (numbered)	£150	8 still available
Boiler Band (lettered)	£200	3 still available
Large Boiler Tube (numbered)	£200	22 still available
Superheater Element	£250	29 still available
Manifold Shut Off Valve (pattern)	£250	One only
Slacking Cock	£300	One only
Tender Sprinkler Valve	£300	One only
Manifold Shut Off Valve (machining)	£550	One only
Blower Valve	£600	One only
Regulator Shaft Bracket & Bearing	£750	2 available
Manifold Steam Valve (Carriage Warming)	£800	One only
Whistle Steam Valve	£800	One only
Manifold Steam Valve (various)	£900	6 available

13 more expensive items from £1,100 to £12,000 each

Cylinders & Valves

Piston Rings	£60	15 still available
Piston Rings	£80	2 still available
Front Steam Chest Cover (machining)	£300	One only
Piston Valve Spindle	£400	One only
Slide Bar – Top Centre (forging)	£500	One only
Piston Valve Cylinder Liner (machining)	£600	6 available
Pressure Release Valve	£600	7 available
Piston Crosshead (casting)	£650	3 available
Piston & Rod (machining)	£700	3 available
St Chest Cov/Valv Sp Guide Sup (casting)	£900	3 available
Whitemetal/Finish Machining Crosshead	£900	3 available

12 more expensive items from £1,000 to £2,400 each

Running Gear – Drain Cocks

Pull Rod	£100	2 still available
Cross Shaft Brackets	£100	One only
Crank and Crank Pins	£100	One only
Lever Bracket	£100	One Only
Operating Linkage	£100	2 available
Cylinder Drain Cock Centre (spare)	£200	2 available

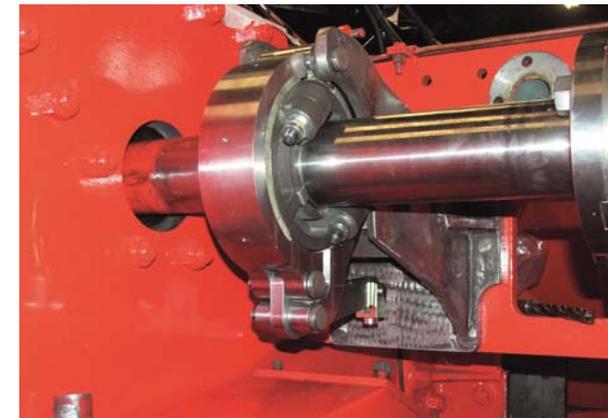
FINANCIAL MATTERS

Frames

Buffer Beam Bracket	£180	2 available
Radius Link Bracket (machining)	£1,500	2 available

Motion

Connecting Rod Small End Bush/Oil Ring	£180	3 available
Combination Lever (forging)	£200	One only
Radius Link Die Block	£300	One only
Reverser Cross Shaft Arm (forging)	£300	One only
Reverser Shaft Clutch Control Valve/Rods	£350	One only



Reverser Shaft Clutch © David Elliott

Cylinder Slide Bar Bolt & Nuts	£350	One only
Main Reversing Rod – Rear Section	£400	One only
Coupling Rod Bush & Oil Ring	£400	2 available
Reverser Stand Nut Trunnion (pattern)	£450	One only
Coupling Rod Knuckle Joint Pin/Washer/Key	£460	2 available
Coupling Rod Bush & Oil Ring	£480	2 available
Coupling Rod Bush & Oil Ring	£550	2 available
Connect'g Rod Big End Bush & Oil Ring	£550	2 available
Con'ct'g Rod/Xhead Gudgeon Pin/Nut/Key	£580	One only
Reverser Linkage Pins	£600	one only
Union Link (machining)	£650	One only
Eccentric Sheave (pattern)	£750	One only

FINANCIAL MATTERS

Reverser Stand Nut (machining)	£750	One only
Connecting Rod Strap (forging)	£900	One only
Con'ct'g Rod Big End Bush & Oil Ring	£900	One only
Inside Reversing Rod (machining)	£950	One only
14 more expensive items from £1,200 to £4,800 each		

Brakes

Hanger Bracket (casting)	£200	5 still available
Hanger (machining)	£200	6 still available
Cross Stay (machining)	£200	2 still available
Cylinder Equalising Link Pins (set of 4)	£200	One only
Rear Cross Stay Fulcrum (machining)	£200	One only
Hanger (forging)	£300	5 still available
Hanger Bracket (machining)	£300	4 still available
Pull Rod Pins (set of 8)	£320	One only
Equalising Link Pins (set of 8)	£320	One only
Cross Stay (forging)	£350	3 still available
Equalising Lever	£350	4 still available
Equalising Link	£350	4 still available
Cylinder Equalising Link	£350	2 still available
Cylinder Equalising Lever	£450	One only
Pull Rod	£500	3 still available
Locomotive Air Brake Cylinder	£850	2 still available
Steam Driven Air Compressor	£8000	2 available

Lubrication

T Piece - Steam Pipes to Anti-Carbonisers	£200	One only
Lubricator Steam Check Valve	£500	3 available
Feed Oil Box for Cannonbox Horn Guides	£600	8 available
Steam Cock Supply to Anti-Carboniser	£700	One only
Feed Oil Box – Coupled Axlebox H Guides	£750	One only
Mod of Air Pump Lubricator for Cab Mount	£750	2 available
Feed Oil Box	£800	4 available
Feed Oil Box – C'azzi Ax'box HG/Wedges	£800	2 available
Anti-Carboniser (atomiser)	£850	2 available

Cartazzi Assembly

Bearing Retaining Nut & Locking Bar	£250	2 available
Axlebox Cover (machining)	£450	2 available
Axlebox Backplate (material & machining)	£950	2 available
2 more expensive items at £1,600 and £2,400 each		

FINANCIAL MATTERS

Smokebox

Blast Pipe Top	£600	2 available
Inside Steam Pipe	£700	One only
3 more expensive items from £1,200 to £9000 each		

Cab

Side Screen Frame (pattern)	£300	One only
Spectacle Safety Glass	£450	One only
Side Screen Frame (machining 7 hinges)	£450	2 available
Spectacle Glass Frame (pattern)	£600	One only
Spectacle Glass Frame Bronze (machining)	£600	2 available

Bogie Wheelsets and Coupled Wheelsets

5 items in each category over £1,000 (£1,020 to £2,100) each

The Bond Issue

Part of The A1 Trust Bond Issue remains available for investment. Sums in multiples of £100 may be invested to earn interest at 4% payable annually. It is open to investors to forego the interest as an additional way of supporting The Trust. Investors wishing to take up any of the available part of the Bond should contact the day hotline (01325 4 60163) and ask for the appropriate paperwork to be sent to them.

Gift Aid Declaration

Every individual who donates money to The Trust is asked to complete a Gift Aid Declaration to enable The Trust to claim back income tax from Her Majesty's Revenue & Customs (HMRC). For example, on a donation of £100, The Trust could claim an additional £28.20, making the donation worth £128.20. However, the Gift Aid Declaration requires a donor to make the following statement: *'I am a UK tax-payer and would like you to treat this, and all other donations, received from "date" until further notice as Gift Aid Donations.'* Your gifts will be treated as made under deduction of income tax at the basic rate. To the extent of which the tax treated as so deducted exceeds the amount of income tax and capital gains tax with which you are charged for the year of assessment in which the gift is made, you will be assessable and chargeable with income tax at the basic rate on so much of the gift as is necessary to recover an amount of tax equal to the excess. In practice, we use this "date" as the start of the tax-year (currently 6 April 2007). Put simply, a person who agrees that their donation is made under the provisions of Gift Aid must

have paid sufficient UK income/capital gains tax to cover the tax that The Trust reclaims on the donation. HMR&C calculations are made for each tax-year. If you have authorised The Trust to claim Gift Aid, it is imperative that you notify The Trust if you cease to pay an amount of income tax and/or capital gains tax equal to the tax that we reclaim on your donations. On a lighter note, providing that you are a higher rate taxpayer, you can claim the difference between the tax that you have paid and the tax that has been reclaimed by The Trust. Finally, the change in the basic rate of income tax, which comes into effect on 6 Apr 2008, requires no action by Covenantors.

Summary

We are on the final stretch of the course leading to a completed new Peppercorn A1 Pacific steam locomotive but need around £85,000 to finish the build. Thereafter, continued support will be essential to maintain and run the locomotive, discharge commitments (entered into to achieve its completion), and begin to gather the funds which will be required later to undertake necessary periodic refurbishment. However, **the chance to be part of the creation of Tornado will disappear once she is built!** If you know anyone whom you think my wish to contribute – **as a creator** – let them know now that time is fast running out.



Exhaust Steam Injector (ex-Sir Nigel Gresley) – the single most expensive component still available for dedicated covenant purchase © David Elliott

Supporters Open Weekend, Darlington Locomotive Works 30 June and 1 July 2007

by the Editor

For the first time in the life of the A1 project, visitors to Darlington Locomotive Works during the Open Weekend could see just how big a Peppercorn A1 really is, even without its smoke deflectors (blinkers to those of us who were privileged to see the originals)! The lack of blinkers led some present to the comment that we could have been looking at a double chimney Gresley A3. My reaction to that thought was satisfaction as I recalled that Peppercorn had returned LNER design to the Gresley style after the Thompson years. Other early impressions included admiration for those who had worked so hard to have so much of the locomotive in place in an immaculate erecting shop. I learned that members of the Board had done a lot of the work preparing the Locomotive Works for the weekend. I was impressed by the lateral thinking in utilising the space under the cab floor for ancillary equipment in a way which will facilitate servicing and repair in the future. In a later conversation, I learned that equipment to be installed between the tender frames is to be modified in the same way – with an eye to future ease of maintenance and repair. That kind of far-sightedness, applied while it is possible to get at things easily, is one of the strengths of our project team. The other thing that struck me was the quality of the professional painting of the frames that I had read about in the railway press. The finish drew the eye and led quite a few people to crawl underneath for a better look.

What was not immediately obvious was the huge amount of work that had been done between the frames before the boiler was lifted onto the rolling chassis. The symmetry of the boiler cladding crinolines spoke volumes about the care with which they had been manufactured, prepared and installed. (In an earlier visit to the Works I saw similar attention to detail being applied in the cutting, shaping and trial-fitting of the cladding sheets). The evidence of the wheel balancing work was fascinating to see after reading about what was involved in the process. Equipment yet to be fitted to the locomotive, laid out for viewing, also captured my interest.

In circulating around the gathering, I sought out those whom I knew had been involved in the project from its early days, and asked them for their impressions of *Tornado* with its boiler in place for the first time. One Board member (one of those who spent 3 days helping with preparations) expressed relief that nothing had gone awry during the boiler lift and that things had been ready for the Open Weekend. The Chairman, Mark Allatt, always with an eye to the next challenge, hoped that

the evidence of our gathering success would encourage people to contribute to meeting the current requirement of £85,000 to complete the locomotive quickly enough for us to stick to our planned timetable (quite apart from the continued income we will need when *Tornado* is operational). One of my editorial predecessors, Phil Champion, in a brief break from serving tea and coffee to the visitors, told me that he felt a quiet satisfaction at seeing *Tornado* beginning to look closer to completion, but said that, in the early days, he had never expected the project to take so long to achieve. The Engineering Director, David Elliott, was constantly besieged by visitors seeking additional information about the locomotive, but his thoughts, recorded elsewhere in this edition, concentrate on what we are achieving on a day-to-day basis.

The weekend was a great success and attracted around 300 covenantors, supporters and guests – just over 200 on Saturday and about 100 on Sunday. Many familiar faces were in evidence, but it was particularly gratifying to see some who had not been to the Works for some time if ever. Over £850 worth of merchandise was sold, donations were just short of £2,000 and £1,000 of the Bond was taken up. In addition, we converted 3 of those present into covenantors! I am told that a further benefit was to be found in the cleaning and tidying of the Works with mislaid items being discovered and working conditions enhanced – always a boon when we are working to a timetable.



Carefully Does It! Midway through fitting the boiler on 28 June © David Elliott

THE FUTURE - CONSIDERATIONS ON LOT 2 by Barry Wilson

As we enter what we all hope will be the final 12 months of the construction of our A1 thoughts inevitably have turned to what next, often referred to as Lot 2. This note will air a few thoughts in connection with Lot 2 (more properly Lot 3 as Lot 2 will be the support vehicle!).

The constitution of The A1 Steam Locomotive Trust is that of a company limited by guarantee, as permitted under the Company Law of England, which has charitable status. The latter brings the directors of the Company, who are also Trustees for the purposes of charity law, under the auspices of the Charity Commissioners and the English laws applicable to charities.

One of the recurring precepts of the charity laws is that the trustees of a charity are required to protect the assets under their charge on pain of joint and several liability if they do not. In the case of The A1 Steam Locomotive Trust the asset is obviously *Tornado*.

When the construction of *Tornado* became well advanced the Trustees decided that it would be appropriate to borrow funds to speed the construction process thus the Bond issue was launched in 2004, which provided funds for the construction of the boiler and a loan of £180,000 was negotiated from Venturesome, the social investment arm of the Charities Aid Foundation to further completion of the engine itself. These loans have to be repaid and until such time as these liabilities are discharged the Trustees should not take any action which may inhibit the ability of The A1 Steam Locomotive Trust to repay these debts.

It could well be argued that setting out to build a second locomotive could place the Company in a position whereby the repayment of debts attaching to the construction of *Tornado* is compromised as funds, which might otherwise be used to pay off the debts, will be diverted to building a second locomotive. The Trustees would have thus created a position which may lead to action against the Company from those who have loaned funds to the Company and have not been repaid. In turn the Trustees may then also be open to an allegation that they failed to protect the asset of the Company i.e. *Tornado*.

There is no doubt that within the Board there is a desire to build a second locomotive but not at the expense of placing the first one in jeopardy and thus it is likely to be some time before construction work can commence on a second locomotive.

Whatever locomotive is chosen it is likely that arising from experience on the construction of *Tornado* that we would wish to redesign the construction of the frames as it now believed that a perfectly acceptable set of plate frames can be built for very significantly less using modern techniques as opposed to those of the 1940s. Visibly there would be little if any difference.

Whatever the choice, work will have to wait a while for both financial and engineering reasons and therefore we should not allow ourselves to get too worked up about Lot 2 at this point in time. It is suspected that we will all have plenty to deal with once our A1 gets on the road!

TALISMAN

Talisman 2007 – last chance for seats!

As previously circulated to Covenantors, the 2007 running of the Talisman will feature the newly-restored A4 No 60019 *Bittern* (the last A4 in BR service). The train will run from Kings Cross to Newcastle and back on Saturday 22 September, and will leave, diesel-hauled, at 8.15am (provisional). After stops at Potters Bar (8.35am), Stevenage (8.50am) and Peterborough (9.35am), *Bittern* will take over at Grantham for a high-speed return to the North East. The same stops will be made on the return to Kings Cross where we expect to reach by about 9.30pm.

As of mid-July there were less than ten seats remaining on this year’s ‘Talisman’!

First Class is now full, but anyone who wants to secure one of the last Standard seats (£72.50 each) should call our ticket agency Steam Dreams on 01483 209886.

All profits from the tour go towards the completion of *Tornado*.

Note: Prints of ‘Night Scotsman’ (The centrefold) are available from The Trust – £10 signed; £5 unsigned (plus £1 p&p).

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



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