



The A1 Steam Locomotive Trust
New Steam for the New Millennium

The Communication Cord

No 7 Newsletter of The A1 Steam Locomotive Trust August 2006

On time and to specification ! the boiler arrives in Darlington

Following a successful hydraulic testing in Meiningen, witnessed by all the required approval bodies, *Tornado's* boiler was given the confirmatory CE marking.



Photograph:~ David Elliott

The boiler was then lifted onto a low-loader with the air-pumps and other items. It was then made ready for its journey across Europe to Darlington via the North Sea Ferry to Teesport arriving in Darlington on the afternoon of Saturday 15th July. In the picture below the air pumps are clearly visible on the right hand side of the trailer:



Photograph: David Elliott

After some very careful – and somewhat euphoric – inspection, the whole unit was parked overnight on the field behind the Locomotive Works. To ensure that the boiler would not be the subject of any unwanted attention overnight, John Perry acted as night watchman from dusk through to the return of the rest of the team on Sunday morning – special thanks to John.

Sunday morning saw the early arrival of a large crane plus other lorry loads of associated equipment.

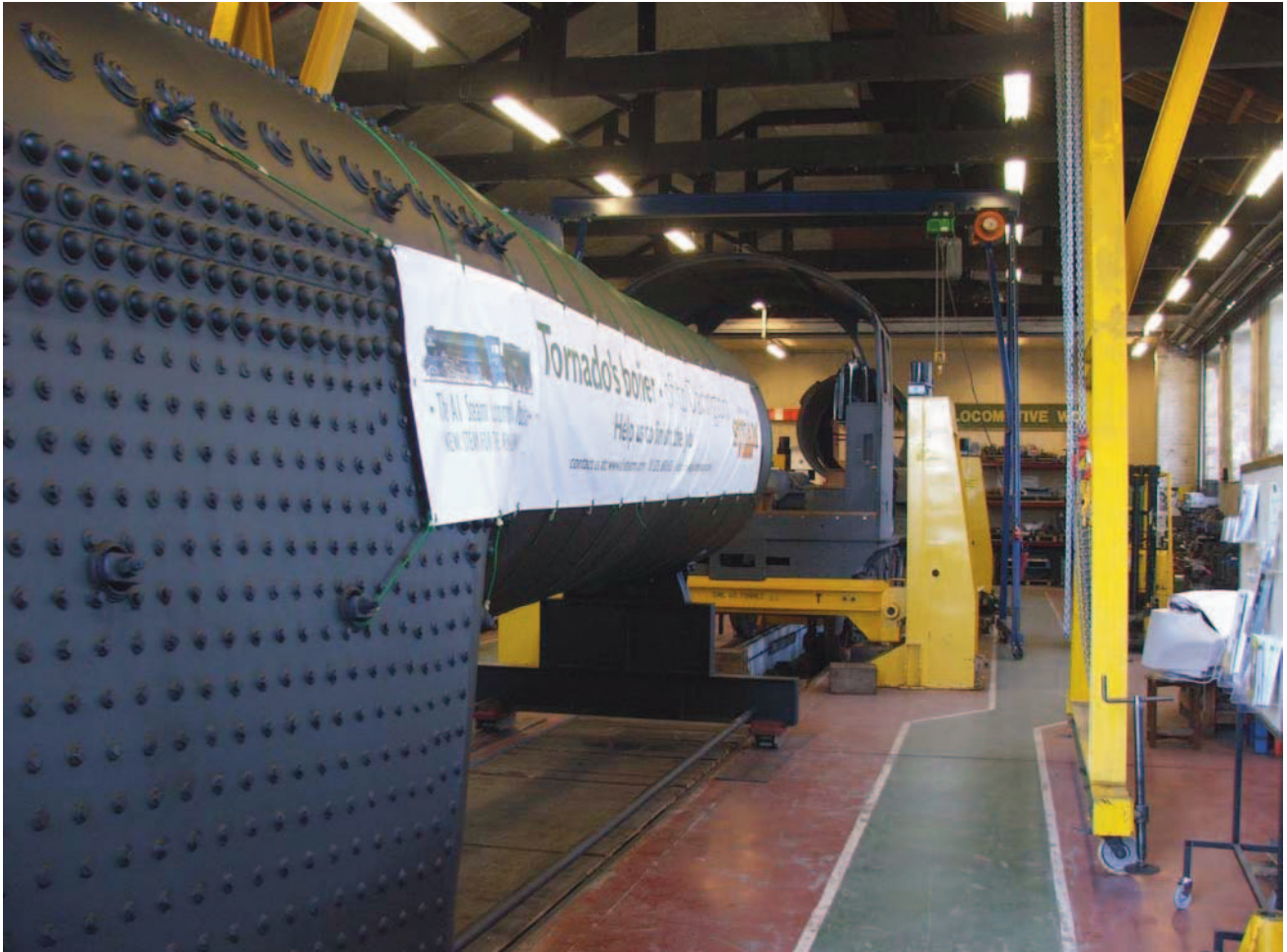
The boiler was soon swinging gently from the crane ready to be lowered into the works:



Photograph: David Bedding

It has to be remarked that at this point David Elliott was seen to be looking a trifle anxious !

However, the lifting team clearly knew what they were about and the boiler was soon safely on the ground and being positioned ready for its final movement into the works to take pride of place behind the locomotive – see next page.



Photograph: David Elliott

£178,282 to go !!

Over the past few weeks, our readers may have seen in the press – notably in *Steam Railway* - the figure of £195,000 quoted as the amount needed to complete *Tornado* and wondered where this sum came from.

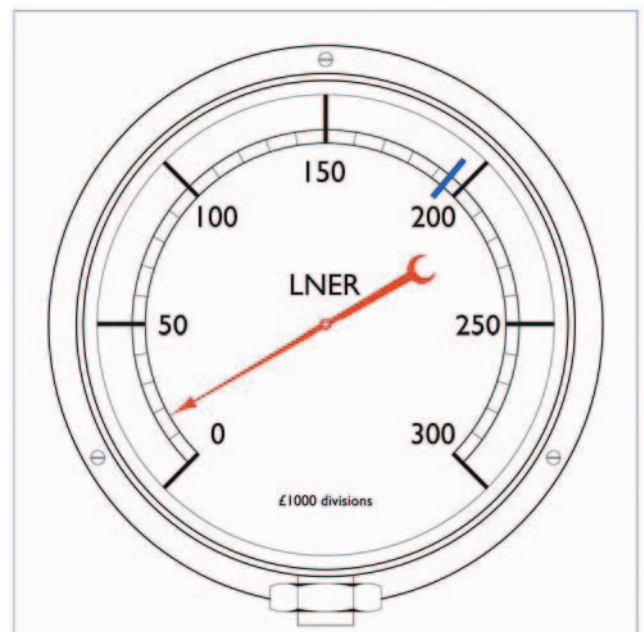
Most importantly it should be noted that the figure is always given with the additional comment “over and above expected income”.

What we have done is to calculate the expected costs to completion of the locomotive. Then we have taken a figure for our regular covenanted income over the period to completion and assumed a level of donations and other income roughly the same as that received in the past six months or so.

The difference is the amount that we need to raise and, when we made the calculation on 1st July, the figure was the £195,000 that you have seen quoted.

Based on July’s figures we have already reduced the amount needed to £178,282 – a fantastic performance in just one month !

To express the information graphically we have adopted a pressure gauge with *the line* at 195 as shown in the illustration below - this will appear on our website and in the railway press and will be updated monthly as the figures become available to us.



Engineering Report

by David Elliott, Engineering Director

MOTION Orders for machining the inside motion and valve spindle crossheads have been placed with Multi-Tech at Featherstone. Work has continued on grinding the outside motion and the radius link die blocks have been started. Various jigs to assist on assembly of the radius links have also been made. Two test specimens of BS570 070M55 (EN9) motion pins have been made and then induction hardened and subjected to sectioning and hardness testing by Keighley Laboratories. This confirmed that the hardness and penetration of the hardened case is satisfactory, and that the core material remains soft and ductile as required. The results have been presented to the VAB who have indicated agreement to the change. The pins will now be put into manufacture.

PIPE WORK Material for the front bufferbeam steam heating pipe has been delivered, and the copper pipework is on order.

RUNNING GEAR The Cartazzi spring hangers have been fitted to the rear frames.

BRAKE SYSTEM The air pumps came to DLW with the boiler. Five brake cylinders (2 for loco, 2 for tender and a spare) have been ordered from Metcalfe Railway Products.

TENDER The tender frame is now virtually complete, requiring fitting of footsteps and two pieces of angle.



Photograph: Barry Wilson

A dimensional survey indicated that the frame is correct within tolerance in length, distance between frame plates and squareness. The horn faces still require truing up, but this will await completion of the axleboxes in case any problems with them may require a concession on the final dimensions of the hornblocks. The wheel and axlebox design has been subjected to preliminary scrutiny by the VAB and approved for patterns and casting. A reply on the detailed axlebox design is awaited from Timken but, as this is most unlikely to affect the pattern and casting process, drawings have been forwarded to William Cook for patterns and castings. Work on finalising the tank drawings is nearing completion and we expect to send them out for quotation during August. A revised layout has been schemed for the brake actuating gear to facilitate conversion to air brakes from the original steam operation. The redesigned brake cross shaft and hand brake arrangement are being detailed and the associated stress calculations are being made.

The final installation of the brake cylinders looks to be fairly straight forward as they will mount on plates welded directly to the front drag box, eliminating the requirement for the complicated frame stay that supported the original steam cylinder design. Following VAB approval, the brake levers which support the brake blocks are being fabricated from mild steel plate rather than forged from solid.

The profiles have been delivered and are being bent where necessary prior to having bosses welded on. The brake shaft bearings have also been fabricated. I D Howitt Limited are progressing the procurement and fitting of brake levers and rods and suspension parts. An iron casting has been made for the handbrake screw support. Spring hooks and other forged components for the suspension and brake parts have been ordered from Heskeths of Bury. A coach alternator including control gear has been recovered from a scrap vehicle and is being offered up for making a suitable mounting on the rear drag box. The alternator will be the primary source of 24V DC when the locomotive is moving. This is much more efficient than the locomotive's steam turbo generator which will still be available for extended stops or if the alternator fails.

Marketing Report

by David Bedding, Marketing Director

The past months have been probably the most exciting – and some of the most hectic – times in the history of The Trust and are likely to get more so as we get nearer and nearer to completion.

Whilst the Board of Trustees are the most visible part of the organisation we could not have met our targets without the support of many other volunteers. Given that you are reading *The Communication Cord* it is an appropriate time to recognise the back room team who pack and address it. This was the scene in the office on the day of the last packing:



Photograph: David Bedding

l to r: Robert Facey, Terry Greaves, Gordon Best, Barry Thompson and John Perry

SMALL BOILER TUBES ALL SOLD !! The response to the insert sent out with the last *The Communication Cord* far exceeded our expectations with the result that we have now sold all the small boiler tubes ! In something of a departure from previous practice we have recently reviewed the prices associated with the sponsorship of many of the remaining items for the locomotive and re-pricing many of these in the near future. The most immediate effect of this is that the large boiler tubes have now been re-priced to £200 (from the original £400) making them much more affordable. We have also lowered the associated super-heater tubes from £450 to £225 – or, if taken as an associated pair, then £400 for both. These are now going quite quickly as well so if you want to sponsor one of these vital components don't leave it too long !

NEW PRINTS AND CARDS AVAILABLE With especial thanks to the artist, Professor Dugald Cameron, we are pleased to announce the availability of a new print: "*Night Scotsman*" – also available as a greeting card. This super print is the latest from Professor Cameron who, as many will be aware, also produced the *St Mungo* print for The Trust (soon also to be reprinted) The print is A3 sized – approx 16½" X 11¾" (43 X 30 cm). Professor Cameron has kindly signed a number of prints for us and these are available at £15 each (+ £1 P&P). Unsigned prints are also available at £10 (+ £1 P&P) The greetings cards are A5 sized – approx 8" X 6" (20 X 15 cm) - blank inside for your personal greeting and are individually packed with envelope. These are competitively priced at £5 for 6 cards (again plus £1 P&P regardless of quantity ordered)



'Night Scotsman'
© Dugald Cameron 2005

TALISMAN This year's *The Talisman* is now scheduled to run on Saturday 23rd September. Our original plans had to be changed when it seemed that the RMT union were calling their members out on strike on the Friday and Saturday of the weekend we were planning to run. However, the good news is that the new date coincides with the Community Railfest event in Darlington/Shildon so there will be more to see and do than we had originally expected. There are still some seats available from West Coast Railways (01524 737753) for those who could not travel on the original date but can on the revised.

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