

THE *A1* STEAM LOCOMOTIVE TRUST

Registered Office, General Correspondence & Membership Enquiries:
Darlington Railway Centre & Museum, North Road Station, Darlington DL3 6ST
Hotline Answerphone: 01325 4 60163

PRESS INFORMATION - PRESS INFORMATION - PRESS INFORMATION

PR99/03

Wednesday 28 July 1999

NEW STEAM LOCO ON WHEELS BY AUTUMN *Smokebox nearing completion in Darlington Locomotive Works* *Two tenders and 90mph running for Tornado*

The A1 Steam Locomotive Trust, the registered charity that is building the first new mainline steam locomotive in Britain for almost 40 years, today announced that No. 60163 *Tornado* will be on its wheels by the Autumn. This will be the first time that a new mainline steam locomotive has been wheeled since the completion of British Railways last steam locomotive in 1960. This part of the £1.6 million project will have cost around £150,000.

The trial fitting of the wheels to *Tornado* will be the culmination of the most complicated logistics exercise yet undertaken by the Trust. The fitting of the 12 wheels to their axles will be completed during September. The steel tyres have already been fitted to the two 3ft 8in Cartazzi (trailing) wheels by the Trust's contractor, Ian Riley of Riley & Son (Electromech) Ltd of Bury and the tyres have been turned to their final profile. This will be followed by the four 3ft 2in front bogie wheels.

Performing a similar operation on *Tornado's* six 6ft 8in driving wheels is more complicated due to their size. The demise of steam on British Railways over 30 years ago has left few workshops able to machine such large wheels - modern diesel and electric locomotive's wheels are much smaller. *Tornado's* six 6ft 8in driving wheels will therefore have to be moved from Bury to the Severn Valley Railway's workshops at Bridgnorth for turning, going back to Bury for the tyres to be fitted, before again visiting the SVR for the newly fitted tyres to be turned.

David Elliott, technical director of The A1 Steam Locomotive Trust, added: "The building of *Tornado* has meant the rediscovery of many old skills and new applications for the latest technologies. However, the wheeling of *Tornado* has proved to be the Trust's most complicated logistics exercise to-date involving specialist suppliers from across the UK and one in Belgium. 40 years ago all of these processes could have been carried out under one roof at the then Darlington Works where 23 of the original A1s were built."

Before the wheels are test fitted to *Tornado*, five of the locomotive's six wheelsets will have had their roller bearings fitted. The 46 different spacer, abutment, sealing and adjustment rings for the 12 Timken taper roller bearings have to be manufactured and located on the driving and bogie axles before the wheels are pressed on. The leading driving wheelset has a total of four roller bearings in two individual axle boxes. This is necessitated by the crank for the middle of the three cylinders. The remaining two driving and bogie wheelsets have two roller bearings each which are each housed in a cannon box of a tubular construction that encases the axle across the width of the frames.

more follows...

The cannon and axle boxes which were cast in steel by Wm Cook Cast Products at Burton on Trent and have been machined by Ufone Precision Engineers at Rowley Regis, West Midlands. This work has also involved welding a total of 96 pieces of highly wear resistant manganese steel to the guides in the cannon boxes which slide up and down in the horn blocks. The manganese steel liners were supplied by Aurora Metals of Sheffield. The trailing truck (cartazzi) wheelset has outside roller bearings enabling the bearings and axle boxes to be fitted after the wheels have been pressed on to the axle.

Second Tender and 90mph running

The A1 Steam Locomotive Trust has decided that No.60163 *Tornado* will have a second new LNER eight wheel tender to carry additional water capacity, enabling the completed locomotive to run for over 250 miles non-stop when required.

The second tender, which will be constructed at the same time as the standard tender, will have a water capacity of around 9,250 gallons. The standard tender, which will have a coal space into which the oil tank will be fitted when *Tornado* is running in oil-fired mode, has been redesigned without a water scoop and higher back space to increase water capacity to around 6,250 gallons.

Both tender tanks will be constructed in stainless steel and contracts are due to be let in the next couple of weeks.

The Trust has also decided to seek 90mph approval for *Tornado* when completed, up from the maximum of 75mph for existing, old steam locomotives on Railtrack.

David Champion, chairman, The A1 Steam Locomotive Trust, added: "The additional tender and the decision to go for 90mph approval are both part of our policy of equipping *Tornado* for tomorrow's railway. With a second tender and over 15,000 gallons of water, *Tornado* will be able to run from Kings Cross to Darlington non-stop. This, combined with a 90mph approval, will be a better fit with the other traffic on today's mainlines."

Further Engineering Update

As well as work on the wheelsets, considerable progress continues to be made on other aspects of the locomotive's construction:

- **Motion:** the first batch of motion components - the slide bars and several parts for the reversing mechanism - have been forged by Heskeths at Bury and sent to Ufone for machining. They are due for delivery to Darlington in September and a few are still available as Dedicated Covenants. The patterns have been ordered for the piston crossheads, valve spindle crosshead guides and the cylinder covers.
- **Bogie:** the bogie bottom centre, end stretchers and crosshead castings have also been dispatched to Ufone for machining. They are also due in Darlington in August.
- **Boiler:** the most complex pattern needed for the construction of *Tornado* has been ordered from Kings Heath Patterns of Birmingham, who produced the patterns for *Tornado*'s three cylinders. The pattern for the superheater header will cost around £9,000 and it will be cast in SG Iron.
- **Smokebox:** the shell of the smokebox is now approaching completion, with the smokebox door, door fittings and ring (built by Ian Howitt at Crofton near Wakefield) have been assembled in Darlington Locomotive Works in readiness for fitting to *Tornado*. The chimney, chimney liner and blastpipe have been cast by Charles W Taylor at North Eastern Foundry, South Shields through a very generous sponsorship arrangement.

more follows...

Annual Convention

The A1 Steam Locomotive Trust's 6th Annual Convention will take place at the Dolphin Centre, Darlington on Saturday 23 October 1999. The day will commence with a progress update by the Trust's board of directors, followed by a visit by several hundred covenantors to Darlington Locomotive Works to inspect progress on *Tornado* during the past year.

Tornado on TV

The project to build *Tornado* was featured on BBC2's *One Foot in the Past* programme on the future of steam broadcast on the evening of Saturday 29 May 1999. The programme showed *Tornado* under construction at Darlington Locomotive Works and featured a number of the Trust's management team. This programme has resulted in a significant number of enquiries to the Trust.

- ENDS -