

# THE MIKADO MESSENGER



2007 PRINCE OF WALES  
Building Britain's Most Powerful Steam Locomotive



No. 2007 Prince of Wales - Mandy Grant/A1SLT

Welcome to edition No. 62 of *The Mikado Messenger*, our monthly eNewsletter which aims to provide a regular progress update on the construction of new Gresley class No. 2007 *Prince of Wales*.

We'd like to take this opportunity to thank all of our readers for their generous support during 2019 without which our new Gresley class P2 would just be a pipe dream and to wish you all a prosperous New Year.

## FUNDRAISING

A P2 for the price of a pint of beer a week: around 930 supporters have signed up as Covenantors for No. 2007 *Prince of Wales* from as little at £2.50 per week and are now kindly donating over £205,000 annually including Gift Aid. We aim to reach 1,000 regular donors by the end of the 2020. If you haven't yet signed up as a Covenantor we would encourage you to get on-board. You can find more information [here](#).

The Motion Club has now welcomed 158 members, with only 17 members remaining of our 175 members target. You can find more information about The Motion Club [here](#) - help us to fund the manufacture of No. 2007's motion!

The Boiler Club has hit the 182 members mark, leaving just 118 spaces available. As we have now placed our order for the boiler, we would urge those who haven't yet contributed towards the purchase of No. 2007 *Prince of Wales*' boiler to join us. This is the single most expensive component on the locomotive and is due to be delivered to Darlington Locomotive Works in July 2021. More information about The Boiler Club can be found [here](#).

Our newest club, The Tender Club, is filling up with 50 places already taken. In order to keep on schedule to complete No. 2007 within three years, we need to have the tender frames and tender tank delivered to Darlington Locomotive Works in 2019. Our target for The Tender Club is 250 members, contributing £1,500, so if you would love to contribute towards the tender more information can be found [here](#).

You can sponsor No. 2007 *Prince of Wales* components from as little as £25 ranging up to £15,000! The **Dedicated Donations** scheme has already raised around £400,000. If you would like to sponsor a component, please email [dedicated.donations@p2steam.com](mailto:dedicated.donations@p2steam.com), detailing the amount you would like to donate and/or if you had a specific part of the engine in mind, we will then send you some component recommendations to suit your donation.

To-date, over £2.1m has been spent, £2.7m raised and almost £3.5m pledged of the required £5m to complete No. 2007 *Prince of Wales* within the next three years.

## ENGINE FRAMES UPDATE



Cartazzi spring guides undergoing inspection- A1SLT



Pony truck cannon box assembly - A1SLT

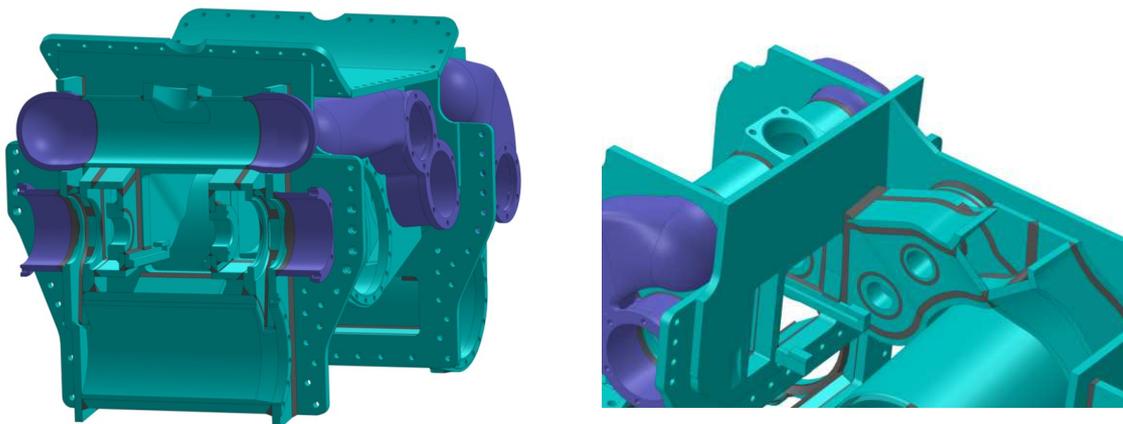
**Summary:** engine's frames erected; all major frame stays, brackets, horn blocks, axle boxes & buffers cast and fitted using around 1,000 driven bolts.

**Progress update:** following delivery from North View Engineering Solutions Ltd (NVES), the fabricated spring hanger brackets have been trial fitted to the frames; the Cartazzi spring guides have been inspected and are due to be trial fitted to their horn blocks for measuring prior to fitting the manganese steel liners; the pony truck frame fabrication has been ordered from NVES; the pony truck cannonbox has been delivered by Timpsons of Kettering and has had its interior painted.

**Next steps:** once the wheelsets are removed from the frames, the motion brackets and spring brackets will be permanently bolted to them.

**Fundraising:** The Founders Club was established in September 2013 to give the project a racing start and get it to the point of erecting the engine's frames with a target of raising £100,000 plus Gift Aid from 100 supporters each donating £1,000. The Founders Club closed in July 2014 having attracted 360 members and raised around £450,000.

## CYLINDERS UPDATE



3D CAD image of the fabricated cylinder block with Lentz-Franklin B valves: the cylinder exhaust passage weld details (in black) have been applied to the image; the middle cylinder exhaust ports are in blue - *David Elliott/ A1SLT*

**Summary:** design studies into cylinder block manufacture and selection of valve gear complete; 3D CAD design of the cylinder block and valve gear substantially complete; further progress has been made in applying the weld details to the cylinder block inside exhaust passages with particular attention being paid to the order of fabrication to ensure that all welds can be completed properly.

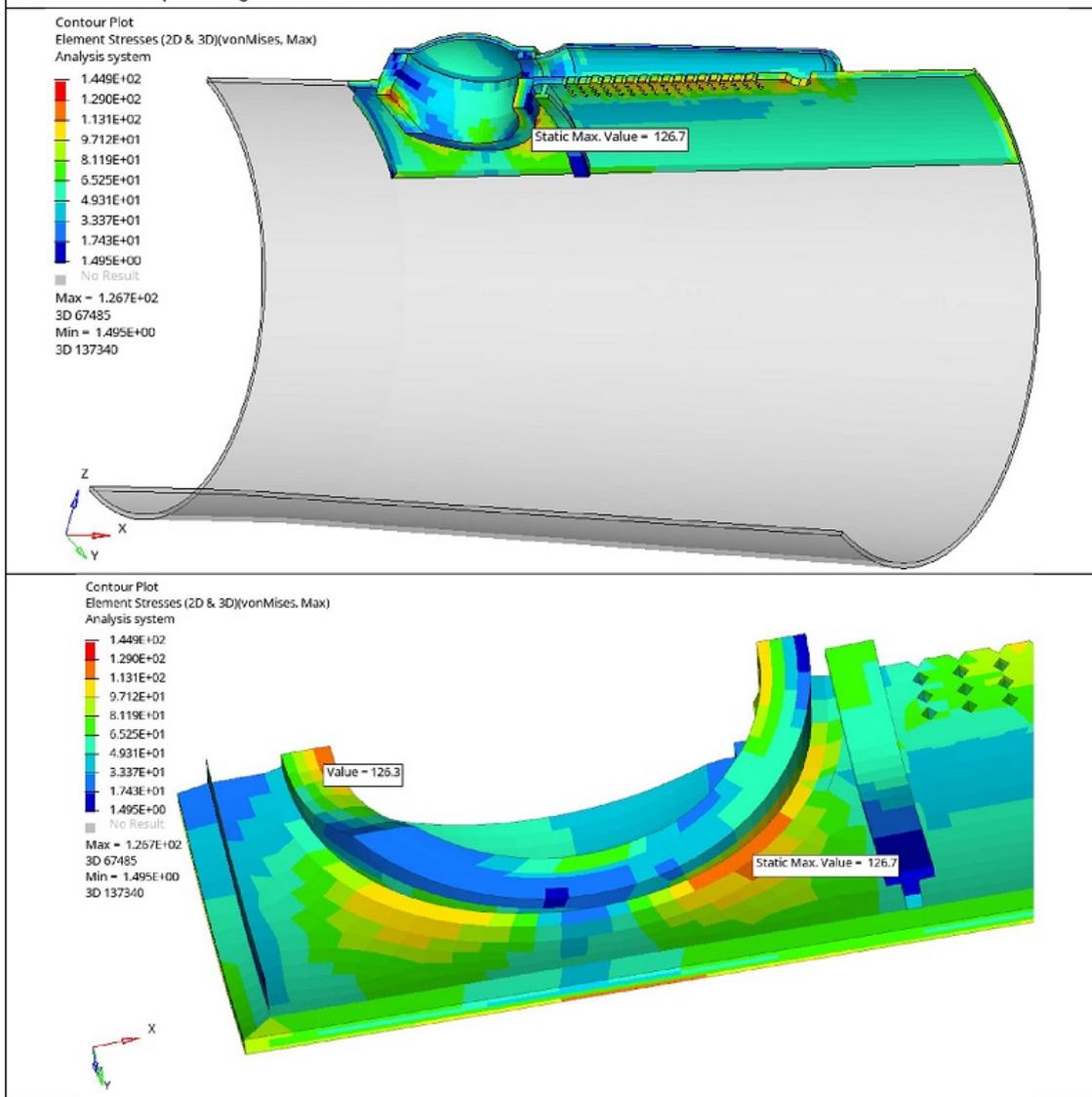
**Progress update:** we are currently seeking best and final offers for the cast steel steam passages for the cylinder block; David Elliott has completed the design welds on the cylinder block and quotes will be sought.

**Next steps:** completion of the manufacturing drawings of valves and valve gear details so that quotes can be obtained; quotes are also being sought for casting the steam chest covers.

**Fundraising:** The Cylinder Club was founded in October 2017 to fund the redesign and manufacture of the cylinder block with a target of raising £100,000 plus Gift Aid from 100 supporters each donating £1,000. The Cylinder Club closed in March 2018 having achieved its target.

## BOILER UPDATE

### STN 3 : BF – Spannungen Von Mises



An extract from the Cideon report - DB Meiningen / A1SLT

**Summary:** boiler design study completed; forged foundation ring corners manufactured & machined; regulator castings delivered; superheater header cast & machined; boiler cladding manufactured, trial fitted to frames and now in storage; boiler order placed with DB Meiningen for delivery in July 2021; foundation ring forgings and regulator castings despatched to Meiningen; the minor re-design of the banjo dome to suit the P2 cladding by has been completed by DB Meiningen.

**Progress update:** DB Meiningen's specialist subcontractor Cideon has completed the Finite Element Analysis (FEA) study of the revised banjo dome design; further liaison has taken place between DLW and Meiningen to finalise the locations of the increased number of flexible stays in the firebox based on experience with *Tornado's* boiler.

**Next steps:** visit by DLW design staff to Meiningen to carry out a detailed design review.

**Fundraising:** The Boiler Club was founded in October 2017 to fund the design modification and manufacture of the boiler with a target of raising £600,000, plus Gift Aid, from 300 supporters each donating £2,000 in up to 40 payments of £50. As of today, The Boiler Club has attracted 182 members who have generously donated almost £450,000. For further information click [here](#) - we must reach our 300 members target by July 2021 at the latest.



The tender wheelsets in their undercoat condition - A1SLT

**Summary:** study into ride & suspension completed using Vampire<sup>®</sup>; software; crank axle re-designed to comply with modern standards, approved and manufactured; all engine wheelsets complete and trial-fitted to engine; a full drawing set for the pony truck frame has been produced and checked.

**Progress update:** filling and painting to undercoat of tender wheelsets complete.

**Next steps:** discussions with prospective balancing firms to dynamically balance the tender, Cartazzi and pony truck wheelsets.

**Fundraising:** The Mikado Club was founded in March 2016 to wheel the engine with an initial target of raising £200,000, plus Gift Aid, from 160 supporters each donating £1,000. This was extended in May 2017 to 200 supporters raising £250,000 plus Gift Aid in order to also wheel the tender. The Mikado Club closed in May 2018 having achieved its target.

## MOTION UPDATE



Four forged coupling rods at Stephenson (Engineering) Ltd - *Robert Stephenson/A1SLT*

**Summary:** all heavy motion ordered from order with Stephenson (Engineering) Ltd of Atherton, Manchester; work started with first delivery due in autumn; updated poppet valve gear design almost complete with first components in manufacture.

**Progress update:** four coupling rods have just been forged at Stephenson (Engineering) Ltd.

**Next steps:** machining of the coupling rods.

**Fundraising:** The Motion Club was founded in May 2018 to fund forging and machining of the heavy motion, with a target of raising over £210,000 including Gift Aid, from 175 supporters each donating £1,000 in up to eight payments of £125. As of today, The Motion Club has attracted 158 members who have generously donated over £175,000. For further information on how to become a member and help us to reach our target before the convention click [here](#).

**TENDER UPDATE**



No. 2007 *Prince of Wales'* tender tank with the sides and part of the coping attached -

*David Elliott/ A1SLT*

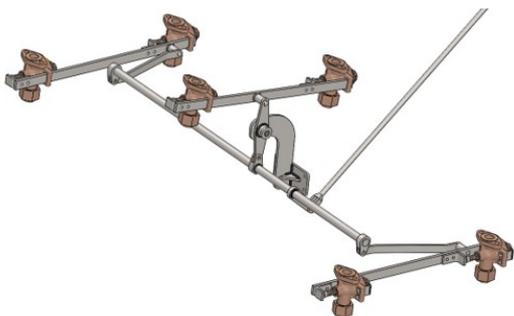
**Summary:** axlebox and other tender castings produced by William Cook Cast Products; frames being assembled by I D Howitt at Crofton; tank construction under way by NVES; tender wheelsets assembled by South Devon Railway Engineering and returned to DLW.

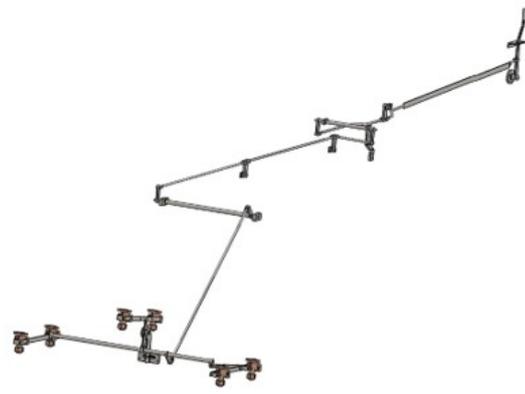
**Progress update:** NVES continue to make good progress with the tender tank with Ian Matthews from DLW seconded to NVES to blacksmith the 2 inch half round beading where it follows the leading edges of the sides and the curved top of the back of the tank; I D Howitt is continuing with machining and trial fitting of hornblocks to the frame; details including footsteps have been fitted.

**Next steps:** welding on and machining of manganese liners on tender hornblocks, machining of axleboxes by I D Howitt; completion and water testing of the tender tank, followed by grit blasting and delivery to DLW.

**Fundraising:** The Tender Club was launched in April 2019 to fund the construction the tender, with a target of raising £450,000, including Gift Aid, from 250 supporters each donating £1,500 in up to eight payments of £125. As of today, The Tender Club has already attracted 50 members who have generously donated almost £50,000. For further information on how to become a member click [here](#).

## MISCELLANEOUS FITTINGS





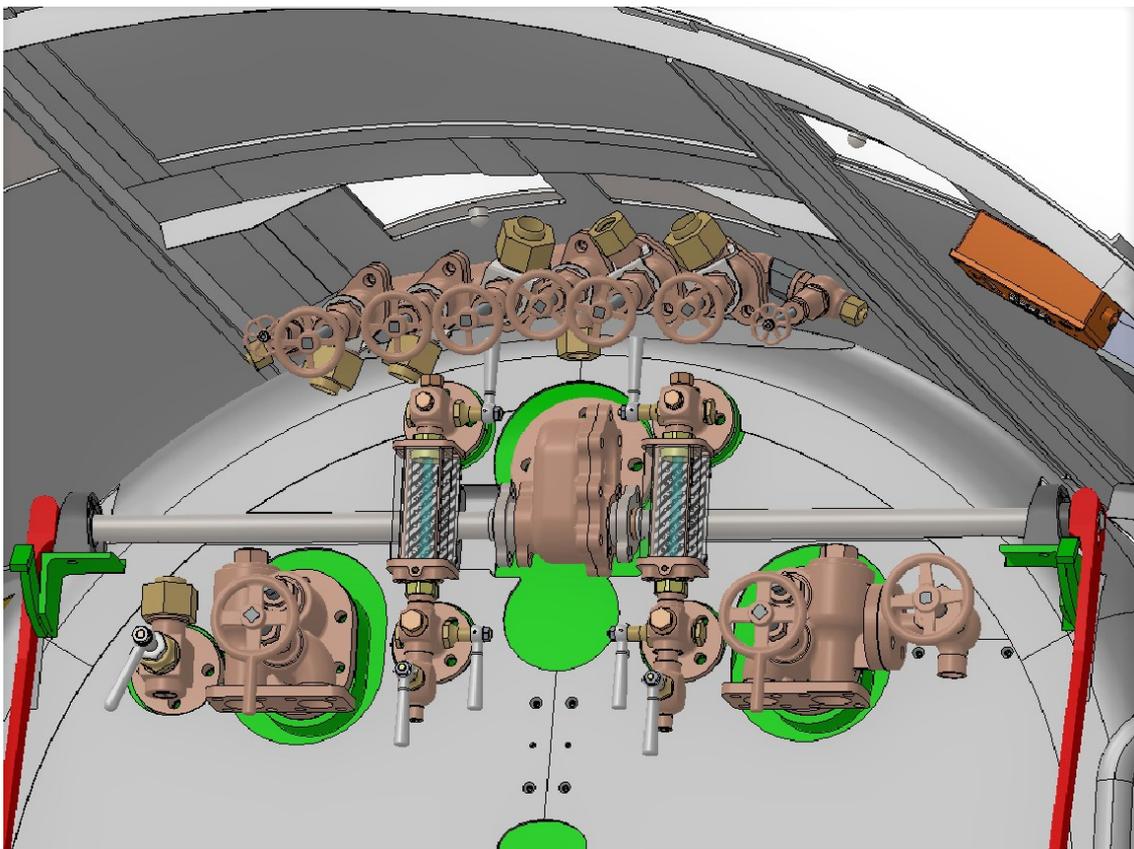
CAD images of the cylinder drain cock to cab lever mechanical linkage - *Alan Parkin/A1SLT*

## Running Gear

**Summary:** the conceptual and detailed design of the cylinder drain cock operating gear has been completed by Alan Parkin.

**Progress update:** a total of 60 profiles for cranks, bearing mountings and forked ends for pull rods have been delivered.

**Next steps:** Edward Laxton to start machining these profiles.



The steam stand pipework- *Alan Parkin/A1SLT*

## Pipework

**Summary:** the design is well advanced and installation under way.

**Progress update:** Alan Parkin has created routes for the steam heat and sander pipework through the

engine frames.

**Next steps:** completion of routing of the last major pipe run for the exhaust injector sensing pipe, ordering materials.



CAD model of lamp and a prototype luminaire - Rob Morland/A1SLT

## Electricals

**Summary:** significant progress on design and manufacture of electrical system; belt driven tender alternator nearing completion, turbine wheel for steam turbo alternator manufactured.

**Progress update:** Rob Morland and Roger Millington have been developing an LED luminaire to fit in the early LNER style oil head lamp casing; unlike *Tornado* whose prototype had electric marker lights, the new headlamps have to include white marker lights and red tail lamps in the same assembly; the design of the TPWS electrical safety system, under the cab seats, is reaching a conclusion.

**Next steps:** a major design review of the electrical system has been completed which will enable freezing of the design of several areas of the electrical system.

## Fundraising

The Dedicated Donations scheme was founded to fund numerous components including the non-ferrous fittings and has raised around £400,000 to-date with new parts being frequently made available for sponsorship. For further information, click [here](#).



Progress on No. 2007 *Prince of Wales* - Mandy Grant/A1SLT

## AN AUDIENCE WITH THE *PRINCE OF WALES*

### NEW 2020 ROADSHOW PROGRAMME

Following on from the success of our 2018 and 2019 Roadshow programme, we are continuing the Roadshows in 2020 with a series of presentations on the project to build new Gresley class P2 No. 2007 *Prince of Wales*. Each presentation will feature key team members including Mark Allatt and/or David Elliott and will cover the background to the project, progress to-date, future plans and details of how to get involved. We would encourage you to attend one of these Roadshows and bring along some friends and family members who would be interested in hearing about the project. The two hour presentations will start promptly at 11:00hrs and run until 13:00hrs\* on each of the days listed below and are open to existing supporters and interested members of the public:

- 18<sup>th</sup> January - Darlington Locomotive Works
- 29<sup>th</sup> February - London Transport Museum, Covent Garden, London
- 21<sup>st</sup> March - Great Northern Hotel, Peterborough
- 18<sup>th</sup> April - Darlington Locomotive Works
- 23<sup>rd</sup> May - Nene Valley Railway, Wansford\*
- 6<sup>th</sup> June - Hallmark Hotel, Carlisle \*
- 4<sup>th</sup> July - Darlington Locomotive Works
- 23<sup>rd</sup> July - Jurys Inn Aberdeen, Aberdeen \*
- 22<sup>nd</sup> August - Darlington Locomotive Works
- 3<sup>rd</sup> October - Darlington Locomotive Works
- 10<sup>th</sup> October - Great Northern Hotel, Peterborough
- 21<sup>st</sup> November - Darlington Locomotive Works

\* Please contact the office for timings.

For more information, visit [www.p2steam.com](http://www.p2steam.com), email [enquiries@p2steam.com](mailto:enquiries@p2steam.com) or call 01325 460163.

# OPEN DAYS AT DARLINGTON

We hold public open days at Darlington Locomotive Works on the first and third Saturday of every month from 11:00hrs to 16:00hrs.

- Saturday 4<sup>th</sup> January
- Saturday 18<sup>th</sup> January \*
- Saturday 1<sup>st</sup> February
- Saturday 15<sup>th</sup> February

Come and see the progress of No. 2007 *Prince of Wales* for yourself!

\*Saturday 18<sup>th</sup> January is also a P2 Roadshow - the presentation will run from 11:00 - 13:00.

## PRESENTATIONS

If any railway society, or indeed other interested groups, would like a presentation on the project they can contact us by emailing [enquiries@p2steam.com](mailto:enquiries@p2steam.com)

## EASYFUNDRAISING

Users of Easyfundraising to support the Trust should please note that the relationship with Amazon is changing. Rather than Amazon donating via Easyfundraising, they will now do so via their own Amazon Smile process. The A1 Steam Locomotive Trust is registered as a charity with Amazon Smile so please ensure that next time you use Amazon, you opt to join Amazon Smile and select the Trust to benefit from anything that you buy.

For anyone who doesn't use Easyfundraising but does use Amazon, please help by selecting the Trust. Just type "The A1 Steam Locomotive Trust" into the search box the click to select when it is displayed as the result. Please contact us at [enquiries@a1steam.com](mailto:enquiries@a1steam.com) for more information.

## VOLUNTEER

As ever, we are looking for more volunteers. It takes a lot of people to both keep *Tornado* on the main line and also to build *Prince of Wales*. There is always so much more that we can achieve with the right volunteers, with the right skills and can-do attitude. **We are currently looking for more volunteers to join the Open Days team at Darlington Locomotive Works.** If you have a passion for fundraising or engineering please do get in contact. For more information, please email our [volunteers coordinator](#).

## TRAVEL WITH *TORNADO*



No. 60163 *Tornado*, hauling the 'The Christmas Express' - Barry Goodey/A1SLT

For more information on *Tornado's* 2020 Raitour programme click [here](#) or call Tornado Raitours on 01325 488215.

The Trust respectfully requests that anyone wishing to see *Tornado* follows the rules of the railway and only goes where permitted.



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**Our mailing address is:**

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