

THE MIKADO MESSENGER



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



Jenny Chapman, MP, and Gerald Lee, former Mayor of Darlington, christening No. 2007 *Prince of Wales* at Darlington Locomotive Works, 2014 - *Lawrie Loveless/A1SLT*

Welcome to edition No. 57 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*.

This month marked the fifth anniversary of the official start of construction on 19th July 2014 and our 'P2 for the price of a pint of beer a week' covenant scheme passing the £200,000 per annum mark for the first time.

The project plan was subjected to a presentation and review to Mark Allatt, Graeme Bunker-James Paul Bruce, David Elliott, Daniela Filová and Terry Graham (whose work the current plan is) on 5th June. This indicated that the current substantial completion date of three years hence is still feasible, subject to funds being available. No. 60163 *Tornado* is still diluting the design resource, but with efforts to recruit additional operating engineering staff, this should improve over the coming months.

We have also changed the format of *The Mikado Messenger* from this issue to hopefully make it easier for you to track the progress we are making.

For more information on how you can help to build Britain's most powerful steam locomotive visit www.p2steam.com, email enquiries@p2steam.com or call 01325 460163.

FUNDRAISING

A P2 for the price of a pint of beer a week: over 930 supporters have signed up as Covenantors for No. 2007 *Prince of Wales* from as little at £2.50 per week and now kindly donating over £205,000 annually including Gift Aid. We aim to reach 1,000 regular donors by the end of the summer. 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 143 members, with only 32 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 is now rapidly approaching the 180 members mark, leaving just over 120 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 it is due to be delivered to Darlington Locomotive Works in July 2021. More information about The Boiler Club can be found [here](#).

Our newly launched club, **The Tender Club**, is starting to fill up with 27 places already filled. 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. ID Howitt Limited is currently manufacturing the tender frames and is making good progress. Given the traditional generosity of our supporters, we have confidently placed the order for the manufacture of the tender tank with North View Engineering Solutions of Darlington. Our target for The Tender Club is 250 members, contributing £1,500, so if you would love to contribute towards the tender more information about The Tender Club 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 £350,000. If you would like to sponsor a component, please email 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 £2m has been spent, £2.6m raised and £3.3m pledged of the required £5m to complete No. 2007 *Prince of Wales* within the next three years.

ENGINE FRAMES UPDATE



No. 2007's frames are now substantially complete; stainless steel handrails are presently being fitted - A1SLT

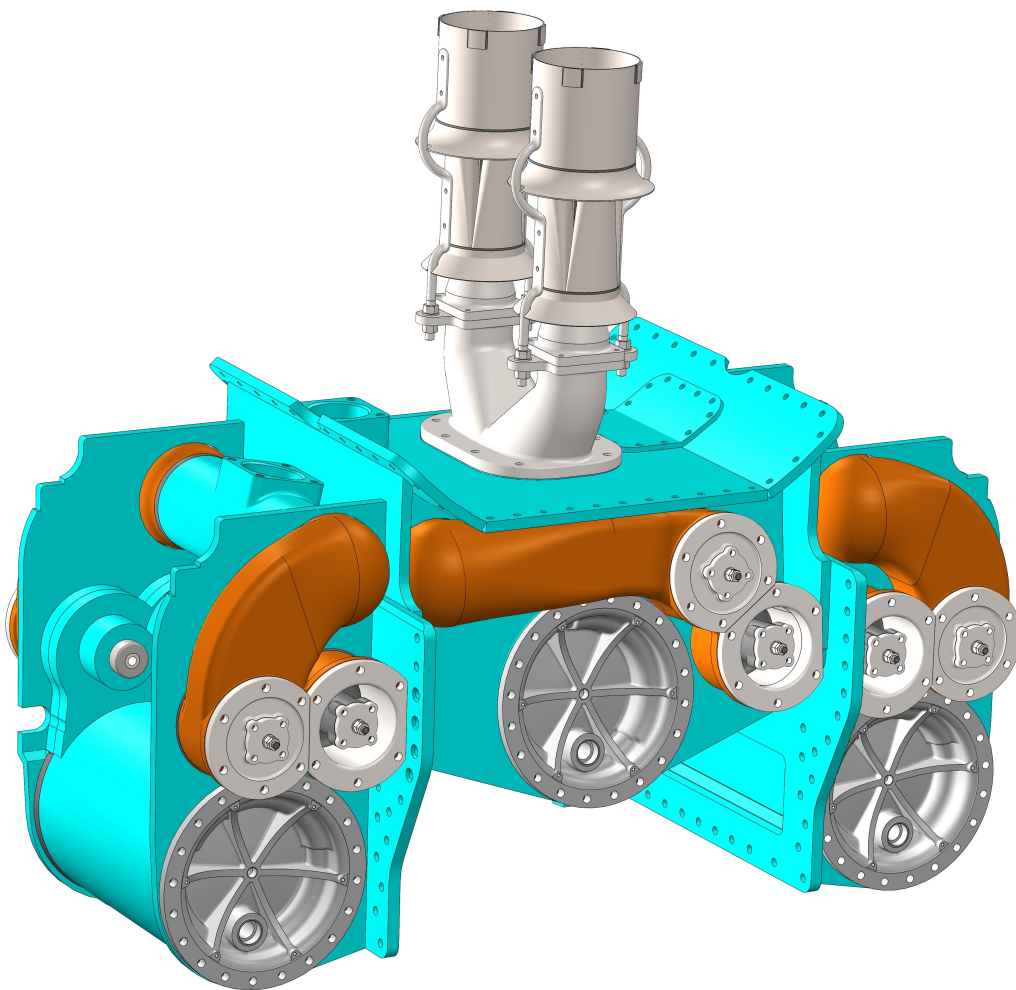
Summary: engine's frames erected; all frame stays, brackets, horn blocks, axle boxes & buffers cast and fitted using around 1,000 driven bolts.

Progress update: the left-hand motion bracket has been delivered by North View Engineering Solutions (NVES), however two non-conformances have been identified in Daniela's inspection with holes for mounting bolts being in the wrong places and some weld to plate transitions being a bit rough. The bracket has been returned for rectification but should return soon. NVES have also made good progress with the 10 spring brackets.

Next steps: Once the fitting of the handrails has been completed, the the cladding will be removed.

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



Recent CAD image of the fabricated cylinder block showing cylinder and valve covers and the Kylchap exhaust system - *David Elliott/A1SLT*

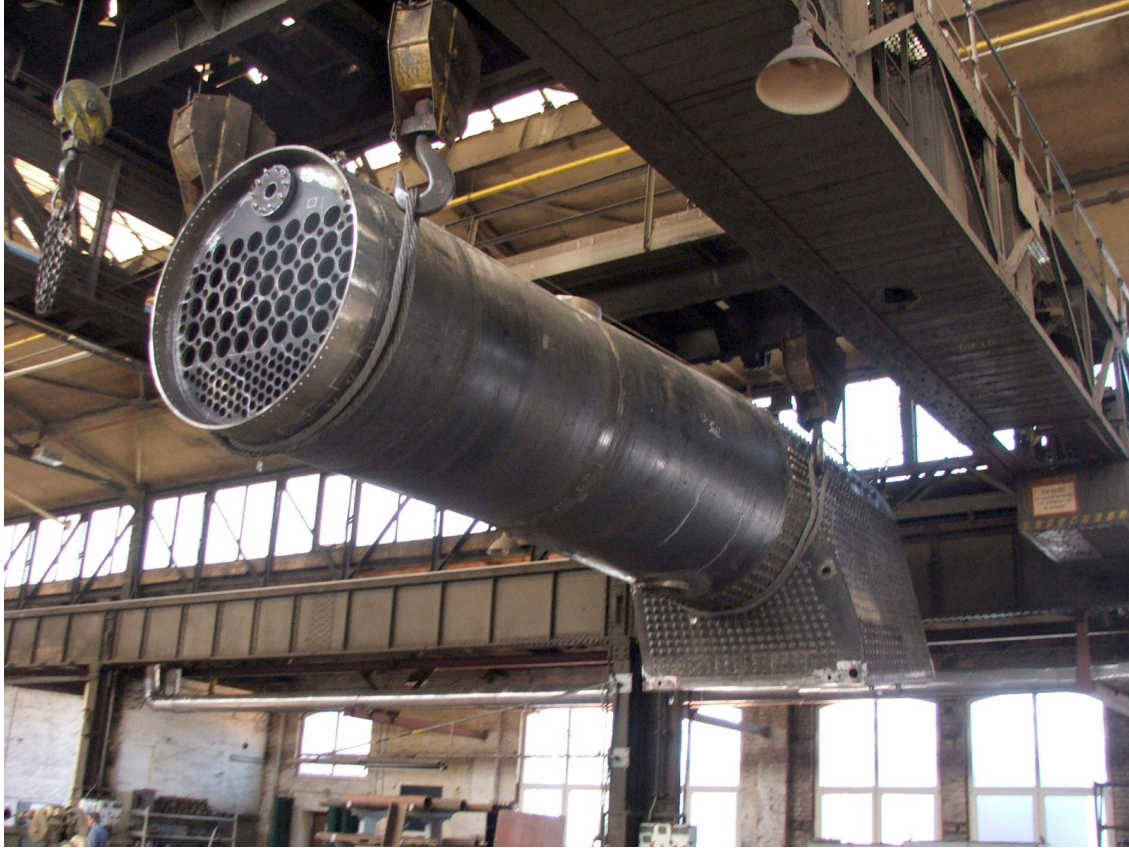
Summary: design studies into cylinder block manufacture and selection of valve gear complete; 3D CAD design of the cylinder block and valve gear substantially complete.

Progress update: We are currently seeking best and final offers for the cast steel steam passages for the cylinder block. In the meantime David Elliott has re-built the cylinder assembly model so that it works more reliably and have started detailing it including welds so that we can seek quotes.

Next steps: The cylinder steam chest cover patterns have been ordered from pattern maker John Hazlehurst of Swineshead, Lincolnshire, who has previously produced pattern equipment for the cylinder 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



No. 60163's boiler at DB Werk Meiningen, 2006 - *David Elliott/A1SLT*

Summary: boiler design study completed; forged foundation ring corners manufactured & machined; regulator castings delivered; superheater header cast & machined; Smoke box & fittings: smokebox assembled and trial fitted to the frames; chimney cast and fitted; boiler cladding manufactured and trial fitted to frames; boiler order placed with DB Meiningen for delivery in July 2021.

Progress update: on 13th June we signed a contract with DB Meiningen to supply two boilers.

Next steps: The boiler is due for delivery in early July 2021 which fits in with the project plan. David Elliott is in the process of responding to a number of design questions from DB Meiningen.

Fundraising: The Boiler Club was founded in October 2017 to fund the redesign and manufacture of the cylinder block, 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 179 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.

WHEELSETS UPDATE



The tender wheelset, axles and alternator pulley were taken to South Devon Railway by L Hunt & Sons Ltd in a very special lorry - *Richard Pearson/A1SLT*

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.

Summary: study into ride & suspension completed using Vampire® software; crank axle re-designed to comply with modern standards, approved and manufactured; all engine wheelsets complete and fitted to engine; parts for tender wheelsets delivered to South Devon Railway Engineering for assembly.;

Progress update: Daniela Filová has completed the Finite Element Analysis (FEA) on the pony truck. Work is continuing at Timsons with the pony truck cannon box machining.

Next steps: David Elliott to review FEA report and send it to Ricardo Rail for approval before we order manufacture.

MOTION UPDATE



And we are off... work has started on the first heavy motion forging: a middle coupling rod -

Robert Stephenson (Engineers) Ltd/A1SLT

Summary: all heavy motion ordered from order with Robert 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: after a series of set-backs at Robert Stephenson (Engineering) Ltd, which is making forging and machining the heavy motion, forging of the first coupling rod has just started and the equipment and new staff appear to be working satisfactorily. Daniela Filová has also completed a drawing of the return cranks which drive the valve gear.

Next steps: Daniela has completed the detailed drawing for the return cranks which drive the poppet valve gear boxes. Forging and machining quotes will be sought in the near future.

Fundraising: The Motion Club was founded in May 2018 to fund forging and machining of the heavy motion, with a target of raising £21,000 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 141 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



The tender baseplate being pre-fitted to the tender frames at I D Howitt, at Crofton- A1SL7

Summary: axlebox and other tender castings produced by William Cook Cast Products; frames being assembled by ID Howitt at Crofton; tank construction under way by North View Engineering Solutions (NVES), in Darlington; parts for tender wheelsets delivered to South Devon Railway Engineering for assembly.

Progress update: the tender base plate has been advanced to the point where it has been delivered to Crofton for Ian Howitt to pre-fit to the frames.

Next steps: the tender tank will remain at I D Howitt for a fortnight after which it will return to NVES to have the tank built up on it.

Fundraising: The Tender Club was launched in April 2019 to fund the construction the tender, with a target of raising £450,000 plus Gift Aid from 175 supporters each donating £1,52500 in up to eight payments of £125. As of today, The Tender Club has already attracted 27 members who have generously donated almost £50,000. For further information on how to become a member click [here](#).

MISELLANEOUS FITTINGS



The driver's seat trial fitted in the cab, at DLW - A1SLT

Miscellaneous engine platework

Progress: cab erected and cab side & spectacle window frames fitted; footplating & splashers kits fitted to frames.

Progress update: Ian Matthews has made good progress and almost completed the cab seat cubicles. Alan Parkin has completed the 3D modelling to fit the latest version of OTMR (On Train Monitoring and Recording) into the firemen's side seat cubicle and extending under the fireman's footstep, which much to the delight of Rob Morland will allow for a significantly larger input/output auxiliary electrical panel. With the receipt of the handrail knobs from Ian Howitt, Ian Matthews is making good progress in fitting them to the cab and cladding.



Steam stand casting, currently at DLW, ready for machining in the near future - A1SLT

Fittings

Summary: many non-ferrous fittings are being cast and machined

Progress update: the boiler prices included two sets of superheater elements and machining and fitting of regulators to both of them. Alan Parkin has been producing 3D models of fittings to populate the backhead to enable us to model pipe runs to the fittings.

Next steps: arrangements will be made to send DB Meiningen the regulator castings in due course.



Brake stays which transmit the force from the brake cylinders to the brake hangers which carry the brake blocks - A1SLT

Brakes

Summary: work well advanced on manufacture of brake rigging

Progress update: all the small brake rigging parts for the locomotive are complete and the bearing castings for the brake cross shafts have been ordered. David Elliott visited Ian Howitt this week to chase up the brake hangers and the brake cross shafts.

Next steps: Once the above mentioned items from I D Howitt Ltd are delivered, we will have all the pull rods, with the brake blocks being due for delivery this month. Apart from a few cotters and the air brake cylinders, we have all the engine brake rigging delivered or nearing completion.



The vacuum pipe [left hand-side] and exhaust steam pipe [right-hand-side] inside the frames- *A1SLT*

Pipework

Summary: design well advanced and installation under way

Progress update: Ian Matthews has continued with vacuum pipework and is presently installing the DV2 air/vacuum proportional valve and its associated isolating valve.

Next steps: Alan Parkin has been instructed to model the remaining air and steam pipework through the frames having demonstrated previous skill in this with the electrical trunkings situated between the frames.



The first of the two battery box with integral cable ducting is fabricated from stainless steel. Ian Matthew's under construction, at DLW - *Ian Matthews/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: Alan Parkin has produced manufacturing drawings for both vee and flat belt pulleys, and these have also been ordered - (the two types of pulley are required to enable the alternator to be fitted to the tender or the support coach). Alan's also completed design on the upsized battery boxes and associated trunking which Ian Matthews is fabricating out of laser profile stainless steel kits.

Next steps: we expect to be in receipt of the final externally sourced parts for the belt driven alternator shortly which will permit assembly and testing.

Fundraising: the Dedicated Donations scheme was founded to fund numerous components including the non-ferrous fittings and has raised around £350,000 to-date with new parts being frequently made available for sponsorship. For further information click [here](#).

2019 ANNUAL CONVENTION

Our Annual Convention is on **Saturday 12th October 2019** and will be held at the Mercure Darlington Kings Hotel for both the morning presentations and the evening dinner. Supporters, and their guests, will also have the opportunity to visit Darlington Locomotive Works to see the progress of No. 2007 *Prince of Wales*, with David Elliott conducting a guided tour. Invitations, with the full details, were sent out this month. If you have not received yours or would like further details please call the office on 01325 460163 or email leigh.taylor@p2steam.com



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

AN AUDIENCE WITH THE *PRINCE OF WALES*

Following on from the success of our 2018 Roadshow programme, we will be continuing the Roadshows in 2019. We will be holding 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 presentation 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:

NEW 2019 ROADSHOW PROGRAMME

- Saturday 14th September 2019 - Hilton Hotel, Leeds
- Saturday 2nd November 2019 - Darlington Locomotive Works, Darlington
- Saturday 7th December 2019 - Pendulum Hotel (Manchester Conference Centre), Manchester.

For more information on the P2 Roadshows visit www.p2steam.com, email 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 3rd August
- Saturday 17th August
- Saturday 7th September
- Saturday 21st September

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

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

EASYFUNDRAISING

Why not help the Trust at the same time by doing your online searches through EasyFundRaising: painlessly raising cash for The A1 Steam Locomotive Trust every time you spend online? You can find details of how to do this [here](#).

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 raising money or engineering please do get in contact. For more information, please [email us](#).

TRAVEL WITH *TORNADO*



No. 60163 *Tornado* at Bo' Ness ready for her Aberdonian duties - Richard Pearson/A1SLT

For more information on *Tornado's* 2019 Raitour programme tours 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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