

THE MIKADO MESSENGER



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

Welcome to edition No. 23 of The Mikado Messenger. The Messenger aims to provide a regular bulletin of news about the construction of No. 2007 *Prince of Wales*.

Progress continues to be made at Darlington Locomotive Works with more and more material being added to the frames. Although the chassis will not be wheeled in time for the Convention, those attending will be amazed by the extent of construction since last year.

graham.langer@p2steam.com
Editor of The Mikado Messenger

WHEELSETS

The wheelset assembly is presently being held up by late delivery of axles from South Africa. In order to minimise further delay, Railway Wheelset and Brake Ltd who are the UK agents for the South African company making the axles are arranging for them to be air freighted to the UK instead of the normal sea freight. In the meantime some standard axle stock has been delivered to Unilathe at Stoke on Trent who have been contracted to make the crank pins and complete the machining of the axles.

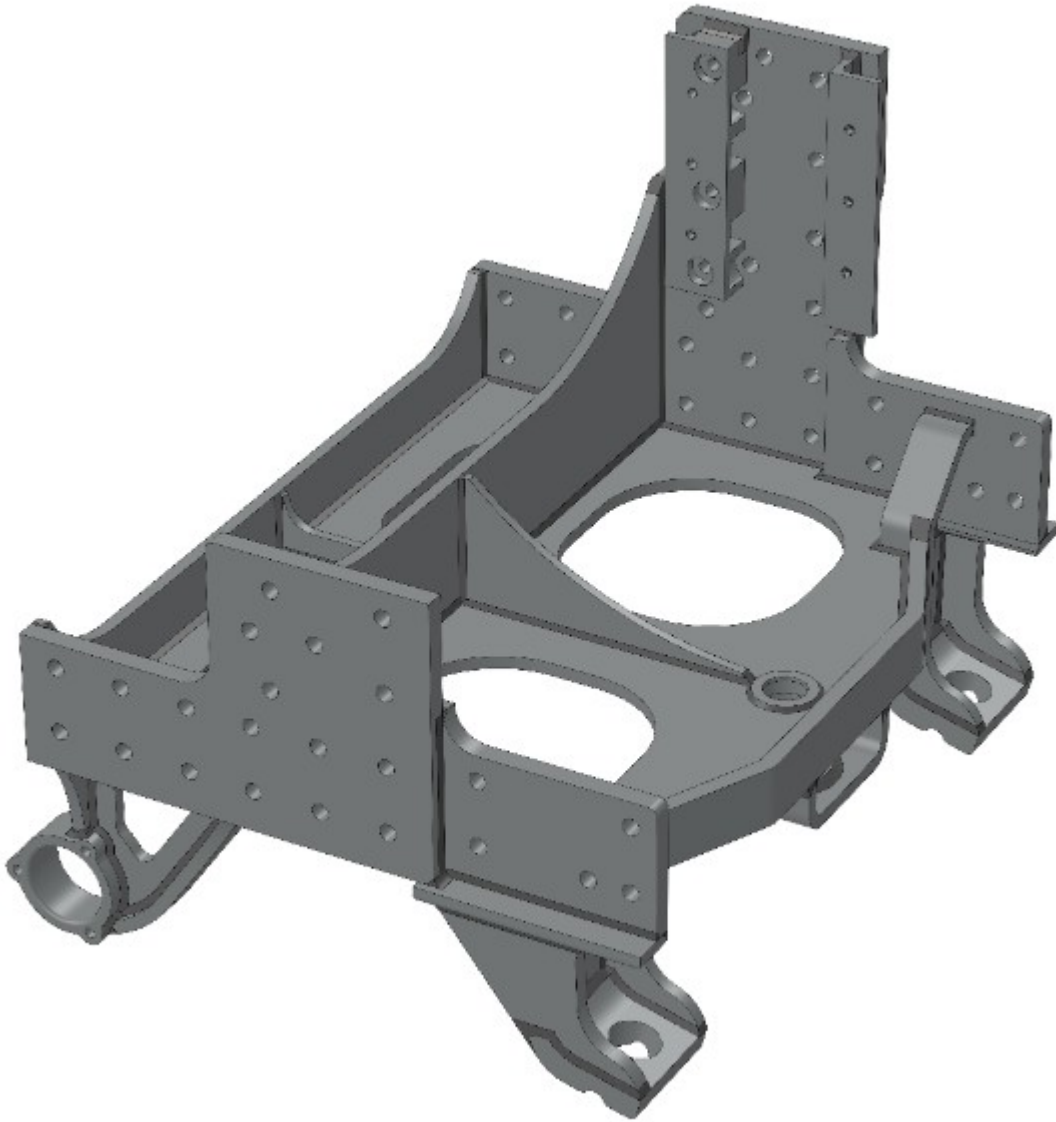
SMOKEBOX

The closure plates around the smokebox door have been fitted and the smoke lifting plates grit blasted. The chimney has been returned to Darlington Works and will be fitted into the smokebox shortly.

FRAMES

North View Engineering is progressing well with the leading brake stay which is last of the major frame stays that have been redesigned as welded fabrications from the original castings. This stay which on the original P2s carried two vacuum brake cylinders and the leading brake cross shaft,

included the front spring hangers for the leading coupled wheelset and also carried the pivot for the pony truck. This has been modified to replace the two vacuum cylinders with a single 12" air brake cylinder. Ian Matthews has continued to work on final fitting the footplating including the raised platforms over the cylinders.



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CAB

The main activity over the last few weeks has been final assembly by riveting of the cab. This completes the main cab structure enabling the brake equipment cubicle which forms the cab floor to be welded into place. This greatly increases the rigidity of the cab making it easier to lift on and off the frames. The runners are being made for the sliding cab side windows.



DESIGN

The design activity has continued to provide manufacturing drawings for the workshop as well as a major effort to bring the design of the one-piece cylinder block to a stage where we are able to approach possible manufacturers. Our original idea was to make the block as a welded steel fabrication (a common practice in Germany and the United States in the final days of steam), however our sponsor, and Principal Sponsor for *Tornado*, William Cook Cast Products, has expressed an interest in looking into the possibility of producing it as a steel casting. A meeting is scheduled to take place shortly to progress this proposal.

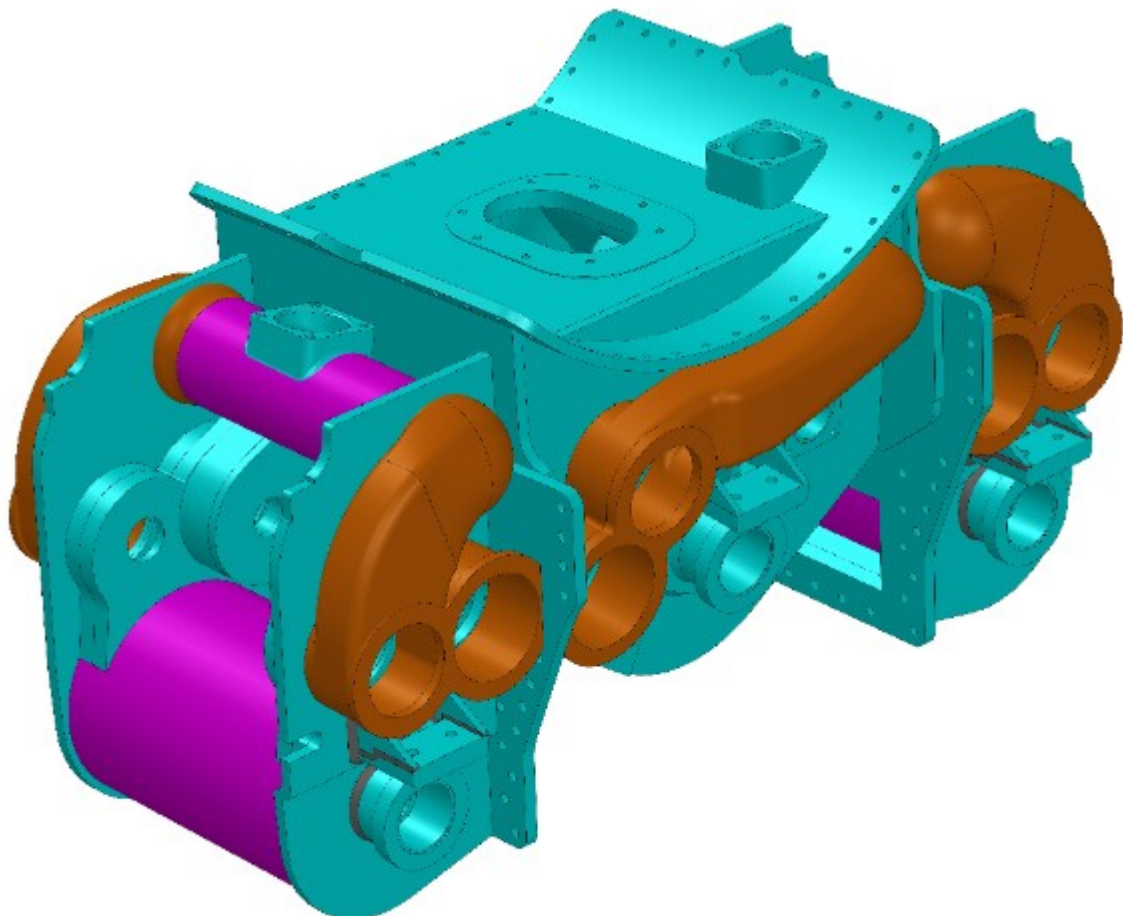
The cylinder block has been extensively re-designed to overcome some of the known problems with No. 2001 *Cock o' the North*, principally around separation of steam and exhaust passages within the cylinder block to reduce the tendency of the incoming live steam to transfer a significant amount of heat to the outgoing exhaust steam and to minimise the clearance volume in the cylinders. The clearance volume is the space left in the steam ports and the end of the cylinder when the piston is at the end of its stroke, and which was considered excessive on the original P2 poppet valve design. Both these features reduce the efficiency of the cylinders and give rise to high coal and water consumption. We are also having to address the overall width of the cylinders to meet modern clearances with platforms, and which needs to be reduced by 2" to give us the widest route availability. This is being achieved mostly by using higher pressure steam (250 PSI compared with the original 220 PSI) which enables the cylinder diameter to be reduced from 21" to 19.75". The balance of 0.75" reduction in width is being achieved by using steel instead of cast iron for the cylinder block which permits the cylinder walls to be thinner.

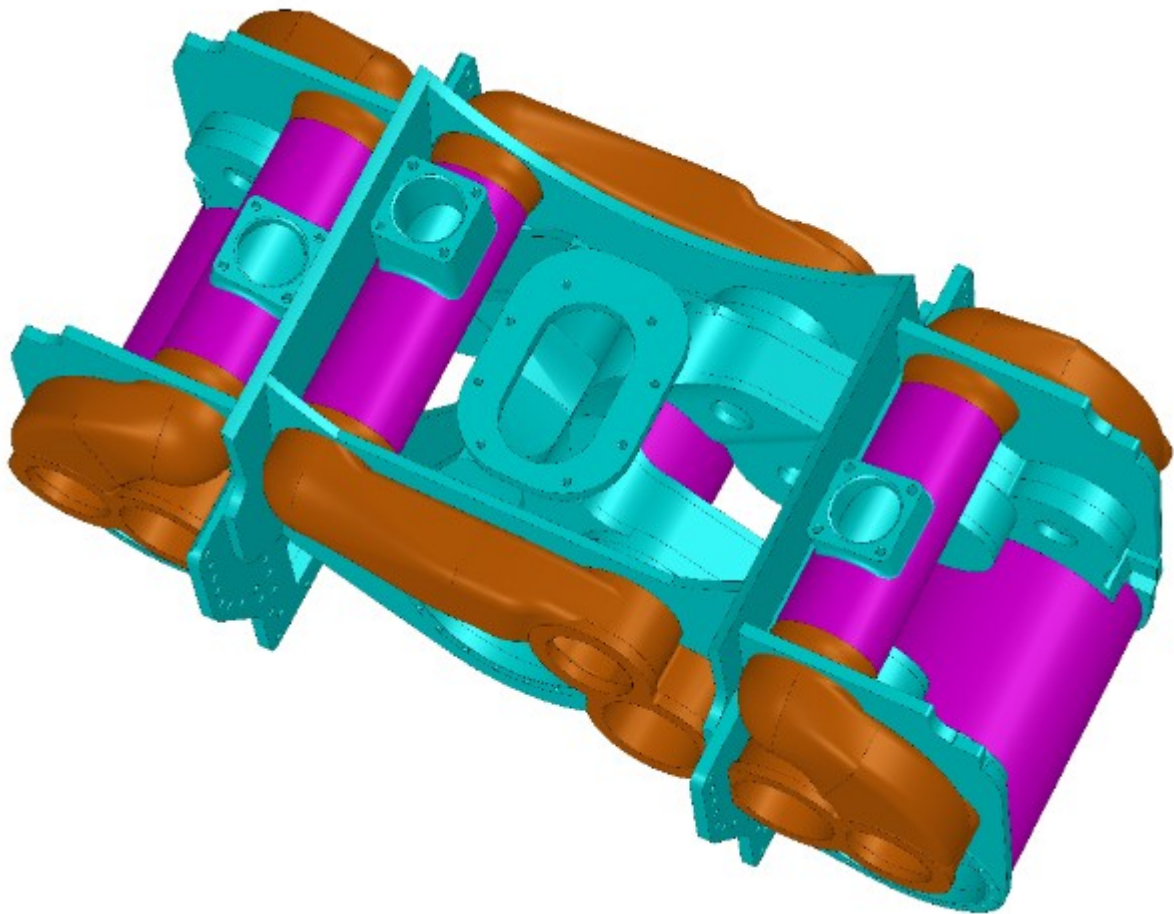
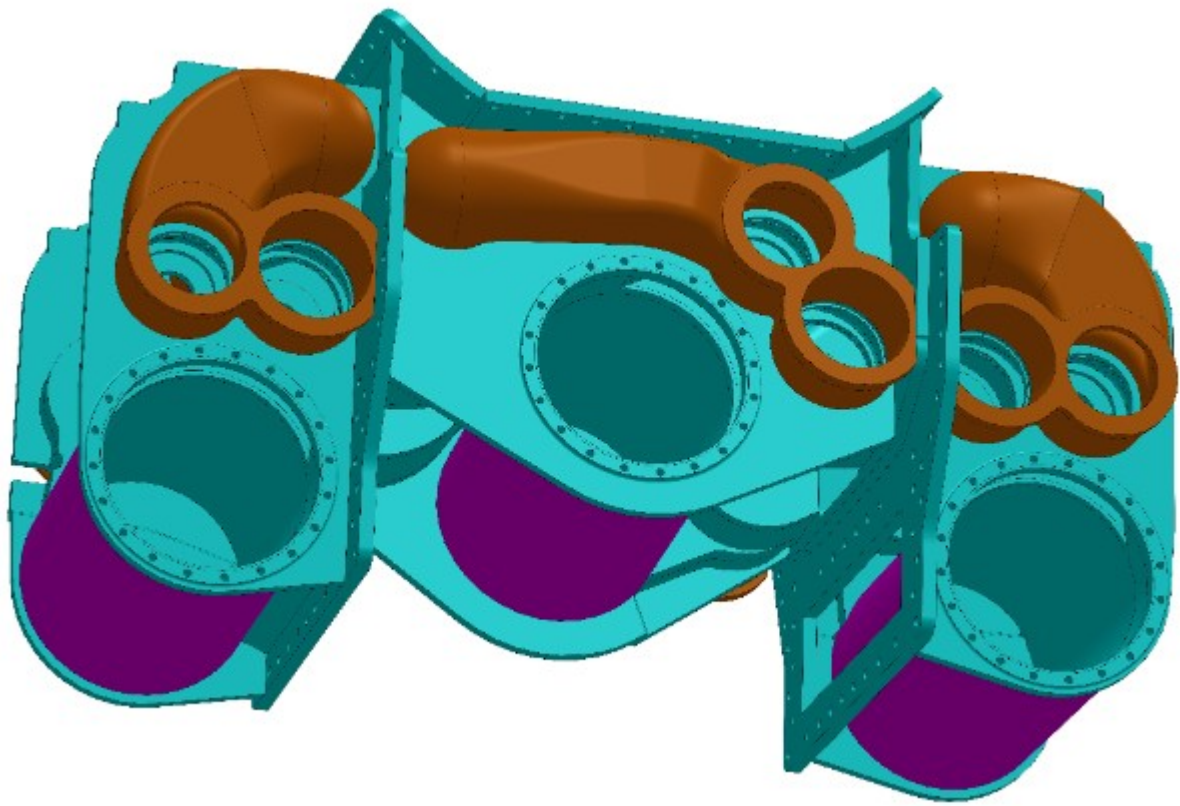
Key to CAD drawings:

Turquoise - welded fabrications from plate and machined from flame cut blanks

Brown - cast valve chests and steam passages

Magenta - cylinders and steam chests from tube





Note: Illustrations 1 and 2 are of the complete block, Illustration 3 has the smokebox saddle removed to enable the exhaust passages to be seen. The model still requires welding details.

FUNDRAISING

Public interest in seeing a new Gresley class P2 become a reality sooner rather than later is high and 770 people have already signed up to the 'P2 for

the price of a pint of beer per week' (£10 per month or more) covenant scheme since its launch. In addition to this core scheme, funds have been raised through The Founders Club (over 360 people have donated £1,000 each - target 100 people, now closed), The Boiler Club (well over 100 people have pledged £2,000 each - target of 300 people), The Mikado Club (80 people have pledged £1,000 each - target 160 people/£200,000), Dedicated Donations (over £180,000 from existing supporters sponsoring a variety of components) and the sponsorship of the locomotive's distinctive front-end by The Gresley Society Trust. This means that the project has already received pledges of 45% (including Gift Aid) of the £5m needed to complete the new locomotive by 2021.

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.

THE MIKADO CLUB

WE WANT EIGHT AND WE WON'T WAIT - £200,000 appeal launched to wheel No. 2007 *Prince of Wales* by the autumn.

On 29th March we announced a new £200,000 appeal to wheel No. 2007 *Prince of Wales* by autumn 2016. When achieved, it will be the first time for over 70 years that one of this iconic class of locomotives has stood on its wheels - the last original Gresley class P2 No. 2003 *Lord President* was rebuilt into an ungainly Thompson class A2/2 Pacific in December 1944.

Following the success of The Founders Club (to get the project to the point of cutting the frames) and The Boiler Club (to fund the construction of the boiler), the Trust has decided to establish The Mikado Club to raise an estimated £200,000 required to wheel No. 2007 during 2016.

If the project to complete No. 2007 *Prince of Wales* in 2021 is to remain on schedule the engine needs to be wheeled this year. The Trust has therefore set itself the challenge of raising £200,000 through The Mikado Club from 160 supporters each donating £1,000 (plus Gift Aid) to the project in up to eight payments of £125 by standing order. This estimate excludes the components already ordered or delivered such as wheels, tyres, axles, bearings and cannon boxes some of which are still available to sponsor as Dedicated Donations.

In return for supporting this appeal, special benefits for members of The Mikado Club include:

- Reserved seat on one of No. 2007's first main line train
- Reasonable access to No. 2007
- Opportunity to purchase an exclusive Mikado Club badge
- Opportunity to join one of the teams building No. 2007
- First choice of other components to sponsor
- Special limited edition version (signed/numbered) of Stephen Bainbridge's new painting of No. 2007 *Prince of Wales* at Darlington station
- Special Mikado Club day with *Tornado*.

We are confident that we will have completed the rolling chassis for No. 2007 *Prince of Wales* in early 2017 having reached 50% of our target for The Mikado Club. We would encourage those of you who haven't yet contributed to this exciting project to help us to meet these deadlines by becoming a member of The Mikado Club. It's time to get on board!

To become a member of The Mikado Club, email enquiries@p2steam.com, call 01325 460163 or visit www.p2steam.com for more information.

THE BOILER CLUB

It is our desire to leave No. 2007 *Prince of Wales* debt free upon completion and therefore our aim is to raise at least £600,000 for The Boiler Club from 300 supporters each donating £2,000 to the project (in up to 40 payments of £50 by standing order).

Special benefits for members of The Boiler Club:

- Opportunity to buy a ticket (seat already reserved) on one of No. 2007's first main line train
- Reasonable access to No. 2007
- Opportunity to purchase an exclusive Boiler Club badge
- Opportunity to join one of the teams building No. 2007
- First choice of other components to sponsor
- Special limited edition version (signed/numbered) of the first official painting of No. 2007 *Prince of Wales* with No. 60163 *Tornado*
- Special Boiler Club day with *Tornado*

For more information on how you can help to build Britain's most powerful steam locomotive [visit our website](#), [email us](#) or call 01325 460163.

P2 BOILER CLUB & MIKADO CLUB EXCLUSIVE BADGES

P2 BOILER CLUB & MIKADO CLUB EXCLUSIVE BADGES ARE NOW AVAILABLE TO BUY!

These badges are only available to Boiler Club or Mikado Club members.

To purchase your badge please send a cheque for £5 made payable to The P2 Steam Locomotive Company to The A1 Steam Locomotive Trust, Darlington Locomotive Works, Hopetown Lane, Darlington DL3 6RQ

DEDICATED DONATIONS

Since its launch in 2014, 236 individual components have been sponsored as part of the Dedicated Donations Scheme, this is in addition to many of the smokebox components which have been sponsored directly by The Gresley Society Trust.

If you would like to sponsor a component on No. 2007 *Prince of Wales*, please contact dedicated.donations@p2steam.com

PRESENTATIONS

If any railway society - or indeed other interested group - would like a presentation on the project they should contact us by email enquiries@p2steam.com

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. Please email enquiries@p2steam.com if you think you can help.

For more information on the project to build Gresley class P2 No. 2007 *Prince of Wales* please visit www.p2steam.com, email enquiries@p2steam.com or follow us on Facebook, Twitter and LinkedIn.



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Website



Email

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Our mailing address is:

The A1 Steam Locomotive Trust, Darlington Locomotive Works, Hopetown Lane, Darlington. DL3 6RQ