

**2022 Autumn Conference held at the “Head of Steam Museum”, Darlington,  
15<sup>th</sup> – 16<sup>th</sup> October.**



*Conference attendees paid a visit to the A1 Steam Trust’s workshop  
to see the progress being made on the Trust’s new-build P2 No. 2007 “Prince of Wales”*

Our 2022 conference turned out to be another successful event that seemed to have been enjoyed by all who attended. There were 28 attendees, up 50% on 2021, but only a little over half the number in 2019, due partly to travel uncertainty (rail strikes) and Covid concerns. Owen Jordan had to pull out a day or two before the conference when he came down with the dreaded virus.

Five of our speakers spoke on a range of new topics, while four expanded on presentations from earlier conferences, as summarised below:

- **Andrew Hartland** presented the third part of his investigations into “Why Did BR Give Up on Steam?”. This year he covered freight locomotives in which he took the BR Class 56 Diesel Electric as the pinnacle of diesel freight in the 1970s to compare with the potential that then existed for steam technology. He concluded that a steam equivalent could have been developed but that it would have had to have had an adhesive weight higher than that of the conceptual 8AT and a geared jack-shaft drive to overcome steam’s limitation in terms of driving wheel diameter and the need to maintain high engine RPM.
- **Hendrik Kaptein** presented a paper on the “Mechanical Efficiency of Reciprocating Steam Locomotives” in which he spelled out the problems of measuring mechanical losses (or mechanical resistance) in steam locomotives and suggested some remedies to improve such measurements (e.g. resurrecting the use of a pendulum) and adopting pure torsional transmission (e.g. as used on the DR 19<sup>1001</sup>).
- **Richard Pearson** gave an introductory talk on the A1 Steam Trust’s new-build P2 locomotive which his audience would be inspecting that afternoon. He explained the extensive use of parts

(including the boiler) that are common with the Trust's A1 Pacific "Tornado", and the design changes that have been made to overcome problems experienced with the prototype P2, most notably the leading pony truck and the arrangement of poppet valves for the middle cylinder.

- **John Duncan** presented a paper on "CPR Aylth Roundhouse and Diesel Depot" in which he described his experiences working as a machinist on the Calgary Division of the Canadian Pacific Railroad in the late 1950s.
- **Adrian Tester** presented a paper on the "Physiology of the Locomotive Boiler" – a follow-up to the similarly titled paper that he presented to ASTT's 2017 conference. Adrian has loaned the text of his talk to Chris Newman who will transcribe it and circulate it amongst those who attended the conference.
- **Steve Rapley** (ASTT Member and CME of the General Steam Navigation Society) presented a paper on "Improving Performance & Efficiency of 35011 General Steam Navigation", focussing on the three principal deficiencies of the original design – the unbalanced crank axle; exhaust drifting, and low performance efficiency.
- **Ian Gaylor** and **Rob King** (ASTT Member and CME of the Bure Valley Railway) gave a talk on the "Development of the Bure Valley ZB locomotives", describing improvements made to valves, ports, cylinders and steam chests that have transformed the performance of the railway's two ZB-type locomotives.
- **John Hind & Ian Gaylor** presented an update on ASTT's involvement in "Trials and Research into Coal Substitutes, describing how they plan to seek funding to cover the significant costs of developing a commercial solid fuel alternative to coal.
- **Jamie Keyte** gave an update on the work that he has been doing on "the design and construction of *Revolution*". He brought with him the assembled main frame for the locomotive, together with the almost completed pony truck, coupling and connecting rods and a set of suspension/axle-positioning components.

Unfortunately no sound recordings of the presentations were made, but the nine PPT files have been uploaded to ASTT's website.

The 29 members who were in attendance are listed below:

Adrian Tester	Graham Shirley	John Hind	Richard Coleby
Alex Powell	Gwion Clark	Les Turner	Richard Mellish
Andrew Hartland	Hendrik Kaptein	Marcus Harriott	Steve Rapley
Chali Chaligha	Eelco de Bode	Mike Stockbridge	Terry McMenamin
Chris Newman	Ian Gaylor	Nigel Barnes	William Powell
Chris Parmenter	Jack Walker	Paul Winstone	
Dave Reynolds	Jamie Keyte	Pep Alemany	
Geoffrey Ayers	John Duncan	Rob King	

Apologies were received from Owen Jordan who came down with Covid just before the conference, Cedric Lodge, Mike Horne, Alan Barnes, David Nicholson, Doug Landau, Grant Soden, Iain Jack, Iain McCall, James Evans and Peter Lewis.

## **2022 Conference Dinner at the Redworth Hall Hotel, Darlington, 15<sup>th</sup> Oct.**

26 members attended the conference dinner at the Redworth Hall Hotel located five miles out of Darlington – see photos below.



*Conference Dinner at Redworth Hall Hotel, Darlington. 26 diners attended.*