

AUSTRALIAN ASSOCIATION OF LIVE STEAMERS TROPHY

2025

Hosted by Rugby Society of Model Engineers

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The Australian Association of Live Steamers Trophy is presented to the Federation of Model Engineering Societies to commemorate the affiliation of the two Associations for annual competition at the Federation's Autumn Rally under the following rules.

The AALS Trophy shall be awarded annually to the miniature working steam locomotive judged to be the best example of a Commonwealth prototype in any gauge between and including 2½ in. and 7¼ inch.

Competition for the AALS Trophy shall be open to all members of Clubs and Societies affiliated to FMES and such members may nominate their locomotive for judging. If deemed appropriate, the Judges may include other locomotives present on the day but not nominated.

FMES shall convene a Judging Panel comprised of the previous year's winner, a representative of FMES and a person nominated by the host society.

In the event that the Judges do not consider a required standard has been attained they may decline to award the AALS Trophy.

The winner may hold the AALS Trophy for a period of twelve months or less as directed by FMES and shall subsequently receive a suitably inscribed memento of the award bearing his or her name and a brief description of the winning locomotive.

A locomotive may only win the AALS Trophy once.

Only the owner of a locomotive is eligible to compete but may nominate a driver for the event.

If not the builder, the owner shall declare ownership and identify the builder.

Professional model engineers shall not be eligible to compete

AALS shall be informed of the outcome each year, whether or not the AALS Trophy is awarded.

A photographic record of each winner shall be prepared for AALS records.

Photographs should show the builder with the AALS Trophy and views of the locomotive.

The Judges' decision is final and no correspondence will be entered into by either FMES or AALS

Winners of AALS Trophy since 1988

Year	Winner	Club	Loco	Venue
1988	Francis Staines	Staines SME	5" Britannia	Whitchurch (Cardiff)
1989	Graham Gain	Birmingham SME	5" LTSR 4-4-2T	Canvey
1990	Ron Price	North London SME	3½" LNER A4	Peterborough
1991	Gerry Tull	SMEE	5" SR King Arthur	Worthing
1992	John Heslop	Ryedale SME	5" LNER P2	Brighouse & Halifax
1993	Martin Parham	Maidstone MES	5" LMS/BR Duchess	Frimley
1994	Robert Booth	Brighouse and Halifax	5" LSWR T3	Edinburgh
1995	David Mayall	Bracknell RS	3½" BR Std Class 4	Newport
1996	Not awarded – no eligible entry.			Ascot
1997	Andrew Breese	Worthing and District	5" LBSC 0-4-2	Fareham
1998	Roland Thomas	Merthyr Tydfil	5" LNER B1	Nottingham
1999	John Richardson	Brighouse and Halifax	5" Crampton	Cardiff
2000	Not awarded - few attended due to petrol crisis			Kinver
2001	Graham Rayner	Brighouse and Halifax	5" GCR 4-4-2	Chesterfield
2002	John Hancocks	North Wilts MES	5" GWR Hall	Hereford
2003	Bernard White	Maidstone MES	3½" Britannia	Saffron Walden
2004	John Peterson	Norwich and District	5" North London 4-4-0	Maidstone
2005	Edgar Playfoot	Maidstone MES	5" MR 4-2-2	Reading
2006	Tony Wall	Leeds SMEE	5" LNER B2	Brighouse
2007	John Cousins	Harrow and Wembley	5" BR Std Class 5	Canvey
2008	John Wilks	Crawley ME	5" GNR Sturrock Steam Tender 0-6-6-0	Bracknell
2009	Richard Linkins	Romney Marsh MES	5" BR Std Class 2	Oxford

Year	Winner	Club	Loco	Venue
2010	Alan Ruston	Birmingham SME	5" Merchant Navy	Rugby
2011	David Beale	Leeds SME	5" LMS Black 5	Nottingham
2012	Glyn Winsall	Rugby MES	5" SR/BR 2-6-0	Chelmsford
2013	Bernard Clark	Northampton SME	3 ½" Ivatt Class 4	Northampton
2014	David Kerry	Chesterfield DMES	5" BR Class 9F	Leeds
2015	Ian Roberts	Basingstoke DMES	5" GWR 0-6-0 PT	Southampton
2016	Ivan Hurst	Bracknell RS	5" SR/BR 2-6-0	Guildford
2017	Bernard White	Maidstone MES	5" Rebuilt MN	Fareham
2018	Tom Parham	Maidstone MES	5" LMS Jinty 0-6-0T	Cambridge
2019	Les Pritchard	Harlington LS	5" L&Y 0-6-0 A Class	Maidstone
2020	Rally cancelled due to Covid Pandemic			
2021	Martin Parham	Maidstone MES	5" GW 28XX	Reading
2022	David Mayall	Bracknell	5" BR Std Class 2	Sutton Coldfield
2023	Paul Norrington	Romney	5" 'Schools' Class 'Epsom'	Frimley
2024	Les Brimson	North London	5" SE&CR Class L	Nottingham
2025	Ron Head	City of Oxford SME	5" LSWR 488 Adams 415 Class 4-4-2T 'Radial Tank'	Rugby



Owner and re-builder Ron Head







Ron Head's discourse

LSWR Adams 415 class locomotive



The 415 class of 4-4-2 tank locomotives was introduced by the London & South Western Railway in 1882, mainly for suburban passenger work on the lines radiating from Waterloo. Designed by William Adams, the class was built over a period of three years and eventually numbered seventy-one engines. At that time, the LSWR's workshops were at Nine Elms in London, the move to Eastleigh being many years in the future. Nine Elms was at full capacity building express 4-4-0 types, so the 415 class was let to external contractors. Robert Stephenson built twenty-eight in two batches, Dübs built twenty in two batches, Beyer Peacock built one batch of twelve, and Neilson built one batch of eleven. There were significant detail differences between each of the six batches, to trap the unwary modeller! They were known as 'radial

tanks' on account of the trailing axle, the axleboxes for which moved radially in curved guides to follow the track curvature – an arrangement perhaps unusual for the LSWR, but widely used by other railways.

Withdrawal of the class began with the electrification of the suburban routes from 1913 onwards. By the time of the grouping in 1923, only twelve engines remained and these too were all withdrawn by 1928, save for two which were retained to work the Lyme Regis branch, no other class being deemed suitable. These two were given new main frames of a different shape, and carried twin slidebars in lieu of the original single bar. One further engine, which had been sold to the Ministry of Munitions in 1917, and subsequently acquired by the East Kent Railway, was re-purchased by the Southern Railway in 1946. Thus, three engines entered BR service in 1948 and continued working the Lyme Regis branch until 1961, the former EKR example being preserved at the Bluebell Railway.

My 5" gauge model represents a 415 class engine as originally built, being basically to the design by Kelvin Moonie, and carries the Adams pea green livery with stovepipe chimney. It was acquired by me in 2017, basically in running order but in much need of attention. Over a period of two years, it was dismantled and re-built from the frames upwards, with re-painting as required. Many mechanical parts and fittings, and much pipework were replaced. One driving axle was found to be cracked longitudinally, and this had caused excessive wear to an axlebox, probably due to the crack acting as an oil scraper. All four driving axleboxes were bored out to a larger diameter, which necessitated new axles. All wheels were re-profiled and the driving wheels were keyed onto the new axles, while the incorrect balance weights were replaced by new ones. Much of the motion, including piston and valve rods, slide bars, eccentrics, crankpins, weighshaft and lifting links were re-made, and the rods were re-bushed.

Modifications were made to the regulator, axle pump, clacks and blowdown valve to improve their operation, and a new no. 4 injector was fitted. The water gauge bottom nut had an upward sleeve added to mask the lower end of the glass, due to the boiler bush being too low to ensure water coverage over the firebox crown. The lubricator was redesigned and re-built with a ratchet replacing the roller clutch, which had worn the drive shaft to the point where it no longer gripped. A problem with steam blowing back into the lubricator tank was cured by fitting check valves of an improved design. New soft-pop safety valves, spark arrestor, water valve, bypass valve, water strainers, stainless steel grate and ashpan, all to my own design were fitted. The springing was adjusted to place most of the weight on the driving wheels for adhesion, whilst keeping just enough weight on the bogie and trailing truck to prevent derailment. The smokebox door was re-profiled to the correct Adams profile and made an airtight fit.

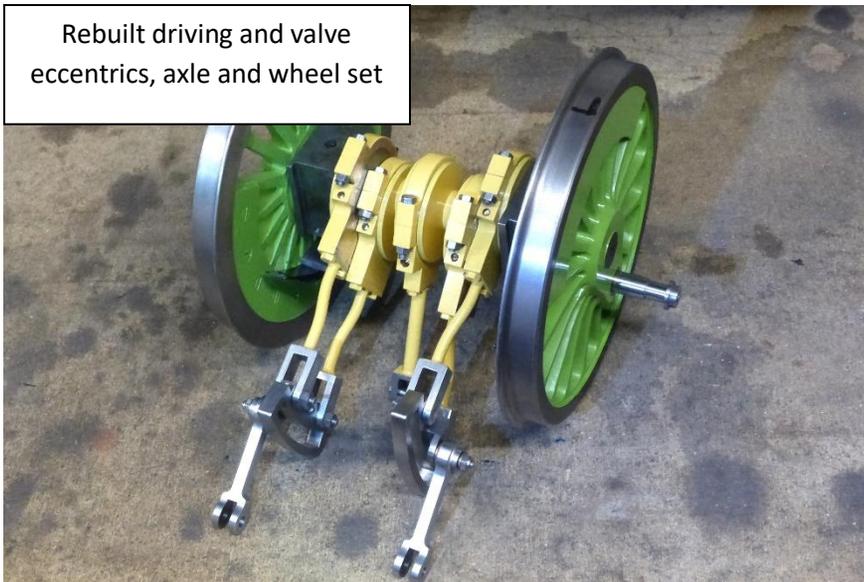
The valve gear was modelled using CAD. This led to a partial re-design, including altering the eccentric advance angle from 30° to 27.5° to reduce the excessive lead towards mid-gear, which is endemic with Stephenson's valve gear. This has resulted in a much smoother-running engine which will happily run with the reverser one notch off of mid-gear. The eccentrics were set with the driving wheelset mounted in the lathe, and an article on how this was done will hopefully appear in the FMES technical library.

Much research has been undertaken, and many details have been added for historical authenticity, although there is still scope for more. The original Adams pattern cowling was added to the safety valves, and a full set of LSWR female lamp brackets was fitted at each end to carry the disc and diamond route indicators in use at the time. The buffer heads were drilled through for a concealed fixing, as per the original Adams buffers. Planked wooden tops were made for the side tanks and dummy sanding gear, vacuum hoses and other details added. Is a model ever really finished?

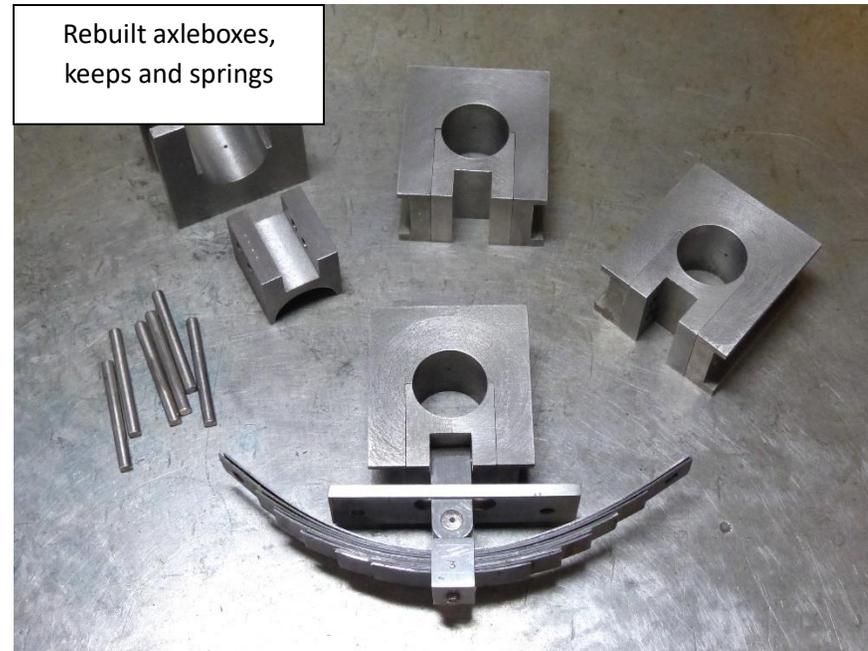
The model has now run for over 300 miles in my ownership, being a regular performer at the City of Oxford club's track at Cutteslowe Park, and it has also visited five other tracks. I initially declined the AALS award at the 2025 Federation rally on the grounds that the engine wasn't 100% my own work, but I suppose that also applies to many of the engines on today's tracks. Eventually, I was persuaded that it was the overall quality of the model that counted, so the judges' decision was final!



Rebuilt driving and valve eccentrics, axle and wheel set



Rebuilt axleboxes, keeps and springs



Illustrations of some of the rebuilding work described in the discourse



Ron receiving the AALS trophy from Bob Polley, Chairman of FMES