



## **Newsletter No. 4 – issued 6<sup>th</sup> May 2017**

Edited by Cedric C Lodge

Welcome to our Newsletter No.4.

We follow the stories which appeared in our previous Newsletter, with additional reference to our recent AGM, the forthcoming Workshop/Seminar, and the Autumn Conference.

There is also a note concerning Phil Girdlestone.

### **Chairman's Notes:**

**John Hind**

John's notes will be circulated following the Birmingham Seminar – see below.

### **Committee:**

**Cedric Lodge**

We held a committee meeting on the morning of 4 March, at which it was noted that Mike Horne, our longstanding Secretary, had expressed a wish to stand down from that position. Mike has served as Secretary for many years, and we are pleased to record our thanks for his devotion. He has been succeeded by Cedric Lodge, who is now Secretary for both the Trust and Services Company.

### **Annual General Meeting:**

**Cedric Lodge**

Following our Committee Meeting on 4 March, we held our Annual General Meeting - a simultaneous event which covered both the Trust and Services Company. A copy of the Minutes and Appendixes of the Annual General Meeting will be circulated to Members before being posted onto our web site.

Following the formal proceedings, a number of papers were presented which are summarised briefly below.

### **General Meeting Presentations:**

**Cedric Lodge**

Following the morning AGM, the afternoon was taken up by a general meeting at which Members were regaled by a number of fascinating presentations:

Richard Coleby gave an inspirational presentation in which he advocated the design and construction of a modern steam locomotive for the main line. We thought it was all over, but Richard thinks not.

David Pawson, a renowned student of steam locomotive performance, gave members an illuminating analysis of the various efficiencies which determine the success (or otherwise) of a steam locomotive. He believed that the famed designers did as good a job as was possible with the

science and technology at their disposal. At the end of the presentation, John Hind commented that the steam locomotive- although a machine which changed the world, no one fully understands.

Jamie Keyte outlined a novel approach to the construction of a modern steam locomotive: build them in kit form! Versions could be designed to meet a variety of preferences: tank or tender; Belpaire or round topped firebox; and-provocatively, even North Eastern or Great Western outline.

Owen Jordan gave us an update on progress with the York Rotary Engine, an enigma if ever there was one. For those who missed Owen's earlier presentation at Haworth, we recommend you view his paper and/or listen to his presentation on our website. We look forward to the next instalment to what is an intriguing concept.

Jamie and Mike reported further on their work in connection with fitting sensors and recording test results on the Kirklees Light Railway locomotive 'Badger'. This is now paving the way for testing of the S160 on the Keighley & Worth Valley Railway and possibly the two on the Churnet Valley Railway.

All these presentations are available to view on ASTT's web site.

We have been inspired by the discussions stimulated by the presentations to hold a 'Workshop' in May – see below.

### **Workshop/Seminar:**

Inspired by the presentations which followed our AGM in March, we have organised an event entitled: 'Network steam: securing steam's future on Network Rail'.

This is a one-day event to be held at the University of Birmingham Centre for Railway Research and Education, on Wednesday 10 May, commencing at 9.30. Those wishing to attend should contact [info@advanced-steam.org](mailto:info@advanced-steam.org)

### **2017 Autumn Conference**

**Chris Newman**

Planning is well underway for ASTT's 2017 Autumn Conference which is to be held in the Bury Transport Museum over the weekend of 30<sup>th</sup> Sep – 1<sup>st</sup> Oct. An announcement about the conference and "call for papers" was circulated to all ASTT members on 11<sup>th</sup> March with a request that those wishing to attend register their interest by replying to the webmaster. 32 responses have been received to date, all but 7 of them registering interest in attending. Six members have indicated that they are unable to attend and one is uncertain.

An additional 30 invitations have so far been sent out to non-members of whom 5 have reserved seats and 5 have declined with apologies. Furthermore, Adam Harris was kind enough to add a paragraph about the conference in a recent circular that he sent out through Camden Miniature Steam. This has resulted in one reservation and three expressions of interest.

Admission fees will be based on covering costs (without profit) and it is currently estimated that if 50 people attend, then the admission fee will need to be around £40 to cover the costs of room hire,

lunches, speakers' expenses and coach hire for a visit to Ian Riley's workshops (if that can be arranged). The conference dinner cost will be an optional extra on top of the admission fee.

The response to the "call for papers" has been outstanding, with 14 offers received so far. Since there will probably only be time for 9 or 10 papers over the two days, some speaking offers will have to be deferred to one of our 2018 events.

With regards future events, members are invited to suggest alternative venues for the 2018 AGM and conference. It is preferred that both events are held at the same location since that will allow for any problems that arise during the March AGM to be sorted out in advance of the October conference. Suggested venues should have the capacity to seat at least 60 people, should have projection equipment available, and should have on-site or nearby catering facilities. They should also be located within reasonable (preferably walking) distance of public transport and accommodation. Above all, they need to be affordable: for example the 2016 conference room in Haworth cost around £100 for the day, and Bury Transport Museum currently charges £60 per day for its conference room. Suggestions for future venues will be welcomed.

## Membership Matters

Chris Newman

ASTT's membership continues to grow, having increased from 31 at the end of 2016 to 38 today. It's especially pleasing to report that all 31 past Members renewed their membership at the start of 2017.

We welcome the following seven Members who have joined since publication of our December 2016 newsletter:

- **Andrew Turner** from Bromsgrove, Worcestershire.
- **Edgar Smallegange** from Krimpen aan den IJssel in the Netherlands, miniature steam enthusiast.
- **Joseph Cliffe** from Woodford, Essex, retired consulting engineer and author/authority on LNER locomotives. He served an apprenticeship at Doncaster under Edward Thompson before joining Powerjets Ltd to work on gas turbines where he got to know William Stanier who was then a director of the company.
- **Laurie Greene** from Pinner, Middlesex, retired London Underground signalling engineer; designer and builder of 5" gauge steam locomotives.
- **Stephen Whitehead** from Merseyside, horologist (clockmaker and repairer) at Prescott Museum.
- **Vyvyan Vickers** from London who has had a long term interest in railways and applied engineering. He has been a member of the Newcomen Society since the 1970s and Bevil Club<sup>1</sup> since 1998.
- **Zach Bond** from Woodbridge, Suffolk, chemical engineer currently working on PhD in biomass gasification at Cambridge University, working closely with fluidised reactors.

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<sup>1</sup> The Bevil Club (named after its founder member) is an informal group of railway enthusiasts, both professional and amateur, that has been meeting for lunch every Thursday since the 1920s (Thursdays except between Christmas and New Year). Attendance is by invitation only, and lifetime membership is automatic to anyone who receives an invitation to return (which has only been denied once in the Club's history). The Club, which remains informal and unincorporated, meets for lunch at 12 noon each Thursday in the basement at the Institution of Civil Engineers in London.

## Membership Distribution

The current distribution of ASTT's 34 UK Members can be seen on the accompanying map. It is not very different to the map published in the December newsletter, the centre-of-gravity remaining somewhere south of Manchester but now shifted a little towards the south-east.

In addition, ASTT has four European Members living in Germany, France, Holland and Spain.



## Website Matters

Chris Newman

The main developments on the website since last reported in December 2016 have been as follows:

- **Help Section:** A new Help section has been added, incorporating the advice that appeared in the last newsletter and in subsequent email circulars. The link to the Help section can be found on the left side of the black margin at the top of each webpage. Members are encouraged to report problems when using the website so that solutions to recurrent issues can be added to the "Help" section.
- **Bury AGM/GM Pages:** A new page has been added under the Members' menu heading giving details of the AGM and General Meeting held at Bury on 4<sup>th</sup> March. An additional password-restricted page, with links to the five afternoon presentations' files and video recordings, has also been added. Members who have not received the password to access this page should request it from the webmaster.
- **Newsletter Page:** A new page has been added with links to all three of ASTT's past Newsletters. Links to this and future newsletters will be added in due course. Access to the page is restricted to logged-in Members only (no extra password required).
- **Design for Reliability:** A new page titled "Design for Reliability" has been added under the Technical menu heading. The text is copied from a memo written by David Wardale in 2005 listing the principle design features incorporated into the 5AT design that would have ensured a significant improvement in reliability as compared to "first generation" designs. The memo was found in a set of four lever-arch folder of correspondence kept

by Robin Barnes<sup>2</sup> over the period of the 5AT Project which were recently handed over to your webmaster when Robin was clearing space on his bookshelves. The files contain much of interest, particularly relating to the development of the aesthetic appearance of the 5AT, and could be a valuable resource to anyone writing a history of the 5AT Project.

- **News pages:** Various news updates have been published over the last four months. These can all be found under the News menu item and are not listed here. Each time a News item is added, it should automatically copy across to ASTT's Facebook page, but it appears that the connecting link has failed. The webmaster has therefore been adding the more important news items as "posts" on the Facebook page.
- **Forums and Forum Topics:** The website now lists 8 forum subjects under which some 12 topics have been opened. It is often easier to communicate with one another by email, but when writing about a subject that might be of interest to the wider membership, there's much to be said for using the website's Forum facility since it is available to all Members.
- **Members' Contributions:** Members are encouraged to put forward suggestions for new pages for the website, and to contribute content for them. Equally welcome is Members' feedback, both constructive and critical. The website is not just a shop-front for the Trust, but a communication channel for Members to make use of.

## Facebook Followers

ASTT's Facebook page currently has 75 followers of whom only 14 are registered Members of ASTT. A recent appeal posted by Iain Jack explaining the advantages of membership and encouraging Facebook followers to become paid-up Members of ASTT failed to generate any new membership applications.

## Book Sales

Chris Newman

Book sales on all fronts have been disappointingly slow since the start of the year. Having been a very profitable venture in the past, it has now to be said that it is fortunate that ASTT does not depend on book sales for its survival. The book situation is summarised as follows:

- **5AT FDCs:** Only one copy has been sold since the end of 2016, bringing total sales to 168. One copy remains in stock, but further printings can be made (by Edinburgh Copyshop) if/when required.
- **5AT Feasibility Study:** This has been a very disappointing publication so far, there being only one buyer since the start of the year. Camden Miniature Steam has purchased an additional 13 copies but they have also been surprised and disappointed by lack of sales. Copies are printed on-demand by Lightning Source, so no stock needs to be held.
- **Crimson Lake books:** Adrian Tester's kind offer to allow ASTT to market his titles has resulted in 4 sales so far – two copies of each title. Adrian publishes his books through his own

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<sup>2</sup> Robin Barnes is a renowned railway artist, historian and author who painted all the representations of the 5AT that can be found on the 5AT website.

publishing label “Crimson Lake”, and it is under this name that his books are listed below the “Books” menu heading on ASTT’s website. The two titles currently available are:

- An Introduction to Large-Lap Valves & Their Use on the LMS, and
  - A Defence of the Midland/LMS Class 4 0-6-0 – also why frames cracked and axleboxes ran hot.
- Both offer excellent and challenging reads, especially suited to engineering-minded readers.

- **Here be Dragons:** Dave Wardale’s labours editing and laying out the pages and images for Phil Girdlestone’s autobiography are now complete and the finished PDF file is in the hands of Adam Harris, proprietor of Camden Miniature Steam. Adam is awaiting print samples from a local printing works before proceeding further, however due to other pressures he does not expect the book to be available for sale until the autumn. There is a possibility that the book launch will coincide with ASTT’s autumn conference which Adam has expressed interest in attending.
- **The Red Devil and Other Tales from the Age of Steam:** with second-hand prices for this book soaring to 2012 levels, enquiries about further printings are being received both by ASTT and Camden Miniature Steam. Second-hand prices dropped dramatically in 2013 when Camden produced a fourth reprint of the book, 233 copies of which were sold by the 5AT Group through its website. Camden is now considering the possibility of another (smaller) print run later in the year if demand for the book can be demonstrated. Both 5AT and ASTT websites now carry pages announcing this possibility and asking anyone interested in purchasing a copy to register their interest with the webmaster.

## **LNWR Prince George V:**

**Paul Hibberd**

As a project aspiring to main line operation, progress on the LNWR ‘Prince George the Fifth’ has been dominated by uncertainties with regard to the ORR requirements, which hopefully will shortly be resolved. To this end, the LNWR ‘Prince George the Fifth’ Steam Locomotive Trust is preparing a statement on how it plans to proceed and inviting ORR comments.

Fundraising success means the funds are in place for a number of developments and the latest state of play is as follows:

- (i) Bogie wheels: Detailed analysis has shown that the original design (used from 1906 until the 1960s) needs minor adjustment to its spokes profile to conform with the current regime. The interface with the axle may also require further work due to the size of the central boss in relation to the wheel diameter.
- (ii) Coupling rods: Assessment in respect of the forces applicable is close to completion we could proceed if they were being forged, but we would prefer water jet cutting as a safer process. One issue still requiring clarification is the final finishing process required. It appears the hand finishing as used on ‘Beachy Head’ will not be acceptable.
- (iii) Boiler shell: Alan Haigh has been extremely busy in working from the original drawings and producing an equivalent which complies with modern regulations. Further work is being undertaken in respect of his 1A proposals which correspond closely with the original scheme (which was a success), and it is hoped that we will be able to go out to tender for the shell later this year.

- (iv) Chimney and Dome: The boiler shell will create great visual impact for the project, and it is intended to enhance this by production of a chimney and outer dome cover to the original design. These will be removable and suitable for heritage line use only, but they will display to maximum effect the original splendid proportions of the locomotive.

Progressing the project with speed requires both engineering and financial inputs. For the engineering, CAD experience particularly welcome and offers of help should in the first instance be communicated to [paulhibberd@gmail.com](mailto:paulhibberd@gmail.com).

Financial donations should be sent to:

LNWR 'Prince George the Fifth' Steam Locomotive Trust,  
62 High St, Buntingford, Herts SG9 9AH

We are a registered charity, so gift aiding is available where applicable by completing the necessary form, which we can supply.

### **Badger testing update April 2017:**

**Mike Horne & Jamie Keyte**

Work on testing Badger stopped towards the end of 2016 due to KLR Xmas operations, however we have since managed to get in a test run with, for the first time, good results following work on the data recording system carried out on a homemade test bench over Winter.

Several issues were resolved in this testing including getting the equipment to run for the full 16 minutes that it is capable of with known good data from a signal generator throughout. This also allowed us to thoroughly check the data recorder for such as cross-talk between channels and channel calibration.

An unexpected chance to test this came when the KWVR carried out a test run with 5820 on the front and the WD on the back ahead of the visit of Flying Scotsman to the railway. It was with some trepidation that this was carried out as this was the first opportunity to check the equipment on a live locomotive of this size.

Smokebox vacuum was the only measurement taken but we need this data to see whether the Lempor nozzles need any adjustment when the exhaust is removed during the upcoming boiler inspection. This involved fitting the transducer to the smokebox ring and then running the cable the full length of the locomotive and tender and into the first carriage, the first time we had such a length of cable from the transducer.

3 runs were carried out and good data was recorded on all 3 but the final run produced the best results as it was an express run from Keighley to Haworth, the amount of information recorded is still keeping us all busy working out what it all means. What we were able to ascertain however is that, after 3 years use, the Lempor is still working to design specification.

Good data from a further 3 runs on the KLR is also causing some head scratching as to the actual meanings of the data. All 12 channels recorded data throughout but the cylinder pressures show some impossible results which is currently under investigation by the team.

The reason for the strange results is because we are tapping into the drain cocks rather than the cylinder cover so condensate and the high temperatures are an issue. However we want to stick with

getting a solution because we will then not have to tap into cylinder covers, something that locomotive owners are obviously not keen on.

Once this problem is sorted out with the transducer manufacturer then we will be the only owners of a digital recording system for steam locomotives of any size anywhere in the world to the best of our knowledge.

### **Phil Girdlestone's Unfinished Locomotive:**

**Cedric Lodge**

Phil Girdlestone, who died in South Africa in April 2016, had his ashes laid to rest at a memorial service held outside the Festiniog Railway's Boston Lodge workshops on 18<sup>th</sup> March this year. Chris Newman and Cedric Lodge represented ASTT at the event as reported in the News section of our website.

Phil was Works Manager at Boston Lodge during the 1970s and was responsible for several Porta-inspired improvements to the Festiniog's locomotive fleet. In 1985 he began a new career working on overseas railway, first in Sudan and then in South Africa, spending five years at the Alfred County Railway (ACR) where he was responsible for the partial "Porterization" of two narrow gauge Garratts. Following a short spell with South African Railways, Girdlestone settled down in Durban where he ran his own engineering business, most notably designing modifications for express passenger locomotives in Russia and Australia, and building two narrow gauge locomotives of his own design - namely: a 500mm gauge 0-4-0+0-4-0 Garratt for the Ferrocarril Austral Fueguino (FCAF) in Argentina completed in 2006, and a 610mm gauge tender locomotive for which only the rolling chassis was completed.<sup>3</sup>

When funding for the 2-6-2 project ran out, the completed chassis was purchased and shipped over to the UK where it has remained locked away for the last decade or more. John Hind, Jamie Keyte and Cedric Lodge inspected the chassis in 2015 and were able to confirm that it is a fine piece of engineering and that, if completed, it could be a fine demonstrator of "modern steam" on the narrow gauge.

In the month following Phil's memorial service, it was discovered that Phil left a full set of drawings for the locomotive on his hard-drive, and thanks to his brother and to his friend and colleague Manuel Ramos in Spain, copies of these drawings are now in the hands of ASTT. ASTT therefore has the opportunity to complete and operate the locomotive as Phil would have wished.

If ASTT is to pursue the idea of purchasing and completing the chassis, a team of Members will need to get together to begin planning what is to be done – in particular estimating costs to complete the locomotive, and figuring out how funds might be raised to cover the costs.

Having a locomotive of our own and the freedom to operate it to our own requirements- perhaps on the WHR/FR, would allow ASTT to learn much from monitoring its performance and assessing the effects of adjustments or modifications – for instance, to the exhaust system.

Members interested in taking up the challenge of completing the locomotive are invited to contact Cedric Lodge at: [janced@sky.com](mailto:janced@sky.com)

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<sup>3</sup> Details of Phil's career are set out in his autobiography "Here be Dragons" – see "Book Sales" above.



