

Wattrain

The World Alliance of
Tourist Trams & Trains

WATTRAIN August 2017 Newsletter

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Editor's comments:

In this month's WATTRAIN newsletter a sad tale involving Canberra's Railway Museum takes centre stage. Lessons for the heritage industry will no doubt be learned from this. Another closure will be visited next month.

And an uplifting account of an engineer from New Zealand and his wood burning steam Locomotive. Chapelon and LD Porta live on!!

Correction: You probably noticed the deliberate mistake in the July 2017 edition as follows.. One operator, Reefsteamers, has operated a number of successful steam tours in conjunction with SA Steam Tours based in **Switzerland!!!!** **Correction:** SAR Steam Tours is a South African Non Profit Company (NPC), Reg. No: 2015/054411/08

We apologize for the error! Double checking may help us in future avoid such geographic mistakes!

National Lottery success for Seaton Tramway

Seaton Tramway are excited to announce that their bid for National Lottery support the 'Travels through Heritage and The Axe Valley' project has taken a crucial first step.



This popular attraction has been based in the coastal town of Seaton for the past 47 years and each year carries thousands of delighted passengers along its three-mile route between Seaton, Colyford and Colyton in East Devon's glorious Axe Valley. The historic 2'9" gauge trams travel alongside the beautiful River Axe estuary through two nature reserves, giving unrivalled views of the abundant wading bird life that surrounds it. Thanks to money raised by National Lottery players, the Heritage Lottery Fund (HLF) has awarded Seaton Tramway initial support* and a development grant of £45,000 to progress the project and apply for a full National Lottery grant of £420,000 at a later date. The project will form an important part of the ongoing development and success of the Tramway.

This winter, building commences for the new £2m Seaton terminus and the National Lottery funding will follow on from the

opening of the terminus in Spring 2018 during the period 2019 – 2022.

The 'Travels through Heritage and The Axe Valley' will enhance the new terminus with new and exciting interpretation.



Jenny Nunn, Chief Executive at Seaton Tramway said: "National Lottery funding will enable us together with our partners to provide in-depth engagement with visitors, staff, volunteers and new audiences through an ambitious programme of new interpretation, facilities, training, learning, events and long-term activities. I would like to take this opportunity to thank everyone for their continued support."

Nerys Watts, Head of HLF South West, said: "Thanks to money raised by National Lottery players, we're delighted to support this project which will ensure heritage is at the heart of Seaton Tramway's exciting vision for the future. Natural heritage, stories of the historic tramway and local communities are all set to benefit so we look forward to seeing the plans develop!"

Further information on the project and its progress will be available on the Seaton

Tramway website
www.tram.co.uk

Seaton Tramway joins Heritage Ability scheme to help empower people with disabilities (Seaton Tramway News Release)

Seaton Tramway are committed to inclusivity and have seized an exciting opportunity to team up with other historic sites in the South West as part of the new Heritage Ability scheme, designed to build a greater understanding of the barriers experienced by disabled and Deaf people when visiting heritage sites. Thanks to National Lottery players, the Heritage Lottery Fund (HLF) has just awarded a grant of £527,000 to the scheme to support heritage sites in becoming more accessible. There are 18 sites in the South West currently taking part, eight of which are located in Devon including: Cockington Country Park, Kents Cavern, National Trust Castle Drogo / Fingle Woods, National Trust Killerton, Royal Albert Memorial Museum, Seaton Tramway, Seaton Jurassic and Seaton Wetlands. This scheme is delivered by charity, Living Options Devon, which was set up in 1990, and of which 80% of Trustees and volunteers, and over 50% of staff have

disabilities or are Deaf. The project aims to improve access for people with physical disabilities, establish British Sign Language as part of each sites' interpretation, whilst also making adaptations to improve experiences for those with autism.

Jenny Nunn, Chief Executive at Seaton Tramway said: "Seaton Tramway is proud to be involved in a project focused on making long-term changes to the accessibility of heritage in the South West. Here at the Tramway, we take into careful consideration the needs of those who require specialist access, and understand the importance of continuous growth and development in order to provide an excellent experience, making it inclusive for everyone."

To discover how you could help and for more information about the project, please contact Jessica Holroyd, Engagement and Communications Officer at Heritage Ability, by emailing Jessica.holroyd@livingoptio

ns.org or phoning 01392 459222.

You can also join the story on social media, by visiting @HLFSouthWest & @HeritageAbility and by using hashtags #heritageability and #National Lottery

For the past 47 years Seaton Tramway has been running from the main car park in Seaton for three miles inland through Colyford to Colyton, much of it along the former Seaton to Seaton Junction branch line between the picturesque estuary of the River Axe and the Axe Estuary Wetlands.

All our double-deck trams have open top decks, providing 360 degree panoramic views, but for inclement days there are enclosed single deck trams making it an all-weather family attraction. The fleet of 14 passenger carrying single and double-deck electric trams were purpose built by the company from classic designs based on heritage trams that served our towns and cities in the first half of the 20th

century.

Open Daily: 11th – 19th February 25th March – 29th October 27th December – 1st January 2018.

Open Weekends only: 25th February – 19th March

Birdwatching, Birthday Parties, Tram Driving Experiences and Lessons available all year.

The Fairy Special: 8th April 29th May 4th, 11th, 18th, & 25th August 1st September.

The Dinosaur Tram Adventure: 16th & 23rd April 1st & 28th May 23rd & 30th July, 6th, 13th, 20th, 27th & 28th August.

Pirate Tram: 28th July & 26th August.

Halloween Tram of Terror: 23rd -29th October.

The Polar Express Tram Ride: 1st – 3rd, 8th – 10th & 15th – 24th December

Full sized versions of photographs available on request. For further information, please contact Bracken Stockley on 01297 20375 or e-mail: bracken@tram.co.uk

Moving a Railroad to Frisco, again!



American Eagle Railroad Group begin work on the disassembly and relocation of the Sanders Model Train Layout.

The long and tedious process of relocating the Sanders G-Scale Model Train Layout to Frisco began today. Workers from American Eagle Railroad Group (AER), under the direction of Andy Wortman, started photographing, cataloging, and removing items from the layout.

Rolling stock (locomotives and cars) were carefully removed from tracks and placed in their original boxes.

Cincinnati-based AER Group was selected to do the work, having shown great enthusiasm and a

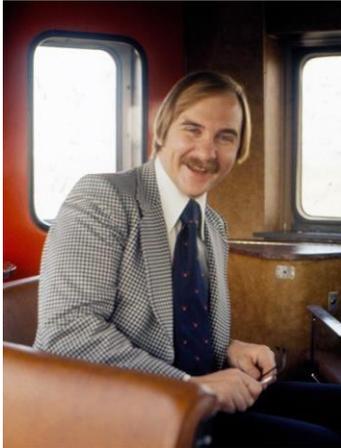
willingness to meet the Museum's budget for the project. They have much experience with constructing and relocating G-Scale layouts for commercial use. They will work in concert with Entertainment Junction which specializes in state-of-the-art operating systems for model train layouts.

Great care will be taken during every step of the relocation process. The layout will be broken down into manageable pieces in much the same fashion as when it was assembled. Each piece will be carefully transported to Frisco, reassembled, and then meticulously blended together. Electrical systems, including lighting and train control, will be upgraded using the latest

technologies. Since the layout will transition from an in-home hobby that saw relatively light use, to a year-round public attraction, new train operating systems will be designed to minimize daily wear and tear. Work will continue through the summer.

The Museum is officially a tenant at the Frisco Discovery Center, with Special Events Room #2 now dedicated to housing and presenting the Layout. We are very grateful to the City of Frisco and its Community Development Corporation for making the Discovery Center space available. Watch for periodic updates as we build this exciting, new attraction at the Museum of the American Railroad in Frisco!

Journalist Donates a Look into Amtrak's Past



Arch Campbell aboard Amtrak's Broadway Limited, 1974.

Our good friend Arch Campbell recently donated some gems from his years at Channel 8 television in Dallas. Arch was a feature reporter for the ABC affiliate back in the 1970s. As part of his work, he covered Amtrak's early operations following its assumption of intercity passenger rail operations in 1971. Arch rode the rails on Amtrak in 1974 and again in 1978, logging many miles in the Midwest and Northeast. His itinerary included Amtrak's Lone Star (formerly Santa Fe's Texas Chief), and the Broadway Limited. Both trains were subsequently discontinued. He prepared mini-documentaries for Channel 8, filming (yes, real film) and photographing trains, passengers, and employees along the way. He generously donated the actual film reel and over 100 slides of his travels. They provide a rare,

candid glimpse of early Amtrak service, a time of transition that is now part of the carrier's history.

Campbell's images capture an ambitious effort to preserve the vanishing passenger train, and the seasoned employees that worked aboard aging equipment originally purchased by the railroads in the 1950s. He also featured another local railroad subject, a hand-built O-Gauge model train layout constructed by Burt C. Blanton of Highland Park. His layout is captured in several Kodachrome slides. Arch went on to work for a television affiliate in Washington, D.C. where he recently retired from his long career in journalism. He and his wife travel the country and continue to discover the diverse ways of life just as he did in journalism.



Sleeping Car Attendant (left) and Conductor (right) aboard Amtrak's Lone Star, 1974.

The train operated from Houston to Chicago via Fort Worth. Amtrak ran a connecting train from Dallas to Fort Worth until the Lone Star's discontinuance in 1979.

John Bush: Heating locomotive boilers

When locomotives are first fired up with cold water in the boiler they are subject to significant thermal stress. The water is typically less than 75 degrees and of course most of it is below the crown sheet. The primary heat transfer from the fire occurs at the crown sheet although there is some transfer through the side sheets, the flues, and the door sheet. Because hot water is less dense than cold water hot water rises to the top and colder water sinks to the bottom. The result is that the water at the top begins to boil while the water along the mud ring and in the belly is still less than 100 degrees F. Boiler steel expands with heat. The more difference in temperature over any given distance the more stress the sheets, stays, and tubes are subjected to. If the water in

the boiler was close to boiling before the fire was started the thermal stress would be reduced.

In the US most terminals had stationary boilers that could supply hot water to locomotives before they were fired up. We do not have a stationary boiler nor the way to transfer a large quantity of water from one locomotive to another. What we do is connect a steam hose from one turret to another. Then by closing the main turret valve on the dead engine and opening valves to connect the live turret to the dead turret we now have a live turret on the dead engine isolated from the boiler. The injectors on the dead engine can then be started and they will put water preheated to nearly boiling into the dead boiler. The

heat from that water will be transferred to the metal surfaces of the dead boiler starting to warm it up. Opening the blow down valve occasionally allows the release of the now cooled water.

Repeating this process eventually resulting in the boiler being filled with hot water near the boiling temperature. At that point the steam supply to the dead engine is shut off and drained by opening a valve to any other appliance like the dynamo or air compressor. When the turret is de-pressurized the main turret valve on the dead engine can be safely opened. The locomotive can then be fired up in the normal manner in less than normal time without harm.

Canberra Railway Museum forced to sell off historic train carriages.

Canberra's historic railway museum has been forced into liquidation, with many historic train carriages set to go to auction next month. Former museum volunteer and heritage rail enthusiast Garry Reynolds is fearful the city's rail history will be lost with the sale. "We're talking about carriages that took soldiers away down to the docks and the ships in World War I," he told Genevieve Jacobs on ABC Radio Canberra. "They're that old. "Then in World

War II, we're talking about carriages that took soldiers to the hospitals, [soldiers] who had come back from the jungles of New Guinea by ship.

Museum derailed

The museum was forced to temporarily close its doors last year after falling more than \$500,000 into debt. Based at Kingston for 34 years, the museum was home to Australia's oldest and

largest steam locomotives. It was a popular attraction, offering trips from Canberra on a century-old steam train. But Mr Reynolds said it cost about \$3 million a year to maintain the engines and run the museum. The City of Canberra, a Beyer-Garratt 6029 which was the largest operating steam locomotive in the Southern Hemisphere, was particularly expensive to run. It would consume 18 tonnes of coal and 40,000 litres of water on average

each day, costing around \$10,000 a day.

D-day looms

"After the Supreme Court decision last Friday, it's all going to be wound up," Mr Reynolds said.

The museum's historic collection will go to auction on August 2. "That's D-day," Mr Reynolds said.

"In the future, someone will say, 'What were they doing? They knew this was important heritage but no-one did anything and it's gone, gone forever'."

Selling off Canberra's core

Mr Reynolds said the mainly volunteer-run organisation could do little more in its bid to save the museum. "We tried as individuals to call on government, but it must be the cold in Canberra — they're just sitting on their hands to keep them warm. "They don't appear interested in buying some of this rolling stock on behalf of the community. "Some of these carriages are 110 years old and they're likely just to disappear and turn up as B&Bs or kids' cubby houses somewhere." Mr Reynolds said he hoped local organisations might be interested in purchasing some of the train carriages. "I want to see this precious local history stay in Canberra. "There could be corporations here who say, 'Here's a chance to make a real difference and secure Canberra's heritage'. "The creditors do need to be paid, but there are some carriages that have a lot of connections to Australia's

history that need to be kept. "We're guilty in the future if we let these go." Article appeared in <http://www.abc.net.au/news/2017-07-13>

Latest Developments

WHILE the Canberra Railway Museum spirals into liquidation, two local directors have made a "generous bid" to keep the community's heritage in the ACT. Directors of the Capital Holdings Group, Ian Oliver and Dallas Dogger see this as an opportunity to say "thank you" to the Canberra community by giving something during a critical time. Ian Oliver says: "We are completing our due diligence and research with the cooperation of the liquidator from Deloitte, Eddie Senatore. We understand from Mr Senatore that other Canberra business people may be willing to help as well and we are open to a collaborative approach that can protect the assets for future generations." "Of course, the liquidator will make the final decision and we have told him we are willing to 'cut a cheque' to achieve the best result for all involved. There is no guarantee that our offer will be accepted," he says. "We want to see prompt action to stop the debt growing and save our community's heritage by developing arrangements which prevent a collapse happening again. "There are groups and private bidders in Australia and overseas expressing interest in purchasing, then removing key elements of

our community's story to other regions or private properties. We don't want to see this happen when we have so little heritage left in Canberra. The experience of steam train travel has been preserved so well in the national capital and it should continue." Mr Oliver and Mr Dogger have discussed their plans to fund a rescue the Canberra Railway Museum with the ACT government and say there is bipartisan support for a heritage operation. Garry Reynolds, who worked as a volunteer at the Canberra Railways Museum says it was fortunate that Mr Oliver and Mr Dallas made an offer and hope it is taken up. The not-for-profit Australian Railway Historical Society (ACT) is currently in the process of liquidation and many of Canberra's heritage treasures will be up for auction on August 2. <http://citynews.com.au/2017/bid-save-canberras-steam-trains/>

CANBERRA – 24 hours prior to the auction for significant rail assets, Capital Holdings bid to save local rail history has been rejected. Ian Oliver, Managing Director of the Capital Holdings Group said today: "I am disappointed that our offer was rejected today, 24 hours from the auction." Notification came by way of an email, just prior to 9 am today. The letter, scant on detail as to the reason for rejection, has left our company with no chance to save what many consider to be significant rail history, pertinent to the ACT. "We were not given the

opportunity to discuss, revise or change our offer and that has disappointed us, as we sincerely wanted to help. We had made it clear that we were willing to work with other parties for the good of the collection, working toward a sustainable outcome. "This was a not a cynical grab for assets by us – far from it, our motive philanthropic and proudly ACT biased. Dallas Dogger, Director said. The letter suggests that if we have a genuine "Interest in ensuring some of the assets remain in the ACT", that we should attend the auction. "Our offer made to the liquidator was large enough to keep all of the rail heritage assets in the ACT, not some cherrypicked

from an auction". Oliver said. We wanted to establish a trust to protect the assets and work with a suitable local operator to preserve and run trains. There is a wider issue of transport heritage in the ACT and this trust could have been the start of something bigger, even attracting more visitors to the ACT. We thank the ACT community and the ACT Government for their kind words and support and we hope that the ACT rail heritage community can reunite and regrow and share their common interests in the future. So much work has been done by so many volunteers to save rail history locally that we really hope that it's not

been wasted". "We can't speculate on the future of these assets now. The auction for some of the assets that should stay in the ACT is tomorrow, the future of the rest of the collection is up to the liquidator", Oliver said ACT locomotive history on sale: What happened at the Canberra Railway Museum auction?_

<http://www.abc.net.au/radio/canberra/programs/breakfast/what-happened-at-canberra-rail-museum-auction/8770224>

A final word from former museum volunteer Gary Reynolds. He said going to the auction felt a bit like going to a funeral.

The Midland Railway Trust has appointed a new full time Locomotive Engineer. (MRT News Item)

Gareth Winter aged 49 joins the small team of full time staff at the heritage railway and will be based in the railways' workshops at Swanwick Junction. Gareth, from Nottingham, brings a wealth of experience to the job having been involved in the heritage railway movement as both a volunteer and full time staff since 1989. The important task facing Gareth is the restoration back to working order of London, Midland and Scottish Railway 0-6-0 3F tank locomotive number 47357. This locomotive has been a mainstay of the railways services for many years but is now receiving a complete overhaul that should see it give many more years' service. In addition work is continuing on the long term restoration of sister locomotive 47445, a locomotive that has not been steamed in

preservation. Gareth is very keen to see these two machines restored to working order and would like to hear from anyone that would like to help by joining the volunteer team that are working on their restoration. "If anyone would like to get involved please get in touch with me at the Midland Railway – Butterley so that we can see how you can help. You do not need experience just the determination to help restore these magnificent locomotives. Let's get on with the bringing them back to steam." Alan Calladine, the Midland Railway Trust Development Officer said "Gareth Winter has a tremendous challenge in front of him to complete the restoration of these two locomotives. With his experience and ability I am sure that it will not be long before we will see these locomotives back at work."

Alan Keef Ltd, Lea, Ross-on-Wye



Tucked away on the right hand side of the A40, 5 miles to the east of Ross on Wye, and just as you exit Lea village, stands, almost hidden by the trees, the Locomotive Works of Alan Keef Ltd.

The rolling countryside of Herefordshire is not normally associated with railway engineering. Hereford Bulls and cider come to mind. But for the last 40 years, Alan Keef Ltd have been providing engineering services to the leisure and industrial sectors – and doing it rather well. Their website announces that “Founded by Alan Keef in 1968, we are based in rural Herefordshire and remain a family owned and run enterprise with a personal, as well as professional, passion for narrow gauge railways. Alan Keef remains at our helm as Chairman whilst his son, Patrick Keef, is Managing Director and daughter, Alice Basey, is Chief Design Engineer”



And “Alan Keef Ltd has an unrivalled reputation throughout the narrow gauge (10¼" - 3'6" gauge) railway industry as a designer and supplier of quality modern railway equipment, replica historic equipment and as a restorer of historic equipment including steam and diesel locomotives and carriages.” An hour spent in the company of Patrick Keef provided answers to the basic questions.



Patrick Keef

How did it all start? Where are we going from here?

The beginnings. It all started as a hobby hence the phrase “remain a family owned and run enterprise with a personal, as well as professional, passion for narrow gauge railways.” Alan’s father spent his time tracking down narrow gauge railways in particular, those in the Colonel Stephens portfolio such as the Kent and East Sussex, Rother Valley Railway, Ffestiniog, Welsh Highland Railway all of which were still operating as heritage lines, either in full or in part, and built under the Light Railways Act of 1896. These were a few of the 16 railways in his network, along with 18 others which never came to fruition. With an inherent interest in railways, as a farmer, it was perhaps only natural that Alan should install a ‘guided materials handling system’ i.e. a railway, to facilitate feeding and cleaning routines. And so, as they say, one thing led to another. Alan saw the potential for a new business

offering light railway equipment, not just for heritage and industrial use, but for an emerging park railways market too, with early orders secured from Whipsnade Zoo and Longleat Safari Park. Creating the new enterprise coincided with the railway inspectorate realising that, given the potential numbers that might be carried on park railway systems (upwards of ¼ million visitors per year in some parks), equipment should be specified to a prescribed standard to ensure visitors enjoyed a comfortable and, more importantly, safe ride. An intrinsic understanding of their market and the design innovations that followed, have allowed the company to develop a distinctly different product offer and they continue to prosper and exploit new markets too. Whilst many customers require a 'standard' product from Alan Keef Ltd, the company has developed a reputation for more specialist work too. Patrick gave me an insight into some of the interesting projects they've been involved with including designing battery-electric operated railcars for a gas jetty in Brunei that had, naturally, to be 'spark-free' to avoid the risk of explosions. Designing railways to handle materials instead of, or alongside people, has seen the company secure contracts for a wide range of projects including boat launch slipways and tracks laid inside warehouses to aid the smooth transition of materials along production lines.



RNLI Slipway (Alan Keef Image)

A strong business was emerging and was further strengthened in the early 1990s with the acquisition of Motor Rail and its Simplex brand, and to this day, the company still supports Simplex locomotives around the world although, unsurprisingly, the number of locos still running is decreasing year on year. The business is clearly hugely diverse, the mantra being 'if it runs on rails then call us'; but the leisure market is still core to the business with several new locomotives or train sets being built each year for railways in parks, zoos, stately homes and theme parks. The design criteria are, unsurprisingly, straightforward – they have to be easy to maintain and operate and offer a smooth ride for passengers. In the main, diesel engines dominate but battery operated locomotives have a place too, particularly in environments where the noise from a diesel might otherwise be problematic. In the last couple of years, locomotives and carriages have been supplied for zoos and safari parks in Europe as well as the UK. Going through the workshop right now is a new engine and set of carriages for a park in Berkshire that has a one-mile 10¼" railway. In addition, a new locomotive is also being built for one of the company's original customers, Longleat Safari Park.

Recently completed for Wellington Park railway, also in Berkshire, this time to 12 ¼" gauge was the locomotive 'Arthur' and three new semi- enclosed carriages. The new train set replaced an aging and unreliable smaller train set. This summer has seen a huge increase in the number of passengers that can ride the railway which, as well as bringing extra revenue for the park, also ensures that visitors to the park are not left frustrated by long queues to ride the train or disappointment when it breaks down.



Perrygrove Railway, Forest of Dean.(Alan Keef Image)

What has been/is the most challenging of assignments?



“Lyn” under construction.

The ongoing project is the replica ‘Lyn’ that is being built for the Lynton & Barnstaple Railway. As with similar projects the company has been involved with, the challenge was recognising the specific characteristics of that particular heritage railway and understanding that many involved with the project are intensely interested in its progress and outcome. Alan Keef Ltd was asked to build ‘Lyn’ (the original Baldwin manufactured locomotive was built in 1898 but scrapped in 1935) but include new technical innovations such as roller bearings, high-tech gas produced combustion, improved lubrication and high superheat boiler, all light years ahead of the original specification but designed to deliver the best efficiency possible. At the time of writing, ‘Lyn’ had been recently steamed for the first time and proved a resounding success in front of a delighted audience of some 150 donors to the build project. Delivery to the Railway is expected to take place during September, concluding five-years of dedication from the designers and engineers involved.

How far afield has Alan Keef Ltd spread its work and name?

Worldwide is the simple answer. The book ‘A Tale of Many Railways: An Autobiography & History of Alan Keef Ltd’, gives a very full description of the worldwide reach of the company. Railway stock has been provided to parks in Argentina, Holland, Singapore and Belgium. Industrial railway stock can be found in a cement works in Bangladesh, coal mines in South Korea and Nigeria and of course Simplex locomotives and parts have been provided to Fiji, Africa, and east Africa.

The company’s locomotives can be found widely across Ireland too including replica locomotives, such as the unique Lartigue Monorail for the Listowel and Ballybunion Railway in Ireland.



Lartigue Monorail.(Alan Keef Image)

Significant work is carried out for European customers and as Patrick explained, the customers they’ve worked with have had very demanding specifications that reflect the fact that their railways will typically carry very high passenger numbers and are an important revenue generator. The fact that these European customers choose a UK supplier to deliver the reliability they need is testament to the company’s reputation for delivering highly dependable quality stock. One recent example was a zoo railway project in Belgium that was built to an exacting specification. In its first season, this railway carried around 200,000 passengers on 2½ km circuit and has a goal to reach over 300,000 passengers annually. Similarly high passenger numbers have been seen at a new railway in Denmark that the company was involved with. Time and again, the reliability and comfort of the ride has been the over-riding criteria in establishing whether the project delivered value for money overall.

What are the future prospects for Alan Keef Ltd?

Alan Keef Ltd is undoubtedly a family business. Patrick Keef took over from his Father as Managing

Director some 20 years ago and with his sister Alice Basey as Chief Design Engineer has steered an enduringly successful and highly regarded business. That the company is rarely seen advertising or promoting its work highlights that its business is sustained by word-of-mouth recommendation and its portfolio of loyal customers would be the envy of many businesses. Future goals involve consolidating and improving their infrastructure. They have a busy satellite operation nearby, which focusses on carpentry and finishing works. About 20 staff are employed by the company and the skill set is crucial. Machinist, fabricators, steam fitting team, carpenters, fitters, painters and two track laying teams, as well as several designers, make up a tight-knit team. Although staff turnover is remarkably low, a real challenge is finding reliable people and specifically appealing to the younger generation. If there is any young person locally (or otherwise!) who has a love for traditional engineering, then an apprenticeship at Alan Keef Ltd could be for you! Perhaps you might end up travelling the world commissioning engines and be part of a tradition of delivering products with a world-wide reputation.

What are the proudest moments for the company?



“Steam Elephant” and “Puffing Billy” replicas at Beamish Museum, Durham. (Alan Keef Image)

For Patrick, the project that most stands out, without a shadow of doubt, is ‘Puffing Billy’ and ‘Steam Elephant’, the two replica engines they built for Beamish Museum. Equally, the WW1 Baldwin for Leighton Buzzard Light Railway would rank high on the list.



Restored Baldwin for Leighton Buzzard Railway.(Alan Keef Image)

So, Hereford is not all bull and drink! Next time you sit on a little railway somewhere, look out for the maker’s plate and see if it comes from Alan Keef Ltd in Ross-on-Wye and perhaps raise a cheer for another great British company that is doing the UK’s engineering reputation proud.

(Peter S Lewis wishes to thank Patrick Keef for his assistance and insight, without which this article would not have been possible.)

This article also appears in the August edition of “On Shed” (<http://railtube.info/category/on-shed/>)

Puffing Billy. News Update

Puffing Billy recorded 487,237 passengers in the 2016/17 financial year, which is an increase of 17% on the previous year. This is also the highest patronage of any narrow gauge steam heritage railway in the world that is a volunteer- based, not for profit operation. Puffing Billy Railway CEO, John Robinson, said the continued growth can be attributed to the increase in visitors from the Asian market, as well as regular repeat visitation from passengers who can't get enough of the iconic tourist attraction. "The Asian market now represents over half of overall visitors, and we are working really hard to ensure they have an enjoyable experience at Puffing Billy," Mr Robinson said. "We have recently prepared a Visitor Information brochure in Simplified Chinese, produced new promotional videos with Simplified Chinese captions and have introduced recorded announcements in Mandarin on the Belgrave platform to cater for this immense growth." "We are also really proud of the fact that generations of Melbournians have visited us for over 100 years. Visitors love reliving their childhood memories by taking their children or grandchildren to

experience Puffing Billy for the first time. It truly is a shared experience that creates lasting memories for the young and old like. Our passionate and committed workforce, including over 900 volunteers, play a vital role in attracting people back to Puffing Billy. They work extremely hard to ensure everyone has an unforgettable visit, and these incredible visitation figures are an acknowledgement of this." "We're also extremely fortunate that Puffing Billy is located so close to the Melbourne CBD and is accessible via the Metro Trains. It makes it so much easier for visitors to Melbourne to come out for the day and discover the beauty of the Dandenong Ranges," he said. Puffing Billy received a Silver Award in the Major Tourist Attraction category in the Victorian Tourism Awards in 2016, Gold in the Outstanding Contribution by Volunteers category, and was recently awarded a Certificate of Excellence from TripAdvisor for the fourth year in a row.

For further information, please visit www.puffingbilly.com.au or call (03) 9757 0700

And something new developing...

Sam Mackworth (New Zealand) explains his wood burning steam locomotive....



The project began 6 years ago with quite a general aim of developing an environmentally sustainable, multipurpose engine. The important outcome of the initial stages was a start on identifying exactly what the problem was that had to be solved. Correctly identifying this and applying development in the right direction continues to be an important factor. In reality there is a plurality of problems for which it has been the endeavour to find a common solution. Providing a sustainable powerplant for transport purposes was a core focus as viable solutions are lacking in the sector. A fundamental step was clearly identifying the most practical source of environmentally sustainable energy. A key factor identified was that the primary source must be solar based. Photovoltaics and batteries were out of the question for various reasons, it was understood that the

natural process of photosynthesis served both functions. The focus was therefore on biofuels from the start and after a couple of years this became concentrated on solid biomass from, preferably trees. Trees were identified as being able to yield approximately 8 times the energy per unit area of land compared with rapeseed derived biodiesel for example, and without the energy hungry processing that can be attributed to producing liquid biofuels. The energy required to process the wood fuel being of the order of 5% of that actually yielded.

So to directly answer your question of the viability of the sustainability aspect - Yes, in fact it could be argued that it is the most viable option, considering also that it is more cost effective than many fossil fuels and there are significant waste streams that can be tapped into.

Thus development work centred on developing a simple and efficient powerplant to turn the thermal energy released when burning wood fuel into kinetic energy. External combustion being required meant that steam was an obvious candidate. Analysis showed steam to be the only option with excellent possibilities. The steam expander (Engine) is a relatively well developed machine, but the current state of the art for a high power boiler burning solid wood fuel that was amenable to vehicular applications left something to be desired - the conventional locomotive type boiler being the best that was then available. Given this, a large portion of the work over the years was directed at developing an improved locomotive type boiler, but improved doesn't properly express the level of change involved. The result is a wood fired boiler that cannot explode and is quick steaming. Thus most of the safety issues

are eliminated and light-up time is reduced to 10-15 minutes. The boiler

doesn't throw sparks or have smoke emissions as combustion is nearly

perfect. The manufacturing cost is markedly reduced.



Lempor Exhaust...

Images courtesy Sam Mackworth.

Thank you all for your generous contributions to this edition of WATTRAIN Newsletter (August 2017)

If your item isn't here in this edition. It will be next or in the near future!!

Given the serious vandalism experienced recently by the North Yorkshire Moors Railway, East Lancashire Railway, and the Mid-Norfolk Railway, what suggestions might the world family like to share on the subject. (Peter S Lewis. Editor)