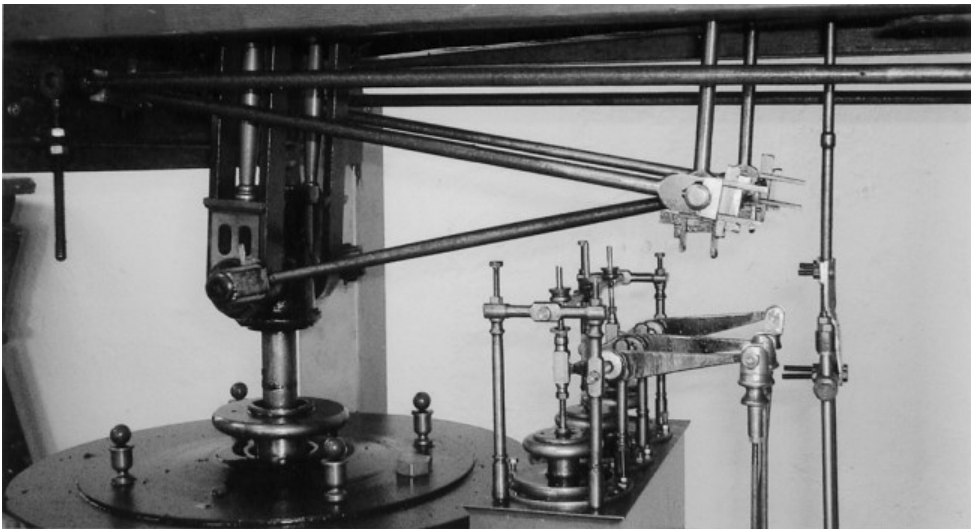
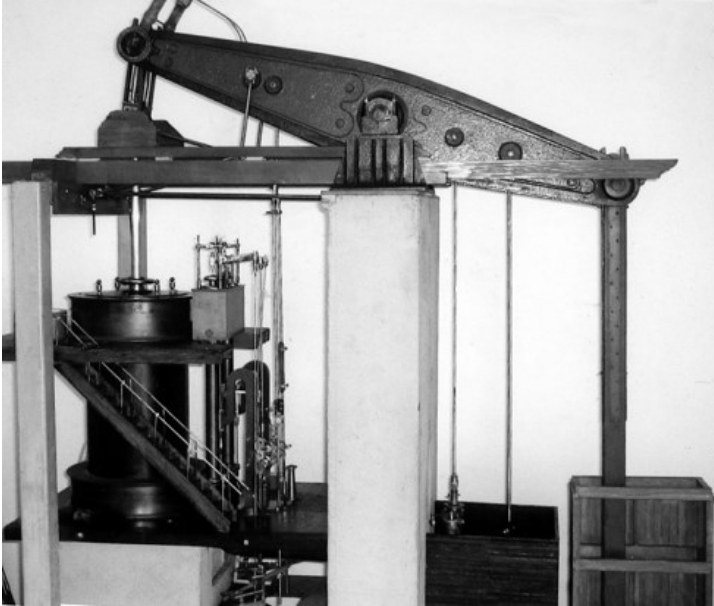
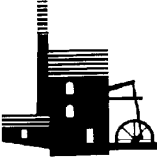


THE TREVITHICK SOCIETY



Duncan Nicholson, who has led the work on the model beam pumping engine at Levant, given to the Society by Mr Boulden, reports on progress inside.

CHAIRMAN'S ADDRESS

[I believe this Society is financially well founded, has an increasing membership and is respected in Cornwall and throughout the UK, even some parts of the world, for its resources and intellectual standing in the world of Cornish industrial archaeology. In recent years it has improved its profile and has been seen to take a lead in the matters that concern it.

It is not therefore surprising that other societies should see us as the epitome of success and good management. It is rather more interesting that, during the past year, this Society has been approached by two other equally well-founded national societies with a view to amalgamation so that they might benefit from the services of our management team.

Why should they do that? Simply because they are loosing their ability to administer their affairs. This matter was discussed at a recent council meeting of this Society when the opportunities to appoint people to represent this Society in other places drew blanks. It was clear that we were in no fit state to take on the worries of other organisations. It also became apparent that we are barely covering our own needs. We saw, although we are currently capable of undertaking our responsibilities, the time may be coming when that might not be the case and we would find ourselves in a similar situation to so many other voluntary organisations in this country.

Discussions then ensued to suggest a way forward for the future. At the moment the Society has a very full anniversary year ahead and it is hoping that it will succeed in all that it has projected to achieve. However, we share a vice-chairman with the Camborne Trevithick Day Committee and the loss of their chairman has meant that Kingsley Rickard has taken on other onerous responsibilities. As a result it is unlikely the replica 1801 Trevithick locomotive will appear in Camborne this year, the first time for five years.

Your council is well aware of its responsibilities and is wondering how to tackle the situation. One might have thought that the increasing age of the population and numbers of people who are retired might provide us with a surfeit of willing volunteers but that is not the case. In recent years there have been successful efforts to find occupations for the aged delinquents in society. U3A and flower arranging all have their administrators and they are depriving long established societies like ours of willing members.

Is our 70th year to be the water shed after which we will be reduced to a publishing and reference society? With all the work the Society has to do, it is something I can barely think about. Have you any ideas?

Phil Hosken

EDITORIAL

Bill Newby, in his letter on page 3, puts the record straight as to how the Trevithick Trust got its name. However, the name "Trevithick Trust", was I believe, an unfortunate mistake, which should have been rectified when the opportunity arose. The name certainly caused much confusion, to such an extent that, in the minds of some, the two organisations were thought of as one and the same. Sometimes, this confusion was beneficial to the Trevithick Society and at other times it was detrimental, and even now, after the demise of the Trevithick Trust, the confusion continues. For example, on two occasions I have recently been approached by a member of the public who commented how sad it was that the Trevithick Society had closed down.

Copy date for next issue is April 12th, 2005

Colin French

LETTERS TO THE EDITOR

Dear Editor,

WHAT'S IN A NAME?

The Trevithick Trust was so named by a majority vote of the Trevithick Partnership Steering Group — representatives from County and Local Authorities and some dozen other groups, including the Trevithick Society. The choice of name was not thoughtless, as suggested by the Chairman (Newsletter No. 126), but reached after considerable discussion by the Partnership. The question of confusion with the Society was debated at length, but in view of the widespread use of the name "Trevithick", it was felt that the name should remain as proposed.

There was a later proposal in June 1992 that the name should be changed, but this was not agreed.

Bill Newby MBE

Chylason,
5 Fairfield Close.
Lelant,
St. Ives.
TR26 3JY.

As a part of its 70th anniversary celebrations this year the Society is

THE HOLMAN PROJECT

planning a community project. This will involve the former Holman Bros factory employees and their families.

The Society has a considerable archive of Holman 16mm films and a variety of slides. The films are held in safe keeping by the South West Film and TV Archive in Plymouth who are joining in the project.

There is sufficient material in these archives to make a number of quality films, on VHS and DVD, to record much of the history of the company and many of its employees.

The Society has applied to the Heritage Lottery Fund for assistance and is quietly confident that this very important facet of Camborne's industrial engineering and culture will attract the funding that is necessary.

The Society will be looking for volunteers to meet the former employees and their families to record their experiences and anecdotes. It is intended to open an office in Camborne where this may be done.

Mention of this exciting project has already attracted an enthusiastic response and John Pope, the town's mayor, said that he was delighted the Society had found another way in which the historic contribution made by Camborne and its people to the world's industrial history could be told. "I will always back a project that supports Camborne and those who worked so hard to make it great," he said to the Society.

Town Clerk, Reg Bennett, has offered traditional Cornish music and song from his 'Proper Job' CD that features Camborne Town Band and Climax Choir as a fitting background to the scenes of Holman Bros and Camborne.

Further announcements of progress will appear on the Society website as they develop.

P.M.Hosken



Holman **BROS. LTD.**

THE BEAM ENGINES IN NORTH AMERICA IX: THE VAUCLUSE ENGINE, COLORADO SPRINGS

In 1931, Henry Ford purchased the abandoned Vacluse Gold Mine in Orange County, Virginia, for the sole purpose of acquiring for his museum in Dearborn, Michigan, the beam engine that still stood on the property. The 30-inch engine was re-erected in the Greenfield Village section of his museum and remained there until 1983 when it was removed to the Western Museum of Mining and Industry in Colorado Springs, Colorado, in the grounds of which it now stands (Fig. 1).

The importance of this engine lies in the fact that it is one of just a handful of surviving beam engines known to have



Figure 1: The Vacluse beam engine in Colorado Springs in 1996, showing the slender flywheel and sweep rod, spindle-shaped crank, "indoor" location of the condenser and boiler feed pump, and beam mountings attached to the outside of a beam that lacks a central stiffening rib.

worked in North America. In contrast to their dominance in the United Kingdom, where remaining examples number in the hundreds, beam engines never proved to be as popular in North America, where the stationary steam engine of choice was the horizontal Corliss engine. As a result, very few North American beam engines survive. In fact, at only two sites in the United States and Canada are beam engines preserved on their original foundations. These are the two 36-inch rotative engines of the Chesapeake and Delaware Canal liftwheel pumping plant built by Merrick and Sons of Philadelphia in 1851 and 1854 (Newsletter 89, pp. 13-15), and the two 42- and 24-inch Woolf compound engines of the Hamilton (Ontario) waterworks (now the Hamilton Museum of Steam and Technology) built by John Gartshore of Dundas, Ontario, in 1859 (Newsletter 104, pp. 7-12). Of the eleven beam engines on display at the Henry Ford Museum (Newsletters 92, pp. 10-14; 93, pp. 11-14; 96, pp. 7-12), all but one (the 36-inch "Gothic engine" built by New York's Novelty Iron Works in 1855; Newsletter 97, pp. 8-10) were collected in the United Kingdom and so never worked in North America. The 22-inch Watt engine on display at the headquarters of the DoALL Company in Des Plaines, Illinois, is likewise of English origin (Newsletter 125, pp.7-15). A few American beam engines survive in other collections, most notably at the Smithsonian Museum, but all are quite small.

The Vacluse engine is, therefore, one of only four surviving standard beam engines of any size to have worked in the United States. Furthermore, with a working history that can be traced back to 1844, it is also the oldest surviving example. Unfortunately, it is the only one of the four whose age and origin are uncertain. But raising its interest value still further are its tantalizing links to an engine shipped to the United States from Cornwall by Harvey's of Hayle in 1835.

The Harvey Engine

In his book, "*The Cornish Beam Engine*",

published in 1966, D.B. Barton makes reference to two entablature rotative beam engines, a 30-inch and 26-inch, that Harvey's of Hayle sold to the Union Gold Mine in Orange County, Virginia, in June and July of 1835 at a cost of £737 and £584, respectively. The Cornish beam engine specialist, Kenneth Brown, has since ascertained from Harvey's records that, not one, but two 26-inch engines were sold to the Union Mine, a fact we have been able to corroborate from the mine's sales notice of the following year.

Despite the cost and difficulties that their shipment must have entailed, the engines' service at the Union Mine was short-lived and they were offered for sale in the *Fredericksberg Virginia Herald* on 24 August, 1836. Of the three engines (a 30-inch and two 26-inch) mentioned in the sales notice, the largest is described as a "30-inch low pressure engine, with two balance wheels, bobs and cranks, to be worked as a pumping engine, or to drive any other kind of machinery, with two large wrought iron tub boilers, sufficient to drive the engine at the rate of 130 horse power".

By 1844, an engine closely matching this description was at work at the Vaucluse Gold Mine, just 8 miles from the site of the Union Mine, and it is this engine that Henry Ford salvaged in 1931. This raises a tantalizing question. Were these two engines one and the same?

The Vaucluse Engine

The Vaucluse engine is a standard A-frame entablature rotative engine with a cast iron bed plate and a jacketed 30-inch cylinder. Although its present appearance, with only a single flywheel and no boilers (Fig. 1), would appear to preclude a connection with the 30-inch engine built by Harvey's of Hayle, there was once significantly more to this engine than exists today.

Photographs taken at the time Henry Ford acquired the engine

in 1931 (e.g., Fig. 2) show a striking similarity to the one described in the sale's notice of the nearby Union Mine in 1836. Like the Union Mine's Harvey engine, the Vaucluse engine was originally equipped with a pair of flywheels and two boilers. Henry Ford, however, chose to retain only one of each, the boiler remaining stored at the Ford Museum.

The possible link with the Harvey engine is further strengthened by the fact that paired flywheels, which are usually hallmarks of a stamps or crushing engine, are not common among entablature engines. Furthermore, the two boilers are of a Cornish design with a single below-center fire tube. The unusually large diameter of the fire tubes is presumably a modification for wood, rather than coal, firing.

The manner in which the Vaucluse engine worked is beautifully described in a contemporary prospectus of the Vaucluse Mine, dated 1847, a copy of which can be found in the Library of Congress in Washington D.C. Three excerpts from this "*Plan and Description of the Vaucluse Mine, Orange County, Virginia*" are quoted below.

"The machinery consists of a very perfect



Figure 2: The Vaucluse beam engine in Orange County, Virginia, at the time of its salvage in 1931, showing paired flywheels and two modified Cornish-type boilers.

condensing Cornish engine, 120 horse power, over which is a first rate substantial engine house and stack 50 feet high, of beautiful proportions. On the north of the engine and boiler house is a large frame mill-house, containing 6 large Chilean mills (much improved by the proprietor) consisting of cast iron bed plate, 5 feet 6 inches and weighing 2200 pounds each”.

“On the south side of the steam engine is the stamp house and amalgamating room, containing 6 batteries of three stamps each, or 18 in number, also driven by the engine, and each of which with the iron head of 125 lbs, weighs 350 to 380 pounds”.

“Attached to the steam engine by a connecting rod or joint, and raised on a heavy frame work above the working beam of the same, is a large balance Bob made of heavy Oak timber, the outer end of which works outside the engine house. There is connected or attached a large Sliding-rod, passing down into the pit or well room, to this is connected by offsets the two lifts or pumps as mentioned above, and likewise another or second bob, connected at pleasure, which drives the line of flat rods, leading to the different pits, where they are connected by different bobs to the lifts or pumps in the shafts, from which the water is raised to the surface. When all are in motion they present a lively and interesting appearance”. Indeed, they must have



Figure 3: The Vaucluse beam engine in 1931, showing fragments of the Chilean mills and fallen balance bob.

done!

That this is indeed the engine that Henry Ford collected is confirmed in another photograph taken at the time of its removal (Fig. 3), which shows many of the features the prospectus describes. In particular, fragments of the Chilean mills can clearly be seen, as can the fallen balance bob that drove the line of flat rods used for pumping. Interestingly, the prospectus not also describes the engine as Cornish, but also claims it cost between \$8000 and \$10,000 to import from England. While this figure seems wildly exaggerated, perhaps to attract investors, it does imply that the engine was not American-built.

Elsewhere, the same prospectus makes the following claim: “Having in view to build the present establishment so as to save the expense and inconvenience of transporting the ore 1½ miles over a hilly and bad road, in 1844 the present establishment was commenced, the mine purchased and a powerful and very superior English Condensing Engine brought on the ground for the purpose”. Hence, the engine was apparently erected at the Vaucluse engine in 1844, dating it to within 8 years of the sale at the Union Mine.

At this point, however, the trail goes cold and we have been unable to find any record of either the fate of the Union Mine engines or the history of the Vaucluse engine during this critical 8-year period. So we do not know if the 30-inch Union Mine engine was purchased and, if so, by whom. Nor do we know from whom the Vaucluse Mine obtained their 30-inch engine. So despite the circumstantial evidence in its favour, we cannot be certain that the two engines were one and the same.

Comparison with Other Engines

Although the Vaucluse engine cannot be directly linked to the Harvey engine of 1835, direct comparisons can be made between the Vaucluse engine and the 28-inch rotative beam engine preserved at the Levant Mine in Cornwall, which is known to have been built by Harvey’s of Hayle in 1840 (Fig. 4). Although the engine is of the house-built rather than the

entablature variety, there are, as Kenneth Brown has pointed out, many typical Cornish features in its design that differ from those of the Vauclose engine. For example, the beam has a central stiffening rib, a characteristic of Harvey engines. The massive design of the flywheel and sweep rod, the drop valves, and the dumbbell shape of the crank are also typical Cornish features.

By contrast, the beam of the Vauclose engine lacks a central rib, the flywheel and sweep rod are of slender shape, the engine is equipped with slide valves, and the crank is spindle-shaped (Fig. 1). While some of these changes may have been made for ease of shipment, for many authorities they would be enough to preclude any connection between the Vauclose engine and Harvey's of Hayle. Indeed, the striking similarity between the Vauclose engine and a drawing, published by Dionysius Lardner in 1836, of a rotative engine built by the West Point Foundry in New York (Fig. 5), could be used to argue for an origin in America rather than in Cornwall. However,

such an origin is clearly contradicted by the description of the engine in the prospectus.

Interestingly, three other features of the Vauclose engine that could also be taken as indicative of an origin outside Cornwall are shared by the Harvey-built Levant engine. Unlike many Cornish-built engines, the condenser and boiler feed pump of the Vauclose engine are placed "indoors" rather than "outdoors". That is, they are placed between the cylinder and the A-frame rather than between the A-frame and the flywheel (Fig. 1). The beam mountings or loops are also attached to the outside of the beam rather than between the two halves of the beam as was usually favoured in Cornwall. And unlike most Cornish designs, the parallel motion, which is more complete in the early photographs, was concentric. That is, the anchored and moving arms of the parallel motion were of the same length. Yet all of these typically non-Cornish traits are also features of the Levant engine (Fig. 4). So, clearly, the design of an engine need not be definitive of its origin.

Hence, the evidence in favour of a Cornish origin for the Vauclose engine is more-or-less balanced by the evidence against it, and until further leads are found, we cannot be certain whether the Vauclose engine and the 30-inch Harvey engine sold to the Union Mine are one and the same or not. Unfortunately, many of the deed books and other records of Orange County, Virginia, in which further leads might be found, were used by Union soldiers during the American Civil War to fill in muddy potholes as the army passed by on its way to the battles of Fredericksburg. But other leads may yet prove productive. For example, a careful search of the records available in Cornwall, particularly those in the County Records Office, may turn up a more detailed description of the 1835 Harvey engines that would tilt the scales one way or the other.

Failing that, a direct link with Harvey's of Hayle might be established through comparative chemical analysis of the cast iron used in the Vauclose engine with that of the Levant

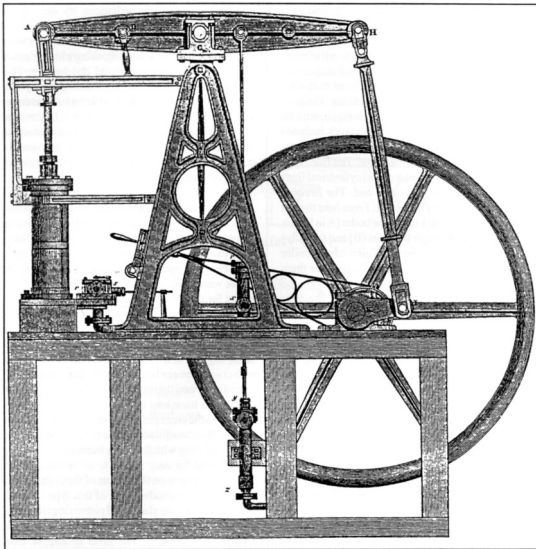
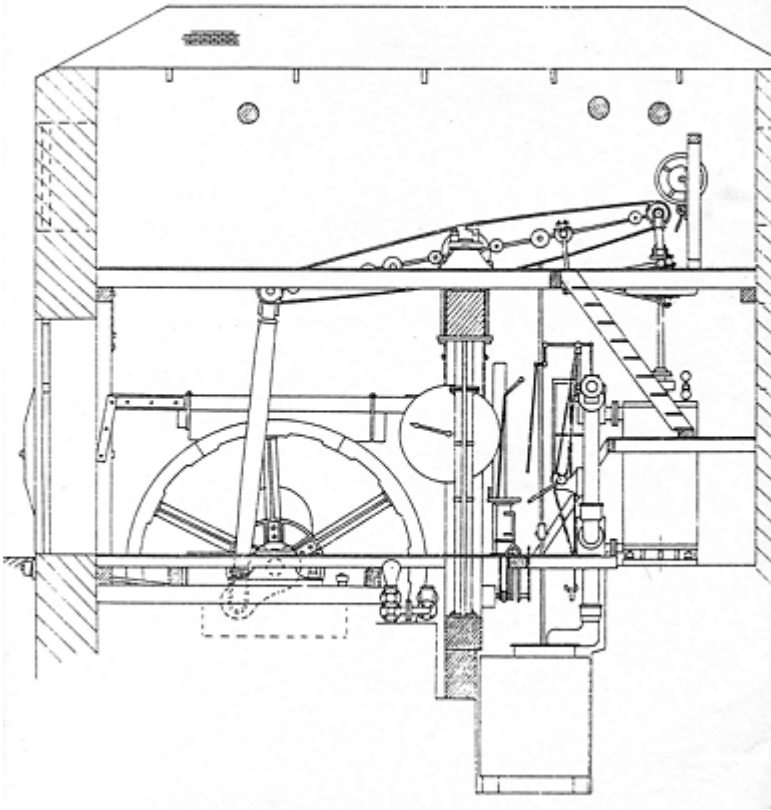


Figure 4: Elevation of the Levant Whim (or winding engine) built by Harvey's of Hayle, Cornwall, in 1840 (from Courtney Rowe, 1995, Drawings of Levant Whim, Part 1 - Original Parts, Journal of the Trevithick Society, v. 22, cover).

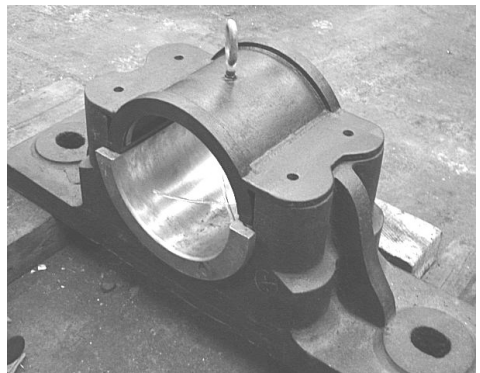
Man and Engine,
Volume 1, Stationary
Power, v. 10, p. 10,
after Dionysius
Lardner, 1836, *The
Steam Engine*).



engine. These avenues are presently being explored. But until the results of such studies are known, the fascinating origin of the Vauclose engine must be considered an unresolved issue.

Damian Nance
Randolf Grymes, Jr.
Terry Girouard

GAWNS WHEEL



Work is progressing on the Gawns Wheel in the Isle of Man. Here is a picture of one of the refurbished main bearings.

Figure 5: Small American high-pressure beam engine of the West Point Foundry, New York State (from William D. Sawyer, 1994, Corliss,

**AGM WEEKEND
MAY 20/21/22 2005**

Advance notice.
Full details in next Newsletter.

Friday 20th May

Field Trip "A look at Pool & Tuckingmill". Meet at 1pm. at Cornish Engines, Taylor's Shaft. We have permission to use "Safeway" car park. This field trip will cover Taylor's and Michell's engines, then through the Robinson's site, past South Crofty and on to the Tuckingmill Valley finishing at New Dolcoath, Roskear Shaft. Time approx. 3 hours.

Talk and visit to Porthcurno Cable & Wireless Museum. Meet at the Museum for 7pm start.

Saturday 21st May

Field trips. Levant Mine and Rosevale Mine, Zennor. All meet at Levant at 10am. The party will split due to pressure of space at Rosevale. Hard hats and lamps will be supplied.

Return to Geevor at 3-30pm.

4pm. Tea and biscuits at Geevor restaurant

5pm. Annual General Meeting

7pm. Annual Dinner at Geevor Mine Restaurant

Sunday 22nd. May

Field Trip to Wheal Cock.

Meet Botallack car park 10am.

Grid ref. SW366331.

Field Trip "The Buildings of St. Just"

A guided tour by a member of St. Just Old Cornwall Society.

Peter Richardson has bravely chosen the life and works of Richard Trevithick as his

TREVITHICK ON MASTERMIND

specialist subject on the television Mastermind programme.

His research into the complex subject included contacting the Society. However, his successful response to the questions posed by John Humphrys was attributed

more to his intense study of the several references books on the subject. His list of likely questions and their answers derived from this research was contained in no less than eighteen closely types A4 pages. They make fascinating reading and have become a work of reference in themselves.

The little chat between Peter and John Humphrys before the general knowledge questions lasted for some four minutes and included as much as Peter could cram in about the £2.00 coin and other links to Trevithick and this Society. We will have to wait until the broadcast to see how it will be edited down to 90 seconds.

We thank Peter for his work and look forward to seeing him when the next series of programmes starts in June; details will be posted on the Society website as soon as they are available.

P.M.H.

The Society has negotiated with the Royal Mint to acquire the final stock of this very rare 2004 £2.00 commemorative coin.

TREVITHICK COINS

Such has been the demand from enthusiasts for these coins that they have barely appeared in circulation. The Society will receive the coins in uncirculated condition and they will be individually packaged with details of their provenance.

To start with, they will be sold at just £3.00 each to members. This will include carriage and all proceeds will go to the Society. Uncirculated coins in this condition always demand a special price and we believe, because of their rarity that these will gain a considerable premium over the years. They have been seen in poorer condition on eBay at £5.00!

The first 50 purchasers of ten or more coins will receive a free copy of the Royal Mint's beautifully illustrated 'Fleur de Coin' booklet that contains an article on the life and achievements of Richard Trevithick.

Full details on the Society website:

www.trevithick-society.org.uk

P.M.H.

STEPHENSON LOCOMOTIVE SOCIETY

Date	Location	Time	Subject	Speaker
02/03/05	Annexe, Hayes village hall, Hayes St., Hayes, Bromley	1915	The Reading to Redhill Line	Bruce Nathan
04/03/05	The Settlement Centre, Union St., Middlesbrough	1900	The Lancashire and Yorkshire Railway	Noel Coates
04/03/05	Mining Institute, Neville Hall, Westgate Rd., Newcastle Upon Tyne	1900	The Railways of Sweden - Part 3 - the epilogue	Bill Hampson
09/03/05	Green Room, YMCA, Bridge St., Guildford	1930	The case for a high speed north-south rail link in the UK	Gordon Pettitt
12/03/05	Kidderminster Railway Museum	1415	Exeter West Signal Box	P. Jordon
14/03/05	Contact 01294 822303 for venue	1930	Swiss rail in general and a trip on the Bernina Express in particular	John Black
15/03/05	Fox Covert Inn, High Leven, near Yarm	1930	The Deltics—a story of creativity, enterprise, vision and determination	Dr. Peter Rodgers
17/03/05	St. John's URC Hall, Mowbray Rd., New Barnet	1930	An evening with	Richard Hardy
18/03/05	Mining Institute, Neville Hall, Westgate Rd., Newcastle Upon Tyne	1900	Sardinian Steam Safari—a railway touring company tour by narrow gauge	Martin Green
19/03/05	Friends' Meeting House, Mount St., Manchester	1400	Railway Accident Investigation	Joseph Taylor
31/03/05	St. John Ambulance Centre, Sandes Av., Kendal	1915	LMS Steam in the Thirties	Michael Carrier
01/04/05	The Settlement Centre, Union St., Middlesbrough	1900	Limestone tramways of Holy Island	Roger Jermy
06/04/05	Annexe, Hayes village hall, Hayes St., Hayes, Bromley	1915	Members' Evening	—
08/04/05	Mining Institute, Neville Hall, Westgate Rd., Newcastle Upon Tyne	1900	The city of San Francisco—why Southern Pacific covered up a train wreck for 30 yrs	Ray State
09/04/05	Kidderminster Railway Museum (adj. SVR station)	1415	Japanese Railways Illustrated	E. Talbot
11/04/05	Ayrshire Centre (contact 01294 822303 for venue)	1930	Centre AGM and members' night	—
13/04/05	Green Room, YMCA, Bridge St., Guildford	1930	Members' Evening	—
19/04/05	Fox Covert Inn, High Leven, near Yarm	1930	Oz 2000	Stan Buck
21/04/05	St. John's URC Hall, Mowbray Rd., New Barnet	1930	The Channel Tunnel Rail Link redevelopment of St. Pancras	Richard Jones
29/04/05	Mining Institute, Neville Hall, Westgate Rd., Newcastle Upon Tyne	1900	Roscocs—the success story of privatisation?	Andrew Burchall
06/05/05	The Settlement Centre, Union St., Middlesbrough	1900	Rail renewal at Shildon	George Muirhead
13/05/05	Mining Institute, Neville Hall, Westgate Rd., Newcastle Upon Tyne	1900	The Wensleydale Railway—moving the Dales forward	Ruth Annison

PROBUS – BURNGULLOW TRACK DOUBLING

Your secretary has spent half his working life trying to find unusual and unique (i.e. cheap) solutions to ensure the survival of the railway in Cornwall. In 1986 the money ran out, and faced with deteriorating track condition, British Rail opted to single 7.5 miles of the main line between Burngullow Junction (by Blackpool Clay Works) and the site of the closed Probus Station.

Privatisation took some of the pressure off, as there was an inbuilt requirement in the railway act to keep open all existing lines. However it had become clear that the single line section, added to the other three on the main line, was an operational nightmare with trains delayed due to queuing for the single line section causing disruption to tight schedules in Birmingham and Reading.

In 2002 it was decided to seek Objective One finance to assist in paying for redoubling of the line. Your secretary's company was offered the contract to carry out a feasibility study followed by detailed design.

Now (as usual) this was not just a case of putting the track back, the remaining track had been moved to improve clearances to trains passing under the arch bridges. The redundant track formation had become overgrown, and lost much of its drainage abilities and hence carrying strength. The bridges under the track had to be checked to see if they were still able to support two trains and modern regulations require clearances for larger trains and safety paths, and then there were the mines!

The area around Coombe had a history of ground collapses as mines were known to pass under the track, and the track was strengthened to avoid a collapse derailing a train. Allen Buckley and his employer were contacted to research the mining history of the area. His findings showed that several tunnels passed under the track and in fact at one point were the track was in a cutting a tunnel was exposed in the cutting face.

The results however did not identify the exact position of all of the tunnels and

therefore a Geophysics resistivity survey was carried out which gave some clues. This was followed by core drilling the ground to locate the tunnels, which were then capped by a large concrete slab to bridge the railway over the mines, prior to relaying the track

On completion of all the works Network Rail held an opening ceremony to which the Society was invited. This started with the arrival of a special train drawn by 3440 "City of Truro". First Great Western re-dedicated HST power car 43 192 "City of Truro" and Wessex Trains named sprinter unit 158 747 "Richard Trevithick", and to everyone's surprise presented the Society with a copy of the nameplate. Your Chairman and vice chairman represented the Society.

Now how about doubling the section from Saltash to St. Budeaux Ferry Road!!!

Geoff Smith-Grogan

Duncan Nicholson and George Blenkhorn have carried out most of this work, and Duncan has produced these notes about it, for the information of members. A member,

WORK ON THE MODEL BEAM ENGINE AT LEVANT

Mr Boulden, commenced this scale model beam pumping engine before giving it to the Society. The pieces were moved a number of times before arriving at Levant, when they consisted of the main castings, together with valve chests, a complete exhaust valve, one inlet valve, the valve arbor gear (minus the fittings) a box of rods etc, and some woodwork for the engine house. There was also a set of Mr Boulden's drawings and several sketches, which were a great help.

With additional materials supplied by the National Trust, and a considerable amount of time, the parallel motion gear, valve gear, cataracts, etc. were made and fitted, together with a fabricated base for the engine. When these were completed they were transported and erected at Levant.

It was necessary to operate the model on compressed air, which was not thought to present any major problems – how wrong

we were. Recently a similar model, to the same scale and built by Holman's apprentices many years ago, was erected in Camborne and, it is believed that attempts to run this model on air have also been unsuccessful.

It is thought that the problem with both engines was incomplete seating of the valves. As far as we know, the engines have never been run and are "tight". So with no expanding steam, or assistance from the condenser, as soon as the stroke almost closed the valve the engine stopped dead. When the following valve opened the leakage past the unseated valve would not permit the start of the return stroke.

The valve chest design, unfortunately, gives the air flow up through the cylinder inlet valve which rather defeats the object of the double seated valve. During the "running-in" period this valve has been held open all the time, with the regulating valve used as the cylinder inlet, and with the exhaust valve also held open.

In efforts to overcome this incomplete closure of the valve, a single seated valve was made up, then a valve with a rubber seat, along with other ideas, but all to no avail. Eventually the cataract operated valve concept was abandoned, and spring loaded valve trips made up and fitted to the regulating and exhaust valves. These worked very well, except of course there is no pause at the end of each stroke. Once the engine is "run in", it is hoped to refit the cataract valve control arrangement.

The engine house has also had a great deal of time spent upon it, and it now taking shape very well.

Duncan Nicholson



70th BIRTHDAY CELEBRATIONS

Your Society is seventy years old this year, a milestone the Council feel should be celebrated especially as we believe we are the oldest industrial conservation society in the world. It was felt that some extra "treats" should be included in the programme. Although the fine detail still has to be confirmed, the celebrations will be on Saturday August 13th. at Levant where it all started. We are intending to have an alfresco lunch and the Council are currently testing the local pasties and saffron cake as to their suitability with great stoicism. There will also be musical entertainment and an evening meal locally.

It is hoped that a number of "upcountry" members will be in Cornwall on holiday and be able to join in. For those that may not be able to journey to the far west we are looking at the possibility of a boat trip on the River Tamar from Plymouth to Morwellham, a spectacular trip if ever there was one, with lots of industrial archaeology to view and with a commentary. The date will be Sept. 11th.

In addition to all this we are offering field trips of your choice (within reason!) from August 8th. to August 17th. Many members do not get the chance to go on the field trips. These can be for singletons or bigger groups - we will endeavour to accommodate you. To help us there will be a booking form with the next newsletter.

The West of England Steam Engine Society will be celebrating their fiftieth birthday at their usual rally, August 19/20/21 and the Trevithick Society is intent on mounting a larger display than usual as part of the joint birthdays. We shall need volunteers to man the displays and generally help, so come on members, show 'em what you can do. Details on the chatline 01209 716811

Trevithick Day is April 30th. We shall also need help there and Sunday, May 1st. is Open Day at King Edward Mine, so bring everyone along...its a free show.

Kingsley Rickard

The annual maintenance programme has begun and the engine is only open to the public on Fridays until the spring. The major

LEVANT REPORT

jobs are the cleaning and inspection of the steam boiler and steam system, checking the method of securing the winding drums to the engine shaft and the overhaul of the boiler ignition system, which has given much trouble recently. The boiler water blow-down vessel has been replaced.

The 1:12 scale model of the 80" W. H. Mitchell designed pumping engine, which was given to us by Mr Boulden and is being completed by volunteers, has been installed in the Electric Winder House. A separate note by Duncan Nicholson, who has led the work, is included.

The National Trust has agreed that Geological tours and an Art Course will be held at Levant this year to take advantage of the spectacular coastal setting of the mine. Bookings may be arranged on 01736 787117.

The Trust has also decided to try changing the route followed by visitors to the site. Visitors will now start at the Electric Winder House and finish at the Steam Whim.

The National Trust contractors are now working on further Stages of the NT/St Just Heritage Area Regeneration Project. The old reservoirs below the site of the steam compressor house have been refurbished and now collect the water that used to drain down from around the Man Engine shaft, flowing over the road and the cliff. This trench also carries the cables for lights in the Man Engine Tunnel.

As a long term project, a Working Party is continuing to look into the installation of various preserved pumping engines in the stabilised pump engine house at Levant.

The pre-season meeting of the staff and volunteers will be held on 8th March 2005 in the refurbished Mine Drawing Office.

W. E. H. King

ROWE HILLMASTER



To mark the Golden Jubilee of Cornwall's own commercial lorry, Peter Tutthill has written the book *Rowe Hillmaster: The Cornish Commercial Vehicle*.

It was 50 years ago that the first Hillmaster lorries rolled out of Maurice Rowe's factory near Liskeard. Although production ceased in 1962, the Rowe Hillmaster has always had a special place in the hearts of Cornish transport enthusiasts.

The book will be launched at Dobwalls, at the Rowe Garage Showroom, at 1000 on Sunday 20th March. There will be an exhibition on show about the Rowe Company and its products until 1730. The exhibition will include photographs, archive plans, and memorabilia. At least one of the surviving Rowe Hillmaster trucks will be present and possibly more.

Rowe's Garage is on the A38 at Dobwalls, just west of Liskeard on the right hand side going west. Parking will be available behind the garage.

There will also be a celebratory lunch for up to 70 at the Royal Talbot, Lostwithiel. The cost of the lunch - including a souvenir Rowe badge - will be £12 and tickets, which are expected to be much in demand, are available from Mrs Wendy Liddicoat, 10 Reed Park, Lostwithiel, PL22 0HF.

Peter Tutthill's previous books include the comprehensive story of motor racing at the Davidstow circuit, histories of the Kieft and Paramount car companies as well as a brief history of Wadebridge, where he now lives.

For further information please contact either Peter Tutthill on 01208 812358 or

Graham Thorne on 01621 892896.

Graham Thorne

John Soper lives in Plymouth and he has

THANK YOU JOHN

kindly volunteered his services as a fitter and turner to the Society. It's a long way to come but we've already seen him twice and we're confident that we will see a lot more of him.

Many people believe that you have to be an engineer to offer your services, you don't! Apart from some essential DIY maintenance on my first motor car, a 1936 Austin Seven Opal, I've never done any engineering. All sorts of strange talents are very acceptable. If you can hold a pencil, sweep a floor, take minutes, be a gopher or wield a hammer you'll be appreciated. We reckon that we're a friendly bunch and welcome all ages and all sexes with common sense. In the first instance, please phone the Trevithick Society Chatline on 01209 716811, it could be the start of a whole new life.

P.M.H.

The Society proudly possesses a replica

NAMING CEREMONY



name plate, presented by Bob Houghton of Wessex Trains, after the naming of the newly refurbished Class 158 No 158747 "Richard Trevithick". From left to right are Kingsley Rickard, Phil Hosken, Bob Houghton and Colin Jarvis (Cornwall County Council). Photo: Colin J. Marsden.

BOOK REVIEWS

Ross Island, Mining, Metal and Society in Early Ireland. William O'Brien, A4 Monograph, 800 pp., 120 plates, 259 line drawings. ISBN 0 9535620 3 X. Cost €60.00 payable to Bronze Age Studies, Dept. of Archaeology, National University of Ireland, Galway City, Ireland.

This book is massive — 3 Kg., demonstrating the mass of information it holds. It covers extensive research on the ancient copper mines of South West Ireland. It is impossible to do it justice in a simple review such as this, a full review would run into pages: for those really interested in mining research it is a "must".

It is particularly valuable for its widespread and detailed coverage of the research techniques which have been developed for a full analysis of a mining site. Methods from photographic recording through optical and scanning electron microscope examination, lead isotope provenance studies to others such as pollen and radiocarbon dating, give an indication of the scope of methods which have become essential for any serious study of ancient mining and metallurgical research. This alone is a valuable contribution for researchers to follow, quite apart from any specific study of this mining area.

Readers should be cautioned that the very accuracy and capability of present day research equipment results in a virtual avalanche of data: a skill that has to be developed is 'seeing the wood from the trees'.

It is indeed difficult to make any adverse criticism — maybe a shade more attention to similar research and replication experiments conducted on more widespread mining sites could have been expected. The book is most attractively produced with fine layout and printing. A pallet jack may be needed to handle it.

BE.

After the debacle over last year's "static steam only" event the spectacle of moving

CAMBORNE TREVITHICK DAY AND THE TREVITHICK LOCO

locomotives in Camborne will be with us again this year on the 30th April. The route for the steam parade will be a new one allowing even more people to see the unique display. It will start from Basset Road, go down Church Street and Wellington Road, around by Tehidy Post Office and back up Camborne Hill, round by Tyacks Hotel and into Basset Road again. The Trevithick Dance and the miniature steam engine parade will take the usual route.

The Trevithick locomotive has normally been on show in Basset Road but a shortage of volunteers means that it is unlikely to appear this year.

The locomotive was built to commemorate the remarkable achievements of Richard Trevithick and, after fifty appearances in steam all over the country, numerous television appearances and five Trevithick Days, it has certainly done that. At the time of its building it was hoped that a suitable museum or display area would be found within five years. This has not happened and sadly it is accommodated unseen for most of its life in the workshop where it was built. We are grateful to RT Quaife Engineering Ltd for their kindness.

P.M.H.

John Potter has produced a new documentary video about "South Crofty Mine and Dolcoath Workings". It took John many months to complete and comprises

SOUTH CROFTY ON FILM

footage from the working mine days and from today. Baseresult Holdings and their staff gave John and Dominic Hudson help and access to many parts of the mine, including Cooks Kitchen, Dolcoath's old valley shaft, Dolcoath deep adit and the exit portal at Roscroggan where it enters the Red River. See programme for 16th Sept.

TREVITHICK SOCIETY EVENTS AND CONTACTS

April 22nd. C.C.

An Industrial Coastline — Penzance to St. Ives.
by Bill Newby MBE.

May 1st

Open Day at King Edward Mine.

May 20th — 22nd

AGM weekend in West Penwith.

June 17th. C.C.

Hosken, Trevithick & Polkinhorn Co. Ltd.
by Phil Hosken & Ian John.

June 18th. Field Trip

Wheal Fortune & Cusvey
by Pete Joseph.

*Meetings are held in the Lecture Theatre,
Opie Building, Cornwall College at 7pm.*

*East Cornwall Branch meetings will be held
at the Public Hall Complex, Liskeard at 7.30pm.*

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The Trevithick Society, a registered charity, is a recognised body of the study of industrial archaeology in Cornwall. Membership is open to all who are interested in the region's great industrial past, whether or not they live in Cornwall. The Society takes its name from one of Britain's foremost inventors and pioneers of the Industrial Revolution, Richard Trevithick, a Cornishman whose name is inseparable from the development of steam power.

This Newsletter is published quarterly and, together with the annual Journal, is distributed free to members. Letters and contributions are always welcome and should be sent direct to the editor. The views expressed in this Newsletter are those of the authors and not necessarily those of the Trevithick Society.

Subscriptions 2005:-

Single members	£15
Family (husband & wife)	£18
Overseas members	£18
Corporate members	£18
Student members	£5

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