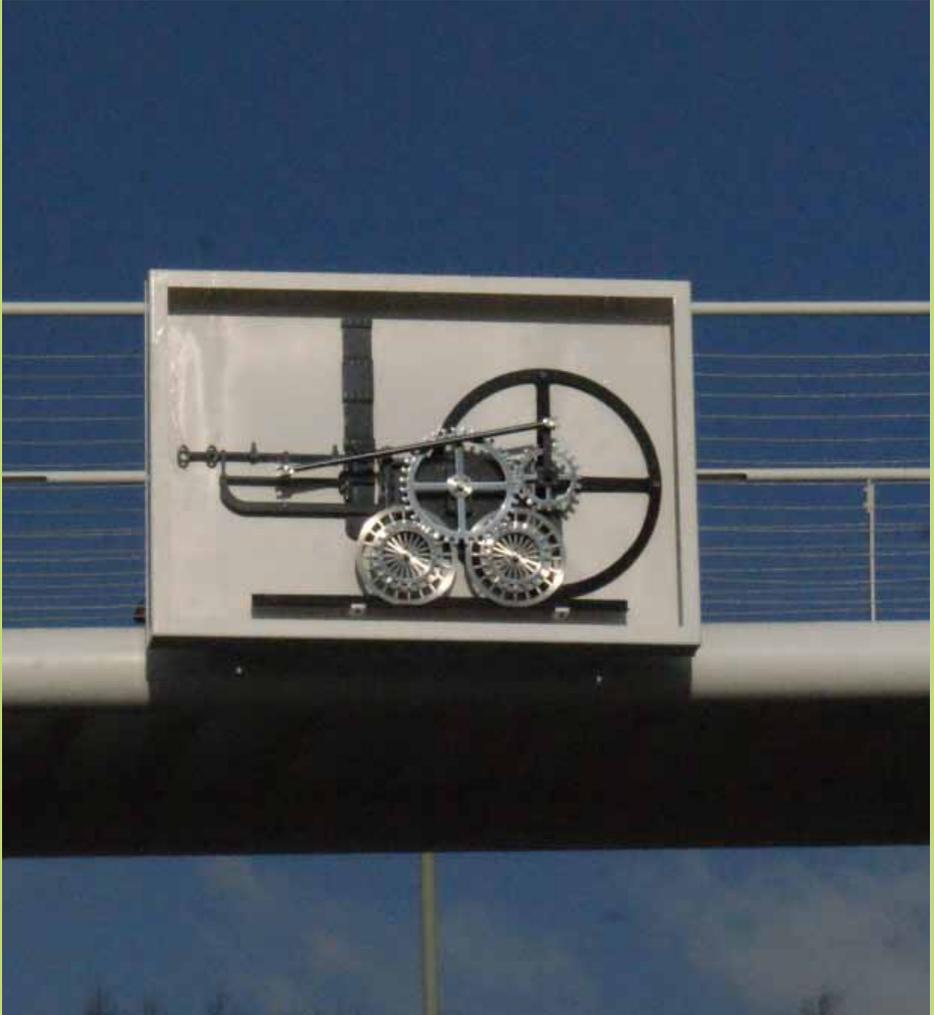




# THE TREVITHICK SOCIETY

**KOWETHAS TREVITHICK**  
NEWSLETTER 155 SPRING 2012



Puddlers' Bridge on the Trevithick Trail, near Merthyr Tydfil.

Reg. Charity  
No. 246586

# CHAIRMAN'S ADDRESS

## Creating links

The recent opening of the Sustrans bridge, covered elsewhere in this issue, to connect two lengths of the Trevithick Trail near Merthyr Tydfil came about a year after the University of Swansea published an investigation into the Welsh Copper Industry.\* Both these significant events in industrial history depended upon Cornwall's links with Wales.

In the first instance, Richard Trevithick's ingenuity and development of the high-pressure steam engine in Cornwall took form as the world's first steam powered railway locomotive in Wales. It is well known for having pulled a train loaded with 10 tons of iron and some 70 passengers nearly ten miles. This was 25 years before the emergence of George Stephenson's Rocket. The second event depended mainly on the little sailing ships that carried thousands of tons of copper ore from Cornwall and returned with the Welsh coal and iron that powered Cornwall's mines and fed its industries. Investigations have shown that much of the copper smelting in Wales and shipping was controlled by Cornish families.

Cornwall had similar industrial links to Bridgnorth, Dartford and other places throughout the country; all depended to a great extent upon Cornish ingenuity. This Society appears to be the only link today between Cornwall's industrial archaeology and that of other parts of the country. If we are to encourage the study of Cornwall's industrial archaeology we need to develop these links for the benefit of all concerned, wherever they may be. This will enhance the status of this Society whenever it is seeking recognition or funding. It is encouraging that, following the networking in Wales, Merthyr Tydfil is now planning annual Trevithick Days to encourage the appreciation of the inventor's work.

\* [www.swan.ac.uk/archives.copper](http://www.swan.ac.uk/archives.copper)

**Philip M Hosken**

# EDITORIAL

Producing a quarterly newsletter that is published on a set date has proved impossible for quite a few years. There are many factors that have contributed to this reality including late submission of text, delays in printing, delays in sending out the printed newsletter and the occasional illness or holiday intervening. With that in mind future newsletters will be referred to according to the season of publication - this one being Spring 2012.



**Colin French**

**Copy date for next newsletter: May 30th**

**Established 1935**

## LETTERS TO THE EDITOR

Dear Editor,

Keith Johns writes from Adelaide "The article below serves to show that we have been forced to repel borders in defence of Cornish Heritage Downunder".

Reading the article in Cornwall one cannot resist a feeling of *deja vu*. It is not many years since Geevor was in the hands of the scrapman when the Local Authorities alerted interested bodies to the potential loss of an historic site by calling a meeting. That meeting resulted in the establishment of the Trevithick Trust and the appointment of Stuart Smith as its Chief Executive. The County Council bought Geevor, Cable & Wireless dropped its plan to remove historic telegraph equipment from Porthcurno to its Midlands HQ and, perhaps most importantly, there was a change in perception of the significance of Cornwall's industrial heritage.

We wish our friends every success in their efforts to save the Cornish Mining Landscape in South Australia.

**Bill Newby, MBE**

*Exploration rejected* (from the Adelaide Advertiser, 12/10/2011).

The State Government has moved to keep new mining out of the heritage-listed Burra Monster Mine. Mineral Resources Development Minister Tom Koutsantonis said he had refused an exploration licence for Phoenix Copper.

National Trust of SA president David Beaumont said the historic mine site and its buildings were of national importance. In 1845 Burra's copper mines were the nation's first major copper discovery. Mr Beaumont said it would have been ridiculous to allow renewed exploration at the site. "The Monster Mine has been nominated for World Heritage listing as a transnational component of Cornish mining sites".

Keith Johns (a former director

of the Department of Mines) explained further in the Cornish Association of South Australia newsletter:

Phoenix Copper Ltd applied on 26/5/2010 for entry to the Burra Mine Reserve for the purpose of exploration for identification of mineable copper. The Government called for submissions on the proposal in July 2010, but dithered on whether to allow (or not) such activity.

Thus, 15 months later - with a new Premier, a new Minister of Mines, a new Cousin Jack as an advisory bureaucrat in the offing - it was timely to marshal the support of the Australian Mining History Association (AMHA) at its AGM on 16/09/2011. However, we were overtaken by events; the Government rejected the Company's application. So AMHA sent congratulations to the Premier and to the Minister and urged for appropriate legislation to safeguard the future of the Burra Burra Mine Site.

## OBLIVION ...

Those who have read *The Oblivion of Trevithick* may have been mystified that this book on Trevithick is not overburdened with details and drawings of engines. Those details are available in quantity elsewhere. An eminent body asked for details of the content before choosing a reviewer; here are some thoughts on that content.

Its purpose is made clear in the title and the frequently unread opening pages. Most, maybe all, previous books about Trevithick and the other contributors to the evolution of the steam engine have been written by engineers or by writers with an appreciation of engine design. Those writers have, as an essential part of their work, ensured that dimensions, pressures and other factors have been fully and accurately documented.

In the *Oblivion ...* the author is not an engineer but has appreciation of their dreams, problems and achievements. He has written a book that should not

## ALTERNATIVE ENGINEERING

be judged by its number of nuts, bolts or thread sizes. It is a book about human beings, lots of them, and it explores their natures, temperaments and failings. Many reviewers are mystified by the appearance in the book of a number of women who have no connection whatsoever with steam engines but a book that seeks the reasons for Trevithick's obscurity deals not with bores, strokes, pressures and vacuums but with humour, deceit, greed and unrequited love.

The author has sought the facts that illustrate the personalities of the characters depicted in the book. He has ridiculed the crass absurdities of Samuel Smiles, Francis Trevithick and other authors whose contributions to steam engine history have been accepted almost without question and have been the foundation of much misappropriated credit to this day. He has elaborated on the devious schemes of Davy and Gilbert by reference to their relationships elsewhere.

Many inventors have had their work stolen and exploited by others. Few of them trusted and respected the thieves as fully as Trevithick did throughout his working life. In a way, this is not a book for engineers but for anthropologists who do not access the human qualities and failings of engineers by the numbers of steam engines they manufacture. Nevertheless, the book has a proud place in the home of every engineer and library as it stands alongside those on Watt and others as the explanation how the high pressure steam engine of today came into existence and drove the world's Industrial and Transport Revolutions.

See [www.trevithick-society.co.uk/oblivion](http://www.trevithick-society.co.uk/oblivion)

**P.M.H.**



Do you wonder if it may be time to give up metal engineering? Are you getting cold out in the shed? Are you wondering how you can best use your design and manufacturing skills? Are you looking for something that's clean and quiet, something that you can do indoors when the kitchen's not required? Something that is unlikely to annoy anyone who must be obeyed? Then think of Lego.

Don't laugh, go to the website [www.lego.com](http://www.lego.com) to find an official Lego shop or [www.preloved.co.uk/lego](http://www.preloved.co.uk/lego) for secondhand Lego. We're not talking toys here, you're unlikely to let your kids play with them! There is the Brickish Association at [www.brickish.org](http://www.brickish.org) or meet the Americans who are deep into Brickishness, check out [www.brickjournal.com](http://www.brickjournal.com). There are steam and aircraft models and a new mincraft kit is about to be announced.

First person to drop me a line can receive a free copy of the US Brick Journal (Issue 16) for a mind blowing experience.

**P.M.H.**

## POSSIBLE VISIT TO IRISH MINES

Due to a technical problem members who registered their interest in the above are asked to re-state their interest to Kingsley Rickard at the following address:- [k.rickard@talktalk.net](mailto:k.rickard@talktalk.net)

## LEVANT REPORT

The winter shut-down and maintenance programme is well under way. The volunteers have installed a compressed airline that can be taken into the engine house, and has proved to be very useful for removing old and flaking paint from the flywheel and pipework using an air driven chisel. New paint is being applied to smarten the engine up, and it is intended to purchase more compressed air tools in the near future. Other work carried out during the winter period has been the refurbishment of the condenser foot pedal linkage, and an inspection and adjustment of the flywheel brake mechanism. A tightness has been noticed in the air-pump cylinder and is being investigated.

The new CFB boiler installed last August has proved to be very economic and reliable, and the flow rate problem to the engine has been resolved by totally stripping every part of the Spirax-Sarco Pressure Reduction Valve, by freeing up and cleaning. This valve is capable of reducing the boiler pressure (up to 150 psi) down to a maximum of 30 psi for the 1840s beam engine, with no loss of flow rate.

Due to local planning regulations it has not been possible to replace the main oil tank with a new bunded buried tank so plans are now going ahead to install a new smaller tank into the old upcast fan building.

This year we have opened the site earlier than normal commencing with the half term break before Easter.

**Ron Flaxman.**

## PUDDLERS' BRIDGE ON THE TREVITHICK TRAIL

Julien Macdonald cuts the tape



Two hundred and eight years to the day a newly built pedestrian and cycle bridge re-linked two sections of the tramway that Richard Trevithick had used to demonstrate the performance of his high-pressure steam driven locomotive in South Wales.

Since the bicentennial celebrations in 2004 of Trevithick's ingenuity and determination, the former tramway became known as the Trevithick Trail. During its concept, design and construction stages the new £1m structure was fondly known as the Trevithick Bridge. As it neared completion there was a competition to name it and the winning entry was 'Puddlers' Bridge'. The name reflected the tremendous iron works that spread throughout the district and the hazardous work of making wrought iron.

The intention of the bridge is to



provide safe, traffic-free passage over the A4060 dual-carriageway for walkers and cyclists as they make their way through the former heavy industrial area from Penydarren to Abercynon and eventually join up with the Taff Trail. The work was undertaken by Sustrans in co-operation with local authorities. Sustrans stands for Sustainable Transport and is the organisation behind the National Cycle Network and a number of bridges built to link important cycle and walkways.

A part of the development has

been a seat for travellers backed by metal outline sculptures of three local Merthyr heroes. The chosen ones were locally born Julien Macdonald, OBE and Laura Ashley together with Richard Trevithick. All three have, in their separate ways, made international impact that has been enjoyed by Merthyr Tydfil. The competition was stiff. Merthyr could have recalled a number of other well-known sons and daughters such as the actor Philip Madoc and, through his father's birth in the town, Rolf Harris. Tom Jones (Woodward) was born just beyond Abercynon at Pontypridd.

Julien Macdonald, an award winning dress designer, is not immediately recognised in industrial archaeological circles. Nevertheless, he stood under an umbrella and engendered considerable enthusiasm for the bridge from the assembled dignitaries and school children with their bicycles as he cut the tape and declared the bridge open.

In addition to giving an informal lecture to selected members of



**Trevithick as an outline sculpture**



**Phil Hosken chats with Julia Trevithick**

the local community concerned with its heritage and redevelopment, Phil Hosken of this Society had the opportunity to say a few words at the ceremony. He spoke of Cornwall's Celtic link to Wales, the way we had shared our resources and the manner in which Trevithick (not 'Tre-veh-ic as all the other speakers had insisted on calling him!) had demonstrated his locomotive in the valley for the entire world to appreciate. He stressed how this had been much more than a local triumph for Merthyr and it was something that should now be developed to draw attention to its international significance. He offered such help as could be contributed by friends in Cornwall.

Following the opening, the crowd departed to enjoy local hospitality and an afternoon of Trevithick-themed activities at the nearby Hill's Plymouth Cricket Club building. Here were a number of stalls, including one for this Society manned by Ken Trevithick and his wife Julia, competitions for the children and refreshments including over 200 pancakes as it was Shrove Tuesday.

Then Phil Hosken, in company

with Rob Thomson, Public Relations Officer of Merthyr Tydfil Heritage Regeneration Trust, were invited into the parlour of Cllr Paul Brown, Mayor of Merthyr Tydfil County Borough Council. The importance of the Trevithick Trail tram track to the story of early railway history was discussed. They also talked about the possibilities for study and tourism in the district and the mayor planned future Trevithick Days in Merthyr to follow this inaugural one. Following the meeting, Rob Thomson said that a number of representatives from Merthyr intend to visit Trevithick Day in Camborne this year.

**P.M.H.**



## PUBLICATIONS

Diane Hodnett's book, *The Metal Mines of West Cork*, which was much praised and won two awards, has been out of print since Christmas. We have now undertaken a limited reprint of which only 50 copies are for sale in the UK. These are available from Tormark in the usual way, price £17.99.

H G Ordish: *The Early Mining Photographs* has been a very strong seller and the limited hardback edition (£25.00) is very close to selling out. As for West Cork, any members who wish to guarantee a copy should not delay.

Other Society titles where stocks in hand are now limited include the hardback editions of *Dolcoath Mine* (£25.99) and *The Harveys of Hayle* (£19.99) and our reprint of the Holman Brothers, *Catalogue of Crushing and Dressing Plant* (£7.99). Peter Joseph's revision of Clive Carter's Holman history, with a large amount of new material, will be going to press shortly and should be published in early summer.

Finally congratulations are due to Pete on his Botallack history, *Hard Graft*, being named runner-up in the Association for Industrial Archaeology's 2011 award for Best Occasional Publication.

**Graham Thorne**

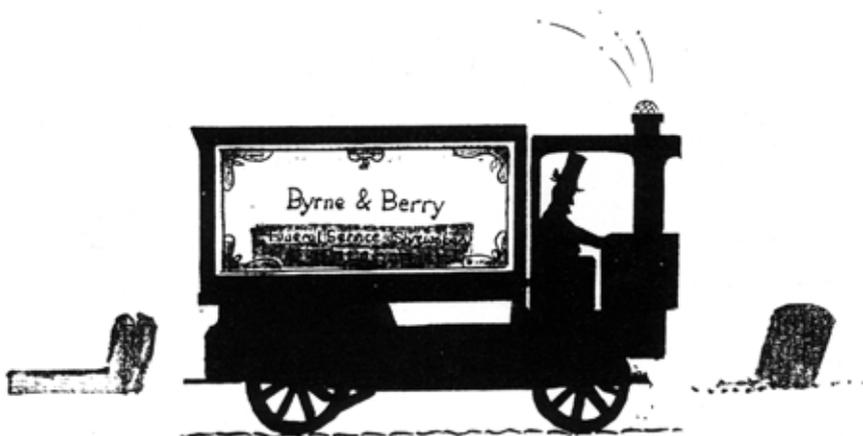
## SENTINEL HEARSE

The following eulogy to a Sentinel first appeared in the Tolskiddy Bugle, a periodical for the Chester & Wrexham Cornish Society some twenty years ago. As you may be reading this early in April we thought this a suitable time to repeat it here. It began,

Whilst we were researching Trevithick Day we came across a report and subsequent correspondence in *Past Glories* which would interest Cornish steam enthusiasts about a Sentinel steam hearse. Society members may know that Sentinel lorries were built in nearby Shrewsbury and road tested over the Horse Shoe Pass at Llangollen.

'Sir, The only remaining completely original Sentinel steam hearse has come to light in Shrewsbury, close to where it was built. The 25 foot vehicle, in derelict condition, was found in the back garden of a funeral director's business. It was found when the walled premises were surveyed prior to demolition to make way for Shrewsbury's Tesco/Marks & Spencer complex.

Local undertakers Byrne & Berry served Shrewsbury for over a century and were amongst the few steam undertakers in the country. The fact that bearers and other staff wore black meant that the coal-fired Sentinel was an acceptable substitute



for the more expensive petrol-engine Lanchester or Rolls Royce vehicles. Based on a 1917 Stand Sentinel chassis, the hearse body was always considered unwieldy and 'steam raising time' charged on funeral bills was an irritation to all but those families whose deceased loved ones were formerly employed at the nearby Sentinel works.

The steam hearse last saw use at a funeral in April 1931 when an inexperienced crew unused to the need to deploy damper and injector discreetly when near a graveside, allowed the safety valve to lift. The minister's final words to the mourners had to be shouted over the roar of escaping steam which condensed into sooty droplets in the brisk Spring weather and descended on the funeral party. Sadly, this had happened before and the Sentinel was driven home in disgrace. Her gilded plumes, large expanses of bevelled glass panelling and gold filigree work were removed and she was left to rot at the back of Byrne & Berry's premises.

Now alerted to the value of the wreck on their premises, Cremquik, the national funeral directing combine, who absorbed the old family concern in 1988, intended to restore the vehicle for future specialist funeral service if suitable drivers could be found.

This item evoked the following correspondence,

Sir, I was most interested to read of the recent discovery of the remains of the unique Sentinel hearse in Shrewsbury. However, readers may be interested to know that it was not actually supplied new to Messrs Byrne & Berry.

No. 1417 (built 1st April 1917) was actually sold to a small (very small!) undertaker in mid-Wales named David Evans – known locally as 'Evans Above' or 'Dai Peacefully'. He used the vehicle in connection with his business in the small town of Llansalof deep in the Cambrian mountains. Dai was a junior partner with his maternal uncle, William Berry, who had family connections with the Shrewsbury firm.

Berry had little respect for his

Welsh relatives, particularly when, soon after acquiring the Sentinel, Dai was persuaded by his somewhat senile uncle to adopt the slogan, 'Have Hearse, Will Berry' – in those days a particularly inept and inappropriate move in such a puritanical area of Wales. However, as Dai was the only undertaker in the district the locals had little choice but to support him.

The Sentinel's career in Wales was to be a short one for, in April 1919, it was sold to the Shrewsbury firm with connections to Will Berry. This followed a particularly unfortunate and embarrassing mix-up with regard to ashes. (This, incidentally, also explains the presence of a memorial stone laid in the middle of Llansalof rugby pitch, itself constructed on a land/refuse site, Ed.)

Sir, I read with interest ... the hearse, it caused problems from new. Apart from having to keep the boiler quiet at graveside, the pall-bearers also had difficulties. Due to the height of the bed, they had trouble reaching and moving the coffin. For a while mobile platforms were carried but were unsuccessful due to the uneven ground in churchyards. I know of at least one unhappy incident when a coffin was dropped, fortunately out of sight of the mourners who were only aware of a delay whilst the deceased was replaced and the lid secured.

Other problems were mentioned by correspondents including the considerable weight of the steam lorry chassis which caused it to push in the sides of a grave whilst parked alongside and hot ashes dropping from the tray under the boiler which set alight the long dry grass one Summer's day.

**P.M.H.**



## WHY DO THEY CALL HIM TRE-VETH-IC?

Elsewhere in this issue you will find numerous mentions of Trevithick. They are all connected to his short but incredibly important visit to South Wales. Put 'Trevithick Close' into Google and you will find his name known by people who have little idea of his achievements all over the country and as far away as Western Australia. When they say Tre-veth-ic in Wales and elsewhere, do they really appreciate who he was? In Cardiff the School of Engineering is the Trevithick Building where the Institution of Engineering and Technology organises lectures on the Large Hadron Collider. Nearby at Techniquet, Dr Mark Lewney gives an otherwise unnamed Trevithick Lecture that is described as,

'What causes the revolutionary, history-changing sound of rock guitar, and how does it help us to understand the nature of the stuff we're made of? Famelab winner Mark Lewney explains the physics of rock using riffs from Vivaldi to AC/DC, explains the secret of the Stradivarius, and shows how string vibrations might lie at the heart of the Big Questions about the universe.

It is clear that Trevithick means different things to different folk and, as they say, all advertising is good advertising, but we'd like the true story of his achievements to be better known.

**P.M.H.**



## DEVELOPMENTS AT NUMBER 3

Following public demonstrations, protracted negotiations and the fears of structural engineers that it would tumble down as they inspected it, the former Holman Bros Museum and Apprentice School is being developed by Coastline Housing Ltd into eighteen flats.

Coastline sought suitable names for the building. Numerous ideas were made that reflected its occupation by Holmans following its use as the Assembly Rooms. These ranged from Novice House or Court to echo its use as an apprentice school, Silver Court in memory of the famous drill or even Rotair House to commemorate the mainstay of Holman manufacture in later years. As we go to press we understand that Cornwall Council is looking favourably on 'The Public Rooms' as that is what was originally inscribed into the granite when the building was erected. We look forward to telling you there has been a change of mind.

**P.M.H.**

## TORDOWN QUARRY ENGINE

Preparations to remove the engine from the quarry building are now complete and we await the landowner's builders to remove the roof. All the smaller parts of the engine are now back at King Edward along with the compressor the engine drove. At the quarry the kit still awaiting transport comprises the two cylinder blocks, the crankshaft, the flywheel, three overhead R.S.J.s and checker plate pit covers, or to express it another way – two truck loads.

**K.J.T.R.**



**Holman Bros Museum and Apprentice School in the '50s.**



**As it appears today, awaiting to emerge from its chrysalis.**

## THE TREWHELLA MODELS EPISODE 4

### VISITS TO GEEVOR

It is important for the reader to realise that my uncle's models form a very small part of the work undertaken by Geevor, and if this instalment seems like an indictment of Geevor's lack of progress, it must be understood that visitors are their lifeblood, so projects like The Hard Rock Museum, the overhaul and major maintenance of the buildings, and the underground visit in Mexico mine all help to bring the people in. They are the real achievements of Geevor, and are no mean feat.

Now we must go back to 2003 when, filled with enthusiasm, I went to Geevor in March. I was a bit disappointed that nothing had changed since my wife, Beatriz, and I went there in September 2001 and first saw some of my uncle's models. I was welcomed by Bill Lakin who was, and I believe still is, Chairman of the Trustees of the Pendeen Community Heritage that run Geevor. He introduced me to Mike Simpson, the mine manager, and various other members of the staff.

### INITIAL DISCUSSIONS

For me this was really exciting, as we discussed whether the models should be considered as a purely static exhibit (God forbid!), or should the objective be to make the models active and process ore driven possibly by steam but at least by compressed air. This was a policy decision to be made by Geevor management, not by me as an outsider, and it was great to find them so positive that they should be assembled as a working ensemble. I am of course very pro this and would love to see them driven by steam, but of course I am well aware of the problems involved and can see that a more practical approach is to run them on compressed air.

Where the few models on display

were housed it was quite impracticable to consider them as anything other than a static display. Even using compressed air or an electric motor to run the mill there are far reaching implications.

- First of all, just to consider running them, they would have to be moved, so that those operating them could move around them, as they were installed hard against the outer wall.
- Running the mill, since water is needed to carry out the ore processing, there would be a considerable rise in humidity in the area. Since at that time this was part of the museum at Geevor, the rise in humidity, it was felt, would result in a deterioration of some of the many artifacts on display.

Therefore, to make the models a working ensemble, they would have to be moved to a site where a rise in humidity would be of no consequence. Quite obviously, this affected what I did during my short stay and the objectives I set myself. On the mill it would be stupid to spend a lot of time, when it would all have to be dismantled to be moved to a new location.

### INSPECTION AND WORK ON MODELS

Although the intention was to do nothing to the mill, it was felt that it was well worth putting the Holman pneumatic stamps back in the mill alongside the Nissan (labelled Californian) stamps, where they used to be in my uncle's workshop before they were loaned to the Holman Museum. Conveniently, the main layshaft still had all the keyways in it for the driving pulleys, so it was no problem to refit them. The only new thing required for this static display, was a box for the stamps to stand on, since the original concrete mounting had been removed. A suitable box was made by Carl Weaver of Geevor. All the parts fitted together perfectly, as is shown in picture 2. There are quite a number of small bits missing from the mill, but I felt that it was not worth worrying about them until the mill

was in its final home. However, we would obviously look out for these missing parts when examining the bits and pieces in store.

The next few days of my stay at Geevor was spent with the Curator, Ben Beckwith, looking at all the many bits and pieces that he had collected together and, of course, all the engines in store. As you can imagine, despite all the assurances I had been given, It was a great relief for me to actually see the engines. They were all in a pretty rough state, though none were seized except for the boiler water feed pumps. As reported by Pete Joseph, only one model appeared to be missing, and that was the horizontal mill engine that drove a water pump through a set of reduction gears and an angle bob. That this model went to Geevor was confirmed when the plunger pump that it drove was found in the store.

It is due to Ben's diligence in collecting together every odd bit of copper pipe that I was able to identify all the water feed pipes to the stamps and shaking tables and the half inch water main that carried the water to them from the water-tank adjacent to the beam engine. All these

bits were labelled and taped together and put in store ready to be fitted sometime in the future. Amongst the collection of pipes there were some large bore ones approximately one inch in diameter which, when examined in detail, were found to be the rising main and the pump of the beam engine; unfortunately, the plunger for the pump and the pump rod were missing.

Having been through all the parts in store and examined the models with Ben, I had completed all the work that I could do at Geevor until the models were moved to their new site. At the time, I had limited workshop facilities in Spain so the rebuilding of the beam engine pump, pump rod and pipe work seemed ideal. This would need a general arrangement drawing of beam engine, pump rod, pump and balance bob. The machining required would be a new plunger for the pump and should not cost too much. I therefore spent the rest of my time checking and taking measurements of the beam engine for the drawing.

## BEAM ENGINE

I had to laugh at myself as I went



over the beam engine taking great care not to disturb the valve timing, only to discover that it had been readjusted by someone with a view to running it off compressed air, which explains why the exhaust pipe connecting the exhaust valve outlet to the condenser had been removed. Picture 1 of the lower part of the beam engine clearly shows this. In fact, as I looked more deeply into the valve mechanism, I found that the equilibrium valve operating mechanism was so maladjusted that the valve pushrod was bent. This I readjusted, and I also straightened the rod. The linkage to the condenser water injection valve was also disconnected. This was not only as part of converting to run on air, but also because the valve was seized solid. There were also a number of nuts and pins missing. The pins I made and replaced, but nuts and bolts were a problem as to what thread they were. At the time, I thought they would be BA, a now obsolete thread used a lot by model makers. Later, from working on other engines, I found that nearly all the small fixings used by my uncle on his engines were Whitworth 1/16 to 5/32. Sizes above that depend a bit on the material, for instance, most brass fixings are in British Standard Brass and for the larger steel fixings he used M.E. Threads (Model Engineer). In UK there is a large supportive industry for the model maker and restorer, so there are numerous suppliers of nearly, if not all, obsolete nuts and bolts and their associated taps and dies. They even produce special small nuts to make them more in scale for models. No need to setup a personal factory to make obsolete fixings!

## OTHER MEASUREMENTS

I also thought it would be a good idea to confirm my belief that the models that were to scale, like the Nissan and Holman stamps, were one inch equals one foot, so I took both photographs and measurements of them to use in research when I got home.

I felt that in the few days I had been at Geevor, the staff and I had achieved a

lot. The Holman Stamps were back as part of the mill, I had enough dimensions to do an installation drawing of the beam engine and pump, we had identified all the pipe work belonging to the mill and put it in store labelled, I had dimensions and pictures for establishing the scale of the models and I had the beam engine pump and the boiler feed pumps to restore.

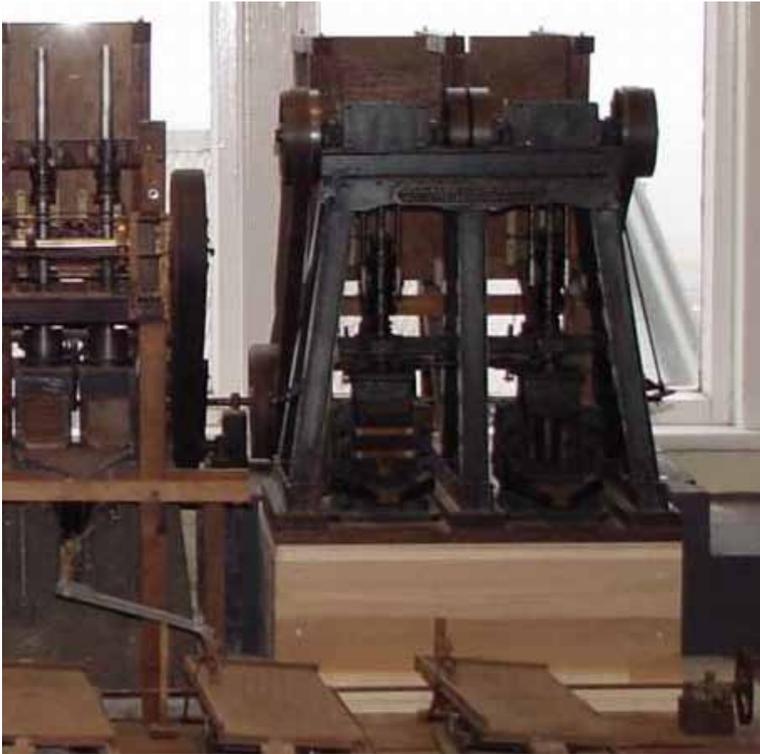
## Visit Autumn 2003

By the end of the summer, I had completed the home tasks I had set myself. The beam engine and pump installation drawing had been completed, and I had made a pump assembly mounted in a wooden "U" channel simulating an open sided shaft that could be reunited with the beam engine at Geevor, and the water feed pumps were refurbished. I needed some more restoration to do, but I also hoped that a visit might create some drive to find a new home for the models, as this seemed fairly low in Geevor's priority list.

I made a stay of three days to give me time to talk with all concerned with the models. I had a long talk with Bill Lakin and set some possible realistic objectives for the future of the models. We came up with two approaches:

1. For the models to be turned into a pretty static exhibit even though what we have are working models. Really an objective of last resort.
2. For the principal objective to be that the models form part of a working ensemble, creating an "exciting educational" experience of late 19th and early 20th century tin mining. The whole ensemble to cover the surface process from winding gear to the refined mineral at the end of the processing plant.

It was quite clear from what Bill said, that education was a very important part of Geevor's mandate and, in his view, any support from outside for the models would be linked to the learning experience. This means that there should be one main objective, namely the second one. It was



other would have been huge and quite dwarfed the other models. An electric winder is much more practical from a control point of view in a model and can be made fully automatic. Therefore I spent a happy afternoon taking lots of photographs of the Weathered electric winder to use as the basis for 1/12 scale design.

I did no work on the display as it was really a waste

of time until they were moved. I did however spend quite a while on the beam engine, establishing thread type and size.

The condenser water injection valve I freed by putting a long rod through the engine placing the end on the operating mechanism and giving this a sharp but gentle tap with a hammer. Since I did not intend to take it home I also spent some time rechecking and ensuring that I fully understood the operating cycle.

Part of my reason for the visit was to take home some of the engines that appeared fine but needed cosmetic restoration. I took the twin cylinder compound mill engine and the small twin cylinder generating set. These I had in my hand luggage, and when I went through security at Bristol airport, it took hours as they all wanted to see the models!

I was not going to be able to go to Geavor for a while, as in 2004 we moved from a large flat in Palma to a house in the

thought that, possibly while the new site was being found, the mill might be titivated to look more complete and tidy.

At least I could consider a layout that would leave room for additional models, like winder and headgear, and possibly a large rock crusher and electric railway to transport ore from headgear or crusher to stamp bins. Still, this is speculation, as at this time there was no idea of where they might end up. In fact, I think to keep me quiet, I was sent to look at various possible sites and to assess their suitability. I will not discuss them here, as I do not think any were seriously considered and, as you will read later, the problem was solved. Meanwhile I set myself a new task of building a winder and headgear for when I had completed all the other restoration work. There was the possibility to copy or base my design on old Victory shaft or Weathered shaft headgear. As it turned out, at 1/12 scale only Weathered shaft head gear was anything like practical, the

of time until they were moved. I did however spend quite a while on the beam engine, establishing thread type and size. The condenser water injection valve I freed by putting a long rod through the engine placing the end on the operating mechanism and giving this a sharp but gentle tap with a hammer. Since I did not intend to take it home I also spent some time rechecking and ensuring that I fully understood the operating cycle.

Part of my reason for the visit was to take home some of the engines that appeared fine but needed cosmetic restoration. I took the twin cylinder compound mill engine and the small twin cylinder generating set. These I had in my hand luggage, and when I went through security at Bristol airport, it took hours as they all wanted to see the models!

I was not going to be able to go to Geavor for a while, as in 2004 we moved from a large flat in Palma to a house in the

middle of the island. The move was really great but very hard work. We had been finishing this part-built house over the last two years, and one real advantage was that there was space for my UK-stored furniture, tools and workshop machinery. There was in the basement an ideal room for the latter, away from the living space, alongside the garage.

All this time I was in regular contact with Bill Lakin, and it was perfectly clear that until they knew the results of their funding bid to the lottery, it was wishful thinking on my part to consider that a new home would be found for the models. The whole process seemed to take forever. But then in April 2006 I heard from Bill that Geevor's bid to the Lottery for £3.8m for a new Museum and restoration of the site, had been successful. He said that the euphoria did not last long, as they soon realised that getting the money was the easy part and that now they had to get the work done. Now, I thought, there was a chance of possibly developing the old museum area for the models. This did indeed happen eventually, but what I should have realised was that the pressure on the Geevor staff would be such, that other than looking after visitors, all their time, efforts and thoughts would be focused on the new museum project. I must admit, this was fully justified. In fact, I did visit Geevor that autumn taking back the twin cylinder compound mill engine, but really except for the warm welcome, unsurprisingly they had little time available for me.

The situation for the models is well covered by extracts from Bill Lakin's e-mails:

2008 March

"We have decided that we will have the large double room in the old museum that is currently used as the mineral gallery as a dedicated 'model room' which visitors will see as they pass from Reception to the doors out onto the site to view the wonders that await them there." (Much along the lines that I anticipated.)

2009 August

"There is a possibility that we might secure some grant funding for the work via the World Heritage Site Office. We will know the results next month [around the 16th I think] and the situation will be clearer. The intention will still be to house the models in the end room of the old museum as part of a display giving an overview of local mining. The fit-out to be done professionally is for about £30k."

They got the grant In November 2009. So it was a great relief to find that at last Geevor had got the finance, and I could relax in the knowledge that action was being taken, as that month I had a major cancer operation, so I really would not have any energy to apply to my uncle's models for quite some months. However, sadly, in 2010 September, I had a further e-mail:

"As regards the models: one of the projects was funded by the World Heritage Site Office [- EU funding at bottom]. This was to create two 'orientation rooms' in the old museum to showcase the World Heritage site (Geevor).

We worked up a proposal including the display of the models in setwork, making them part of an overview about processing.

The Cornwall Council awarded the contract to an outfit in Yorkshire, who decided - halfway through the project - that they could not do the work around the models for the money available. The council, spineless as ever, let them get away with it. So we have two half-empty rooms with some interpretation panels which cost £30k. We could have produced them for about £4k."

What to do now? Well there is nothing I can do except give encouragement to Geevor.

Fortunately, although I still had some corrective surgery to be done, I was really fit and well again, and we had planned a birthday celebration, 80th for me, in the U.K., which was followed by a

trip to the West Country and, of course, included a visit to Geevor and the return of the remaining models, the generating sets as an ensemble.

I found a very depressing atmosphere at Geevor, although, as usual, I was made welcome. They had cost cutting pressure from The Cornwall Council which created a status quo feeling in the staff, and this influenced me towards agreeing that the models on display should be left where they were and tidied up as a static display, although at the time I think David Wright (Geevor Technician) did suggest that this would result in them never becoming a working ensemble. At home later, I realised that this was a poor decision, and I have written this autumn reversing my support of this proposal and suggesting that, come what may, the mill should be moved to its new place. At the same time I have done some layout drawings suggesting how the models should be arranged. Many of you are probably wondering why it seems so difficult to move the mill. Well, the stamps are mounted on a huge piece of concrete!

As and when anything new arises and progress is made, I will provide this Newsletter with an update. In the meantime, I will be writing about the restoration work I have been carrying out on the models at home in the next few issues.

**Richard Fishwick**

## **KING EDWARD MINE**

The plans are now well in hand for the annual Open Day on April 29th. with the theme being very much "the mixture as before" so we intend to have all machinery working, displays in the Survey Office, music and dancing, stationary engines, vintage vehicles and stalls – in fact something for everyone. Huw Rowe is working on the Holman winder installing new air supply pipework and the rag frame gang, Nigel MacDonald, Tony Clarke and Eric Rabjohns have completed their refurbishment. Alan Bingley continues

to replace and repaint shiplap boarding on the carpenters shop and shortly Alan and Tony Bunt will start to remove gorse and undergrowth to enable access to the fields on the eastern side to allow our horse owning tenants access from the road through their own gateway. This will lessen traffic on the main drive which, on some days, begins to resemble the M25! In the survey office a start has been made on converting the office into a kitchen. This is the room on the immediate right as you enter the building. This will prove move more convenient than the current arrangement of having most of the catering sundries left out in the open on the bench. There will also be storage for the cleaning materials and other necessary paraphernalia. And thinking of paraphernalia, up until now I thought that referred to a collection of oil lamps!

Under the supervision of David Blight the weighbridge stores has now had a new roof so is now watertight and will provide storage. David has now turned his attention to the boilerhouse roof which is slipping. Recently, while he and Frank Kneebone were on the roof they were spotted by the police who arrived to verify what was going on. Given the poor publicity the boys in blue currently suffer it was good to see their reaction.

Preparations for the 34th. International Mining Games continues apace with the delivery in early February of five dense concrete blocks each weighing fifteen tonnes to be used for the drilling competition. Thirty seven teams of students are now expected to take part in the drilling, mucking, sawing, track laying and surveying events. The games will be open to the public on Saturday, March 31st. and Sunday April 1st.

Recent visitors to the site will have noticed the car park has been full of structural steel. This was the Vospers car showroom previously at Pool and is destined to be erected in the Home Field. Unfortunately when the steel was delivered the field was too wet to take the lorries so they had to off-load in the car park. Never wishing to miss a chance, when the crane

arrived to lift the concrete blocks for the Mining Games we asked him to lift the steel over the hedge into the field. We now have a car park we can use again.

**K.J.T.R.**

## BOOK REVIEW

*A History of Iron Mining in Cornwall*, by Tony Brooks. Published by Cornish Hillside Publications. Price £15.99 hardback & £11.99 softback. Pages 249, 56 maps, plans & illustrations. 48 coloured and black & white photos.

This book is destined to become the basic text book on iron mining in Cornwall. Tony Brooks is a mining engineer, trained at the Camborne School of Mines, as was his principal source of local mining knowledge, John Tonkin. This is Tony's fifth book, and like the others it is filled with detail and analysis, invaluable for those with an interest in Cornish mining history.

Restormel Royal Iron Mine and the mines along the Great Perran Iron Lode are dealt with in great detail and will serve to remind readers of the impressive extent of these old workings. Restormel Royal extracted 650,000 tons of 42% iron ore between 1829 and 1911. This produced some 275,000 tons of iron metal and generated an income of £570,000 at 19th century values. Although Cornish production was tiny in comparison with the rest of the country, being less than one percent of the total, the industry here employed many thousands of workers from the late 18th to the early 20th centuries and made a significant contribution to the local economy.

The description of Queen Victoria and Prince Albert's visit to Restormel Royal in 1846 was worth a read in itself.

A mining map of Cornwall shows scores of small iron mines stretching from the south coast near St Austell to the north coast between Perranzabuloe and Newquay. Tony takes a discerning look at these many tiny mines and gives a useful

insight into their extent and history. John Tonkin, who probably knows more about the mines of the St Austell area than any man alive, showed Tony the district and explained to him what was there and had been there. Tony's mixture of old plans and modern photographs is skilfully done and he and his publisher, Charles Thurlow, should be congratulated. The only irritating aspect of the book was the constant use of the apostrophe with dates - it's the 1840s, not the 1840's! Despite this small thing, this book is highly recommended and at £15.99 for the hardback and £11.99 for the softback it is a bargain.

**JAB**

## OUTDOOR EVENTS PROGRAMME

At this early stage this programme may well vary or have additions.

- International Student Games- March 29th – April 1st.
- Camborne Trevithick Day – April 28th
- King Edward Open Day – April 29th.
- Launceston Steam Rally – May 26/27/28th.
- Tavistock Steam Fair – June 10th.
- Bude Heritage Day – August 5th.
- W.E.S.E.S. Rally, Stithians – August 17th., 18th., 19th.

Volunteers to assist the "canary crew" always welcome.

To channel your enthusiasm ring the chatline 01209 716811

## SOCIETY MEETINGS

### Society Programme

#### Friday 13th April. KEM.

*Fitty scoven, or a brave flink.* By Noel Michell. Cornish Dialect.

#### Tuesday 17th April. ECB.

*The Oblivion of Trevithick* - Why are Trevithick's achievements not fully recognised by history? An illustrated talk by Phil Hosken, author of "The Oblivion of Trevithick".

#### 11th - 13th May.

All details of the A.G.M. Weekend are enclosed separately.

#### Friday 8th June. KEM.

*Cornish Copperwork.* By Jonathan Holmes

#### Tuesday 12th June. ECB.

Field Survey training by Andy Robinson of CHAHP. A follow on survey exercise may be arranged at the meeting.

#### Friday 13th July. KEM.

*The work of Falmouth's quay punts during the Great Age of sail.* By Roger Stephens.

#### Tuesday 17th July. ECB.

*Geology of the South West.* -How Cornwall's mineral wealth was formed. An illustrated talk by the geologist. Calum Beeson.

#### Tuesday 28th August. ECB.

*Devon Great Consols:* A talk about this massively rich copper mine by Rick Stewart. A perfect introduction to the walk on the 2nd.

#### Sunday 2nd September. ECB.

Exploring the western mines of Devon Great Consols, a walk by Rick Stewart. Meet 1100 at the Wheal Anna Maria Chimney. The walk will be about 3- 4 hours long and include Wheal Maria and Wheal Fanny with an optional extension to look at pre 19th Century tin workings at Blanchdown and Frementor.

#### Friday 14th September. KEM.

Bingham Canyon Mine. By Phil Hosken.

#### Friday 12th October. KEM.

[To be arranged]

#### Saturday 13th October. ECB.

Visit to the Robey Trust at Tavistock.-Meet 1100 at the Robey Trust, Parade Business Park, Pixon Lane Tavistock, PL19 9RQ. This will be a live steam day for Trevithick Society members, donations will be welcome by the trust towards fuel costs.

#### Friday 9th November. KEM.

*Twentieth Century Mining in Devon, England.* By Owen Baker.

The West Cornwall Branch meets at King Edward Mine (KEM) at 7.30pm on the 2nd Friday of the month.

The East Cornwall Branch (ECB) meets at the Public Rooms at Liskeard and commence at 7.30pm, unless stated otherwise.

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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.

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