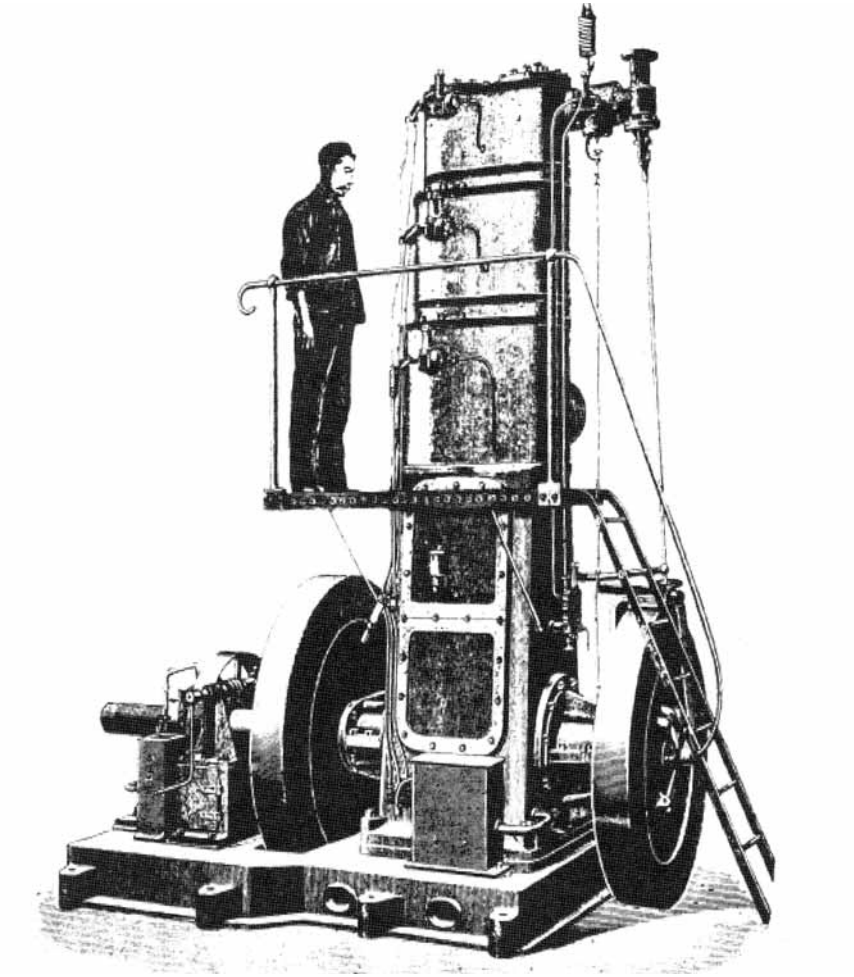
I.S.S.E.S.

**AUGUST 2006**

# *NEWSLETTER*



**INTERNATIONAL STATIONARY STEAM ENGINE SOCIETY**

# INTERNATIONAL STATIONARY STEAM ENGINE SOCIETY

**The Primary aims of ISSES are:**
"to foster, encourage and co-ordinate an interest in and an appreciation of the history, recording and preservation of stationary steam engines through-out the world".

You can become a member of ISSES by applying to the secretary. Subscriptions run from April each year and are available in two categories: without journal; and full (the latter includes the annual journal 'Stationary Power'). The 2004 subscription rates are shown.

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Mr C.H. Milster, 178 Emerson Place, Brooklyn, NY 11205, USA.

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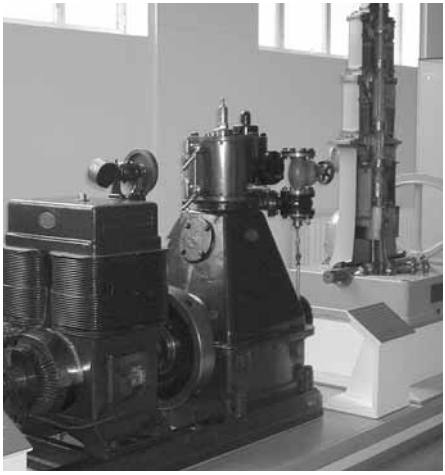
# INTERNATIONAL STATIONARY STEAM ENGINE SOCIETY
**NEWSLETTER August 2006**



## Contents

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## Editors Note

Steam-related sites have done well in recent awards celebrating excellence in the museums sector (see News, page 3), although the closure of the British Engineerium at Hove as reported in the current *Bulletin*, shows how difficult it can be to maintain visitor numbers at 'our' type of attraction.

As one of the best known museums in the UK, the Science Museum has more experience than most in the display of engineering exhibits and on a recent visit I found that the layout of the Power Hall has been changed to improve the display of their various steam engines *(see photo, left*). The Watt engines and the mill engine still take pride of place and better natural lighting means veiwing them has been improved. They are rather overshadowed by a giant moving light installation that hangs from the roof though, and many visitors seemed to find this just as interesting as the old machines.

Upstairs, the Marine Engineering Gallery remains much the same, with most exhibits displayed in glass cases. This gallery now looks dated, and dare I say it, rather dull, especially when compared to modern display techniques. There were no other visitors present to disturb my quiet contemplation of the models of ships and engines and I would have to say that, impressive though the modelmaking is, this space could now be used to better effect.

Thanks, as usual, to members who have provided material for this issue, but of course more will always be welcome. Any news items, small ads, or just general steam-related stuff for publication should be sent to me at the usual address.

# In the News

*Chris Hodrien , Phil Retter, Paul Stephens*

**Youngs Brewery to close**

Young & Co's Brewery have recently announced their merger with Charles Wells Ltd. The major effect of this will be the cessation of brewing at Young's Ram Brewery site in Wandsworth which currently houses two Woolf compound 'A' frame beam engines of 1835 and 1867. The fate of the engines is not known at present but it seems unlikely that they will be scrapped as the company were well aware of their historic value.

***Sirapite* locomotive**

*Sirapite* is a remarkable and very rare 1906 Aveling & Porter 0-4-0 gear-drive compound overtype locomotive based on traction engine technology. It shunted the Garrett Co's works sidings at Leiston, Suffolk for some 60 years, being retired in 1966.

After many years of neglect at various sites, the Heritage Lottery Fund (HLF) has awarded a grant of £50,000 to the Long Shop Project Trust, who plan to give the engine a complete overhaul back to working condition. Once restored, it will operate on a track behind the Long Shop Museum for everyone to learn about and enjoy.

Lord Cranbrook, Chairman of the Long Shop Project Trust said, "The Trustees are absolutely delighted to have been awarded this grant. Working alongside the Heritage Lottery Fund has been a valuable experience, and we thank them for their support. There is no doubt that *Sirapite* is a very special engine. Its preservation and restoration was vitally important, partly for its unusual and historic construction, but also because it was the chief visible link between the Leiston townspeople and the Richard Garrett Engineering Works.

"What went on in the factory was invisible behind high walls; but *Sirapite* came and went through the town, carrying the products of the shop floor. The restoration of this historic engine will enhance the experience of the Museum and its unique collection. With this new venture, we expect to attract increasing numbers of visitors of all ages."

The Long Shop Museum has received two previous grants from HLF, totalling almost £300,000, for work to improve its buildings.
***www.longshop.care4free.net/***

**London Steam Museums work together**

Kew Bridge and Kempton Steam Museums got together for the first time in June to offer a unique Steam Saver Ticket. The tickets gave visitors entry to both museums and included free Routemaster bus trips between the two sites over the weekend of 24th - 25th June.

Kew Bridge Steam Museum ran the 90 inch, Boulton & Watt and Maudslay beam engines and the weekend also included behind the scenes tours of the original workshops and tower tours.

Kempton played host to several vintage steam-driven road vehicles engines, a Victorian mini fair ground ride and traditional fairground music.

**Balloch slipway and *Maid of the Loch***

A £600,000 project to repair and rebuild the Grade A listed building and slipway at Balloch, Loch Lomond, has recently been completed. The slipway winding gear is powered by a twin cylinder non-condensing engine. The gearing has an overall ratio of about 1:170 giving a carriage speed of one metre/minute. Steam is supplied by a boiler

that was originally on a steam crane in Chatham. The boiler has been completely overhauled and updated and can be fired with coal or oil.The intention is to open the slipway as a free of charge visitor attraction later in the summer, with the engine in steam occasionally

The slipway will be used to further the repair of *Maid of the Loch*, the last of Loch Lomond's paddle steamers, which is based at Balloch Pier. The ship is currently open to the public as a static Restaurant and Café Bar while work continues on the overhaul of her machinery. She is open every day 11am – 4pm, Easter to October; and on Saturdays and Sundays during the winter. Admission is free.

The patent slip is a Scottish invention used to haul the loch steamers out of the water for repair. The Balloch slipway was built in 1901 with the carriageway by George Halliday of Rothesay and the engine and hauling gear by John Bennie of the Star Engineering Works, Glasgow.
***www.maidloch.cadol.com***

**Kew is a winner...**
Kew Bridge Steam Museum has won this year's Classic Award, announced in the 2006 Museums Heritage Awards for Excellence. This award is given to a museum that has been open for over ten years and can demonstrate continuous development and achievement. Lesley Bossine, Museum Director said: "We were up against *HMS Belfast* and *ss Great Britain*, but the judges felt we were the clear winner. The award is a tribute to the hard work, determination and enthusiasm of our staff and volunteers over the past 30 years."

Created by The Museums Heritage Show and supported by the *Independent* newspaper, the Awards recognise and celebrate best practice within UK museums, galleries and heritage visitor attractions.
***www.kbsm.org***

**... and so is the *ss Great Britain***
The *ss Great Britain* has won the £100,000 Gulbenkian Prize for museums and galleries in this, Brunel's bicentenary year.

The judges were united in their admiration for *ss Great Britain*, which now rests in Bristol's Great Western Dockyard, on a glass 'sea' above a giant dehumidification system, designed to halt the corrosion of her iron hull.

Robert Winston, Chairman of the Gulbenkian judges said: "Each of our four short-listed museums and galleries could have been a deserving winner but *ss Great Britain* got our unanimous vote for being outstanding at every level. It combines a truly groundbreaking piece of conservation, remarkable engineering and fascinating social history plus a visually stunning ship above and below the water line. Most importantly, it is accessible and highly engaging for people of all ages."

The Gulbenkian Prize is awarded annually and celebrates innovation and excellence in UK museums and galleries.

**More on Perkins engines**
The website giving details of the history of the Baker Perkins company that was mentioned in the last *Newsletter* has recently been updated with images of the two Perkins high pressure engines that survived into the 1990s. The photos show a 4-leg engine of 4hp which was at Cadbury's private works museum until scrapped in 1994, and

a larger, hammer-frame, 22hp example. The latter is the engine privately preserved in store in Northampton (see *Bulletin IB 26.1*).

Peterborough City Council have made various Baker Perkins items available on their Archives Service website (see below).
**www.bphs.net/EarlyHistory/EarlyInventions.htm**
**www.peterborough.gov.uk/page-5773**

## Brunel Bicentenary

As members are probably aware, this year marks the bicentenary of I.K.Brunel's birth, and there are numerous events taking place to celebrate the life and works of the UK's favourite engineer.

***Brunel 200***
This is the main Bristol-based website with a mass of resources available for download. It also has details of exhibitions and events in Bristol, Wales and the West.
***http://www.brunel200.com/***

***Clifton Crossing***
A repeat of the competition of 1831 to design a bridge for the Avon Gorge at Clifton has been running under the auspices of Bristol University. The gallery of entries makes for interesting viewing! The winner is due to be announced later in the summer.

The university holds an important archive of Brunel documents and a project is underway to digitise these. As a first step, it is hoped to make around 6500 pages from the collection, including sketchbooks, letters and a selection of notebooks, available online.
**http://research.cen.bris.ac.uk/cc06**
**http://www.bristol.ac.uk/brunel200/brunel-archive.html**

***Great Eastern* photographs**
The Science Museum are staging a Brunel exhibition featuring photographs of the *Great Eastern* steamship. Called 'Isambard Kingdom Brunel: fame and fate', the exhibitions runs until November 2006.
***www.sciencemuseum.org.uk/exhibitions/brunel/***
***http://news.bbc.co.uk/1/hi/sci/tech/5028976.stm***

***The exploding funnel and the resourceful waterworks engineer***
Not many people are aware that a section of one of the *Great Eastern's* funnels was resident for many years in deepest Dorset. Those who attended last year's AGM, however, learned the story of how the funnel ended up as a water strainer at the Sutton Poyntz Water Works near Weymouth.

On September 7th 1859, the *Great Eastern* was proceeding down the English Channel at the start of her maiden voyage. Off Hastings the water jacket round number 1 funnel exploded, killing several men. Despite the damage the ship continued to Portland for repairs and the damaged funnel was removed. The fact that Sir John Coode, the engineer constructing the Portland Breakwater, was also a director of the water company building the water works, may explain how it ended up at Sutton Poyntz. The funnel served as a filter, carrying out preliminary cleaning of the water supply, for over 140 years until its recent donation to the city of Bristol by Wessex Water. It will be displayed alongside the *Great Britain* at her berth in Bristol docks.

***Life of Brunel***
The *Great Britain* is also hosting the 'Nine Lives of IK Brunel' exhibition which focuses on Brunel the man. Nine zones will explore the key events of the great engineer's life from the imprisonment of his father, Marc Brunel, to I.K. Brunel's death. The exhibition, which will be housed in the Maritime Heritage Centre, imaginatively presents Brunel through his own eyes, using his words and experiences to encourage visitor understanding and involvement.
**http://www.ssgreatbritain.org/**
**http://news.bbc.co.uk/1/hi/england/bristol/4096635.stm**

***Broad gauge loco rides***
For those who like their steam with wheels on, Didcot Railway Centre had their broad gauge locomotive, *Firefly* in action for Brunel's birthday in April. The recently-completed replica will be hauling visitors in true 1840s style on the Centre's demonstration line throughout the summer.
**www.didcotrailwaycentre.org.uk/latest_news/**

# Australasian News

*Owen Peake*

**Disaster at Beaconsfield Gold Mine**
In a recent Bulletin (IB27.1) I told the story of the Tasmania Gold Mine in northern Tasmania. The original mine operated from 1878 to 1914 and closed primarily because of the great quantity of water which flowed into the workings. In the latter days of operation in 1914 the mine was equipped with three huge Hathorn, Davey steam pumping engines driving Cornish pitwork in two adjacent shafts. The workings reached 1500 feet (457 metres) depth at the time of closure. The story included the more recent news that the mine had re-opened in 1994 with the objective of going much deeper and to achieve this electrically–driven pumps would be used to overcome the water problem.

On Anzac Day (25 April, 2006) a large rockfall occurred at the 972 metre level in the mine. The rockfall killed one miner, Larry Knight, outright and trapped two others who were working in a safety cage at the time.

Over the next two weeks a frantic effort to release the two trapped miners, Todd Russell and Brant Webb, broke many records. All the technology of modern hard rock mining was brought to play and there were many innovations. A small diameter hole was drilled to the men through which they were fed, communicated with and given other provisions. A tunnel was driven through sound rock, then a one metre diameter hole about 16 metres long was bored with a modified Raise Boring Machine to within a couple of metres below the trapped pair. The final breakthrough was achieved with hand tools at 4.27am on 9 May. They emerging shortly afterwards from the winder cage, showing little sign of their long ordeal.

In Australian mining history this was the longest time that trapped miners had survived. There was a massive media presence at the mine during the drama and a national outpouring of emotion and celebration when they emerged alive.

During the two weeks nobody in the media mentioned the danger of water in the mine and the constant threat of flooding. Thousands of horsepower of electric pumps kept the water safely at bay. The old water demon of Beaconsfield did not raise its head and the two men were safely returned to their families.

# Not in Steaming Dates

*Chris Hodrien , Phil Retter, Paul Stephens*

**VIC 56**
Built for the Admiralty in WW2, this 'VIC' (Victualling Inshore Craft) is based closely on the design of the traditional Clyde 'Puffer' coastal steamer. She has a very underpowered IVC engine giving a speed of about 4 knots – e.g. she can't sail against the tide in the Thames! One of half a dozen of these craft preserved, VIC 56 is in original condition and is currently based at Chatham Historic Dockyard.
***www.vic56.co.uk***

**Westfield Mine**
This pumping engine house survives at Westfield, between Parkgate and Swinton, north of Rotherham. It was built as part of the Fitzwilliam Mines Drainage Scheme and originally housed a Newcomen engine dating from 1823.

The well-known site at Elsecar, about five miles away, was also part of this drainage scheme and a Newcomen type engine survives there. The Drainage Scheme worked for some 200 years,from 1790 to the early 1990s, a testament to the skill of the early mining engineers. In later years electric pumps operated in the Westfield shaft which was was 9ft. dia x 75 yards deep.

Photo: Roger May/Geograph

Originally, beehive boilers were used but these were replaced by Cornish boilers in 1839, and by three 3ft x 7ft Lancashire boilers in 1884. The engine cylinder was 10ft high and ran at 10 strokes per minute, pumping 48 gallons per stroke. The beam was 25ft long x 5ft 6in deep at its centre.

A full description was printed in *The Engineer* of June 27th, 1919.

**Shildon Locomotion Museum**
The museum contains a small Timothy Hackworth beam engine which is publicly viewable on summer Sundays or by appointment at other times.
***www.nrm.org.uk/locomotion/rollingstock.asp***

**Wroughton Open Days**
August 5th/6th, 10am – 4.30pm. Vintage & Classic Car Show
The opportunity to see lots of vintage and classic cars displayed. Tours of our science and technology collections. Free.

August 7th – 11th, 14th – 18th, 21st – 25th, 10am – 4.30pm. NMSI Weeks Long Opening
Tours of a wide range of our science and technology collections. Free.

August 26th – 28th, 10am – 4.30pm. “Science Outside” Open Days
Tours of a wide range of our science and technology collections. Free.

September 9th/10th, 10am – 4.30pm. Heritage Open Weekend
Discover hidden architectural treasures and enjoy a range of tours, events and activities that bring to life local history and culture. There will be the opportunity to tour our conservation facilities and find out how we look after our collections plus learn about the history of our airfield. Free.

September 30th – October, 10am – 4.30pm. 1st NMSI Open Days
Tours of a wide range of our science and technology collections. Free.

***www.nmsiwroughton.org.uk*** or call us on: **01793 846200**.

**Englefield steaming dates**
Just one date this year: 21-22 October.

**Churchill Forge**
Churchill forge water mill was one of the last working water powered forges in Britain, producing metal tools such as spades, shovels and ladles. It is an important example of industrial history and is now being restored as a working museum.

The forge is opened to the public at selected days through the summer when visitors can see the water wheels turning and machinery being driven. It is located in the village of Churchill in North Worcestershire, just off the A456 (Kidderminster to Hagley Road). The entrance to the forge is a short distance along a drive off the minor road that runs past Churchill village church and is clearly signposted on open days. The OS grid reference is SO882795.
***www.churchillforge.org.uk***

**Derby Industrial Museum**
The c1850 single cylinder grasshopper beam engine by George Fletcherwill be in steam on Saturday 8 July 2006, 10am - 4.30pm and Monday 28 August 2006, 1pm - 3.30pm. For further information please see: ***www.derby.gov.uk/LeisureCulture/MuseumsGalleries/Derby_Industrial_Museum.htm*** or call ***01332 255308.***

## Steam Online

***www.e-faith.org***
The European Federation of Associations of Industrial and Technical Heritage (E-FAITH) is proposing that a campaign for a European Industrial and Technical Heritage Year be launched to increase awareness of the need to save the Technical and Industrial Heritage of Europe. Further details are on the website.

***www.carferries.com/skinner/***
Information on Skinner marine steam engines and images from a Skinner catalogue relating particularly to engines used in the Great Lakes Ferries.

***http://viewfinder.english-heritage.org.uk/search/easy.asp***
The English Heritage site has a large selection of images on its website including many showing engines, industrial buildings and machinery. Prints can be ordered online or by telephone.

## Property Corner

Is this the ideal home for a stationary steam engine enthusiast? Described as having the most unusual drawing room in Staffordshire, this is part of the converted water pumping station at Hopwas, Staffordshire. The conversion is called as 'Spruce' after the beam engine that once resided here and in the words of the estate agents, "Is a chance to purchase a piece of our industrial heritage, poised elegantly in front of Hopwas woods with a sprawling view of Staffordshire countryside beneath it". Many features of the original building have been retained, including the iron-framed windows, the massive front doors and the oak staircases.

The guide price is £565,000 for the three bedroom property which has been finished and presented to an extremely high standard, although central heating is now by a gas-fired boiler rather than the coal-fired installation of the 1870s.

The site originally housed two matching 50hp single cylinder, condensing, rotative beam engines, both of which have been preserved in working order. 'Spruce' is now at Forncett Museum and the other – 'Woody' – is at at Snibston Discovery Park. They were named after local dignitaries as was the fashion of the time.

In its working days, the site was operated by the South Staffs Water Co., who were recognised as having a fairly sympathetic attitude to their obsolete steam plant. However, their Brindley Bank site, containing a large horizontal tandem engine, is now under threat – details were published in the last *Bulletin*.
**www.darwinhomes.com**

Hatton Pumping Station, also in Staffordshire, is another site that is being converted to residential use. The fine Italianate buildings have been empty for some years but retain many original features. The decorative main beam engine entablature with fluted cast iron columns and the overhead travelling crane are both still in situ and were shown recently on the BBC "Midlands Today" programme when the developer was interviewed. Interestingly, the listed building consent notes that part of the development will incorporate an exhibition space.

When it was first opened, Hatton housed two compound rotatative beam engines. These were later superseded by horizontal engines and finally, motor driven pumps with diesel generators.
**http://homepage.ntlworld.com/howard.v.moore/hatton_works.htm**

If your budget won't stretch to freehold of these, how about a week in a Cornish mine building? At Engine House Cottages, near Redruth, you can stay in converted outbuildings in the shadow of Wheal Rose, while in nearby Porthtowan you can go one better and rent the former engine house itself, situated right on the beach.
**www.sreagle.plus.com**
**www.powells.co.uk**

## Book Review

*Paul Stephens*

***Stationary Steam Engine Makers – volume 1*** – Compiled by George Watkins; catalogued by Tony Woolrich; 176pp; £26.99; Landmark Publishing; ISBN 1-84306-200-3

This book provides a catalogue of part of the Watkins Collection held by the National Monuments Record (NMR) at Swindon.

At the NMR, The Watkins Collection is organised into a number of sections. Those that are of particularly relevant to steam engine makers occupy sections 34 and 35. Section 34 consists of envelopes containing catalogues, advertisements clipped from trade press, some works photos and George's correspondence with firms that were engaged in the engine business. Section 35 consists of a series of 21 volumes of bound trade catalogues organised by topic.

Section 34 contains information about 375 companies, and this book provides an alphabetical list (running from 'Daniel Adamson' to 'Jessop & Appleby Bros') of more than 180 of them. The second volume is expected to carry material for the remaining firms.

Information about specific firms is limited to a catalogue entry for each item in the bound volumes together with some short incidental notes. For those who wish to learn more about individual firms it will probably be necessary to visit the NMR but this book provides an excellent starting guide to what is held there.

Don't expect to find information about every firm you can think of. This book is all about the trade material George collected about firms either still in business during his time, or for which he managed to get hold of trade catalogues or advertisements. Therefore some very famous firms, including Boulton & Watt, are not represented here.

Likewise, material for companies, like Belliss & Morcom, who were trading throughout the period George was active may not be as extensive as one might expect. It seems that George did not set out to assemble as comprehensive a collection of trade material as possible but what he did acquire over the years has to be regarded as impressive.

Although the book mostly contains records relating to British firms, there is representative material relating to the United States, Canada, Belgium, France and Germany, as well as a few items from Australasia and Eastern Europe.

Apart from the catalogue entries, where this book really scores is in the illustrations selected to support the entries. Drawn from the trade material there are more than 160 of them from the humblest horizontal single engine to some very impressive giants. Included are some excellent photographs, some of which show engines in manufacturer's erecting shops, whilst others appear to show in situ installations.

This book and its forthcoming companion volume sets out to provide an introduction to the trade material covering a very diverse range of builders and is an excellent work of reference. One of the few criticisms that can be made is that although there is a listing of the makers, there is no accompanying list of illustrations. Likewise, the index at the end of the volume lists all the makers to be carried in the two volumes but does not carry page numbers for those in the second volume and should, perhaps, have been omitted. However, these are somewhat minor criticisms and if you are interested in engine makers and need a good initial reference source, then this book is a must have.

If you do decide to purchase this book and you like what you see, some encouraging feedback to the publisher could go a long way to bringing more material of this kind into the public domain.

## Also recieved

***The Textile Mills of Pendle and their Steam Engines***; Geoff Shackleton; 432pp illustrated throughout with drawings and photographs; £24.99; ISBN 1-84306-215-1

Recently received this book will be reviewed in a forthcoming Newsletter. For the moment one word sums it up – Stunning. If you are interested in Textile Mill engines, waste no time, purchase it now!

# Letters

**Preservation or Restoration**

Dear Cedric

I hope you will receive a hearty and rapid response to your letter in the January 2006 ISSES Newsletter – but I doubt it.

You are of course following up the subject you began in your article on Tees Cottage PS in Bulletin 23.3, on which I made some observations in Bulleting 24.4.

Stationary engine preservation sub-divides as follows:

**In-situ (ie in original building)**
Building – fabric and appearance – exterior, interior

Machinery – appearance, engineering

**Off-site (eg in a museum)**
Machinery – appearance, engineering

For in-situ preservation to be effective, the exterior of a building must be maintained, with which all would agree. My personal feeling is that the original appearance should be adhered to as closely as is practicable within the constraints of the funds available. The addition of modern external architectural features should be vigorously resisted. Any new building required for any reason, such as accommodation for donated off-site engines or for visitor amenities, should be in a style harmonious with the original main building – or should be thoroughly out of sight, or else hidden in trees and evergreen bushes. In respect of the special case of the ugly Tees Cottage blast walls, surely here is a good opportunity to satisfy the viewpoints of both the long term historian and the intermediate one: remove one wall and restore the original view of the surge vessel, but retain the other as a relic of an important phase in the station's (and nation's) history.

The fabric and appearance of the interior of a building is much more controversial. There seem to be extremists who would maintain that 'conservation' entails retaining a shabby, scruffy building 'as is', complete with original flaking plaster and irregular layers of cracked and peeling wall paint, soot-blackened ceilings, original (broken) windows in rotting and rusting frames, damaged floors, deformed and rusty handrails, battered doors, blackened and blistered varnish and so on, to them all very authentic because 'original'. But how authentic really, is old paint that is faded and has lost its gloss, has in-grained grime and perhaps oil, and is partly missing anyway, leaving unprotected patches, or has been patch-painted over, and how authentic is woodwork with chunks missing? How authentic is a building in a near derelict condition after it has ceased service and has been attacked by dampness and vandals? Is retaining that condition really conservation? And how educational is it? How interesting? How much credit to our industrial past? And, how likely is it to attract support in the future?

It is a much more valid claim that 'original' and 'authentic' conservation is to restore the building as closely as practicable to the condition as it was on the opening day, as the designer and purchaser intended it to be, and doubtless as it was originally maintained – and for many decades afterwards in the case of most waterworks. By all means try hard to keep to the original colours, but is it necessary to use 'whitewash' on the walls when a modern lookalike will serve as well? (But use whitewash if you must – and keep it clean). There is a rider to this reasoning, namely that there are a few sites where it would be possible to restore one part completely to good condition while 'conserving' the other part in 'as was' worn out end-of-working-life condition, ie a deliberate before-and-after demonstration, in order that visitors can see what has been achieved in restoration.

The full restoration philosophy applies equally to the appearance of the engines themselves, especially in-situ ones. There is no authenticity in flaking, patchy, drab, grimy, oil-stained and chipped paint streaked with rusty water, or in rusty iron and steel, or in engine bright-work dark brown with gummy, oxidised oil, or in copper and brass-work black and green with neglect, or in engine pits serving as sumps for ancient, filthy, smelly oil, grease, sludge and water.

It follows then that an engine should be re-painted when it becomes shabby, preferably following the original colour as closely as possible, but bearing it mind that any sample of the original in existence may well be far from its original hue, also that the colour perceived will vary with the spectrum weighting of the light under which the original and replacement are compared, also again that colour perception varies from one person to another and even from one eye to another in the same person. So total agreement between two colours is very difficult to achieve in practice.

As to metal work, an engine should be cleaned regularly (eg after each run), all bright steel work should be kept bright (and protected), and copper and brass should at least look like what they are, even if they don't always quite gleam. I am very well aware indeed that it is a hard work routine to keep a steamed engine in 'exhibition condition', also that copper and brass soon tarnish if steam or heat get near them. Perfection is the target, but sometimes it might not quite be achieved.

From a visitor point -of-view, I would think that the majority of both the general non-specialist public and the engine enthusiasts like to see an engine house and engines in superb condition, as some indeed are. As you see these buildings and engines on an open day is in principle as they were when new. So they are very authentic. From a practical angle, although maybe incidental to the purist, you are likely to attract more visitors to a supershine station than to a gloomy, tired-looking engine house like some I have seen. Also from a practical angle, visitors need to be shown just what old engineering artefacts ought to look like, especially modern computer-glazed young people. It ought to be added that this is not at all a 'fairground' concept – bearing in mind of course that (original) fairground showmen's engines were generally kept in supershine condition, so that to see like that today is perfectly authentic.

Following on from my previous contribution to the discussion, there still remains the engineering question, specifically of replacing missing or badly damaged parts, if they are necessary for the engine to run. If it runs (as intended when built), then is it authentic because it can run, but not authentic if it has non-original parts? As explained, Sisson No. 2601 has a collection of modern bits on it – but it runs. We are currently working on the restoration of the cannibalised port grasshopper side-lever engine from 'Reliant', basically not far off a wreck when it came. In order to do so, we are doing all sorts of 'non authentic' things, within the money and time constraints prevailing, re-manufacturing from

steel many parts originally of wrought or cast iron. We have joined two part-shafts into one. The slip eccentric is now half cast iron (original) and half steel. Two thirds of the paddle wheel is new steel. The wheel can be turned by electric motor. And so on, all far from authentic. There are other horrors yet to come. The true purist would cry “Stop!” (although none had dared to do so yet!), but ordinary visitors applaud the restoration efforts. At the end of the road, will the assembled and painted engine and wheel be better than a heap of scrap lying outdoors or not?

Overall then, ‘restoration’ needs to be done authentically as is practicable within the information and materials currently available, to present a clean, tidy and attractive plant looking as near to what its original designer and purchaser intended, but completed in such a way that authenticity can be enhanced in the future if more information or original style components come to light. Proper records should be maintained of what has been done, and information on the engines and their setting should be freely available to anyone interested.

I suppose it could be said that my views are likely to be ‘biased the wrong way’ because Markham Grange people are involved with engines in a totally artificial environment. The museum has engines which the visitor can actually see and photograph in a way that would have been impossible in the original installation, particularly the marine engines which are out in the open instead of shoe-horned into a minimum space. At the same time, the view of the engines is a little spoilt by the handrails which have to be in place to satisfy ‘health and safety’ – about which I will make no further comment. However, if I was directly involved in in-situ preservation, I think I would still come to the same general conclusions.

One final point: in the railway preservation field, there is more argument over locomotive liveries and colour shades than over all other subjects combined. The majority of ‘enthusiasts’ are not interested in the engineering that makes things go, but they will debate paint and whether “Flying Scotsman” should be 4472 or 60103 until the proverbial cows come home.

George C Dickinson

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