

'The blackened chimney which dominates the Leven Valley will soon be demolished before it becomes unsafe. Its toppling will be symbolic in an area which helped to breed the industrial revolution and whose use of child labour was investigated by Parliament in 1916'. Readers of the *Guardian* newspaper may have re-read these words trying to relate them to the lakeland village of Backbarrow which was the subject of this report. Sadly the prejudices implicit in such bigotry still persist among planning committees, as followers of local politics will know; the proposal to topple an innocuous but redundant chimney is debated, not as a step to remove a traffic hazard or a threat to nearby houses but as a corporate act of revenge on what is seen as a physical embodiment of what was evil about the factory system.

Backbarrow is a village remarkable for the way it combines evidence of many phases of lakeland industry. Iron was smelted with charcoal here until the 1920s and much evidence of this unique survival of an historic metallurgy survives. The Lakeside and Haverthwaite Railway conveys delighted visitors to the Southern shores of Windermere, where they can join motor vessels whose splendid archaism is the main feature of their owner Sealink's marketing strategy. At nearby Stott Park the DoE's Ancient Monuments Administration has restored a water powered bobbin mill as a working industrial monument. Much of the appeal of these attractions is that they represent **authentic** Lakeland activities, reminding us that there was more to 19th century life there than mailcoaches stuck in winter snowdrifts and poets dreaming of April daffodils.

It would be arrogant to suggest that every feature like Backbarrow's inoffensive chimney should be indiscriminately preserved for the delight of that minority of the population with an informed interest in industrial history. What is equally clear however, is that many of the civic leaders who shop for a few votes with declamatory phrases about sweeping aside the wretched symbols of industrial oppression are to be heard a few years later clumsily enunciating schemes to establish theme parks and similar extravagant proposals, intended to recreate at great cost to their ratepayers a series of set pieces to express the area's 'industrial heritage'.

By way of contrast Burnley's planning committee recently endorsed a report from their Chief Planning Officer that fifteen chimneys, earmarked for preservation were as important to Burnley as classical antiquities to

Greece. Such a decision in an overwhelmingly industrial area can only be made with the full appreciation of what the factory system meant for the town. It had, and still has, many features that no-one would wish to see perpetuated; aerial and rivering pollution, ugliness, boredom to name a few! Burnley however, sees its chimneys as a reminder that not long ago it was the cotton weaving capital of Britain, with a greater concentration of looms than anywhere else in the world. Burnley is proud to sustain that memory. But Backbarrow on the other hand prefer to erase the evidence of the fact that in 1830 it housed the largest ironworks and cotton mill in the North West of England, a supremacy that continued until the new sources of power and better communications coaxed its industries away to new sites elsewhere. The splendid cotton mill was subsequently re-occupied to provide a home for the manufacture and packing of the 'dolly blue' once a familiar feature of washdays, that since 1928 has provided the village with up to 140 jobs (one third of the population) and a permanent blue overcoat. With the removal of the process to Reckitt's parent works at Hull, the village lost the latest in a long sequence of

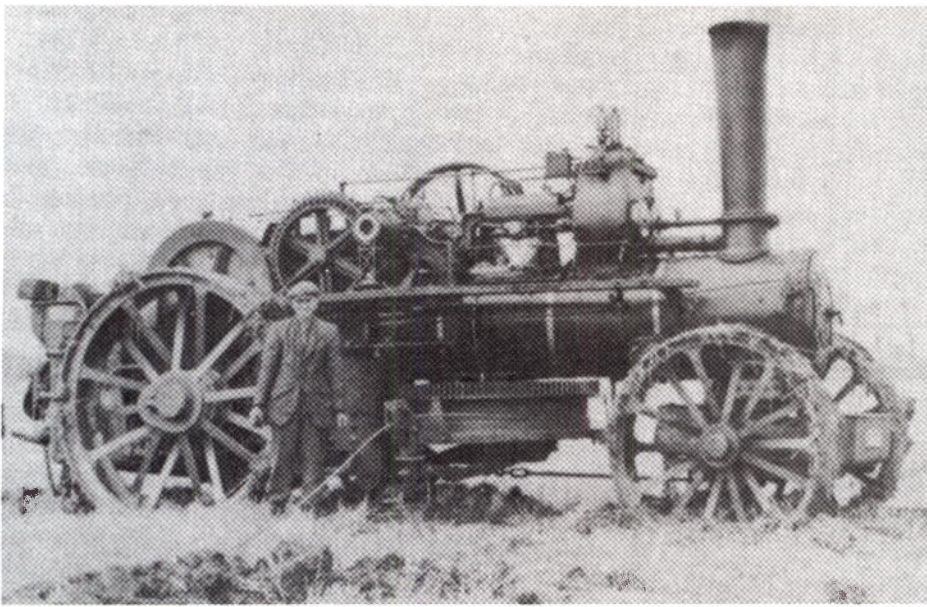
industrial activities. In its enthusiasm to attract new small industries, the South Lakeland District Council seeks a dynamic image; 'We mustn't linger in the past', said the council chairman, who was also administrative manager at the blue works.

Late in 1982 the innocuous chimney, whose visual contribution was to provide a vertical scale in a community of low-rise buildings nestling in a lakeland valley, was toppled. The mill it served has survived and is to become a leisure centre. Few residents of Backbarrow will mourn the loss of its blue overcoat now that the brightly coloured powder no longer blows over the town from the Reckitt factory. But with its chimney Backbarrow has lost a potent reminder of its origins.

Motorway Built by Steam. When Wolverhampton is linked directly to the M6 motorway shortly by a new dual carriageway to be called the Black Country Route, it will be thanks to a pair of elderly Fowler BB1 steam ploughing engines that were called in earlier this year to scoop the saturated peaty silt from an extensive area of riverside swamp on the alignment of the new



*The foundry at Backbarrow furnace which was first established in 1711. This view which appears in the Chaloner/Musson book *Industry and Technology*, is about 1730.*



road. Because of the depth of the swamp and the proximity of low slung 132 kv power cables, the West Midlands County Council opted for the obsolete technique of dragline dredging in preference to more modern diesel plant.

A pair of Fowler ploughing engines built 65 years ago and named *Tiny Tim* and *Old Jumbo* were hired from Sussex enthusiast Vic Mitchell and operated more than 600 feet apart on existing roads dragging a 4 ton scoop back and forth through the 15 ft deep swamp on a dragline rigged between the horizontal drums slung under their boilers. The soft silt was removed down to the level of the underlying glacial clay and these powerful and almost silent engines consumed only about £5 worth of coal per hour, whilst working 12 hours at a time.

Engines of this type have long been preferred where soft ground is to be tilled or drained without the requirement of compressing it by the repeated passage of a heavy towing vehicle across it. The success of the two old BB1's in getting a capacious dragline bucket across a swamp where few modern excavator drivers would have ventured is a reminder that steam ploughing engines made an important contribution to the improvement of tillage and land drainage. The advent of the Ferguson and other 'lightweight' tractors late in the 1930s reduced the incidence of soils compressed by excessively heavy plant; but even today it would be difficult to find a pair of winches that can handle a 4 ton dragline bucket and more than ¼ mile of wire cable with as little fuss as these reliable old Fowlers.

Reopening of Llangollen Canal. More than a year ago the Llangollen Canal had to be closed to all traffic when a serious breach was discovered near the village of Trevor and only 4 miles from the terminus in Llangollen. Although all commercial carrying lapsed long ago, the canal has assumed importance in recent years as perhaps the most attractive holiday waterway, and hence one of the busiest. The British Waterways Board wasted no time in starting repair work, but it was no simple matter and the eventual cost was in the region of £700,000. The town of Llangollen had reported that the closure was a severe blow to its tourist trade, and local traders were anxious for the reinstatement of their link with the holiday cruising trade. Reopening was scheduled for Easter last year but then another breach was discovered in the course of an inspection, and

the canal had to remain closed for another two months. Now the holiday boats are busily traversing the lovely stretch of Welsh canal again, giving people the opportunity to look down on the Dee from Telford's lofty Pont Cysyllte aqueduct and the corresponding stone aqueduct at Chirk.

The impact of this closure on the local economy is a reminder of how important is the regular inspection of the bank carried out from the towpath by a professional lengthsmen. One hundred years ago his vigilance would have been vital to the survival of the struggling canal companies, for a prolonged closure might well have bankrupted the canal company as a commercial concern.

Cotswold Wool. Filkins is the memorable name of a village near Lechlade, on the border of Gloucestershire and Oxfordshire, which has a remarkable village museum filled with local treasures and opened with cheerful hospitality for any traveller who calls at the caretaker's house close by. The village now has a working weaving mill as part of a lively display on Cotswold wool, housed in a magnificent 18th century barn that is another delightful surprise for explorers looking around Filkins. Visitors to the barn are encouraged to try their hand at drop-spindle spinning or at weaving on hand looms. A continuous slide show tells the story of the barn, and next door is a shop selling quality woollen goods. The weaving mill is open free of charge 10.00— 18.00 daily except Sundays. For access to the museum, which has a rich collection of agricultural and other tools, contact Mr. E P Foster, Abbeystones, Filkins (tel: 036 786 365).

Rope's End at Chatham. Until the steam engine went to sea, sound rope was probably the most important single component in a sailing ship's inventory. Merchant ships relied on it to get them out of trouble, warships relied upon it to win sea-battles. If a rudder-tackle failed or a topmast came crashing down because of a failure in the cordage, the ship might founder or be out-maneuvred and boarded by enemies as often happened. The Royal Navy operated four huge roperies at Chatham, Devonport, Portsmouth and Woolwich to keep its fighting ships supplied with the best rope available, for quality was too important to be left to the vagaries of outside contractors. Chatham's ropery, originally a timber structure, was re-

built in brick at the end of the 18th century, with a clear, internal length of 1,128 feet, long enough for spinning and laying ropes for the largest ships then being built. Their sheer size made such installations expensive to maintain, and the introduction of steam propulsion, and later, wire rigging in the 19th century led to the closure of the Woolwich and Portsmouth ropery yards. Devonport's was bombed during 1941 and the remains cleared, although some of the machinery was salvaged and transferred to Chatham.

Thus it was that for the past forty years Chatham's 190-year old ropery, which since its rebuilding in 1785-91 had been a 'double ropehouse' combining spinning and laying under one roof, has supplied most of the Royal Navy's requirement of natural fibre cordage. Recent years have seen the extensive adoption of man-made fibres for such items as berthing ropes and heavy towing ropes where the inherent stretch is useful. But there remain other applications where natural coir, manilla and sisal cordage remain unsurpassed. The heavy bow pudding fenders on berthing tugs, for instance, have to put up with regular compression and abrasion against ships' sides and the 1982 Falklands campaign saw the Chatham ropery working flat out to meet demands for specialised cordage for ships in the South Atlantic. What is truly remarkable is that much of the long cordage was still being spun on machinery some of which was originally installed before the Battle of Waterloo, at the instigation of Brigadier General Sir Samuel Bentham. Impressed by the success of Marc Isambard Brunel's block-making machinery at Portsmouth, he had sent Simon Goodrich to Chatham in April 1808 to investigate the application of steam power to rope-making. In fact the cast iron forming machines supplied by Henry Maudslay in 1811 could be worked by hand; up to 220 men were required to man the winches which pulled the forming machines the length of the building when a 24-inch cable was being laid, and a steam engine to produce that power in the early 1820s would have been uneconomically large.

Henry Maudslay's machinery, modified in some cases in the course of rebuilds later in the 19th century, remained in production until the end of February 1983. The future of the magnificent four-storey ropery, one of the largest industrial buildings in the country when completed in 1791, is now a cause for concern. The Ministry of Defence will have completely vacated Chatham Dockyard by the end of March 1984. The importance of the ropery is officially recognised; like many other buildings in the historic enclave it is a scheduled Ancient Monument. A consultant's report* commissioned by the Government's Property Services Agency and by Kent County Council suggests that continued rope-making is the only appropriate use for this splendid but highly-specialised building. But repairs to the 166,000 sq ft building are estimated to cost £1 million; dry rot and crumbling brickwork must be dealt with very soon. There may be a continuing demand for traditionally-made cordage, but insurance costs are likely to be prohibitive; floors and internal supports are all timber and during Naval occupation insurance in the usual sense was not necessary.

* **Chatham Historic Dockyard Study.** PSA Library Sales Office, Room C109, Whitgift Centre, Wellesley Road, Croydon CR9 2LY Price £11.00.

The National Maritime Museum has taken a close interest in the future of Chatham Dockyard for some years and filmed the rope-making machinery before it stopped work. But planning and conjecture will soon have to be replaced by the stark reality of looking after the world's finest collection of Georgian maritime buildings, some of them having had only rudimentary upkeep once the MoD's intention to withdraw was known. They will continue to deteriorate as resources are organised to carry out the most urgent building maintenance work. As anyone who has restored an old timber-framed building will testify, a year or two's delay can mean that rot or insect attack can get a hold and multiply the eventual cost of repair many times. We should salute Kent County Council and the PSA for at least sizing up the nettle to be grasped in saving this unique and little-known complex of industrial buildings, unrivalled anywhere in the world. We can only hope now that a consortium of interested bodies can come together to put that work in hand, for the task is too huge for any one organisation to tackle on its own.

The last batch of cordage made under Naval administration was for the re-rigging of HMS Victory completed on 25th February 1983. This was of black polypropylene, which as long as the raw material comes in cold fibre form can be worked to a high standard on the traditional natural fibre machinery as can more lightweight material spun up from plastic film.

The Ropery was then officially closed on 25th March 1983.

However contemporary with these events moves were taking place to secure the Ropery for the future. The NMM, apart from its film 'The Rope Makers of Chatham', took a full internal photographic coverage of the building in January and February, while at the same time the PSA completed its preparations for major contracts for reroofing the building and making it wind and weathertight.

The museum in conjunction with the Yard Authorities and the PSA also took steps to ensure the preservation of all machinery and redundant material of display potential within the building.

Though early attempts to find a commercial concern to convert the Ropery to private production had been unavailing, the Dockyard authorities themselves partly through contacts of the Chatham Dockyard Flagloft Ltd — that is the old Yard flagloft which had previously gone private in February — found a company which was prepared to become involved on a commercial basis under agreements in principle previously worked out by MoD for such an eventuality.

Cosalt Plc of Grimsby — a concern which supplies services to the fishing, merchant shipping and offshore oil industries — thus moved into the Ropery to produce cordage and MoD licensees early in April. The operation is now in the hands of their Net and Twine division and they have retained the former dockyard staff as their employees. The spinning machines were restarted on 11th April 1983 and until new supplies of natural fibre became available the building continued to produce artificial fibre cordage.

Both the Flagloft and the Ropery will have to renegotiate their tenancy agreements in due course with the historic trust which is expected to be formed to preserve and redevelop the historic yard at Chatham but it is obviously very much in everyone's interest that both should remain going concerns. The agreement

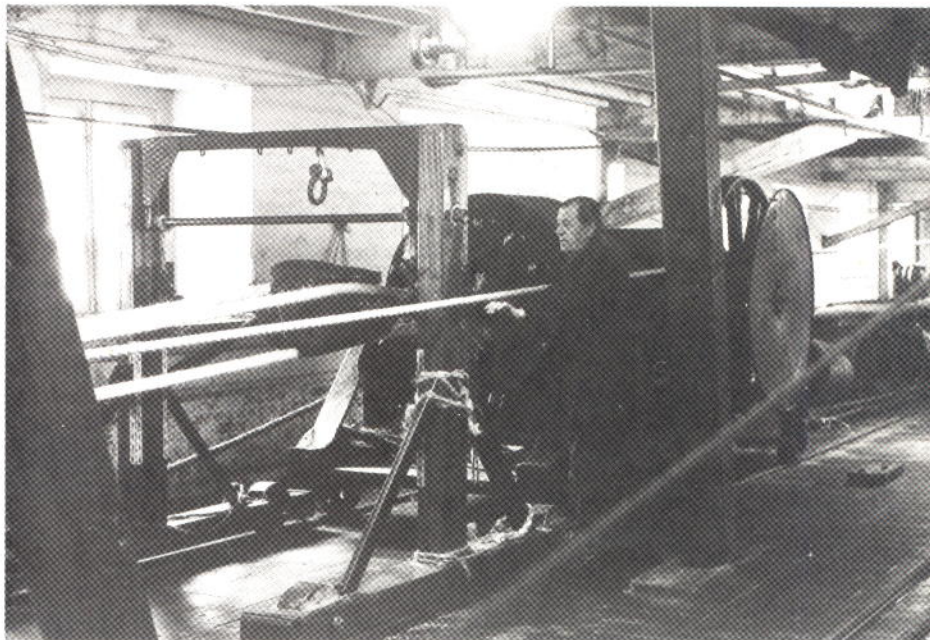
of principle approved by MoD by which the privatisation took place also stipulates that in due course arrangements should be made to open both processes to public inspection. A great deal of work has to be done before this will be practical on a large scale but in due course both concerns should be as much visitor attractions as they are successful commercial enterprises.

Since its inception in 1973, the AIA has had a Vice-President, first Michael Rix and now Douglas Hague, who apart from being notable industrial archaeologists, have also been executive members of the Association, re-elected Annually with other Council Members.

Now there is a new category of VP, or perhaps it should be VIP, one who in the unanimous view of Council has been outstanding in the study of his particular aspect of technology. A man whom Council was delighted to elect the AIA's first Honorary Vice-President: George Watkins.

George Watkins is the archetypal industrial archaeologist who, as a schoolboy, became interested (obsessed is a better word) in technology in general and steam propulsion in particular. During the 1920s he began what was to become a lifetime study, recording and photographing stationary steam engines. For the next fifty years, until quite recently in fact, George travelled the length and breadth of the country on a small motor-cycle laden with photographic paraphernalia in search of steam engines and their associated equipment. For very many years he earned his living working with steam and once he had paid for the meagre essentials, and George was never self-indulgent, the money was spent on books, films (or for the greatest part of his photographic life, plates), petrol or train fares.

In 1965, after convalescing from a serious operation, George was offered a Research Assistanceship in the School of Humanities and Social Sciences at Bath University of Technology.



Chatham Ropery: Top picture, Victorian twisting machine and un-powered top cart. Bottom picture, Maudslay's forming machine at bottom (south) end of main laying floor.

