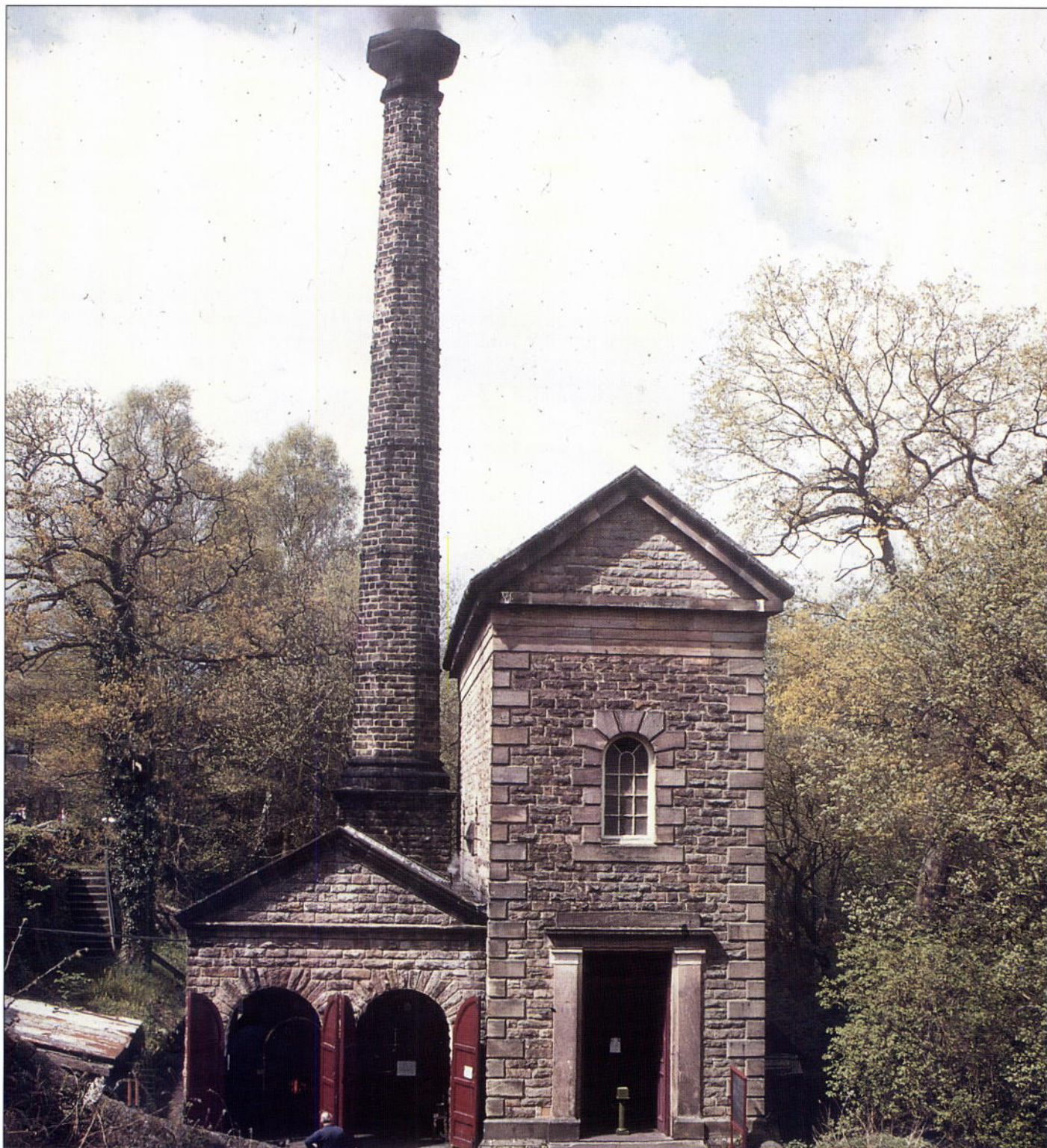


# INDUSTRIAL ARCHAEOLOGY NEWS

**128**  
SPRING  
2004

THE BULLETIN OF THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY

FREE TO MEMBERS OF AIA



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## Refitting the *Waverley*

*As the National Maritime Museum regularly warns, ship conservation is enormously expensive. A classic early attempt at ship retention was that of Drake's Golden Hind – after her round-the-world voyage of 1577-1580. The Golden Hind's scattered timbers became lost in the mud on the south bank of the Thames many years ago. She had survived most of the seventeenth century. Readers who have been watching recent programmes on television will be aware that a building may be saved from demolition for a million pounds or so. For a ship of moderate size to be kept in working condition sums of tens of millions will be necessary. PS Waverley has recently been consuming the order of £7 million for refits. She is beginning to resemble the proverbial sailor's knife. This applies to other famous old ships – HMS Victory for instance.*

### Robert Carr

The real revolution at sea in the nineteenth century was the introduction of iron-hulled steamships driven by screw propellers. Reciprocating steam engines could not easily produce high shaft-speeds (using direct drive) and in order to get sufficient propulsive force large diameter propellers were needed. This was fine for deep sea use but in shallow water there was not enough depth of water to cover the propeller.

High speed reciprocating steam engines were expensive to maintain and the solution for high speeds in shallow water was to continue to make use of the paddle steamer. Paddle steamers for coastal use were still being built up to 1900 and beyond. (Paddle steamers such as the *Bristol Queen* and *Waverley* were built post World War II

to replace ships lost in the War). Once the steam turbine with the possibility of high shaft-speeds became available from 1897 coastal passenger steamers were built with screw propulsion, often with more than one propeller. For pleasure excursions a classic type of elegant slim-hulled shallow-draught paddle steamer remained popular for much of last century and we are most fortunate that one of these vessels, *PS Waverley*, still survives in sea-worthy condition.

The first *PS Waverley* was built in 1899. While rescuing Allied troops in May 1940 off Dunkirk she was sunk by Heinkel 111 German bombers. Her replacement was built by Anthony & John Inglis at Pointhouse, near where the river Kelvin joins the Clyde in Glasgow. The second *Waverley* was launched on 2 October 1946 by Lady Matthews, wife of the chairman of the London and North Eastern Railway Company. The same Pointhouse yard had also built the original 1899 vessel.

At first the replacement *Waverley* was coal fired but she was converted to burn oil in 1957. The double-ended Scotch boiler which Rankin & Blackmore built for the second *Waverley* was replaced with a more modern version installed by Babcock's of Renfrew in 1981. A paddle steamer such as *Waverley* can approach quite close to the shore. *Waverley* has a draught of only six and a half feet. In their heyday some paddle steamers used to beach on soft sand to disembark passengers.

In 1973 *Waverley* was bought by the Paddle Steamer Preservation Society from Caledonian MacBrayne for the nominal price of one pound. At the time finding a qualified crew for *Waverley* was not that difficult. In 1975 there were still about 3,000 ships registered in Britain but by 1997 this was down to 300 and obtaining



*New work at the bow of PS Waverley*

### COVER PICTURE

*The restored Leawood Pumping House is described in a new book on the Cromford Canal (see page 18)*

*Photo: Hugh Potter*



qualified crew members to man *Waverley* has recently become a major headache. Replacing the period crew facilities with accommodation of a standard expected by present-day professional seafarers should help to overcome this.

A very major rebuilding of the *Waverley* has been underway for some time with a view to making future running costs more in keeping with a newly-built vessel (see *IA News 104*, page 11). Over last winter *Waverley* underwent an extensive refit at George Prior's shipyard, River Yare, Great Yarmouth. Sufficient money, principally from the Heritage Lottery Fund, has been available to carry on the work started for the Millennium. Over the winter 2002-3 the expenditure was £7 million.

As the ship still had her paddle boxes attached there was no dry dock wide enough to accommodate her. The solution was to hire a large barge, the *AMT Wayfarer* (registered in Liverpool). This came from the South of France in November 2002. It was sunk, the *Waverley* positioned over the barge and the barge raised by pumping so that the complete paddle steamer was well out of the water and it was possible to work on the underside of the ship from the deck of the barge. *Waverley* was raised on the barge in this way on 25 November 2002. *Waverley* was out of the water on the barge during the winter of 2002/3 and was lowered back into the water (by sinking the barge beneath the ship) on 7 February 2003. In a previous refit *Waverley* had her paddle boxes removed and having otherwise a slim yacht-like hull could easily fit into a dry dock.

Much work has gone on replacing the deck saloons. The upper aft saloon has been renewed largely in aluminium but the corresponding forward saloon needed to be constructed of mild steel as in an emergency it would have to take the load of two lifeboats full of people.



*Renewed paddles*

The paddles were completely renewed with fully interchangeable parts and new woodwork. New boilers were fitted in 2000 by Prior's but the main steam engine is still essentially original. It was planned to install a bow rudder but this will not be proceeded with.

The crew accommodation has been completely renewed to modern standards and the bridge rebuilt. A great deal of original woodwork was replaced by hardwood from Africa and there is considerable use of 'scumbling'. This is a technique where surfaces are painted to resemble wood. A coat of dark brown paint is put over a yellow undercoat and 'combed' with a dry brush or comb to reproduce wood grain. Skilfully done this can produce quite realistic effects. After

scumbling a coat of varnish is applied. Some aluminium panels have been finished in this way.

Large areas of new deck planking have been laid using kiln-dried Nigerian iroko. To attach the planks to the steel deck bolts were welded on and nuts hold the planks in place. The hole above the nut is sealed with a wooden plug. Gaps between the planks have been caulked in the traditional manner with pitch.

Work on *Waverley* at George Prior's yard had to finish by 9 June 2003 as she was due to commence her revenue-earning Clyde sailings on Saturday 14 June. She was scheduled to depart from Glasgow that day at 10.00 am. The route *Waverley* might take back to the Clyde depended on weather conditions. On a previous occasion the Captain decided there was a likelihood of heavy Atlantic swell off Land's End and she returned by the northern route, past Cape Wrath. For those lucky enough to be on board this turned out to be a spectacularly scenic cruise. On departure from Great Yarmouth fitters and workmen remain on board to finish off any remaining jobs and to make necessary adjustments once moving parts have worked themselves in. *Waverley* successfully completed a sea trial on Wednesday 4 June, leaving at 18.20 and returning after dark. As in 2000 it was decided to take the northern route home. Following her departure from Great Yarmouth on 9 June she reached Aberdeen the following Tuesday at 16.40 in just under 24 hours sailing. Leaving Aberdeen that night she was reported sailing past Mallaig at 15.30 on Wednesday 11 June and was due to arrive at Anderton Quay, Glasgow, on Thursday morning.

Last summer the general public was able to enjoy the usual extensive programme of paddle steamer excursions around the coasts of Britain. For sailing information generally, contact *Waverley* Excursions Ltd, *Waverley* Terminal, Glasgow G3 8HA, ☎ 045 130 4647, or visit the website [www.waverleyexcursions.co.uk](http://www.waverleyexcursions.co.uk).



*New deck planking*