



Docklands History Group meeting 3rd May 2007

The Millwall Ironworks

By Edward Sargent

Edward introduced himself by explaining that he is Architect and is currently Conservation Officer for Medway. Before that he had a similar job in Gravesham and prior to that he was Conservation Officer for LDDC. He had been researching into the history of the London's Docks since the early 1970s.

His father was Assistant Dockmaster of London Docks and had also been at the West India Docks, and so his first memory of the docks was at about five years old when he went down for the afternoon and spent the day going round West India Dock on the bridge of a tug - great fun. Apart from that his father was a Master Mariner, as was his grandfather and two great-grandfathers. Architecture came from his mother's side of the family.

The talk began by considering the former extent of Ferguson's Mast House and its associated wooden ship repairing facilities, whose demise in 1832 together with the consequential land sales made feasible the emergence of Millwall's iron shipbuilding industry by followed by conditions of boom and bust until 1872.

William Fairbairn. (1789 -1874) a Mancunian engine builder famous for the invention and marketing of the Lancashire boiler, took a lease in Millwall in 1835 and soon became famous as the "Chief fabricator of ironwork" for the Turkish Government, for the British Admiralty were slower to accept the potential of the iron warship, as opposed to paddle tugs, and that despite the delivery of two large armed paddle steamers to the East India Company built by Laird and engined by Maudslay and Field of London in 1839. Fairbairn appointed Andrew Murray, to manage his London Yard from 1836, when his new works built around a new slipway with a large fabrication complex was completed round a huge central chimney. By 1839-40 it was employing up to 1,000 men. Fairbairn had grasped the potential of such a works to sell bigger iron vessels whose advantage lay principally in their cheaper construction costs. One was even fabricated and then taken apart for transhipment to Lake Constance. Others were sold to Russia and Turkey. Among his merchant ships were the *Aaron Manby*, the *Ludwig*, and most famously the 163 feet long iron ship *Sirius* launched in 1837. When P & O commissioned *Sirius* she was the first ocean going ship to be classified and then insured on that basis by Lloyds Register.

Fairburn also won orders to fabricate box sections for the Britannia Bridge, whereon his sub-contractors, Messrs Westwood and Bailie, first made their name as the most effective riveters of lines of iron plates. Fairbairn, also built a large tug the *Rocket* in 1842 for the Royal Navy, followed by the more famous tug *HMS Grappler*, 165 ft long, launched in August 1844. Meanwhile the Admiralty concerned that within four years galvanic action had destroyed one of the ship's plates around a copper feed water pipe to her engines, saw fit to condemn the ship to scrapping by Mr Beech of Rotherhithe in 1849.

Tests at Woolwich in 1843 had shown that a conventional 32 pound gun could sinter iron plate at 30 yards. Meanwhile Capt. Henry Chads and Capt. William Symonds, concerned with gunnery and warship design respectively, began to change the official Admiralty attitude and in so doing greatly narrow the operational scope and reputation of Fairbairn's London business and indeed for his London rivals. Further trials in 1846, 1849 and 1850 suggested all large iron ships were too vulnerable to hostile fire to sustain use as ocean going frigates - vessels like *HMS Mowhawk* and *HMS Megaera* ordered from Fairbairn's yard in 1844 but not launched until May 1849. *Megaera* was to be last of Fairbairn's warships launched before the yard was sold on to Henry and Richard Robinson who invited John Scott Russell to join them. This partnership did not last long and Scott Russell took over the yard on his own account. In September 1853 there was a major fire that devastated the yard.

John Scott Russell (1808-1882) and Robert Napier (1791-1876) owned adjoining yards from about 1841 and both advocated the construction of iron warships, despite the Admiralty attitude and huge financial losses taken in

consequence, John Scott Russell and Fairbairn had collaborated over the box girder spans for the Britannia Bridge. but the yards of Scott Russell and Napier almost lost their separate identity after 1853 not just due to the huge fire and the distortion of HMS *Glory*'s hull but also to the huge scale of works and financing required to keep John Scott Russell at work through the Great Eastern Steam Ship Company until the 680 feet long SS *Great Eastern* was eventually launched on 30th January 1858, to make her first Atlantic crossing in 1860. Damage to a water heater during her sea trials further embarrassed John Scott Russell who soon afterwards gave up all his shipbuilding aspirations.

Edward supplemented his splendid pictures of that yard during *Great Eastern*'s building with some of John Scott Russell's offices which still bear Scott Russell's name due to his noticing that name was still just visible in the building's pediment and persuading the developers of the site to restore these. Next to this the original entrance gateway survives. Within the yard itself, a large building that seems to have been used for mechanical engineering work and had a mould loft in the attic still survives. Edward showed slides of the interior and construction techniques used in that building when its shell was revealed during his time as Conservation Officer to the LDDC when he was able to persuade the developers to reinstate the original roof to a tower at the river end and an adjacent bell cupola which had been taken down probably in the 1950s. It is likely that these buildings were designed and built by William Cubitt because they have architectural detail that was typical of his work. Facing this building across a yard is the original albeit much shortened chimney built by William Fairbairn when he set up the yard. During excavations being carried out by the LDDC to prepare part of the site of the former Napier Yard for a sale to developers, some large baulks of timber were exposed which Edward identified as being part of one of the two large slipways built for the building and launching of the *Great Eastern*. He persuaded the senior officers of the LDDC that this was an important historical survival and should be excavated to see how much remained. He subsequently led a project to preserve the timbers.

After the launching of the *Great Eastern*, C.J. Mare (1815-1899) took over most of the Millwall Ironworks, pouring huge sums into improving the vertical integration of its processes, having begun by acquiring part of Napier's yard in 1857. He too was an innovative iron shipbuilder, as well as principal contractor for the ironwork of the Britannia Bridge, for Fenchurch Street station roof and for the second Westminster Bridge, Using their insurance compensation for earlier shipyard fire in Deptford in 1838, Ditchburn and Mare had moved most of the operation to Orchard Shipyard, Blackwall, which had formerly belonged to Gladstone Snook & Co, before taking on the Millwall site with a more successful record of contracting for iron vessels with the Admiralty. They included HMS *Trident*, HMS *Harpy*, HMS *Myrmidon*, HMS *Onyx*, HMS *Torch* and HMS *Violet*. Eventually Mare won over fifty naval orders, with commissions from the Governments of, Belgium, Mexico, Italy, Peru, Prussia, Russia, Sweden, Sardinia, and Spain. The Museo Naval, Madrid contain a model of one of those commissions.

However, Mare's most successful product was paddle steamers built for railway companies., notably the *South Western* (240 tons) and *Wonder* (242 tons) both built for the London and South Western Railway in 1843-44. Having purchased the port of Folkestone in 1844 the South Eastern Railway ordered a fleet of steam paddlers to operate to Boulogne at 12.5 knots in rivalry with Admiralty packet mail services from Dover to Calais. The four ordered from Ditchburn and Mare included *Princess Maud* (179 tons), *Princess Mary* (294 tons), and *Queen of the Belgians* and *Queen of the French* (207 tons). On Ditchburn's retirement in 1846, perhaps because he thought Mare was over-committing to a production cycle for the Admiralty that would not be repeated, James Ash succeed him as Chief Designer working to C.J Mare. Ash stayed with the firm until it became the Thames Ironworks & Shipbuilding Co, before setting up his own shipyard in 1862. T. Waterman also designed for Mare. Ash produced the remarkable cutter yacht *Mosquito* in 1848. She was not only built of iron, but had a long fine bow instead of the usual bluff form, later outmoded by the success of the racing yacht, *America* in 1851

C. J Mare's engineering base for the work on Westminster Bridge was John Scott Russell's old but much enlarged yard which he operated as the Managing Director of the Millwall Ironworks and Shipbuilding Co. The famous new armour plate rolling mill and steel furnaces described by P. Barry cost over £100,000 to commission under Mr Hughes's supervision. Mare appointed George Harrison as his Managing Director, and Charles Henwood as his Naval Architect.

C. J. Mare built six big ships for the P&O, including the huge *Himalaya* 3,438 tons (g) or 4,690 tons (d) in 1853, for the P&O Company, the largest merchant ship of her day. She was an iron screw steamer of 340ft long and

proved capable of steaming from Gibraltar to Malta at an average speed of 14 knots. P. Barry in his **Dockyard Economy and Naval Power, 1863** considered the two works Mare had established “*are establishments of infinitely greater national importance than all the seven royal dockyards, representing together a greater iron shipbuilding and armour plate producing power than at the present time is possessed but the whole of France* “

E. C. Smith, in his *Short History of Naval & Marine Engineering*, says the Mare’s failure was due to a mistakenly low contract price to provide “Crimean” gunboats for the Admiralty. They cost about £10,000 each and were about 200 tons. Each of Mare’s applications for bankruptcy was subjected to legal process in which he lost the personal touch and the confidence of suppliers common to most other Thames shipyards. C.J. Mare had set up his shipbuilding and contracting business before the passing of the Companies Act creating Limited Liability in 1855, so Mare and his wife were liable for the full debts of the business for which formal bankruptcy proceedings began on 13th October 1855. When Overend and Gurney would lend no more Mare’s business had to return to the courts almost monthly to report and extract settlements with his suppliers and creditors until July 1856. The Admiralty resented this, wanting their ships finished. So Robert Bailie and Joseph Westwood, his riveting sub-contractors based in the Isle of Dogs accepted office with Admiralty promises of finance to administer the business as the under the Official Receiver, running both its ironworks and Mare’s wood shipbuilding yard in Deptford. On 18 September 1857 the marine stores dealers of Blackwall mutually agreed that if C.J Mare was altogether excluded from the shipbuilding business they would reach settlements and allow the business to restart under new management. In 1857 the business was reconstituted as the Thames Ironworks and Shipbuilding Co. Ltd. with a new board of directors under the chairmanship of Peter Rolf, the principal mortgagee of the new operation of C. J. Mare’s father-in law, who thereupon insisted that C.J. Mare be kept out of the yard’s operations on account of his financial indiscretions and hostile creditors’ opinions. Thames Ironworks & Shipbuilding Co went on to even greater things under Rolfs leadership for fifty years before failing in 1912 after completion of HMS *Thunderer*.

Mare's career continued although his own firm had failed, for he became manager of the yard of William and Henry Pitcher of Northfleet, which had also failed in 1857. C,J. Mare’s bankruptcies were formally annulled on 26th December 1857 but by October 1858 he was again filing for bankruptcy. Following a successful legal action by Mare against one of his creditors, Sandford in July 1859, he was ready for his next venture by 1860, having won a competitive tender to provide the ironwork for Westminster Bridge a programme of work placed under the engineering supervision of Thomas Page at his old Millwall works.

Among C.J. Mare’s new buildings at Millwall was a huge new forge on the other side of Westferry Road, which still has a cast iron plaque with his initials. Mare did not manage the yard for long and it was taken over by the Millwall Ironworks and Shipbuilding Company which had been formed by some of the partners of the Overend and Gurney bank.

Note: Although this talk was originally given by Edward Sargent, Robert Baldwin who wrote the text of this report has added a considerable amount of text in relation to CJ Mare.

Robert Baldwin