

Steam Tug *EPPLETON HALL*
Hyde Street Pier
San Francisco Maritime National Historical Park
San Francisco
San Francisco County
California

HAER No. CA-63

HAER
CAL,
38-SAN-FRA,
167-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Western Regional Office
National Park Service
U.S. Department of the Interior
San Francisco, California 94102

HISTORIC AMERICAN ENGINEERING RECORD

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Steam Tug *EPPLETON HALL*

HAER No. CA-63

Location: Hyde Street Pier, San Francisco Maritime National Historical Park
San Francisco, San Francisco County, California

Rig/Type of Craft: Steam Side Paddlewheel Tugboat

Trade: River Tugboat

Principal Dimensions: Length: 100.5' Gross tonnage: 166
Beam: 21.1' Net tonnage: 27
Depth: 10.8'

Date of Construction: 1914

Builder: Hepple & Company, Ltd.
South Shields, England

Original Owner: Lambton Collieries Ltd.

Present Owner: National Park Service
U.S. Department of the Interior

Present use: Historic ship exhibit

Significance: The steam side paddlewheel tugboat *EPPLETON HALL* was the last of the famed British paddleboats to be built. Its engine is the once-common, but now rare, twin sidelever "grasshopper" engine. It was typical of tugs on the River Tyne and other streams and estuaries in England. In 1970, the *EPPLETON HALL* became the last sidewheeler to cross the Atlantic.

Researcher: This information was adapted from the National Register of Historic Places Inventory - Nomination Form for the *EPPLETON HALL*, written by James P. Delgado and Gordon Chappell in 1979; and from the 1990 Inventory of Large Preserved Historic Vessels, James P. Delgado and Candace Clifford, editors, National Maritime Initiative, National Park Service.

ADDENDUM TO
Steam Tug EPPLETON HALL
Hyde Street Pier
San Francisco Vic.
San Francisco County
California

HAER NO. CA-63

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PHOTOGRAPHS

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
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ADDENDUM TO:
STEAM TUG EPPLETON HALL
San Francisco Maritime National Historical Park
Hyde Street Pier
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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C St. NW
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

HAER
CAL
38-SANFRA,
167-

ADDENDUM TO:

STEAM TUG EPPLETON HALL

HAER No. CA-63

This report is an addendum to a 1 page report previously transmitted to the Library of Congress.

Rig/Type of Craft: Steam tug, paddlewheel

Trade: Commercial towing

Principal

Dimensions: Length: 100'-6" Gross Tonnage: 166
Beam: 21'-1" Net Tonnage: 27
Depth: 10'-10"

Location: San Francisco Maritime National
Historical Park
Hyde Street Pier, San Francisco, California

Date of
Construction: 1914

Designer: Unknown

Builder: Hepple and Company, Ltd.
South Shields, England

Present Owner: United States Department of the Interior
National Park Service

Present Use: Historic ship exhibit

Significance: EPPLETON HALL is the last extant Tyne River paddle tug afloat. The type was developed on the Tyne River in England to assist colliers up and down the river. EPPLETON HALL was a late model of the type, so it cannot claim the role of ancestor to American paddle tugs, The EPPLETON HALL and the American paddle tug do share a common progenitor. This is

especially relevant since no American built
paddle tugs remain in existence.

Historian: Marc R. Porter, 2001

Project
Information:

This project is part of the Historic American Engineering Record (HAER) Eric DeLony, Chief, a long-range program to document historically significant engineering and industrial works in the United States. The HAER program is administered by the Historic American Buildings Survey/Historic American Engineering Record Division (HABS/HAER) of the National Park Service, U.S. Department of the Interior, E. Blaine Cliver, Chief.

The project was prepared under the direction of HAER Maritime Program Manager Todd Croteau. The historical report was produced by Marc Porter, and edited by Richard O'Connor and Justine Christianson, HAER Historians.

Significance

EPPLETON HALL is the last extant Tyne River paddle tug afloat. The type was developed on the Tyne River in England to assist colliers up and down the river. EPPLETON HALL's significance in the specific context of United States history is not obvious, but it is nonetheless important. Though paddle tugs, indeed tugboats in general, developed in England, the technology spread across the Atlantic and was a model for tugs built in the United States. EPPLETON HALL was a late model of the type, so it cannot claim the role of ancestor to American paddle tugs. The EPPLETON HALL and the American paddle tug do share a common progenitor. This is especially relevant since no American built paddle tugs remain in existence.

EPPLETON HALL is also historically significant because it was built with two "grasshopper" type steam engines. This engine type was once common in the towing industry and could be found on both sides of the Atlantic. Today, EPPLETON HALL's engines, though slightly modified, are the only ones of the type still mounted in a floating vessel.

Principal Dimensions

Length: 100'-6"	Gross tonnage: 166
Beam: 21'-1"	Net tonnage: 27
Depth: 10'-10"	

Designer

No separate designer is listed in the records pertaining to EPPLETON HALL. Presumably, an individual or individuals working for the builder designed the tug.

Builder and Location

Hepple and Company, Ltd. in South Shields, England built

EPPLETON HALL. During the building process the tug was referred to as "Steel Paddle Tug #632."¹

There have been a number of shipbuilding companies located on the Tyne River that bore the name Hepple. It is difficult to ascertain how the companies are related. They may have been independent entities or simply successive iterations controlled by the same general ownership. Appendix A lists the "Hepple" companies and their dates of operation.

The company that produced EPPLETON HALL was the most recent, and it worked entirely with iron and steel hulls. Little else is known about the building of EPPLETON HALL other than that she was built and launched along the banks of the Tyne River in 1914. A photograph taken during the tug's sea trials is the earliest photographic record of the vessel.

Date of Construction

Hepple and Company built and commissioned the tug in 1914.²

Original Price

The original price paid for EPPLETON HALL is unknown.

Original Construction

Workers built the tug's hull in the traditional manner for steel ships of the early twentieth century. The builder fashioned a skeleton or frame using steel beams. Once the vessel was framed, plates were attached to the frame with rivets to form the hull.

¹James P. Delgado and Gordon Chappell, *National Register Historic Places Inventory Nomination Form: Eppleton Hall* (San Francisco: National Park Service, 1979), Section 8, Page 1.

²P.N. Thomas, *British Steam Tugs* (Wolverhampton, England: Waine Research Publications, 1983), 45.

In the case of EPPLETON HALL, the plates used were of mild steel.³

Once shipyard workers completed the hull, they laid down wooden planking to form the main deck.⁴ The deck planking in turn supported a wooden deckhouse located just forward of amidships. The engineering spaces and funnel were installed aft of the deckhouse. A single wooden mast, supported by stays, was stepped on the foredeck. Fore and aft cabins were built under the main deck. An above deck "engine room," or platform with engine controls, was installed amidships.

EPPLETON HALL's original paint scheme was a black hull and bulwarks. The stack was black with three red bands.⁵

The tug carried towing hooks on deck for the attachment of towing hawsers. The original location of these hooks is unknown.

According to a picture taken during EPPLETON HALL's sea trials, the tug carried at least one and probably two lifeboats. The visible lifeboat is on a davit affixed to the starboard side of the vessel near the stack. It is quite likely that there was an identical arrangement on the port side.

A pair of steam engines powered EPPLETON HALL:

They were crude, heavy, cranky, primitive steam plants, known as "side lever" or "grasshopper" engines. The name, which was not particularly poetic, was a pragmatic description of the manner in which they worked. They consisted, basically, of a large steam cylinder which

³ Dick Rutter, "Steam Sidewheel Tug Eppleton Hall" (San Francisco Maritime Park, 1998. photocopy), unpaginated.

⁴ Scott Newhall, *The Eppleton Hall: Being a True and Faithful Narrative of the Remarkable Voyage of the Last Tyne River Steam Sidewheel Paddle Tug Afloat- Newcastle-Upon-Tyne to San Francisco, 1969-1970* (Berkeley: Howell-North Books, 1971), 18.

⁵ Fred M. Walker, *Report: Steam Paddle Tug Eppleton Hall* (Kent, England: Fred M. Walker Ltd., 1994), unpaginated.

rocked a long heavy pair of levers on each side at the bottom of the cylinder in an up-and-down motion and these crude levers, in turn, were attached to large connecting rods that, again in turn, transferred the reciprocating, up-and-down motion to a main crankshaft, where it was transformed into a circular motion that directly turned the paddle wheels.⁶

The twin steam engines were jet condensed and each had a 30" bore and a 51" stroke. They generally operated at 20-30 psi and developed a combined 500 horsepower. The boilers supplying steam to the engine were of the return flue variety and shared a common stack. They were fueled by coal and used salt water to produce steam.⁷

The motive power generated by the boilers and engines turned paddle wheels mounted outboard and amidships on each side of the vessel. The paddle wheel assemblies consisted of a steel spoke system supporting wooden floats or paddles. The floats pivoted or "feathered" for optimal orientation while passing through the water. The entire above water portions of the paddle wheel assemblies rested inside wooden housings known as paddle boxes.

The two engines, and thus the paddle wheels, operated independently of one another. This meant the paddles could run at different speeds or even in different directions. This made the tug very maneuverable. If one engine was run ahead and its twin astern, the tug was capable of spinning around in very tight quarters. Paddle wheel tugs equipped with twin engines are regarded as some of the most maneuverable vessels ever launched.

The engines were controlled from the engine stand or "engine room" on deck. When practical, two men worked the engine stand, one per engine. The engineer, however, was capable of controlling both engines at one time if necessary. In its earliest form, the engine room was open to the elements. Engine

⁶ Newhall, *Eppleton Hall*, 17.

⁷ Rutter, "Steam Sidewheel"; Helmut G. Raffay, Letter to Ted Miles, n.d.

controls were simple and mainly governed the speed and direction of paddle wheel rotation.

Alterations and Additions

As built, EPPLETON HALL had a covered wheelhouse elevated between the two paddleboxes. Inside the wheelhouse was an aft facing steering wheel.⁸

At an unknown time after the tug's launch the enclosed wheelhouse was converted to an open bridge by removal of the roof.⁹

EPPLETON HALL underwent modifications during the period of France, Fenwick, Tyne and Wear ownership to obtain a certificate allowing the carriage of passengers. The main modification was the addition of an enclosure around the tug's engine room.¹⁰

After coming under the control of France, Fenwick, Tyne and Wear, a second stack, taken off the tug EARSDON, was fitted over EPPLETON HALL's original stack. The stack paint scheme changed to the company's blue, black, and white with a raked anchor on each side. Seaham Dock Company changed the stack colors to red and black.¹¹

An intentionally set fire, part of the scrapping process, destroyed much of EPPLETON HALL's decking, especially in the aft section. Partial dismantling of the tug followed the fire. After Scott Newhall acquired the vessel in 1969, it went through a complete restoration. This process was mainly a case of replacing worn or destroyed portions; it was not, however, done in accordance with the historic record and thus EPPLETON HALL was somewhat altered. Many of the non-historic alterations were

⁸ Captain John Watson, "Interview with Capt. John Watson," interview by Karl Kortum (June 1979), 3; Walker, Report.

⁹ Watson, "Interview," 3.

¹⁰ Watson, "Interview," 4.

¹¹ Walker, Report; Watson, "Interview," 9-10.

later undone as part of restoration by the National Park Service.¹²

In 1970, the new owner converted the coal fired boiler system to burn diesel in preparation for moving EPPLETON HALL from England to San Francisco, California. This change meant the installation of tanks to hold diesel fuel.¹³

Original and Subsequent Owners and Masters

Lambton Collieries Ltd. ordered EPPLETON HALL from Hepple and Company. After taking delivery of the tug, Lambton Collieries operated the vessel on the Wear River in northeastern England as part of the coal trade that distributed coal from English mines to markets worldwide. EPPLETON HALL's owners were heavily engaged in the waterborne shipment of coal.

The nature and organization of the coal trade meant ocean going ships were loaded in ports, such as Newcastle, located well up the Wear and Tyne rivers. The ocean going colliers were too unwieldy to navigate the rivers under their own power so tugs towed them up river and back down to a point where they could navigate on their own. Under Lambton ownership, EPPLETON HALL spent its day and nights hauling ships as large as 4500 tons up and down the Wear River.¹⁴

Lambton Colliers sold EPPLETON HALL to France, Fenwick, Wear, and Tyne Ltd. in 1946. This company was also involved in the coal trade and the tug's occupation differed little from what it had been before the sale. During this period the paddle tug also operated on the Tyne River.

¹² Delgado and Chappell, *National Register*, 7/1.

¹³ William Featherston, "The Paddle Tug Eppleton Hall," *Model Engineer* 136, no. 3398 (August 7, 1970): 749; Delgado and Chappell, *National Register*, 7/1.

¹⁴ *San Francisco Chronicle*. 25 March 1970.

EPPLETON HALL passed into the hands of the Seaham Harbor Dock Company in 1964. The new owners used the tug to haul coal barges within Seaham Harbor. In 1967, the EPPLETON HALL's owners sold the tug to H.W. Clayton for scrap.¹⁵

Scott Newhall of San Francisco purchased EPPLETON HALL in 1969. Newhall turned the vessel over the San Francisco Maritime Museum in 1970. The National Park Service took over ownership of the tug in 1977.

Records pertaining to EPPLETON HALL's masters are scanty on this side of the Atlantic. It is possible that more could be learned by research using archival sources in Great Britain.

John Watson was master for several years in the early 1950s. An excellent account of his experiences on EPPLETON HALL and other paddle tugs exists in the form of an interview conducted by Karl Kortum, of the San Francisco Maritime Museum, in 1979. The transcript from the interview runs more than ten typewritten pages and provides details concerning tug operations, the crew's origins, construction details, and anecdotal tales of life on the paddle tugs.

The only other man known to have commanded EPPLETON HALL, prior to acquisition by Scott Newhall, was one George Renwick; he is mentioned in the Watson interview but little in the way of details are given.

In the era of steam, the newly created role of the engineer became almost as important as master. The engineer was in charge of operating and maintaining the vessel's propulsion system. All but one of EPPLETON HALL's engineers remain anonymous. The exception, however, was a longstanding member of the crew. There is no record of when Ned Fields first stepped aboard EPPLETON HALL, but one of the tug's former masters is recorded as saying

¹⁵ Thomas, *British Steam Tugs*, 45; Newhall, *Eppleton Hall*, 11.

Ned Fields had been there for "donkey's years...and donkey's years," and that he was one of the "fittings."¹⁶

Source of Original Name

The tug derived its name from the Lambton family's ancestral home outside Sunderland, England.¹⁷

History of Vessel Type

The Tyne River is important in the history of tugboats because the wake of almost every tugboat ever launched leads back, at least metaphorically, to the river. This is because the Tyne was the nursery of tugboating. It was in this small river that an industry formed that would revolutionize the conduct of maritime commerce.

The first attempt made at commercial steam towing was by the steamboat CHARLOTTE DUNDAS occurred in 1802 on the Firth and Clyde Canal in Scotland. CHARLOTTE DUNDAS made a successful maiden voyage while towing barges, but the project lost its momentum after the death of its benefactor. The prototype was barred from towing and orders for other towboats discontinued.¹⁸

A short time after CHARLOTTE DUNDAS towed barges in a Scottish canal, Robert Trevithick, an engineer of some note, proposed the construction of a steam vessel called NAUTICAL LABORER. As envisioned by Trevithick, the NAUTICAL LABORER would tow vessels around the port of London. Trevithick's invention was also slated to carry a steam crane for moving cargo and a steam fire pump to douse shipboard fires. The maritime community in London so strongly opposed the idea that Trevithick abandoned the idea even before beginning construction of a prototype. The idea of

¹⁶ Watson, "Interview," 2.

¹⁷ Delgado and Chappell, *National Register*, 8/1.

¹⁸ Thomas, *British Steam Tugs*, 11.

steam towing had been demonstrated but not embraced in Scotland. In London, the idea stalled on the drawing board.

Once the plan for NAUTICAL LABORER had been scuttled, the focus of tugboat development swung back to Scotland. In 1814, J. & W. Fyfe launched the steamer INDUSTRY on the Firth of Clyde. The steamer was 68'-4" long, had a beam of 16'-6", and measured at 83 tons. Power for the new vessel came from a single steam engine built by J. Thompson of Glasgow. INDUSTRY started out as a passenger vessel carrying people from Port Glasgow on the coast to Glasgow. The steamer made two trips carrying passengers before being converted to a luggage boat. INDUSTRY's carrying capacity was increased in 1815 by rigging the vessel to tow barges astern during the shuttle runs.¹⁹

The idea of towing under steam came of age in the second decade of the nineteenth century. The steamer MAJESTIC towed an East Indiaman from Deptford to Woolwich in 1816. Later the same year, in Liverpool, CHARLOTTE towed the sailing vessel HARLEQUIN down the Mersey. A yard in Dumbarton built the namesake of the type, TUG, in 1817 and put her into service towing ships from Leith to Grangemouth. In another development fraught with symbolism, the Clyde Shipping Company launched SAMSON in 1818. On towing vessels, the structure to which the tow is made fast is often called the samson post. SAMSON seems to have been purpose-built as a tug, and after launching she began towing lighters to Glasgow.²⁰

It was an idea whose time had arrived. Tugs were appearing in distant ports around the British Isles. No one person or port can rightly take credit for inventing the towing industry; the earliest tow boats were launched too close together, temporally, to be a case of imitation alone. Inventors and engineers throughout Britain worked on prototype tugboats, but the Tyne River was the area where the idea came to widespread fruition at

¹⁹ Thomas, *British Steam Tugs*, 12.

²⁰ Thomas, *British Steam Tugs*, 12-13.

an early date.

The early career of the first Tyne tug was marked by a series of halting steps. Rather than an insightful idea, a commercial failure spawned the towing industry. On February 21, 1814, the prosaically named TYNE STEAMBOAT was launched on the Tyne River. Her owners envisioned her as a passenger carrier, but after two years of unsuccessful attempts to establish a profitable service they gave up and sold out to one Joseph Price.²¹

Initially, Price tried to use the renamed PERSEVERANCE as a passenger carrier but mounting losses made him cast about for an alternative occupation. By July 1818, Price had a new idea in mind. In his own words:

In furtherance of my idea, I applied to the late Robert Wharfinger, of Newcastle, for leave to try and experiment with one of his loaded vessels, which was granted. I gave notice to Captain Copeland, of the Friend's Adventure, Hull Trader, to have all ready from an hour to an hour and a half before high water.

At the time appointed I requested him to throw a line on board the steamer. The tide was against us the first three miles. Everything answered as well as I could wish, and the vessel was towed two miles over the bar in two hours and ten minutes a distance of thirteen miles, the wind against us all the way.

This was the first time a sailing vessel was ever towed by a steamboat.²²

Price's experiment was an unqualified success. He entered a second vessel, EAGLE, into towing service. Imitators soon took

²¹ "The Story of the Tyne Tugs," *Smith's Dock Journal* (May 1933): 64.

²² "Tyne Tugs," 64-65.

to the water and within three years, there were fourteen tugs operating on the Tyne.²³

An unknown, but apparently vocal, number of community members initially opposed the idea of steam tugs working the Tyne. The exact nature or substance of their objections is lost, but Price recorded that he was told his inventions, "...had ruined the port."²⁴

Whatever the objections, they fell on deaf ears as the tugs gave undeniable proof of their worth. The maneuverability engendered by using tugs allowed ships as large as 400 tons to tie up at river docks as far up as Newcastle. Prior to the tugs, larger vessels were limited to downriver anchorage areas and the largest vessels coming alongside were around 240 tons.²⁵

Besides simple maneuverability, the tugs offered ship masters a way to move their commands in the face of unfavorable winds. Ships no longer had to sit idly in harbors awaiting a wind to fill their sails and take them to the sea; tugs could take them out of the harbor instead. The increased efficiency was dramatic. Ships that previously averaged eight annual round trip voyages between the Tyne and the Thames were soon averaging thirteen voyages.²⁶

Little is known about the specific construction of the earliest tugboats. No plans were made prior to their construction and the builders simply worked within the parameters of a specified length, breadth, and height of the engine. Most early Tyne tugs were from 50' to 70' long; tugs built elsewhere in Britain tended to be slightly larger.²⁷

The early tugs were wooden vessels that did not carry any

²³ See Appendix B for a list of the fourteen tugs on the Tyne.

²⁴ "Tyne Tugs," 65.

²⁵ Thomas, *British Steam Tugs*, 12.

²⁶ Thomas, *British Steam Tugs*, 12; "Tyne Tugs," 65.

²⁷ "Tyne Tugs," 66; Thomas, *British Steam Tugs*, 16.

deckhouses. The captain perched on a walkway between the paddle boxes and gave his commands to a helmsman stationed at a tiller in the stern. The use of the tiller was important in the early tugs as their paddle wheels did not operate independently, and steering was accomplished with the rudder alone. Even the engineer worked outside on the tugs as the engine controls were mounted on deck.²⁸

Wooden hulls were built using traditional plank on frame construction. Planking, of the clinker type rather than the carvel type, ran horizontally and was faired by eye. The early vessels exhibited a pronounced rake of the stem; as time passed, the stem became more vertical. The stern was rounded and displayed a substantial overhang. The early Tyne tugs were built using wood imported from America, a practice that may have foreshadowed Britain's early adoption of iron construction.²⁹ The powerplant driving the early tugs consisted of a single cylinder side-lever ("grasshopper") steam engine supplied by a double-return flue boiler. The boilers were constructed of iron plates riveted into an asymmetrical shape that followed the contours of the hull.³⁰

Early tugboats relied on their steam engines to do the work when they were racing competitors to meet an approaching ship, and they certainly relied on the engines to do the towing. Despite this reliance on mechanical power, older technology was not completely abandoned. Most early tugs carried a gaff-rigged mainsail and jib to minimize their coal consumption while searching for a customer.³¹

The practice of towing using steam spread throughout the British Isles and to other nations in the 1830s and 1840s. In these years, most tugs could not operate as profitable businesses on the revenue from towing alone. Owners and captains were often

²⁸ "Tyne Tugs," 66; Thomas, *British Steam Tugs*, 16.

²⁹ "Tyne Tugs," 67-69.

³⁰ "Tyne Tugs," 69-70.

³¹ Thomas, *British Steam Tugs*, 16.

forced to pick up other jobs carrying passengers or cargo whenever the opportunity arose.

Tugs were built out of wood until 1841, when the iron tug *DEFIANCE* was launched. *DEFIANCE* was somewhat larger than wooden tugs of the period, with a length of 112'-3" and a beam of 20'-3". Not much is known about the vessel's early years. The tug was added to the Liverpool-based towing fleet of J. Tyrer in 1853.³²

Iron tugs may have been introduced in 1841 but it took a number of years for them to be adopted throughout Great Britain. The first Tyne paddle wheel tug constructed of iron appears to have been *LIONESS*, introduced in 1851. Appendix C details the introduction of iron tugs in the British Isles.

The advantages of iron over wood in the tugboat service were the same as those throughout the British shipbuilding industry. Iron is stronger than wood and, thus, can absorb more punishment before requiring repair. Iron hulls are easier to maintain than their wooden counterparts. An iron hull is generally lighter than a wooden hull of comparable size. Finally, in industrial revolution era Great Britain, iron was cheaper and easier to obtain than wood.

The point at which steel came on the scene is unclear. Historical works dedicated to Tyne tugs do not identify the first steel-hulled tug. This is perhaps because steel construction was simply a refinement of iron shipbuilding rather than a revolutionary departure as the shift from wood to iron had been. Steel is highly refined iron with other metals added to convey desirable characteristics. The resulting product multiplies all the advantages of iron usage.

Though slow to gain acceptance, iron hulled tugs and their steel descendants eventually supplanted wooden tugs entirely. There

³² Thomas, *British Steam Tugs*, 18.

were only seven wooden paddle tugs still operating in the British Isles by 1929; by 1940, the type had disappeared altogether.³³

Other than changes in hull composition, there were not many significant developments within the paddle tugs except for changes related to steering and propulsion. The first tugs were steered by tiller; later, the walkway between the paddleboxes was expanded and a wheel installed at that vantage point.³⁴

The early wooden paddle tugs had a single engine, so their twin paddle wheels could only turn in one direction at a time. Later tugs, beginning about 1850, were fitted with twin, side-by-side engines. This meant the paddles could spin independently and conferred excellent maneuverability characteristics.³⁵

Whatever their construction, paddle tugs were engaged in similar pursuits. The smaller tugs worked in and around harbors and along other inland waterways. They helped larger sailing and steam vessels maneuver in confined quarters and towed sailing ships in the absence of wind. The largest paddle tugs operated far out into the ocean and had large cruising radii. They concentrated on long distance towing and assisting disabled vessels.

The paddle tug, with its excellent maneuverability and economical engines served the regional maritime economy well. The presence of the tugs made trade much more efficient by cutting down lag time as ships sat in harbors; it also allowed increasingly large merchant ships, sail or steam, to safely enter harbors and other restricted waterways. Not only was efficiency improved, so was safety. The presence of the tugs meant damaged or becalmed vessels could be towed to safety when at risk of sinking or going aground. England's merchant marine thrived during the paddle tug era, with the Tyne and other northeastern waterways being particularly busy.

³³ Thomas, *British Steam Tugs*, 46.

³⁴ "Tyne Tugs," 66.

³⁵ Newhall, *Eppleton Hall*, 16; Delgado and Chappell, *National Register*, 8/1.

The paddle tug was not, however, to be a permanent fixture on Britain's waterways. In the 1880s and 1890s, paddle tug numbers slowly dwindled. Just as the paddle tug had made sitting and waiting for the appropriate wind inefficient, new technology rendered the paddle tug inefficient. After lengthy debate about its efficacy and repeated testing of prototypes, the screw propeller began to gain widespread acceptance as a means of tug propulsion toward the end of the nineteenth century. Though screw tugs would never be as maneuverable as paddle tugs, other advantages made them attractive. The screw boats were more powerful and efficient. Their propellers were less vulnerable to damage from floating debris. The props were also unaffected by variable immersion, the condition where differing amounts of the paddle wheel was brought into use as the boat steamed in rough seas.

Coupled with the rise of the screw propeller was a change in the nature of merchant ships in general. As the nineteenth century drew to a close, more and more merchant ships were steamers and fewer were powered by sail. Sailing ships would hold on in various trades well into the twentieth century but the overall numbers were in constant decline. The days of vast sailing fleets awaiting tugs into harbors and through calms were over. Merchant steamers could move in and out of harbors and up rivers under their own power. Like the tugs, they operated independently of the wind and were unaffected by calms. Tugs were still needed for docking operations and for towing disabled steamers but the overall need was greatly diminished.

As the rise of steam created a smaller market for tugs and the propeller boats proved able competitors that squeezed most paddle tugs out of business. In these circumstances there was little impetus to build new paddle tugs. EPPLETON HALL was the second to last paddle tug built in Great Britain. The last, JOHN H. AMOS, came off the ways in 1930, sixteen years after EPPLETON HALL.³⁶ With construction of paddle tugs halted, attrition

³⁶ Thomas, *British Steam Tugs*, 41.

through accidents, breakdowns, and retirements thinned the fleet to thirty-nine paddle tugs by the outbreak of World War II.³⁷

By the mid-1960s, RELIANT and EPPLETON HALL were the last survivors of the paddle tug class.

History

Information about EPPLETON HALL's early years has not come to light, or is simply nonexistent. Presumably the tug spent this portion of its career engaged in towing colliers for the Lambton Colliery. Lambton tugs were generally involved in river work alone; thus, EPPLETON HALL probably spent most of this period within the upper reaches of the Wear River.³⁸

During this time the Lambton Tugs were in direct competition for tows with the France, Fenwick Wear, and Tyne tugs. The Lambton tugs were at a slight disadvantage since they operated from bases farther upriver than their competition. This meant ship captains sometimes tired of waiting for a Lambton tug and would accept a tow from the competition.³⁹

The best source of information about the vessel is Captain Watson's interview. He adds welcome detail to the study of EPPLETON HALL and paddle tugs in general. During Captain Watson's tenure, EPPLETON HALL's crew consisted of five men. The captain was responsible for the overall operation of the vessel. The engineer maintained and operated the tug's machinery. The mate handled lines, took turns at the helm, and generally maintained the vessel. Assisting the engineer with operating the machinery was a fireman who also stoked the boilers as needed. The crew was completed by a "boy," who was responsible for

³⁷ See Appendix D for a list of iron/steel paddle tugs in service in the British Isles.

³⁸ Watson, "Interview," 6.

³⁹ Watson, "Interview," 5.

cooking, cleaning, and distributing coal evenly in the bunkers.⁴⁰

The system for advancing in the paddle tugs was simple. Men worked their way up a hierarchical ladder. Crewmembers started out as the "boy," graduated to apprentice and worked their way up. According to Captain Watson, this meant everybody was capable of doing multiple jobs and there was little resentment when a crewmember was asked to do something that he knew his superior had done countless times before.⁴¹

Bonds ashore strengthened the sense of camaraderie engendered by the shared experience of working up through the ranks. Being a "tugboatman" in the Northeast of England was almost a hereditary occupation. Men working on the paddle tugs came from families living near the docks and were preceded by their fathers and brothers in the trade.⁴²

Crews worked from 7:30 A.M. until around 5:00 P.M. in the course of a normal day's work. The work during these hours usually consisted of moving ships up and down the river or between piers. For many crews, the time on duty was lengthened considerably when the opportunity arose to escort a ship to sea or meet one at sea and bring it into the river. Tug crews received extra pay for these trips and would often wait all night for an expected ship to appear.⁴³

Her coal supply governed EPPLETON HALL's range and endurance. The bunkers were capable of holding approximately 25 tons of coal. A full load generally lasted about twenty days.⁴⁴

⁴⁰ Watson, "Interview," 1-3.

⁴¹ Watson, "Interview," 3.

⁴² Watson, "Interview," 1-2.

⁴³ Watson, "Interview," 2.

⁴⁴ Watson, "Interview," 2.

The tug changed hands in 1946. There is little indication that her use changed significantly except in one respect. Under France, Fenwick, Wear, and Tyne, the vessel was altered slightly to satisfy Board of Trade requirements for obtaining a certificate to carry passengers. The plan was to have EPPLETON HALL do a little moonlighting as a passenger vessel. She was not intended to be a ferry or excursion craft. Rather, she was to take advantage of her proximity to Sunderland, a major shipbuilding center.

When a new ship was launched, it steamed downriver and into the North Sea for sea trials. Aboard the new vessel, in addition to a crew, were government officials, the new owners, and shipyard representatives. If the trials were successful and no modifications needed, the ship was free to depart for its first destination. Before it could depart the area, it had to offload all the extra personnel. To do this it could reenter the harbor and tie up. This option was expensive since it entailed lost time and incurred charges from the pilot's association and the harbor. The more attractive option was to offload the departing passengers to a smaller vessel at sea and have the smaller vessel bring them home. EPPLETON HALL was engaged in this trade when not working as a tug. No record remains of how many such groups she offloaded, but the tug is reported to have carried as many as eighty passengers at a time on such trips.⁴⁵

In 1964 EPPLETON HALL, now under the control of Seaham Harbour Dock Company, moved to Seaham Harbor. Seaham is a coal port on the coast located south of the Wear River mouth. It is an artificial harbor surrounded by walls that keep the North Sea out. The protected waters are accessible through a gated harbor entrance.

EPPLETON HALL's career at Seaham Harbour was not long. The tug spent a few years hauling coal barges but by 1967 or 1968 her working days were over. Her owners sold EPPLETON HALL for scrap and wreckers began dismantling the old tug. Luckily, the

⁴⁵ Watson, "Interview," 4, 7-8.

scrapping proceeded slowly and an unlikely cast of characters stepped in to preserve a bit of British history.

Around the time of EPPLETON HALL's consignment to the ship breakers, Scott Newhall, a San Francisco newspaper magnate, became interested in preserving a British paddle wheel tug. He traveled to England to survey the few tugs that constituted the surviving paddle tug fleet. Newhall's first choice for salvation was RELIANT, another old tug serving out her final days in Seaham Harbour. RELIANT, however, was unavailable. The tug had been promised to the National Maritime Museum at Greenwich. EPPLETON HALL, not yet broken up, was suggested as an alternative but did not immediately interest Newhall.

At this point, the plot thickened almost to the realm of fiction. Scott Newhall and his associates, after having a second offer for RELIANT rebuffed, contacted RELIANT's owners under an assumed name and pretended to be representatives from the Greenwich Museum. They set up a meeting to purchase the tug. RELIANT's owners were suspicious since they were being contacted by an unfamiliar party and asked police officials to sit in on the meeting. At the meeting Newhall tried to purchase the tug but the undercover police handed him back his money and warned him of possible fraud charges for his activity.⁴⁶

Thrice rebuffed, Scott Newhall turned his attentions to EPPLETON HALL. He purchased the then derelict vessel and with a team of American and British shipwrights set about rebuilding the tug for an ocean crossing. The work took an amazingly brief three months and on September 16, 1969, EPPLETON HALL under the command of Scott Newhall, steamed down the Tyne to the sea and embarked on the 11,000 mile trip to San Francisco.⁴⁷

The trip is recounted in Newhall's book, *The Eppleton Hall: Being a True and Faithful Narrative of the Remarkable Voyage of the Last Tyne River Steam Sidewheel Paddle Tug Afloat*. Suffice to

⁴⁶ Tom McNee, *The Changing Face of Seaham: 1928-1992* (n.p., n.d.), 40.

⁴⁷ McNee, *Changing Face*, 40.

say, the trip was successful and the vessel arrived safely in California.

Scott Newhall's efforts to purchase RELIANT were the subject of much debate at the time and controversy still exists surrounding those months in 1969. Newhall's supporters claim the Greenwich museum stepped in and bought a vessel they never intended to buy and which they subsequently ruined by turning it into a terrestrial display. Other parties involved in the events cry foul over the American effort to acquire a piece of Britain's heritage through underhanded maneuvering. All in all, it appears to come down to what version of events one chooses to believe. Perhaps all that can be said is the result seems to be ideal. RELIANT is preserved as a museum display in Greenwich and EPPLETON HALL, once consigned to the ship breakers, is afloat and close to her original form.

The preparations that made EPPLETON HALL ready for a long sea voyage also changed some of her historical fabric. Among the changes were the additions of an extra mast, reinforcement of structural members, the building of non-historic accommodations. When the vessel underwent overhaul in San Francisco, most of the changes were undone and the vessel is close to a totally authentic example of a British paddle tug from the early twentieth century. The major change that remains as it was in 1969 is the diesel powerplant. There are no plans to convert the boilers back to coal fired. The vessel is theoretically capable of steaming under her own power but has not done so since the early 1970s. At present, EPPLETON HALL remains a floating museum ship berthed at the Hyde Street Pier in San Francisco, California.

APPENDIX A

The "Hepple" Companies⁴⁸

Company	Output (tugs)	Location
Hepple & Landello (1858-1861)	3 wooden	Low Walker
T. Hepple (1859-1867)	3 wooden	Low Walker
T. Hepple & Company (1862-1871)	5 wooden, 3 iron	Low Walker
J. Hepple & Son (1867)	1 iron tug	Low Walker
W. Hepple & Son (1869)	1 wooden tug	Newcastle
Hepple & Company (1883-1892)	5 iron, 1 steel	North Shields
Hepple & Company Ltd. (1903-1914)	2 iron, 3 steel	South Shields

⁴⁸ John H. Proud, Letter to Ted Miles. 14 November 1993.

APPENDIX B

First Tugs operating on the Tyne River

PERSEVERANCE
EAGLE
SWIFT
SWIFT II
TYNE
TWO BROTHERS
INDEFATIGABLE

ENTERPRISE
SPEEDWELL
HOPE
DUTCHESS OF NORTHUMBERLAND
NAVIGATOR
SAFETY
UNION

APPENDIX C

Appearance of iron tugs in United Kingdom waters

Port	Year	Tug
Lowestoft	1846	LOWESTOFT
Glasgow	1848	WIZARD
Liverpool	1849	PRINCE OF WALES
Swansea	1850	TARTAR
South Shields	1851	LIONESS
London	1851	FRIEND TO ALL...
Leith	1853	LIONESS
Cork	1854	POWERFUL
Newcastle	1855	DRAGON
Cardiff	1857	IRON DUKE
Sunderland	1857	HARRY VANE
Belfast	1857	WONDER
Hull	1858	JAMES WATT
Falmouth	1863	PENDENNIS
Dundee	1863	ATLAS

APPENDIX D

Number of iron/steel paddle tugs in service in the British
Isles⁴⁹

Year	Number of tugs
1885	339
1895	228
1905	220
1929	87
1940	39

⁴⁹ Thomas, *British Steam Tugs*, 45-46.

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