Historic American Engineering Record

HAER VI-1

Creque Marine Railway
Hassel Island
St. Thomas
Virgin Islands

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ADDENDUM
FOLLOWS...

REDUCED 8" x 10" DRAWINGS

Addendum to:
Creque Marine Railway
(St. Thomas Marine Repairslip)
Hassel Island
St. Thomas
Virgin Islands

HAER No. VI-1

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
VI-1

Historic Name:	St. Thomas Marine Repair Slip (1840-1910)
Modern Name:	Creque Marine Railway (1910-1950s)
Location:	Northwest tip of Hassel Island, adjacent to St. Thomas, United States Virgin Islands.
Date of Construction:	1840-1843; renovated, 1911.
Present Owner:	Creque Estates, St. Thomas.
Present Use:	Abandoned.
Significance:	Containing a well-preserved Bolton beam engine from the 1840s, this marine railway is one of the oldest surviving facilities of its kind in the Western Hemisphere.
Historian:	John C. Rumm

Situated on the northern edge of Hassel Island, a small island adjacent to the southern shore of St. Thomas, United States Virgin Islands, the Creque Marine Railway survives as one of the few intact steam-powered marine railways in the world. While the steam engine and winch exist in fairly good condition, other parts of the facility -- the railway tracks, masonry wetdock, powerhouse/residence, and repair shop --- have deteriorated greatly and are threatened by encroaching vegetation and the elements. In operation for over a century -- from the mid-1840s to the early 1960s -- this marine railway, once a St. Thomas landmark, symbolizes well the manner in which 20th century progress renders 19th century styles obsolete.

Whenever and wherever man has utilized water-based forms of transportation, he has needed a means of repairing his vessels. For centuries this was most readily accomplished by hauling a boat up onto a beach and tipping it onto its side. As ships increased in size, however, this method became impractical. The masonry drydocks introduced in the 18th century offered one alternative process, yet they posed the disadvantages of cost and cumbersomeness. Interest in the inclined plane suggested the possibility of employing this device for hauling ships out onto land for repair. Thus Thomas Morton, an English shipbuilder, was granted a patent in 1819 for his "patent ship," consisting of "the application of a particular kind of carriage to the inclined plane." This carriage would be lowered into the water "so that the vessel may be floated over it," and thereupon "steadied on the frame with blocks and shores." A capstan or some other power source would then haul the vessel and carriage out of the water and up the inclined plane. [1]

Morton's patent slip spread to several English ports and harbors as shipbuilders recognized its usefulness. The earliest facility in North America was erected at Salem, Massachusetts in 1822, and others soon followed in coastal waterfronts. [2] These structures were known as "marine railways" in the New World. Nearly all of the initial marine railways relied upon horse or human power for hauling, but some employed steam power.

St. Thomas, blessed with an excellent natural harbor, soon became a key stopping-point for West Indian shipping lines. The local Danish residents improved their island's harbor facilities to attract even more mercantile commerce. A group of Danish businessmen on St. Thomas

met in 1840 and formed the "St. Thomas Marine Railway Company." This firm purchased, in early 1841, "all the ground in the Small Careening Hole" in the southwest part of the harbor, and began constructing their marine railway "according to the plan laid down by Mr. Mathew the engineer." [3] The company subscribers met to elect L. Rothschild as Chairman of the enterprise now known as the "St. Thomas Marine Repairing Slip." [4] Rothschild left St. Thomas in 1842 and Major W. Recht was elected to replace him.

Construction progressed smoothly on the marine railway and at a general meeting in October 1843, the Board of Directors declared their project "so far completed, as to have permitted a trial and that it was found effective." [5] The Company petitioned the Danish crown for a $50,000 loan to finish the undertaking.

The island's Governor-General, Peter von Scholten, was present for the second trial run, in November 1843. A newspaper report described the trial:

> The vessel which was hauled up was a large one and from the ease with which it was effected we have no doubt that the slip is capable of taking up vessels with safety of a much larger class ... [S]uch an establishment had long been wanted in this part of the world. [6]

Further tests of the marine railway continued. As the St. Thomas Tidende noted in reporting the hauling-up of the American ship Cora, steam power provided the lifting force:

> ... the noble vessel when released glided down the inclined plane of the railway easily but majestically ... Another vessel the Romp was in waiting to be hauled up and repaired, and we are happy to learn that several other vessels are daily expected to avail themselves of the same advantage, of the efficiency of the steam power and capabilities of the cradle to carry up the largest vessel in the merchant service. [7]

As this account indicates, the St. Thomas marine railway incorporated the three basic elements of such a device: 1) the inclined plane leading into the water; 2) the cradle (Morton's "carriage") upon which the ship rested; and 3) some form of windlass or winch for hauling the cradled ship up the incline. It may be assumed that facilities for repairing ships (wood shops, stores, etc.) also existed on the site.

One source listed the site structures as "a repair shop, a winch-house residence and facilities for storing coal and other supplies," in addition to a 156-foot long railway and a 200-foot pier. [8] Typical repair processes at marine railways included hull and keel work, painting, cleaning, caulking, seaming, chipping, and sail mending.

It is reasonable to assume that the steam-winch and powerhouse which survive today were original to the site A date of 1843 for the plant's initial hauling operations utilizing steam power ranks the St. Thomas marine railway as one of the earliest in the Western Hemisphere to incorporate this technology. Although additional information would be needed to validate the claim, it may represent the oldest surviving steam-powered marine railway. [9]

Following some improvements to the slip's apparatus in early 1844, the company hauled out the cargo ship Oberlin of 350 tons deadweight. [10] The Company directors also announced plans to erect the following structures at the marine railway site: 1) a store 100 feet in length by 36 feet in breadth; 2) a 240-foot long wharf; 3) a cistern to hold "400 Puncheons of Water"; and 4) a darin 395 feet long. [11] An editorial in the Tidende suggested that the facility might be rendered more attractive and renumerative by the addition of a saw-mill to the steam winch "which is at present only partially employed." [12]

Some 50 vessels had been hauled out by the St. Thomas Marine Repair Slip as 1844 ended, including the French war schooner La Estefette [13] and the steamship City of Glasgow, the "first steam vessel by which its capacity has been tested." [14] The Tidende noted proudly that "the slip is strong enough to bear, and the engine able to drag up the largest class vessels ... likely to navigate these areas for the purposes of commerce." [15] A Company report for 1845, however, showing 58 ships totalling 11,604 tons hauled out, hinted at unspecified great engineering difficulties. It also observed that despite improvements to the facility, the Company remained some $50,000 in debt. [16]

The St. Thomas Marine Repair Slip averaged 50 ships hauled out annually after 1845. Apparently, engineering problems continued to plague the operations. In late 1854, for example, a section of the rails broke off during a ship-hauling, and the railway was forced to shut down temporarily for repairs. Mr. Wilkins, the Company Superinten-

dent, "removed and replaced 2-1/2 sections of defective rails at the depth of 12 feet of water," using a diving bell. [17] He also directed an extension of the cradle. Repairs ended in early 1855 as the steamer Eagle was hauled out for caulking and coppering. [18]

Company directors also continued to expand and develop the operations at the railway. Plans were announced in 1856 for an unspecified extension of the slip. The directors also moved to answer the need for a sufficient supply of steamship coals by establishing a coal depot adjacent to their marine railway. Two coaling jetties were erected and a new wharf was filled and piled. [19] Some of the on-site buildings were also repaired. A. Wolff, the Company chairman, advertised in early 1860 that "Steam coals will be furnished to parties requiring them in quantities, above 20 tons at $7 per ton." [20]

The 1860s were particularly bleak for the St. Thomas Marine Repair Slip, with the year 1867 especially disheartening. A curious and embarrassing incident happened in April when the ship Gem of the Sea, on the stocks for cleaning and repair work, toppled over on its port side. A board of inquiry found that the railway foreman, Shipwright F. Pradine, had employed unsuitable bilge blocks for bracing the vessel in the cradle. Although Pradine maintained that his removal of screws from these blocks alone led to their failure, at least one investigator held otherwiae:

> It may be due to the want of the screw or screws as maintained by the Marine Repairing Slip, but it may just as likely be ascribed to the Slip Company's defective materiala .... I have seen that the chocks, cradle -- where broken, and other materials are worn out, defective, in part rotten, and in some cases unfit for use. [21]

The Company was cited for negligence and the owners of the hapless ahip received $2,139 for compensation.

Another, more devestating blow came in November when a tremendous hurricane battered St. Thomas. The Marine Repair Slip lost its coaling jetty and most of its wharfage; the buildings loat their roofs but remained atanding. [22] The Company weathered this misfortune and resumed operations in 1868. Hauling rates for a few years hence indicate that the marine railway was now capable of hauling out vessels weighing 1200 tona. [23]

An advertisement for the Marine Repair Slip from the turn of the century noted that the firm undertook "the docking of vessels and steamers for cleaning and repair at very moderate rates and quick despatch." [24] By 1910, however, the marine railway had failed commercially; company stockholders, unwilling to continue the venture, decided instead to auction it off. Thus in November 1910 a St. Thomas merchant, Henry O. Creque, acquired the St. Thomas Marine Repair Slip for less than $7,000. [25] From this point on the operation went under various names, the most common of which seems to have been the "Creque Marine Railway." [26]

Beginning early in 1911, Creque supervised the various repairs needed to upgrade the deteriorated shipyard. In May he wrote that he had "begun to take off the arms of the cradle," noting also that the weather afforded a "splendid opportunity for concreting the eastern end of the wall." [27] Newspaper advertisements in November 1911 summed up the work:

> The progress made with the repairs on the dock since January 2 last, coupled with the discovery that the damage reported to have been sustained by the foundations and rails, are quite unfounded; that the granite blocks forming the rail-bed have been found quite intact; and the rails under the water are in even better shape than on shore, warrant the issuance of the statement that as soon as such parts of the rolling stock as have been found necessary to order out from the builders in Scotland, shall have come to hand, enabling completion of repairs to the dock cradle and the re-laying of new rails in place of those missing from the rail-bed near the powerhouse, it is expected that March 1912 will witness the reinauguration of the dock capable of lifting vessels of 1500 tons. [28]

Creque planned to establish a "Henry O. Creque Coal Depot" following the completion of "very urgent dredging required to give an adequate depth of water to facilitate the coaling of vessels up to and above 500 tons." He intended this depot to be an independent venture "quite apart from the Railway Dock," although it would utilize the existing coal jetty. [29] Dredging operations by this time had resulted in the formation of a channel across the southwestern tip of St. Thomas island and the separation of a smaller island from St. Thomas. This smaller island, at the northern tip of which was located the marine railway, became known as "Orkanshullet" (Danish for "Hurricane Hole") and later as "Hassel Island" after its owners, the Hazzell family. [30]

Advertisements in April 1912 for "Creque's Maritime Railway Dock" stated that "the Dock has been thoroughly renovated and brought up to date," and now ready for business. [31] Among the first ships hauled up was the Dutch schooner Venture, 195 tons, and despite "repairs made necessary by the mishap to the cradle arm during the oepration of lifting" the vessel, [32] this operation "demonstrated the stability of the ways, the rolling stock, and the cradle." [33] An article in the Nautical Gazette, while noting that Creque's advertising schemes "already foreshadow the attraction of tonnage above the capacity of the dock," nevertheless hoped that:

> owners of vessels will avail themselves of the facilities which are unequalled anywhere in the West Indies, as to expedition in lifting, launching, cleaning and scraping, caulking, painting, and general repair work upon wooden vessels, also as to economies in cost of materials and labor. Repair work upon iron and steel vessels will likewise be undertaken as soon as this projected machine shop has been installed. [34]

The article also offered a testimonial from "an experienced expert in marine engineering, who has travelled," and who said:

> There is not a railway slip dock on the entire American Atlantic seaboard south of Norfolk, and extending right down to Texas in the Gulf of Mexico, which can be at all compared to this at St. Thomas. When it comes to elaboration and substantiality in construction, nothing is seen like the power house here, which seems to have been built for perpetuality, and the machinery, though of the old type [35], sustains the world-wide reputation of the Bolton builders, whose work combine silence and durability. [36]

The St. Thomas Tidende in March 1913 reported the hauling up of the yacht Seegochet, 50 tons, for cleaning and scraping. The article went on to observe how

> our good old Bloating Dock has a vessel on, a smaller craft comes up for docking. With the Slip lying in so much old junk as formerly the smaller craft would have had to lose 3 or 4 days here, or worse, go elsewhere. But now we have a valuable adjunct to our Floating Dock, where small vessels can be lifted, cleaned and painted with the utmost safety and despatch. [37]

Insofar as can be established from on-site inspection and from interviews with former workers at the Creque Marine Railway, the machinery remaining is original and probably dates back to the 1840s. Foremost among the equipment is the large cast-iron steam engine-winch built by the Bolton Company. A walking-beam engine, it has a fulcrum made of two central A-frames joined at the top. Originally painted red and green, the engine includes a 15-inch bore and 30-inch stroke, D-slide valve, cruciform connecting rod, and a device on the eccentric enabling the engine operator to reverse the machine's direction. Manually unlatching the eccentric rod and thereby manually operating the slide valve, the worker allowed the eccentric to slip on the crankshaft until a stop on the eccentric engaged dogs fixed to the crankshaft. This process advanced or retarded the motion of the eccentric approximately 180 degrees with respect to the piston, reversing the engine's direction, and playing out the chains on the cradle to lower it on the ways. Th engine was designed without a governor since it operated under constant loads. The box end bearings, along with the strap joining the walking beam to the connecting rod and the beam to the piston rod, are the only major parts missing from the engine.

The engine geared directly to the winch without any disconnect or clutch arrangement. Two gear ratios were available on the winch depending on the size of the load being hauled, the gear shift being accomplished through a moveable gear splined to the drive-shaft. The gears -- particularly the large forward cog gear -- exhibit signs of breaking and subsequent repair due to the stress placed on them in hauling. Barge hauling for the Navy during World War II, for example, often ruptured the gears. [38] Smaller gears also show worn or broken teeth. Depending on the load size, hauling was accomplished with either a heavy malleable iron chain or a steel cable wound around a drum on the middle gear-shaft. The iron chain did not extend the full distance from winch to cradle but was supplanted by seven or eight wrought iron rods 23 feet long. An eye-U-bolt shackle connected these rods to one another.

As the iron chain passed under and then across the cog gear it was paid out of the powerhouse by a lightweight chain-keeper. A pulley device located to the left of the powerhouse toward the slip, the chain; the other end of the chain-keeper wound around the pulley. Drawing the leading edge of the chain from the powerhouse, the chain-keeper prevented the heavy iron links from accumulating in the winch-pit

and fouling the gears or excessively wearing down the stone pileage supporting the assembly. A chain hoist above the cog gear facilitated the chain-keeper in lifting the chain from the gear. [39]

Two cast-iron boilers serviced the steam engine in parallel after 1912, although one of the units failed about 1940. The remaining boiler furnished adequate steam for the engine until it too failed, in the mid-1950s. Boiler fuel consisted of a type of wood indigenous to the neighboring islands of St. John and Tortola; the expense of shipping this wood to provide a constant fuel supply for the boilers led to the employment of alternative means in powering the railway. During the 1940s Creque replaced the steam engine-winch with compressed air from a gas compressor, but this proved unsatisfactory. When use of the facility became sporadic in the 1950s, the operators relied on a gasoline winch for light hauling, the boilers now being unfit for the steam engine. [40]

A two-story building housed the winch and boilers and also served as a residence; prior to 1910 the acting superintendent for the St. Thomas Marine Repair Slip dwelled there, and from 1910 until the mid-1940s Mr. Creque occupied the structure with his family. Most of the building has fallen into ruins from Fiscus vines and wind damage, and from a fire during the 1960s. The building sits atop the incline facing north-northwest to the slip. Constructed of fieldstone, with brownstone jambs and flat-arch framing as a monumental entrance to the winch-room, the building is composed of six bays east to west. The boiler room occupied the first two bays, the engine room the third, the winch-room the fourth, and living quarters comprised the final two bays. The north and south walls and the facade are fenestrated. A massive chimney still rises from the rear of the boiler-room. Most of the roof over the structure has now fallen in upon the floor and the machinery.

A large pre-fabricated cast-iron cistern, 42 feet by 24 feet by 6 feet deep is situated south of the powerhouse and stands on masonry piers that provide gravity-water flow to the boilers. Three repetitive sections form this tank: plates six by six feet for both sides and the bottom; single pieces forming outside corners between the sides and between the sides and the bottom; and four angled pieces to complete the four bottom corners. Rain water falling on the powerhouse roof collected in gutters and was fed by downspouts to the cistern. A tank positioned on the south side of the powerhouse was filled from the cistern by a hand-pump, supplying water for domestic use to the living quarters.

Vegetation and litter now largely cover the remains of the railbed. Several sections of the iron rails are missing from the brick and concrete incline. Dimensions for the earlier St. Thomas Marine Repair Slip are not available. The post-1910 rails (two sets of parallel tracks) ran some 210 feet underwater from the end of the wetdock to the masonry incline, and then another 140 feet along the incline towards the powerhouse. [41] The depth of the water off the rails is only 12 feet, a factor limiting the railway's hauling capacity to vessels with moderate drafts. The relative narrowness of the wetdock also limited the size of ships hauled. A foreman, Alfonz Harley, recalled one instance where a Navy barge caused great difficulty for the work force since it barely fit between the wetdock walls. [42] The edge of the wetdock is presently occupied by a 50-foot ketch, Carnival, abandoned after being hauled up privately in the early 1970s.

Portions of a cradle rest in the bushes off the railbed along with parts of chain, track, and scrap metal. Harley, who worked at the Creque Marine Railway during the 1930s and 1940s, recalled that the operation employed three cradles, measuring 27 feet, 37 feet, and 110 feet in length, respectively. [43] Mr. Creque wrote to a business associate in 1933, describing the cradle:

> Length of present cradle 150 feet. Breadth 24 feet. Cradle built of greenheart, renewed in its entirety 3 years ago, originally built for 1000 ton capacity. Largest vessel hauled out up to the present was the Molasses Hopper I45, 165 feet long, 34 feet beam. [44]

When vessels of this size were hauled out, the marine railway was provisionally adjusted to meet the situation. The Boston Molasses Company, for example,

> gave ... every assistance in our power to increase the length of [the] marine railway, so that [it] could take a vessel the size of the s/s Pedrito. We furnished piles and wheels and in fact anything we had which would be of assistance ... [45]

Greenheart, the wood mentioned by Mr. Creque, is a strong dense wood of the genus Ocotea, native to South America [46] which he imported to his facility for use in building and repairing the cradle. According to Mr. Harley, such cradle repairs took place every three years or so. [47]

The cradles probably resembled those described by historian Alex

Gratiot in the HAER report on the Thames Shipyard:

> The cradle sat on rollers, which in turn rested on the iron strap rails. One set of stringers followed the incline of the plane, while another set on the lower two-thirds of the cradle supported a level working platform. This working platform was held above the stringers by heavy wood trusses. The space between the two sets of stringers was filled with scrap metal or fieldstone which served as ballast; it prevented the cradle from floating. Beams ran perpendicular to the longitudinal stringers and supported both the keel blocks, which bore almost all the weight of the ship on the cradle, and the sliding bilge blocks, which gave lateral stability to the craft. Winches for hauling the bilge blocks in and out from under the hull were placed on docking platforms on each side of the cradle supported by upright posts. [48]

Workers at the Creque Marine Railway used scrap metal for ballast (most of which remains in the bushes) and used ropes instead of winches for manuvering the bilge blocks. [49]

Hauling a vessel up on the railway was a fairly simple process which nevertheless required much preparation. Workers began readying the railway for a ship the day before it arrived, adjusting the cradle to fit the hull of the craft. At 5 o'clock the morning of the hauling, workers fired up the boilers. The cradle was fitted with ballast blocks and the steam engine's direction was reversed to run the cradle down the incline into the water. A piling set in the seabed marked the end of the track. The process of firing the boilers, lowering, and positioning the cradle, generally lasted one to three hours.

The ship was then directed into position over the cradle arms. Large flags on either side and on the center rod of the cradle guided the ship in positioning. Underwater divers followed the ship's progress and helped guide the keel into place. A crew of workers stood on the masonry wetdock walls holding guide ropes to shift the keel and bilge blocks. When the vessel was properly positioned and aligned on the cradle, so that its load was evenly distributed and with the blocks locked in place to hold the ship steady, actual hauling began. This aligning operation, a delicate procedure, required six to nine men. If the ship was not properly positioned, it backed off the cradle

and the sequence was repeated. Sometimes 15 to 20 attempts were required before the ship was properly secured. The older the craft, the longer the operation lasted.

The steam engine-winch was again reversed, to haul the cradle slowly along the ways. As the cradle ascended the railway, workers placed additional blocks under the ship's hull. If the chain was being used in hauling, the 23-foot lengths of iron rod were linked between the cradle and the chain. When the ship had been hauled 2 rod-lengths, the winch was stopped, the cradle was secured to dead-bolts in the railbed, and the rods were removed as the chain was paid out of the power-house by the chain-keeper. The process was then repeated, two lengths at a time, until the cradle rested at the desired point on the incline. If cable was used rather than chain, the hauling process was continuous and the cable wound around a steel drum on the cog gear-shaft. Depending on the size of the ship and the means employed, hauling lasted anywhere from an hour to an entire day. When operations were finished on one vessel, it was secured to dead-bolts. If a day's operations included a large and a small ship, the larger craft was hauled out first using the big cradle and both tracks; rods or the cable were then passed under the cradle to either of the two parallel tracks and a smaller cradle, using one set of rails, hauled out the smaller craft. Ships requiring extensive repairs were usually hoisted off the railway and moved to one side using rollers and skids. In 1938, for example, Mr. Creque repaired Cane Barge No. 718, replacing "2,881 loose and defective rivets" over a two-week period; the owners were billed for the extra work in "lifting barge from cradle, disconnecting cradle arms, removing keel blocks, replacing same & lowering barge on cradle." [50]

A small repair shop was located southwest of the masonry wetdock at the base of the marine railway. The Creque Marine Railway advertised its services as "docking, caulking, cleaning, repairing, painting, scraping, chipping, and metalling" in the "Smithy and Workshop on the Premises." [51] Although some marine railway plants engaged in shipbuilding operations, no such work was performed at the Creque establishment. Primarily, cleaning and painting operations on yachts and pleasure boats comprised the bulk of the work. Mr. Harley noted that by the 1930s the repair shop was rarely used and then only for welding. Most of the machinery in the shop has been removed, although lathes, saws, and an early diesel engine remain.

Rusting tanks adjacent to the repair shop are all that remain of the Creque Fuel Depot. Information on this venture is scarce, although

a note in the Tidende presented Creque's plans for building "spur pits" and stated further that "the fuel oil tanks, which are to be fitted up on the site ... will be the last and most distant of the several projects to claim attention." [52] In 1918 one author wrote of the fuel depot that "There are accommodations for coal supplies, but very little business is being done at present along these lines." [53] By Mr. Harley's time the tanks were being used to store excess boiler feed water and the coal jetty was no longer in use.

Mr. Creque died in 1918 and his son Herman O. Creque assumed control of the marine railway operation. Henry O. Creque, jr. took over in the 1920s and ran the enterprise until the mid or late 1950s. The marine railway normally employed ten people, one man to operate the engine and the others to conduct the haulings and repair processes. The Creques hauled anything from yachts and tugboats to barges, lighters, and freighters on their ways. They were proud of their work and of their operations, and their repair invoices were often accompanied by personal reflections on the work performed. Henry O. Creque, jr., for example, wrote of the services performed on Cane Barge No. 718:

> Incidentally I may mention that this has been the quickest job ever accomplished on the ways & your Mr. Diaz will bear me out in saying that no effort has been spared to expedite the work and although in work of this nature water is expected to percolate through seals it permanently, yet on launching, not one drop of water was made thus proving the general excellence of the job. [54]

During World War II the Navy leased the facility from the Creques and used it in hauling out barges and mine-sweepers for cleaning and light repairs. Mr. Creque continued to use the railway for work on small private pleasure craft, yachts and motorlaunches. The Navy returned the facility to him in mid-1944 after completing these repairs:

1) Renewal of 500 feet of 1-1/4-inch cable
2) Rebricking boiler uptake
3) Rebuilding and replacing approximately 150 feet of track
4) Replacing greenheart cradle timbers [55]

Following Henry Creque, jr.'s death in 1954 the family closed the marine railway for a few years until William Hurst leased the facility in the late 1950s. The railway had begun to deteriorate markedly during its period of non-use; the track, for example, had buckled so severely

in places that it caused the cast-iron wheels on the cradle to snap. Hurst installed a downhaul on the railway so that the cradle might be controlled during launching rather than running freely down the track. He employed 16-20 men in occasionally hauling up three small freighters weighing 400-500 tons, doing so primarily for dry-docking since no other facilities were available. [56]

A Mr. Dollard leased the marine railway in the early 1960s but he too experienced difficulty with the facility due to its great deterioration. The last reference to a marine railway on Hassel Island appeared in 1965, stating that "a slipway for vessels up to 1,000 d.w. with a 9 ft. draught is operated by St. Thomas Shipbuilding and Drydock Co." [57] Apart from the aforementioned hauling of the Carnival (in which a small electric winch was used [58]), the yard has been dormant for over a decade.

Marine railways are fairly commonplace today along coastal waterfronts, wherever a market exists for the hauling out and repairing of small craft. In the early 1840s, however, they were still something of a novelty, and the first marine railway in the West Indies caused considerable interest among the populace. Now, some 130 years later, the Creque Marine Railway is still a novelty -- one of the last surviving examples of the state of the ship-repairing industry from the bygone days of the wooden ships. Steps should be taken to rescue this structure from further deterioration.

(The author would like to express his appreciation to Mr. Alfonz Harley and Mr. William Hurst for their information regarding the marine railway, and especially to Creque Estates, Charlotte Amalie, St. Thomas, for allowing him to examine the personal papers from the marine railway in their possession.)

NOTES

[1] "Specification of the Patent granted to THOMAS MORTON, Shipbuilder in Leith; for a Method for dragging Ships out of the Water on Dry Land," Repertory of Arts, Manufactures, and Agriculture, Vol. XXXV (London: 1819), pp. 272-276.

[2] Henry Hall, Report on the Shipbuilding Industry (Washington: 1882), Census Monograph, Tenth Census, Vol. VIII, p. 109. Other marine railways followed in Washington, where the U. S. Navy erected a facility, and in Philadelphia.

[3] Land Deed, 20 April 1841, in file "Hurricane Hole (Hassel Island also known as Orkanshullet)," Recorder of Deeds, Charlotte Amalie, St. Thomas.

[4] "Extracts from the Protocol of the St. Thomas Marine Repair Slip," in file "Hurrican Hole ..." (see note 3 above).

[5] Ibid.

[6] St. Thomas Tidende, 29 November 1843.

[7] "The Marine Railway Slip," St. Thomas Tidende, 6 January 1844. According to the article, Capt. Warner of the Cora expressed great satisfaction with the operation although recommending "some slight improvements in the cradle."

[8] National Register of Historic Places Inventory -- Nomination Form for Hassel Island (n.a., n.d.), p. 3. No source is cited for this information.

[9] Although marine railways were in existence in the Western Hemisphere, it is unknown when the first steam-powered facilities appeared. The oldest surviving steam-powered marine railway in the U. S. appears to be that at the Thames Shipyard (ca. 1900), according to a report prepared by Alex Gratiot [Thames Tow Boat Company (Thames Shipyard)]," for the Historic American Engineering Record of the National Park Service.

[10] "The St. Thomas Marine Slip - Interesting Launch of the Ship Oberlin of 350 tons," St. Thomas Tidende, 28 February 1844.

[11] Advertisement in the St. Thomas Tidende, February 1844.

[12] St. Thomas Tidende, 1 October 1844.

[13] Ibid.

[14] Correspondence from E. Chappell, Secretary, Royal Mail Steam Packet Company, St. Thomas Tidende, 18 January 1845.

[15] St. Thomas Tidende, 21 December 1844.

[16] St. Thomas Tidende, 4 April 1846.

[17] St. Thomas Tidende, 31 January 1855.

[18] St. Thomas Tidende, 16 April 1855.

[19] St. Thomas Tidende, 10 April 1856, 3 November 1858.

[20] St. Thomas Tidende, 29 February 1860.

[21] "Copy of Mr. James B. Lamb's Remarks in the Case of the Gem of the Sea," St. Thomas Tidende, 12 June 1867. Another investigator, Mr. John Bain, "examined the Cradle, Bilge Blocks, etc., and found some of them suitable and others not suitable for the work." "Award of Mr. John Bain," St. Thomas Tidende, 8 June 1867.

[22] St. Thomas Tidende, 29 October 1867.

[23] The St. Thomas Almanack and Commercial Advertiser, 1879, p. 167.

[24] Advertisement in endpages of Adolph Sixto's Time and I, or Looking Forward, ca. 1900.

[25] The West Indies (London, 1911), p. 308. Some sources refer to the Marine Repair Slip as the "Orkanshullet Island Coal and Oil Fuel Depot," presumably a reference to the fuel depot later established by Mr. Creque. Land deeds and auction papers in the Recorder's Office file for "Hurricane Hole" show that until 1910 the venture remained known as "The St. Thomas Marine Repair[ing] Slip."

[26] Other names for the operation included "Creque's Maritime Railway Dock," "Creque Railway Dock," "Creque's Marine Repair Slip," "Creque's Marine Railway Dock," "Creque Raildock," and "Creque

Marine Slipway." The owners themselves used all of these names rather indiscriminately, but for the purpose of convenience the name "Creque Marine Railway" appears in this paper.

[27] Henry O. Creque, correspondence to Herman Creque, 23 May 1911.

[28] St. Thomas Tidende, 8 November 1911.

[29] Ibid. This concern also went by the designations "Creque Coal Wharf" and "HOC = Coal Depot."

[30] The precise date for this dredging operation is unknown, although it may have happened as recently as 1917. It is not certain whether the "very urgent dredging required" by Henry Creque actually took place. An article in the St. Thomas Tidende (28 November 1911) stated that

> there will be 30 feet and more of water when the dredging work is finished at any point between the Factory and Creque's wharf, so that the largest ships will have ample depth to move in.

[31] Material in the possession of Creque Estates, Charlotte Amalie, St. Thomas.

[32] Advertisement in Lightbourn's Mail Notes, "Creque's Maritime Railway Dock: Announcement," 6 August 1912.

[33] "Repair Facilities at St. Thomas," The Nautical Gazette, 25 September 1912, p. 4.

[34] Ibid.

[35] This is presumably a reference to the fact that by this time many marine railways were being powered by hydraulic lifts rather than steam power.

[36] "Repair Facilities at St. Thomas."

[37] St. Thomas Tidende, 14 March 1913; the notice also appeared in the Nautical Gazette, 9 April 1913, p. 23, as "Success of Creque's Dock."

[38] Interview with Mr. Alfonz Harley, August 1977.

[39] Ibid.

[40] Telephone interview with Mr. William Hurst, 10 August 1977.

[41] Harley interview. Mr. Harley, a foreman at the marine railway during the 1930's and 1940's, supplied most of the information on the facility's operation.

[42] Ibid.

[43] Ibid.

[44] Henry O. Creque, Jr., correspondence to the Porto Rico Coal Company, San Juan, 8 July 1933.

[45] Clarence E. Heath, agent, Boston Molasses Company, San Juan, correspondence to Henry O. Creque, Jr., 8 January 1926.

[46] "Greenheart," in Jess Stein, editor-in-chief, The Random House College Dictionary, rev. ed. (New York, 1975).

[47] Harley interview.

[48] Alex Gratiot, "Thames Tow Boat Company, Thames Shipyard," unpublished monograph prepared for the Historic American Engineering Record of the National Park Service (HAER CT-4), pp. 3-4.

[49] Harley interview.

[50] Repair invoice prepared by Henry O. Creque for Cane Barge No. 718 and owners (United Sugar Company, Humscao, Puerto Rico), 18 January 1938.

[51] This information is taken from the standard repair invoice used at the Creque Marine Railway during the 1930's-1950's.

[52] St. Thomas Tidende, 8 November 1911.

[53] Luther K. Zabriskie, The Vergin Islands of the United States of America (New York, 1918), pp. 74-75.

[54] Henry O. Creque, correspondence with the United Sugar Company, Humscao, Puerto Rico, 18 January 1938.

[55] Memorandum to Commandant, Naval Operating Base, St. Thomas, 2 March 1944.

[56] Hurst interview.

[57] Ports of the World 1965, 19th ed. (London, 1965), p. 834. The nearest marine railways to St. Thomas at this time were three located in Tortola, British Virgin Islands.

[58] "Creque's Marine Railway: Past, Present, and Future," Virgin Island Boating (n.a., n.d.), p. 2.

Addendum To:
CREQUE MARINE RAILWAY
(St. Thomas Marine Repairslip)
Hassel Island
St. Thomas Island
Virgin Islands

HAER NO. VI-1

HAER
VI,
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PHOTOGRAPHS

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