

251

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer to complete all items.

1. Name of Property

historic name Crandall Marine Railway
other names/site number _____

2. Location

street & number 11 Dry Dock Lane [] not for publication
town Ticonderoga [x] vicinity
state New York code NY county Essex code 031 zip code 12883

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [X] nomination [] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements as set forth in 36 CFR Part 60. In my opinion, the property [X] meets [] does not meet the National Register criteria. I recommend that this property be considered significant [] nationally [] statewide [X] locally. ([] see continuation sheet for additional comments.)

Ruth A. Purpont / DSHPO

3/14/11

Signature of certifying official/Title: Acting Deputy Commissioner for Historic Preservation Date

New York State Office of Parks, Recreation & Historic Preservation

In my opinion, the property [] meets [] does not meet the National Register criteria. ([] see continuation sheet for additional comments.)

Signature of certifying official/Title _____ Date

State or Federal agency and bureau _____

4. National Park Service Certification

- I hereby certify that the property is:
- entered in the National Register [] see continuation sheet
 - determined eligible for the National Register [] see continuation sheet
 - determined not eligible for the National Register
 - removed from the National Register
 - other (explain)

Edson H. Beall Signature of the Keeper Date of action 5-4-11

5. Classification

Ownership of Property
(check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in the count)

Contributing	Non-contributing	
_____	_____ 2	buildings
_____	_____	sites
_____ 2	_____	structures
_____	_____	objects
_____ 2	_____ 2	TOTAL

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)
NA

Number of contributing resources previously listed in the National Register

6. Function or Use

Historic Functions
(enter categories from instructions)

TRANSPORTATION: rail- and water-related

Current Functions
(Enter categories from instructions)

TRANSPORTATION: rail- and water-related

7. Description

Architectural Classification
(Enter categories from instructions)

NO STYLE

Materials
(Enter categories from instructions)

foundation concrete

walls na

roof na

other heavy timbers, structural steel, wood

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets)

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 7 Page 1

Description

The Crandall Marine Railway (1927) is a dry dock facility on the shore of the northwest end of Lake George. It sits in Heart's Bay, directly southwest of Coates Point, about three miles southwest of the village of Ticonderoga via Baldwin Road. It was, and still is, the Lake George Steamboat Company's primary facility for building, repairing and maintaining its fleet of excursion boats, including the recently National Register listed *Mohican II*, a 117-foot, riveted hull steamboat that has continuously plied the waters of Lake George since its construction in 1906-07. The railway is a three-part structure consisting of tracks, a cradle, and the machinery that propels the system, the latter of which is housed in a small frame head house. The nominated .3-acre parcel slopes gently southward to the water's edge and is retained at its southeast corner with a small bulkhead (1 contributing structure). Along the northeast edge of the property are two modern, non-contributing sheds that contain paraphernalia related to the dry dock: specifically, various sets of bilge blocks for the three steamboats serviced at the site. A vacant 1.3 acre lot encircles the north and west boundary of the nominated parcel. Further west are year-round residences and one seasonal camp on relatively spacious lakefront properties in Heart's Bay. To the east-northeast of the railway are seasonal camps on lakefront or lake-rights parcels. Most of these residential buildings date from the mid-twentieth century; few retain sufficient physical integrity to merit consideration for National Register listing. Slightly northeast of the cottages on Coates Point is the site of the Steamboat Company's former shipyard at the tiny hamlet of Baldwin; all early twentieth-century buildings and structures are gone, but the Company's boats still stop at the site's large wharf and dock to load and unload excursionists.

The Crandall Marine Railway consists of the head house and related machinery; the track system; and the cradle. Original drawings of and/or specifications for most elements of the facility are in the possession of the current owner, whose father, Admiralty lawyer Wilbur Dow, acquired the marine railway in 1945.

The Hauling Machinery and the Head House (photos 1 – 7)

The head house, the northernmost component of the three-part docking facility, houses the railway's "machinery," which is made up of three integrally related components that run chains that allow for the in-hauling and out-hauling of loads weighing up to 800 tons.

1. The gearing control system, manufactured by the National Hoisting Engine Company of Harrison, New Jersey. There are 3 in-haul gears with haul speeds as follow: 4 ft./min. in low gear, 6.3 ft./min. in intermediate gear and 11.25 ft./min. in high gear.
2. The series of heavy gearings driven by the control system. This gearing system was fabricated and installed by the Crandall Engineering Company. At the time, the Crandall

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 7 Page 2

Company dominated the dry dock industry; it held patents on the majority of the components of the gearing system. (Crandall drawing 137-9; "Machinery.")

3. The machinery foundation: This is a 1'-foot thick, 5'-deep foundation under the power house that serves to stabilize and counterbalance the haul's weight. (Crandall drawing 137-10; "Machinery Foundation.")

The frame head house, per se, is merely a shell that contains the essential elements of the machinery. Nonetheless, it is a remarkably intact structure highly worthy preservation. Oriented with its gable roof on a north-south axis, the head house is a one-story, 20' x 25' frame structure sheathed with novelty siding. Original fenestration also survives intact: irregularly spaced double-hung windows, all with intact wood trim, are placed on all elevations. Doors are found on the north and south elevations. The original steam engine was replaced by a 20 horsepower electrical motor before 1946. The current transmission is from a 1950s truck.

Directly related to the hauling machinery, but not housed within the head house per se, are the in-haul and out-haul chains and various sheaves and pulleys (both above and below water level) around which the chains move.

- a. The In-Haul Chain

The 390' in-haul chain is composed of open-link, electrically welded chain links. Each link is 2 1/4" in diameter, one foot in length, working load 174,700 lbs., breaking load 410,163 lbs., weight per foot 43.5 lbs. The underwater sections of the in-haul chain were replaced in the Fall of 2010 with new sections, the fabrication and installation of which were overseen by Crandall Dry Dock Engineers to the same specifications as the original.

The in-haul chain is first made fast to the forward steel beam of the cradle. It then runs into the power house and around a Crandall 10 Link Chain Wheel. The in-haul chain then runs out under the cradle, down into the lake between the two tracks and out to a position 20' short of the Crandall underwater turning sheave (at cross section #37), at which point it is attached to a 1" stud-link backing chain by means of a "Crandall Chain Swivel." All of these parts date to 1927.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 7 Page 3

b. The Backing or Out-Haul Chain

The 390' foot out-haul chain is a 1" stud-link chain that is attached to the end of the in-haul chain with a Crandall Chain Swivel. The out-haul chain then feeds around the underwater turning sheave at section #37 and then runs in shore, between the two tracks, and under the length (168') of the cradle. It attaches to the cradle at a point 6' behind the cradle's forward 18" "I" beam (thus attaches to cradle "I" beam #2). In the out-haul mode, this chain draws the cradle outward, toward the lake. The underwater section of the chain dates to 1978; it was fabricated by the Crandall Company to the specifications of the original 1927 out-haul chain. The above-water sections of the out-haul chain are original.

c. The Crandall Underwater Sheave

The out-haul or backing chain runs to and loops around a cast semi-steel sheave that is mounted on the submerged portion of the track (Crandall Dry Dock Engineers; DWGS-2430). It is the original 1927 sheave; several decades ago, the owners purchased an identical sheave from Crandall to have on hand if and when the original sheave ever fails.

The Track System (photos 8 - 12)

The second major component of the facility is the track system, which extends a total of 546 feet from the center of the main gearwheel in the head house; 390 feet of the tracking is below water. The entire length of the track was constructed at and is still good for 5 tons per foot loading. For ease of discussion, the track system can be divided into several sub-components.

a. Foundations

The track rail plates are each of steel, 6" wide and 7/8" thick. They must measure, center to center and over the 520' of the railway, exactly 11'6". And for this exact separation over the full length of the railway, the track plates must be fastened to strong (to accept 800 tons without sagging) and perfectly aligned track foundations.

On the landside, starting at the power house, there is 20-foot-long, 5-foot-deep, Y-shaped foundation of reinforced concrete going from the machinery bases in the power house out to the beginning of the two parallel tracks. Then those two parallel track foundations (poured 1 foot wide and 5 feet deep to get below the frost line) run 130' down to the shoreline.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 7 Page 4

At the shoreline and out 390' to the end of the tracks (at which point the water is 25' in depth), the parallel track foundations are of wood. A three tiered pyramid of wood beams which rest upon pilings underneath the beams are driven into the lake's bottom. The current owner has, over the years since 1968, cut the tops of some of those supporting pilings and shimmed between the cut pilings and the wood beams of the underwater tracks' foundations.

(Related Crandall drawings of 1927: 137-3, "Track and Rails;" and 137-4," Track and Pilings.)

b. Tracks Grade and Alignment Surveys

It is absolutely critical that both tracks be in perfect alignment with each other (11'6" center to center). Inshore, the tracks' alignment is maintained by reinforced concrete crossties at 12' intervals. The underwater tracks' alignment is kept secure by timber crossties every 10' (timber crossties also support the white oak chain slides or boxes which prevent the chains from cutting into the wooden crossties). Also, each track must be in perfect level with the other at every point over the entire 520' of the tracks' length.

The grades and alignments must be, and have been, carefully surveyed by professionals from Crandall Dry Dock Engineering. The most recent such survey was conducted by Paul Crandall in August of 1997; it showed that the curved track gradients were in satisfactory alignment. (The tracks are not in a straight-line declination, rather, they are in a carefully curved track gradient. The upper section of track gradient is 1:15.6; the lower [underwater] track gradient is 1:23, mean gradient. The mean gradient is 1:18.68.)

c. Roller Racks/Frames and Rollers

As noted above, the steel track plate mounted on the top of the track foundations measures 6" wide by 7/8" thickness. This plate is exactly matched by a similar steel track plate welded to the base of the cradle, which is designed to carry a vessel from the water and thus moves, on rollers, along the 520-foot length of the tracks below.

Between the foundations' track plates and the cradle's track plates are 15' steel roller racks that are fastened one to the other by toggle pins. Each roller rack maintains, in perfect alignment, thirteen cast alloy iron rollers, upon which the cradle glides. (Crandall still makes all of these pieces, as found in current catalogues: "Roller System and Wheels," "Rollers Pintle Bushings," "Roller Frame Connectors," and "Toggle

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 7 Page 5

Pins.”) As the various pieces and/or segments of the track plates and roller racks wore out, the current owners replaced them with authentic Crandall parts. In addition, the current owner has, since the 1950s, stockpiled considerable supplies of various parts and materials for future repairs. Thus, if and when post-2010 repairs and/or replacements are carried out, the so-called “new” materials could be as many as 60 years old.

The Cradle (photos 13, 14, and 15)

The cradle, originally 205’ long and 60’ wide, is now 168’ long and 56’ wide. It is lowered by the chain system into the lake by riding along the roller racks on each side of the track until it reaches its maximum depth (determined by the lake level which can fluctuate up to 2”) at the end of the track. The vessel to be drawn then comes over the keel and bilge blocks and rests on the cradle, which is drawn up out of the water by the in-haul chain.

In the summer of 1990 the cradle’s lengthwise wooden carrying timbers (rail plates attached to the bottom) had deteriorated to the point where they had to be replaced with steel beams. The original Bethlehem Steel thwartship 18” “I” beams (max. 56’ in length) were retained, but the half-point timber, keel-block-carrying beams were replaced with 18” steel “I” beams. All fabrication and work was carried out by the Crandall Company (“Cradle Reconstruction” drawing S2430-3; “Cradle Runners and Details” drawing S2430-4).

In 1972, when the *Ticonderoga* was being hauled back out into the water, the cradle derailed. The boat and most of the cradle sustained little damage, but the old wooden catwalk system was crushed. The current upright steel catwalks date to 1972.

Non-contributing resources on the property include two sheds (2007 and 2008), which shelter the original white oak bilge boards of all three boats still operation by the company.

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all boxes that apply.)

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location
- C** a birthplace or grave
- D** a cemetery
- E** a reconstructed building, object, or structure
- F** a commemorative property
- G** less than 50 years of age or achieved significance within the past 50 years

Narrative Statement of Significance: See continuation sheets

Areas of Significance:

(Enter categories from instructions)

Transportation

Maritime History

Engineering

Period of Significance:

1927 - 1960

Significant Dates:

1927

Significant Person:

NA

Cultural Affiliation:

NA

Architect/Builder:

unknown

9. Major Bibliographical References: see continuation sheet

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by historic American Building Survey # _____
- recorded by Historic American Engineering Record # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal Agency
- Local Government
- University
- Other repository: _____

Lake George Steamboat Company

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 8 Page 1

Significance

The Crandall Marine Railway (1927) is significant under criteria A and C in the areas of transportation, maritime history and engineering as a rare and remarkably intact example of an early twentieth century railway dry dock facility. Designed and constructed by Crandall Dry Dock Engineers, Inc., the marine railway was, and still is, used by the Lake George Steamboat Company to haul its excursion boats in and out of Lake George for repair, maintenance and short-term storage. The nominated resource embodies all distinct characteristics of the property type: it has a head house, tracks and a cradle. In continuous operation since its construction by the Delaware & Hudson Railroad Company (of which the Lake George Steamboat Company was a subsidiary between 1871 and 1939), the marine railway is particularly rare in that it was, and still is, a stand-alone facility as opposed to being a secondary or tertiary component of a much larger ship yard. The latter type was, by far, the most common type of marine railway. Research suggests that even the more common, ship-yard associated marine railways are an extremely rare resource type; furthermore, extensive study has found no other intact, historic, free-standing marine railways still in use in the country. Notwithstanding the occasional minor repairs conducted at the facility (e.g., the replacement of various segments and/or pieces of the system most prone to water and/or weather damage), the marine railway stands virtually as it was built. In fact, the still-thriving Crandall Company in Boston continues to supply all needed materials and services—often to the exact specifications outlined in 1927. The Crandall Marine Railway is an important complement to the recently National Register listed *Mohican II* (also owned by the Lake George Steamboat Company), a 117-foot, riveted hull steamboat that has continuously plied the waters of Lake George since its construction in 1906-07. Together, the railway and the excursion boat recall the nearly two century history of pleasure boating on one of the Adirondack Region's largest and most popular and accessible tourist destinations.

The contexts in which the Crandall Marine Railway is being evaluated are dry docks (property type and engineering) and maritime history and transportation. Sub-contexts are marine railways and the servicing of excursion boats in Upstate New York. In general, a dry dock is any facility or system that allows workers to haul a vessel out of any body of water in order to access the components of the vessel that are usually submerged and, therefore, impossible to repair or maintain when the vessel is in the water. In addition, the facility or system always provides a means for returning the vessel to the body of water or some sort of transfer point or vehicle for removal (e.g., a truck or railroad car.) Obviously, small and/or light vessels are simply carried out of the water by hand and turned upside down for repair. For larger and heavier vessels, a broad range of methods have been devised for gaining access to the undersides of vessels. The oldest, most passive method was to bring a vessel as close to shore as possible at high tide, anchor it, and simply wait

**United States Department of the Interior
National Park Service**

National Register of Historic Places

**Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York**

Section 8 Page 2

for the tide to recede. One drawback, however, was the limited number of hours during which workers could work before the vessel was overtaken by high tide. Obviously, another major drawback was that this method did not work on non-tidal bodies of water.

One early solution for dry docking vessels in non-tidal waters was to carve channels, basins or cavities into dry land at water's edge. Watertight gates were built at the water-side ends of these basins. After the water and boat flowed into the basins, the gates were closed and the water was pumped out, leaving the vessel dry-docked for repair. When work was completed, water was pumped back into the basin, the gates were opened, and the boat was released.

Another early solution was a floating dry dock: a crude sort of raft or float was sunk to the bottom of the water with weights or by flooding the raft's pontoons. Next, a vessel was positioned over the raft; when the weights were removed or water was pumped back out of the pontoons, the raft rose to "cradle" the vessel and lift the hull, keel and/or propellers above the surface of the water for maintenance or repair. When work was complete, the raft was re-sunk and the vessel was released.

Another early method was literally dragging or hauling a vessel out of the water. At first, some sort of greased skids—logs or planks, i.e., crude "rails"—were laid on land out to the water's edge. Ropes, chains and/or cables were then attached to the vessel and men (or animals) simply pulled the boat out of the water. The advent of the steam engine and its widespread availability in the early nineteenth century revolutionized this method of in-hauling vessels: by the mid-nineteenth century, when rail lines began to be built across America, obsolete logs and planks were replaced with state-of-the-art railroad tracks and steam power was introduced to power the machinery that propelled the vessels in and out of the water. This became known as a "marine railway."

As a property type, the marine railway consists of three primary elements: a head house, a track and a cradle. The head house, also called the engine house, almost always contains the source of power and the gears and related paraphernalia that drive the system. The tracks are perfectly graded and aligned steel rails upon which the cradle is hauled out of (or back into) the water. The cradle is the "nest," or frame, upon which the boat itself rests during the process of in-hauling or out-hauling. A marine railway, like many marine-related resources or property types that are characterized by constantly moving parts, is subject to routine maintenance and repair, especially in terms of replacing completely worn-out pieces of equipment or segments of the system. Various parts and components have certain life expectancies; e.g., in the case of marine railways, underwater timbers can often last for about 100 years; above-water timbers can last for 50+ years; roller frames and tracks/plates can be expected to last 20-25 years, while the rollers themselves have a life expectancy of 15-20 years. Wooden keel and bilge blocks are often viable for up to 20

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 8 Page 3

years, while well-cared for engines and transmissions can last for decades. Well-maintained gears and masonry foundations can be expected to last for more than 100 years.¹ The underwater sections of chains are more susceptible to damage than those above the water; hence, the above-water chains can be expected to last far longer than the below-water sections.

Crandall Marine Railway in the context of Lake George and excursion boats

A new era of water-related transportation was born in August 1807 when Robert Fulton launched the *Clermont*, America's first steamboat. Designed to convey passengers between New York City and Albany on the Hudson River, the *Clermont* was the source of inspiration for virtually all subsequent steamboats that served both commercial and passenger-related transportation on American's waterways, especially inland bodies of water. In 1808, the Winans Brothers of Burlington, VT., launched the *Vermont*, which was similar to the *Clermont* in both design and purpose, for use on Lake Champlain. Nine years later (1817), the Lake George Steamboat Company was incorporated. Its incorporators included James Caldwell, founder of the village of Caldwell (later Lake George) on the south end of Lake George. The Company's first steamboat, the *James Caldwell*, was launched in 1817. It burned in 1821; two years later, the Company launched its second steamboat, the *Mountaineer*. During the next 180+ years, the Company purchased, built, expanded and/or retrofitted nearly a dozen steamboats, including the National Register listed *Mohican II*. Many ran—and still do—the full length of Lake George between Ticonderoga at the north end of the lake and the village of Lake George at the south end of the lake. With the exception of the year 1949, the Lake George Steamboat Company has never ceased to operate its service on Lake George.

As the Lake George Steamboat Company prospered on Lake George during the mid-nineteenth century, so also did the Lake Champlain Transportation Company flourish on Lake Champlain. The latter company gained control of the former company in 1867; by 1871, the two-part company was controlled by the Delaware and Hudson (D & H) Railroad Company. Stagecoach service connected the north end of Lake George and the south end of Lake Champlain via Ticonderoga, but in 1875, the Baldwin Branch of the D & H line opened. Its southern terminus at Baldwin (at the northwest corner of Lake George about two miles south of Ticonderoga) became the home of the Company's new shipyard (see first map on continuation sheets, **Parcel D**). About one-half mile south of the shipyard was the company's "ways," that is, skids (later narrow gage rails) upon which the Company's boats were hauled out of the water for service (**Parcel B**). Horses pulled the boats out of the water, often taking as long as a month to complete the process. In 1882, a new rail line

¹ Brian Duffy, Crandall Dry Dock Engineers, Incorporated. Interviews, August and October 2010.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 8 Page 4

was opened between Glens Falls and the village of Lake George, inaugurating the heyday of tourism and excursion boating on Lake George.

In 1902, the newly completed *Sagamore* was launched from the Company's ways at Baldwin. On July 1, 1927, the *Sagamore* crashed into the base of Anthony's Nose, a mountain on the east shore of the lake. The severely damaged boat sank; three weeks later it was raised and towed back to Baldwin. However, the old ways proved inadequate to haul the *Sagamore* out. The D & H Railroad Company, whose Lake George steamboats were producing huge profits, immediately hired the nation's leading dry dock company, Crandall Dry Dock Engineers of Boston, MA, to build a marine railway capable of hauling out the *Sagamore* (Parcel C). According to *Mountain Steamboats, the History of the Lake George Steamboat Company, 1817 through 2000*,

Crandall designed and constructed a marine railway consisting of three units—the cradle, the track and the power. The cradle had a length of 205 feet and an extreme width of 60 feet. The track upon which the cradle rode was 540 feet in length, of which 320 feet were under water. From the upper end to the water level, it was constructed of reinforced concrete; from the water to the out end, of wood, built of three tiers of timbers resting on piles. The hauling power was steam pulling a single change of manganese steel weighing 1.5 tons.... The cost of the Crandall dock was \$50,000.

With the exception of routine maintenance and repair and/or replacement of a variety of components (or sections thereof) over the decades, the marine railway survives virtually as constructed in 1927. In almost every single case, when an old component (or section thereof) wore out completely, authentic Crandall parts were supplied by the still-in-operation Crandall Company. The Crandall Company still provides routine surveys and all necessary certifications; in fact, the Crandall Marine Railway in Baldwin appears to be the only historic, Crandall-built marine railway still in operation and still overseen by the nation's oldest, most renowned dry dock engineering company.²

As rail transportation improved in the Adirondacks and automobiles were introduced, the popularity of excursion boats on Lake George waned in the late 1920s and 1930s—particularly with the economic repercussions of the Great Depression. When the D & H Company abandoned the steamboat business on Lake George, it was taken over by George H. Stafford who, between 1939 and 1945, ran the Lake George Steamboat Company.

² The Crandall Company built a similar marine railway for the Lake Champlain Transportation Company in Sherburne, Vt. Additional research is needed to verify its integrity. It is still in use, but it is virtually obscured from public view because it is surrounded by a large, mostly modern shipyard.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 8 Page 5

Stafford immediately began to liquidate most of the land and the Company's assets, including the furnishings of the *Horicon* and the *Sagamore*, which the D & H had already scrapped.

In November of 1945, Wilbur Dow purchased the company and a small portion of Parcel C, upon which the marine railway stands, as well as the old shipyard and wharf (Parcel D). Portions of Parcels A, B, and C had already been built up with summer camps and year-round residences; this trend continued well into the late twentieth century. Wilbur Dow's son (William) and grandsons now run the company, with three boats offering highly popular, year-round excursions up and down the lake. Virtually every piece of correspondence and every receipt for every transaction between Wilbur Dow and J. Stuart Crandall (4th generation of the Crandall Company family) and between William Dow (current owner of marine railway) and the late Paul Crandall (5th generation of the Crandall Company family) survives on file at the Lake George Steamboat Company's headquarters in the village of Lake George.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 9 Page 1

Bibliography

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Steel Pier, Lake George, NY: Lake George Steamboat Company, 2000.

Other materials:

Crandall Marine Railway, C-137 Construction Drawings

Dwg. 137-1, 8/1/97	Cradle Schematic
Dwg. 137-2, July 1927	Steel Details
Dwg. 137-3, 7/27	Track and Rails
Dwg. 137-4, 7/27	Track and Piling
Dwg. 137-5, 7/27	Cradle
Dwg. 137-6, 7/27	Cradle Details
Dwg. 137-7, 7/27	Boot jack
Dwg. 137-8, 7/27	Iron Work & Chain Gear
Dwg. 137-9, 7/27	Machinery
Dwg. 137-10, 7/27	Machinery Foundation
Dwg. 137-12, 7/27	Bearing Part no. Z-11
Dwg. 137-13, 7/27	Chain Wheel
Dwg. 137-14, 7/27	Cast Iron Stop Pawl
Dwg. 137-15, 7/27	Roller Frames, Wooden

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 9 Page 2

Crandall Correspondences and Calculations (some of many)

5/18/53	J. Stuart Crandall to Wilbur Dow
8/14/78	Gordon Winrow, cutting piles to receive caps
10/89	SK S2430-1, Boot Jack
8/27/94	Paul on Saint's initial docking requirements
9/14/94	Crandall, steel weights in cradle
10/94	Dry Dock gearing schematic
12/28/94	Paul on Rehabilitation of Crandall Railway, 11 handwritten pgs.
11/2/95	Paul on dock preparation for Saint, 7 handwritten pgs.
5/96	Docking Report, Marine Railway Inspections
10/10/97	Paul's certification (800 tons) of Railway Dry Dock 137
10/13/98	Paul's cantilevered track support sketch
2/8/99	Koutrouba on work dates since 1927

Crandall: Booklets, Reports, History

- a. Introduction to Railway Dry Docks and Transfer System, date unknown.
- b. Introduction of Dry docking Principles and Techniques, June 1970
- c. Railway Dry Docks, 1957 and 1967

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga vicinity, Essex County, New York

Section 9 Page 3

- d. Dock Master training Seminars Folder
- e. Dock Maters Manual, Paul Crandall, 1978, 87
- f. Dry docking Seminar Materials, ASDCO, 1972
- g. Dry Dock Hardware and Equipment ordering Booklet
- h. Timber Design in Waterfront Const, Paul 10113/66
- i. Care and Maintenance of Marine Railway Dry Docks
- J. Waterfront Engineer's Pocket Book, 1976
- k. Report of Inspection Dry Dock No. C137, Sept. 1989
- l. Crandall Dry Dock Engineers, Designers and Builders of Over 200 Docks & Transfer Systems since 1854

Crandall Dry Dock Hardware and Equipment Catalogue.

Delaware and Hudson Railroad's pamphlets noting the schedules of their vessels on Lake George and Lake Champlain. Issues of 1926, 1929, and 1932.

Dry Dock Gears Schematic, Robert Gates, 1992.

10. Geographical Data

Acreage of Property .3 acres

UTM References: **18/624793/4851649**

Verbal Boundary Description: The boundary of the nominated property coincides with the full extent of land historically and currently directly associated with the dry docking facility. The boundary coincides with the legal lot lines as delineated on the attached county tax map (160.33-2-9.000).

Boundary Justification:

11. Form Prepared By: William Dow, Lake George Steamboat Company

name/title Nancy Todd, Program Analyst

organization Division for Historic Preservation

date March 2011

street & number Peebles Island, Box 189

telephone (518) 237-8643

city or town Waterford

state NY zip code 12188

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Property Owner (Complete this item at the request of the SHPO or FPO)

name _____

street & number _____ telephone _____

city or town _____ state _____ zip code _____

United States Department of the Interior
National Park Service

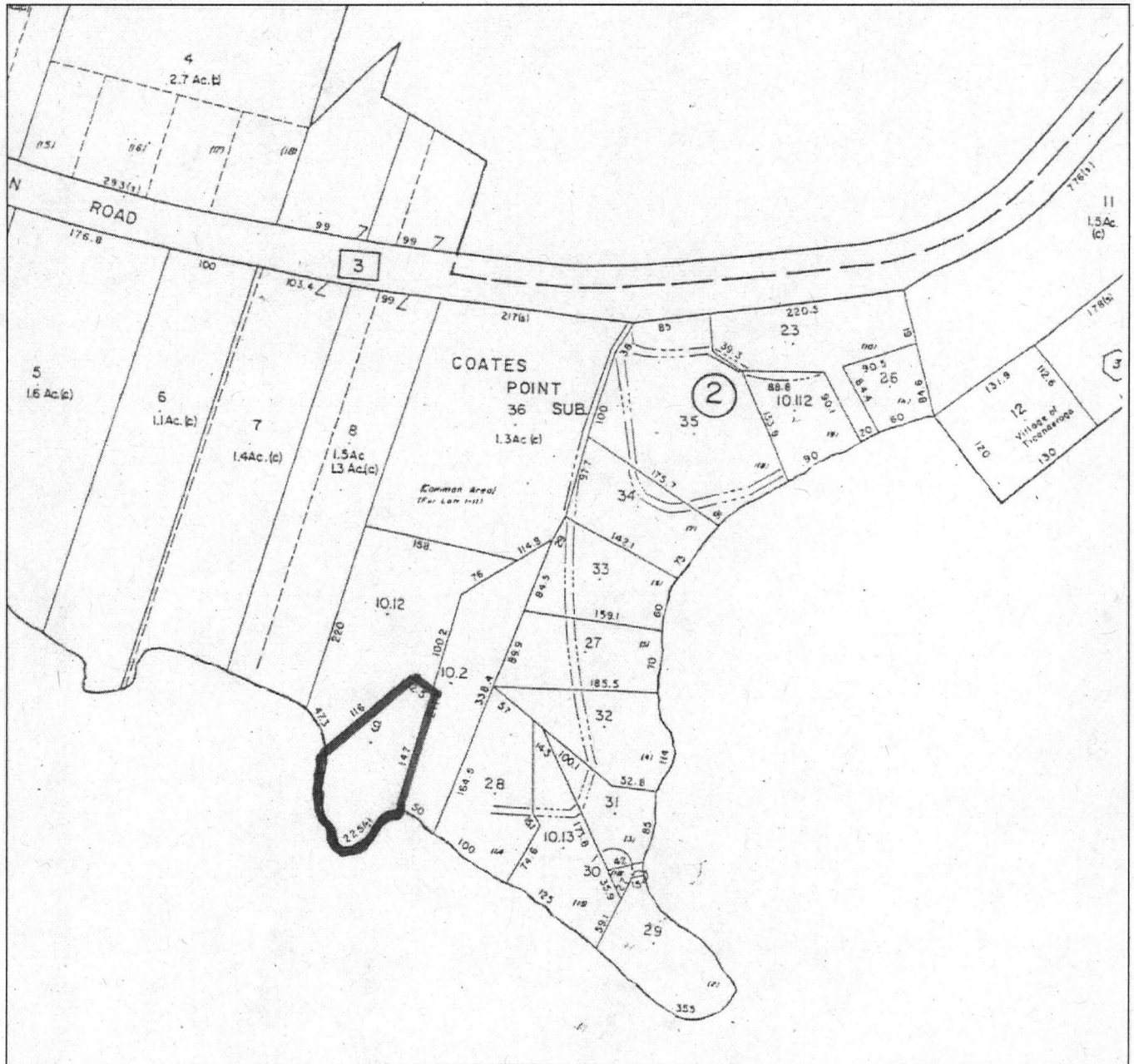
National Register of Historic Places

Crandall Marine Railway
Ticonderoga vic., Essex County, New York

Continuation Sheet, Geographical Data and maps

Section 10 Page 1

Verbal Boundary Description: The boundary of the nominated property coincides with the full extent of land historically and currently directly associated with the dry docking facility. The boundary coincides with the legal lot lines as delineated on the attached county tax map (160.33-2-9.000).



**United States Department of the Interior
National Park Service**

National Register of Historic Places

**Crandall Marine Railway
Ticonderoga, Essex County, New York**

**Additional Documentation: Key to Digital photos on disk
Plus miscellaneous drawings, historic photos and extra photographs**

Page 1

All digital photography by:

**Nancy L. Todd, OPRHP and William Dow, Lake George Steamboat Company, 2010
Historic photographs and graphics provided by William Dow**

1. North and east elevations of head house in foreground with fully dry-docked *Mohican II* in background
2. Standing on south end of empty cradle (fully docked) and looking north toward head house
3. Crandall Engineering Company plaque mounted in head house
4. Gears in head house
5. Gears in head house
6. Gears, looking out of head house toward in-haul chain
7. 1950s electric motor and transmission
8. *Minne ha ha* on partially submerged cradle
9. Under-water tracks, cross tie #19 in foreground
10. Detail of above-water tracks, frames and rollers
11. "New" (unused) spare plates, tracks, frames and rollers, most of which date to the 1950s and 1960s
12. Hull of *Mohican II* resting on numbered bilge blocks
13. *Mohican II* on partially submerged cradle
14. Standing near middle of empty cradle, looking south to the lake
15. Spare Crandall sheave to 1927 specs

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

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Page 2

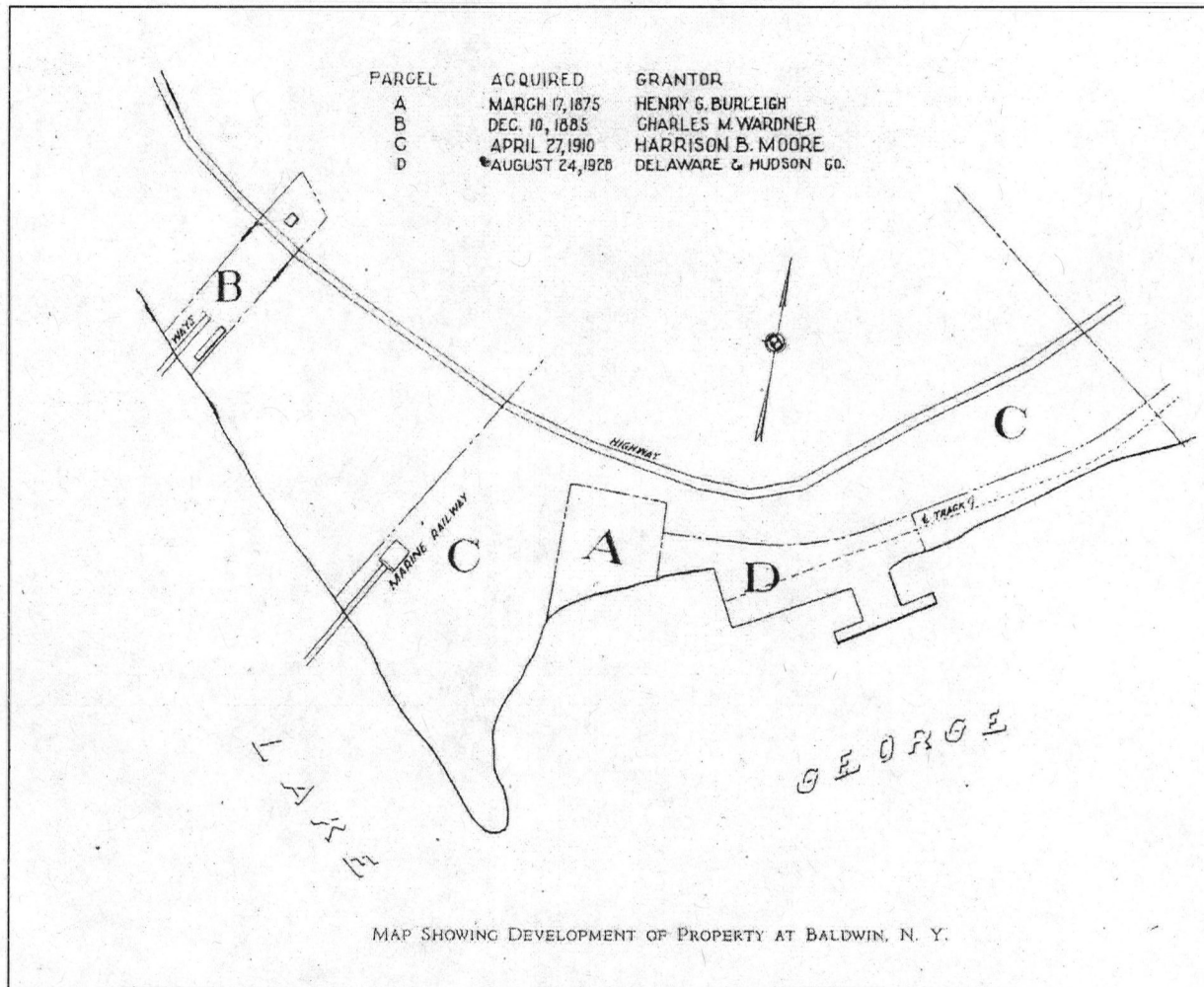


Illustration 1:

(from Delaware and Hudson Railroad, Board of Directors, *Inspection of Lines, June 2 - 5, 1932*, p. 150)

Parcel A: now built up with camps

Parcel B: site of "old ways;" now built up with camps

Parcel C, far west edge: location of the 1927 Crandall Marine Railway

(The remainder of Parcel C is now built up with camps)

Parcel D: site of former Lake George Steamboat Company's shipyard; old buildings gone, but wharf and dock remain in use by the Company's excursion steamboats; see *Illustrations 13 - 16*

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

Additional Documentation: Key to Digital photos on disk
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Page 3

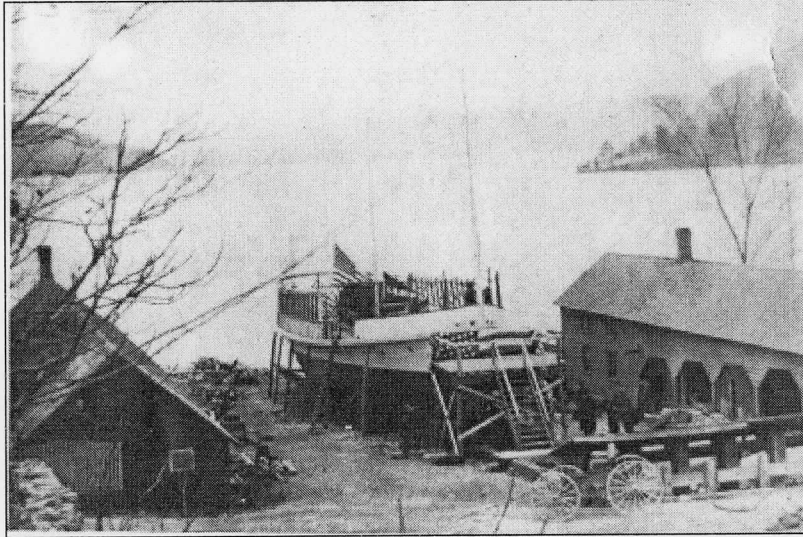


Illustration 2: The first *Mohican* dry docked at the “old ways” on Lot B. The “old ways” were abandoned upon completion of the Crandall Marine Railway in 1927 on Lot C several hundred feet southeast of the “old ways.” The shed on Lot B was moved to Lot C in 1927.

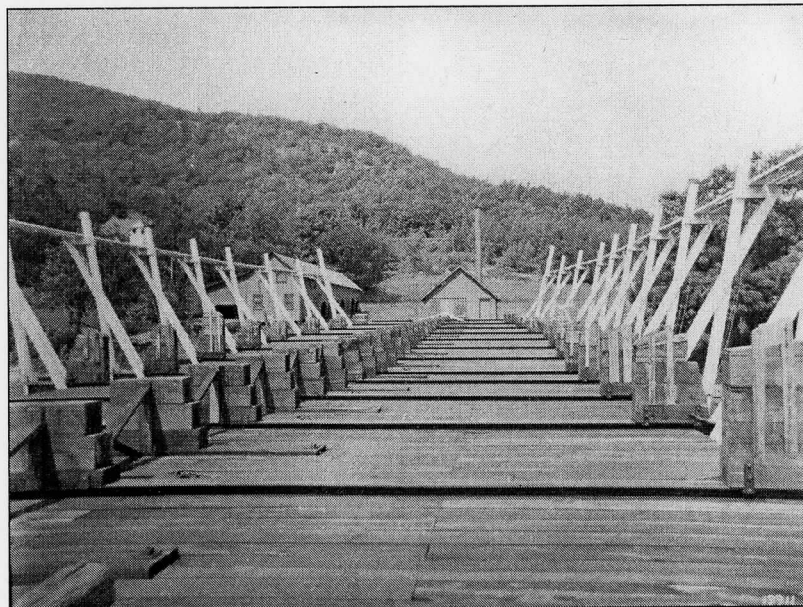


Illustration 3: Photo taken in 1928: standing on the empty cradle looking north toward head house. Note the large shed on the left; it was moved from the “old ways” on Lot B to Lot C for use by the new marine railway in 1927. The old shed was replaced with two non-contributing sheds in the late twentieth century

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

Additional Documentation: Key to Digital photos on disk
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Page 4

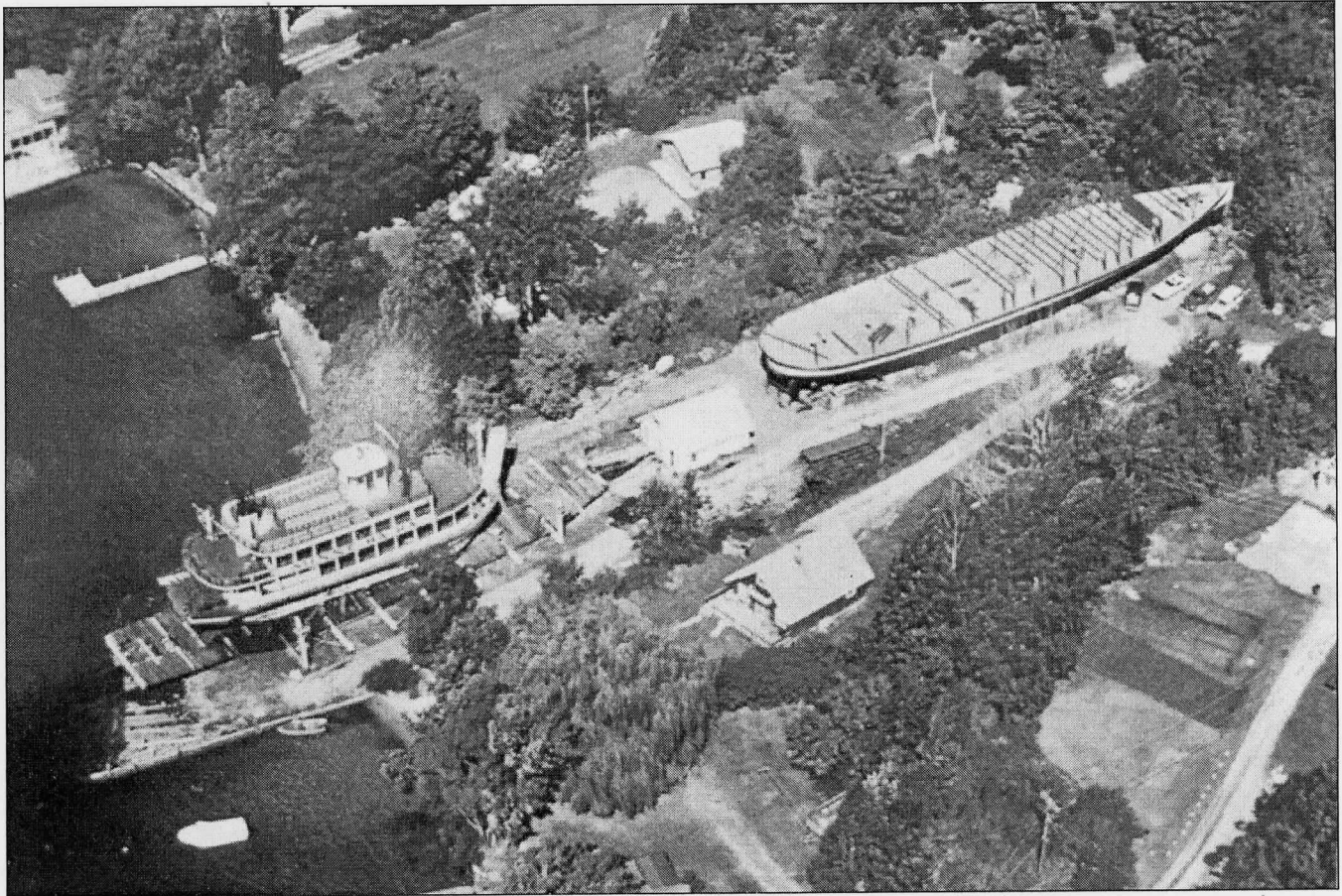


Illustration 4: Aerial view, Summer of 1986: *Minne-Ha-Ha* on the railway cradle while the hull of the *Lac du Saint Sacrement* is under construction. The “tiny” gable roof between the two boats is that of the head house.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

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Page 5



Illustration 5: Underwater sheave

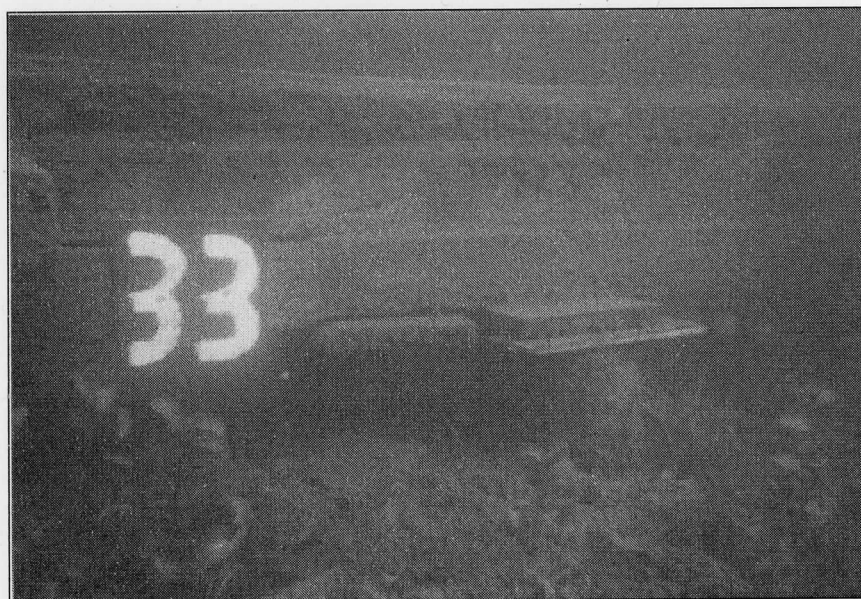


Illustration 6: Underwater track foundations at cross tie #33

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

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Page 6



Illustration 7: Pilings supporting the underwater track foundations

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

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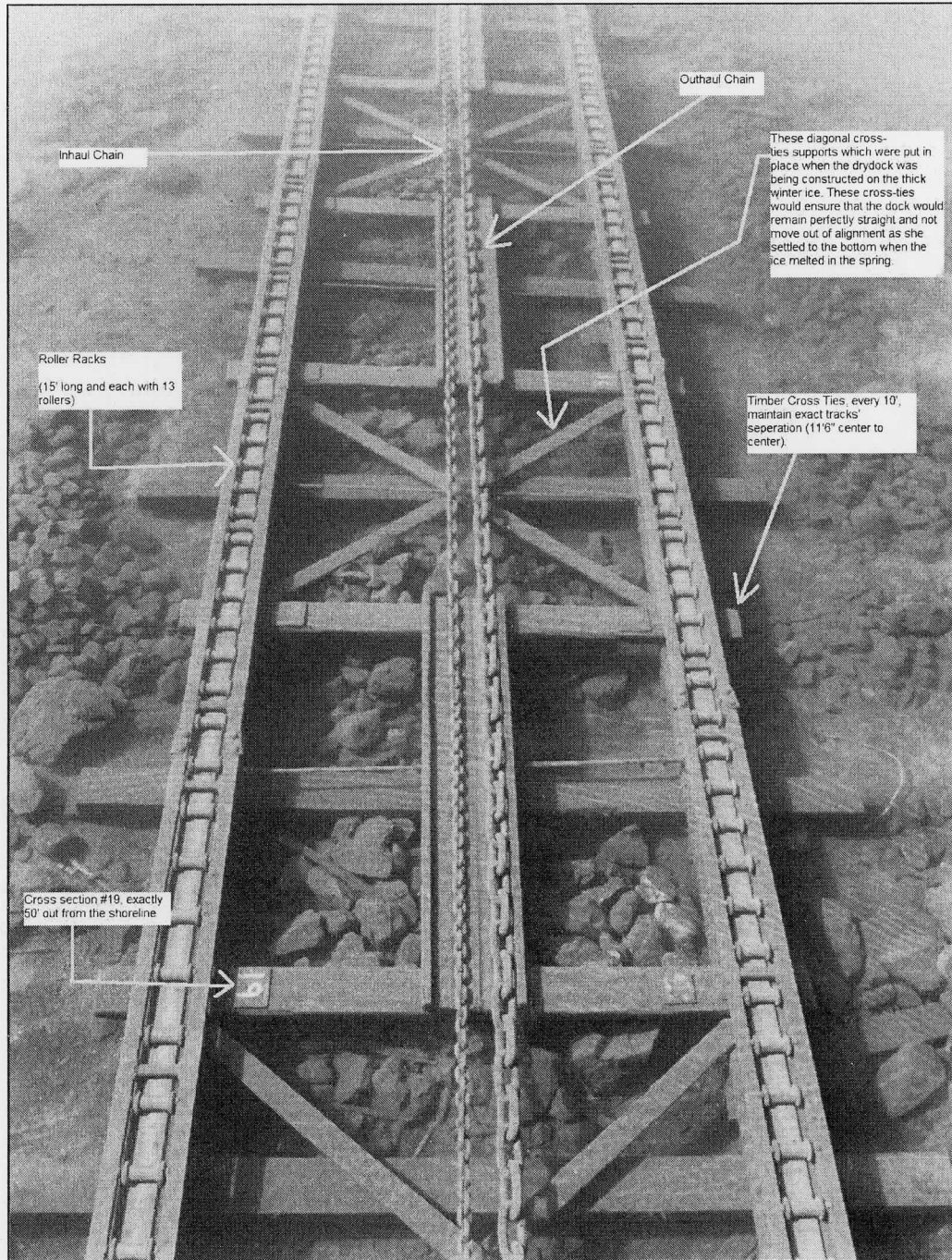


Illustration 8: Underwater tracks with annotations (corresponds to digital photograph 10)

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

Additional Documentation: Key to Digital photos on disk
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Page 8

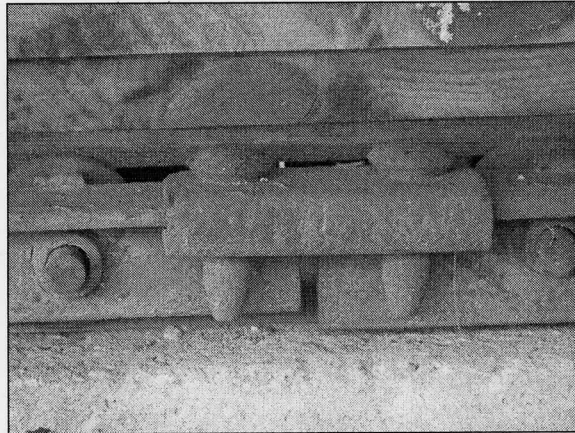


Illustration 9: Toggle pins holding roller frames together



Illustration 10: Five-foot-deep, Y-shaped foundation below grade at south elevation of head house, showing in-haul chain as it leads to front of cradle

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

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Page 8

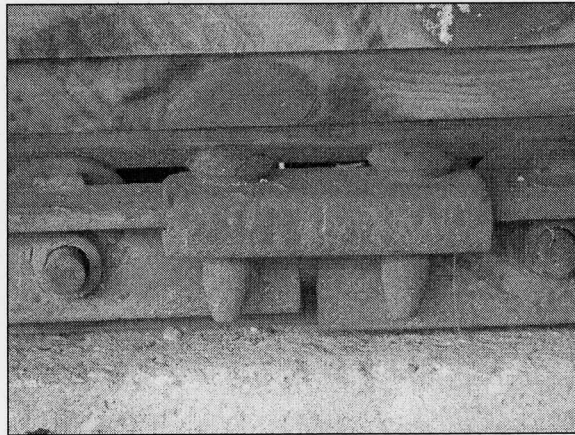


Illustration 9: Toggle pins holding roller frames together

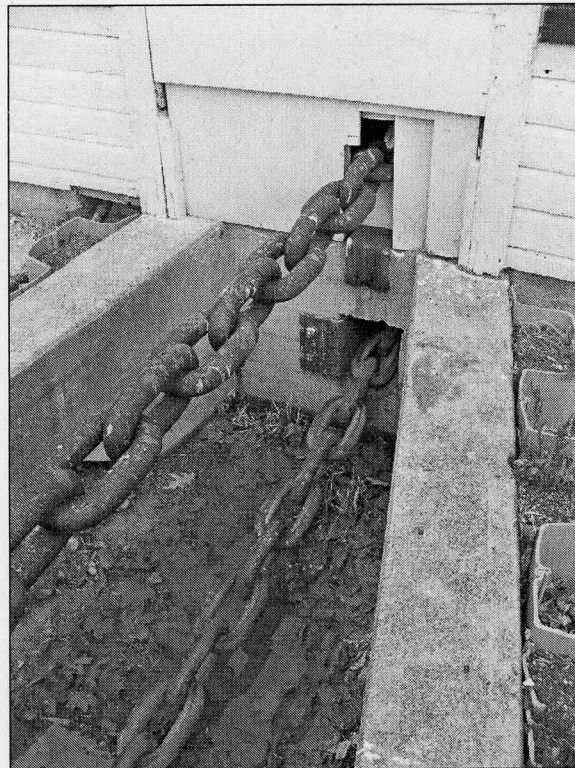


Illustration 10: Five-foot-deep, Y-shaped foundation below grade at south elevation of head house, showing in-haul chain as it leads to front of cradle

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

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Page 9



Illustration 11: Underside of the partially submerged cradle showing the roller racks and the foundation supporting the track plates upon which the roller frames sit

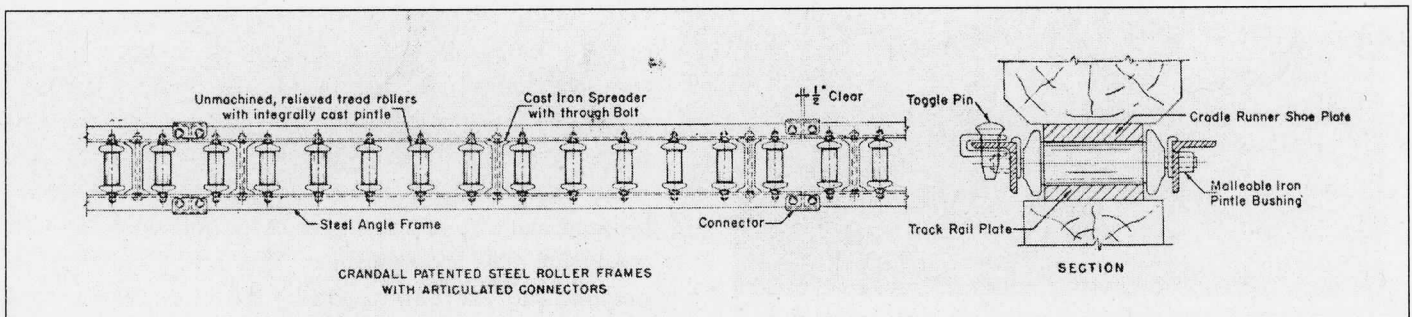


Illustration 12: Drawing from *A Short History of Railway Dry Docks Since Their Inception in 1854*. Crandall Dry Dock Engineers, Inc.; Cambridge, MA: 1967, p. 23.

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
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Page 10

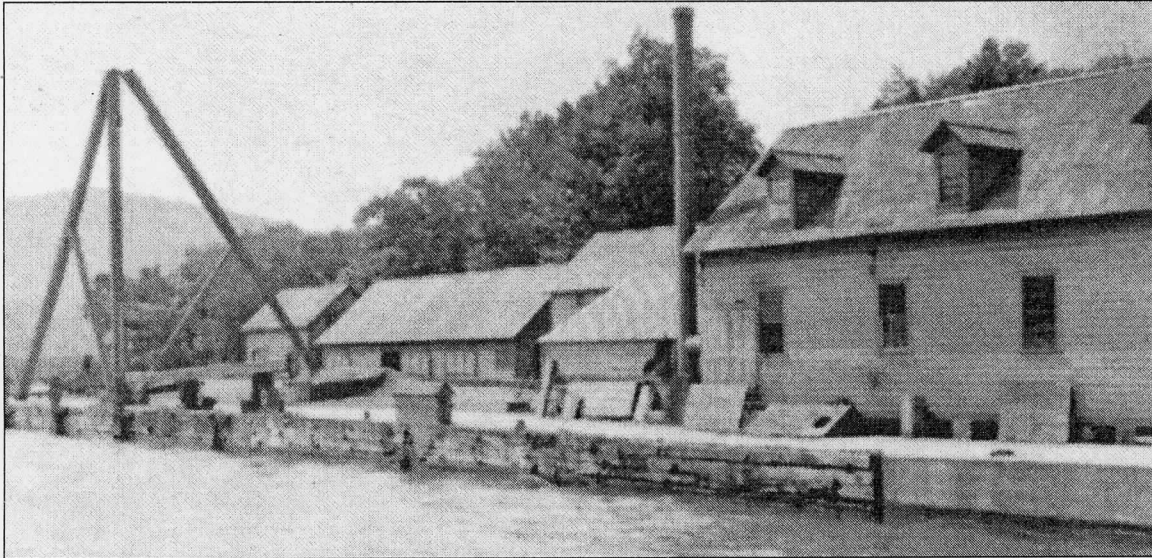


Illustration 13: Historic photograph of buildings at the former Baldwin Shipyard, from *Mountain Steamboats, the History of the Lake George Steamboat Company, 1817 through 2000, p. 16.*

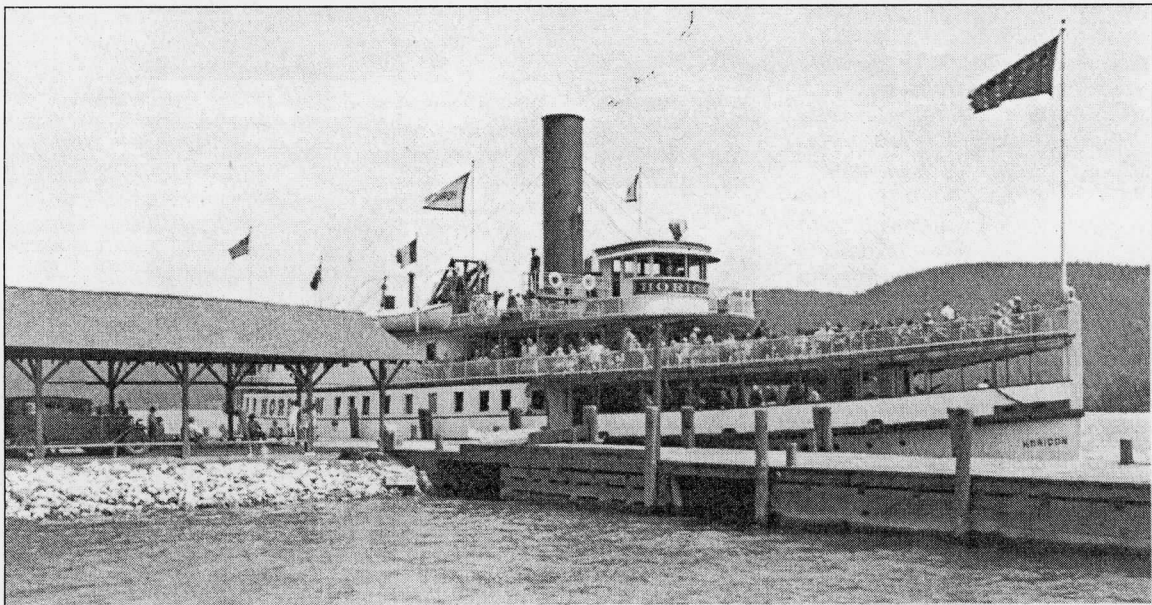


Illustration 14: Historic photograph of the *Horicon II* landing at the former Baldwin Shipyard, from *Mountain Steamboats, the History of the Lake George Steamboat Company, 1817 through 2000, p. 18.*

United States Department of the Interior
National Park Service

National Register of Historic Places

Crandall Marine Railway
Ticonderoga, Essex County, New York

Additional Documentation: Key to Digital photos on disk
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Page 11

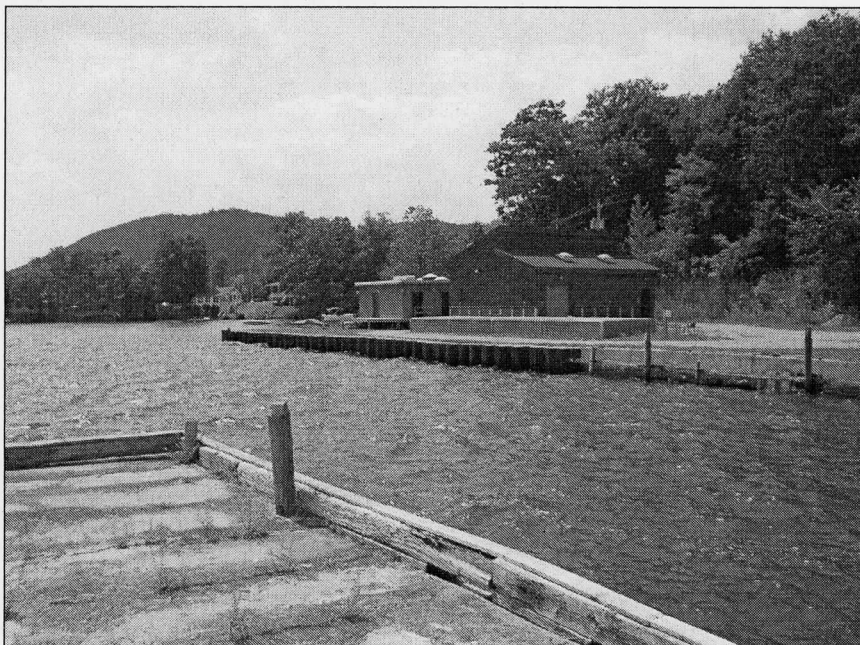


Illustration 15: Current photograph of the modern buildings at the former Baldwin Shipyard, viewed from the dock



Illustration 16: Current photograph of looking east toward the dock at the Baldwin Shipyard

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Crandall Marine Railway

MULTIPLE NAME:

STATE & COUNTY: NEW YORK, Essex

DATE RECEIVED: 3/21/11 DATE OF PENDING LIST: 4/14/11
DATE OF 16TH DAY: 4/29/11 DATE OF 45TH DAY: 5/06/11
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 11000251

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: N SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

ACCEPT RETURN REJECT 5.4.11 DATE

ABSTRACT/SUMMARY COMMENTS:

**Entered in
The National Register
of
Historic Places**

RECOM./CRITERIA _____

REVIEWER _____ DISCIPLINE _____

TELEPHONE _____ DATE _____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.



Crandall marine Railway

Tiowateroga vic, Essex Co, NY

1



Crandall Marine Railway
Ticonderoga, Essex Co. ny

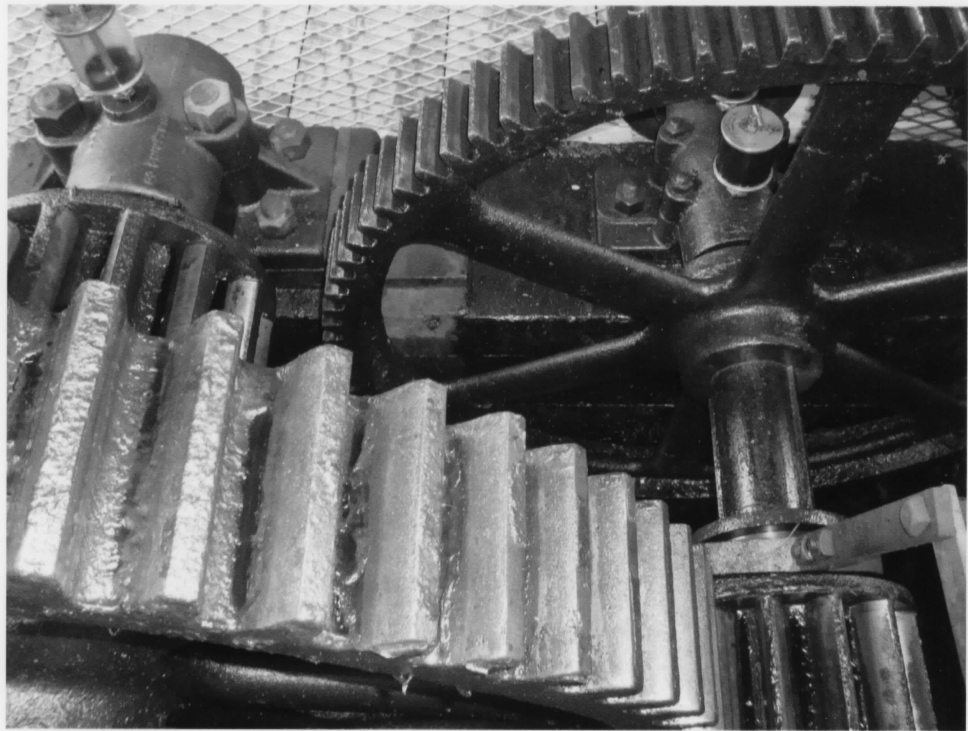
2

RAILWAY DRY DOCK

PRODUCT NO. 128
DESIGNED BY
THE
RANDALL ENGINEERING
COMPANY
BOSTON, MASS. U.S.A.

Crandall marine Railway
Ticonderoga vic, Essex Co, NY

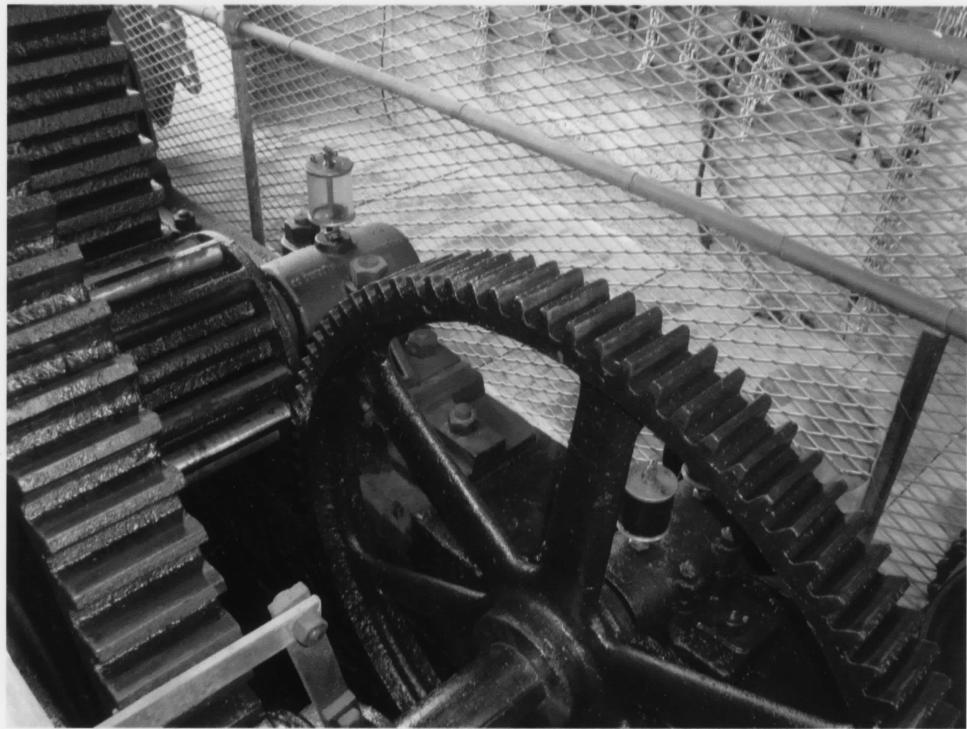
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Crandall Marine Railway

Ticonderoga vic, Essex Co, NY

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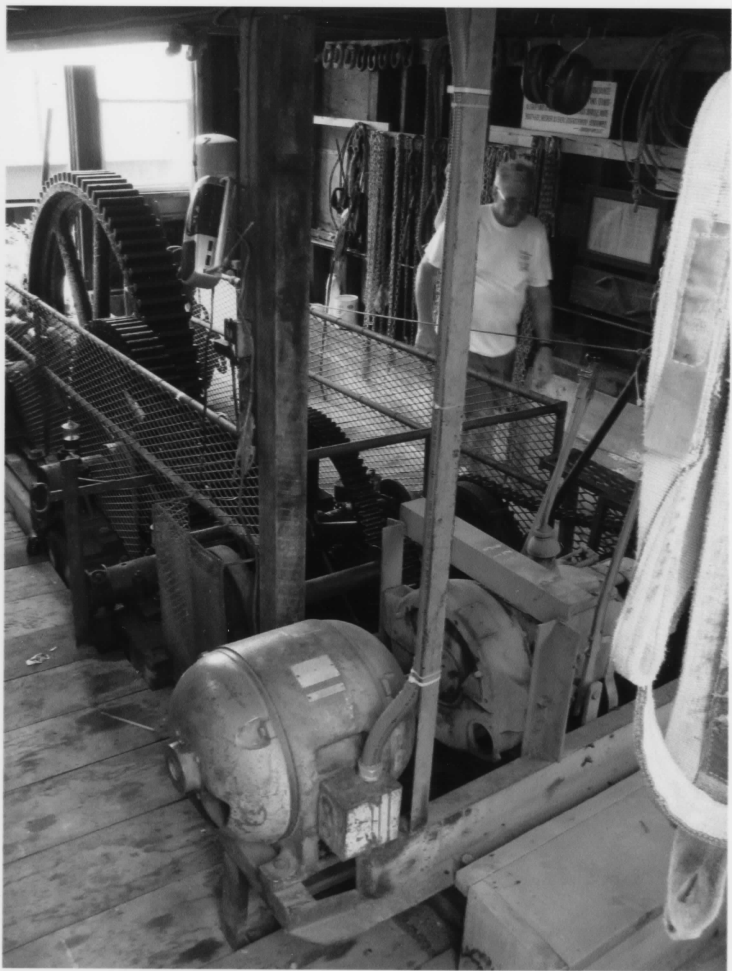
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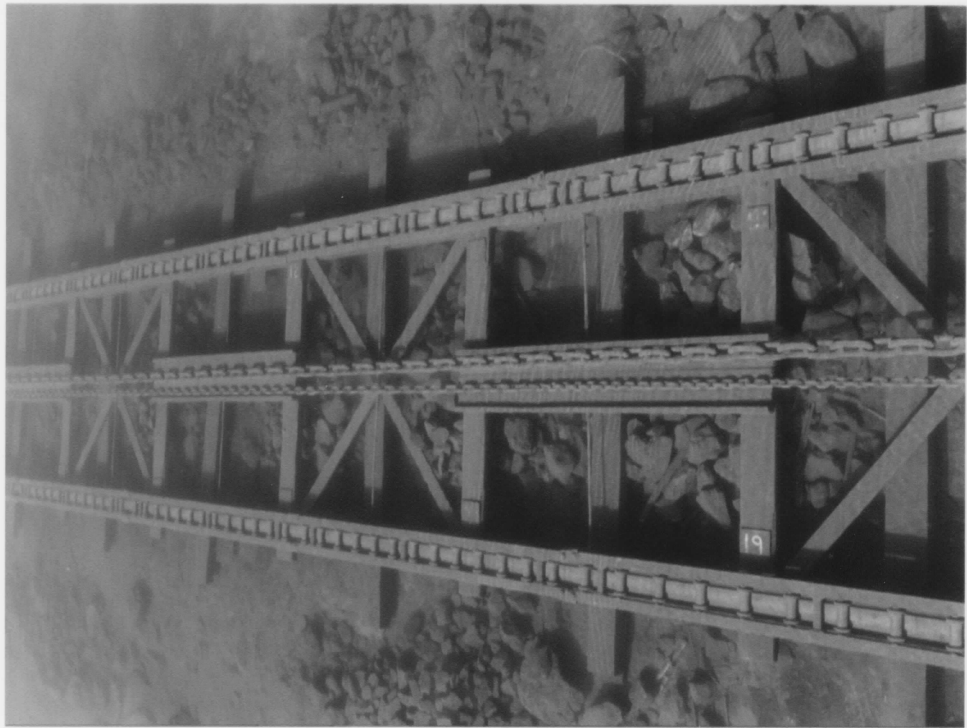
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Crandall marine Railway

Ticonderoga vic, Essex Co, NY

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Crandall Marine Railway
Ticonderoga vic, Essex Co, NY

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Crandall Marine Railway
Ticonderoga vic, Essex Co, NY

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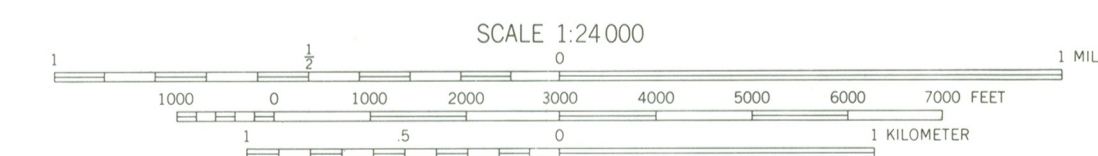
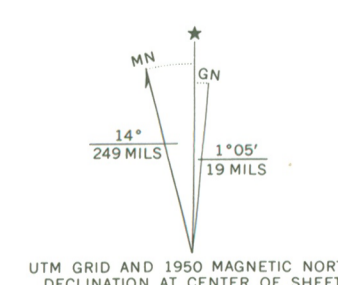


Crandall marine Railway
Ticonderoga vic, Essex Co, NY

15



Maped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography from aerial photographs by multiplex methods
Aerial photographs taken 1942. Field check 1949-1950
Polyconic projection. 1927 North American datum
10,000-foot grids based on New York Coordinate system,
east zone, and Vermont coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 18, shown in blue
To place on the predicted North American Datum 1983
move the projection lines 3 meters south and
34 meters west as shown by dashed corner ticks



SCALE 1:24,000
CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES IN FEET-DATUM IS MEAN LOW LAKE LEVEL 92.5 FEET
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
THIS MAP IS AVAILABLE WITH OR WITHOUT SHADED RELIEF OVERPRINT

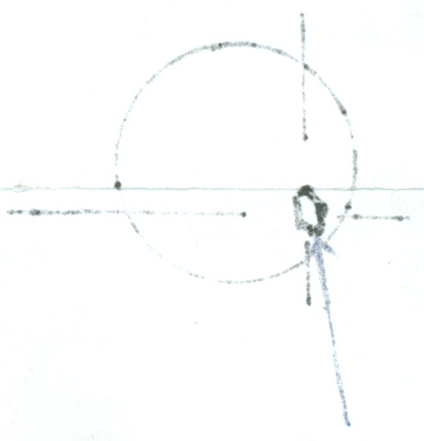


ROAD CLASSIFICATION

Heavy-duty	Light-duty
Medium-duty	Unimproved dirt
State Route	

TICONDEROGA, N.Y.-VT.
SW/4 TICONDEROGA 15' QUADRANGLE
43073-G4-TF-024
1950
DMA 6371 IV SW-SERIES 821

TICONDEROGA,



1870-1873
1874-1875
1876-1877
1878-1879
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2018-2019
2020-2021
2022-2023
2024-2025

STATEMENT OF OWNER SUPPORT

Before an individual nomination proposal will be reviewed or nominated, the owner(s) of record must sign and date the following statement:

I, William Paul Dow am the owner of the property at
(print or type owner name)

11 Dry Dock Lane, Ticonderoga, New York 12883
(street number and name, city, village or town, state of nominated property)

I support its consideration and inclusion in the State and National Registers of Historic Places.

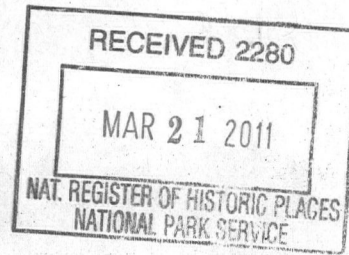
William P. Dow, 22 Jan., 2010
(signature and date)

Lake George Steamboat Company
P.O. Box 551
Lake George, NY. 12845
(mailing address)



**New York State Office of Parks,
Recreation and Historic Preservation**

Historic Preservation Field Services Bureau
P.O. Box 189, Waterford, New York 12188-0189
518-237-8643



Andrew M. Cuomo
Governor

Rose Harvey
Acting Commissioner

16 March 2011

Alexis Abernathy
National Park Service
National Register of Historic Places
1201 Eye St. NW
8th Floor
Washington, D.C. 20005

Re: National Register Nominations

Dear Ms. Abernathy:

I am pleased to enclose four new National Register nominations to be considered for listing by the Keeper of the National Register:

Crandall Marine Railway, Essex County
Hotel Broadalbin, Fulton County
Heyworth-Mason Industrial Building, Clinton County
Dickinson Hill Fire Tower, Rensselaer County.

Thank you for your assistance in processing these proposals. Please feel free to call me at 518.237.8643 x 3261 if you have any questions.

Sincerely:

Kathleen LaFrank
National Register Coordinator
New York State Historic Preservation Office

enclosures