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# New Haven: Its Ships and Its Trades, 1800-1920

Curriculum Unit 80.02.04
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### *Introduction*

"New Haven: Its Ships and Its Trades" is part of the High School in the Community program in Marine Arts and Sciences. It should be used in conjuction with Unit I "New Haven: Maritime History and Arts" which presented a general overview of the maritime history of the city. This unit has four primary student objectives:

1. To become aware of the Quinnipiac River and Fair Haven with its special importance, during the 19th century, as a ship building center and the home of the oyster industry.
2. To become familiar with New Haven's two most consistently important water oriented businesses, coasting and oystering.
3. To develop an understanding of the steps in ship construction and the general types of boats that can be built with wood.
4. To become familiar with New Haven's Sharpie, its history and construction, in preparation for actually building a sharpie as a class project during the 1981 school year.

While this unit will focus on the history and crafts segment of the Marine Arts and Sciences course the reader should recognize that the actual program is interdisciplinary in nature, covering navigation, marine biology and mathematics and is taught at Schooner Inc., City Point.

### *The Harbor in the 19th Century*

During the l9th century New Haven's harbor was both diversified and active. Starting at Long Wharf and moving up the Quinnipiac River to Fair Haven, the port busied itself with all kinds of water oriented activities. Here most of the ship building was done, be it two or three masted schooners for the West Indies trade or sharpies and later round bottomed steamers for the oyster business. Using L. Schierholz's 1860 painting (see slides 1-11), or any number of maps or paintings from the period, you can move up the river, starting at the Tomlinson bridge where the Long Island ferries once departed for Providence or New York, up past the Neck,

Grapevine Point, and the ship yard of Lane and Jacobs, then past the current site of the Ferry Street bridge and the yards of G.W. Baldwin on the east side and Tuttle and Munsell on the west bank. As you move further up the river a great assortment of sailing craft would be visible. Sharpies and dugouts working the oyster beds, and larger ships, sloops and schooners, possibly with cargoes of Chesapeake oysters, would be moored at Rowe's or Brown's dock. On the east bank at what was probably the yard of Warren Nettleton, the large frames of two vessels being faired for planking are clearly visible in Schierholz's painting.

***The Trades***

None of the famous ships which set records for fast passages to California, London, Canton, etc., were built in New Haven. In fact, few of the larger classes that set records ever went down the ways here. Square rigged ships and barks intended for the glamour trades to Europe, California, or China were built and sailed out of the large ports of the world, such as New York, Boston, Hamburg, Liverpool. New Haven was engaged in the steady and profitable oyster trade, coastal trade, and West Indies trade. This work required very different classes of vessel and many of these were built here or in neighboring ports.

During the 18th century there were plenty of oysters for everyone. However, at the end of the l8th century fines were imposed to prevent the taking of oysters during the spawning season. Until the 1830's oystering was done by practically everyone in Fair Haven, but few worked the natural beds as a full time business. During this period log canoes were used by the "serious" oystermen, but almost anything that floated was used by the amateurs who would come to the Quinnipiac during the first week after the end of the spawning season in the fall. By 1835 the natural beds were impoverished and the first cargo of imported oysters arrived in Fair Haven on the schooner "John". They had been brought from Virginia to be replanted in the Quinnipiac. In addition to log canoes local builders could now produce much larger vessels, two-masted schooners, to ferry southern oysters (Chesapeake) to New Haven to be replanted or opened immediately by women and boys in the basements of their homes along the river. By 1858 yards such as Baldwin Nettleton, and Graves were building some of the 250 schooners that imported two million bushels of oysters into Fair Haven. Those that weren't opened for immediate sale were replanted, then raked and tonged (process for bringing up from bottom) from sharpies. In 1874 Henry Rowe began cultivating New Haven seed oysters (used for propagation) in large deep water farms. This marked the beginning of the end for importing oysters, but a boom for the local industry. Sharpies, some log canoes, and starting in the 1880's, steam oyster dredges, all worked the expanding beds. Some of the same steam dredges are still working New Haven's seed beds.

While New Haven only briefly engaged in the glamour business of direct trade with Europe and China (1790's1815), steady profits were made in coastal carrying. Since New Haven wanted and needed European imports almost from the beginning, small ships (sloops and brigs) carried local goods to New York and Boston and returned with imported cargoes. The coastal trade, and its extension the West Indies trade, engaged New Haven directly with ports along the east and gulf coasts and islands such as Barbados, Trinidad, and Antigus. Farm and manufactured goods were exported while coal, lumber, molasses, rum, oil, etc. were imported. The coastal trade like the oyster business reached its peak during the second half of the 19th century, and had seriously declined by 1915. Rather then attempt to discuss the dozens of companies and hundreds of ships engaged in the coastal trade we will focus on one man and his company.

Magnus Mansons Benedict-Manson Marine Company was typical of the many companies engaged in coastal trade. Manson was born in Scotland and arrived in New Haven in 1850 as a crew member on a vessel carrying coal. He jumped ship and went to work on a vessel owned by H.W. Bendict and Son coal dealers (the Benedict Co. still exists and currently sells oil out of its North Front St. tanks). Mr. Benedict after a short time gave Manson command of the "J.W. Hine".

He continued to command vessels in the coasting trade such as the three-masted schooner “James Boyce” that carried coal to Boston. From 1860 until 1906 Captain Manson commanded or acquired an interest in many vessels. In 1889 he had his first schooner built which he named “Agnes E. Manson” after his second child. In 1906 the Benedict-Manson Marine Co. was formed with Manson as president until his death in 1909. The company continued in business with their sailing fleet until 1916 when unable to meet the competition of barges and steamers they went out of business. The Benedict family, of course, continued in the fuel business.

During the ten years of its existence, the Benedict-Manson Marine Company had no less then 27 three, four and one five masted-schooners. While they were primarily involved in carrying coal, any cargo that returned a profit was welcomed.

A list of the Benedict-Manson Company vessels was compiled by H. Sherman Holcomb, a descendant of the Manson family, from the Lloyd’s Register’s of the period. That list follows:

*(figure available in print form)*

### *Shipbuilding*

Until approximately 1920 many of the coastal vessels and most of the oyster ships that worked out of New Haven were built in local yards. The following is a list of those yards:
*(figure available in print form)*

### *Leading Fair Haven sharpie builders.*

Competition for Fair Haven shipbuilders came from Gesner & Mar at the foot of Main Street in West Haven. From 1880-1893 they launched thirteen three and four masted schooners. The “Lucinda Sutton” (1891) and the “E.S. Greeley”(1893) were the last large sailing ships launched from New Haven area yards.

### *Wooden Ship Construction*

In preparation for the actual building of a wooden boat students will view slides 1-44 (Boatbuilding) and participate in a variety of activities designed to make them familiar and somewhat comfortable with boatbuilding tools.

Each stage of wooden ship construction is examined with slides including the following:

1. Laydown—Taking the plans for any vessel includes a side view (Profile) top/bottom view (Half breath) and bow/stern view (Sections) and translating that into a full size pattern. Frequently called lofting.
2. Getting out the pieces and making up the sub-assemblies (frames, stern, transom, etc.).
3. Setting up the parts of the boat and fairing (trim and adjust so that the ship is smooth and flows).
4. Planking and Rigging
5. Finish the interior, paint, etc.

At this point students will have an idea of what is involved in wood boat building.

Each of the following types of vessels were built in New Haven.

1. *Flat-Bottom*— This type of boat will be given the most detailed consideration. The best known New Haven model was the sharpie. It was created in the 1840's to be used by oystermen both in the shallow flats of the Quinnipiac and deep water beyond the mouth of the harbor.
2. *V-Bottom*— Locally used to modify sharpie lines for "improved" performance in pleasure boats.
3. *Round-Bottom Hull*— This hull configuration was used in virtually all large vessels used in the coastal trade, West Indies trade and, for a brief period, the European and China trades. Regardless of the rig (schooner, sloop, ship, brig, etc), the round bottom boat was the only model appropriate for deep water sailing.

***The New Haven Sharpie***

For a commercial boat to gain widespread popularity and use, it must be well suited to a variety of weather and water conditions and have the potential to make more money then other boats that might be used in the same trade. Although there were more than 200 different types of small boats used for fishing in North America during the l9th century, few were so well suited to a particular type of fishing that it spread beyond a local area. The New Haven sharpie was one of those few.

The sharpie is so distinctive in appearance that it is possible to trace its movement down the coast of North America from New Haven as the oyster business spread. New Haven's sharpie developed here during the 1840's ( *Forest and Stream* , January, 1879) and was well suited for tonging oysters by hand in shallow waters. The tonger was the poorest of all oystermen. He earned his living oystering in waters close to his home. His boat had to be strong, long lasting and inexpensive. In addition, it had to be easy for one man to work, yet large enough to handle one days catch of 30 to 100 bushels. Before the sharpie was developed, New Haven's oystermen used dugout canoes, and to some degree continued to use them straight through until the 20th century. The dugout came directly from the Indians who used it for heavy work like taking oysters while maintaining bark or skin canoes for lighter tasks. Fair Haveners adopted the dugout from the Indians but used white pine logs rather than oak or chestnut, perhaps to save building time. When local stands of lumber were gone, Fair Haveners looked to New Hampshire, Maine and finally Lake Cayuga in New York for large logs.

Fair Haven dugouts averaged around 28 feet long by 36-39 inches wide, 18 inches depth, 3 inches thick on the bottom, and 2 1/2 inches on the sides. They floated empty in 3 inches of water and drew 9 inches fully loaded. They carried on average thirty bushels.

Dugouts like sharpies were propelled by a sculling oar or sail, and were used first on the river (Quinnipiac) and then generally only as far as the breakwater. While they were stable when loaded, they were not considered very seaworthy. An exception to this rule was made by Elijah S. Ball, grandfather of "Mr. Fair Haven" Eric Ball, who during the 1870's sailed the 21 miles across the Sound to Mattituck Inlet, Long Island in his dugout canoe. Young men in the area looked to that feat as a challenge in the years that followed.

During the 1840's the oyster beds were extended out beyond the site of the present breakwaters. Larger,

safer, and more seaworthy boats were needed, which led to the development of the sharpie.

George Graves before 1880, and Lester Rowe and E.H. Thatcher after 1880, were the leading Fair Haven builders of sharpies. However, it should be mentioned that its simplicity of construction allowed almost anyone with a little boat building experience to build one. Sharpies came in three sizes: small, medium, and large. To the oysterman who was buying one his choice depended on how much he could afford and how far out beyond the sheltered waters of the Quinnipiac he was going. Henry Hall in the marine portion of the 1880 census (printed 1884) reported the prices asked for sharpies.

| | | | | |
|---|---|---|---|---|
| Small: | About $25.00 | Under 25’ | Skiff like, Below 75 bushel capacity | undecked or half decked; sail, or oars |
| Medium: | $200.00 | 26’-35’ | 1 or 2 masts; 75-175 bushels | sprit sail; half-decked |
| Large: | $300-$500 | 35’-45’ | Cabin forward; gaff cat-ketch; tong and dredge boat. Few built in New Haven. | |

It was these boats that spread as the oyster business became big business during the latter half of the 19th century.

***Building a Sharpie***

While the New Haven sharpie came in many sizes the two most often built were approximately 28 feet in length (75 to 100 bushels) and with a single mast and sail. The smaller sharpie was rigged with a single mast and sail. The larger boat was always fitted to carry two masts, but by shifting the foremast back to a step-braced hole for a mast near the middle of the boat (amidships), the sharpie could be sailed with one mast. Sharpies were long and narrow and always fitted with a centerboard. The stem (bow or front of the boat) was straight and upright. The stern (back) was usually round using vertical planking. The line of the deck at the sides (side profile) called the sheer was well proportioned. The planking of the boat flared and this combined with the longitudinal curve gave the vessel a graceful appearance.

The structure of the sharpie was strong and rather heavy, consisting of white pine planks on oak (white) framing. The sides were enclosed with 2 or 3 wide planks of 1 1/4-1 1/2” thickness. The bottom was planked athwartships (from the center line out to the side rather than the more conventional longitudinal planking) with planking the same thickness as the sides and 6 to 8 inches wide. Inside the boat was a keelson (like a keel only inside the boat for strength) made of three laminated planks cut to the profile (shape) of the boat. The center plank was left out where the centerboard slot was needed. The interior framing consisted of the following:

1. Chine—Two 4 to 7 inch oak planks running the length of the boat where the side planking and the bottom meet.
2. Sheer—Two 3 to 4 inch oak planks running length of the boat where the side planking and the deck meet.

3. Side Frames—Oak cleats, 1 1/2 by 3 inches, running from the chine to the sheer at 10 to 12 points along each side of the interior of the boat. Unlike round or V bottomed boats these frames did not extend out over the bottom of the boat meeting at a center line.

The decking of the sharpie was made of white pine planks 1 1/4 inches thick and 7 to 10 inches wide. The stem was of oak and covered with a band of brass (stemband) which turned under the boat and ran on the bottom for one or two feet. As you can see these boats were designed to deal with the problems of going around in shallow water.

The New Haven sharpie had none of the decorative features such as a billet head, name boards, quarterboards etc. that other work boats of comparable size had during the period (Maine built lobster boats, Muscongus or Friendship sloops had a great deal of curved decoration). Sharpie hulls were usually painted white or gray and the interior color was buff or gray. They were plain, functional and inexpensive boats that did their job well.

***Teacher Notes for New Haven: Its Ships and Its Trades***

Teachers interested in New Haven merchant marine history should read *Shallops, Sloops, and Sharpies* , published by the New Haven Colony Historical Society, 1976. This little book (60 pages) covers the maritime history of New Haven in a concise, informative manner. It also can be used as the “text book” for classes needing that sort of security.

## *Lesson I*

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Objective: Students will be able to work with source material used in the study of merchant marine history.

***Lesson Outline*** **:**

1. Students will each select two vessels from the list of ships owned by the Benedict-Manson Company.
2. Using any or all of the following ship lists, *List of Merchant Vessels of the United States,* Bureau of Navigation, Dept. of Commerce, or *Lloyds Universal American Register of Shipping* , or *Fairbuns’s Merchant Marine History* , have the students accumulate as much information as they can about their ships. (Books are available through either the Yale or New Haven libraries).
3. Have the students agree on the form they wish to use in organizing the information for presentation to the entire class.
4. Draw conclusions and raise questions about the information. i.e. Four of the ships were attacked by submarines. Whose subs and why? A majority of the ships were constructed in Maine. Why?

## *Lesson II*

***Objective Students will become more familiar with the Quinnipiac River and its history.***

***Lesson Outline* :**

1. Using the list of shipbuilding yards included in the unit have each student select one yard that was located on the Quinnipiac River.
2. Using any of the 19th maps available at the New Haven Library (Elm St.) pinpoint the approximate location of the yard.
3. Select a team of students who are responsible for photographing each location.
4. Show the student produced slides to the entire class and compare the sites as they exist today to the 1860 painting by Schierholz (slides 1-11).
5. The final activity is to take the students on a walking tour of each site.

***Additional Follow-up***

To further accentuate the contrast a trip to Mystic Seaport would be useful. If this isn't possible an afternoon on South Water St. City Point would give students a feel of what a water-oriented community was like.

## *Lesson III*

***Objective Students will be able to perform competently at least one operation associated with the actual building of a New Haven sharpie.***

Note: While this unit certainly can be used within the context of a school based U.S./New Haven history class, it is my intention to use it as an introduction to the central activity of my class, the building of a sharpie. Let me urge anyone who has a lot of interest, a little building experience, a place to work (school shop), and a talent for raising money to build a small work boat. It is an excellent vehicle for teaching skills while fostering an important sense of group accomplishment. Most importantly, it teaches students that they can complete what appears to be an impossible task by using patience and care at each step.

***Lesson Outline* :**

1. Rather then attempt to outline the steps in building a small wood boat, let me recommend two books that must be read before you can decide whether you want to do it and which boat should be built first. Peter Stevenson's *Sailboats You Can Build* includes plans and building instructions

for three simple but interesting boats. If you don't have any experience one of Stevenson's boats is a place to start. John Gardner's *The Dory Book* is for the amateur boatbuilder with some experience. Gardner started as an elementary school teacher and went on to build and then teach boatbuilding during the last fifty-five years. His book carefully takes you through the steps in building fairly sophisticated vessels.
2. If you feel that you have the experience to build a somewhat more difficult boat, a New Haven sharpie, then Howard Chapelle's *Boatbuilding* is the source. Included are plans for several sharpies with building instructions. However, Chapelle assumes a working knowledge of marine terminology and building techniques, and is really only useful to the experienced amateur.

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Excellent source of ship's plans with building instructions for the experienced builder.

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Kochiss, John M. *Oystering from New York to Boston* . Middletown, Connecticut: Wesleyan University Press, 1974.

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Source of plans for both the sharpie and dugout canoe with description.

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New Haven Colony Historical Society. *Shallops, Sloops and Sharpies* . New Haven, Connecticut: New Haven Colony Historical Society, 1976.

Excellent little volume that could be read by many students.

Story Dana A. *The Building of a Wooden Ship* . Barre, Massachusetts: Barre Publishers, 1971. Source of building instructions and pictures.

Townshend, Doris B. *Fair Haven A Journey Through Time* . New Haven, Connecticut: New Haven Colony Historical Society, 1976.

Interesting chapter on the oyster industry in Fair Haven.

*(figure available in print form)*
An oyster dugout canoe used in New Haven
*(figure available in print form)*
Plan of typical New Haven sharpie

***The Building of a Wooden Ship***

1 The story that we hope to tell in this series of pictures is neatly contained in a photograph of the John Prince Story Yard of Essex Massachusetts.

To the right is a brand new keel. At the left is a large fishing dragger nearly finished and ready for the water. The processes by which the transition from one to the other is made will be the object of our pictorial narrative.

2 In common with all creation, the building of a ship must start somewhere. For generations, the shape of the boat has been originally conceived in the form of a model. Having achieved in the model the contours which he feels are the ones he desires, the boatbuilder proceeds to transpose the shape of the scale model to the full size of his boat.

3 With the completion of a “lines drawing” taken from a half-model, it now becomes necessary to enlarge this small scale to the full size of the contemplated vessel. This is done on the floor of a “mold loft”. Where not only the shape of the hull but all of the principal structural parts are drawn full size. Now from the full-size drawings, templates or “molds” of these pieces must be made.

4 Here is a picture of two craftsmen using a device called a “trammel” by means of which the lines on the floor were transferred to pine boards of the mold.

5 With the model decided upon and made, the lines drawn and molds ready, the time has come to begin the actual construction of the vessel. As might be imagined, the place to begin is with the backbone, of more properly, the keel of the boat.

6 Simply because the nature of its structure makes it so, a keel is more easily assembled upside down. When finished it is rolled over and carefully placed on the blocks upon which the growing vessel will sit until it is launched.

7 With the keel in place, a vessel dramatically begins to take shape as the heavy frames are put together and

raised into place. Here is a photo of work in progress on the “framing stage” which illustrates how the several parts called “futtocks” are fitted together and molded into the whole.

8 With the frame completely assembled and fastened (in this case with trunnels) a “cross pawl” is spiked across the tops of the frame to keep it from spreading, and it’s ready to stand up. “Frame up!” holler the men on the framing stage, and the rest of the “gang” drop whatever they’re doing and come over and help. Stooping over together they grab the frame and stand it up at its place on top of the keel.

9 Once a frame is standing up, some of the men must balance it in place while the rest jiggle or jostel or pound it into just the right spot and then attach a few temporary pieces to hold it there.

10 We have discussed how frames are put together and raised. The type we have seen and which is put up as a single unit is known as a “square frame”. These formed the central body of the ship. As the shape of the hull becomes finer and somewhat more complex at the ends of the vessels, the frames are erected in halves, one side at a time. These frames, whether at the forward or after ends of the vessel, are called “cants”. This is because in the early days of ship building they were “canted” or set at an angle to the centerline of the keel.

11 This is what it takes to hoist the cants into place—”brute strength and ignorance”.

12 The men in this picture are starting to erect the stern structure. The piece being lifted here is the stern post, a member of considerable bulk and weighty. The hole through which the old hand wrought chain passes will later receive the vessel’s propeller shaft.

13 This is a good illustration of the emerging after structure of the dragger. The stern post which we saw being lifted into place is now up, fastened and shored. Behind it stands the even bigger rudder post, supported by the two-legged derrick or “shears” that was used to lift it in place.

14 The completion of a vessel’s framing presents an interesting pattern of light and symmetry. When viewed from inside.

15 Once the stem structure of a vessel is well along, preparations can be made to start the planking. First of all, this involves cutting the rabbet for the full length of the keel. The rabbet is roughly, a V-shaped notch cut to receive the edge of the first strip or “streak” of plank. This first streak is called the “garboard”. Next the “dubbing” of the frames must begin. By dubbing, I mean the trimming of each frame with the adze so that the planks will lie firmly and fairly against them.

16 In this picture we see a shipwright “lining plank”. “Lining plank” means to lay out the strips or “streaks” of plank which form the outer skin of the ship, and to do it in such a way that they fit fairly and in proper relationship to those adjacent and to those already on.

17 Here we see the gang lugging a plank from the “mill”. The mill was the term used to describe the building which housed a big band saw and other woodworking machinery used in wooden ship construction. After sawing the plank is lugged over to where the “beveller” makes it ready to put onto the vessel. By beveller, I mean the man who smooths with broad axe and plane the edges of a plank so that it will lie firmly and fairly against the one below or above it.

18 Here is a beveller at work. The numbers you see along the upper edge of the plank designate the numbers

of the frames against which this particular plank will lie.

19 Before any plank is hung onto the vessel, a small flat place has to be trimmed on, “dubbed” with adze to conform to the curvature of each frame. This, of course, is to enable the plank to lie flat against the frame.

20 No two ways about it, “hanging” a plank on a vessel is a hard and laborious job. These men have raised a plank on their shoulders to approximately where it belongs, at which point it is secured by heavy iron C-clamps, and finally to be wedged snugly against the one below it. Just think what it must have been like in the days when they built the really big wooden ships. The planking of those vessels was four to five inches thick and sometimes fifty or sixty feet long.

21 After all, its the planking or skin that makes a ship a ship, and its a fussy job to be sure that each plank lies properly and snugly against the one beneath it. It’s hard, too, when a plank has to be bent edgeways (called “set”) flatways (called “bend”), and also twisted. In such a situation a good cooking in a steam box is necessary. Obviously, then, more than a little skill and muscle is required to hang a heavy plank on a big vessel.

22 Here is an interesting view of a small schooner with framing complete and planks about half on.

23 Here, a shipwright is seen working on one of the vessels stanchions, those timbers which project above the deck and to which the bulwarks and rails are attached. Stanchions are generally put in separately after the vessel is all planked. Note the well worn oil stone and two smoothing planes.

24 Planking the outside of a ship was really only half the battle. The inside had to be planked too. Inside planking was known as “ceiling”, and putting it in was quite laborious, although perhaps not as painstaking as hanging the outside planking.

25 This view shows the inside of a large dragger as the men are installing what is known as the “shelf”. The shelf was just what the name implies: a laminated member which protruded from the inside upper edge of the hull and upon which the deck structure rested.

26 With the planking well along, the caulkers have begun their work filling the vessels seams first with a “thread” or layer of cotton and then with two threads of oakum. For those who don’t know, oakum is tarred hemp.

27 What good is a ship without a rudder? The rudder of a large vessel is a large and heavy thing, and a great deal of work is involved in making it. The photo shows how the pieces are laid up, one atop the other, each a little thinner than the one below. After being fastened with long bolts or drift pins, the whole thing is trimmed and faired with an adze.

28 The ceiling and shelf are in, the stanchions are in place, and the last major process of construction is underway-the framing of tie deck. In this big Schooner, we see the beams of the forward deck in place as the gang starts the raised deck aft. In fitting a big beam, one man works at each end. One of the laminated members of the shelf sticks up a bit and each beam is cut to lock over ti. When fitted, a beam is held in place with bolts.

29 It would appear that the gang has gone to lunch, leaving quite a mess on the forward deck. It’s a good view,

though, of the laying of the deck and the beginnings of the various deck structures. Forward is a forecastle companionway; nest we see a skylight, and in the foreground is the opening for the cabin trunk,

30 All decks were fastened with spikes, countersunk and bunged. Spikes were driven down flush and then, with the use of a “set”, were punched home, snugging the deck down as they went. Here one of gang, a set in his left hand and a five pound maul in his right, is doing just this. The funny looking wooden block with a handle on it is a “whammy” for driving in a last tight-fitting piece of decking. Instead of hitting the pine decking with the maul, you hit the whammy.

31 A great deal has been accomplished on the deck of the little Schooner since the previous photograph. Looking aft we see the gang as they build the top of the transom stern.

32 The assembling of the traditional curved elliptical transom stern is one of the things that separated the men from the boys as far as the ship carpenters were concerned. It was a fussy and a heavy and hard job too, as you can see from the size of the timber which went into it.

33 The stern on a dragger is totally different in configuration and construction from that of a Schooner. In essence it is a roughly semi-circular structure built up from layers of heavy pine timbers sawed to the desired shape.

34 This photo rather interestingly shows the building of a “coaming” on a main fish hatch, and illustrates the manner in which the corners were dove-tailed together.

35 On a dragger, a raised structure or deck called the “whaleback” is built over the forward end of the main deck. It becomes a place fro lockers for the storage of fishing gear. It also keeps the main deck dryer in heavy weather. A ship’s carpenter starts to trim the insides of the main frames and forward fillers in preparation for the work.

36 By this stage of the game, the “inboard joiners”, aristocrats among ship carpenters, have begun their work. These men built their living quarters and accommodations for for the crew and the structures on deck which pertained to them.

37 Way forward, the gang is getting the deck beams onto the whaleback; midship, a man is trying to stand up the sides of the forward main hatch, while one member of the gang is just coming out of the hold with a template for a floor timber.

38 For a closer look at the makings of the whaleback, we see this shot of the beams as they are fitted and placed. Origin of the term “whaleback” is obscure. They were sometimes referred to as “forecastle heads”.

39 Inevitably as soon as the deck is laid a mess appears on it. On either side we see rail caps being applied, while amidship appears the main cabin trunk.

40 Speaking of rail caps reminds us that it’s no mean job to put these on. They must be “molded” (shaped that is) from wide clear pieces of heavy oak plank and then mortised down over the tops of each stanchion. When on, all must be trimmed and smoothed and all the edges nicely rounded.

41 A caulker’s black mesquite mallet was practically an extension of his own right arm. Here we have in fine

detail, a caulking mallet. We also see a caulker's reefing hook, chisel, and beveled iron.

42 The absence of all but one lone figure under the bilge amidship tells us that it must be noon. We do get, however, a good look at a nearly completed dragger. We also see the rudder, finished and ready to hang, and the framing of the pilot house.

43 Obviously the launching of a vessel is the most spectacular episode of the building process. Those few exciting moments are proceeded by days of careful preparation and labor. To accomplish launching in the traditional manner a cradle or "sled" is built under the vessel and letting her slide down a greased track or ways.

44 Having watched so much of her construction, it seems only fair that we should watch the dragger take her initial plunge using the traditional "slide launching". Some idea of the enthusiasm for these events can be gained by the size of the crowd pressing every vantage point for a better look.