A STUDY OF LOG RAFT STEERING SWEEPS
RECOVERED FROM THE CURRENT RIVER,
RIPLEY COUNTY, MISSOURI

BY

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A STUDY OF LOG RAFT STEERING SWEEPS RECOVERED FROM THE CURRENT RIVER, RIPLEY COUNTY, MISSOURI

INTRODUCTION

Since the early 19th century timber products have been an important resource extracted from the natural environment of the Current River Valley in Dent, Shannon, Carter, and Ripley Counties in the southeastern Missouri Ozarks. Various sash sawmills were constructed as early as the 1820's in the middle and lower reaches of the river valley to exploit the large stands of native softwoods as well as hardwoods which grew in the region as mature canopy forests when the first Euro-Americans entered. Early mills were built on tributaries of the Current River in order to take advantage of small streams which provided adequate water flow to fill a mill pond, flow down a mill race, and power a mill waterwheel which in turn powered sash sawmills, provided the term because they employed a straight saw stretched into a frame which slid up and down in a wooden track much like a window in its frame. Based on archaeological evidence (C. Price 1985: 82-138) from the Kelley-Dearing Mill which stood ca. 1830-1860 at Phillips Bay, logs were transported to the mill by rafting. The site has a log holding pond associated with it which is connected to a spring branch that provided the mill power. Early pine saw logs lie submerged in the spring branch indicate that the branch which entered Current River a short distance below the mill was probably used to transport logs to the mill. Log rafts were probably used to bring supplies of saw logs to such mills by transporting them down the Current River where the rafts were broken up and small raft sections floated up to mills on small tributaries. Also finished sawn products from such mills were formed into rafts and floated down the river early in the 19th century.

During the Civil War the region witnessed devastation and most sawmills were burned or fell into ruin. Recovery of the lumber industry in the region did not begin in earnest until after circa 1880 when new technologies, primarily brought with the lumber industry from Pennsylvania, entered the southeastern Ozark Highland with large lumber companies which bought up thousands of acres of timberland and built large mill towns. Such mills were run with steam power and employed gang bandsaws. Hundreds of miles of narrow gauge railroads were constructed from mills to various timber harvesting areas. Although such transportation in part supplanted log rafting on the Current River, the practice continued throughout the major lumber boom of the last two decades of the 19th century and probably became even more important in the two decades that followed when the large companies took up their rail tram lines and left the region. Doniphan, Missouri, the county seat of Ripley County, became an important sawmill town in the 1880's and continued as such well into the 20th century. It is located on the lower Current River and was the southernmost
important mill center on the river. Tram lines were never constructed into the woods from Doniphan as was done at Grandin, Winona, Naylor, and West Eminence. The Current River served as the major transportation route for bringing logs to Doniphan. After March 23, 1883, when the St. Louis Iron Mountain railroad came to Doniphan, hundreds of thousands of sawlogs were transported down the Current River to Doniphan where they were taken out and sawn into useful products. Also, similar numbers of sawn and handhewn railroad ties were rafted to Doniphan from upstream and loaded on rail cars there for transportation elsewhere. Most of the logs and ties that came to Doniphan were cut and put in the river downstream from Van Buren in Carter County since it too was a town with large mills which processed logs floated down from Shannon County and northern Carter County.

Log rafting represents a rich heritage of the people along the Current River. The ancestors of most longterm residents residing in the valley were in some way involved in the logging industry and many specifically with log rafting. Several men still live who rode the rafts down the river and several now deceased left printed descriptions and tapes of their rafting experiences on the river north of Doniphan. Although most of the voices that yelled "Snub 'er, snub 'er"; "Pull tight"; and "Haul 'er over and lash 'er to a willer" are now stilled, the legacy of the tie rafters lives in old photographs, verbal and written descriptions, and in tangible sites and artifacts remaining from the days when men risked their lives to deliver logs and ties to Doniphan. Significant ethnographic artifacts such as canthooks, peavy pikes, raft augers, and chain dogs remain in possession of local people. One type of significant rafting artifact, however, was simply cast aside at the end of a raft journey and sank in the river or was washed into a canebrake and decayed. These are the large oars used as rudders to steer log rafts down the river. Little was known about such oars, other than descriptions, until an intact specimen was recovered from the river upstream from Doniphan in 1964. Its massive size impressed this investigator and many others. Between 1986 and 1990 Mr. Ray Joe Hastings of Doniphan discovered and removed fourteen additional raft steering oars from the Current River near the site where the log rafts were docked as well as downstream from this point. It is the purpose of this report to describe these significant cultural resources and place them in their historical and technological contexts.

BACKGROUND ON THE STEERING SWEEPS

The first archaeological raft steering sweep was removed from Current River in 1964 by Mr. Lester Wright of Doniphan. It was discovered a short distance above Doniphan and is a complete specimen including the pole and large steering blade. This specimen measures over 36 feet in length and rather awesome in
appearance. Mr. Wright stored the specimen for some time and then donated it to The National Park Service, Ozark National Scenic Riverways. The Park Service never placed it on exhibit but instead stored it in a barn at Owls Bend. It was loaned back to Mr. Wright and exhibited in a restaurant near Big Spring for a period of time before it was returned to the Park Service. Currently it is stored at Alley Spring on the Jacks Fork River in Shannon County.

Mr. Ray Joe Hastings of Doniphan, Missouri long maintained an interest in the history of the logging industry in the southeastern Ozarks and had often admired the steering sweep discovered by Lester Wright. In the winter of 1986, while trapping for beaver, Mr. Hastings discovered a steering sweep on the bottom of the river and retrieved it a few days later. He then began to look intensively for additional specimens and since that time spent many days peering into the clear water looking for poles with holes in them as well as searching cutbank of the river after floods. To date he has removed fourteen specimens of the raft steering oars from the river and its banks and knows the location of several more. The section of the Current River from which he recovered the fourteen specimens is illustrated in Appendix IV.

Mr. Hastings is an amateur archaeologist and was cognizant that he should keep fieldnotes on the provenience of each oar and the conditions under which it was found and removed. He filled a notebook with notes detailing the date on which each discovery was made, provenience of each specimen, and extensive metric data on each specimen. He unselfishly shared all of his data with this investigator and therefore made this study feasible. On numerous occasions this investigator has interviewed Mr. Hastings to obtain additional data on the steering oars. His enthusiasm about the history of these specimens and his untiring efforts in studying them help add significant new information to the data base on log rafting on the Current River.

After the discovery of the first specimen Mr. Hastings contacted this investigator on how best to preserve the waterlogged wooden artifacts. Not having access to vacuum tanks filled with PEG this investigator recommended that he apply boiled linseed oil thinned with turpentine repeatedly to the specimens as they dried to prevent them from checking, splitting, and shrinking. It was also recommended that he keep them covered so as to dry them very slowly. This technique worked amazingly well. The specimens are well preserved and have maintained their original volume without shrinkage or deterioration. Mr. Hastings currently has the specimens stored on racks in a barn and keeps them covered with burlap. He as done an admirable job in preserving them as well as curating them.

In the course of the investigation this investigator examined each of the oars. Mr. Hastings is extremely familiar with each specimen and has accurately quantified its diagnostic attributes
in detail. He pointed out each feature of each oar to this investigator during the course of this study.

Mr. Hastings wrote a summary of his raft steering sweep study (Hastings 1991) and provided this investigator with a copy. It has been edited and word processed by this investigator and the manuscript will be submitted to a popular Ozark magazine under Mr. Hastings' byline for publication consideration. Much of the background data provided in this report was generated by information assembled by Mr. Hastings and this investigator acknowledges his significant contribution.

STEERING SWEEPS IN THEIR TECHNOLOGICAL CONTEXT

In order to understand the role steering sweeps played one must be cognizant of the procedure used in rafting logs and railroad ties down the Current River. Logs or ties, the latter being either sawn or hand hacked, were stockpiled at various points along the river. When a sufficient quantity was available they were placed in the river and assembled into a raft. In his memoirs Mr. S.E. Cox (Anonymous 1959) related that at the turn of the century he helped put together a raft of 30,000 ties at Well's Creek and rafted them to Doniphan. Several place names along Current River, e.g. Log Yard, reflect their past use as assembly points for rafts. Sometimes logs were slid down bluffs into a deep bay called a "boom hole" where they were assembled in slack water.

An excellent description of rafts on which steering sweeps were used was provided by Howard Steen of Doniphan in an interview with Ozark Graphic in 1984 (Royce 1984: 1, 6). Mr. Steen and his father-in-law, "Uncle" Andy McDowell brought the last raft down the Current to Doniphan in April of 1931. According to Mr. Steen, before he got into the business, rafts were double wide, or "two-string" contraptions. That is, they were two logs in width. A two-string raft is illustrated in the left field of an historic photograph taken of a raft being assembled in the Current River near the turn of the century (Figure 1). They averaged 700 to 800 feet in length and were assembled into "platforms", each about the length of a railroad boxcar, linked with flexible coupling poles so the long raft could flex to maneuver bends in the river. Howard Steen stated that rafts were assembled by laying logs or railroad ties perpendicular to the river’s flow. If needed, eight-foot sycamore logs were inserted at intervals between hardwood logs or ties to serve as "floaters", to make the raft more bouyant. Logs or ties were connected by poles nailed across and along the raft’s outer edges. In earlier days "chain dogs" or raft shackles, two iron spikes on either end of a short length of chain, were used to hold the poles in place. Raft shackles can be seen in place in a turn-of-the-century photograph of a log raft on Current River (Figure 2). The coupling of platforms was accomplished with a
Figure 1. "Nailing in" a Tie Raft on the Current River. Original photograph owned by Mrs. Jean Cox, Doniphan, Missouri.
Figure 2. Log Raft on the Current River Illustrating Method of Assembly. Original photograph owned by Fred Ollar, Briar, Missouri.
single coupling pole either shackled or nailed into place.

Once assembled all necessary gear was loaded on the raft and it was outfitted with pike poles, snub poles, and a large steering oar or sweep. Pike poles, sometimes called "jam pikes" were used by rafters, called "bag men", stationed at points along the length of the raft to keep it shoved off of obstacles such as rocks and snags. Snub poles were usually made of hickory and were of two types, short and long. These were used near the rear of the raft to slow it down on a shoal by inserting them down between the logs or ties and dragging the end on the river bottom. Long snub poles were used in deeper water. If the front of the raft entered an eddy or relatively deep stretch of river and the rear end was on a fast shoal, the rear would push the front, causing it to dive all the way to the river bottom. Snub men slowed the rear end, preventing such a catastrophe.

A sweep was mounted at the front of a raft on a special bolster made for it. The bolster was nailed, pegged, or chained to the front logs and had a hole in it to accomodate a large peg that was the pivot for the massive raft sweep. In use the blade of a sweep was raised out of the water, moved to the side, replaced in the water, and leverage was applied to the sweep pole to guide the front of the raft. Sometimes the were left in the water and used as a rudder much like the rudder on the back of a boat or ship. The "sweep man" was at the mercy of the raft's speed in the current and had to continuously ply the sweep to keep the front of the raft away from the river bank, rootwads, snags, and bluffs. A sweep is illustrated in use on a raft in an early photograph taken on Current River circa 1900 (Figure 3). The man on the left in the photo is probably holding a jam pike. Also, the young man on the right in Figure 2 is also holding the end of a sweep pole.

Raft sweeps employed for steering rafts on the Current River appear to have differed very little from those used on the Delaware River in Pennsylvania. A typical raft in that region (LaBar 1963: 212) however, was put together with the logs or ties running parallel with the primary axis of the raft rather than across the primary axis as was the case on the Current River. The sweeps illustrated in the drawing of a timber raft used on the Delaware River (Figure 4) seem to accurately reflect the kind of sweep represented by the specimens recovered by Mr. Hastings form the Current River. This should not be surprising since much of the lumbering technology that entered the Ozarks after 1880 accompanied the large companies here from Pennsylvania.

**STEPS IN THE MAKING OF A RAFT STEERING SWEEP**

Examination of fourteen archaeological specimens of raft sweep poles and one complete raft sweep recovered from the Current River permit a rather detailed reconstruction of how raft steering sweeps
Figure 3. Tie Raft on the Current River Illustrating the "Bag Man" on the Left and the "Sweep Man" on the Right. Original photograph owned by Mrs. Jean Cox, Doniphan, Missouri.
Shown is a "half-raft" or "piece," consisting of three "platforms" coupled end to end. Larger rafts were made up by joining two or more "pieces." The top view shows lash poles pinned in place at either end of each platform. A cross-sectional view shows the method of pinning, by inserting a white oak bow in holes drilled in a log on either side of the lash pole and drawing the bow down tight with square ash pins driven alongside the ends into the holes. Stiffening of the overall structure was obtained by the use of three or four "hinge sticks" which, as shown, extended some distance into the adjoining platforms; these were likewise secured with bow and pins, using extra short lash poles. The side view shows the oars nicely balanced and secured to head blocks with stout oak pins or thole pins, usually of white oak. Shown in the end view (B-B) is the method of securing head block to logs by pinning with the center thole pin and two wooden side pins. The oar stem was slotted at its larger end to a depth of 2 to 3 feet; the blade was inserted into this slot and pinned in place as shown.

Figure 4. Drawing of a Tie Raft on the Delaware River Illustrating Assembly Methods and Sweeps with their Mountings. (From: LaBar 1963: 212).
were made. The following tasks were performed in constructing a sweep:

1. Pole Selection
   A small tree, in almost all cases, a pine tree, was selected. Most craftsmen selected a straight slender tree. The tree had to yield a pole of sufficient length, usually over fifteen feet.

2. Felling the Tree
   The tree was harvested using either a crosscut saw or a chopping axe. Specimens exist in the collection which exhibit both harvesting methods.

3. Trimming the Pole
   After felling limbs were lopped off with an axe, flush or nearly flush, with the the pole. Mr. Hastings has the impression that the bark was left on the pole since several of the specimens he found retained areas of bark when they were recovered.

4. Hewing the Flat Section for Blade
   An area approximately two feet in length was hewn flat on the large end of the pole to accommodate the mounting of the sweep blade.

5. Boring Blade Mounting Holes
   Holes were bored in the hewn area to receive blade mounting pegs. Most specimens have two holes which seem to be the norm. The specimen recovered by Lester Wright (Specimen 15) has four peg holes for blade mounting. Boring was probably accomplished with a T-auger since the holes are usually larger than those commonly bored with a bit affixed in a brace or bitstock. Other methods employed to hold blades on poles were to either secure them with iron bolts or nail them on. These latter techniques appear to have been used toward the end of the rafting on Current River.

6. Boring the Pivot Hole
   A third hole was bored on a 90-degree axis from the blade-mounting holes at a point approximately one-fourth the length of the pole from the large end. There is a great deal of variety within in the assemblage of specimens on the axes and shapes of these holes. Some are a single hole bored straight through the pole. Others appear to have resulted from boring two adjacent holes and chiseling out the wood between them, creating an oblong hole. One specimen exhibits a single hole bored at a slight angle relative to the primary axis of the pole. Some holes are larger on one side than on the other, i.e., conical. Augers employed to bore pivot holes were probably the same ones.
used to bore the blade-mounting holes and appear to have been from 1 3/4 to 2 inches in diameter. The pivot hole accepted a wooden peg which in turn was inserted in a corresponding hole in the bolster block on the front of the raft on which the entire sweep could pivot.

7. Making the Sweep Blade
Since only one sweep (Specimen 15) survived with its blade intact, it is impossible to state with certainty if it is representative or typical of the kinds of blades that were commonly affixed to such sweeps. The few period photographs that are extant illustrating sweeps indicate that certainly the size of the sweep blade on this specimen is typical. Sweep blades were impressively large. The blade on Specimen 15 is 12 feet, 1 inch in length and 17 inches wide. It is tapered from front to back, apparently to reduce resistance in the flowing water. It is 1 1/2 inches thick at the proximal end, or the end mounted to the pole, and feathers to a thickness of only 1/2 inch at the distal end. Such a blade could be sawed in a sawmill by first making a straight cut through a log followed by canting the log in the sawmill carriage and sawing off a board which is thick on one end and "flitches out" on the other. Of course such a blade could be made from a thick board trimmed down through the use of a foot adze by expending considerable labor. The sweep blade on Specimen 15 is oval at the distal end.

8. Making the Pegs
Wooden pegs that affixed the blade to the pole and connected the pole to the pivot bolster appear to have been made through the use of a drawknife but could have been made with an axe or hatchet. They are roughly circular and exhibit shaved facets on their surfaces. Several peg specimens survived in blade-mounting and pivot holes and they appear to be made of hardwood.

9. Boring the Holes in the Blade
The exact sequence of boring holes in the blade and the pole may have varied from craftsman to craftsman. It is possible that the pole and blade were both finished, except for these holes, and the blade placed on the pole and holes bored through both simultaneously. Or, the holes could have been bored in either the pole or the blade first and the resultant holes then served as a guide or jig for boring the holes in the other element.

10. Pegging the Blade to the Pole
Once matching holes were bored in both the pole and the blade the two elements were joined by driving hardwood pegs in the holes. Pegs apparently fit tightly and would have been even tighter once they became watersoaked.
Problems probably arose with loosening blades because two specimens exhibit nails that were used to secure pegs in their holes or help hold the blade to the pole.

EXPLANATION OF HOW THE SPECIMENS ENTERED THE ARCHAEOLOGICAL CONTEXT

With the exception of the complete sweep, Specimen 15, all of the assemblage was recovered at or downstream from the point at Doniphan where the rafts were docked and taken apart. This suggests that the sweep poles were simply discarded when they were removed from the raft. From evidence apparent on various specimens in the assemblage the raftsmen removed the sweep blade from the pole by driving out the pegs, chopping the pegs out of the pole, or cutting the pole in two and leaving the distal end of the pole attached to the blade. Since not a single blade has been recovered from the river below the docking point suggests that the blades were recycled, that is, removed from the pole and taken back upstream to be reattached to a new pole and continue their office as a steering device. It is also possible that since the blades represented a large board they were simply salvaged to be used as lumber. If they were all tapered like the blade on Specimen 15, however, the board would be of little use due to its uneven thickness. It is highly likely that most of the sweep blades were transported back upstream to be used again since a blade was rather labor intensive to make. The sweep pole, on the other hand, could be easily replaced by cutting down the nearest pine tree of proper size and with a limited toolkit, primarily consisting of an axe and an auger, it could be shaped and readied for joining it to the blade.

The poles which Mr. Hastings has recovered from the river were probably cast overboard after the blade was removed. They probably floated for awhile until they became waterlogged and sank. Some probably lodged against the bank where they were covered by sand and sediment from floods. Some may have been captured in an eddy and floated about for days before they sank. This may account for the one spot which Mr. Hastings refers to as the "paddle graveyard". Countless numbers of the poles likely floated miles down the river while others during floods washed into adjacent woods and canebrakes where they lay and decayed.

It is fortuitous that so many sank or were buried and thusly preserved. Had they not, they would not have survived to the present to provide us with a glimpse of the rafting days on Current River.
Mr. Hastings has spent considerable time researching when the sweeps he discovered were in use (Hastings 1991:3). The docking area on the Current River at Doniphan, according to his research, was in the vicinity of two large lumber mills, the Doniphan Lumber Company organized by William Horton in 1883 (who also started the big mill at Naylor and built the Moore House, currently owned by James E. and Cynthia R. Price) and the Harmon Hungerford Lumber Company, organized by C.P. Harmon in 1884. The mills ran for several years and required huge quantities of logs. Mr. Hastings believes that most of the sweep poles date from the time these large mills were in operation. Mr. Hastings found in his research that a large two-room structure was built in Doniphan in 1871 and that the lumber was hauled from a water-powered sawmill on Little Black River, known as Pennington Mill which was some 15 miles from Doniphan. He feels (Hastings 1991:3) that had a sawmill existed around Doniphan at that time the lumber would surely have been purchased there. Apparently rafting to a sawmill in Doniphan had not yet begun in the early 1870’s. This investigator concurs that the sweep poles recovered from the Current River by Mr. Hastings are probably date no earlier than 1883. Rafting continued until 1931 but declined dramatically in the years approaching this date. This investigator’s father, Acel W. Price, helped his father and brothers bring a raft down to Doniphan from Bay Mill Eddy in 1928 and according to him, not too many people were rafting at that time. The specimens that exhibit peg holes for mounting the blade are probably early in the rafting period and the ones which used nails were later in the period. Ed Cox stated that he used bolts to secure blades to poles as early as 1898 and Howard Steen used bolts in the 1920’s (Hastings 1991: 3). Ernest (Punk Murray, who is not in his late 70’s remembers his father attaching a blade to a pole with nails (Ibid.) and this investigator’s father stated that nails were used on the blade of the raft he was on in 1928. Mr. Price and his two brothers are the the only currently surviving men known to this investigator to have brought a raft down the Current River to Doniphan.

**DIAGNOSTIC ATTRIBUTES OF THE ARCHAEOLOGICAL RAFT STEERING SWEEPS**

During the course of this study it was considered essential to quantify attributes of the archaeological raft sweep poles Mr. Hastings had retrieved from the Current River. Eight most critical and diagnostic measurements were selected for quantification. These were selected for quantification so certain attributes could be compared with those of similar specimens in the literature of archaeological specimens recovered elsewhere. These are illustrated in Figure 5. They are:
DIAGNOSTIC METRIC ATTRIBUTES OF RAFT STEERING SWEEPS

A. LENGTH
B. SMALL END TO PIVOT HOLE
C. BIG END TO PIVOT HOLE
D. BLADE PEG HOLES CENTER TO CENTER
E. DIAMETER OF PIVOT HOLE
F. LENGTH OF HEWN FLAT FOR BLADE MOUNTING
G. CIRCUMFERENCE AT PIVOT HOLE
H. DIAMETER OF BLADE PEG HOLES

Figure 5. Diagnostic Metric Attributes of Raft Steering Sweeps.
1. Length
   This measurement is from one end to the other end of a specimen (Figure 5).

2. Small End to Pivot Hole
   This measurement is from the proximal or small end to the vertical pivot hole in the pole (Figure 5).

3. Big End to Pivot Hole
   This measurement is from the distal or big end to the vertical pivot hole in the pole (Figure 5).

4. Blade Peg Holes Center to Center
   This is the distance between the centers of the two peg holes bored in the flattened area for blade mounting at the distal end of a pole (Figure 5).

5. Diameter of Pivot Hole
   This measurement is the diameter of the pivot hole in the pole (Figure 5). Sometimes it is quoted as two measurements in that the hole is larger on one side than the other.

6. Length of Hewn Flat for Blade Mounting
   This measurement is the length of area hewn to create a flat facet on the distal end of a pole to accommodate the proximal end of the sweep blade (Figure 5).

7. Circumference at Pivot Hole
   This measurement is the distance around a pole at the spot where the pivot hole was bored (Figure 5).

8. Diameter of Blade Peg Holes
   This measurement is the diameter of the holes bored in the flat hewn area at the distal end of a pole into which pegs (or rarely nails) were driven to mount a sweep blade on a pole (Figure 5).

An inventory of all the known specimens from Current River was compiled which list the above metric attributes as well as the date each specimen was recovered, provenience, description, wood species, shape of pivot hole, and method of harvesting pole. All metric data relevant to the fifteen steering sweep specimens are summarized in Table 1.
<table>
<thead>
<tr>
<th>Specimen No.</th>
<th>Total Length</th>
<th>Small End to Pivot Hole</th>
<th>Large End to Pivot Hole</th>
<th>Blade Peg Holes Center to Center</th>
<th>Diameter of Pivot Hole</th>
<th>Length of Hewn Flute</th>
<th>Circumference at Base Peg Hole</th>
<th>Diameter of Blade Peg Holes</th>
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<td>17&quot;</td>
<td>1 3/4&quot;</td>
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<td>16' 10 1/2&quot;</td>
<td>------</td>
<td>------</td>
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<td>3' 7 3/4&quot;**</td>
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*Incomplete specimens, measurements provided are for the segment that remains.
INVENTORY OF RAFT STEERING SWEEPS
RECOVERED FROM THE CURRENT RIVER
NEAR DONIPHAN, MISSOURI

SPECIMEN 1:
DATE DISCOVERED: Ca. December 1, 1986, removed in Jan., 1987
PROVENIENCE: Lying along east bank one-half mile below mill dam boat ramp. Big end upstream, about 3 feet of oar was embedded in river bank.
DESCRIPTION: Two-hole oar with both blade pegs & pivot peg still in pole. Particularly large specimen.
WOOD SPECIES: Pine
LENGTH: 22 feet, 9 inches
SMALL END TO CENTER OF PIVOT HOLE: 17 feet, 3 inches
BIG END TO CENTER OF PIVOT HOLE: 5 feet, 6 inches
BLADE PEG HOLES CENTER TO CENTER: 14 inches
SHAPE OF PIVOT HOLE: Round, straight through
DIAMETER OF PIVOT HOLE: 1 3/4 inches
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 2 feet, 1 1/2 inches
CIRCUMFERENCE AT PIVOT HOLE: 17 inches
DIAMETER OF BLADE PEG HOLES: 1 3/4 inches
METHOD OF HARVESTING POLE: Sawn

SPECIMEN 2:
DATE DISCOVERED: December, 1988
PROVENIENCE: Few hundred yards below Hell's Half Acre a few feet from the west river bank.
DESCRIPTION: Chopped off about 9 inches toward the distal end from the pivot hole, blade mounting segment missing. It was very eroded in one area and broke during removal. Pivot hole was devoid of peg.
WOOD SPECIES: Pine
LENGTH: 17 feet, 7 inches (specimen not complete)
SMALL END TO CENTER OF PIVOT HOLE: 16 feet, 10 1/2 inches
BIG END TO CENTER OF PIVOT HOLE: 8 1/2 inches
BLADE PEG HOLES CENTER TO CENTER: Area missing
SHAPE OF PIVOT HOLE: Larger on one side than other
DIAMETER OF PIVOT HOLE: 1 15/16 x 2 1/8 inches, small side
2 7/16 x 3 3/4 inches, large side
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: Area missing
CIRCUMFERENCE AT PIVOT HOLE: 16 inches
METHOD OF HARVESTING POLE: Unknown, blade segment severed with axe
SPECIMEN 3:
DATE DISCOVERED: Ca. December 20, 1989
PROVENIENCE: Found along east bank approximately 100 yards below the new boat landing at Doniphan.
DESCRIPTION: The pivot hole and one blade hole were still intact. The distal hole was broken or chopped through. A wedge or peg remained in the proximal pivot hole. This is a relatively small specimen.
WOOD SPECIES: Pine
LENGTH: 15 feet 2 3/4 inches
SMALL END TO CENTER OF PIVOT HOLE: 11 feet, 7 inches
BIG END TO CENTER OF PIVOT HOLE: 3 feet, 7 3/4 inches
BLADE PEG HOLES CENTER TO CENTER: 16 inches
SHAPE OF PIVOT HOLE: Larger on one side than other
DIAMETER OF PIVOT HOLE: 1 7/8 x 3 inches small side
2 5/16 x 3 1/2 inches large side
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: This area missing
CIRCUMFERENCE AT PIVOT HOLE: 10 inches
DIAMETER OF BLADE PEG HOLES: 1 3/4 Inches
METHOD OF HARVESTING POLE: Unknown, large end missing

SPECIMEN 4:
DATE DISCOVERED: January 1, 1990
PROVENIENCE: Found lying along east bank in about 1 foot of water a short distance above the Mill Dam Boat Landing.
DESCRIPTION: This specimen is complete but in a somewhat deteriorated condition. It has two blade peg holes. No pegs remain in the blade peg holes or the pivot hole. Relatively large specimen.
WOOD SPECIES: Pine
LENGTH: 17 feet 2 3/8 inches
SMALL END TO CENTER OF PIVOT HOLE: 12 feet, 10 inches
BIG END TO CENTER OF PIVOT HOLE: 4 feet, 4 3/8 inches
BLADE PEG HOLES CENTER TO CENTER: 15 1/2 inches
SHAPE OF PIVOT HOLE: Larger on one side
DIAMETER OF PIVOT HOLE: Enlarged due to decay, NA
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 2 feet, 5 inches
CIRCUMFERENCE AT PIVOT HOLE: 13 3/4 inches
DIAMETER OF BLADE PEG HOLES: 1 5/8 Inches
METHOD OF HARVESTING POLE: Sawn
SPECIMEN 5:
DATE DISCOVERED: January 2, 1990
PROVENIENCE: Discovered along west bank just above Buzzard Rock and just below (downstream) The Heritage Club House which is at the mouth of Old Briar Creek.
DESCRIPTION: This specimen had been chopped off about 2 1/2 feet toward the distal end from the pivot peg hole. Peg still in place in pivot peg hole. Only specimen found with tapered pivot hole which retained a peg.
WOOD SPECIES: Pine
LENGTH: 17 feet, 8 1/2 inches
SMALL END TO CENTER OF PIVOT HOLE: 15 feet, 2 1/2 inches
BIG END TO CENTER OF PIVOT HOLE: 2 feet, 6 inches (end missing)
BLADE PEG HOLES CENTER TO CENTER: Area missing
SHAPE OF PIVOT HOLE: Larger on one side than other
DIAMETER OF PIVOT HOLE: Round, 2 inches in diameter one side 2 1/4 x 32 inches on other side
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: Area missing
CIRCUMFERENCE AT PIVOT HOLE: 20 1/4 inches
DIAMETER OF BLADE PEG HOLES: Unknown, area missing
METHOD OF HARVESTING POLE: Unknown, distal end missing

SPECIMEN 6:
DATE DISCOVERED: January 2, 1990
PROVENIENCE: Found above Buzzard Rock a short distance above the locus where Specimen 5 was discovered.
DESCRIPTION: This specimen retains both blade peg holes and pivot peg hole. Pivot peg still in hole. The oar was almost broken in two so the portion with the peg holes was removed first and the remainder dug out on January 9, 1990. It was embedded in the bank and took effort to retrieve. Approximately 1 foot broke off when it was pulled from the matrix. This pole is large in size. It also has a square cut nail driven through the proximal blade peg hole, apparently employed to hold the peg in place.
WOOD SPECIES: Pine
LENGTH: 21 feet, 6 1/2 inches
SMALL END TO CENTER OF PIVOT HOLE: 16 feet, 6 1/2 inches
BIG END TO CENTER OF PIVOT HOLE: 5 feet
BLADE PEG HOLES CENTER TO CENTER: 10 1/2 inches
SHAPE OF PIVOT HOLE: Round, same size on both sides
DIAMETER OF PIVOT HOLE: 1 9/16 inches
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 1 foot, 8 inches, Hewn on both sides, other side is 1 foot, 11 1/2 inches
CIRCUMFERENCE AT PIVOT HOLE: Missing data
DIAMETER OF BLADE PEG HOLES: 1 9/16
METHOD OF HARVESTING POLE: Sawn
SPECIMEN 7:
DATE DISCOVERED: January 7, 1990
PROVENIENCE: Several hundred yards south of Patterson's Cabins along west bank of river.
DESCRIPTION: This specimen is a two-hole oar in deteriorated condition. It broke at the pivot hole when it was being removed from the river. This is an intact oar except the blade. Both blade pegs and pivot peg are absent. Was several feet out in river from bank. Was lying loose, not embedded.
WOOD SPECIES: Pine
LENGTH: 18 feet, 5 1/2 inches
SMALL END TO CENTER OF PIVOT HOLE: 14 feet, 8 inches
BIG END TO CENTER OF PIVOT HOLE: 3 feet, 9 1/2 inches
BLADE-PEG HOLES CENTER TO CENTER: 10 1/2 inches
SHAPE OF PIVOT HOLE: Oblong
DIAMETER OF PIVOT HOLE: 2 3/4 x 5 1/2 inches
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 1 foot, 8 1/2 inches
CIRCUMFERENCE AT PIVOT HOLE: 8 3/4 inches
DIAMETER OF BLADE PEG HOLES: Missing data
METHOD OF HARVESTING POLE: Sawn

SPECIMEN 8:
DATE DISCOVERED: January 7, 1990
PROVENIENCE: Found immediately downstream from Specimen No. 7. Was lying in cutoff just downstream from Bud Ponder's Cabin near west bank.
DESCRIPTION: Appears to be part of a steering oar. Only one hole remains and it has a flattened place on one side. It retains several wire nails near the flat that were probably used to hold the blade in place.
WOOD SPECIES: Pine
LENGTH: 6 feet, 11 1/2 inches (partial oar)
SMALL END TO CENTER OF PIVOT HOLE: NA
BIG END TO CENTER OF PIVOT HOLE: NA
BLADE PEG HOLES CENTER TO CENTER: No peg holes, blade nailed on
SHAPE OF PIVOT HOLE: Missing data
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: Missing data
CIRCUMFERENCE AT PIVOT HOLE: 10 1/2 inches
DIAMETER OF BLADE PEG HOLES: No holes
METHOD OF HARVESTING POLE: Not determined
SPECIMEN 9:
DATE DISCOVERED: January 9, 1990
PROVENIENCE: Discovered along east bank of river just below new
boat landing at Doniphan, where Specimen 3 was found.
DESCRIPTION: This is a two-hole oar in deteriorated condition.
During removal it broke in two places. In all about
an 8-foot section was saved including the area with
the two blade peg holes and pivot hole. No peg
was in any of the holes. This oar is relative small
in diameter.
WOOD SPECIES: Not determined, probably not pine
LENGTH: 7 feet, 11 1/2 inches (not complete pole)
SMALL END TO CENTER OF PIVOT HOLE: 3 feet, 5 1/2 inches (not
complete pole)
BIG END TO CENTER OF PIVOT HOLE: 4 feet, 6 inches
BLADE PEG HOLES CENTER TO CENTER: 14 inches
SHAPE OF PIVOT HOLE: Larger on one side than other
DIAMETER OF PIVOT HOLE: Eroded hole, cannot quantify accurately
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 2 feet
CIRCUMFERENCE AT PIVOT HOLE: 8 inches
DIAMETER OF BLADE PEG HOLES: 1 3/4 inches
METHOD OF HARVESTING: Too eroded to determine

SPECIMEN 10:
DATE DISCOVERED: January 15, 1990
PROVENIENCE: Discovered along east bank of river approximately 100
yards downstream from new boat landing where Specimens
3 and 9 were found.
DESCRIPTION: This specimen is in poor condition. It is broken
at the pivot hole. It appears to have been a two-
hole oar. Only a portion of the distal peg hole remains;
The proximal blade mounting peg hole is intact.
This is a relatively small specimen.
WOOD SPECIES: Not determined, probably not pine
LENGTH: 5 feet, 1 inch (not complete oar)
SMALL END TO CENTER OF PIVOT HOLE: Broken off at pivot hole
BIG END TO CENTER OF PIVOT HOLE: Broken off at distal peg hole
BLADE PEG HOLES CENTER TO CENTER: 19 inches
SHAPE OF PIVOT HOLE: Broken in hole, cannot quantify
DIAMETER OF PIVOT HOLE: Broken in hole, cannot quantify
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: Part missing, cannot
quantify
CIRCUMFERENCE AT PIVOT HOLE: 6 1/2 inches
DIAMETER OF BLADE PEG HOLES: Eroded, cannot quantify
METHOD OF HARVESTING POLE: End missing, cannot quantify
SPECIMEN 11:
DATE DISCOVERED: 1990
PROVENIENCE: Found along east bank of river approximately 100 yards downstream from new boat landing at Doniphan in same area where Specimens 3, 9, and 10 were recovered. This area seems to be a "graveyard" for oar poles. This is logical in that the site was the take out point for log rafts.

DESCRIPTION: This is most likely part of an oar in that it is of pine and and been trimmed of its limbs with an axe. Appears to be an oar broken on the proximal side of the pivot hole.

WOOD SPECIES: Pine
LENGTH: 8 feet, 1/2 inch (not complete oar pole)
SMALL END TO CENTER OF PIVOT HOLE: Cannot quantify
BIG END TO CENTER OF PIVOT HOLE: Cannot quantify
BLADE PEG HOLES CENTER TO CENTER: Cannot quantify
SHAPE OF PIVOT HOLE: Cannot quantify
DIAMETER OF PIVOT HOLE: Cannot quantify
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: Cannot quantify
CIRCUMFERENCE AT PIVOT HOLE: Cannot quantify
DIAMETER OF BLADE PEG HOLES: Cannot quantify
METHOD OF HARVESTING POLE: Cannot quantify

SPECIMEN 12:
DATE DISCOVERED: January 15, 1990
PROVENIENCE: Discovered along east bank of river approximately 50 yards below the discovery site of Specimen 4, or approximately 200 yards downstream from the Mill Dam Boat Landing. Pivot hole end and about 3 feet of adjacent pole were in the water; the balance was out of the water on the east bank.

DESCRIPTION: This specimen is broken at the pivot hole. It is a relatively small specimen.

WOOD SPECIES: Pine
LENGTH: 12 feet, 4 inches
SMALL END TO CENTER OF PIVOT HOLE: 12 feet, 4 inches
BIG END TO CENTER OF PIVOT HOLE: Cannot quantify
BLADE PEG HOLES CENTER TO CENTER: Segment missing, cannot quantify
SHAPE OF PIVOT HOLE: Cannot accurately quantify
DIAMETER OF PIVOT HOLE: Cannot accurately quantify
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: Segment missing
CIRCUMFERENCE AT PIVOT HOLE: 10 9/16 inches
DIAMETER OF BLADE PEG HOLES: Cannot quantify
METHOD OF HARVESTING POLE: End missing, cannot quantify
SPECIMEN 13:
DATE DISCOVERED: January 15, 1990
PROVENIENCE: Discovered along west bank of river above Buzzard Rock in same area where Specimens 5 and 6 were recovered. It was only a few feet downstream from where Specimen 6 was found. Only approximately one foot of the small end was exposed. Excavation of a segment of the pole exposed the pivot hole. Two hours of excavation were required to expose the portion where the blade was mounted. Large end was lying upstream.
DESCRIPTION: This is a two-hole oar with blade-mounting pegs still intact in their respective holes. A portion of the pivot peg remains. This is a complete oar except for perhaps 4 inches broken off the small end.
WOOD SPECIES: Pine
LENGTH: 19 feet, 1 1/2 inches
SMALL END TO CENTER OF PIVOT HOLE: 13 feet, 1/2 inch
BIG END TO CENTER OF PIVOT HOLE: 6 feet, 1 inch
BLADE PEG HOLES CENTER TO CENTER: 15 1/2 inches
SHAPE OF PIVOT HOLE: Round, same size on both sides
DIAMETER OF PIVOT HOLE: 2 inches
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 2 feet, 8 inches
CIRCUMFERENCE AT PIVOT HOLE: 15 1/4 inches
DIAMETER OF BLADE PEG HOLES: 2 inches
METHOD OF HARVESTING: Chopped down with axe

SPECIMEN 14:
DATE DISCOVERED: July 10, 1990, Removed July 16, 1990
PROVENIENCE: This specimen was deeply embeeded in the west river bank above Buzzard Rock a few ydrs upstream from where Specimens 5, 6, and 13 were discovered. This oar was lying parallel to the course of the river. The small end was sticking out of the bank and about half the oar pole was exposed. The remaining portion was approximately one foot deep in the bank. This specimen was only recently exposed by bank erosion due to floods. Big end was pointing downstream.
DESCRIPTION: This is a two-hole specimen with blade-mounting pegs and pivot peg remaining in respective holes. This oar is complete except for the blade. During transportation this specimen broke at the pivot hole.
WOOD SPECIES: Pine
LENGTH: 19 feet, 1 inch
SMALL END TO CENTER OF PIVOT HOLE: 15 feet, 5 3/4 inches
BIG END TO CENTER OF PIVOT HOLE: 4 feet, 6 1/4 inches
BLADE PEG HOLES CENTER TO CENTER: 9 3/4 inches
SHAPE OF PIVOT HOLE: Round, bored at an angle
DIAMETER OF PIVOT HOLE: 2 inches
(SPECIMEN 14, CONTINUED)
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 2 feet, 7 inches
CIRCUMFERENCE AT PIVOT HOLE: 14 3/8 inches
DIAMETER OF BLADE PEG HOLES: 2 inches
METHOD OF HARVESTING POLE: Chopped down with axe

SPECIMEN 15 (IN POSSESSION OF THE NATIONAL PARK SERVICE)
DATE DISCOVERED: Circa 1964, discovered by Lester Wright
PROVENIENCE: North of Doniphan on Current River
DESCRIPTION: This specimen is the only complete one ever recovered on the Current River. It has an intact blade still mounted on the pole.
WOOD SPECIES: Pine
LENGTH, INCLUDING BLADE: 36 feet, 2 inches
LENGTH OF POLE: 26 feet, 9 inches
LENGTH OF BLADE: 12 feet, 1 inch
WIDTH OF BLADE: 17 inches
THICKNESS OF BLADE: 1 1/2 inches thick at pole mounting, tapers to 1/2 inch at distal end
SMALL END TO CENTER OF PIVOT HOLE: 18 feet, 6 1/2 inches
BIG END TO CENTER OF PIVOT HOLE: 8 feet, 2 1/2 inches
BLADE PEG HOLES CENTER TO CENTER: Has 4 peg holes
SHAPE OF PIVOT HOLE: Larger on one side than other
DIAMETER OF PIVOT HOLE: Not quantified
LENGTH OF HEWN FLAT FOR BLADE MOUNTING: 2 feet, 8 inches
CIRCUMFERENCE AT PIVOT HOLE: Not quantified
DIAMETER OF BLADE PEG HOLES: Not quantified
METHOD OF HARVESTING POLE: Sawn
SUMMARY AND CONCLUSIONS

A study was done of fifteen archaeological specimens of log and tie raft steering sweep poles from the Current River. Fourteen of these specimens were recovered since 1986 from the river downstream from the old raft landing at Doniphan, Missouri. The other specimen was recovered in the early 1960’s a short distance above Doniphan and is a complete specimen in that it still has a sweep blade attached. These are significant artifacts that were fortuitously preserved by either being waterlogged or buried in the bank of the river in a wet environment. This study focused on the role these specimens played in the historic logging industry of the last two decades of the nineteenth century and the first three decades of the twentieth century. Various metric attributes of the specimens as well as diagnostic morphological attributes were quantified which will be useful in comparing these specimens with those elsewhere in the nation.

These archaeological specimens are the only such artifacts known to have survived in the southeastern Ozarks. They are very significant cultural resources which should be preserved and exhibited for public enlightenment. Mr. Hastings is equipping one specimen with a sweep blade for exhibition in the newly founded Current River Heritage Museum in Doniphan.

RECOMMENDATIONS

It is recommended by this investigator that the National Park Service, Midwest Region, entertain a proposal to conduct a more lengthy study of the sites and artifacts associated with the historic logging industry along the Current River, resulting in a video tape program depicting such sites, artifacts, and historic photographs of the logging industry. Such a program would help inform visitors to Ozark National Scenic Riverways about a very important aspect of the rich cultural heritage of the Current River Valley, an aspect which to date has received little attention in cultural interpretations. It is also recommended that the complete raft sweep currently in possession of the National Park Service be permanently exhibited and interpreted in a special exhibit depicting its role in the logging industry of the Current River Valley.
REFERENCES CITED

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Trapper Finds Relic of Ripley County's Past. 
Trapper Finds Relic Of Ripley County's Past

A scene such as this one may have been fairly common on Current River 75 or 100 years ago. Here two men wield the sweep, while a third, the "bag man," uses a pole pole. Standing upright beside the sweep is a stub pole, which was used as a brake. Note how the bend poles allow the raft to maneuver around a curve in the river.

By Sandy Griffin

While trapping last winter for beaver and mink, Ray Joe Hastings made several trips to an area near Mill Dam Landing on Current River. Each time he became more and more curious about a certain large pole that lay mostly underwater near and lodged in the bank. "I kept wondering why the bank on that pole was so round," said Hastings.

Finally, on January 13 of this year, Hastings hauled the 22-foot, three-inch pole out of the water. He found that the round knot was not a knot at all, but was one of three hand augered holes drilled in the pole. Hastings then realized that he had found an unusual relic of Ripley County's history. The pole, which may be as much as a century old, was part of a raft steering paddle called a "sweep" by the timber workers who once rode log rafts down Current River.

Beginning in the 1880s or even earlier, and continuing until the 1920s, steam-powered sawmills could be found at several points along the Current River, including Dothan. Men working upstream felled giant pines with crosscut saws and hauled the logs by mule teams to the river. Here the logs were made into rafts for the trip downstream to Dothan.

The rafts were assembled in spring branches or in eddies along the river. Pine logs eight to ten feet in length were laid across the river, along with dead sycamore logs, crossed for buoyancy. The logs were held together along these ends by saplings one-inch to 1/2-inches in diameter. The saplings were fastened to the log raft with chain dogs, which were lengths of spiked chain that could be wrapped around the logs and tightened by driving in the spikes. Some of the log rafts were enormous, reaching as much as a quarter of a mile in length. At intervals of every 20 or 30 feet bend poles were spiked. These three to four inch diameter poles were fitted with lengths of crosscut in the center of the logs to allow the raft to navigate sharp bends and curves in the river.

Also added to the raft were hickory sap poles. These saplings, about three or four

(Continued on Page 8.)
The massive size of the sweep’s pine pole can be seen here as it rests in Hastings’ 16-foot boat.

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**STEERING PADDLE OR “SWEEP”**

- **PINE POLE**
  - Length: 30 to 37 feet
  - Diameter: 1 1/2 to 3 inches
  - Thickness: 1 1/2 inches at one end, 1/2-inch thickness at the other end

- **PILOT HOLE**
  - Depth: 5 to 6 inches

- **OAK PEG**
  - Diameter: 1 1/2 to 2 inches

---

Trapper...

(Continued From Page 1.)

As Hastings reminds us, these rafts and the men who worked upon them are an important part of our history. Their story is one that should not be left.

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**Sweeps**

Sweeps mark the augered peg holes (with wooden pegs still intact). They once held the blade onto the pole. Blade and pole together make up a complete steering paddle, or sweep.

- **Pole**
  - Length: 16 feet
  - Diameter: 1 1/2 to 3 inches

- **Blade**
  - Length: 30 to 36 feet
  - Width: 14 to 18 inches
  - Thickness: 1 1/2 inches at one end, 1 1/2 to 2 inches at the top

---

During the 1930s, these giant sweeps were 30 to 37 feet long. They were mounted by means of pegs at the front of the raft. Peg holes were driven into the pole about 5 to 10 feet from the butt end, so that the men riding the raft could walk the sweep on to the pole and so steer the raft down the river.

Marching the rafts was dangerous and difficult work. Even the smallest rafts needed a crew of at least three workers, and the large rafts needed several more. Often it would take two men to handle a single sweep.

The raft’s journey ended at Doniphan. Here the logs would be piloted into railroad cars and hauled. After delivering the logs, the raftsmen would board a wagon to return upstream. The sweep’s blade, fastened from the pole, was taken to be used on the next raft.
APPENDIX II

Howard Steen -- Last Raft, Last Man.
The Ozark Graphic Weekly, April 4, 1984,
Pages 1 & 6.
Cataract Island, gathering ties as they drifted downstream. They headed it up to Kansas where they found occasional employment in the wheat harvest. As Autumn turned to Winter the boys found themselves out of a job and starving, as Howard put it. With no place to go they decided to go home to Current River.

They did.

Howard and Edmund spent the winter of 28 and 29 saving ties and building rafts, and then one morning in the Autumn of 1928 Howard awoke to learn Western Tie and Timber Co. and Harry Grubb had parted company. Howard had then possession of a used, outboard engine of the primer type which gave him an idea. He told his brother he was going to Doniphan and Howard pointed his homemade johnboat downstream.

Omer Randel had replaced Glad Hanners as the Doniphan head of the Western Tie and Timber Co. office. Howard approached Omer with the idea of letting Howard and his brother have the tie rafting contract. Omer was reluctant, but he consented saying, "Ok, we'll give you a try and see what you can do."

With hope in his heart, Howard went to Doniphan to see Merchant Bob Lee and asked for credit to buy the tools and materials needed to build rafts. Lee was understanding, and wrote Howard's name on the wall for keys of nails, coils of rope, new hammers, saws and axes. Howard loaded his johnboat and headed back upriver to announce his success. He even began to think about marrying Andy McDowell's pretty daughter, Elna.

The Howard and Edmund Steen tie rafts were not the double-wide monsters the more experienced rafters brought down river. Being inexperienced in the trade, the Steens held their rafts to the single strand style but their snake-like floating platforms extended the usual 750 to 800 feet front to back. From Howard's position in the front there were many times during a rafting day that Howard couldn't see Edmund because of the river's bends.

The Steens' contract with Western Tie and Timber called for them to get 10 cents for each 6x8 and 15 cents for each 7x9 delivered. And, 25 cents for each abandoned tie they might recover as salvage from previous raft wrecks.

With the single-strand raft Howard, as the front man, gave up the giant oar used to guide the two-strand rafts. Howard chose a 23 foot, six inch pike pole as his tool in the rafting trade. Charlie Kinnard sometimes served as bag man, and Charlie couldn't swim. Consequently Charlie had a five gallon gas can tied to him where it served as his personal life saver when he fell off the raft or it sank under him as it would do on occasion. Edmund was the raft's rear brakeman with a pike pole similar to Howard's. Howard remembers there were two places on the river where the poles wouldn't touch bottom. Phillips Bluff and Deer Leap Bluff.

The men's rafts were usually started in the vicinity of Cataract Island, gathering ties as they drifted downstream. They would have about 1000 to 1500 ties to work on as they headed down river. They would often try to return the broken raft sections back to the delivery site. The Steens suffered several wrecks in their rafting career but the one that sticks in Howard's mind is the one smash-up and during the same month of April 1928 when Howard quit the rafting business and his new wife became caretakers at the old Senator Harry B. Hawes Clubhouse on the river above Doniphan. Other men took up the dwindling rafting trade and Mrs. Steen recalls several times when she and Howard would try to provide food and warm clothes and beds for wrecker Tie rafters who would come off the river seeking shelter before trying to re-assemble their tangled floating platforms.

After Howard quit the river, his brother Edmund continued rafting for a time with Lo-ima Estes and Ura Buffington as partners. Edmund, Estes and Buffington cleaned up the riverbanks of about 3,000 or more ties before they left the river. The contract rafting trade ceased until that final raft in April of 1931 which Uncle Andy and Howard brought down. As far as Howard knows that was the end of the big rafts on Current River.

Howard took up the stone mason trade and became a good one. Much of the regional art work in masonry was accomplished by Howard Steen in the continuing years until he retired about the age of 70.

Railroad ties are now delivered from modern sawmills by truck. In the old days it was by wagon or river raft. The 7x9's were used under the cross-country rails while the 6x8's carried the spur-line railroad shipment deliveries.

If the Western Tie and Timber Company records could be found Howard says they would show that he and his father-in-law Andy McDowell brought the last tie raft down Current River in that April of 1931. It was only a small one, though, made up of only about 350 ties.

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Howard Steen—Last Raft, Last Man

By BB Rayce

It was cold but clear that spring morning in April, 1931 when Andy McDowell and Andy's son-in-law Howard Steen stood on the west bank of Current River at a place then known as "McDowell's Landing." The men watched the morning mist rise from the gray waters of the river and surveyed their chores.

Three hundred and fifty or so hand-hewn railroad ties lay scattered about them in the nearby woods lining the riverbank and they knew of a few more that lay beside the river somewhere downstream where the remaining old time men and women had left them when they shouldered their broad axes and went home. Andy and Howard's job was to make a raft and take it to Doniphan. They had done that work before.

Iron tired wagons of the time had cut deep ruts into the riverbank at McDowell's Landing and the old river ford was still in use. Today the site is called "Robert's Roost." The cut gave the men access to the river's waters, and that April day was spent carrying the heavy 6x8 and 7x9 inch ties to the river's edge where the raft was put together. As was the custom, each man carried one tie at a time on his shoulder. There was no doubling up between the men who handled.

(Continued on Page 6)
Howard Steen—Last Raft, Last Man

(Continued from Page 1)

rafts and loaded railroad ties in those early turn of the century days in Missouri's Ozarks.

"Uncle" Andy McDowell left these hills a decade or so ago and his spirit rests in that great land where all Ozark timber and rivermen go; but Howard, at 75 years of age, remembers it took him and Andy all day to make up what is believed to be the last tie raft of consequence and record to be man-handled down the 30 mile stretch of Current River between Doniphan and Catarama Island. Howard remembers how the rafts were made.

Before Howard got into the rafting business, the rafts were double wide, or "two string" contraptions. Averaging seven to eight hundred feet long, the giant platforms were maneuvered by a front man with a huge, mounted oar to pull the leading edge into its proper direction. At the middle a "bag man" with a pile pole did his work while trying to maintain voice communication between the front man and the rear or "snub pole" man. A sharp pole jammed between the ties at his position and into the river's bottom to serve as a brake of sorts.

The sharp pole could get some assistance in the rushing chores from the bag man who used his pile pole in a similar manner as called upon. The front man, of course, was at the mercy of the raft's speed and occupied himself with keeping one end of the raft away from the river's shore and all the rafts from the river's banks, roots and other obstacles designed to wreck a raft and scatter it downstream.

Such was known to happen.

According to Howard, the rafts were designed by laying the ties crossways to the river's flow. Depending on the need, eight foot sycamore logs were cut and spaced between the hardwood ties to make rafters; it was a matter of chance and circumstance being more or less mellow. Between every 30 ties an 18 inch coupling was made to permit the individual raft platforms to bend.

The ties were connected by poles nailed across and along the tips of the 30 tie platforms extending into a valley between the hills.

The second day was like the first weather-wise, and Andy and Howard spent the winter of 1927 and 28 sawing and loading the rails and shipping them to Harry Grubbs who lived upstream at Grubb Hollow. The couple lived created by nailing or spiking a single connecting pole between the 30 tie platforms.

In all, all days to accommodate and build the 350-tie raft which both Andy and Howard considered a rather small creation. When they reached Doniphan, the Western Tie and Timber Company promised to pay them the heavy price of 50 cents for each 6x8 and 75 cents for each 7x9 they delivered. In 1931 that was big money. That last raft in April of 1931 was designed to clean up the riverbank of any remaining rafts which had not been brought down by the earlier ties rafters. For historic purposes the only hand-hewn ties to possibly be seen along Current River today are to be found rolling in a hidden portion of the forest along the stream. Or, when the water is clear, one can occasionally get a glimpse of a partially buried tie in the river or in one of the several bays extending into a valley between the hills.

The second day was like the first weather-wise, and Andy and Howard spent it floating their small, 350-tie raft down to Doniphan. The ties were counted, paid for, and the two men returned home with the knowledge that they had ended an era in the Ozarks.

According to another company record, Howard Steen was the last man alive known to have built and floated a Current River raft of ties. He was known to say, no stranger to the Ozarks. He was a young boy when his parents led the family to a new place and its possessions into their own canvas and bow covered wagon to depart Kansas and return east and south to seek a new home in the forest. The family settled on a small acreage of land on the hillside of Current River known then and today as "Gooseneck." The year was 1917.

The family scratched a living out of the thin, hill-country soil. Andy and Grubbs sold their products to Kansas and return east and south to seek a new home in the forest. The family settled on a small acreage of land on the hillside of Current River known then and today as "Gooseneck." The year was 1917.

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APPENDIX III

Life on Current River. Published in Ripley County Centennial 1859–1959. No Pagination.
Ripley County's only surviving riverman, Mr. S. E. Cox, relates the following account of the importance of Current River in the development of the northwestern part of our county.

I spent my first night in Ripley County on December 31, 1895. We crossed Current River at Doug Ford. The snow was about six inches deep. We made a log heap and set it afire to dry out the ground. Then we pitched our tent over the site.

The following day we went to Kelly Hollow in Carter County. That winter we hauled logs down to the river for the Doniphan Lumber Company. The logs were floated loose down the river with about one-half million feet making up a drive. This was approximately 750,000 logs. I've seen the river lots of times when you could walk across on logs.

About 1898 the Doniphan Lumber Company built a railroad from Tucker Bay to Blue Hole. They took all their equipment, including the locomotive, up the river on barges. Winches were used to pull the barges up the river. Two men would go ahead with a rope about 3,000 feet long, bring it back to the barge, then string another line, and that's the way they made their way up the river.

The Doniphan Lumber Company built a camp at Blue Hole which was about two miles northwest of the present Fred Ollar farm. They had a company store, several boarding houses and homes. There were about 300 people living in the camp. The company operated for about two years then consolidated with the Missouri Lumber and Mining Company and a railroad was built from Grandin down Colvin. It crossed the river at the mouth of Colvin. The tracks were laid as far west at Pine and Bardley.

Under the partnership agreement, two-thirds of the logs were hauled to Grandin and one-third put in the river. This partnership operated until 1906 when the Doniphan Lumber Company was purchased by T. L. Wright Lumber Company.

Most of the transportation was by boat. The first power boat was built about 1902 by A. J. Smith and Ed Gregory. It was about 35 feet long, three feet wide, and two feet deep. There was a wheel on the back to push it.

The Doniphan Lumber Company built a big boat about 60 feet long and 12 feet wide. It was used to haul supplies up the river to the company store. It was powered by a gasoline engine and was named "The Margaret" in honor of W. H. Horton's daughter. Mr. Horton was president of the Doniphan Lumber Company.

The area was covered with virgin timber, principally pine and oak. The pine was cut by the lumber companies. Logs were either driven down, or rafted down, the river. Five or seven men accompanied the logs, two men to a boat. The cook followed with the big boat which was about three feet wide and 40 feet long. It was covered with a canvas and filled with straw and the men slept in it at night.

George Davis was the first foreman. He was succeeded by Bud Kennon. I made a few trips with them.

I started rafting ties in 1898 at the age of 18. The first raft of ties that I brought down the river brought 26 cents each, tied up at Doniphan. They were white oak ties and were sold to VanHouser and Company. We had 396 ties that had been made on my father's farm. Ed Moore helped me to raft them down the river. It took about eight hours.

About 1900 I began rafting ties for the Western Tie and Timber Company. I worked for them about eight years. I got ties all the way from Spring Bay to Big Springs and brought them to Doniphan. The biggest month's work was 14,000 ties that we rafted from Capp's Creek (Boyles' Slough). I received three and one-half cents each for rafting them.

My wages were as follows: Three and one-half cents from Colvin to Doniphan, four cents from Kelly Hollow and four and one-half cents from Big Springs. We pushed our boats up the river with pole paddles. We would push from Doniphan to Kelly Hollow the first day, then on to Big Springs the next half-day.

One winter we had 30,000 ties at Well's Creek to raft. We slept in the canvas covered boat at night and cooked our meals by a big log on the bank. We played pitch each night to see who would have to cook breakfast the following morning. Lots of mornings we could walk on the ice from the back of the boat to the shore. The boat was anchored in the creek to protect it from the wind. Among my campmates were: Sam Going, Sandy Jeffers and Lee Jeffers. Rufus McManus was a young boy at the time and he rode a mule to skid ties in the water at Well's Creek.

We had a standing rule among the crew. Anyone who complained about the cooking had to take over the cook's job. One man had been cook for quite some time and wanted to git rid of the job. Finally, in desperation, he threw a handful of
salt in the morning coffee. One of the men took a mouthful and spat it out. The cook was well pleased for he thought he was rid of his job at last. However, the resourceful riverman remarked, “The coffee sure is salty—but it’s just the way I like it!”

Charlie Ollar operated a supply boat along the river about 1907 or 1908. He made a trip to Doniphan every Saturday and sometimes twice a week. A. J. Smith and Harry Grubs also ran supply boats.

In 1909 the T. L. Wright Lumber Company built a store on the site of the present Gooseneck Cabin. I operated the store for two years, then it was sold to Mr. and Mrs. W. F. Short. I started a post office. It was called Short. The postmaster was A. A. Dorlaque who came from St. Charles, Missouri. He was succeeded by Mrs. Alice Short. Later the post office was moved to Jim Lewis’ residence on Big Barren. The first mail to Short was taken up the river three times a week. Later a route was made from Bennett three times a week by horseback.

There were many fish in the river when I first came to the county. Trot lines, gigging and pole bank fishing were popular. Game was plentiful along the river. It was not unusual to have “Mulligan’s Stew” made of quail, rabbit, squirrel, duck and turkey. Deer were also plentiful.

Two men worked together as a rafting team. I usually worked with Charlie Wall or Pearl Boyles. We usually rafted from 600 to 800 ties a trip. The largest raft that I ever supervised included 1,284 ties. Charlie Wall assisted me on this trip.

One night the mosquitoes were so bad we couldn’t sleep so we put our raft of ties in the river. We finished about daylight. Under the last tie I picked up there was a water moccasin.

We turned the ties edgewise and the rafts were 16 feet wide. Two poles crossed each string of ties and the ties were nailed to the poles. After the raft reached a length of 75 ties, we separated the raft with a pole to leave an opening 12” to 16” to allow the raft to bend. This process was repeated with another coupling after another 100 to 125 ties. There were two oar blades on each end of the raft. They were 12” to 16” wide and about 12 feet long. We bolted a pole to the oar blade. The pole was about 20 feet long. Then we bored a hole thru the pole next to the oar blade and put a pin through it and then made a hole on the raft. A chain with rings was attached and this device was used to guide the raft.

At the back end of the raft we had a hole thru one side about 4” to 6” and we nailed a pole on top crosswise. Then we dropped a pole through it that touched the bottom of the river. This was our “brake.” We used it to stop or slow the raft when going around bends or over rapids.

Float trips were very popular at that time, especially from Van Buren. I took seven boats from Doniphan to Van Buren at one time. I put three inside the “Red Devil,” W. W. Martin’s boat, and stacked two on each side of Martin’s boat. Luther Turner and DeWitt Lackey accompanied me on the trip upstream.

Dr. C. H. Martin, W. W. Martin, Dr. Williams, pastor of the Third Baptist Church in St. Louis, and Howard Caldwell, a teacher, spent about two weeks camping on the river about 1906-07. Claude Kinnard was the guide and I was the assistant. We caught lots of eels. Dr. Martin said he couldn’t eat any eels, but I cooked some one morning for breakfast and he thought it was the best fish he had ever eaten—until he was told what it was. Then he said, “It’s still the best fish I’ve ever eaten, but I couldn’t eat another bite.”

Mr. Caldwell, Claude Kinnard, and I spent some additional time on the river and I caught a big mouthed bass in Bay Mill Eddy. It weighed seven pounds and eight ounces.

Another trip was made with Otis Gary and John Ponds. We hired a livery rig here and drove to Grandin. We boarded the train at Grandin and rode to Winona. There we hired another livery rig and drove to Jack’s Fork at Eminence. We left Doniphan at six a.m. and arrived at Eminence at six p.m. We were met by John Webb who came with us to Van Buren. The first day we had fish for dinner. We lost our afternoon string and had a scanty supper and breakfast. We spent about two weeks on this float trip. When we landed at Doniphan, we had 35 nice bass and we had cooked a lot on the trip.

In 1911 Harry Grubs and I brought a raft of ties down the river for the T. L. Wright Lumber Company. This was my last trip. I worked around town for a month or two for the Company, then began sawmilling on Little Black on my own in 1912.

In 1913 P. J. Burford and I formed a partnership and set up a mill at Camp Roy. We operated the mill five or six years. From that time on I sawmilled until 1954 in various sections of Ripley, Carter and Butler Counties.
APPENDIX IV

Map Illustrating the Location of the Historic Raft Landing Site at Doniphan, Missouri and Section of Current River Downstream where Mr. Hastings Recovered Raft Sweeps
APPENDIX IV. Map illustrating the location of the historic raft landing site at Doniphan, Missouri and section of Current downstream where Mr. Hastings recovered raft sweep poles. (USGS 15' Doniphan Quad., 1939)
REPORT CERTIFICATION

I certify that "A Study of Log Raft Steering Sweeps Recovered From The Current River, Ripley County, Missouri" by James E. Price

has been reviewed against the criteria contained in 43 CFR Part 7(a)(1) and upon recommendation of the Regional Archeologist has been classified as available.

5/8/91
5/8/91
Date

Regional Director

Classification Key Words:

"Available"--Making the report available to the public meets the criteria of 43 CFR 7.18(a)(1).

"Available (deletions)"--Making the report available with selected information on site locations and/or site characteristics deleted meets the criteria of 43 CFR 7.18(a)(1). A list of pages, maps, paragraphs, etc. that must be deleted for each report in this category is attached.

"Not Available"--Making the report available does not meet the criteria of 43 CFR (a)(1).