

Coquille River Bridge
Spanning Coquille River on Oregon Route 244
Coquille
Coos County
Oregon

HAER OR-32

HABS
ORE,
6-COQ,
1-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HAER
ORE,
6-COQ,
1-

HISTORIC AMERICAN ENGINEERING RECORD

COQUILLE RIVER BRIDGE
HAER OR-32

Location: Spanning Coquille River on the Coquille-Bandon Highway (Oregon Route 244), Coquille, Coos County, Oregon
UTM: Coquille, Oregon Quad. 10/403160/4780575

Date of Construction: 1921-22

Engineer: Conde B. McCullough, Oregon State Highway Department

Builder: A.B. Gidley, Marshfield, Oregon

Owner: Coos County, 1922-25
Oregon Department of Transportation, 1926-present

Use: Closed to traffic. Projected demolition.

Significance: The Coquille River Bridge is on the original route of the Oregon Coast Highway. It is one of the oldest and few remaining swing span bridges in Oregon. It was designed by State Bridge Engineer Conde B. McCullough, an innovative pioneer in twentieth-century American concrete bridge design.

Project Information: Documentation of the Coquille River Bridge is part of the Oregon Historic Bridge Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and the Oregon Department of Transportation. Researched and written by Gary Link, HAER Historian, 1990. Edited and transmitted by Lola Bennett, HAER Historian, 1992.

Related Documentation: For more information on Conde B. McCullough, see HAER OR-54.

HISTORY

The Coquille River Bridge was on the original route of the Oregon coast Highway. The highway was constructed piecemeal starting in Clatsop County in 1914. In July 1916 the federal government passed a bill designed to coordinate main interstate roads. Under the bill, the federal government would pay half of construction costs for highway projects provided that the state had an organized state highway department (the Oregon State Highway Department was created in 1913). In 1917 the Oregon state legislature petitioned Congress to build a military highway on the coast. In 1919 the state legislature permitted a bond issue of \$2.5 million building the road, then called the Roosevelt Coast Military Highway. Construction proceeded north and south in sections connecting the trans-mountain roads.¹

The Coquille River Bridge was opened in August 1922 and was at that time owned by Coos County. In January 1926 the state of Oregon took over ownership. The coastal highway was completed in 1932, its name having changed the previous year to the Oregon Coast Highway.²

In 1960 the Oregon Coast Highway was rerouted, by-passing the city of Coquille. The Coquille River Bridge became a part of the Coquille-Bandon Highway. River traffic had dropped off at the city. From 1960 to 1970 the Coquille River Bridge drawspan was opened only 14 times, and these were for maintenance traffic, not commercial vessels. Because of the infrequent openings, the state applied to the Coast Guard to amend the regulations governing the manning of the bridge. The state employed bridge operators on the bridge twenty-four hours a day, even though openings were rare. Rather than employ full-time operators, the state requested permission to require that 48-hour notice be given by navigators needing the bridge opened. The Coast Guard made these amendments in August 1971.³

The Coquille River Bridge built in 1922 was by age and design not suited to hold up to the heavier vehicles and high volume of traffic of a highway in 1977. The bridge was too narrow for two-way traffic, and the sharp approach curves were considered conducive to vehicle accidents. Stress of modern live loads had caused damage to the supporting beams under the operator's house and overhead lateral bracing, pulled the vertical members out of line, and loosened the deck at the radius ends of the swing span. In 1977 the Oregon Department of Transportation Maintenance Engineer reported that the Coquille Bridge was third on the state's list of bridges to be replaced. An inspection report that same year urged that the bridge be replaced as quickly as possible. However, a new bridge at Coquille was not completed for another decade.⁴

In 1986, with construction of a new bridge at Coquille underway, the question arose as to what to do with the old bridge. The Port of Bandon and City of Coquille wanted it removed, claiming that the bridge exacerbated aggradation in that section of the stream (ODOT studies did not support this claim). But the bridge was National Register-eligible, which meant that the state was required by federal law to make every attempt to keep the bridge intact. Only should all efforts along these lines fail could the state "go through the federal hoops" for demolition of the bridge. The Highway Division and Environmental Section drafted a proposal to the city with three options to keep the bridge in place--keep it in normal operation for pedestrian traffic only, keep it permanently in the open position, or keep it permanently in the closed position for pedestrian traffic. The city rejected the proposal en toto, and again asked state to remove the bridge.⁵

In July 1988 the Highway Division made the decision to remove the bridge. The city of Coquille proposed to use sections of the bridge for an interpretive open-air exhibit, but the state had one more avenue to pursue to keep the bridge intact. In August 1989 public notices were published in newspapers and magazines in the coastal states: the State of Oregon would give the bridge away to any public or private organization which would preserve it. The state would even help pay for transporting the bridge, with funds slated for demolition. Sadly, there were no takers. At the time of this report the paperwork is being prepared to allow for demolition of the

bridge. Portions may yet be saved for an open-air exhibit in Coquille.⁶

DESIGN

The swing span of the Coquille River Bridge is a 255-foot riveted steel through Parker truss with a timber deck. Top lateral bracing includes diagonal bars and braced struts. Horizontal, vertical and diagonal members make up the sway bracing to form two boxed X's beside each other. Vertical clearance is 14'-7", and horizontal clearance is 17'-8". Sidewalks, added in 1935, are 3'-6" wide and the hand rails are metal with pipe caps. The control house rests on struts above the roadway in the center of the span. When closed, each end of the drawspan rests on a reinforced concrete pier. The swingspan is of the "bobtail" design, which means that the center pier is slightly off-center. This causes the north end to be longer than the south end, allowing for a greater horizontal clearance through the channel for boats.⁷

The main pier rests on piles. Its upper portion is a hollow concrete pipe, 30' in diameter at the rim. The pier houses the operating machinery which originally was a Model-T Ford motor, replaced in 1952 by a Ford (Mercury) V-8 motor. When the machinery goes into operation the span rides on two steel wheels that run along the rim of the pier. These wheels are connected by vertical members to the span.⁸

When the span is fully opened it is aligned directly over the draw rest. The rest is a wooden structure 226' long and 29' wide. At each pointed end is located a dolphin made up of five wooden piles.⁹

Six 19-foot long frame timber spans approach the north side of the drawspan and seven approach the south side. Continuing south, the bridge is approached by twelve 19'-long pile trestle spans. Wooden stringers (6" x 20") support the roadway of the entire 475 feet of approaches. Total length of the bridge is 730'.¹⁰

CONSTRUCTION

The contract for the construction of the Coquille River Bridge was awarded to A.B. Gidley of Marshfield (now called Coos Bay), Oregon, on March 15, 1921. Work started on May 10. A combination of man and nature caused the work to proceed slowly. High water came to that section of the river earlier in the season than expected and remained much longer than average. Design plans had to be redrawn after it was discovered that the foundation material was different than anticipated. And through the entire construction the A.B. Gidley Company maintained only a small crew.¹¹

Still, work was completed to a degree that the span could open for traffic on August 18, 1922. All work was finished October 15. The structure consumed 711 cubic yards of concrete, 15 tons of reinforcing steel, and 166 tons of structural steel. 553 cubic yards of excavation were moved and 7,105 feet of piles driven. Total cost of the structure was \$89,846.12. The state paid a small percentage for the engineering, the rest was paid by Coos County.¹²

MAINTENANCE HISTORY

Much maintenance work was done on the bridge during its years of use. In 1935 alone the south end shoulders were rebuilt and grade widened; the deck on the swing span was repaired and safety gates rebuilt; sidewalks were added and the wooden rail was replaced by steel railing; and the submarine cable was also replaced. In 1939 the draw rest and curve at the south end were redecked. The following year the draw protection was replaced and old rest was removed. In 1942 all the stringers on the north approach were replaced. Two years later the steel span was

redecked, the safety gates again rebuilt, and the sidewalks repaired.¹³

In 1950 members in the steel truss had to be straightened, as did the end roosts. In that year repairs to the deck, span, gate and sidewalks totalled over \$1,500. Two years later the deck of the drawspan was again replaced, as were the sidewalks on the drawspan and south approach, and catwalks on each end of the drawspan. In 1955 the decayed deck was patched, and the following year more stringers were added. A 1977 report called the approach spans "critical," and replacement of the bridge was urged by the inspector. By 1984, repairs done to the east portal were foregone because the bridge was about to be replaced.¹⁴

ENDNOTES

1. Historic American Highways (Washington, D.C.: American Association of State Highway Officials, 1953), p.111; Leslie M. Scott, "Oregon Coast Highway," Oregon Historical Quarterly 33 (September 1932), p.269.
2. Oregon State Highway Commission, Fifth Biennial Report, 1920-1922, p.212.
3. Oregon Department of Transportation, Bridge Section Maintenance File #598: Letter dated 11 March 1971, Ivan Merchant, Bridge Engineer to Commander, United States Coast Guard, 13th District; United States Coast Guard, Public Notice 71-N-19.
4. ODOT, Bridge Section Maintenance File #598, "Drawspan Inspection Report," October 25, 1976; Interdepartment Memo dated August 18, 1976 from E.S. Hunter, Deputy State Highway Engineer to Alfred Shirley; "Drawbridge Inspection Report, November 2, 1977; Interoffice Memo dated November 22, 1977 from R.L. Schroeder, Maintenance Engineer, to Jack Sollis, Assistant Attorney General.
5. ODOT, Environmental Section Bridge File #598, "Acquisition and Adaptive Reuse of the Old Coquille River Bridge by the City of Coquille, Proposal Information," prepared by Dwight Smith; ODOT, Bridge Section Maintenance File #598, Letter dated September 4, 1986 from Jim Hanna, Port of Bandon President to Jim Gix, Region 3 Construction Engineer; Interoffice Memo dated September 24, 1987, Terry Shike; Letter dated May 10, 1988 from Alex Linke, Port of Bandon President, to Jim Gix, Region 3 Construction Engineer.
6. Bill Calder, "At This Price, Historic Bridge a Giveaway," Oregonian 18 Aug 1989, B4. ODOT, Bridge Section Maintenance File #598, Letter dated July 25, 1988 from James Gix, Region 3 Construction Engineer to Alex Linke, Port of Bandon Director; and Letter dated May 4, 1989 from the City of Coquille to Jim Gix, Region 3 Construction Engineer.
7. T. Allen Comp and Donald Jackson, "Bridge Truss Types: A Guide to Dating and Identifying," History News, American Association of State and Local History Technical Leaflet 95, vol. 32, May 1977; ODOT, Bridge Section Maintenance File #598, Letter dated April 9, 1952 to W.W. Stiffler; and Letter dated January 28, 1935 to Conde B. McCullough, Bridge Engineer, from A.G. Skelton.
8. ODOT, Bridge Section Maintenance File #598: Drawing #1396; "Drawbridge Inspection Report," October 9, 1984; Letter dated April 9, 1952 to W.W. Stiffler, Assistant State Highway Engineer.
9. ODOT, Bridge Section Maintenance File #598, Drawing #1395.
10. ODOT, Bridge Section Files, "Bridge Log," p.2.
11. Oregon State Highway Commission, Fifth Biennial Report, 1920-22, p.212.
12. Fifth Biennial Report, p.212.

13. ODOT, Bridge Section Maintenance File #598, "Bridge History Record of Maintenance, (1935-1956)."

14. ODOT, Bridge Section Maintenance File #598: "Bridge History Record of Maintenance, (1935-1956)"; "Drawbridge Inspection Report," November 2, 1977 and October 9, 1984.