

Oklahoma

Water
News

MONTHLY NEWSLETTER OF THE OKLAHOMA WATER RESOURCES BOARD

Red River Bridges Swingers In Early Days of Statehood

This article is excerpted from a longer one written by Bernice N. Crockett, an authority on Oklahoma water resources, long-time water development activist and "Oklahoma Water Pioneer" honoree at the 1985 Governor's Water Conference. "Oklahoma Water News" gratefully acknowledges Dr. Crockett's kind permission to reprint portions of her article entitled "Oklahoma's Galloping Gerties." This is Part I of two parts. Look for Part II in October's issue.

Ten of the 253 suspension bridges (across major rivers) in the world between 1741 and 1932 were in Oklahoma: two across the Canadian River and eight across Red River. (The eighth of the last group replaced the first suspension bridge over the Red River.)

On the morning of November 7, 1940, people in and around the Tacoma Narrows in the state of Washington were holding a death watch. The slender, beautiful victim was the third longest suspension bridge in the world, and, in her brief life had earned the name of "Galloping Gertie."

Symptoms of her impending fate had appeared even before her official opening July 1, 1940. Workmen early on complained of being dizzy and seasick from her pronounced tendency to oscillate and undulate er-

atically in the wind currents across Puget Sound.

By 9 A.M. Gertie's final spasms had increased to the extent that the deck of the 2,800-foot center span bridge "was heaving up and down in waves 30 feet high and twisting around through an angle of nearly 45 degrees to either side."

Death struck the graceful suspension structure around 11 o'clock when ". . . a 600-foot section of the road deck wrenched itself from the suspenders and plunged into the Narrows." That the bridge literally shook itself to pieces because it did not have

'aerodynamic stability,' which, according to the experts, was due to the lack of stiffness.

Galloping Gertie's early and spectacular death may cause the average layman to forget some basic facts about the reliability of suspension bridges. In 1983, Brooklyn Bridge, designed by John Augustus Roebling, "builder of unprecedented suspension bridges," marked its 100th birthday. Others include the Benjamin Franklin Bridge over the Delaware River (1926); San Francisco's Bay Bridge (1936); the Golden Gate Bridge (1937), which can sway 27 feet in a gale, rise five feet on a hot day, or drop 10 feet on a cold one.

It is noteworthy that the celebrated George Washington Bridge over the Hudson River (1931), was the first to

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During the night of May 19, 1929, the Red River changed its course and moved the entire bridge into Oklahoma. The wrecked bridge between Idabel and Clarksville, Texas, was so new it had not yet been officially opened.

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coordinate bridge and highway development to accommodate motor cars.

Years before Galloping Gertie, Oklahoma had Gerties of her own, most of them across Red River.

Some of these suspension bridge structures which connected Oklahoma and Texas were almost as dramatic as Gertie in their frenzied oscillations before crashing. Some were carried away or were ruined by floods, another fell (a victim of arson) and one, thrashing madly in futile protest, succumbed to an Oklahoma tornado.

An official record shows that there were 17 interstate (Oklahoma-Texas) toll bridges and three free bridges across the Red River as of January 1, 1930. Of the 17 bridges, seven were suspension bridges.

However, credit for having the first and only suspension bridge in the Twin Territories in 1898 must go to the Canadian River, where the earliest one bridged the river near Noble, Oklahoma. The two other suspension bridges which were built across the Canadian were the Bridgeport (Key Bridge also known as the Postal Bridge) in 1921 and the Ada-Konowa Bridge in 1923, owned by George D. Key.

One promoter of the suspension toll bridge project to connect Oklahoma and Texas by way of the Red River was Frank E. Austin, ably assisted by Charles R. Moore. Mr. Austin came to Dallas in 1892 to join his brother George in what was to become Austin Brothers "Steel Fabricators." Employed as a draftsman, Frank learned the basics of bridge and building construction by on-the-job training. Put in charge of the Dallas office in 1902, he was also entrusted with a program to develop steel business west of the Mississippi River. As a roving salesman for the steel company, Mr. Austin became involved in many bridge-building operations on the Red River:



Seven cable suspension bridges were constructed over Red River between 1914 and 1929. Bridges connected Temple (Oklahoma) and Byers (Texas); Terral (OK) and Ringgold (TX); Grady (OK) and Nocona (TX); Courtney (OK) and Saint Jo (TX); Durant (OK) and Bonham (TX); Bennington (OK) and Honey Grove (TX) and Idabel (OK) and Clarksville (TX).

"... In those early days, bridge sales were made directly to counties, through county judges and commissioners. Contracts included foundation work as well as the fabrication and erection of steel bridges. Fabrication was accomplished by blacksmithing and the use of hacksaws. Large girders were transported to the jobsite by mule teams and erected by falsework of heavy timber and block and tackle."

The need by both Texas and Oklahoma for an interstate system of bridges across the Red River became both chance and challenge.

Charles Moore and experts agree "... the suspension bridge is light, aesthetic, graceful; it provides a roadway of low elevation, and it has a low center of wind pressure; it dispenses with falsework and is easily constructed, using materials that are easily transported; there is no danger of failure during erection; and after completion, it is the safest structure known to bridge engineers."

The founding and incorporation of Austin and Moore's Southern Toll Bridge Company and the company's purchase of all seven bridges in 1929 marked a beginning and an end. A beginning in that they could now set about changing the Red River from a barrier to a connection at a profit. Such a venture would also be the end of the "free lance" bridge building projects which had existed on the Red River for more than twenty-five years.

"There can be little doubt," stated Franklin D. Roosevelt prior to the opening of the George Washington bridge in October, 1931, "that in many ways the story of bridge building is the story of civilization."

Nowhere was it more evident than the efforts Oklahoma and Texas put into playing an active role in history's march through time. The enterprising men who recognized the importance of fulfilling the need for transportation across streams and rivers were those who could make the transition. They carried in their wake the inevitable benefits of progress—some good, some not so good—but they comprised an ongoing thrust which would not, and could not, be denied.

Colorful Cotton County, which on September 6, 1912, became the seventy-seventh and last county formed in Oklahoma, was the first county in the state to have a suspension (cable, swinging) bridge built across Red River less than two years later. Earlier, pioneers had voiced problems attendant to getting across what was undeniably an unpredictable and unreliable stream. Besides high-water flooding there was the ever present hazard of quicksand whether the water was high or low. Inconsistency was the Red's trademark.

Red River was always ready to prove that she was no lady anytime or anyhow.

By August 7, 1913, the Walters

New Era could announce that a steel bridge would be spanning Red River between Temple, Oklahoma, and Byers, Texas, in the near future. "The contract for the steel suspension bridge across Red River a few miles south of Temple was let today," the newspaper informed its readers August 28, 1913. Further good news included an increase from the original plans—a change that would result in the new bridge being seventeen hundred feet in length rather than the original one thousand, "with double driveway and a carrying capacity of an eighty (probably should be eight) tonload."

The toll collector on the Byers (also called the 98th Meridian) Bridge reported that the bridge "lasted until the cyclone got it in 1923. The cyclone was going southeast from Temple, followed the river bed till it got to the bridge, took it out in short order." According to the *Waurika News-Democrat*, the loss was estimated at \$50,000. A roar accompanied constant flashes of lightning and loud peals of thunder to the extent that during the early morning hours "the disturbance of the elements was anything but pleasing."

In August 1923 Austin Bridge Company was given the contract for the complete rebuilding of the Byers (98th Meridian) suspension bridge. A traffic census from 1926–1928 showed gross receipts from collection of tolls on the Byers Bridge amounted to \$30,036.58 in 1927 and \$28,999.49 in 1928. The bridge continued to serve until it was damaged by flood water in 1935. "In 1938 flood water took it out and it was never replaced."

A charter was granted to the Terral Toll Bridge Company in 1916 to construct a suspension bridge between Terral, Oklahoma, and Ringgold, Texas. From pier to pier, the bridge was 1800 feet long composed of three main spans each 450 feet and two half spans, with cable supported by the end piers. There was a 70-foot approach at each end and the bridge's 16-foot wooden roadway would support a five-ton load.

The official announcement of the

United States' entry into World War I—a declaration of war against Germany April 6, 1917—drew both the peoples' and the local newspaper's attention from the Terral Bridge. No date was set for the completion and opening, but people in Terral were hoping it would not be later than July 15, 1917. A big celebration was promised: "Terral always celebrates, and Terral never does anything by halves." The *Waurika News-Democrat* promised that a large delegation of their citizens would be present because "a large percent of her population can always be depended upon to attend any jollification to which 'big eats' are attached."

The toll bridges might have been, as accused, light and narrow and unsatisfactory for modern traffic, but toll receipts showed the bridge collected \$46,000 in 1927 and more than \$50,000 in 1928. Terral Bridge tolls were reduced from one dollar to fifty cents at that time. Gross tolls for 1929 were \$27,255.80.

The new bridge between Terral and Ringgold was completed January 1, 1931, at a cost of \$124,485.86. Some sections of the old suspension bridge still remain, but it is inaccessible by car and almost prohibitive on foot.

On the official reports the suspension toll bridge was called the Nocona Bridge. It was listed as being between Oscar, Oklahoma, and Nocona, Texas. But to the people in the extreme southeastern section for Jefferson County in 1924 when the bridge was built, it was Ketchum Bluff Bridge, or simply Bluff Bridge.

An incipient oil boom in the 1920's in the Ketchum Bluff vicinity set off a campaign to start a new town there.

In Fort Worth in 1924, gas was selling for 11 cents a gallon.

In January, 1924, the Austin Bridge Company received the contract to build a suspension bridge across Red River north of Nocona, Texas, to connect with Oscar, Oklahoma. Plans included a 700-foot span, a 16-foot roadway with main cables containing 1000 galvanized wires each.

TO BE CONTINUED NEXT MONTH



Water Conference Set

The tenth annual Oklahoma Water Conference will be held December 13 at the Marriott Hotel in Oklahoma City, announces James R. Barnett, OWRB executive director.

Highlights will include a luncheon address by Gov. Henry Bellmon and presentation of this year's Oklahoma Water Pioneer Awards. Barnett points out that the Water Resources Board sponsors the conference which has a reputation for featuring a balance of speakers of national, state and regional note.

For more information, call Conference Coordinators Mary Whitlow or Brian Vance at the Oklahoma Water Resources Board, (405) 271-2523.

Arkansas Hosts Compact Meet

The State of Arkansas will host the upcoming annual meeting of the Arkansas-Oklahoma Arkansas River Compact Commission September 28 in Fort Smith.

The compact is one of four such agreements in which Oklahoma officials discuss concerns about waters shared with neighboring states.

The OWRB's Stream Water Division and General Counsel provide technical and legal support to state compact commissioners so they can effectively enforce compact requirements and negotiate outstanding water issues. Oklahoma commissioners are James R. Barnett, OWRB executive director; Dr. Lloyd Church, Wilburton; and John Moffitt, Ft. Gibson. J. J. Vigneault, of Little Rock, is the new federal commissioner of the Arkansas-Oklahoma Arkansas River Compact Commission.

Texas Xeriscape Conference

The Fourth Annual Texas Xeriscape Conference will be held in Arlington October 5–6 at the Arlington Hilton, 2401 E. Lamar Blvd.

Xeriscape is the concept of water conservation through creative land-

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scaping. The conference—hosted by the cities of Arlington, Dallas and Fort Worth, and the Texas Agricultural Extension Service—will showcase experts in the water utilities and landscape professions.

Sessions will cover such topics as xeriscape design, native and ornamental grasses, and gray water reuse in landscapes. The conference will explain the seven basic principles to successful xeriscaping and include tours of local xeriscape areas.

For more information on the Texas Xeriscape Conference, call Cheryl Taylor West, Arlington Water Utilities, at (817) 459-6602; Cari Hyden, Fort Worth Water Utilities, (817) 870-8208; or Janell Mirochna, Dallas Water Utilities, (214) 670-4297.

**ACTIVE CONSERVATION STORAGE IN SELECTED OKLAHOMA LAKES AND RESERVOIRS
AS OF AUGUST 16, 1989**

PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY	PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY
SOUTHEAST			Wister	63,250	100.0 ²
Atoka	120,568	97.2	Sardis	302,233	99.9
Broken Bow	914,555	99.6	NORTHEAST		
Pine Creek	77,456	99.7 ²	Eucha	77,000	96.8
Hugo	157,600	100.0 ²	Grand	1,435,900	96.3
McGee Creek	109,073	99.3	Oologah	541,078	99.4
CENTRAL			Hulah	30,594	100.0
Thunderbird	105,925	100.0	Fort Gibson	363,704	99.6
Hefner	72,294	95.9	Heyburn	6,600	100.0
Overholser	15,935	100.0	Birch	18,782	97.8
Draper	83,565	83.6	Hudson	200,300	100.0
Arcadia	27,390	100.0	Spavinaw	30,000	100.0
SOUTH CENTRAL			Copan	43,400	100.0
Arbuckle	62,571	100.0	Skiatook	314,110	98.3
Texoma	2,564,175	97.2	NORTH CENTRAL		
Waurika	203,100	100.0	Kaw	428,600	100.0 ²
SOUTHWEST			Keystone	616,000	100.0
Altus	107,483	80.9	NORTHWEST		
Fort Cobb	78,423	100.0	Canton	97,500	100.0
Foss	175,542	72.0 ¹	Fort Supply	13,900	100.0
Tom Steed	81,980	92.1	Great Salt Plains	31,400	100.0
EAST CENTRAL			STATE TOTALS	12,514,890	99.1
Eufaula	2,318,283	99.5			
Tenkiller	623,177	99.3			

1. Conservation storage lowered for project modification
2. Seasonal pool operation

Data courtesy of U.S. Army Corps of Engineers, Bureau of Reclamation, Oklahoma City Water Resources Department, and City of Tulsa Water Superintendent's Office.

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... a year to rekindle pride, celebrate excellence in education and our communities and invite all former Oklahomans back for a visit.