

History of the Telephone in Arizona Up to 1919

A large proportion of the exchanges and long distance lines in Arizona were originally constructed by local companies. These were consolidated in a few districts into larger concerns but quite generally the plants were built by people who had little or no information of the telephone business and who had little or no knowledge of the selection of proper materials and equipment. There was an entire lack of proper engineering under such conditions and the result was the usual one low first costs, high maintenance, poor service and extraordinary depreciation. In fact, generally the service was scarcely worth the name, Judged by present day standards.

The central office equipments were of all types and makes, installed in the crudest manner and lacking in the numerous accessory equipment which is necessary to give proper service. There was a lack of quarters and proper arrangements for the operating force. The sets used by the subscribers in some cases fitted in with the central office equipment and in other cases did not. These likewise were of various makes and types and many were of such ancient origin as to be utterly worthless, both as to value and service.

Some exchanges had a goodly proportion of cedar and big redwood poles but there was a very large number of pine and other native poles in use whose life was generally not in excess of three years and when not properly inspected and replaced they constituted a continual menace to life and service. Comparatively small amounts of cable were used so that heavy open wire leads existed in such condition as to be frequently in trouble. A large number of the lines were grounded, that is, employing only one wire to a line with the return circuit through the earth; there is no effective way to use grounded lines occupying the same poles without "crosstalk" or conversation being heard between two disconnected lines. Many pole lines were not of sufficient strength to carry the load which had been gradually placed upon them. This was particularly true of an unusual number of poles which had been spliced to make poles of greater height in order to clear trees or haystacks, and these resulted in dangerous conditions. Very poor separation existed between dangerous electric light wires and telephone wires, with the result of frequent crossing of wires with hazard to both life and property. Crossings over railroads were weak and only the mild climate aided in saving many wrecks.

The long distance lines between various communities were similar in

construction to that of the towns. Generally the poles were short lived. Many circuits were grounded and mostly of iron wires to that the range of transmission was limited. A number of lines between various towns and districts were in such bad condition, due especially to the rotted poles that while service was offered to the public, it could seldom be given and was absolutely unreliable. The result was that while telephone service was supposed to exist between a large number of cities and towns in the State, it was really confined to a limited number. In short, judged by the standards of service which were given at that time in other communities, as well as by the standards of today in the same localities, the service was unreliable limited as to distance and extent, of a low standard and under dangerous conditions.

The first plants of any extent in the State were built about 1900 to 1902 by Sunset Telephone and Telegraph Company, a Bell Company of California. They built exchanges at Phoenix, Tucson, Prescott and some of the smaller adjacent towns, connecting them by long distance lines in which redwood poles of excellent quality were used. Parts of these lines are still in existence and in good condition. This Company later sold its plant in State to a local company who slowly built more lines and exchanges and purchased a few others. This Company in 1911 became the Arizona Telephone and Telegraph Company and operated over the largest territory of any company in the State. They had exchanges at Nogales, Tucson, Clinton, Safford, Globe, Florence, Yuma, Mesa, Tempe, Phoenix, Buckeye, Glendale, Prescott, Humboldt and Jerome. All of these exchanges were presumed to be connected by long distance lines, but many of these were entirely out of order, giving little or no service at all. In 1910, the Overland Telephone and Telegraph Company built an exchange in Phoenix in competition with the Arizona Company, and either purchased from local people or erected themselves exchanges at Buckeye, Glendale, Mesa, Tempe, Flagstaff and Williams. Those in the vicinity of Phoenix were connected together but had no connection with the two northern ones.

Outside of these two companies the remaining towns in the State were served by local companies with limited facilities and with few, if any, connections to other points.

The first permanent entrance of the Bell system into the State was in 1910 when the Tri-State Telephone and Telegraph Company, one of the predecessors of the Mountain States Telephone and Telegraph Company, purchased from the two local concerns the exchanges at Douglas and Bisbee which were connected by an iron circuit on a poor pole line. The Tri-State Company within a year did considerable work at both places putting the exchanges in better condition. They

reached an agreement with the Arizona Company and the Pacific Bell Company of California whereby there was built in 1911 a thorough copper circuit with intermediate stations between El Paso and Los Angeles. The Tri-State Company erected the line from El Paso to Benson and the Arizona Company from Benson to Yuma. A branch of this line was extended into Phoenix. This was the first connection of Arizona with the outside stated be means of the telephone.

In July, 1911, the Tri-State company was merged into the Mountain States Telephone and Telegraph Company and in August the latter acquired the property of the Tombstone Telephone Company, operating exchanges at Tombstone and Benson, with lines between these towns and to Bisbee and Courtland.

In the summer of 1912, the Mountain States Company acquired the properties of the Arizona Telephone and Telegraph Company, the Overland Telephone and Telegraph Company and the New State Construction company, which latter had just built a line from Prescott to Ash Fork. In 1916, the property of the New State Telephone and Telegraph Company was acquired, this consisting of five small exchanges east of Benson in Cochise County, with some connecting lines. In 1916, the property of the Winslow Telephone Company was acquired, this consisting of the exchange at Winslow.

The Mountain States Company immediately upon securing these various plants, commended putting them in shape or rebuilding in order to give real telephone service. This was no easy task, for, as previously described, there were all kinds of materials, equipment and conditions in the various plants thus associated.

Within seven years after the principal purchases, the telephone plant in the entire State was practically rebuilt, exchanges enlarged to keep pace with the demand for telephones, land purchased and new buildings erected, equipment changed as justified to give a higher class of service, new exchanges put in service, lines extended into new territory and additional long distance circuits strung to meet the increasing demand.

In 1912, the entire plant at Douglas was rebuilt, underground conduit being constructed in the business part of the city, considerable aerial cable erected and new central office equipment installed; all the grounded lines were changed to metallic.

In 1913, the two exchanges at Phoenix were consolidated, the automatic plant of the Overland Company being retained, and at the same time many additions were made to this equipment as well as additions and improvements in the outside plant. At Nogales the outside plant was entirely rebuilt and a new central office installed. At Yuma, land was purchased, a building erected and new

common battery equipment installed therein; the outside plant was rebuilt and rural lines extended. Copper circuits were strung between Globe and Miami and between Globe and Safford. New pole lines with copper circuits were erected between Clifton and Morenci, between Globe and Hayden, between Tucson and Hayden, and between Clifton and Safford. The result of this work was to bring the districts around Clifton, Safford and Globe into connection with one another and the outside world.

In 1914, a new exchange was built Chandler, the central office being placed in our own building erected for that purpose. Extensive additions, both inside and out, were made at Phoenix to keep pace with the growth of the city. The entire outside plants at Mesa, Flagstaff, Williams, Florence and Glendale were rebuilt. A new central office was placed at Florence. A copper circuit was strung between Tucson and Nogales, the old line having become a wreck.

In 1915, considerable underground conduit was constructed at Tucson in order to remove the heavy pole leads from the main streets, and a considerable portion of the outside plant rebuilt. A new pole line and copper circuit was constructed from Benson to Bisbee.

In 1916, the outside plants of Prescott, Globe and Tombstone were rebuilt. At Tucson, land was purchased, a building erected and a new central office installed. A new central office was installed at Tombstone. A new pole line was built between Tucson and Nogales, a copper circuit strung and the one the one erected in 1914 transferred from telegraph poles. Unusual storms in this year caused an expenditure of money in the Douglas, Brisbee and Gila River territories, many miles of pole line being wrecked.

In 1917, a new exchange was built at Casa Grande and a new office installed at Humboldt. A new pole line and copper circuit was built between Phoenix and Wickenburg, between Clifton and Duncan, between Gila Bend and Ajo, while a pole line and additional circuits were built from the New Mexico State line to Benson, the existing line being removed from telegraph poles.

In 1918, land was purchased at Nogales, a new building erected and common battery equipment installed. New exchanges were built at Johnson and Somerton. The outside plants at Wilcox and Humboldt were rebuilt. Extensive additions in underground and aerial plant were made at Tucson, this completing the rebuilding of the exchange. A new building was erected at Courtland on our own property and our office moved into it. At Mesa, land was purchased and new building provided in which to place new common battery equipment. A pole line and copper circuits were erected between Flagstaff and Williams and between Prescott and Ash Fork. It is interesting to note that the latter line had just been built in 1912 when it was

purchased by Mountain States Telephone and Telegraph Company, it thus having had a life of only six years.

During 1919, the outside plant at Tempe was being rebuilt, as well as that at Jerome. At the latter place a new common battery equipment was installed. A new exchange was opened at Clarkdale.

The foregoing represents only the principal items of work that have been done, and those have been listed which show that practically the entire plant in the State was rebuilt and replaced by new plant. Many other extensions and additions were made and many other toll circuits on existing pole lines were strung. Additional equipment was placed in central offices. All the new work was engineered in accordance with the latest standard practices and the materials used were of the best so as to result in long life and that condition which is requisite for good service.

The magnitude of this new work was shown by the reports of the General Auditor. These show that the total on December 31, 1912 was \$1,309,206.27, while on December 31, 1918 it was \$2,633,740.75 or an addition in the six years of more than the original investment. All our new construction work, involving sums of \$500 or more, was done under specific estimates. A summary of the amount involved in these estimates is as follows:

<u>Year</u>	Gross Additions to Plant	Value of Displaced Plant	Net Additions To Plant
1912	\$53,975.00	\$18,658.00	\$35,317.00
1913	289,595.00	143,482.00	146,113.00
1914	219,891.00	118,862.00	101,029.00
1915	68,649.00	22,530.00	46,319.00
1916	320,965.00	117,276.00	203,639.00
1917	292,166.00	61,414.00	230,752.00
1918	345,382.00	83,732.00	261,650.00
1919	<u>150,063.00</u>	<u>54,089.00</u>	<u>95,974.00</u>
TOTAL	\$1,740,886.00	\$620,043.00	\$1,120,843.00

It will be noticed that additions on specific estimates alone involved an investment of \$120,843.00, old plant to the value of over half of this was written off. This does not consider those materials in the old plant which were reused to advantage or those parts which have been worked over and put into condition for

good service or corrected in such a way as to be utilized properly.

It is a matter of considerable pride to the Company that it was able to take a disjointed, obsolete and inadequate system and in the seven years preceeding 1919 make it over into one which was unified, up to date and capable of giving the very best service, not only in any one exchange or between any districts, but through its being a part of the Bell System, to obtain service to the most distant points in the country.