



# CONNECTIONS *news*

[www.telcomhistory.org](http://www.telcomhistory.org)

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Jody Georgeson, editor

## A Message from Our Director

*Happy Fall.* We had an outstanding Challenge Grant this year. Thank you to all who participated. Thanks also to our wonderful benefactor who matched the donations.

Seattle is open for tours and have had quite a turnout. They put a lot of work into getting everything perfect for their Grand Opening. There are an amazing group of volunteers In Seattle keeping all the switches working and keeping the museum in pristine shape.

I can't say this enough; thank you to all our volunteers. In Denver, Jon and Jack put our video library in shape and we now have a database of all the videos. Jack has been working in the Robert K Timothy Library, cleaning up our backlog and ensuring the accuracy of the database. Ron, our "jack of all trades," has been helping in the library, helping me to update descriptions of artifacts in the museum and performing myriads of other duties around the archive. Jon has taken on the job of archiving donated documents that have accumulated over the last few years. Mike has been cleaning up our overflow room; it's quite a chore. Then there is our Archivist, Jody. She handles research requests and collects wonderful stories for you to read in this newsletter she puts together. She has been with THG for over twenty years. and helps me and The Telecommunications History Group in more ways than I can write about. There is nothing she can't do [*editor's note – There are a few things I can't do, but don't tell Renee.*] and is invaluable in her knowledge of our organization and of telephone history.

I also want to thank all of you all for helping to keep telecommunications history alive.

March 1876 - Alexander Graham Bell makes the first phone call ever.



Moments later - He is notified that his car's warranty has expired.

Stay well and happy,  
Renee Lang, Managing Director

# AT&T

By John Swartley

The L-carrier system was one of the series systems developed by AT&T for high-capacity transmission of long distance-distance communications. Over a period from the late 1930s to the 1970s, they evolved in six significant phases of development, designed by the Bell System engineers as L-1 through L-5 and L-5E. Coaxial cable was the principal transmission medium in all stages. Initial development and testing took place between 1935 and 1937 on a test bed of 95-mile two-way coaxial between New York and Philadelphia. The system provided 240 channels over a single circuit.

In the 1960s, AT&T and the Defense Dept. started building the "harden coaxial cable" system due to the cold war. Beginning with the L-4 build, the network was designed to withstand a nuclear attack. The "L" system consisted of over 100 "Main Stations" and 1000 repeater vaults, each designed to withstand a nuclear environment. Main stations also were designed complete with generators, blast doors and housing to sustain the staff for a two-week post-attack period. Most of the system was dismantled in the late 1970s and early 1980s as ground-based communications networks were replaced by satellite systems.

The "harden coaxial cable network" connected some of the main Defense Department's locations together and would be able to withstand a nuclear bomb attack and keep operating. Cheyenne Mountain installation near Colorado Springs was one of the locations. Lamar was one of the main switching locations.



from <http://www.alleged.com/telephone/L4/>  
"20 tube L-4 cable next to 12 tube L-3 cable"



from <http://www.alleged.com/telephone/L4/>  
"key routes for the Department of Defense's communication's system during the Cold War"



*The equipment in these huge concrete underground bunkers was installed on springs like everything in Cheyenne Mountain to withstand the shock of the bomb blast. The main stations were manned 24 hours a day with sleeping quarters for technicians.*



In my research, I found this old underground AT&T repeater complex, for sale on E-Bay for only \$695,000. The sale includes 10 acres of land, 8,000 square feet of underground space, 3,800 square of steel mezzanine to make the second floor. It still has its working blast proof doors. The antenna is included.

The underground complex is located near Scott City Kansas, just 30 miles north of Garden City, where I was working as an installer while they were installing it. I do not remember this particular installation, but I do remember watching them trenching and installing the cable. It has been a while, but the last time we traveled along highway 96 the towers were still in place at each repeater location. All you could see was a small entrance building at each location.



Untold number of dollars were spent on underground bunkers including many in private back yards during the cold war, bracing for a nuclear attack which thankfully did not happen. I found it interesting that, after all the millions spent on making a failsafe system, the total AT&T long distance network was completely shut down in January of 1990 due to a computer glitch.

Like so many things in the communications world, all the L-carriers and micro-wave towers are no longer in service. They have been replaced, just like the miles of copper wire I spent "transposing" back in 1959 when I started my career, by satellites and fiber cable.



## My Years at Mountain Bell (continued)

By Kenneth E. Pratt, June 2005

*As promised, here is the rest of Ken's story:*

When MJE (Management Job Evaluation) was implemented and on a maintenance basis I was given an assignment in Functional Accounting (FA). FA was a new accounting system to more closely relate accounting to the function creating the transaction. All management personnel were assigned function codes reflecting the functions they performed. Again, I had a small group of managers in the states and other corporate departments assigned directly to me that did the assigning for their organizations. When the job code assignments were completed, we implemented a sampling system to check the code assignments to maintain their accuracy.



When Functional Accounting went to a purely maintenance basis, I was given a job in Personnel on Planning. This was primarily in the area of planning human resource requirements. Using Fortran, I made a computer model of movement of management people. With age distributions of employee groups, I determined retirements and estimated other attrition on an historical basis. This movement plus growth produced employee requirements for planning purposes and was reflected in the Mountain Bell Five-Year Plan.

The Personnel Department career ended in 1980. I was eager to get back to engineering. I never felt as if I really fit in the Personnel Department. Finally, an offer came through for me to join the Network Engineering Department. Network Engineering was also required to produce a five-year plan and I was offered the job of preparing it. Since I was experienced in five-year plans at Personnel, I took the job. Primarily it was a job of determining what the department was going to do and then getting it all into a presentable document for AT&T. Shortly after arriving at Network Engineering they lost their Personnel Manager. I took on that job also for several months until they could make other arrangements.

One interesting thing came up on AT&T's review of our Network Engineering five-year plan. In Wyoming management had found that when the clock struck noon long distance calling within the state dropped off significantly. They worked with their state Utility Commission and had implemented lower rates for the noon hour. This provided more revenue during the hour and reduced the peak loads at other times. AT&T liked that innovative plan and complimented us in their review. Our officers who were sitting in on the televised review looked at each other in amazement. They had failed to read the five-year plan closely before they signed off on it and knew nothing about the noon hour special.

Near the end of 1982 the company offered their first retirement incentive plan to district level managers. Being 61 years old, I took a close look at it but decided to work a

little longer. About this time, I was offered an assignment involving the Bell System breakup. Central office equipment and the associated buildings were inventoried to determine whether Mountain Bell or AT&T should be the owner. Bell Labs people were preparing computer programs to make the record and investment transfer and had needed our Accounting computer full time: Accounting said they couldn't have it. I took on a task force to implement the change. We found we had sufficient computing capacity so the transfer could be done without the computer being completely at their disposal.

A retirement incentive plan was to be offered again at the end of 1983, to be effective the moment before the Bell System breakup. I was then 62, close to the retirement age of 65, and retirement looked like the best option. Being privy to some of this information because of my personnel work, I was at the head of the line to apply for retirement when the plan was formally announced.

At the agreed upon time The Bell Telephone Laboratory personnel came to our Mountain Bell computer center and, with the help of our task force, implemented the change in ownership of some \$250,000,000 of investment with no problems. Still having a couple of weeks of vacation I soon checked out, ending a very good Bell System career of thirty-four and a third years .



### **UNDER A TELEPHONE POLE**

I AM a copper wire slung in the air,  
Slim against the sun I make not even a clear line of shadow.  
Night and day I keep singing--humming and thrumming:  
It is love and war and money; it is the fighting and the tears, the work and want,  
Death and laughter of men and women passing through me, carrier of your speech,  
In the rain and the wet dripping, in the dawn and the shine drying,  
A copper wire.

*Carl Sandburg (1878–1967). Chicago Poems. 1916.*

## Capehart Museum Collection

*The Capehart Museum closed in 2019. These items were purchased by THG at a subsequent auction.*

The Capehart Communications Collection, owned by Western Electric retiree Don Capehart and his wife, Rita (and operated out of an old Coca-Cola bottling factory next to their home in Corsicana, Texas), was a unique collection of communications equipment, telephones that spanned many ages from the end of the Victorian Age to modern times, media sources such as magazines, posters, and records, and other trinkets and gadgets used throughout the history of communication. The Collection showed the history of a major company, Western Electric, and its vital role in developing the telecommunication business.

Begun in 1984, the collection grew into one of the nation's largest privately owned museums of its kind. Western Electric was the manufacturing arm of the Bell System. From sewing machines to switches, telephone booths to toilets -- the Capehart Collection contained examples of many items manufactured by the Western Electric Company through the years. It also included artifacts, documents, and memorabilia from Bell Labs and AT&T.

Here are a few of our new treasures:



This master clock is now controlling the various switchboard clocks we have around the Seattle Connections Museum. Sarah had to clean and restore it before it would tick again. Eric did a great job of mounting it on the wall.





Poster from China



Western Electric ads from 1929 through 1950



Converse All-Star Chuck Taylor tennis shoe phone.  
Muraphone®, GEC (General Electric Company, LTD); UK

Edison Televoice dictation phone;  
1950s, Western Manufacturing



## San Luis Valley Telephone Company

Compiled & Edited by Jack R. Bol



Incorporated: Colorado

Location: Monte Vista

Date: 1902

Certificate: #32

Status: Issued

Signatures:

H. D. Abrams, President

Issued to: R. B. Wallace

### History:

The San Luis Valley Telephone Co. was granted permission to construct, repair and maintain a line of telephone wires along the public highways of the county.

Saguache Crescent  
Saguache, Colorado, 4.14.1898

The poles for the San Luis Valley Telephone are now being put up. The line will run to the Experimental farm on the Gunbarrel road, thence a branch to Del Norte and another to Center View and on to the several towns in the valley. —Monte Vista Journal.

Saguache Crescent  
Saguache, Colorado, 4.21.1898

A San Luis Valley Telephone company has been organized at Monte Vista with a capital of \$10,000. The object of the company is to connect all valley points, and the valley system thus formed with the outside world.

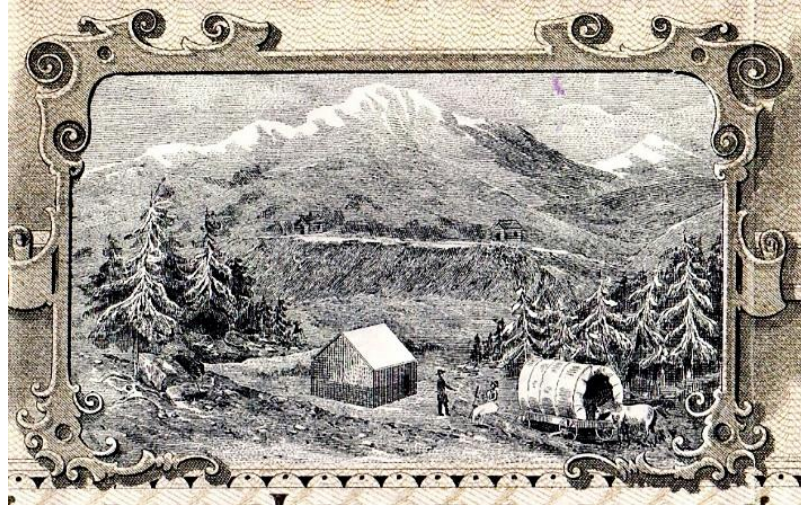
Salida Mail  
Salida, Colorado, 5.29.1898

Manager Burris, of the Colorado Telephone Company, states that there has been six San Luis valley telephone girls married within the last three months. He also added that he is deluged with applications for employment.

La Jara Chronicle  
La Jara, Colorado, 5.24.1907



San Luis Telephone  
Company Stock  
Certificate Vignette



**TELEPHONE COMPANY ANXIOUS TO DEAL WITH VALLEY PATRONS  
COMMITTEE CALLED TO DENVER TO DISCUSS LEASE OR PURCHASE  
OF LOCAL HELLO EQUIPMENT FROM THE TALK TRUST**

Last Sunday night a committee left Alamosa for Denver to confer with the Mountain States Telephone and Telegraph company concerning the purchase or lease of the former company's wires and plant in the San Luis valley. The committee went to Denver at the request of the Mountain States Telephone company, which paid all expenses incident to the trip and stay in Denver. Those composing the committee and counties are:

Alamosa county—James A. Mc Donald, Alamosa. Conejos—D. E Newcomb, La Jara, vice president of the San Luis Valley Telephone company. Saguache—Scott Carroll, Center. Rio Grande—O. A. Kramer, Monte Vista, president and treasurer of the San Luis Valley Telephone company. Charles A. Galbreath, of Del Norte. The Mountain States people, seeing the independent company's progress in the installation of the new plant in the valley and the temper of the people to make it an unqualified success, now wish to make something out of the deal by selling or leasing their wires down here to the Valley company. The committee returned from Denver Friday and reports having received courteous treatment from the Mountain States people, who candidly admitted their appreciation of the serious condition of affairs in this district.

The committee took up with the Phone company the question of purchase or lease of the present equipment of that concern, and the following proposition was proffered for consideration by the people of the various communities in the San Luis valley: The company would rather sell than lease their lines and equipment. In either event they are, like Barkis — willing. They will sell at a figure to be determined by a commission composed of two engineers, one to be appointed by each of the contracting parties. In the event that these men cannot agree, a third appraiser shall be chosen by the engineers, and both parties to the arrangement shall abide by the conclusion reached under these conditions. With respect to a leasing proposition, the company agrees to transfer its holdings on the basis of first cost of all the plants, interest figured at 7 per cent, plus 6.6 per cent for depreciation. A thorough investigation was made by the committee as to costs of installation and upkeep of a new

telephone system. In this regard they had the benefit of the experience of independent companies in the northern end of the state.

It was found that calculations hitherto submitted are very far from exact and that the estimated cost of \$50 per phone is approximately three times less than the probable cost of a new system. If the San Luis valley people decide not to buy or lease the present telephone system, the Mountain States people offer to install an open battery system in Alamosa and other towns of the valley, a system similar to that used in Denver. They also will agree to run a special line to Hooper and Mosca and connect Alamosa with any point desired wherever five subscribers will make application for such service. Other improvements were offered, both for Alamosa and other valley towns. In view of information in the committee's possession, it is hoped that means will be found for an amicable adjustment of the telephone trouble. The Mountain States company is now meeting Valley people with a spirit of fairness not hitherto shown, and a similar spirit in return will best serve the interests of all. The committee will submit its full report to the meeting of the San Luis Valley Commerce club, which will be held at Center on June 6th.

Alamosa Courier  
Alamosa, Colorado, 5.30.1914

### **Castle Rock Historical Society and Museum**



THG is always happy to partner with other museums and archives. We were contacted recently by the museum in Castle Rock to borrow some artifacts for a special exhibit about telecommunications. Located in the old Castle Rock railway depot, this fascinating museum tells the stories of local history, area geology and the military. More about the historical society and museum is at [www.castlerockmuseum.org](http://www.castlerockmuseum.org)



A "scissors phone," a modified candlestick, was often used by station masters who needed their hands free for other chores.



A small PBX like this may have been used in a small-town station.



Thanks to the folks at the Castle Rock Museum for allowing us to be part of their exhibit!



***We hope you have a SUPER Autumn!***





**TELECOMMUNICATIONS  
HISTORY GROUP**