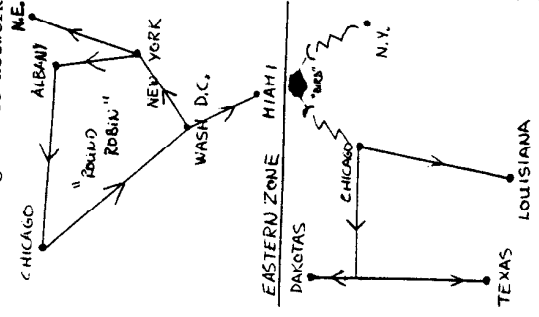


How a Radio Network Works

by Karl J. Zuk

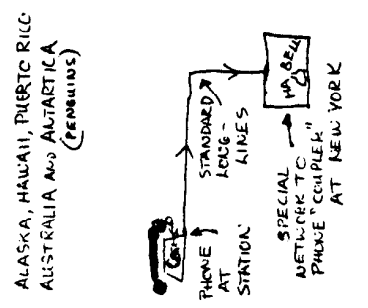
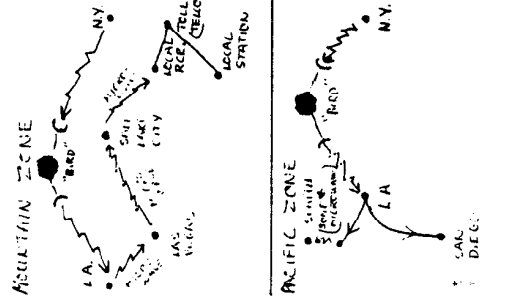
When you hear a network radio program from thousands of miles away, do you hear it by magic? Well, almost. Here is a brief description of how it all works. As a case study, let's look at the ABC Radio Networks. The network has to provide programming to over 1700 radio stations nationwide and be able to feed each of the four time zones different programming if necessary. This gives the network flexibility to play a commercial at 8am local time to each time zone to promote a McDonald's breakfast or whatever without playing the spot four times to the entire nation. Each time zone has a different method of getting network programs from ABC's studios in New York. The Eastern Time Zone uses mainly high quality telephone circuits, usually 5khz quality, to get its message across. The heart of this system is what is known as the "Round Robin". A main signal trunk sends the network from New York to Albany, NY, then on a winding path to Chicago, Illinois, where ABC has another news bureau. From Chicago the signal goes south to Washington D.C. where ABC has yet another news bureau, and then back to New York. This system was devised so that New York can hear its programming "coming back" on this loop so that we know that it is being heard down the line, and we can localize trouble if one of the circuits goes bad. All along this "Round Robin" are telephone company "tolls". These are large switching offices that relay our signal from one place to another, just like your phone call to Aunt Millie in Topeka. Your local station simply rents another radio quality phone circuit from its location to one of these many toll offices, and the connection is made. New England and the Southeast have separate main signal trunks to feed their stations. The New England feed originates in New York, just like the "Round Robin" and the Southeast gets its network feed from our news bureau in Washington, M.E.



CENTRAL ZONE
It is simply easier or less expensive to do it another way. This is where microwave circuits come into the picture. For example, it is easier to send the network programming from

Albany, New York to Burlington, Vermont by microwave instead of using the telephone circuits. The signal goes to the Albany toll using the Round Robin system, a microwave company in Albany gets the signal from the phone company via a microwave trunk, and relays the signal via microwave to Burlington. The radio station has a line to the microwave company receiver, and the connection is made. The Mountain Time Zone is the most complicated of the four. In the other three time zones, the heart of the network distribution are main trunk lines that ABC rents from Bell System Long Lines. In the Mountain Time Zone, the network programming, again, originates in New York and is fed, via satellite audio circuits to Los Angeles. It then goes on a microwave trunk circuit to Las Vegas and then to Salt Lake City. This service is not provided by "Ma Bell". The satellite services and this mountain zone trunk are provided by several different competitors of the Bell System. The microwave service beams the network programming from point to point after it reaches Salt Lake City to all the cities who have stations who want the network programs. This microwave service rents a program line to the telephone toll closest to the station that wants the network. This line connects the microwave service with the phone company. As before, the station rents a line from the telephone toll to the station location, or intercepts the microwave signal on its own and again, the connection is made. There are several areas where these inter-connection systems are mixed and integrated. A network program may go via microwave to Salt Lake City, then on telephone circuits for several hundred miles and back onto a microwave circuit, then to a microwave service station that sends it to a toll and then to the station. As you can see, it can get very complicated; and when something goes wrong, even more complicated to find out what caused the problem!

The Pacific Time Zone is fed in a similar manner. The programs originate in New York, and are transported to Los Angeles by satellite channel. Just like the feed to the mountain zone, they go through our news bureau in Los Angeles and on their way to the stations. In the Pacific zone there are two main telephone trunk lines. One goes north of Los Angeles and one goes south. Almost all of this time zone is serviced by the Bell System, except in the northwest (like Seattle), where the telephone trunks are sent to microwave services that send it, much like the mountain zone, to the stations directly or by another phone interconnection. Finally, we have affiliate stations in Alaska, Hawaii, Puerto Rico, and even Australia. How do they get their network service? They call special phone numbers in New York that will connect them directly with the network. The stations put these calls on the air just like the talk shows do, except you hear the network instead of the guy who favors gun control. There will be a test on Thursday; any questions?.....KZ 9/81



ALASKA, HAWAII, PUERTO RICO, AUSTRALIA AND ANTARCTICA (PENINSULA)