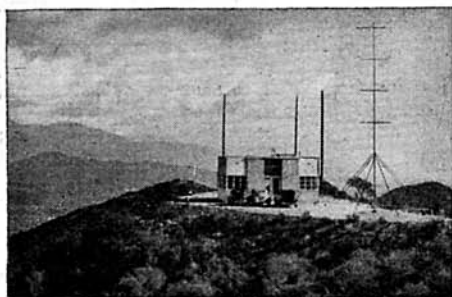


K45LA—ONLY "COMMERCIAL" ON WEST COAST

FRANK KENNEDY

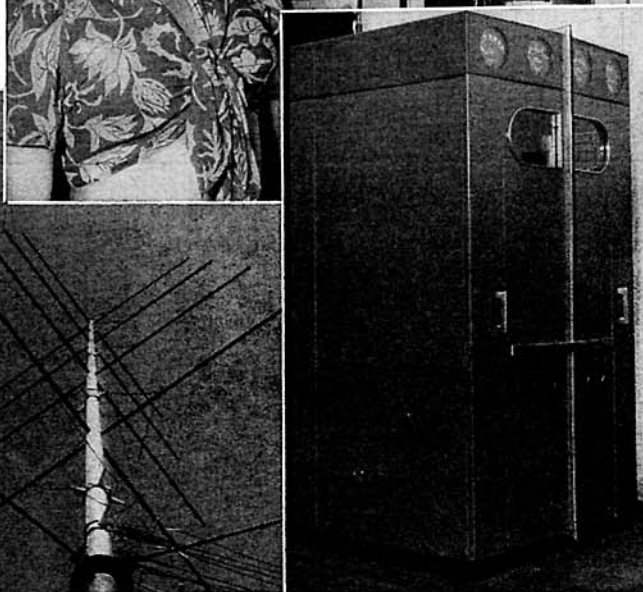
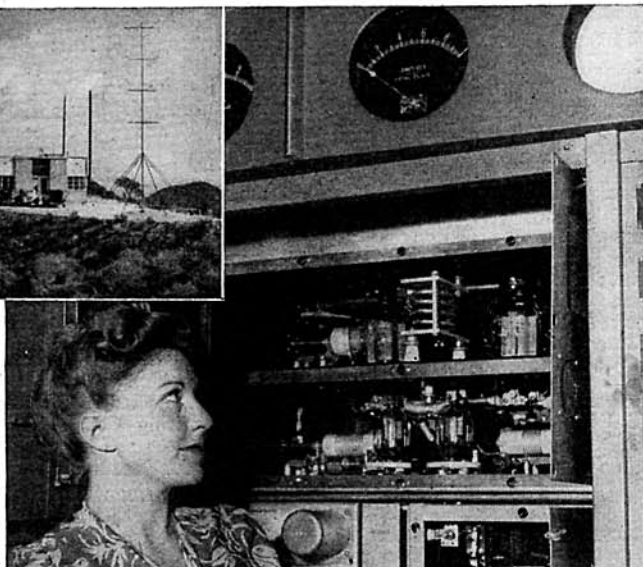
Chief Engineer, Don Lee FM System.



Above—View of FM station K45LA, erected atop Mt. Lee in Hollywood. Right—Virginia Simms takes a peek at the internal structure of the W. E. Frequency Modulation Transmitter operated by the Don Lee Broadcasting System in Hollywood.

Below — A "bug's-eye" view of the 4-bay turnstile antenna of FM station K45LA.

Lower right photo shows the W.E. 1000 watt FM transmitter; note the "blackout" curtains.



diated was two kilowatts output for one kilowatt input. This is believed to be the first check, by free-space measurement on an FM antenna in the United States.

The first commercial FM station on the Pacific Coast, K45LA made its official bow at an auspicious ceremony arranged by Lewis Allen Weiss, Vice President and General Manager of the Mutual Don Lee network, owners and operators of the FM station, on the evening of August 11, 1941.

Using a large volume of its own originations, the World Recording library and occasional programs off the Mutual and Don Lee lines, K45LA maintains its individual program structure, although the brilliant musical programs such as the Coca Cola "Spotlight Bands" program, the Standard Symphony hour, and the Betty Rhodes show, "Adventures in Melody," with Dave Rose, are duplicated from the Mutual Don Lee network.

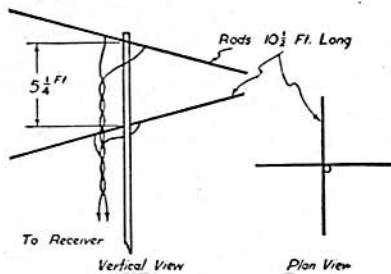
It has been found desirable to use a non-directional antenna at the receiver which will receive all stations. A simple type is shown in the illustration which incorporates two horizontal dipole or rod antennas arranged at right-angles. They are vertically spaced about one-fourth wavelength apart or approximately 5¼ feet. The center of each rod antenna can be supported on a pole. A twisted-pair feeder is connected, one wire to each half of the top section. The connection is made about 12 inches from each side of the center. Another twisted pair is connected to the bottom section in the same manner. Then the two twisted pairs are connected together a little lower down, and continue as one twisted pair to the receiver. This provides an antenna somewhat similar to the "turnstile" antenna used by FM broadcast stations.

NO SERIOUS SETBACK TO FM GROWTH

Mutual Don Lee Vice President and General Manager Lewis Allen Weiss recently surveyed radio's position in the present emergency, to foresee an even closer gearing of broadcast operations with the national "all-out" effort to win this war.

Said the Pacific Coast executive who manages the 32-station Don Lee chain from Canada to Mexico, "Twenty-four hour broadcast schedules are a first step in radio's service to listeners, in a total program of strengthening morale and keeping the public informed within bounds of national safety, while making broadcast facilities immediately available to governmental uses whenever the need may require."

Despite wartime demands on metals and parts, Weiss sees no serious setback in 1942 for *Frequency Modulation*, radio's newest contribution to an improved, high-fidelity system of broadcasting. He believes that manufacturers will probably use their limited quotas of materials for manufacture of quality FM-AM combination sets, to make up for volume production of cheap AM midget receivers stopped by material shortages. Don Lee introduced Frequency Modulation to the Pacific Coast with inauguration of its commercial FM station K45LA on August 11, 1941, and has been on a daily broadcast schedule since that



Simple FM Receiving Aerial

THE Don Lee setup is one of the most interesting in the United States because the Western Electric transmitter, Model No. 503 A-1 is located in a special building atop 1,700-foot Mt. Lee, overlooking Hollywood.

The station operates on 44.5 megacycles and there is no trace of noise at the carrier. Audio characteristics are flat, plus or minus one decibel, 30 to 15,000 cycles. Frequency stability is better than 1,000 cycles at carrier. The linear modulator has a 75-kilo-

cycle swing. Distortion is less than 1%.

The station operates on 1,000 watt power and Western Electric cardioid microphones are used in the studios.

Programs originate at the Don Lee studios at 5515 Melrose Avenue in Hollywood, where all studios, announcer booths and associated circuits were designed and built for FM quality. A 15,000-cycle line leads directly over a four-mile path from the Don Lee studios in Hollywood to the transmitter atop Mt. Lee. In addition, half a dozen remote spots have been equipped with special high-fidelity telephone lines leading to Hollywood Don Lee studios.

Listener-response has been tremendous and auditors from San Diego to Ventura indicate that some of them live more than 100 miles from the transmitter atop Mt. Lee.

A new achievement in free-space measurement was made by the author recently when he circled the site in the Goodyear Blimp, "Resolute." Proof was obtained that the calculated effective useful power ra-

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Many FM Questions

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time, with a consistent growth noted in number of listeners for the area.

"Radio will continue to entertain and to educate," concludes Don Lee's managerial head, "but with one main objective in view . . . a calm, unhysterical welding together of America's mind, heart and muscle in a whole effort to defeat the enemy and effect an early, sure peace."

Los Angeles is one of the best cities in the nation for FM. Since Station K45LA went on the air on August 11 an additional 15,000 sets were put into use, bringing the total number of sets in operation on the Pacific Coast up to 20,000. At the present time there are 2,000 sets being sold per month. Dealers, jobbers, and retailers are well stocked and sales are "going to town" with the whistle cord tied down, according to reports from the Los Angeles sector.

FM Grows Amazingly

FM in Philadelphia:—Definite plans for inauguration of service on W53PH, WFIL's new FM station, were recently announced. W53PH, Philadelphia's first FM transmitter, went on the air Monday, November 10, and operates daily from 2 to 8 p.m. The antenna is located on top of the Widener Building in the very heart of Philadelphia.

Program plans call for no duplication of AM service, with the exception of a few outstanding shows and some special events. The schedule will have "news" for five minutes before each hour and the rest of the schedule will be classical and semi-classical music. The station will also include special events features planned for FM only, and will release some of the network shows which WFIL is unable to carry locally.

Audience Over Quarter Million:—Continued gains in sales of FM receivers have boosted the available listening audience for the country's FM stations far beyond the most optimistic expectations.

On the basis of reports from manufacturers, now turning out about 1,500 receivers a day, FM's national trade association, FM Broadcasters, Inc., has compiled figures showing that over 240,000 frequency modulation sets are today in American homes.

The largest single group is found within the New York City service area where approximately 50,000 have been sold. Chicago's total is well over 25,000. New England has more than 22,000 sets. Other areas where FM listener growth has been correspondingly swift include Detroit, 12,000; Los Angeles, 15,000; Milwaukee, 6,500; Pittsburgh, 8,000.

Several cities where FM stations are still under construction already claim sizable quotas of sets. An outstanding example has been Philadelphia which, until recently, enjoyed no local FM service and yet had approximately 5,000 receivers available in homes.

Production schedules, together with current sales trends, indicate further heavy increases in the FM listening audience through this spring's receiver buying. At the start of 1941 there were approximately 15,000 FM sets in the entire country.

Construction permits authorized for additional FM transmitters will further extend frequency modulation service in the cities of Chicago and Detroit. The Federal Communications Commission also approved an educational FM station for Memphis, Tennessee.

This brings the total of commercial FM broadcast installations thus far sanctioned by the FCC to 63.



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