

# K ★ M ★ P ★ C

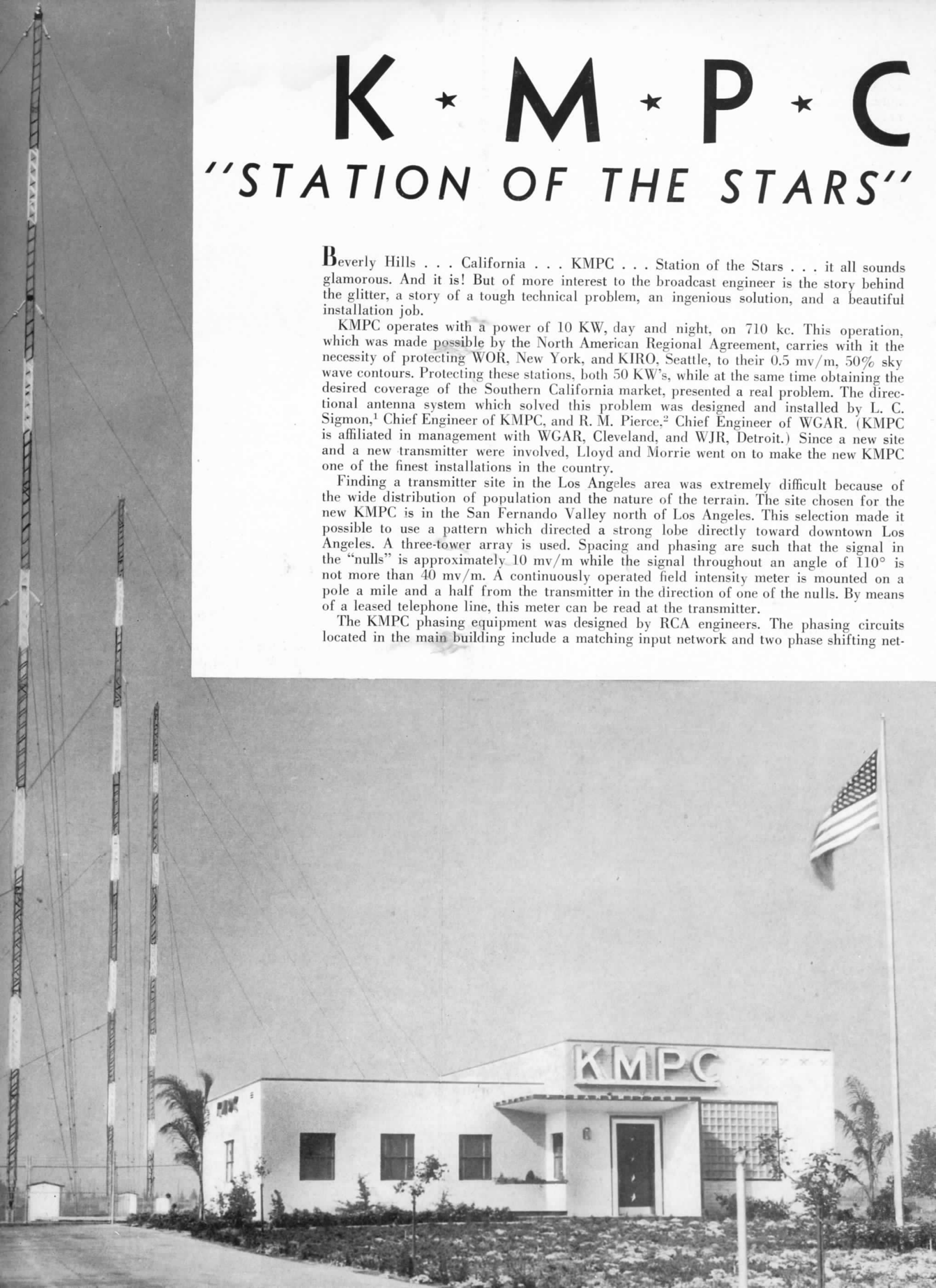
## "STATION OF THE STARS"

Beverly Hills . . . California . . . KMPC . . . Station of the Stars . . . it all sounds glamorous. And it is! But of more interest to the broadcast engineer is the story behind the glitter, a story of a tough technical problem, an ingenious solution, and a beautiful installation job.

KMPC operates with a power of 10 KW, day and night, on 710 kc. This operation, which was made possible by the North American Regional Agreement, carries with it the necessity of protecting WOR, New York, and KIRO, Seattle, to their 0.5 mv/m, 50% sky wave contours. Protecting these stations, both 50 KW's, while at the same time obtaining the desired coverage of the Southern California market, presented a real problem. The directional antenna system which solved this problem was designed and installed by L. C. Sigmon,<sup>1</sup> Chief Engineer of KMPC, and R. M. Pierce,<sup>2</sup> Chief Engineer of WGAR. (KMPC is affiliated in management with WGAR, Cleveland, and WJR, Detroit.) Since a new site and a new transmitter were involved, Lloyd and Morrie went on to make the new KMPC one of the finest installations in the country.

Finding a transmitter site in the Los Angeles area was extremely difficult because of the wide distribution of population and the nature of the terrain. The site chosen for the new KMPC is in the San Fernando Valley north of Los Angeles. This selection made it possible to use a pattern which directed a strong lobe directly toward downtown Los Angeles. A three-tower array is used. Spacing and phasing are such that the signal in the "nulls" is approximately 10 mv/m while the signal throughout an angle of 110° is not more than 40 mv/m. A continuously operated field intensity meter is mounted on a pole a mile and a half from the transmitter in the direction of one of the nulls. By means of a leased telephone line, this meter can be read at the transmitter.

The KMPC phasing equipment was designed by RCA engineers. The phasing circuits located in the main building include a matching input network and two phase shifting net-





**KMPC TRANSMITTER ROOM**—The 10-E transmitter, the phasing equipment for the three-tower antenna array, and the speech input and monitoring equipment are all mounted behind the single "unified-front" type enclosure shown above. The operator's console and a monitoring speaker mounted in the ceiling are the only other items of equipment in the transmitter room. The extra panel units which make this ultra-streamlined installation possible are optional accessories with the 5-E and 10-E transmitters.

works. The third line requires no phase shift network at this point. All three towers are fed by lines running directly from the main building. Since one tower exhibits critical characteristics, means are provided for both local and remote control of tuning elements affecting both matching and phasing. This system has been in operation a little over a year and has operated very satisfactorily.

### THE TRANSMITTER

The transmitter installation at KMPC is just about the ultimate in streamlining. There are no separate phasing cabinets, no ungainly speech racks, no isolated items of test equipment to clutter up the transmitter room. All of the equipment is mounted behind a single "unified-front" enclosure. By this means connections are kept shorter, installation costs reduced, and a neat, businesslike appearance achieved.

The transmitter, a 10-E, is described at some length in another article appearing in this issue. As noted in that article, the modifications required in changing a 5-E (power output 5 KW) to a 10-E (power output 10 KW) are relatively minor and consist for the most part of changing over a few components. (The extra tube socket is already in place.)

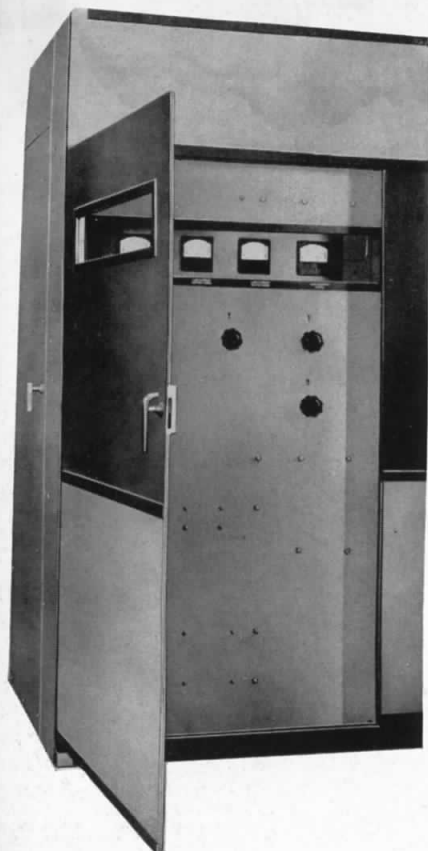
Referring to the picture above, the transmitter proper constitutes the four center panels of the installation, each panel having a door for access to the interior of the unit. At the left of these four basic units is an additional unit containing the phasing equipment and at the right a similar unit containing the speech input and test equipment. The panels of these two extra units are identical to those of the basic transmitter.

The phasing and speech equipment cabinets are standard units available as optional equipment with the 5-E/10-E transmitter. The curved end sections of the basic transmitter are readily removable to permit the insertion of these units. In addition to the greatly improved appearance, there is also a functional advantage. The phasing unit, for instance, is adjacent to the power amplifier unit. A 12" length of bus bar serves as the necessary r-f connection. The speech input cabinet, while somewhat further from the low-power audio stages, is nevertheless located so that interwiring can be run in the channel in the base of the transmitter. The only duct necessary is that to the control console.

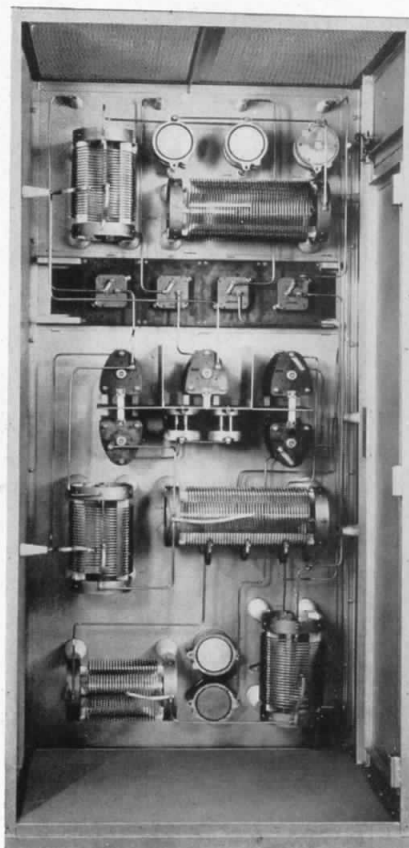
The transmitter is finished in two shades of gray-blue and provided with chromium trim strips. All important controls are duplicated on the operator's console which, incidentally, is the only piece of equipment in the transmitter room. The fireproof brick and concrete building carries out the modern motif of the installation. Matching or complimenting colors are used throughout. The floor of the transmitter room, for instance, is blue asphalt tile. In daytime, light is furnished by windows on three sides of the room and at night by fluorescent lights in the ceiling and in recesses above the transmitter panels. KMPC has probably achieved one of the best-looking 10 KW installations made to date.

<sup>1</sup> Now Captain, H. Q. Services of Supply, Signal Corps, U. S. Army.

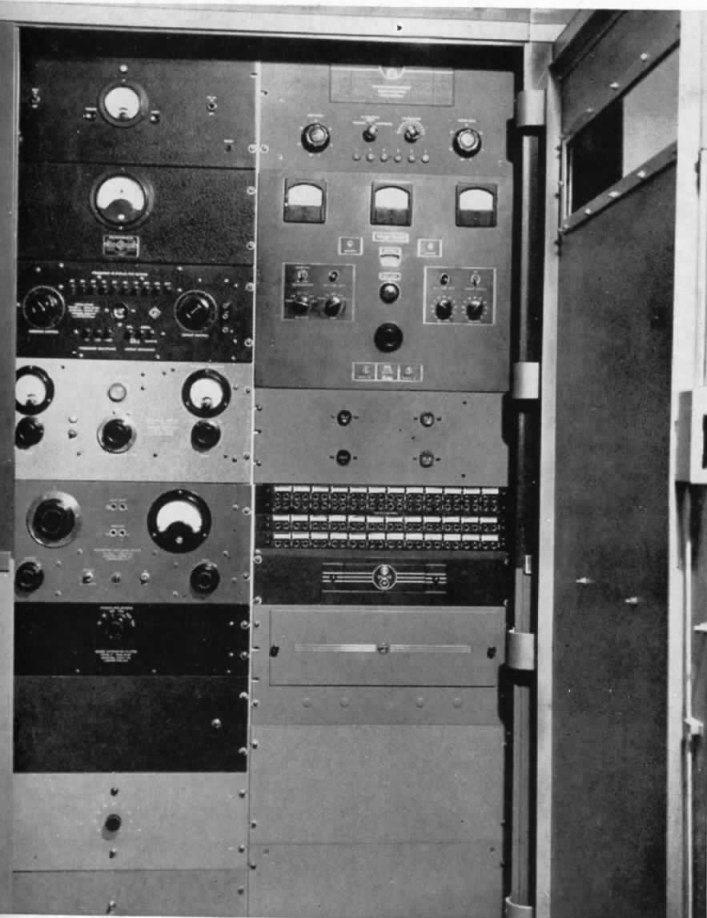
<sup>2</sup> Now Chief Engineer, Psychological Warfare Branch, Allied Force Headquarters, Algiers.



**INTERIOR** of the phasing cabinet at KMPC. This was taken with the rear wall removed in order to show the arrangement of components. As installed, the back is permanently affixed so that the unit may, if desired, be mounted against or close to the back wall of the building. Entrance to this cabinet for purposes of inspection and maintenance is by means of a hinged door in the side, which may be seen in this picture. The cabinet is deep enough for a man to enter and work on the equipment without cramping.



**PHASING** equipment controls at KMPC. This is the view presented when the extreme left door of the transmitter enclosure is opened. Inadvertent operation of these controls is avoided by placing them behind the door. The meters can be read through the viewing window. In earlier installations, phasing equipment was mounted in a separate unit, usually located apart from the transmitter. The phasing equipment cabinet, available as an optional accessory with the 5-E/10-E transmitter, actually saves space and reduces wiring connections as well as improving appearance.



**SPEECH** input and test equipment at KMPC. This is the view presented when the furthest right door of the transmitter enclosure is opened. In most stations this equipment presents a rather motley appearance, so that mounting it behind a door like the one furnished as an optional accessory with the 5-E/10-E transmitter greatly improves the appearance of the whole installation. Meters of the frequency and modulation monitors, which are the only ones of concern during routine operation, can be observed through the glass viewing window. The door, of course, is not interlocked and can be opened during operation.

**REAR** view of the speech input and test equipment cabinet at KMPC. This cabinet is wide enough for two racks of equipment, is 36 inches deep, and is provided with a hinged door on the side. (The back is left clear so that the whole transmitter may, if desired, be mounted against the back wall of the building.) Angles, with standard mounting holes, are provided at the front of the cabinet so that speech units may be mounted as standard racks. With units of ordinary depth there is room to enter the cabinet for inspection and maintenance operations.

