

# 5-E BROADCAST TRANSMITTER

The newest in a famous line—successor to the 5-D/5-DX transmitter, the most popular 5 KW broadcast transmitter ever built. One of the new features is an arrangement whereby speech input and phasing equipment can be mounted behind matching extensions of the “unified” front. The curved ends of the basic unit shown above can be removed and an extra front unit added to the right end which is wide enough to accommodate two speech racks. A second unit, wide enough for a standard phasing cabinet, can be added to the left end. The KMPC installation shown on Page 39 is an illustration.

## Walk-In (From-the-Front) Construction ►

The basic 5-E is shown here without the unified front. The four compartments, from left to right, contain the power amplifier, the low-power stages, the modulator and rectifier, and the control circuits. Doors in the front (see above) give access to each of these. The only external units are the modulation transformer and the plate transformer. If desired, these can be mounted on top of the transmitter (or in the basement), in which case the equipment can be set flush against the back wall of the building.

# THE **5-E** AN ENGINEER'S TRANSMITTER

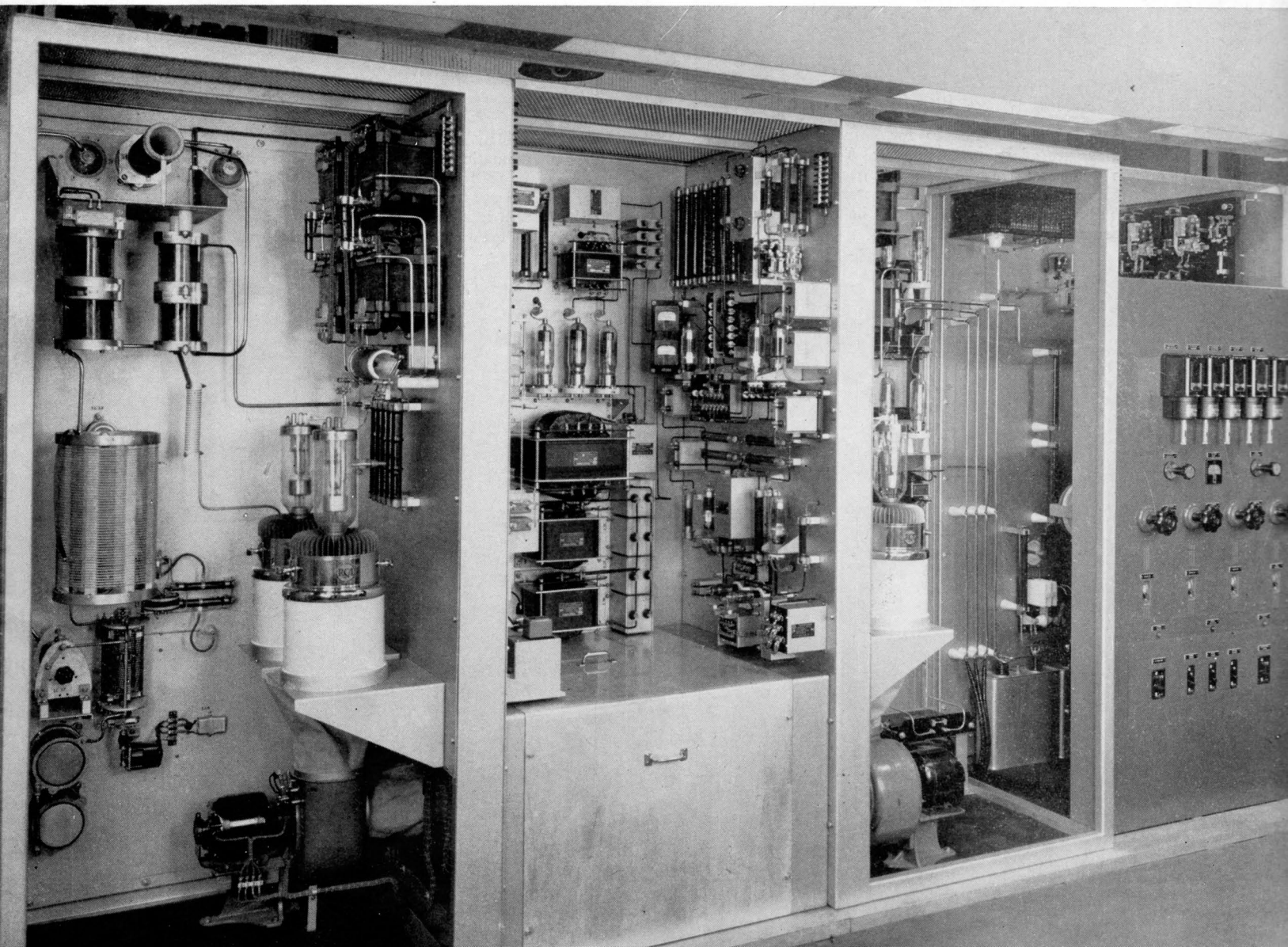
by **J. E. EISELEIN** • PRODUCT MANAGER, SPECIAL APPARATUS DEPARTMENT

The 5-E is an engineer's transmitter. It includes the features they particularly want—arranged, in so far as possible, in the way they want them arranged. For a decade RCA 5 KW broadcast transmitters have been outstanding. They have enjoyed an acceptance, particularly among station engineers, which has been unapproached by any design of any make.

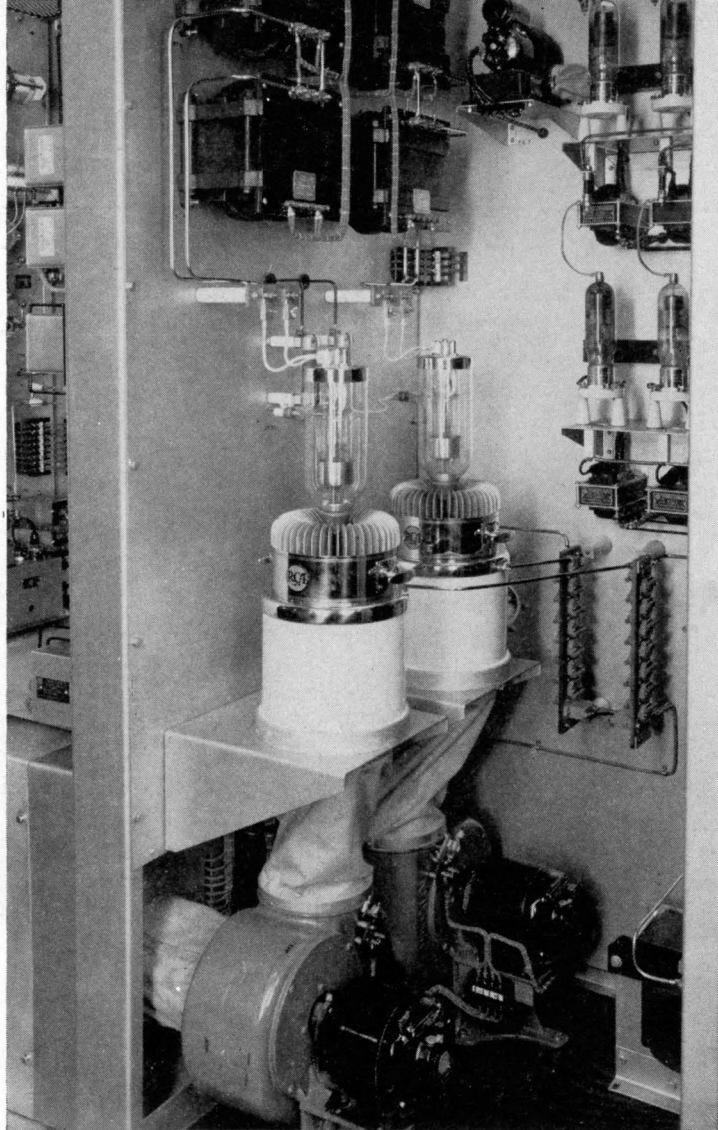
In the process of planning these 5 KW installations with station engineers, and in testing and placing them on the air, RCA engineers have had an unequalled opportunity to learn the problems of 5 KW stations, to find out what station engineers thought they needed and would like to have incorporated in a 5 KW transmitter. Through this intimate association, RCA engineers have become real experts—experts in fact and in application, as well as in theory. Each new design in the 5 KW series, from the 5-A through the 5-B, the 5-C, the 5-D, and 5-DX, has seen new improvements added as the result of practical field experience

combined with laboratory development. In the 5-E this evolution has reached a new peak. A completely new design, the 5-E has many new features, features which station engineers have asked for. This transmitter was built for them!

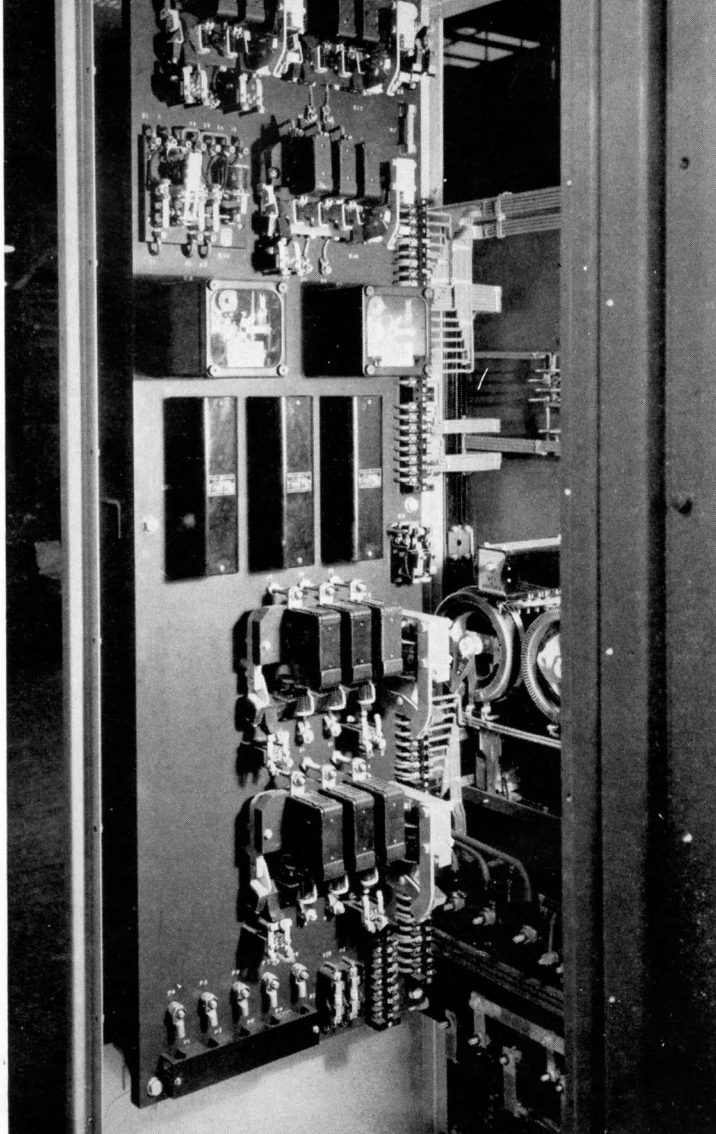
The 5-E transmitter has been designed for either 5 KW or 10 KW operation. Only the modulation components are different; changeover can be accomplished in a few hours. All parts are conservatively rated and have been largely standardized so that a few spares go a long way. Accessibility is even greater than in the 5-DX, and all access is from the front. Installation is simple, as only plate and modulation transformers are external. The unified front is a separate unit in itself, wired to convenient terminal boards requiring only jumper connections. Inter-unit wiring runs in one of the channels which form the transmitter base. There are many other new ideas, some of which are illustrated and described on the following two pages.







**ACCESSIBILITY** Separate blowers for each tube simplify duct work and assure adequate cooling air. A single plenum chamber from which all blowers draw air has a single dust-filter, easily removed for cleaning. Blower motors are accessible for servicing. Blower impeller blades can be easily reached for cleaning from plenum chamber.

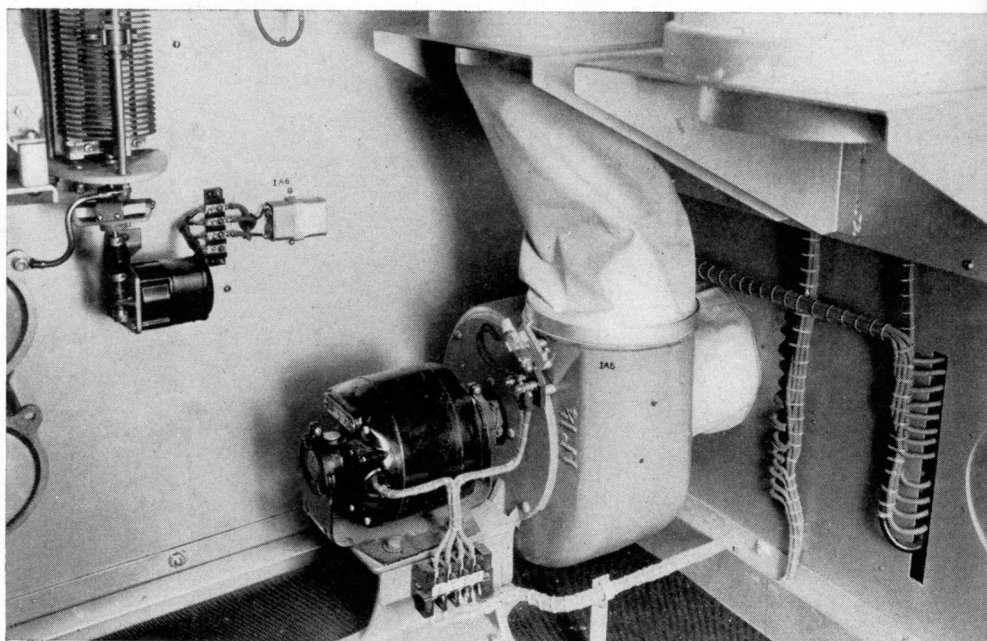


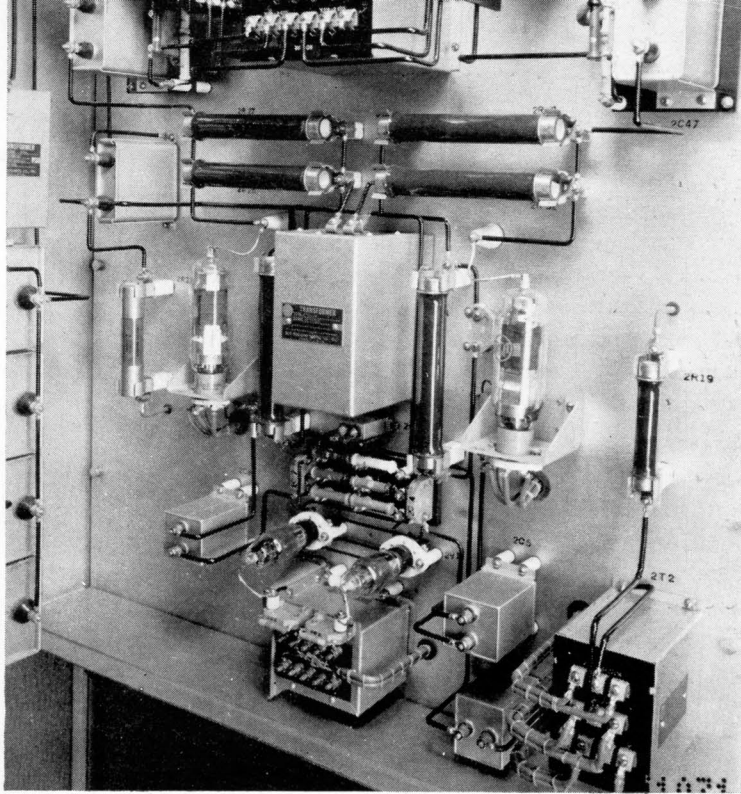
**BRAIN CENTER** RCA transmitters for years have incorporated automatic operational and protective controls. If the controls are set for automatic operation a four-step relay will operate to reapply full power after a first and second overload, but on a third recurrence, power is automatically reduced. If the fault persists for a fourth overload, power is removed completely.

# 5-E

continued

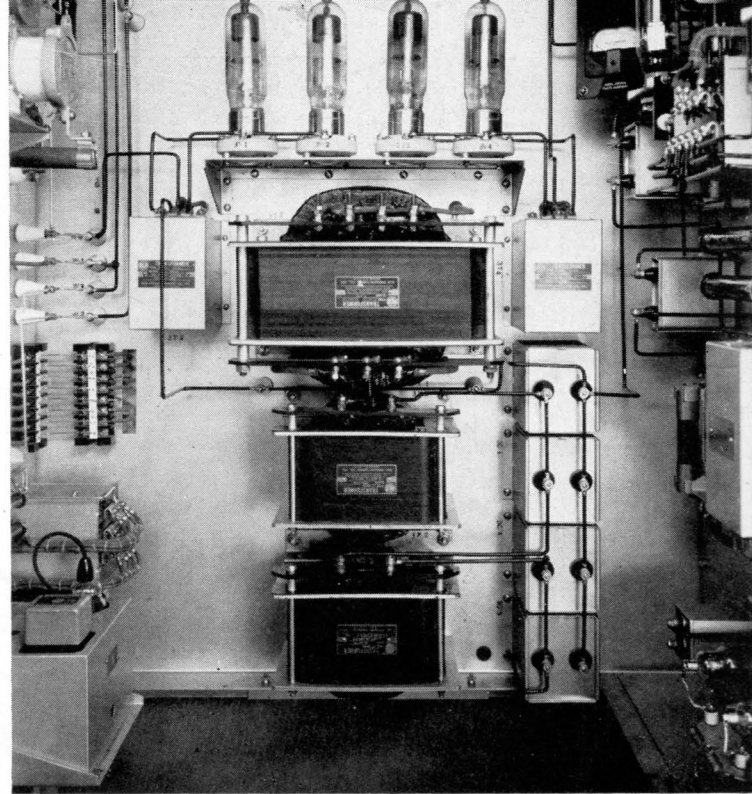
**MOTOR-DRIVEN TUNING** There are no complicated mechanical drives to variable tuning elements. Preset tuning and fixed neutralization reduces variables to two: grid drive and vernier output control. These are provided for by variable inductors driven by husky motors controlled by push-buttons on the panel.





**CONVENIENCE** Low-power stages of the 5-E. Wiring is in the clear, easily followed. Terminals are accessible, easily checked. Any component can be removed without moving others. Only three types of tubes are used in the audio and modulator stages; only seven types in the whole transmitter.

**PUSH-BUTTON XTAL CHANGE** A single push-button controlled toggle-action relay which will hold its position with or without power is provided for changeover between crystal units. Another relay automatically blocks out the oscillator for a few mille-seconds when a control button is pressed. This is useful for parasitic check.



**SIMPLICITY** Low-voltage plate and bias rectifiers mounted on back wall of center unit. These and a high-voltage plate rectifier supply all required voltages. One type of tube—the new RCA-8008 Mercury Vapor Rectifier—is used in all three, thereby reducing the number of spare tubes required.

**SPARE TUBE** In the power amplifier compartment there is an extra socket which for 5 KW operation can be used to store a spare RCA-892-R tube. For 10 KW operation this extra tube is connected in parallel. Only minor additions are required for 10 KW output. Use of RCA-892-R tubes in both modulator and p.a. simplifies replacement problems and reduces tube costs.

