



FIG. 1. Front panel of the "Voice of America" transmitter as seen from right side of room.

VOICE OF AMERICA'S 150 KW TRANSMITTER

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The U. S. Department has put a 150 KW AM transmitter into operation in Munich, Germany, to carry the Voice of America programs deeper into Eastern Europe and Russia.

The new transmitter is the RCA Type BTA-150A, developed by the RCA International Division. It augments existing facilities of the State Department in the

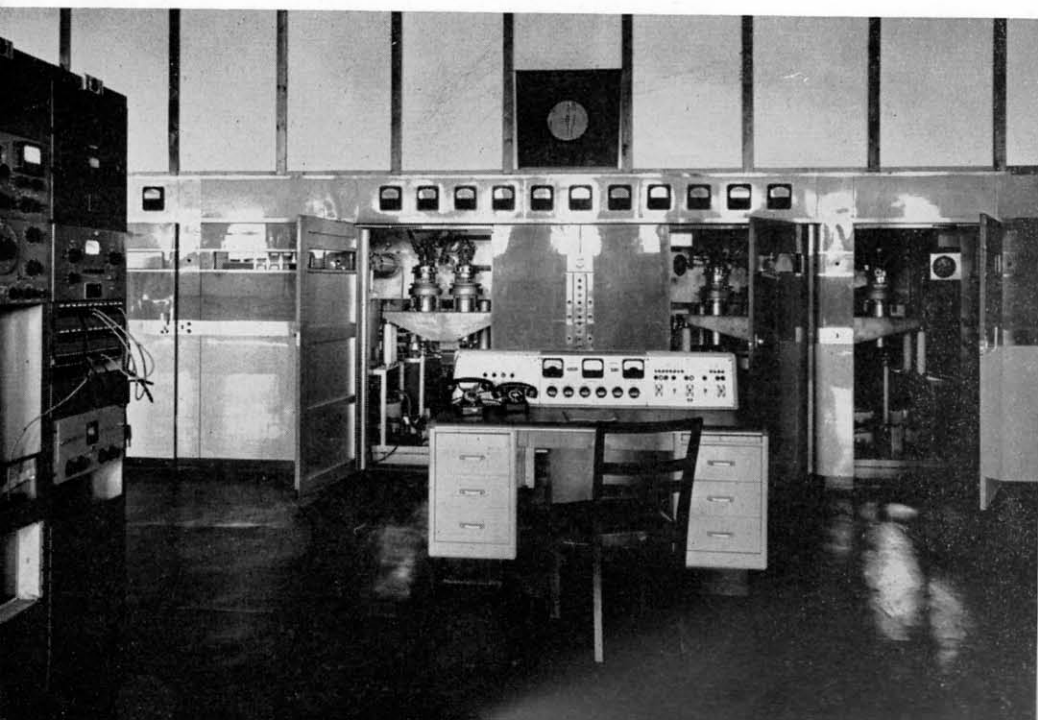


FIG. 2 (left). Picture taken from entrance of transmitter building. Control console (center) and measuring racks (at left). Open doors of transmitter show R.F. driver stage on left and power amplifier stage at right.

Munich area, which consist of four 100 KW short-wave transmitters. Also included in the Munich installation, but operated independently of the Voice of America, are a 100 KW German broadcast station and a 100 KW Armed Forces Network station. The site covers about 250 acres, with three main transmitter buildings.

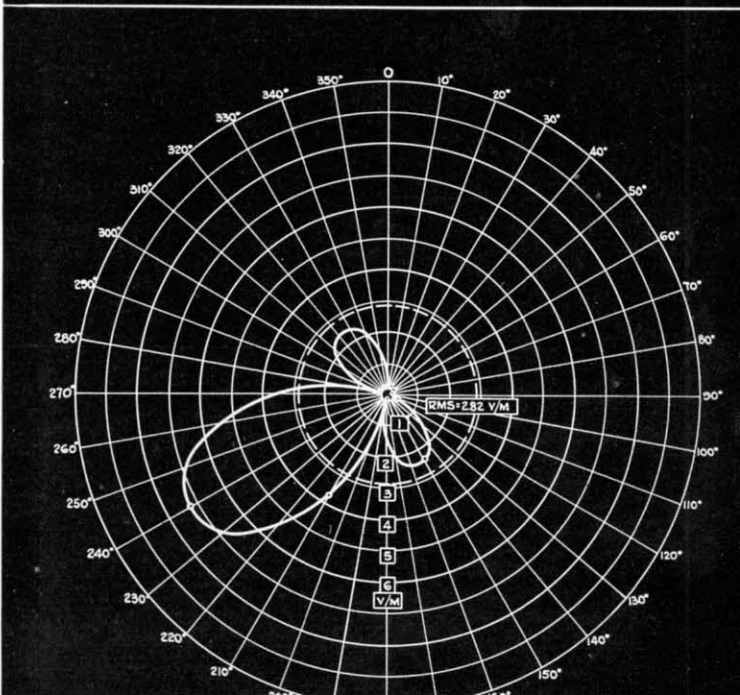
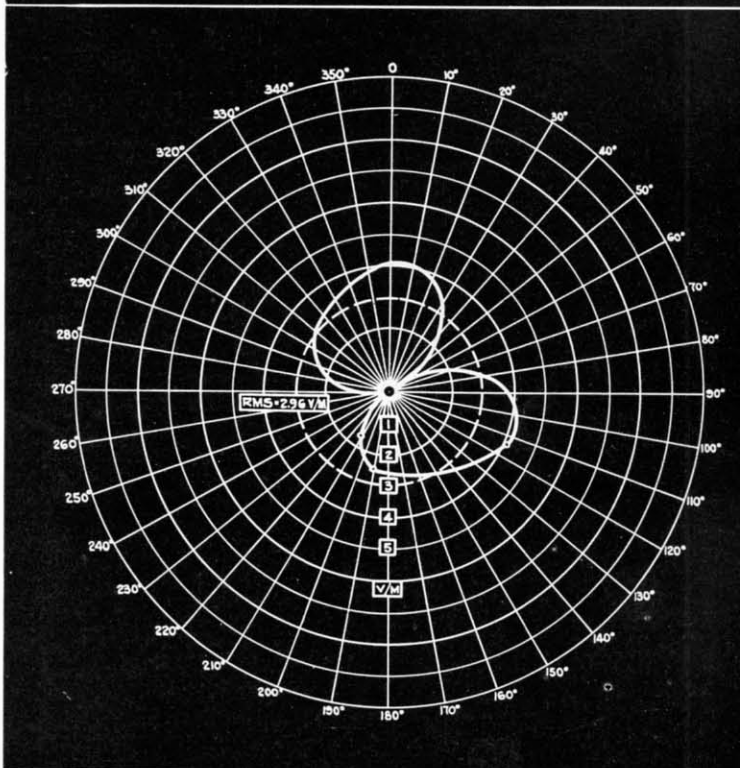
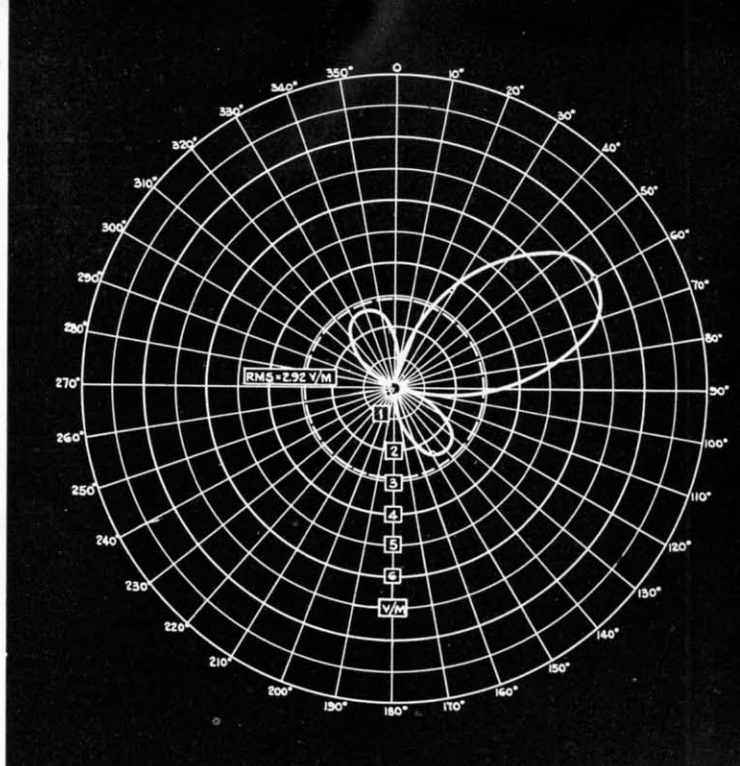
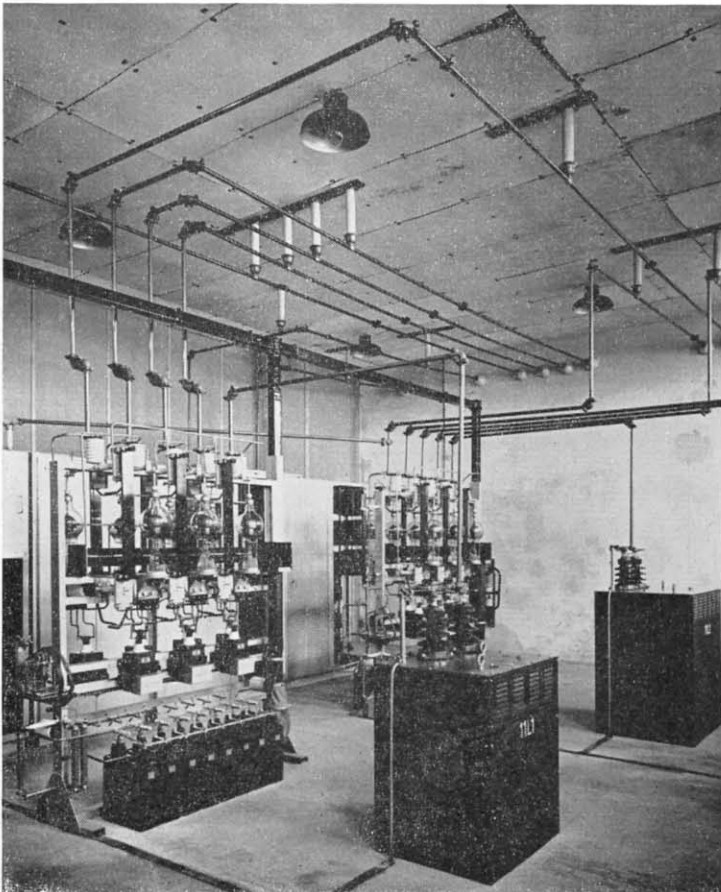
The installation was planned and directed by George Q. Herrick, Chief of Facilities Branch, International Broadcasting Division, Department of State. Installation engineer was Jean Seymour. The transmitter was set into place and tested into a dummy antenna within forty-five days.

Regular broadcasting operations began September 1, on a twelve and one-half hour daily schedule. The transmitter relays Voice of America programs as they originate from the United States and are received on short waves by diversity receivers in Germany for re-broadcast. The broadcast period runs from sunset to sunrise, to make use of sky wave transmission. During the day the station carries programs of the Armed Forces Network.

Operating on 1195 KC, the transmitter uses a speech-clipper amplifier to maintain a high average percentage of modulation. Excellent performance is reported under these conditions. It has been operated successfully under test with full modulation with carrier power up to 170 KW. Normally, 150 kilowatts are delivered to the special antenna system, which consists of a 4-element array of half-wave towers. The antenna has three beam patterns, as shown in Figures 3, 4 and 5, with bearings of 60° and 240° , a double lobe of 115° and 355° . These can be

FIGS. 3, 4 and 5. Directional antenna system provides three different patterns, depending on the area to which program is directed. Any one of the three patterns can be selected at transmitter plant by means of pushbutton controls.

FIG. 6. Shown below are the medium and high voltage rectifier units.



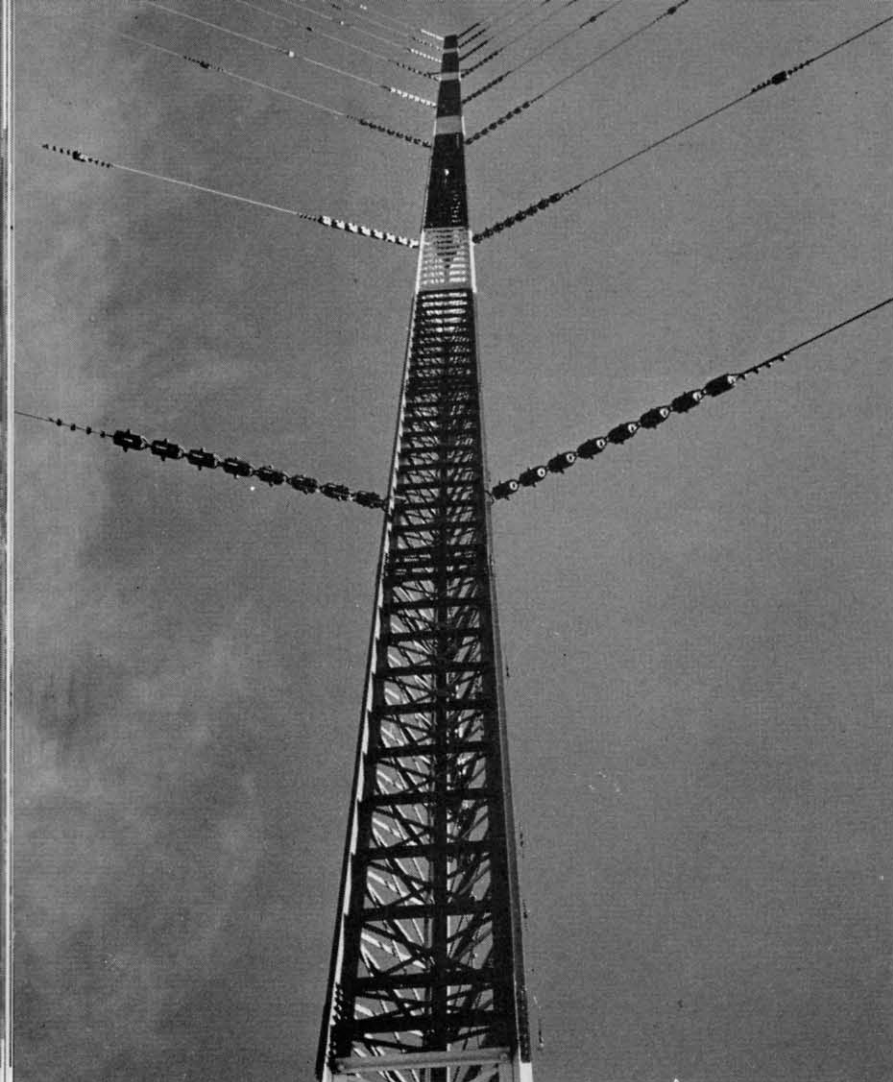


FIG. 7. Vertical view of the four towers of the medium-wave relay transmitter of the "Voice of America."

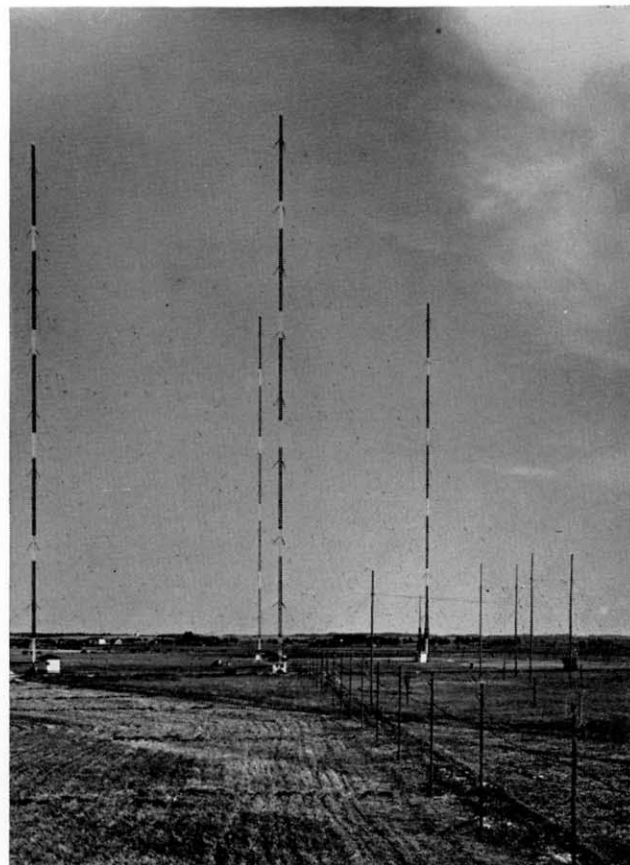


FIG. 8. The antenna area showing towers and main transmission line.

FIG. 9. The phasing networks and pattern transfer switches in the antenna tuning house.

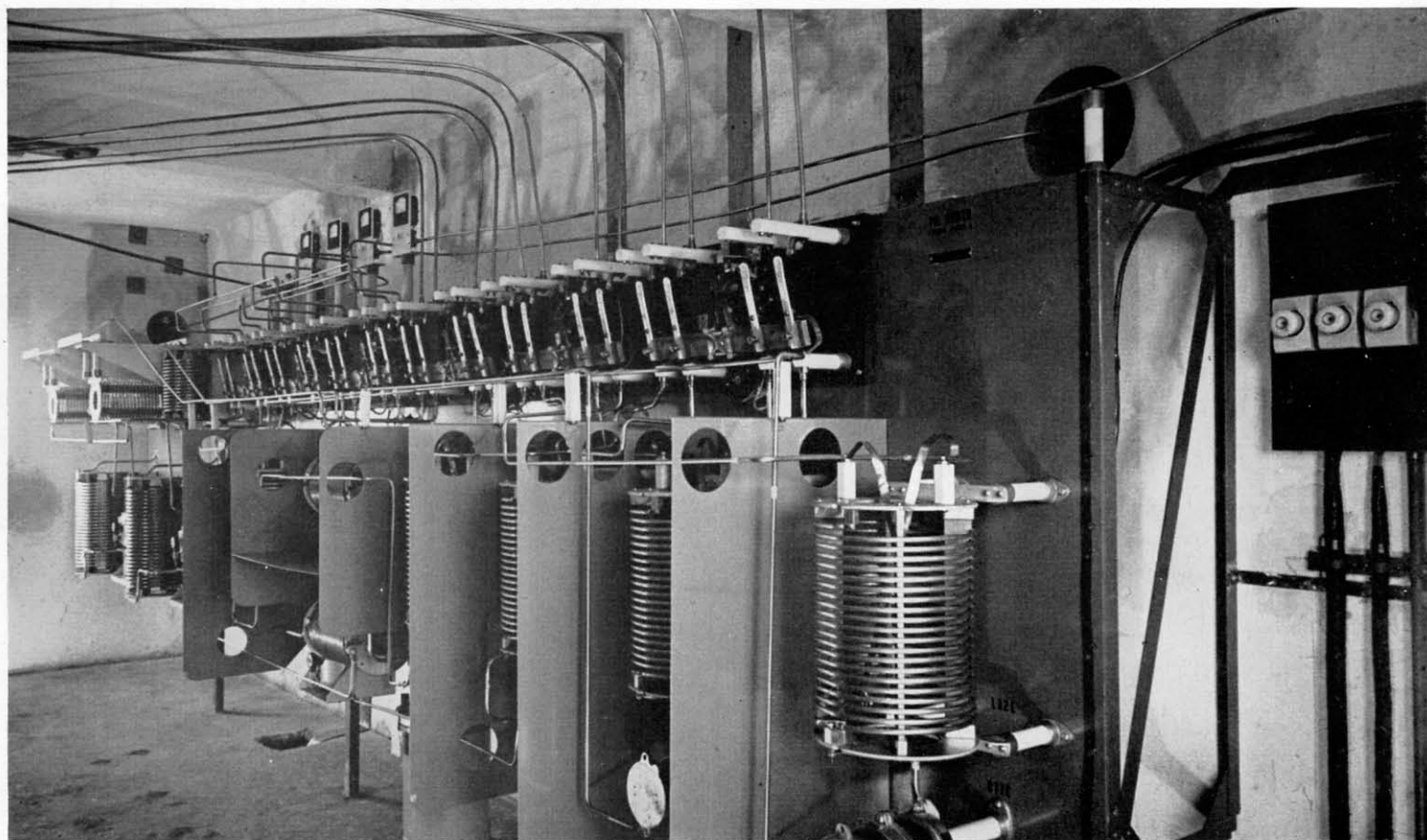




FIG. 10. Transmitter house, as seen from tower No. 1.

selected by switching for transmission in three different directions. The forward power gain on the main lobes is in excess of six. This is the first successful attempt to get so great an antenna gain for use with a transmitter of this size. One radiator can be used alone for non-directive transmission, using the antenna coupling network. The networks and switches for the various directive patterns are shown in Figure 9. The antenna engineering was done by the consulting firm of Weldon and Carr.

The field intensity at night, as measured by the BBC during the period when the beam was directed on England, averaged 1500 microvolts. There have been reports of excellent reception from most of the major capitals of Europe.

The RCA BTA-150A transmitter, as installed at the Munich station, is shown in the accompanying photographs. The 4-element directive antenna system and its feeder is shown in Figure 8, together with other antennas used for high-frequency broadcasting. One tower of the directive array for the 150 KW transmitter is shown in Figure 7. Figure 10 shows a general view of the site and the transmitter buildings.

By coincidence, another RCA 150 KW transmitter, operated by the Turkish Government, went into operation in Istanbul the same day as the Munich station and is also described in this issue.

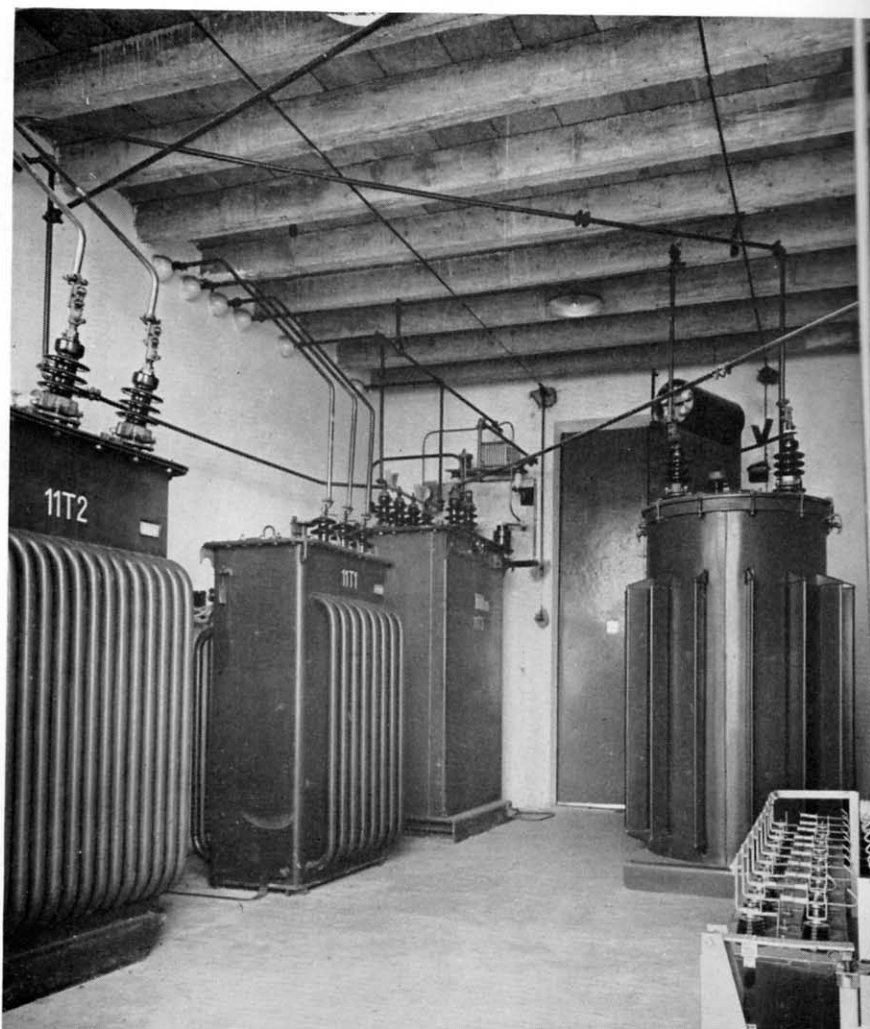


FIG. 11. The transformer room showing modulation and service transformers.