

Radio City for Rochester

WHAM and WHFM Have a New Home with Floating Studios and Centralized Audio System

It's an ultra-modern Radio City—this new \$1,000,000 studio and office building that WHAM and WHFM, Rochester, New York, opened to the public on February 14th. The sweeping curved front with its continuous band of windows symbolizes the care, expert planning and engineering imagination that went into the design and construction of this program center for the Stromberg-Carlson stations—WHAM with 50,000 watts on AM, and WHFM with 1,000 watts on FM. Studio equipment for every type of program, and a novel "centralized" audio system custom built by Western Electric are features of the new building.

The building itself is 230 feet across the front and 180 feet deep, and is supported by 158 column foundations which go down to bedrock. Unusual technique used to isolate the building acoustically from the ground consists of a two-inch layer of felt wrapped around each column, with a rubberized paper coating and a four-inch concrete facing over it. The felt wrapping extends from rock level to the top of each column.

In addition the whole studio section floats separately from the main structure of the building, with isolation provided by heavy pads of felt which form the only connection from studios to building.

Production of programs for WHAM, WHFM, and whenever needed, for the NBC network, is provided for in a large auditorium studio and five additional smaller studios. The auditorium studio has seats for approximately 400 people and a stage 44 by 40 feet in size. Of the five additional studios, three are approximately 35 by 20 feet, and two are approximately 15 by 15 feet.

The auditorium studio and one of the intermediate studios are provided with separate control rooms. Each of two additional control rooms serves two studios, allowing

for flexibility and efficiency in the handling of programs that follow each other at short intervals, or in the case of cut-in, news flashes, or guest speaker announcements on musical programs. In addition to the six studios described, a room approximately 45 by 55 feet is proposed in the west wing of the building which will be used as a television studio when the station's plans in this field have matured.

An elaborate air conditioning system serves the entire building. The air is cleaned by filters and by an electrostatic precipitator and the temperature and humidity are closely controlled to optimum conditions, winter and summer. An emergency power plant is installed, with a gasoline-engine driven generator which takes over automatically in case of power failure.

Central Room for Amplifier Equipment

The control room consoles contain only the gain controls, preamplifiers, program switching and monitoring, cueing, and talk-back switching equipment. The main, monitor, and line amplifiers are located in a central apparatus room. By separating the "operating position" equipment from the other apparatus, smaller, more compact consoles are possible without reduction in facilities provided. Eight microphone inputs, two electrical transcription inputs, and four remote inputs are provided on each console. The two audio lines, one regular and one spare, feed from the console to the central apparatus room.

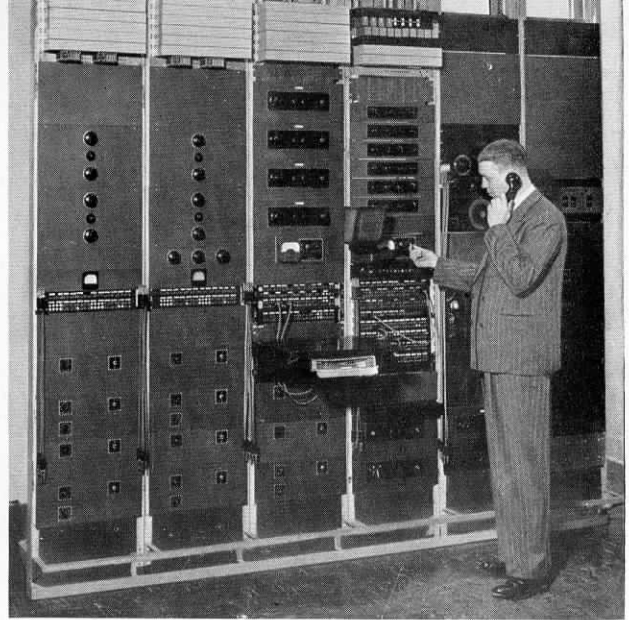
In the central room all of the main, monitor, and line amplifiers, including a complement of spares, are mounted together in open racks, as shown in the photograph on page 41. There are six outgoing trunks—WHAM, WHFM, NBC network, an audition line, recording line, and a spare.

(Continued on page 41)





Main Corridor of new WHAM-WHFM studio building from entrance lobby.



Rack in central apparatus room with main, monitor, line amplifiers.

Radio City for Rochester

(Continued from page 21)

The connection of any console output to any one of the six trunks is accomplished by a d-c relay system, which is operated by keys mounted in the upper right of the mixer panel on each console, with the relays in the central apparatus room. With this arrangement, all amplifying equipment actually in the console is of the small, preamplifier type. Two Western Electric Type 129A amplifiers (each of which consists of four two-tube low level amplifiers) supply the eight amplifiers used in each console, six as preamplifiers and two as boosters. The signal leaves the console at about -10 VU for normal program levels, and the additional amplification required is furnished by the main and line amplifiers in the central apparatus room.

This simplification of the audio control system was worked out by Kenneth Gardner, Chief Engineer of WHAM and WHFM, in collaboration with Western Electric's audio facilities engineers. Mr. Gardner has been in broadcasting for 25 years, 20 of which have been spent at the Stromberg-Carlson Co. He describes the operation of his new audio equipment as follows:

"Our scheme of putting all of our large amplifiers in a single line of racks resulted from long and careful consideration of the operating problems inherent in our studio setup. We are delighted with the efficiency and ease of operation of our centralized system. The simplified consoles perform in the effective manner that we had planned."

Rx for Long Transmitter Life

(Continued from page 20)

position. The fact that it has been moved is almost sure to escape attention, indeed cannot be determined in many cases without a retuning, and resetting of a major section—or all—of the transmitter.

There are two principal ways to avoid thus losing your control settings and *both* should be employed, as they supplement each other. The first consists of putting a small dot of the polish at each setting after the transmitter is completely and properly tuned up. The advantages are apparent. Not only can you make a rapid visual check of all control settings when trouble develops; you have a quick and simple, but valuable aid to maintenance. A regular inspection of all the marked control settings requires only a few minutes each time and gives an excellent check on the proper operating condition of the transmitter.

The fingernail polish method of holding on to control settings is an effective and quick visual maintenance aid, but it must be supplemented by a second and more comprehensive maintenance tool—a complete tuning chart for the transmitter. Such a tuning chart should be carefully and completely prepared on a single sheet of paper and posted

next to the transmitter after the tune-up is completed, showing not only all control settings, but in addition all meter readings covering normal operation of the transmitter in the tuned condition.

In the panel on page 20 is reproduced a section of the tuning chart which is completely filled in and supplied with every Western Electric 442A or 443A, 500 watt or 1 kw AM transmitter. Similar charts are supplied with every other model of Western Electric transmitter. Every variable quantity or control setting of any significance, covering well over a hundred items for the 1 kw transmitter, is included on the chart, giving a most comprehensive and detailed picture of what "normal operation" means for that particular transmitter, and that particular antenna, operating on the assigned frequency and power.

Keep the Tuning Chart on Tap!

Intelligent use of such a chart will uncover nearly any conceivable type of failure, at least to the extent of showing what section of the transmitter is affected and how the abnormal condition has upset operation. In addition, the tuning chart is a powerful maintenance tool, often enabling the engineer to forecast and forestall trouble, while it is in an early stage of development. For instance, tubes