WIBW's New Transmitter Boosts Listening Area 33 Per Cent

Typical of chief engineers throughout the country, Karl Troeglen of WIBW, Topeka, Kansas, has his own ideas of what constitutes a good transmitter. Backed by Manager Ben Ludy's progressive policy, Troeglen's ideas recently materialized in the form of a $70,000 transmitter plant to broadcast the "Voice of Kansas."

WIBW's new plant is located seven miles west of Topeka on a 138 acre tract of river-bed farm land. The one story brick transmitter building, 67 by 35 feet, stands 550 feet from the tower. The floor of the building is elevated to a point five-feet above any previous flood stage.

The spacious control room which houses the Western Electric 5000 watt transmitter is located in the center of the building. Flooring for this room is made of cork to prevent foot-slipping and to aid acoustics. The ceiling consists of sound-absorbent celotex. Because of its ceiling and floor design this room may be used as an emergency studio if necessary. To provide further for this emergency measure a special compartment has been built in the control panel which houses an emergency turn-table and a number of recordings.

High-voltage power equipment and cooling apparatus is located at the left of the control room. For future expansion a room of similar size is provided at the right. Back of the control room a small space enclosed in copper has been partitioned off for short wave reception and re-broadcasts. Other appointments of the building include an automatic emergency power plant, sleeping quarters, bathroom, engineer's office, automatic heating and air conditioning and, in the basement, a double garage and work shop.

Safety and efficiency are the twin watchwords around the new transmitting equipment. The safety lies in the FCC-sealed locking system which makes access to any high voltage apparatus physically impossible during broadcasting. The efficiency lies in the selection of the finest equipment to assure the utmost in mechanical perfection for broadcasting WIBW's messages.

The great tubular mast is 445 feet high. Heavy guide wires, each one inch thick and firmly anchored in concrete, hold this big needle erect.

The tower which is 12 inches in diameter at the bottom and four inches at the top is pivoted on a 16 inch diameter tubular base. The total static load on the pivot insulator, comprising the weight of both mast and the guy wire assembly, is approximately 42 tons. The mast itself is in eight separate sections.

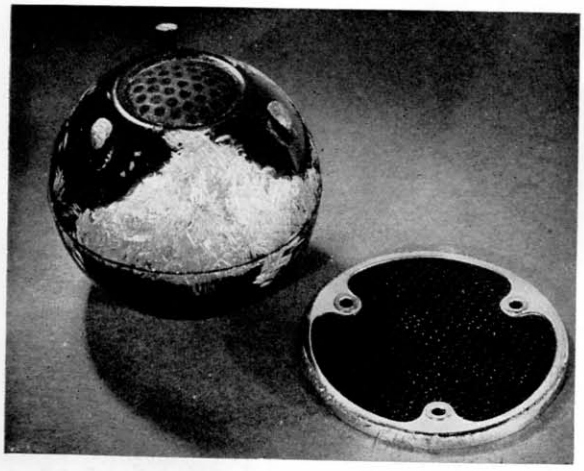
WIBW's new radiator has one of the finest ground systems in the country. Land on which the transmitter stands is the old bed of the Kansas River. The soil itself — a rich sandy loam — is always damp with normal water level only 20 feet below ground surface. The transmitter grounds, but not the transmitter house, are subject to overflow at high river stages.

This famous Kansas soil is well known for its unusually high conductivity of radio waves. And buried in this rich, wet soil is the ground system of the new transmitter. From the tower itself extending out like the spokes of a wheel are 120 radials of Number 10 bare copper wire each 825 feet long. These lengths of wire are completely buried in shallow graves eight to ten inches deep.

Thus the new plant, according to Troeglen, boasts the finest in towers, in ground systems and in soil conductivity, all of which make WIBW's 5000 watt regional channel at 580 kilocycles easily equivalent to several times that wattage in some parts of the country.

WIBW's primary area has always been outstandingly large. With the old transmitter this area has field tested one half millivolt at a radius of 187 miles. But with the new transmitter, the primary area radius is currently showing field test results at approximately one half millivolt at 250 miles.

This means that the station's primary and secondary areas are now about 33.6 per cent greater than they were before the new plant went into operation. If listeners in these areas increase in the same proportion WIBW's broadcasts will reach 7,977,880 people instead of the previous number of 5,983,410.



This eight-ball microphone was accidentally dragged over a concrete road for a distance of one mile and a half behind a speeding noise measuring truck operated by General Motors. When recalibrated it was found to be in perfect working condition except for a slight decrease in level at the high frequency end.

WIBW

Topeka, Kansas

The new "Voice of Kansas" reaches WIBW listeners through the medium of this Western Electric 5000 watt transmitter. Increased coverage and higher fidelity are responsible for that satisfied expression on Manager Ben Ludy's face. Chief Engineer Karl Troeglen (lower left) chose the equipment. High voltage unit shown in lower right picture.