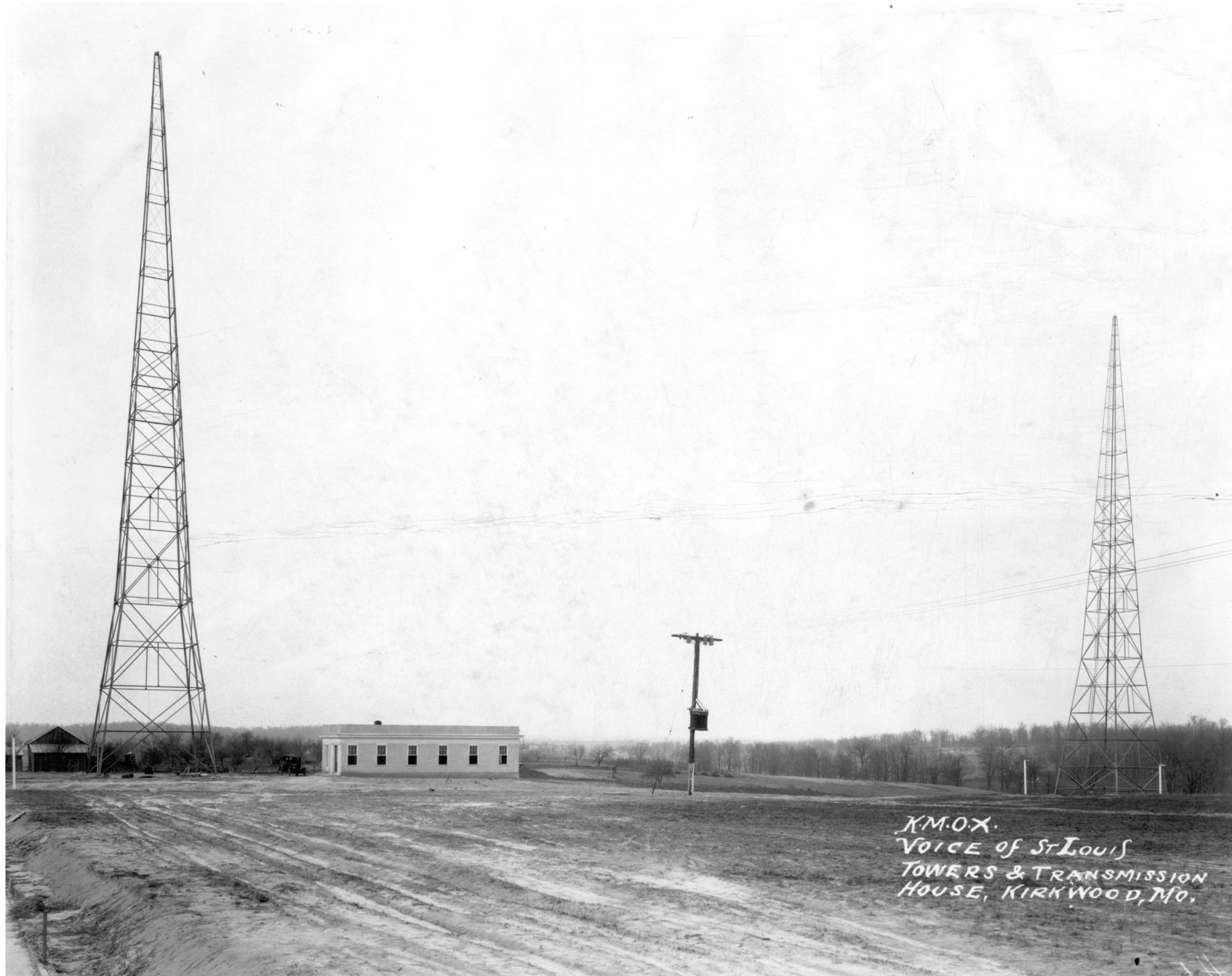


# *KMOX Historical Presentation* *October 2005*

KMOX



## **KMOX 'The Voice of St. Louis'**

**KMOX radio signed on with their new Western Electric 104-A Christmas Eve in 1925.**

**This transmitter was based upon the old original designs that started with the 101-A of 1922-23. However, this design was not without its' improvements. The early design was implemented with many of the new circuits and features that began with those experiments and modifications made to the WEA radio transmitter. Water-cooled finals, improved fidelity and reduced harmonic distortion and crystal determined frequency were a number of improvements. In 1924, WEA New York City moved from the 1000 watt level to its' first transmission platform rated at 5000 watts. It was the first Western Electric 5000-watt product in the country. This set the stage for the 104-A.**

**The 104 series was a temporary series that fulfilled the demand of some of the larger broadcasters for this higher power system. Most of America's transmitters were of the 500-watt class or less at this time and only those stations who were owned by the privileged few operating groups worked with the 1000 watt systems. The 105-B series, while not part of this discussion, did have a number of additional improvements. Please find enclosed a picture of the 105-B series of cabinets to compare the difference.**

**This transmitter designed and built at the Engineering and Manufacturing facilities at 463 West Street, NYC, was installed by local engineers along with representatives of WE from NYC.**

**Tubes employed in the 104-A final power stage were 220 type. These tubes were rated for 10,000 watts each and because Western Electric used low level modulation there were no requirements for any high powered modulation tubes as were used in many other vendors' models.**



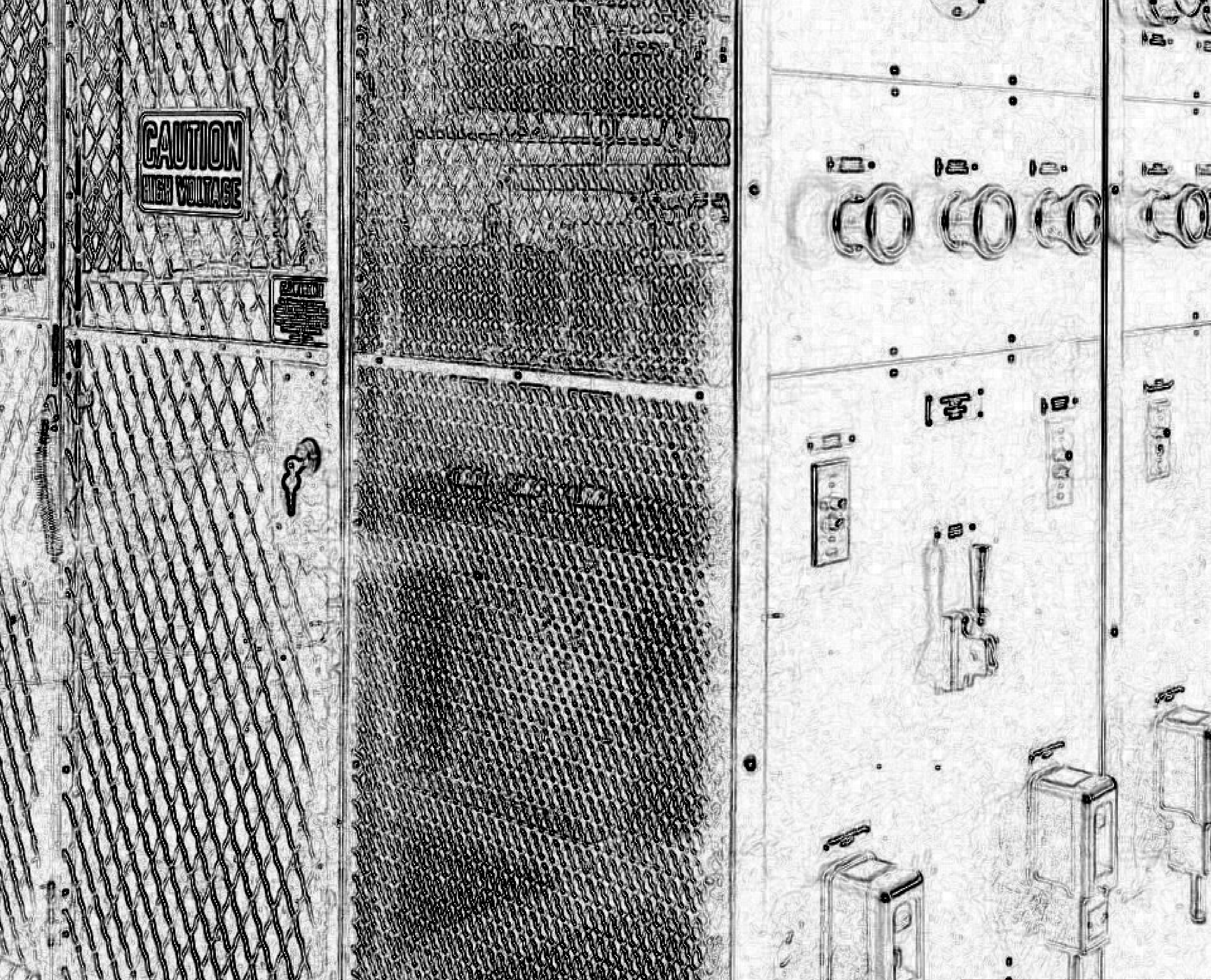
**WE 220 Tube  
information**



**WE 104-A 12/24/1927**

*KMOX  
VOICE OF ST. LOUIS  
TRANSMITTER, KIRKWOOD, MO*

**CAUTION**  
**HIGH VOLTAGE**



***KMOX Western Electric 107-A Transmitter***



## **KMOX Western Electric 107-A Transmitter**

This transmitter replaced the 104-A transmitter and was the big 50 kW unit that was the top of the power line at this time. It, again, was but a short time until the 407 series were issued. The later series featured slightly higher efficiency by using the Doherty circuit. This series began to be marketed in the early to mid part of 1928 and the 307/407 series came out just a year or two later. WHAS was the first of the 307/407 series and their 'claim to fame' was that they were the first 50 kW station to have the Doherty circuit which greatly improved power savings.

It is possible that this unit had that circuit, but not having any information about it, it would be only speculation. It is not unusual to find WE's that have improvements even though new updated product lines were to be shortly issued.

This transmitter used three 232 tubes as modulators and three 232 tubes as power tubes. Each tube was rated for 40 kW dissipation and water cooled. Cooling ponds were seen at all high power WE stations. Hallmarks of the WE transmitter were low level modulated stages, crystal controlled exciters and highly linear power amplifiers.

Amperex picked up the power tube part of WE when the divestiture occurred.



WE 232 Final Tube

***KMOX Westinghouse 50HG-1 Transmitter***



## *KEX Westinghouse 50HG Transmitter*



This is a picture of the Westinghouse transmitter from KEX. Note the art deco styling and the excellent color scheme. Several series of these transmitters were made from the early through the mid-1950's. All of them were 'high level' or plate modulated transmitters. Many of the Westinghouse stations had them as well as others.



**KMOX Continental Electronics 316-B  
Transmitter**



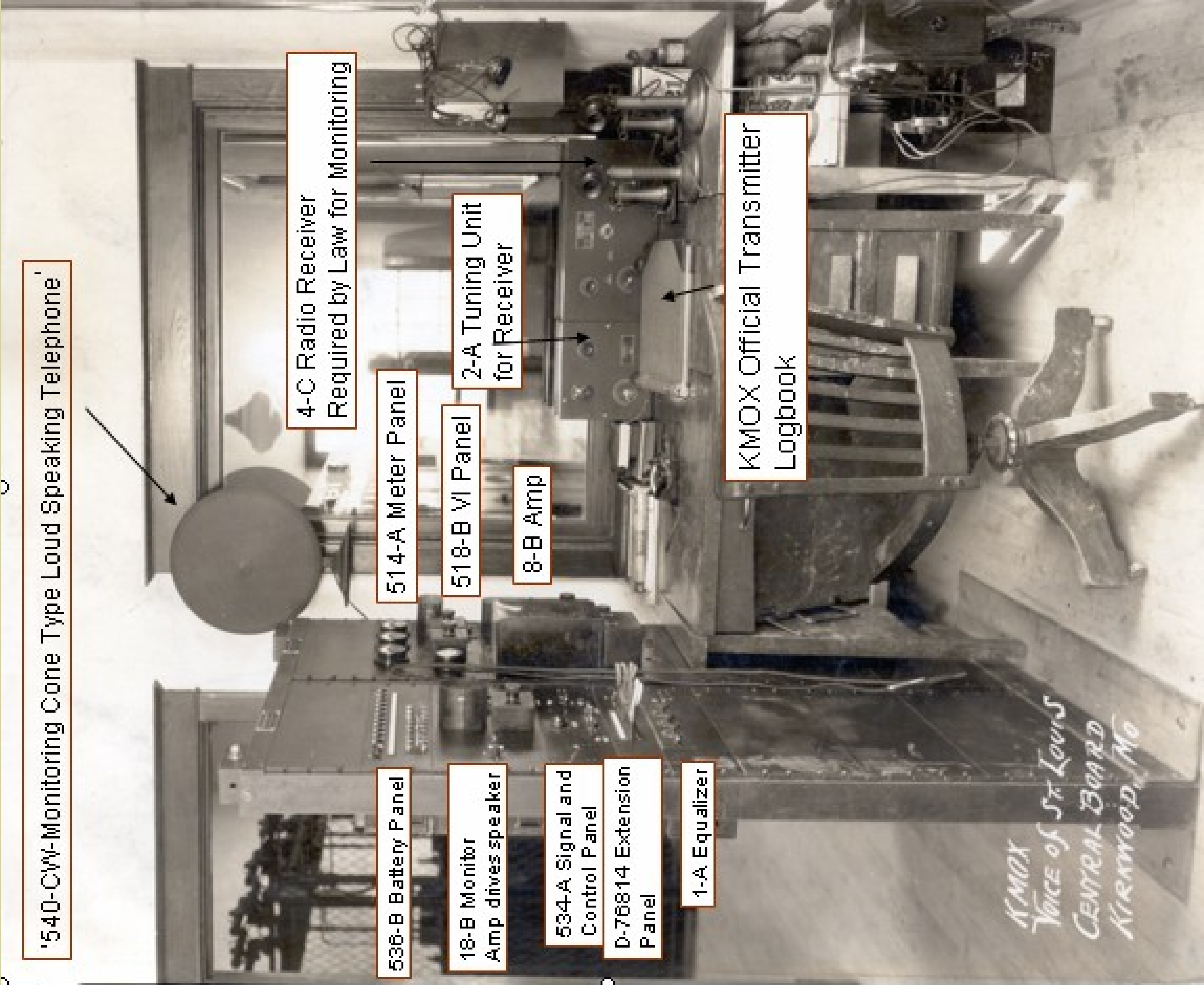
## *KMOX Continental Electronics 316-B transmitter*

This model would support up to 10kW power output and was used as the main standby transmitter for KMOX. FCC records indicate that this transmitter was licensed in June of 1959. This transmitter owed its roots to Western Electric and to those cross-over years of the late forties through to the early fifties.

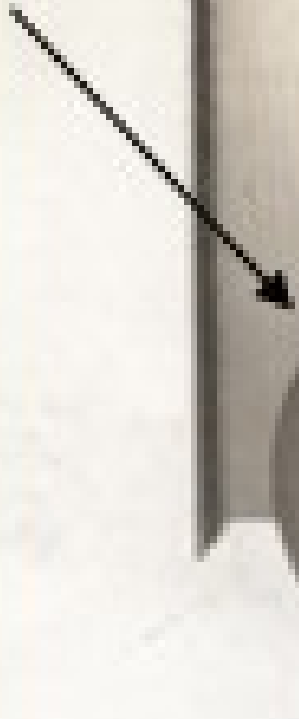
The 315 came out in the early fifties and was rated at 5 kW.

The 316-B used three 4CX5000 tubes with 'screen grid modulation'. The 316-D used a pair of 4CX10000 output tubes and used 'screen grid modulation'. This allowed a less expensive form of construction and kept a high level of overall power efficiency. If you remember the pirate ships and pirate stations of the 1960's that served the British Isles, many of the transmitters were of these form of CE's. Some, in power, as low as 5kW and as high as 50 kW. There were others that ran between 100 and 600 kW; these units were typically custom RCA transmitters.

**KMOX Speech Input Equipment for a 104-A Transmitter**



'540-CW-Monitoring Cone Type Loud Speaking Telephone'



4-C Radio Receiver  
Required by Law for Monitoring

514-A Meter Panel

518-B VI Panel

8-B Amp

2-A Tuning Unit  
for Receiver

KMOX Official Transmitter  
Logbook

538-B Battery Panel

18-B Monitor  
Amp drives speaker

534-A Signal and  
Control Panel

D-78814 Extension  
Panel

1-A Equalizer

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Voice of St. Louis  
CENTRAL BOARD  
KIRKWOOD, MO*

