



# WIP-5 KW

Philadelphia, Pa.

By ALAN D. FERGUSON

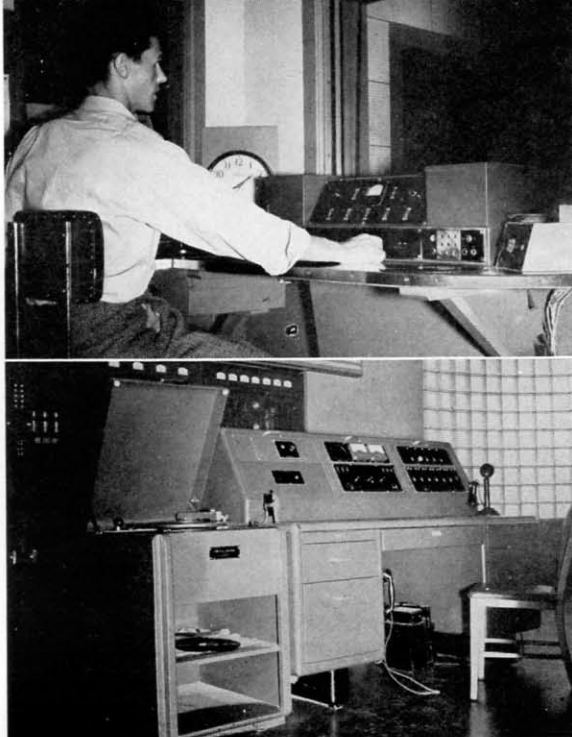
On August 1, 1940, WIP, Philadelphia's oldest radio station, took another forward step in an unbroken record of progress with the dedication of a new and more powerful transmitter, a 5 KW Western Electric 405B-1 air-cooled unit. Located in a strikingly modern transmitter building at Belmawr, New Jersey, this equipment, combined with a new directional antenna system, now blankets the entire Camden-Philadelphia areas of New Jersey and eastern Pennsylvania with a powerful signal.

Owned and operated by the Pennsylvania Broadcasting Company, WIP has centered its activities from its inception over 18 years ago in the Gimbel building, home of the famous Philadelphia department store of this name. Its broadcasting career dates back to March 1922, when, from two tiny rooms in the Gimbel Building, the station went on the air with a 500 watt transmitter. The first WIP studio was a single room about 10 feet square, used originally by Gimbel's customers while listening to phonograph records. It was separated by a partition from a similar room which housed all of the transmitting and control apparatus. In 1923 the station moved to another location in the building but the set-up remained practically the same except for slightly larger rooms.

When WIP absorbed WFAN in 1931 new studios were built and the transmitting equip-

Above: The new transmitter building at Belmawr, N. J., is an example of the trend to functional design in architecture. Top right: "Johnnie" Haeke, studio engineer for WIP's dawn-patrol, handles controls at the 23A Speech Input Equipment. Center right: One of WIP's 1300A reproducer sets is convenient to the custom-built control desk in case of emergency. Lower right: The new 5KW transmitter is an integral part of the interior design of WIP's modern transmitter building.

PICK-UPS

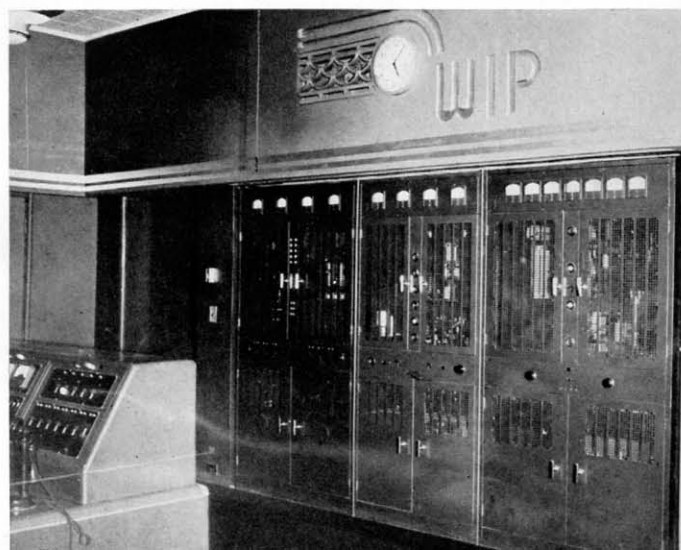


ment was moved to the roof of the building. Four years later the studio activities were again shifted, this time to a suite of air-conditioned, acoustically correct broadcast studios constructed at a cost of over \$100,000. Despite this improvement, in 1937 the management once more found it necessary to provide additional space. Several new studios were added and a general reconstruction took place, resulting in the present WIP studios, among the finest in the country.

There are four main studios, each of them controlled by a Western Electric 23A speech input equipment. Three 300A reproducer panels, for both vertical and lateral transcriptions, are located here, as well as a 1300A reproducer set used by the program department for checking and timing transcriptions. For its microphones, WIP engineers prefer 630A "eight-balls" for studio use and 633A "salt-shakers" for remote pick-ups.

WIP's power was increased from the original 500 watts to 1 KW in 1935. The station's first commercially-made 500 watt transmitter, a 1A Western Electric equipment, now reposes in Philadelphia's famous Franklin Institute as a permanent exhibit. In 1937 the station moved its transmitter loca-

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which gradually impair the vacuum. If these tubes had been used in service as soon as received, approximately normal life probably would have been obtained. Alternate use of spare tubes in the transmitter is therefore recommended in order that tubes held as spares will always give satisfactory operation. When tubes of this type are first inserted in the sockets, the filaments should be lighted without plate voltage. In case of a crack in the glass envelope the filament will "smoke up" due to the formation of tungsten oxide.

It is recommended that the filament be operated at normal voltage for several hours to clean up any residual gas and to insure that the filament is fully activated. Tubes operated in spare transmitters should preferably be run with a filament voltage of about 80 per cent normal to obtain the maximum life from the standpoint of evaporation of active materials.

## **FM Tests Around New York**

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strongest pick-up came from a reflected wave.

Knowing no worse location on the Island we headed back toward town, crossing the Whitestone Bridge, to the Hutchinson River Parkway, and on up the Parkway for a distance of approximately 25 miles north of New York. On this long drive we encountered places where the signal strength momentarily dropped or the signal seemed to wobble a bit. In each case, however, it was noticed that the position of the car placed the car between the path of the signal and the antenna. It seemed reasonable to assume that the car was shielding the antenna. This effect was obtained only while driving at speeds between 50 and 60 miles per hour.

Returning to New York we passed over the lower level of the double-deck bridge across the Spuyten Duyvil. The signal from WOR was completely mixed up with car ignition noise while W2XOR continued with full strength. Back in the city we cruised under elevated railway lines, through streets lined with New York's highest buildings and filled with rush hour traffic. There was no variation whatsoever in signal strength. As I write this, the same receiver is bringing me the music of W2XOR in my home in Manhasset, Long Island, 18 miles from the transmitter. The receiver is connected to an eight foot piece of bell wire which hangs down from the second story window. The vacuum cleaner, electric razor, oil heater have absolutely no effect on it.

From this report of a test of FM, unscientific and unrehearsed as it was, you may read any significance or none at all. To us, it seemed to indicate that FM is perfectly capable of serving the entire metropolitan area of the greatest city on earth. It further indicates that the average listener may receive his FM programs irrespective of location and without an elaborate antenna array. And, also, should not our ideas about FM and car reception be changed?

## **WIP, Philadelphia, Pa.**

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tion from the roof of the Gimbel Building and installed a new 1,000 watt equipment at a better spot on the outskirts of Philadelphia.

In November, 1939, the FCC having granted an increase in power to 5,000 watts, the station's officials decided to build a completely new transmitter plant. After a thorough investigation the site at Belmawr was selected, a Western Electric 405B-1 transmitter was ordered and construction of the building was begun.

The entire installation was carried out under the supervision of Clifford C. Harris, WIP's technical supervisor, who also designed the new directional antenna, a two-element system with 275-foot towers surmounted by steel crowns 30 feet in diameter.

The transmitter building was designed with an eye for utility as well as beauty. A maximum of daylight floods the transmitter room through the glass brick wall which curves half-way around it. The control desk with its sloping panel directly faces the wall mounted transmitter. To the left of the desk stands a 1300A reproducer set, providing the transmitter operators with programs at their fingertips in the event of any emergency.

Additional equipment used by WIP includes a 110A program amplifier, a spare 106A amplifier, a 94C monitoring amplifier and a 1A frequency monitor. The old 6B transmitter, located in the master control room, is now used as the station's auxiliary unit.

After two months of 24 hours-a-day operation, WIP's progressive president, Benedict Gimbel, Jr., stated that everyone concerned was "highly gratified with the excellent performance of the transmitter and its ability to 'stand the gaff'."

## **Bach Choir Sound System**

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was apparent. The slightest disturbing movement on the part of anyone drew silencing looks from his neighbors. Many followed the music note by note from open scores. During the magnificent crescendos in the B Minor Mass the audience would sit up almost breathless and when the music suddenly dropped to the barest whisper, one could hear audible sighs. This response of the audience was particularly striking in view of the altogether too common habit today of carrying on a conversation during any reproduced program.

Judged on the basis of public acceptance, the success of the installation was most gratifying to all concerned. It was felt that the reproduction during the May Festival was in keeping with the dignity and tradition of the Bach Choir.