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EXPERIMENTAL OPERATION OF KIEV TELEVISION CENTER

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The Kiev Television Center began experimental operation in November 1951. Since then two broadcasts have been made every week. The plan of the television center was developed by the Planning Institute of the Ministry of Communications. The equipment was developed and produced in Leningrad. The station is designed to transmit one program (on Channel 2) and has an image resolution of 625 lines, which is the accepted standard in the USSR. The equipment is used to transmit studio broadcasts (concerts, drama, opera, etc.), motion pictures, and programs from theaters, circuses, squares, stadiums, and other places.

The center consists of an ultrashort-wave radio station and studios with equipment rooms. A mobile video station installed in a special bus is used for field transmissions.

The video and sound transmitters are located in a separate building alongside the tower which supports a three-story turnstile antenna, equipped with a coaxial tubular feeder. The studios, equipment rooms, motion picture projection room, and other auxiliary equipment are separate from the ultrashort-wave radio station. A special underground cable between the buildings is used to carry the video and sound signals from the equipment room to the ultrashort-wave station.

Three transmitting cameras, with a corresponding number of amplifying channels, are used. The output of the amplifying channels is applied to the input of a special amplifier which mixes the pictures from the separate cameras. Then the signals pass from linear amplifiers through a coaxial cable to the input of the video transmitter modulator.

Motion pictures are projected from two special video film projectors using one camera. Optical switching is used to transfer from one projector to another. "Alloscopes" are used for projecting slides.

A special panel is used for centralized control of all video and sound equipment in the studios. This panel permits one to control the voltage from the several amplifying channels, to switch the linear amplifiers, to connect signals from the mobile station to the modulator input, and to operate the film projectors by remote control. The panel is equipped with signal lights to indicate the channels, transmitters, etc. in use.

The video transmitter is amplitude-modulated by a band of frequencies from 50 cps to 5.5 Mc, while FM (50-10,000 cps modulating freguencies) is used in the sound transmitter. Both transmitters operate through ultrashort-wave dividing filters into the common coaxial feeder which supplies the antenna.

The supply voltage is regulated by autotransformers with continuous voltage control. The tube filaments of the modulator unit are supplied with dc from selenium rectifiers. The remaining stages of the transmitters are supplied with ac. Rectifiers supply the plate circuits. The control and interlocking system permits switching the transmitters on and off separately by remote control and indicates the defective circuit in case of breakdown.

Special mechanical and electrical interlocking is provided to protect personnel from any contact with high-voltage equipment. A special panel which is also equipped with interlocks and signals is used to control the transmitters.

The transmitters are installed in cabinets with folding doors behind an enclosure. These doors give access to the panels containing the control and tuning units. The test and measuring instruments are installed at the upper part of the enclosure.

The antenna is located on a tower which rests on three reinforced-concrete foundations.

The Kiev Television Center was designed to transmit pictures within a radius of 30-40 kilometers, but the first experiments indicated that the programs are received at distances of 100-120 kilometers from Kiev (in Chernigov, Fastov, etc.). The number of television receivers around the Kiev center is constantly increasing.

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