

RADIO

Prepare to Broadcast Sound With Television Programs

Federal Radio Commission Urged By Engineers To Allow Use of Very Short Wavelengths For Experiments

TELEVISION will now be able to follow the movies and "go sound" if recommendations made by leading television engineers are adopted by the Federal Radio Commission. The Commission asked the views of those who are now putting sight as well as hearing into radio.

Until now most of the lookers-in, who are equipped with televisors and can get the signals from one or more of the eight stations that are regularly putting such programs on the air, have enjoyed silent pictures only. In a few cases, special authority has been granted broadcasters to use a general experimental wave length for simultaneous sound broadcasting, and others have been sending out the sound through a regular broadcasting station when the sound part had entertainment value by itself.

Channels Now Used

The present television broadcasting channels are 100 kilocycles wide, ten times the width of those used for sound broadcasting. It had been suggested that part of the television bands be set aside for simultaneous sound, but this idea was not favored by the broadcasters. It was decided, however, that the Commission should allow television stations to use part of their bands for the purpose. Since future development may require even wider bands, it was also decided that a separate frequency, or wavelength, should be made available over which the television picture could speak.

One possible solution of the problem as to how enough space in the radio spectrum can be provided for adequate television seems to be the use of waves far shorter than any that are now used ordinarily. The television broadcasters urged that several bands of these very short, ultra-high frequency bands should be assigned for television. The bands selected, as not yet being otherwise assigned, are from 43,000 to 46,000 kilocycles, 48,500 to 50,300 kilocycles and 60,000 to 80,000 kilocycles. In wavelength, these are around six meters,

which corresponds to 50,000 kilocycles. The present television bands are between 2000 and 3000 kilocycles.

In order to prevent stations from interfering with each other the broadcasters also recommend that stations should not be allowed to operate at the same time within the same channel if less than 150 miles apart, except by mutual agreement. As some stations do not use the full band of 100 kilocycles, by arrangement among themselves the stations will be allowed to use different parts of the same band if they make mutually satisfactory arrangements.

In spite of the technical advances made, television is still very much experimental. This is the general opinion of those broadcasting. C. W. Horn,

general engineer of the National Broadcasting Co., expressed this viewpoint when he declared that "the amateur cannot be considered at present, and, except in small areas around a station, it is impossible to guarantee any regular service."

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ROENTGENOLOGY

X-Rays Before Operation Do Not Delay Healing

WHEN tissues are exposed to X-rays before an operation there is no delay in the healing of the wounds in those tissues if the operation is done within a month after the irradiation. When wounds are exposed to X-rays after the operation, the healing of the wounds is delayed, Drs. E. A. Pohle, G. Ritchie and O. S. Wright of Madison Wis., reported to the Radiological Society of North America at its meeting in Los Angeles last week.

These results were obtained in studies on white rats. They should help to banish the public fear of X-ray treatment which is given before operation, the investigators felt.

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ASTRONOMY

Six of Shaw's Universe Makers In List of Great Astronomers

SIX of the eight "universe makers" named recently by George Bernard Shaw are included in a list of the ten greatest astronomers proposed by Dr. Frederick C. Leonard, professor of astronomy at the University of California at Los Angeles. Prof. Leonard's list was made several months ago at the request of university officials who wanted to place the names on a new building. The list is published in the current issue of *Popular Astronomy*.

Listed in what Prof. Leonard terms "the order of decreasing greatness," the ten are as follows: Sir Isaac Newton, Nicolas Copernicus, Galileo Galilei, Johann Kepler, Albert Einstein, Hipparchus, Sir William Herschel, Gustav Robert Kirchhoff, Claudius Ptolemy and Tycho Brahe. Prof. Leonard confesses to some doubt "concerning the 'order of merit' in a few cases, but not much regarding who the ten are."

Shaw included all of these names except Hipparchus, Herschel, Kirchhoff

and Tycho, and, in addition, named Pythagoras and Aristotle, neither of whom were, strictly speaking, astronomers. Hipparchus was a Greek who introduced the system that Ptolemy made popular and which was known as the Ptolemaic system. Herschel was the first astronomer to design and use large telescopes, and to study the universe of stars rather than merely the solar system. Kirchhoff was the founder of spectrum analysis, which has revealed so many facts about the stars. Tycho was the last, and greatest, of the pretelescopic astronomers, who made the observations that were applied by Kepler in formulating his laws of planetary motion.

Defending his choice of such men as Newton and Einstein, physicists rather than astronomers, Prof. Leonard says that by an astronomer he means a person who has contributed to the advancement of astronomy, regardless of what his vocation may have been.

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