# A FRENCH TELEVISION SYSTEM

## A 60-line system using a mechanical scanning disc in the transmitter and a cathode-ray system in the receiver.

MARC CHAUVIERRE

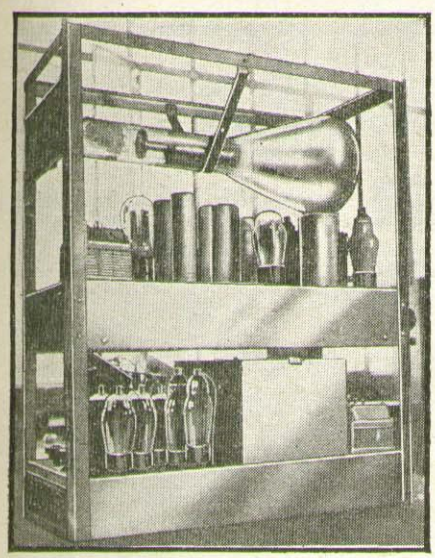

Fig. B. The 3-deck receiver chassis.

WHILE OTHER French television systems are well known in this country little has been published in America about the experiments (under the direction of the writer) in the laboratories of the Institute Marey, of Boulogne-sur-Seine, an institute better known as the Physical Laboratories of the Collège de France. This laboratory makes its television experiments in cooperation with the well-known Paris broadcasting station "PTT". Since this station is owned and operated by the French Post Office the television experiments have a kind of official character.

The most startling fact about these television experiments for an American observer is their extremely low-definition transmission. While in this country experimenters are busy improving the available 180-line television system to a 340-line reproduction, because it is believed that the fidelity of a 180-line performance is not high enough to satisfy the public, the writer still experiments with a low-definition reproduction, consisting of only 60 lines. However we transmit the internationally used 25 frames per second, and since interlacing is used, fairly good performance is obtained at minimum cost.

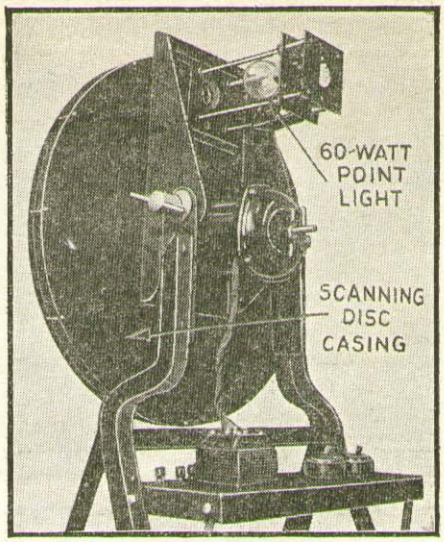


Fig. A. The scanner using a 60-W. "point" light.

For the image pick-up a scanner is used which operates with a 60-hole Nipkow disk, *but for the reproduction the rotating disk has been discarded and*

*(Continued on page* 103)

# A FRENCH TELEVISION SYSTEM

*(Continued from page 91)*

*a cathode-ray tube has been applied!*

The scanner disk is completely enclosed in a case as Fig. 1 shows; a design which reduces the noise produced by a disk rotating in open air. To obtain a strong spot-light beam with a small light-source, lenses have been installed in the holes of the Nipkow disk. How efficient this lens system actually operates may be seen by the fact that only a 60-W. lamp is used as light source.

This lamp is of course of special design. It is a so-called "point-lamp." A kind of incandescent lamp without the usual type of filaments, but furnished with 2 small tungsten balls between which a small electric arc is produced. The light of such a lamp is not only of a very bright white color, but is also concentrated to a degree seldom obtained by the use of a carbon-arc lamp. A similarly-designed scanning disk has been used for the 60-line transmissions of the French broadcasting station "Poste-Radio-Lyon," in the southern part of France.

The chassis is designed in a 3-shelf form. Upon the bottom of the chassis (see Fig. B), the power supply and the sweep circuits have been installed. On the second shelf we see the image receiver, and above this receiver there has been suspended the cathode-ray tube. No means of sound reception and reproduction are provided in this laboratory set-up.

The receiver is a superhet. of normal design as used for the reception of medium-wave (broadcast band) transmissions on which the television signals are at present radiated by the broadcast station "PTT-Paris." Only the I.F. stages are tuned to a relatively broad band to avoid a cut-off of the image frequencies. The receiver is kept in synchronism with the transmitter by means of synchronizing impulses at the end of each line. In connection with this it might be of interest to mention that the sweep circuit operates with a thyratron tube which is applied as a resistor of variable resistance, which discharges a condenser.

The cathode-ray tube (of English make) is of the so-called high-vacuum-type, with a screen size of 6 x 10 ins. The plate and exciter voltage applied in this tube is about 3,000 volts. Although the image quality is too low to satisfy the public after the first curiosity has been satisfied, it is only the beginning of real television progress in France.

Radio-Craft, August 1936