Television at the Berlin Show

A Review of the Year's Progress in Germany

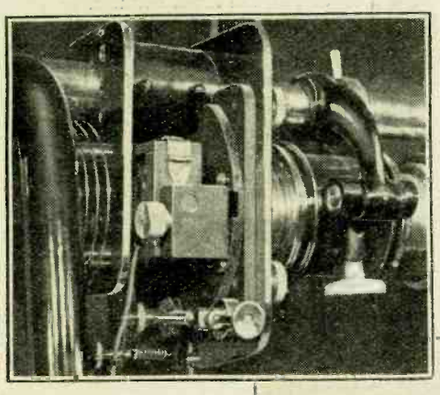
With a regular television transmission on ultra-short waves, Germany is at present taking a lead in television development in Europe. Apparatus for the reception of these transmissions is being developed by a number of manufacturers

DURING the past year, and particularly in recent months, there has been great activity in the field of television in Germany. The German Government is anxious to encourage television. Even so, the only prospect of television at present seems to be on ultra-short waves. German investigators all use twenty-five picture changes and 180 lines, with 40,000 picture elements, and thus obtain pictures far in advance of the current Post Office transmissions.

Some examples of the progress made and shown at the Berlin Exhibition will be briefly mentioned.

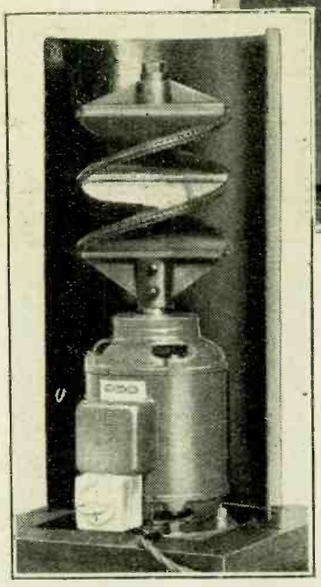
The Principal Exhibits

The Fernseh A.G. has been able to improve to a remarkable extent its well-known "intermediate film" process. In this system the object to be transmitted is first filmed, and the film still wet (in fact, five to ten seconds after exposure) is passed through the televisor and scanned. Formerly it was necessary to use a new film for every record; now, this is no longer necessary. A blank film in an endless band is now used. A sensitised layer is deposited on this by a special apparatus. After passing through a drying chamber the film arrives in the recording camera, where it is exposed, developed, fixed, and led to the



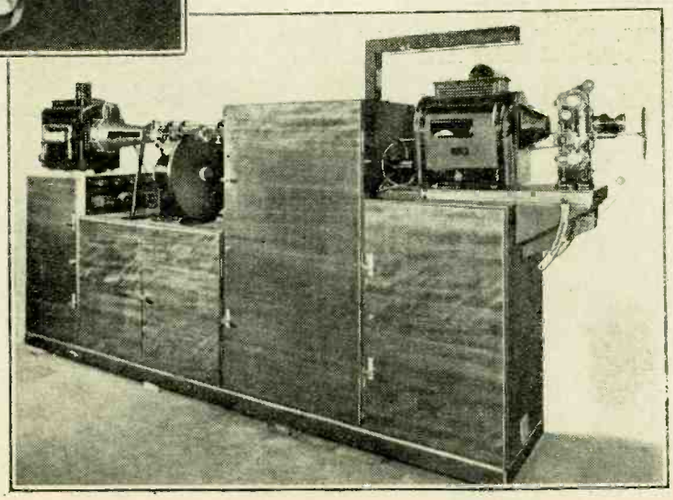
The Fernseh A.G. continuous "intermediate film" television projection receiver, with (inset) a close-up view of the Kerr cell unit which modulates the light.

television transmitting apparatus. Once the picture has been scanned, it is wiped out from the film by another process: a new sensitive layer is deposited on it, and the whole circle repeated. Another accomplishment of the Fernseh A.G. this year is the projection of television pictures to a size of 3 × 4 metres, by the following method. An endless band of blank film is provided with a sensitive layer in a special apparatus and is then dried. From the drying chamber the film passes to a window at which the received television picture is recorded as a negative by means of a perforated disc and a source of light modulated as to brightness. Although every separate picture element can only be illuminated for about a millionth of a second, the illumination is sufficient. The recorded picture is immediately developed and fixed and then projected as a positive picture in much the same way as an ordinary film, by a special cine projector. After passing through this projector the photographic layer is removed from the film and replaced by a new one so that the process continues without intermission.



Another exhibit of the Fernseh A.G. is a new light ray scanner for the direct scanning of subjects. The novelty in this process is that the scene and persons to be transmitted are in a closed room whose inner walls are as white as possible and thus possess a high power of diffuse reflection; in this way three dimensional scenes can be transmitted without interfering shadows and with great efficiency.

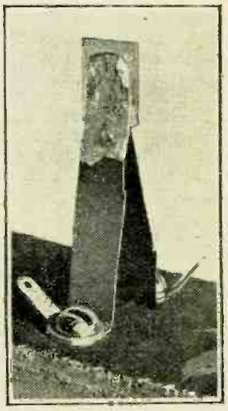
The Fernseh A.G. were also showing a cathode ray television receiver and a mirror



The Te-ka-de mirror screw television receiver and an enlarged view of the mirror screw and motor.

screw receiver, as developed by Te-ka-de.

As in former years, the Te-ka-de exhibited a mirror screw television receiver which is on sale and which this year also reproduces sound. A Te-ka-de novelty is a new type of Kerr cell for the control of the light ray. This Kerr cell does not consist, as usual, of a small condenser in nitro-benzole, but of a crystal through which the light passes. The crystal plate is coated on both sides with metal foil to which the modulating voltage is applied. Under the influence of this voltage the transparency is altered, linearly.



A crystal substitute for the Kerr cell. The crystal transparency varies, depending upon the potential applied across it.

The firm of Loewe exhibited a cathode ray television receiver. The length of this cathode ray tube is 60 cm., the diameter of the fluorescent screen being about 25 cm. The lower portion of the apparatus contains the ultra-short wave receiver, the "Kipp" apparatus for controlling the tube, and a mains unit for providing the necessary voltages. The knobs on the left-hand side of the front regulate the volume for the loud speaker and the tuning of the short-wave receiver, the knobs on the right control the sharpness, and also the switching on and off of the mains