

THE Pye Camera represents the last word in present-day television equipment. Equally outstanding in operation on outdoor pick-up or in the studio, it embodies many revolutionary features, all of them contributing to flexibility and efficiency.

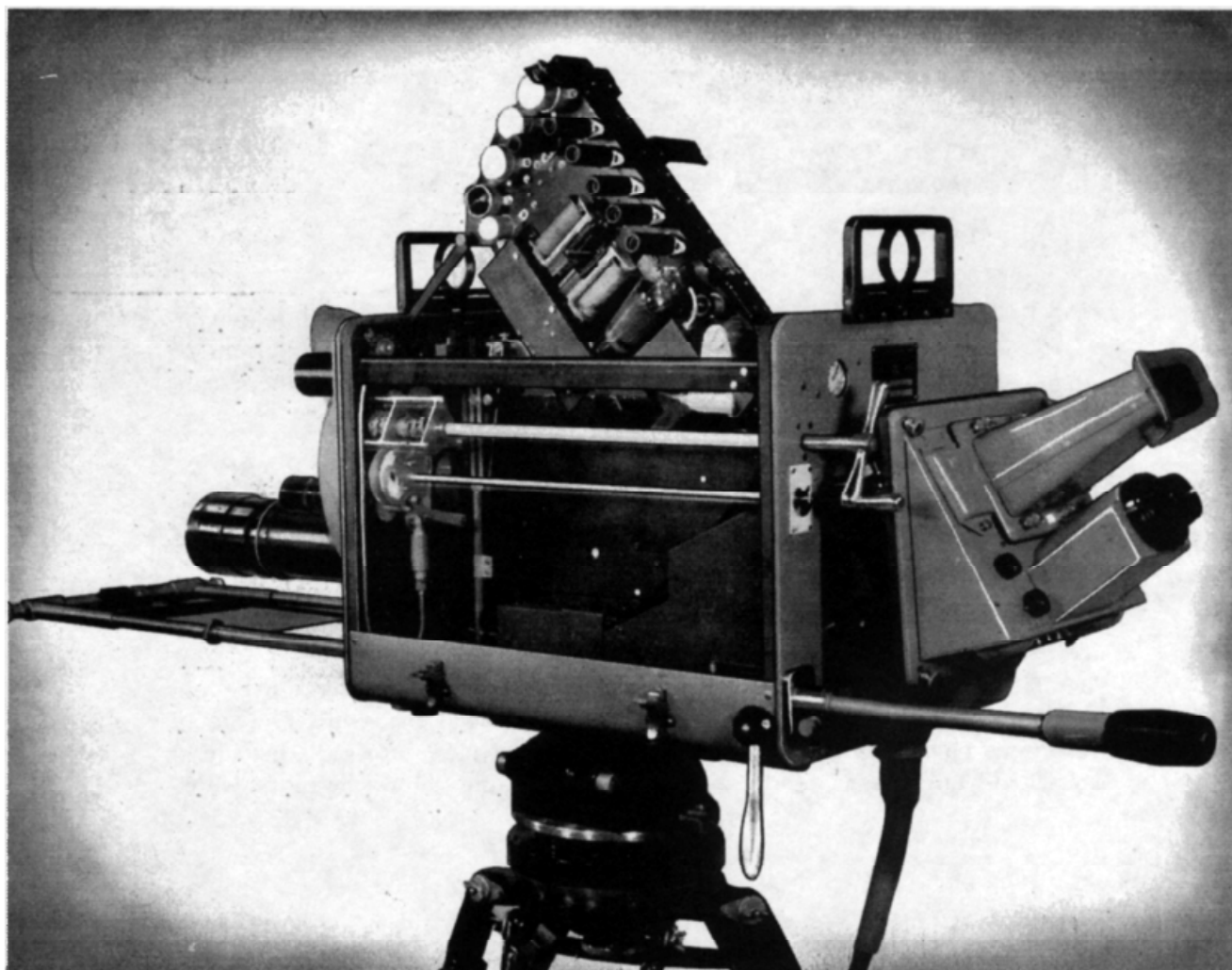
The "eye" of the camera is the Pye-Cathodeon "Image Photicon" tube. This tube has a sensitivity adequate for all normal lighting intensities, and in addition has a particularly fine tonal response, giving a rendering of light and shade of an artistic standard not hitherto associated with television. Using the correct lighting technique, studio pictures of unsurpassable quality can be obtained, and its wide range of light acceptance, coupled with its panchromatic characteristic, makes it ideal for outdoor work. This last feature is most valuable when televising human subjects, excellent portraits being obtainable without the use of special make-up. The detail resolving power of the tube is more than adequate for all broadcast standards, and the geometric distortions, sometimes found in tubes which

employ electronic image-magnification, have been eliminated by the use of special compensating circuits of unique design.

The mechanical design of the camera is perhaps its most remarkable feature. Realising the exacting demands of Television Broadcasting work, Pye engineers have produced a revolutionary design of camera in which flexibility and centralised control are the salient points. All the operator's controls are brought through to the rear of the camera, and quick-release covers give instant access to the interior mechanism and to the four-lens turret assembly.

Further flexibility and ease of maintenance have been achieved by the subdivision of the electronic apparatus in the camera into separate units, each one of which can be changed easily and rapidly. By duplication and by carrying units as spares, maintenance for full-time programming can be made an easy matter. No camera need ever be out of action for more than a minute or two—the time taken to remove any unit and replace it with another. Moreover, routine checks and maintenance can be carried out on all these units without taking an important camera out of service, and thereby keeping idle the mechanical arrangement of lenses, etc., which rarely, if ever, needs attention.

These separate units are three in number, as follows:—

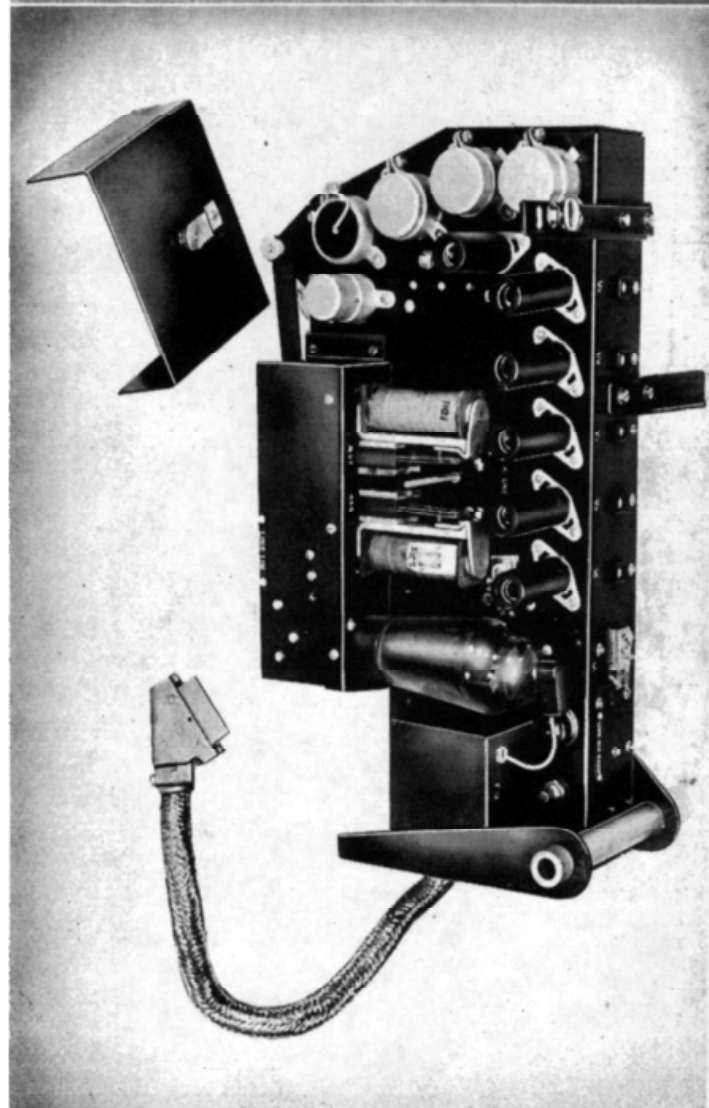
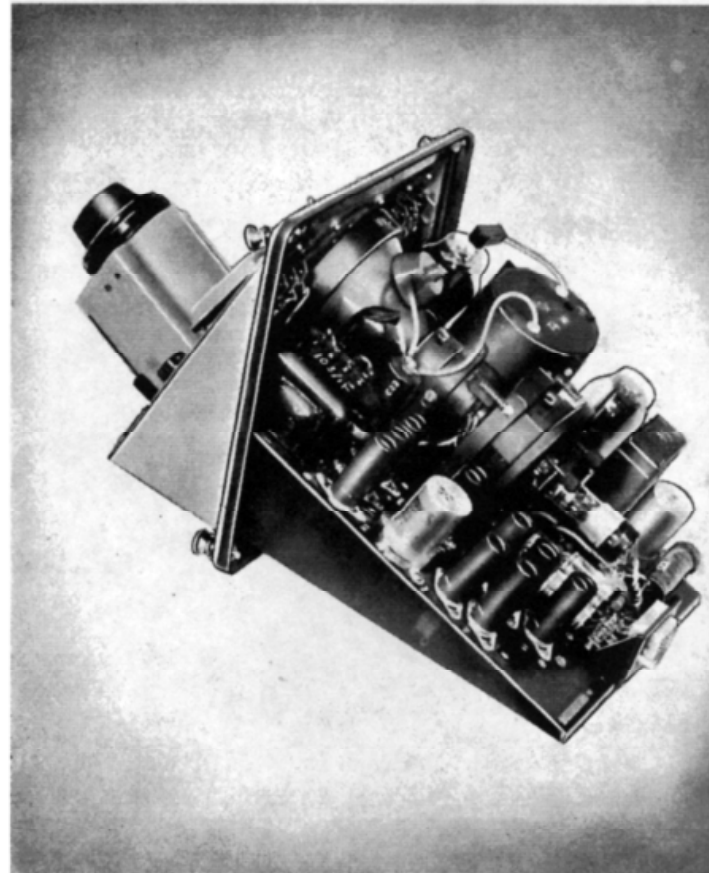


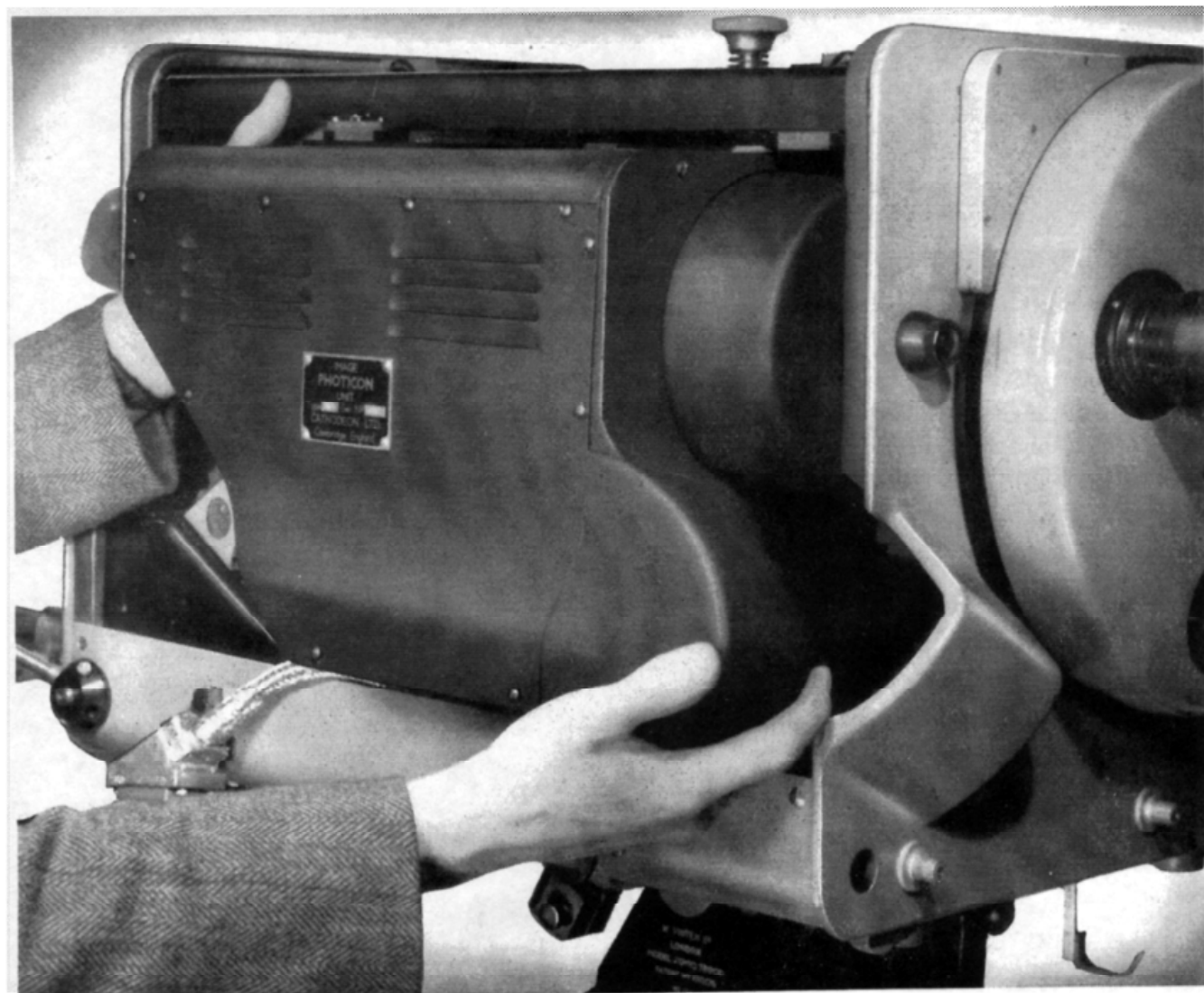
(1) **THE ELECTRONIC VIEWFINDER.** This is in effect a miniature television receiver which presents on a special Cathode Ray tube the picture actually transmitted by the camera. The camera operator views the picture through a magnifying lens mounted in the removable masking hood.

Also incorporated in the viewfinder chassis are the "Talk-Back" circuits, including sufficient outlets for four pairs of headphones, and a built-in microphone through which the camera operator may communicate with the control rack operator.

The viewfinder slides in and out of the camera on drawer-like rails; when it is pushed fully home, a 12-way plug and socket of special design automatically makes connection with the camera wiring. A special flexible extension lead, which enables the viewfinder to be operated outside the camera case for maintenance and test, is supplied with each equipment.

(2) **THE CAMERA TIME-BASE UNIT** amplifies the low-level scanning signals coming from the camera control unit and applies them to the Image Photicon Unit. It can be hinged up on a pivot while actually running to facilitate setting-up adjustments, and can be unplugged and removed altogether in a minute or two.





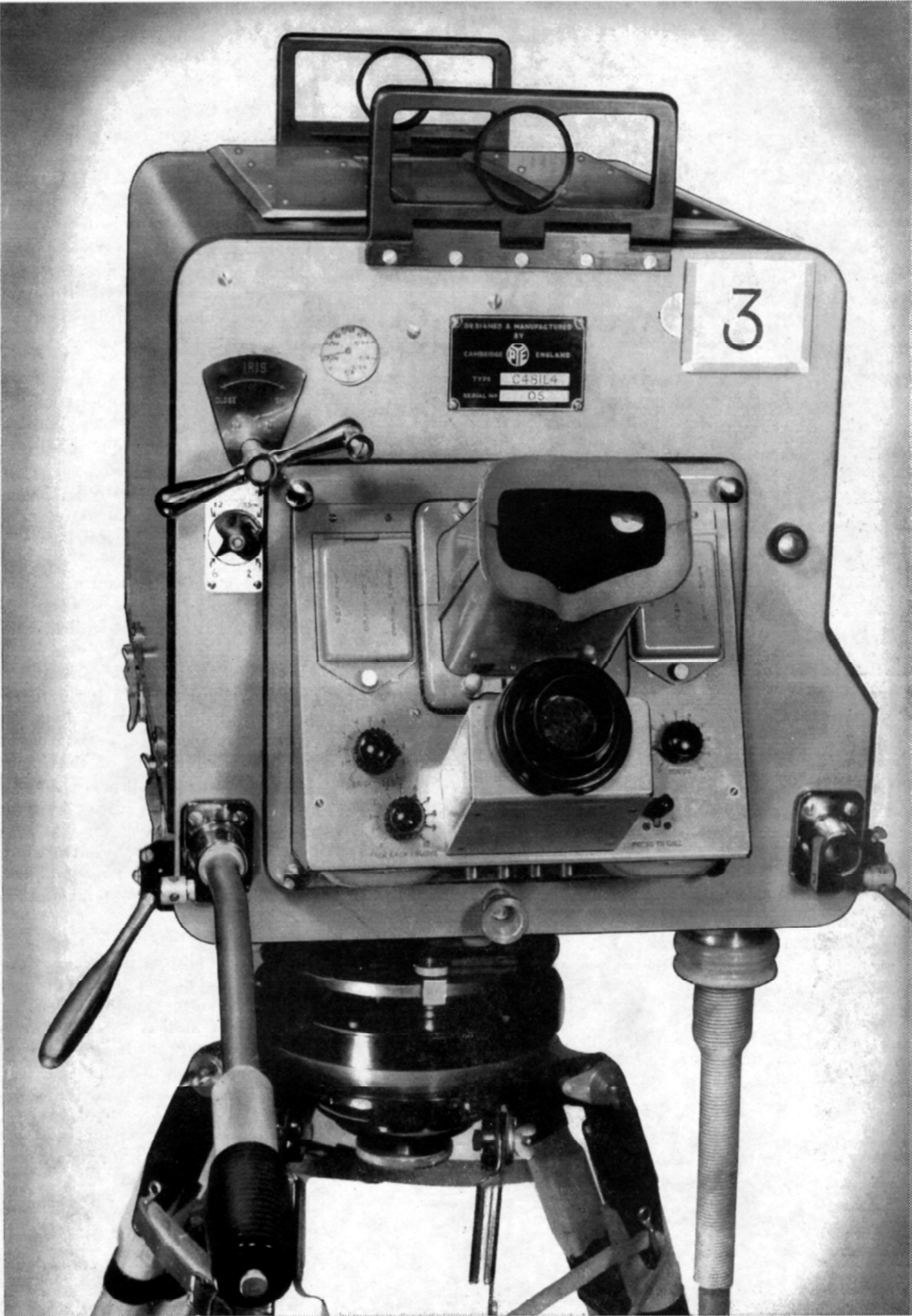
(Above) Changing an Image Photicon Unit.

(Below) Changing the make-up of the lens turret.



(3) THE IMAGE PHOTICON UNIT

contains the Image Photicon tube together with its focussing and deflecting coils and the picture signal pre-amplifier. The extremely laborious initial work of optical and electrical alignment is carried out in the factory before despatch, and the Unit arrives as a sealed package instantly ready for use. Tube changes can therefore be made in a matter of seconds, a development which can be truly said to make television history.

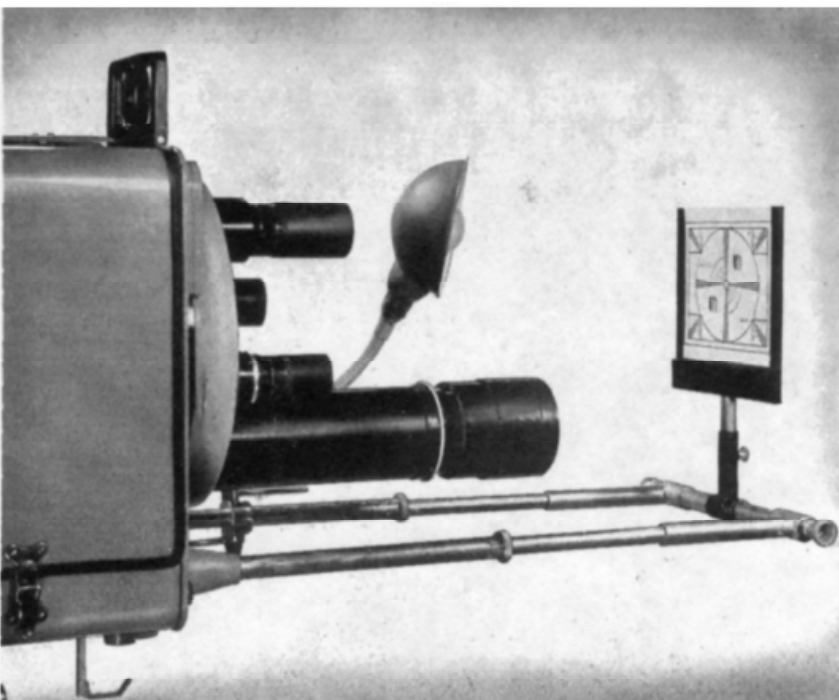
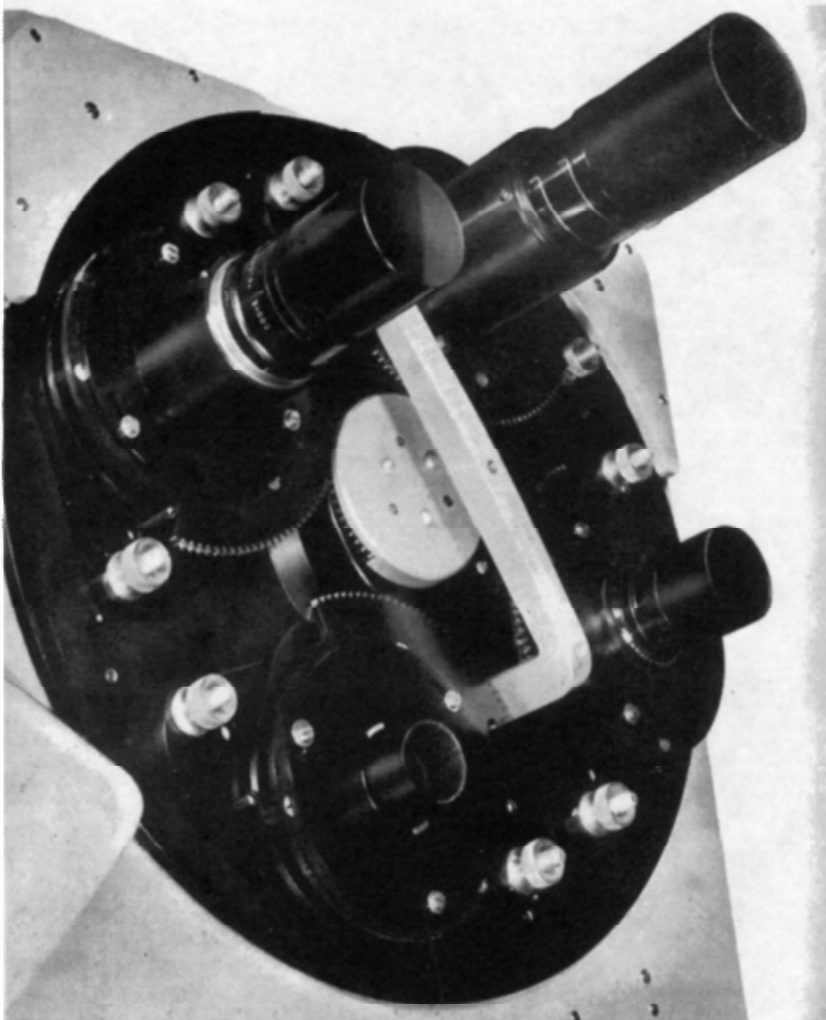


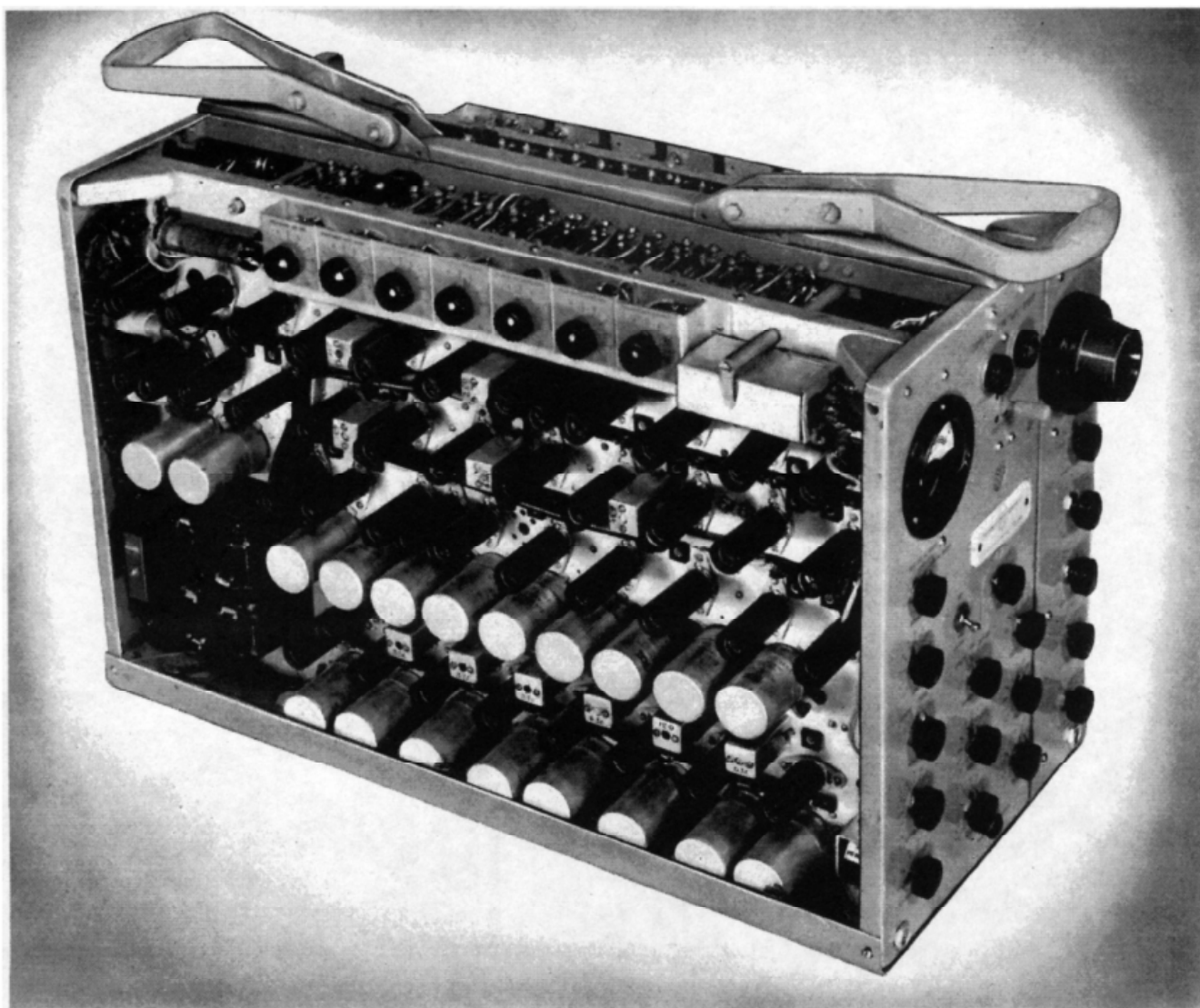
The Camera Turret has capacity for four lenses. A range between 1.375 inch (35 mm) and 20 inch (50.8 cm) is available, twelve alternative focal lengths being carried as stock; this gives the camera a complete choice of views between normal wide-angle vision and the effect of a powerful telescope. We will be glad to advise on suitable lenses for different types of work.

By virtue of the turret, the operator always has a choice of four viewing angles available, and the special design makes it possible to load the turret with any variety or sequence of lenses desired. Lenses can be attached and removed in a few seconds. A single control handle at the back of the camera serves a dual purpose: in its normal position it can be turned to open or close the iris of the lens in use, direct indication of the iris opening being given on an adjacent dial. When the handle is pulled out and turned, it rotates the turret to bring the next lens into position. Automatic registering of the lens, and return of the handle to iris control, follows. Another unique design feature provides that, *whatever lens is in use*, the operator's focus control automatically has a range from infinity to close-up with 180° rotation of the control.

Other features of the camera include a detachable holder for caption or test signal cards, with built-in illumination; and Automatic Warning lights at front and rear which light up when the camera is selected for transmission.

The camera connects to the Control Unit through a single 24-way cable of special design.





THE CAMERA CONTROL UNIT has two functions—they are

- (1) to generate and supply to the Image Photicon Unit the necessary currents, voltages and scanning signals.
- (2) to accept the picture signal from the Camera, to amplify it, insert black level and to pass it on to its destination, which can be either a transmitter, a mixer unit which is also fed by other camera channels, or a group of directly-fed viewing monitors. The Unit delivers signals with or without synchronising pulses included in the picture waveform, thus catering for any of the above applications.

Although eighteen controls are provided on the front panel, and a further eighteen inside, operation is extremely simple, few of these controls needing adjustment after the initial set-up has been made. Like the waveform generator, this unit may be opened up suitcase fashion while running, should access to the internal wiring be required.

THE CAMERA CONTROL UNIT MONITOR is a self-contained unit complete with power supply which supplies on a $7\frac{1}{2}$ " x 6" screen the picture supplied to it by the camera control unit. At the same time a 3" oscilloscope tube presents the waveform trace, the line or frame component of which may be selected by a key switch on the front panel.

All our lengthy and unique experience of television receiver design has gone into this unit in order to make it capable of rendering the finest possible degree of detail, tonal gradation and geometric accuracy.



THE CAMERA AND C.C.U. POWER UNIT delivers four electronically stabilised D.C. lines to the Camera and its control unit. It also furnishes the necessary D.C. supply to the talk-back and communication circuits.

The layout is designed for efficient cooling and easy access to valves, components and Sub-circuit fuses, these last being accessible through the front panel. Spare fuses are mounted inside the removable fuse panel cover.

