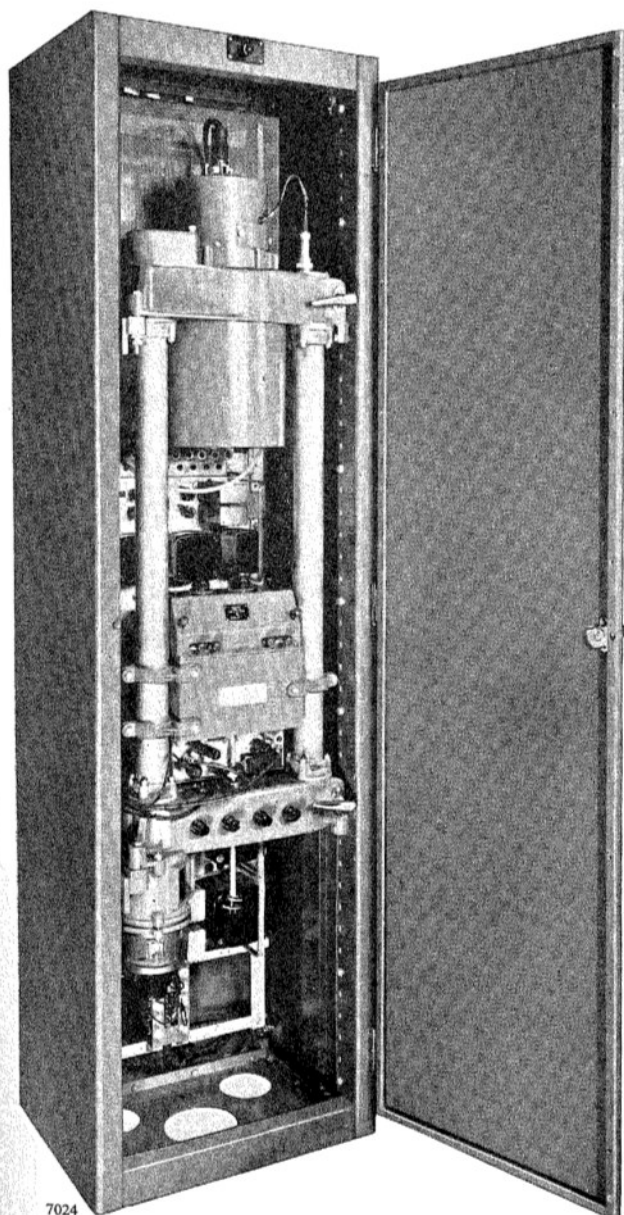




Marker Unit (Video Map) Type 30



7024

THIS UNIT provides a means of electronically superimposing maps or other topographical markings on the screen of a PPI display in addition to the radar picture. The map or grid is marked photographically on a glass slide and converted by a scanning system into video signals. These are mixed with the video signals from the radar and displayed simultaneously on the screen. The system represents a great advance over the method of marking or painting such information on the face of the screen or on a transparent mask covering it, due to the much greater flexibility offered as well as the considerably higher degree of accuracy afforded.

FEATURES

Off-centering of PPI for sector working does not affect the correlation between radar display and video map display.

The video markings can be changed in a few minutes, allowing the function of the PPI to be rapidly adjusted when necessary.

Errors due to parallax effects are completely avoided.

Two sets of markings can be used simultaneously to provide separate pictures for long and short range working, or for 'back-to-back' operation with two synchronised radar heads.

Inter-services preferred components are used throughout.

The unit is suitable for use in tropical climates.

CONSTRUCTION

The equipment is contained in a cabinet 7 ft high and occupying only a small amount of floor

space. The complete scanning system, which is mounted vertically in the cabinet, can be moved up and down by a rack and pinion arrangement for focusing purposes. It can also be swung to one side to give access to the electronic circuits at the back of the cabinet. These consist of panel-mounted units easily removable when necessary. This is, however, seldom necessary as the undersides of the panel units are immediately accessible through the rear door of the cabinet for servicing.

FUNCTION

The photographic slide is scanned by a special high-intensity cathode ray tube, through an optical system. The cathode beam is deflected by

a sawtooth waveform and simultaneously rotated in synchronism with the aerial, the same as is the PPI tube beam. As the rotating beam scans the slide, focused through it on to a photo-electric cell, the variation of light intensity is converted by the cell into electrical impulses which are amplified in a video amplifier to a level suitable for mixing with the radar video signals entering the PPI display. Once properly set up, the video map will always be in correct relationship with the radar echoes, even when the trace origin is off-centred for sector working.

A dual optical system is fitted, to provide two alternative video maps which can be switched according to range or operational requirements.

DATA SUMMARY

Maximum range: 240 nautical miles.

Input sync. pulses: Length 2–50 μ s.

PRF 250 p.p.s. for max. range

Amplitude: 5–40 V.

Polarity: Positive-going.

Video outputs: Amplitude: $1\frac{1}{2}$ V max.

Polarity: Positive-going.

Impedance: 80 Ω

Frequency response: 1.5 Mc/s
bandwidth

Power supplies: 230 V ($\pm 3\%$) 45–65 c/s single-phase AC.

Power consumption: 750 W.

Dimensions:

Height	Width	Depth
7 ft (214 cm)	23 $\frac{1}{2}$ in. (60 cm)	21 in. (53 cm)

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