



Moving-Coil PPI Display Type SD 701

WHERE a limited number of displays are to be used with a radar set, the moving-coil system of deflection presents many advantages. Chief among these are its simplicity of operation and the high degree of accuracy with which bearing information can be produced.

The Type SD 701 is a particularly attractive display unit of this category and embodies every refinement and facility normally required in a modern radar system.

Short range (up to 60 nautical miles) and long range (up to 250 nautical miles) versions are available.

FEATURES

Completely self-contained and capable of integration with any surveillance radar system.

12 in. diameter screen; electrostatically focused, flat faced, magnesium fluoride coated, aluminium backed and with a very long after-glow.

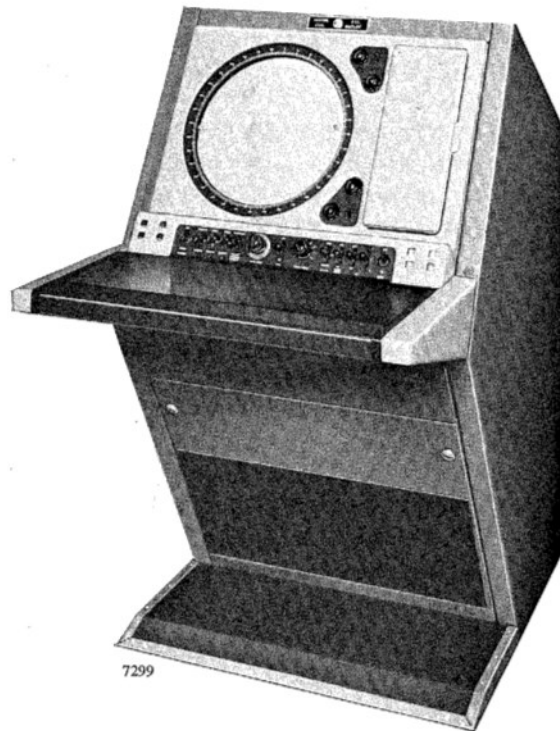
Off-centring of trace origin to any point on the tube circumference, permitting concentration on any one sector of the scan.

Switch selection of either of two incoming video channels.

Head combining facilities for 'back-to-back' operation.

Four switched ranges on each version, automatically selecting the appropriate range-marking signals. Brilliance compensation with range changes.

Delayed start scan (on long-range editions) giving delays of scan starting, variable up to a range of 100 nautical miles.



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Delayed bright-up (on long-range editions) providing blanking of scan start, variable up to 25 nautical miles, to eliminate ground clutter glare.

Facility for operating an externally-generated range strobe and a height-finder strobe.

Edge-lit range scale and rotatable mask engraved with plotting lines.

Reflection plotter available for fitting to front of screen.

CONSTRUCTION

The display unit is in the form of a completely self-contained and well-appointed desk console. Particular attention has been made to the facilitation of servicing procedure. All main units are withdrawable on runners, and sub-sections fold down to provide access to every component in a minimum of time.

The cabinet is air cooled, assisted by a small fan and an air filter.

The reflection plotter, when fitted, permits topographical or other markings to be made on the screen and easily removed by a soft cloth. By optical means, parallax errors are completely avoided.

OPERATION

The cathode ray beam is deflected by a linear sawtooth time-base waveform regulated by a synchronising pulse and a gating circuit. A brightening pulse is applied to the cathode beam during each scanning period. The start of this pulse can be delayed as an anti-clutter facility.

The time-base coils are rotated in synchronism with the aerial and are driven by a selsyn motor through a 30:1 reduction gear. Video amplification, up to a maximum gain of about 40, is provided by a four-stage amplifier in the console.

Power supplies for all circuits are produced by the incorporated power supply circuits.

DATA SUMMARY

External inputs required:

- (1) Video signals: Positive-going, with minimum mean noise level of $\frac{1}{2}$ V. 80 Ω source. Pulse lengths down to 0.1 μ s.
- (2) Sync. pulses: Positive. Minimum level 5 V. 80 Ω source. Minimum length 0.1 μ s.
PRF: 200–2000 p.p.s. depending on max. range.
- (3) Range marks: Mixed with video.
- (4) Relay supplies: 50 V DC.
- (5) Selsyn motors: 230 V type.
- (6) Power supplies: 200–250 V ($\pm 6\%$) 45–65 c/s single-phase AC (Consumption 850 W).

Ranges:

Long range version:	}	in four pre-set ranges.
Short range version:		

4.5–240 n.m.
1–60 n.m.

Range marks: Externally generated range rings. (Variable range strobe as an extra facility, minimum input level 5 volts, positive or negative.)

Bearing accuracy: Within $\pm \frac{1}{4}^\circ$ overall.

Time-base linearity: To within 1% after first $\frac{1}{4}$ in.

Dimensions:

Height	Width	Depth	Weight
43 in.	25 in.	40 in.	550 lb
(109 cm)	(63.5 cm)	(101.6 cm)	(250 kg)



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