



Electronic Velocity Analyser Type S365 'SEA EVA'

SEA EVA is a velocity analyser designed for aircraft-carrier flight deck operation. The equipment can be easily set up and will provide a continuous record of velocity and acceleration from the final approach stage to the moment the aircraft enters the arrester wires and is brought to a standstill.

The equipment comprises an aerial unit and an analyser unit, connected by a multi-core cable of 50 or 100 yards (46 or 91 metres) length. The aerial unit may be placed on deck and the analyser unit is sited under cover in the island structure.

With high-performance naval aircraft operating under critical conditions, speed analysis provided by Sea Eva can be of use in the design of aircraft and landing gear, arrester systems and in pilot training.

Features

The equipment is portable, each main unit having two robust carrying handles.

The aerial unit is waterproof and the analyser unit drip-proof.

High-quality, generously rated components, forced air cooling and rugged construction are used for reliable service in arduous conditions.

Units may be withdrawn readily for servicing.

The chassis of the analyser unit may be mounted in a standard cabinet or rack without modification if the instrument is integrated into a system.

EQUIPMENT

Aerial unit. The transmitter and receiver, together with their horn-type aerials are enclosed in a waterproof lightweight case. A hinged door gives access to all controls.

The transmitter employs a robust klystron which produces a CW output power of 30 mW minimum and feeds the separate transmitting aerial.

A receiving aerial picks up the reflected wave which is changed in frequency due to the doppler effect. This is fed together with a sample of the transmitted wave to a balanced crystal mixer. The mixer output

is at the difference frequency, which is proportional to the speed of the aircraft. It is amplified in a transistor circuit and fed to the analyser unit. A wavemeter is included in the waveguide circuit together with a meter for klystron frequency measurement and crystal current checking **Analysing unit.** This unit resolves the doppler frequency into a measurement of velocity.

When a signal is received, a relay automatically starts the high-speed pen recorder and a continuous plot of the velocity/time relationship of the target is made on Teledeltos paper.

A cooling fan and air filter is incorporated into the drip-proof case. The two chassis of this unit 19 in. wide, and suitable for mounting in a standard rack.

Data Summary

Speed range: 25 to 160 knots.

Accuracy of speed measurement: $\pm 0.5\%$ + fixed reading of ± 0.8 knots max.

Equipment range (distance from aerials): Better than 150 yards (137 m) on 1 sq. metre target.

Transmitter frequency: 9550 Mc/s. Operation on one spot frequency.

Transmitting and receiving aerial beamwidths (3 dB): 20° horizontal, 6° vertical.

Power output: 30 mW (min.) CW.

Power supplies: 100-125 V AC in 5 V steps; 200-250 V AC in 10 V steps, 45/65 c/s, Max. V deviation $\pm 7\frac{1}{2}\%$.

Power consumption: 330 VA (approximately).

Dimensions:

Height	Width	Depth	Weight (approx.)
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Aerial unit

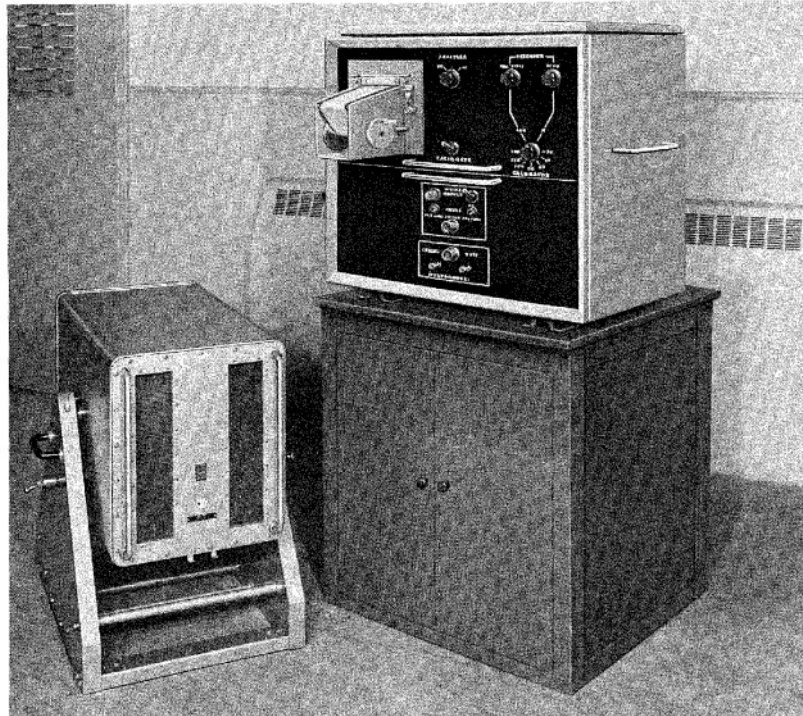
2 ft 6 in. (76 cm)	2 ft (61 cm)	2 ft 8 in. (81 cm)	100 lb (45 kg)
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Analysing unit

1 ft 9 in. (54 cm)	2 ft 2 in. (66 cm)	1 ft 9 in. (54 cm)	150 lb (68 kg)
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Interconnecting cable: 50 yards (46 m) long with a weight of 54 lb (25 kg).

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Marconi

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