Receiving Aerial Exchanges
RC 70 Series

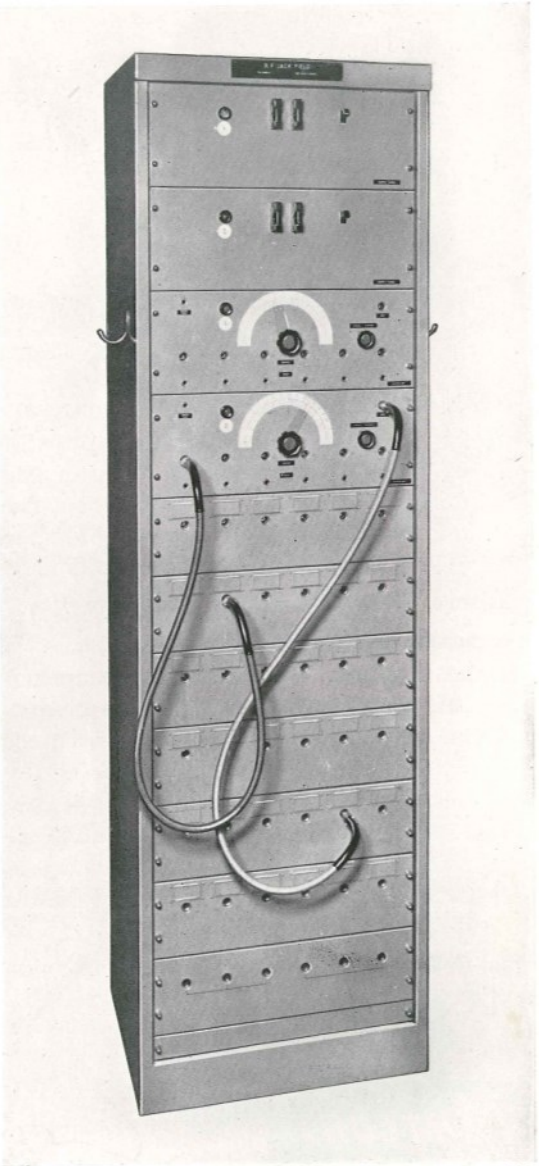
THE AERIAL EXCHANGE EQUIPMENT Type RC 70 series, consists of aerial splitter units, each enabling a number of receivers to be operated from a common aerial, together with a jackfield or system of coaxial plugs and jacks for connection of the associated aerial and receiver feeders.

The aerial splitter is essentially an impedance-matching device enabling common-aerial working to be effected with minimum loss. A number of editions are available, having different characteristics.

Basically there are two distinct splitter designs, one consisting of the untuned or broad-band splitters and the other the tuned or narrow-band editions. All of the splitter panels are capable of feeding up to six receivers from the one aerial input, but as this is often in excess of the actual requirements certain 'dual' editions can be switched for operation also in two sections, with two inputs each feeding three outputs.

The various units, including HF jacks, are built in the form of standard panels suitable for mounting in a vertical cabinet assembly. These assemblies may range from a single short cabinet for bench use (or a single floor-mounted cabinet), to a large multi-bay assembly, depending on the number of aerial splitter units and the extent of the aerial and receiver connections required. Aerial exchange groups containing up to 10 bays of equipment have been supplied for large receiving installations.

The feeder jack fittings and flexible connectors provide effective and continuous screening, throughout, of each HF circuit.



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The following editions of aerial-splitter panels are available and can be used to meet a wide range of requirements:

Input Circuit	*Edition Reference*	*Frequency Range (Mc/s)*		*Inputs*	*Outputs*
Untuned	1	1– 3			
	2	3– 8		1	6*
	3	8–20			
Tuned	21	3–20			
	22	3–20		1	6†‡
Untuned		(*a*)	(*b*)		
Dual	11	1– 3	1– 3		
	12	3– 8	3– 8		
	13	8–20	8–20	2	6*§
	41	1– 3	3– 8		(3+3)
	42	3– 8	8–20		
Tuned Dual	31	3– 8	8–20	2	6‡§ (3+3)

**Note i:* The 'untuned' editions employ band-pass filter input circuits covering the specified wide frequency ranges.

†*Note ii:* This 'tuned' edition covers the specified frequency range in two tunable bands of 3–8 and 8–20 Mc/s, selected by a switch.

‡ *Note iii:* In the 'tuned' editions 22 and 31 the approximate working band about the setting of the tuning control is ±10%. Edition 21 provides about ±1·5%.

§*Note iv:* In the 'dual' editions, (having two inputs (*a*) and (*b*)), a three-way switch provides the following combinations:

(1) Aerial (*a*) to all of six outputs.

(2) Aerials (*a*) and (*b*) each to three outputs.

(3) Aerial (*b*) to all six outputs.

DATA SUMMARY

Frequency range:

Untuned splitter. Three basic editions with pass-bands of 1–3, 3–8, and 8–20 Mc/s.

Tuned splitter. Basically 3–20 Mc/s in two ranges. The tuned pass-band about the resonant point is approximately ±1½%, or ±10% for alternative damped edition.

Impedance: Input and output nominally 75Ω.

Transmission characteristics:

Untuned splitter. The transmission characteristic varies between a gain of approximately 3 db at the lower frequencies in the series to a loss of 3 db at the higher frequencies.

Tuned splitter. In any tuned pass-band in the range of 3–20 Mc/s the overall gain will be between approximately zero and 6 db, the latter at optimum tuning.

Signal-to-noise ratio: Unaffected by the insertion of the splitter.

Power supply: Approx. 80 W to each splitter supply unit from 200–250 V 50–60 c/s AC mains. The AC load taken by the Test Panel is approx. 80 W.

Exchange assemblies: An aerial exchange group, consisting of aerial splitter equipment with the aerial and receiver jackfield, is normally mounted in one or other of the following assemblies, the choice depending on the size of the receiving installation:

(*a*) In a cabinet for bench mounting:
Height 3 ft 6¼ in. (107 cm)
Width 1 ft 11½ in. (59 cm)
Depth 1 ft 8½ in. (52 cm)

(*b*) In a cabinet for floor mounting:
Height 6 ft or 7 ft 0¼ in. (183 or 214 cm)
Width 1 ft 11½ in. (59 cm)
Depth 1 ft 8½ in. (52 cm)

(*c*) In a multi-bay assembly of units as (*b*) forming a continuous structure.

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