

## SUMMARY OF DATA

## PURPOSE

Types 87P/Q at low power (35 watts) V.H.F. transmitting equipment fitted in lieu of Type 87M for Fighter Aircraft communication. Type 87QS is fitted in R.N. Air Stations.

## TYPE OF TRANSMISSION

Voice (Types 87P/Q/QS) Voice and M.C.W. (Type 87P).

## FREQUENCY RANGE

100 to 156 Mc/s.

## MAJOR UNITS

Type 87P comprises essentially Transmitter 8N (Air Ministry Type T1131J)  
Types 87Q/QS comprises essentially Transmitter 75C (Air Ministry Type T1131K)  
The associated receiver is Receiver Outfit CDV (See separate data sheet).

A.P.67929 Transmitter 8N comprises the following Units:-

<u>A.M. Ref.</u>	<u>A.P. No.</u>	<u>Description</u>
10D/17766	67930	R.F. Power Amplifier Unit
10D/17765	67931	R.F. Driver Unit
10D/12	67932	Modulator Unit
10L/386	67933	Control Unit
10K/1901	67934	Modulator Power Unit
10K/16569	67935	R.F. Power Unit

A.P.61606 Transmitter 75C comprises the following Units:-

<u>A.M. Ref.</u>	<u>A.P. No.</u>	<u>Description</u>
10D/17766	67930	R.F. Power Amplifier Unit
10D/17765	67931	R.F. Driver Unit
10D/17936	61535	Modulator Unit 57F
10L/186	67933	Control Unit
10K/1901	61607	Modulator Power Unit
10K/16569	61608	R.F. Power Unit

The above six units are mounted in a rack in the order above downwards, forming the front panel of a cabinet standing 6 ft high, 1 ft 9 in. wide and 1 ft 5 in. deep. The total weight is approximately 6 cwt.

## BRIEF TECHNICAL DESCRIPTION

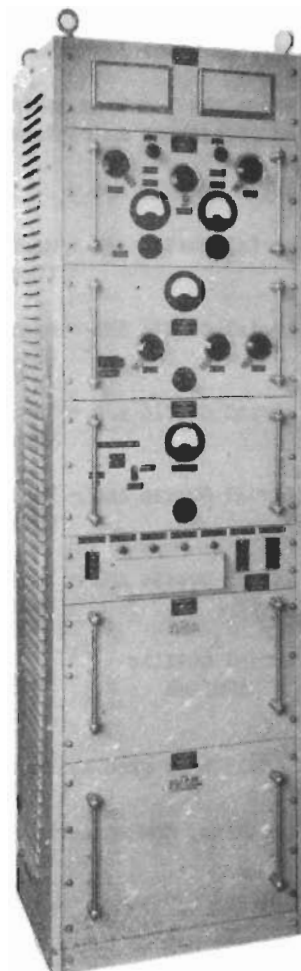
The RF section of the transmitter consists of a crystal oscillator followed by three frequency multiplying stages and a final amplifying stage. Anode modulation is used in the final stage. A high-power modulator is therefore required and it is designed for use with carbon microphones. To allow the use of M.C.W. in type 87P/QS a 1000 c/s tone oscillator is part of the modulator. There are three push-pull amplifier stages for speech and tone, and in addition, for speech there are two single-valve pre-amplifier stages. Metering and monitoring facilities are incorporated in the units. The modulator gives an audio power output of 175 watts with not more than 5% distortion.

## CONTROL CIRCUITS

The equipment can be operated locally or remotely using any of W/T and Voice Control Outfits KR Series or Fighter Direction Control Outfits KFA-E.

## POWER REQUIREMENTS

Transmitter 8N/75C requires 230V 50 c/s single phase at 1.2 kW. This supply is obtained from A.C. Supply Outfits DRD, DTC or DTD, when a suitable supply cannot be obtained from existing sources.



TRANSMITTER 8N

## HEAT DISSIPATION

1 kW (Approx.).

## AERIAL SYSTEM

To achieve satisfactory operating conditions, particularly over the extended frequency band, a modified aerial system (AJD) for yardarm and spur fittings is necessary.

Where the masthead aerial Outfit ANC/ANZ is used with Type 87M no modification to the aerial system is required consequent on replacement of that transmitter.

Brief details are -

Aerial Outfit ANC - Masthead fitting when Aerial Outfits AQB and AQD are fitted.  
(Used with Types 87M/P/Q)

Aerial Outfit ANZ - Masthead fitted when Aerial Outfits AQB and AQD are not fitted.  
(Used with Types 87M/P/Q)

Aerial Outfit AJD - Yardarm and spur fitting - wideband aerial (modified AGR) for Carriers only.  
(Used with Types 87P/Q)

Aerial Outfit ARU - Yardarm and spur fitting - (dipole) - for use in Carriers.  
(Used with Types 87M/Q)<sup>2</sup>

Aerial Outfit APH - Yardarm and spur fitting in Capital Ships, Cruisers, and small ships.  
(Used with Types 87M/Q)<sup>2</sup>

Aerial Outfits  
AGR/AGS - Royal Naval Air Stations (Type 87QS).

<sup>2</sup> Only when used as Type 87M replacement.

In ships, Common Aerial Working is employed - See Summary of Data Sheet on Common Aerial Outfits EAA-EAF.

## REMARKS

The set may be tuned without breaking wireless silence by using Patt. 57818 Dummy Load.

The power output is some 10 - ~~30~~ % lower than for Type 87M.

## HANDBOOKS

B.R.1582 (Type 87P), B.R.1389 (Type 87Q).

## ESTABLISHMENT LISTS

E679 (Type 87M/P)  
E968 (Type 87Q/QS)  
E884 (Aerial Outfit ANC)  
E921 (Aerial Outfit ANZ)  
E1046 (Aerial Outfit AJD)  
E607 (Aerial Outfit APH/ARU)  
E659 (Aerial Outfits AGR/S).

## INSTALLATION SPECIFICATIONS

B394 (Type 87M/P/Q)  
B635 (Aerial Outfits ANC and ANZ)  
B337 (Aerial Outfit AJD)  
B337 (Aerial Outfit APH)  
B337 (Aerial Outfit ARU)