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R.N.A.S. Model Tf

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DATA SUMMARY

Organisation: RNAS/RFC (RAF).

Manufacturer: Various.

Year of Introduction: Believed 1917. *)

Purpose: Airship and larger aircraft receiver.

Receiver: Regenerative detector, two AF stages.

Frequency: 150 - 2500 m (In three ranges).

150-350 m, 500-700 m, 1000-2500 m.

In a later production (Air Ministry Ref. 10A/3333), the 150-350 m range was discarded.

Mode: Spark, tonic-train and CW.

Valves: French pattern 'R' types (3x); BTH or Stearn.

Aerial: Trailing aerial.

Power supply: Dry battery 100V and 6V accumulator.

Size (cm): Height 23, length 16.2, width 26.

Weight: 4.1kg, exclusive batteries and accumulator.

References

- Royal Air Force W/T Apparatus. Receiver Model 'Tf', F.S. publication 75, Air Ministry, September 1918.
- Particulars of W.T Apparatus in the Royal Air Force, F.S. Publication 110, December 1918.
- The Wireless World, Aircraft Wireless Section, 1920-3.
- The second World War, 1939-1945, Signals, Vol.III, Aircraft Radio, Chapter 23.
- The Flowerdown link 1918-1978, S1 LLR Burgh, isbn 0 9507349 0, Privately printed, 1980.

*) The user handbook (F.S. Publication 75), mentioned in the references above as an RAF publication dated September 1918, was believed to be a reprint of an RNAS technical publication after the formation of the RAF. The Model Tf receiver had been introduced much earlier and was primarily used in the RNAS.

REMARKS

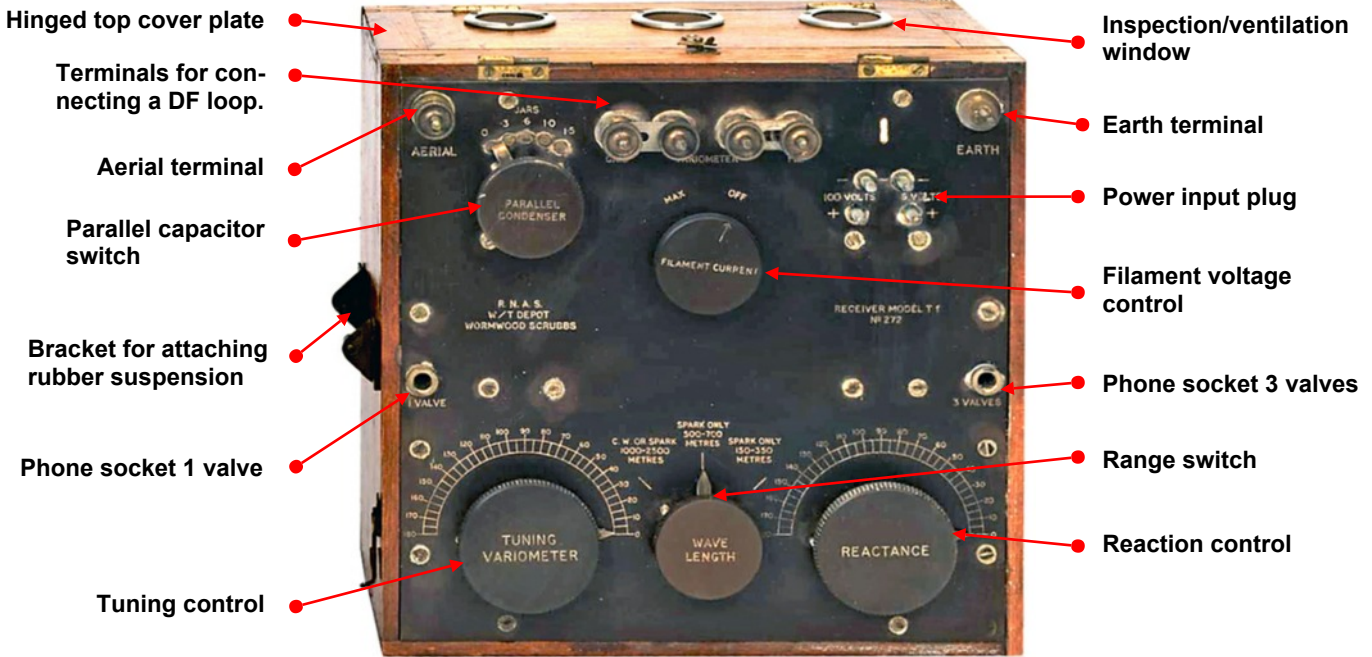
Model Tf was a receiver designed for installation in larger aircraft, sea-planes, and airships of the Royal Naval Air Service (and possibly the Royal Flying Corps, though this has not been confirmed) for the reception of spark, tonic train and CW signals. The receiver was originally designed at the RNAS Development Establishment, as was the case with receiver Models Ta through Td.

It should be noted that the British Army RFC and RNAS were merged in April 1918 into the Royal Air Force. This included both W/T research establishments, which became the RAF W/T Establishment at Biggin Hill. It is possible that at that time, technical publications of both Arms were revised and reprinted as RAF F.S. Publications.

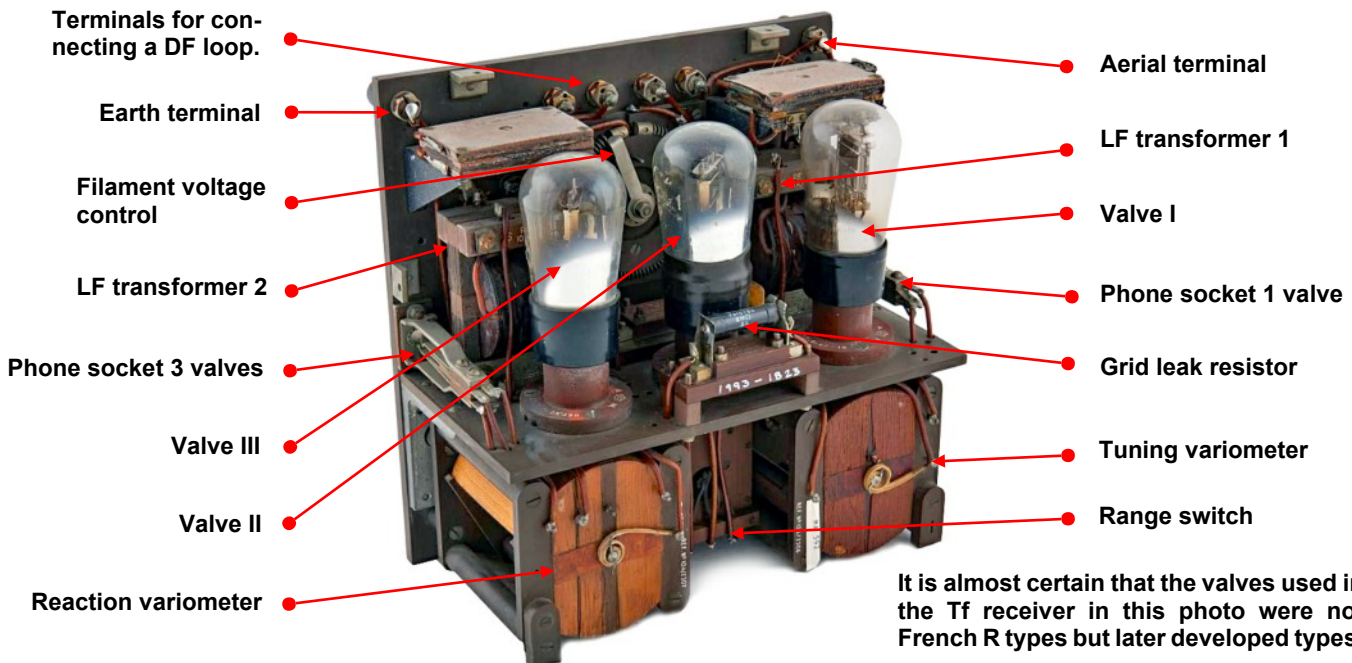
The naval units of the RAF came to be called the 'Fleet Air Arm' in 1924, but in 1937 the government announced that full administrative control of the Fleet Air Arm was to return to the Admiralty.

The Model Tf receiver was enclosed in a wooden case with an ebonite front panel and a hinged, detachable cover. Three French pattern type R valves (manufactured by the British B.T.H. or Stearn) were accessible through a removable lid at the top of the receiver, fitted with inspection/ventilation windows. It is believed that other types of valves replaced the type R. Arrangements in the circuit were made so that it could be used on a closed loop aerial for direction finding. An additional external tuning capacitor was required. Power was derived from an external HT battery and a 6V accumulator, connected to a 4-pin plug fitted on the front panel of the receiver. Two telephone sockets were fitted: one for listening with a single valve without amplification, and a second connected to a two-valve amplifier. In a later produced

The Type T21A transmitter and Tf receiver installations, both designed during WW1 for CW operation, were considered so efficient that they were adapted for long-distance reconnaissance purposes. They were subsequently introduced into all bombing and Army cooperation squadrons, becoming standard equipment by 1923. Although considerable skill was required on the part of the operator to obtain good reception with the Model Tf in the air, remarkable results were achieved with the installation, which remained in use in the service until a few years before the Second World War.

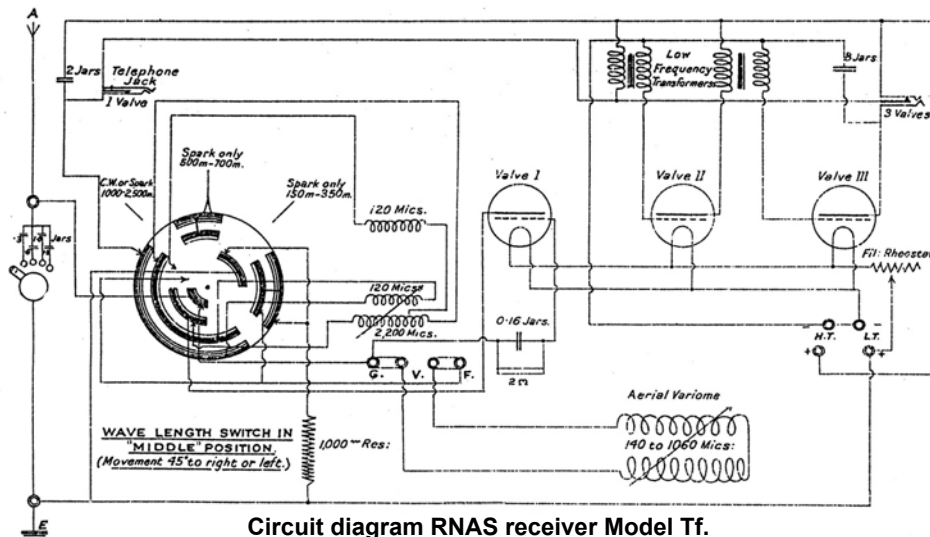


Front panel view with explanation of the controls Model Tf receiver.

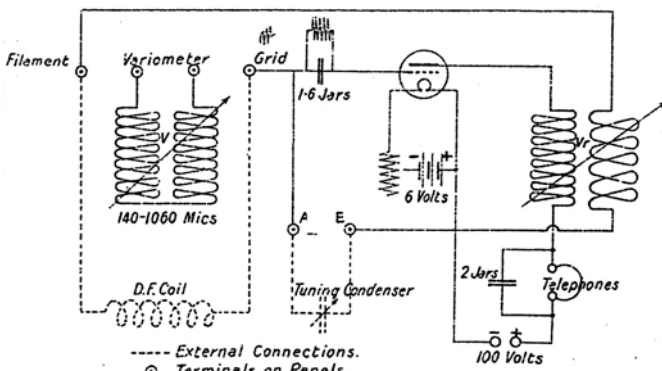
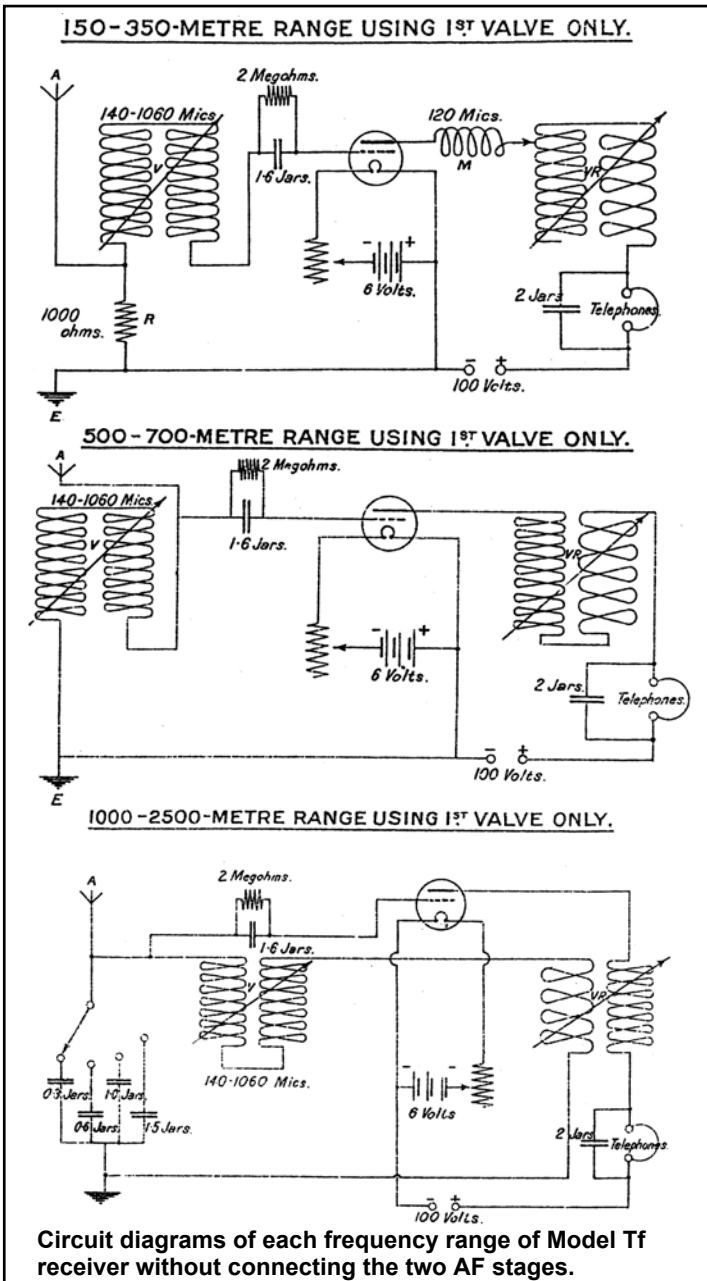


Internal view with explanation of components Model Tf receiver.

It is almost certain that the valves used in the Tf receiver in this photo were not French R types but later developed types.



Circuit diagram RNAS receiver Model Tf.



Model Tf receiver adapted for direction finding. Drawn using 1st valve only.

If direction-finding reception was required, the tuning variometer was disconnected and replaced by a DF loop. An external tuning capacitor was connected to the aerial and earth terminals.

STORES LIST FOR RECEIVER, MODEL Tf.

Reference No.	Description.	Denomination of Quantity.	Quantity
1806	Receiver, Model Tf, with component parts as follows :-	No.	1
1785	Valve-holders - - -	3	
1786	Rheostat, filament - -	1	
1787	Panel, ebonite, carrying terminals and regulators	1	
1788	Condenser, grid, for detecting valve - - -	1	
1789	Carbon rod grid leak -	1	
1790	Switch, multiple-segment, wave-length - - -	1	
1791	Variometer, aerial - -	1	
1792	" reaction - - -	1	
1793	Inductance, anode, small	1	
1794	Condensers, parallel—0.3, 0.6, 1.0, 1.5 jars - - -	1	
1795	Resistance, 1,000 ohms -	1	
1796	Jacks, telephone - -	2	
1797	Condenser, H.F. Shunt, 2 jars	1	
1798	Condenser, L.F. Shunt, 8 jars	1	
1801	Plug, 4-way, with H.T. and L.T. leads.	No.	1
1357	Battery, E.R., 100-volt - -	"	1
1641	Accumulator, 6-volt, Peto and Radford.	"	2
1123	Valves, French pattern, Class " R "	"	3
1802	Brackets, aluminium, fitted with suspension.	"	2
1803	Box, transport, fitted with suspension.	"	1
1800	Battery box for Receiver, Model Tf	"	1
1804	Condenser, .3 m.f. for do.	1	
1805	Coil, 2,000-ohm, for do.	1	
1447	Ammeter, 0-3 ampères - - -	No.	1
115	Telephones, pattern 520 - - -	"	1
117	Leads, pattern 1304, with telephone plug.	"	1
1065	Switch, 5-ampère, tumbler - -	"	1



The Receiver Model Tf, produced by Siemens Bros & Co Ltd in London, Air Ministry Ref. 10A/3333, did not have the 150-350 m range fitted. The date of production is not known and is estimated to be in the early 1930s.