

The Collins 618T Special Interest Group



The 618T

The Collins 618T SIG was formally established in April 2012, with main aims, to help those assembling a station to get on the air, to use the set on the air, and to make available documentation relevant to the 618T.

History

The 618T is a 400 watt SSB/125 watt AM HF aircraft transceiver. The set covers the frequency range 2 to 30 MHz in 1 kHz steps. Main versions were the military AN/ARC-94, 102, 119 and 120 versions and the civilian 618T-1, 618T-2 and 618T-3 versions. It was made by the Collins Company in the US. From the serial numbers, it is obvious that many thousands were manufactured.

In civilian aircraft it was known as the 618T. It was used extensively in RAF and Fleet Air Arm aircraft, and known as the M5. It was also used in the Army, and known as the C15. Many of the sets on the UK surplus market came from surplus MOD stock. The 618T has always been relatively cheap to buy, probably because of the difficulty in obtaining the connectors and control boxes. However, these parts do appear on the surplus market, and once in possession of the parts, getting the set on the air is relatively simple matter, despite the complexity of the set.

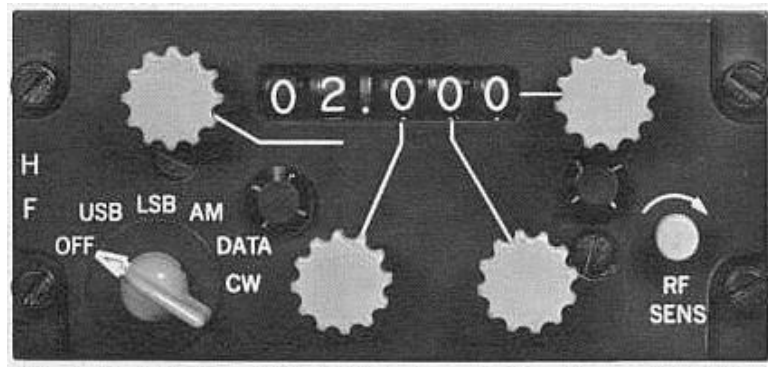
Amateur Use

Already, before the establishment of the SIG, there were several sets which were regularly on the air. One VMARS member has already had one in use since 2002, and there were several individuals in Australia, Belgium, France, The Netherlands, Sweden, Switzerland and the USA who were already in possession of these sets.

Getting it to work

Most of the sets on the surplus market are the 618T-3, which runs off 28 volts DC, but also needs a small amount of 115v 400Hz power. This seems to be the most popular of the sets

in use in the amateur community and is probably the easiest to get on the air. The minimum number of parts needed to get this set up and running are the set itself, the rear connector and an earthing-pin, and the control box and its connector. Power needed is 28v DC at 35 amp and 115v AC 400Hz at around 1 amp.

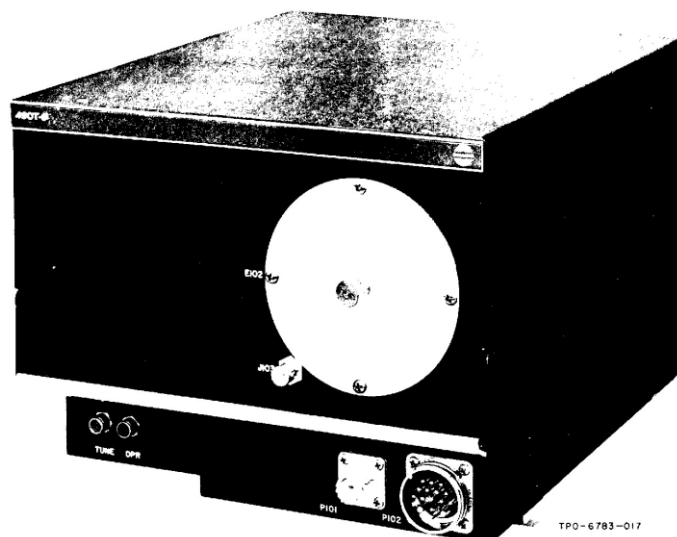


The 714E-3 Control Panel

Although the set is designed to be installed in a mounting tray, it can be used without one, just as long as there is a space under the set for cooling air from the fan to flow out of the set.



Collins 180L-3 tuner



Collins 490T-1 tuner

It is designed to work with an automatic antenna tuner, such as the 180L3 or 490T-1, but it is possible to use the tuner with any other 50 ohm antenna tuner. In fact, it can be rather frustrating using one of the Collins tuners, as in one configuration, the ATU retunes every time the frequency is changed.



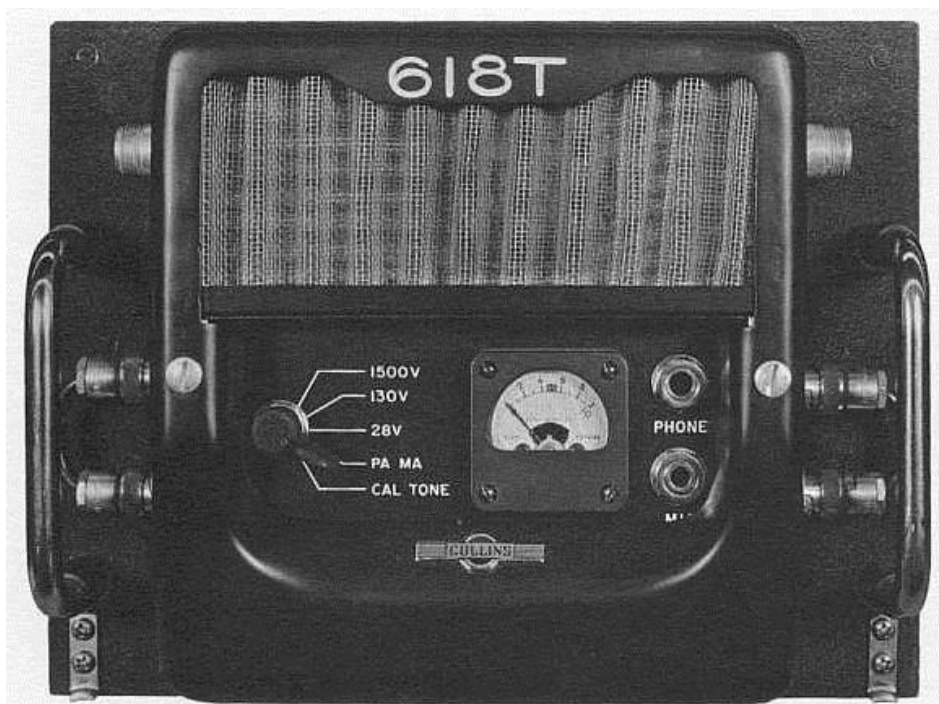
EKCO E182 inverter

The EKCO E182 is one of the many inverters suitable for producing the 115v AC 400 Hz power needed for the 618T-3. This inverter was used extensively in RAF aircraft. This is needed to drive the fan and some of the motors in the power amplifier.

Surprisingly, to wire up a harness to connect it together and make a working system takes just a couple of hours, using one of the aircraft installation diagrams. This assumes of course that some suitable wire for the harness is available. Installation diagrams can be found on the internet, or one can be obtained from the VMARS archive: (archivist[at]vmars/dot/org/dot/uk).

Microphones and Headphones

In the aircraft, the set would be wired to the intercom, and used via it. However, to make life easy, there is provision on the front panel for a microphone and headphones.



Front Panel

The microphone socket, which takes a PJ068 jack plug, is designed for a carbon microphone. Any good carbon microphone such as a T-17 should work, as long as it still has a DC resistance of around a few hundred ohms. The microphone interface also has provision for a PTT switch to key the transmitter.



Electrovoice 602, Electrovoice M-92C/U, Holmco, Telex 66T, Telex T100 microphones

The microphone interface is the same as the one in use in light aircraft, and so any hand microphone for a light aircraft, such as those shown here, is suitable.

There is a socket for headphones with a PL55 Jack plug. This can accommodate headphones with impedances in the range 150 to 600 ohms. Hidden underneath the removable front cover is a pre-set headphone volume control and a pre-set side-tone volume control.

An aircraft headset with PL55 and PJ68 connectors, with a carbon equivalent microphone will work with the set, but then an additional PTT switch is needed, as aircraft headsets usually do not have a PTT switch.

On the air

The set works well in the amateur environment. It tunes in 1 kHz steps, but that does not seem to be much of a problem. Scanning across the band is not too easy, but once on the air and in a QSO, the set performs very well, and almost always gets a good report.

The VMARS SIG runs a regular net to discuss technical issues. The net is at 1330 UK time on Wednesdays on 7073 kHz LSB. So far, the following stations have been logged with 618Ts: G0TBI, G6RAV, G8CDC, G14OYM, HB9AIK, M0BIC, ON8PO, PA0GJC, PA1TN, PA3BOH/G4OEY, PH1DTC, PI4C and PI9KLM. We expect more 618T stations to join the net in the near future.

In the Netherlands, the CRASH museum, with members of the Dutch Surplus Radio Society, regularly uses a 618T for special events and as a club station, with the following call-signs: PI9CRASH, PI9SPITFIRE, and PI4C. One other station regularly on the air in the Netherlands with a 618T is the KLM Radio Club's station, PI9KLM.

Documentation

VMARS has in its possession several manuals which can be made available to members. Contact the archivist for details: (archivist[at]vmars/dot/org/dot/uk).

VMARS and Dutch SRS member's installations



Stuart, G0TBI



Will, G140YM



Peter, G8CDC



John, MOBIC



Matthieu, ON8PO



Gerrit, PA0GJC



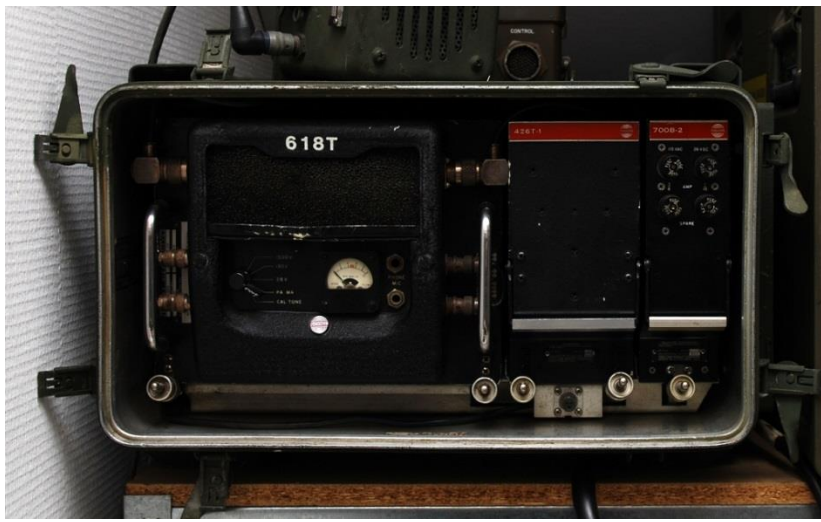
Trevor, PA3BOH



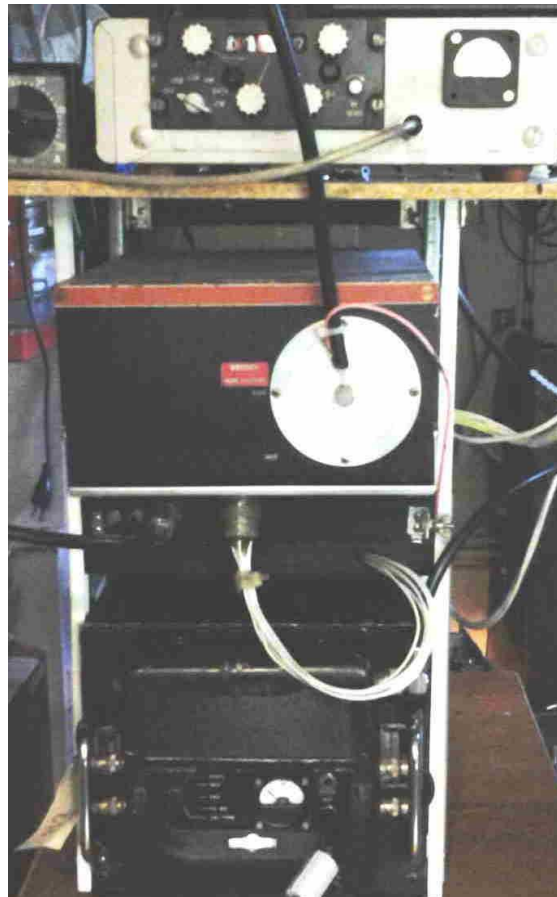
Steijn, PE1RKS(1)



Steijn, PE1RKS(2)



Steijn, PE1RKS(3)



Herman, PH1DTC



CRASH40-45 Museum, PI4C