NT41A - RDF ‘Silica’ Transmitting Triode

Since the early 1920s the British had developed a unique technology for transmitting tubes, the so called silica valves. The envelope of these tubes was made of silica with good resistance to high temperature, softening at about 1.000°C, and transparent to infrared. In the silica valves the anode of woven molybdenum ribbon was mounted close to the inner wall of the bulb wall. In operation it could reach white heat, dissipating efficiently by radiation. Silica was also mechanically stronger than glass, so that it could better withstand shock and vibrations. Furthermore it was preferred to glass for its lower dielectric constant and higher resistivity. The cost of hand-made silica valves was much higher than that of other transmitting tubes but they could be easily repaired in case of failures. Silica tubes were used in the early metric RDF sets because of their relatively low dimensions and subsequently of their good high-frequency behavior. Another reason was that their development was in charge of the Admiralty Signal School and then protected by military security.

The NT41A was a silica power triode designed to operate in the output stage of early shipborne RDF transmitters. Its electrodes are considerably short, to increase the operating frequency.

All silica valves were hand made, their codes being written on the envelope using silica rods melted by a torch. The serial number written on the top of above sample is M112, where M could indicate Mullard as manufacturer.

- **Filament** **9 V at 20 A**
- **Emission** **0.9 A**
- **Anode voltage** **10 kV**
- **Anode power** **1 kW**
- **Ampl. factor** **18**
- **Mutual conduct.** **1 mA/V**
- **Body diameter** **100 mm**