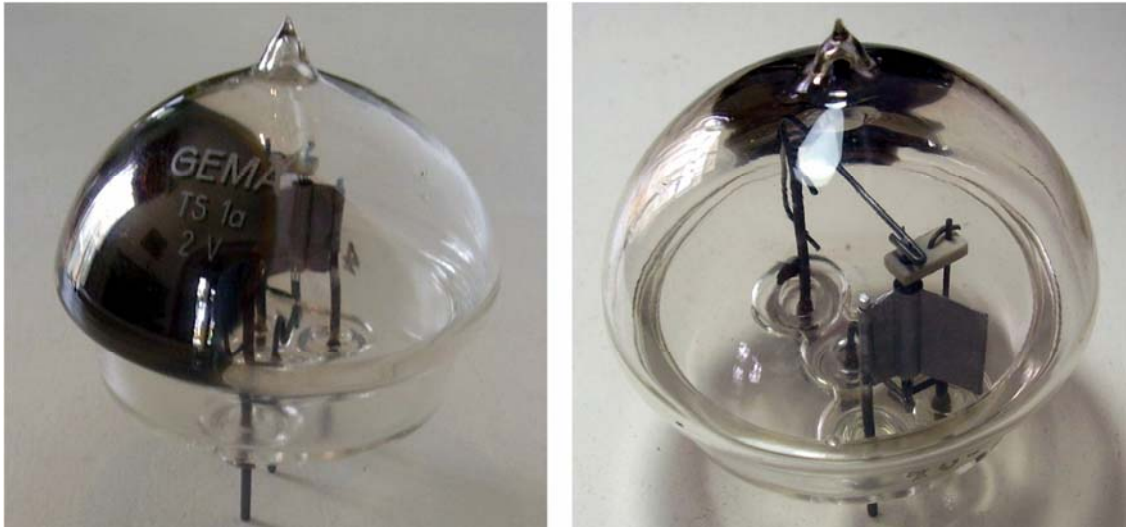


## TS1 and TS1a - GEMA UHF Transmitting Triodes



German GEMA designed these tubes to be used in a push-pull oscillator in the Seetakt transmitter, delivering about 1.5 kW at about 375 MHz. Tubes were mounted back-to-back at the ends of the resonating lines, hence the need for specular pinout in the TS1a.

The tubes derived from the WE 316A, introduced in America in 1936 and soon became popular as the best UHF transmitting triode then available. In order to generate enough power, the design was improved, mainly increasing the size of electrodes. The heater current was raised to 6 A, granting 500 mA emission, the plate power dissipation was doubled, to 40 W, while the insulation was improved to handle 10 kV pulses.

TS1 and TS1a were presumably introduced in 1939, used for the first time in the Seetakt installed onboard of the Graf Spee. The complete oscillator can be appreciated on the site of [cdvandt.org](http://cdvandt.org).

- Thoriated-tungsten filamentary cathode: 1.8 to 2.0 V at 6 A
- 500 mA minimum emission
- 40 W plate power dissipation
- 10 kV max pulse voltage