Melbourne Technical College.

CATHODE RAY OSCILLOGRAPH (A.W.A. TYPE R.6673).

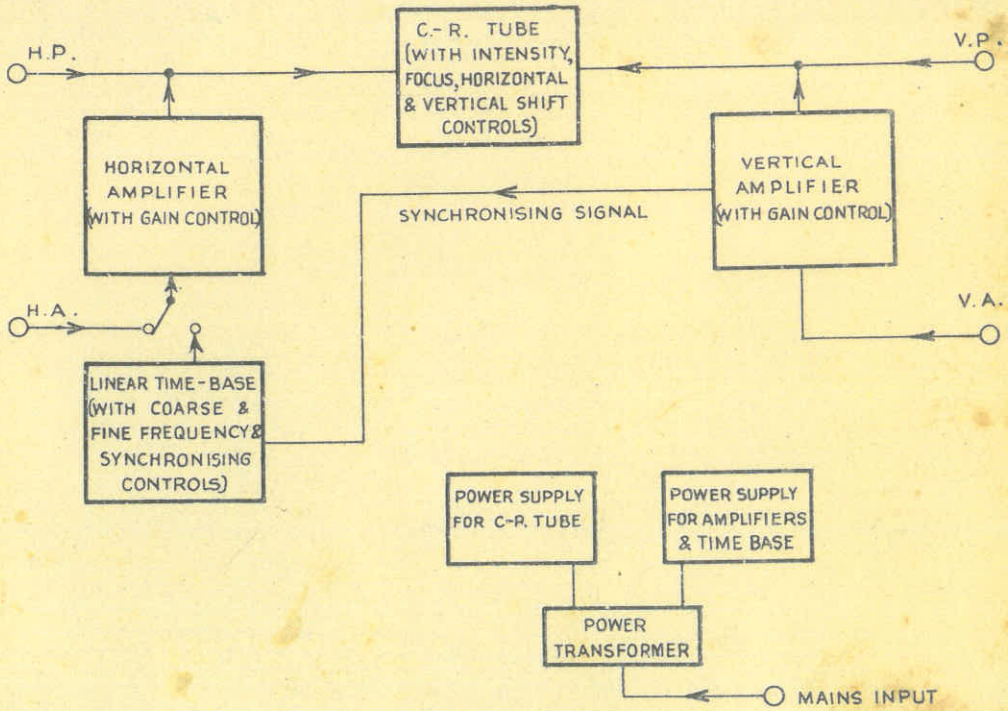


Fig. 1 - Block Schematic.

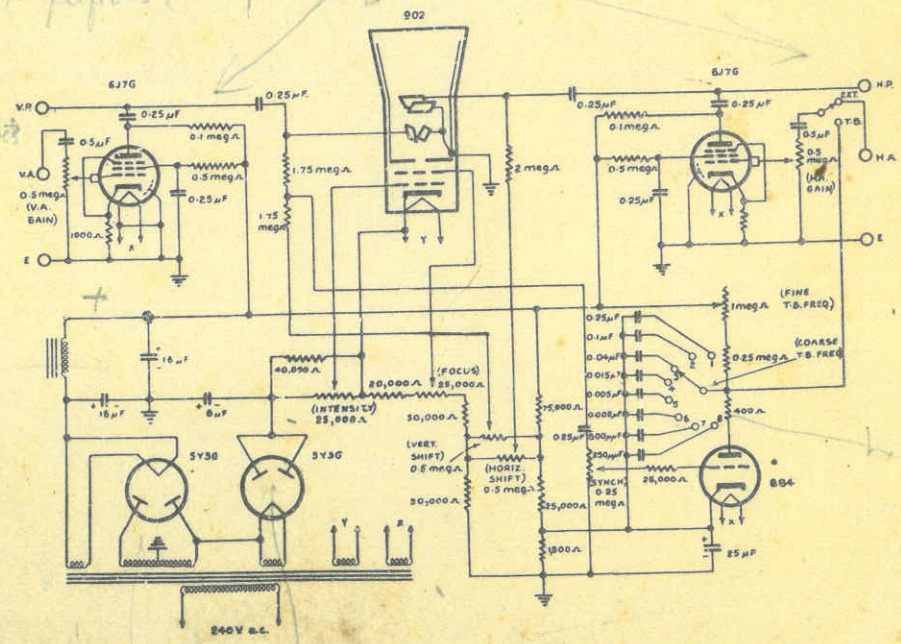


Fig. 2 - Circuit Diagram.

The Melbourne Technical College.

CATHODE RAY TUBE PRINCIPLES.

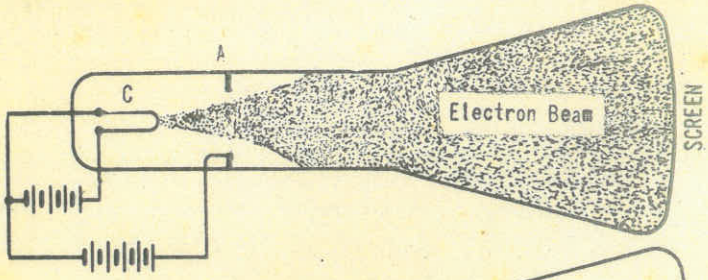


Fig. 1.
Simple cathode Ray Tube showing how the cathode electron stream travelling at high speed passes the anode and hits the end of the tube. The impact of the electrons causes the zinc silicate covering to glow uniformly.

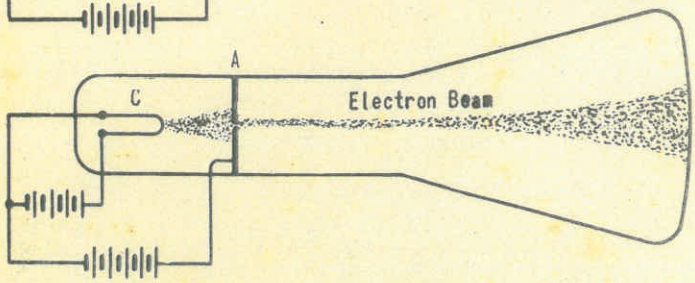


Fig. 2.
By placing only a small hole in the anode a thin stream only can pass to the end of the tube. The ray diverges because of mutual repulsion between the electrons in the stream.

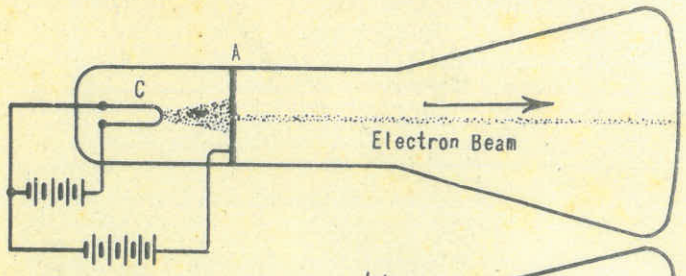


Fig. 3.
If a low pressure inert gas replaces the normal vacuum the beam is kept in a concentrated form and a small brilliant spot appears on the end of the tube.

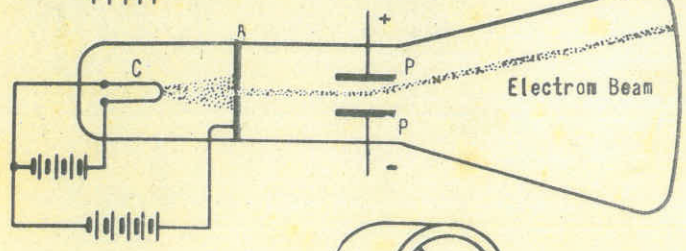


Fig. 4.
Bending of the cathode stream by charged metal plates. The positive plate pulls the beam up because of attraction, while the negative plate helps by repulsion.

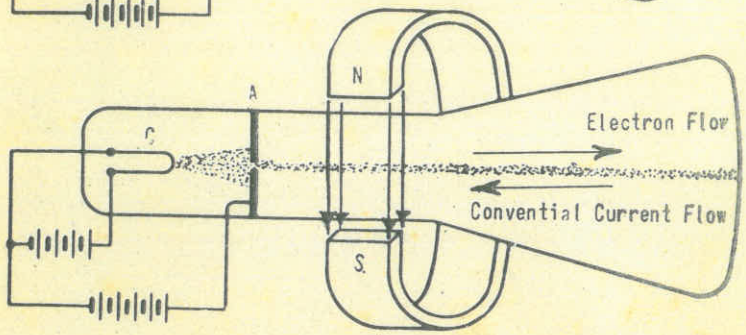
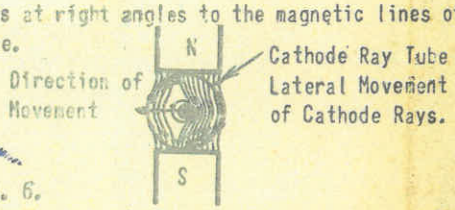


Fig. 5.
If a magnet is placed as shown the cathode stream is forced out sideways toward the reader, i.e. out from the page. The cathode stream always moves at right angles to the magnetic lines of force.



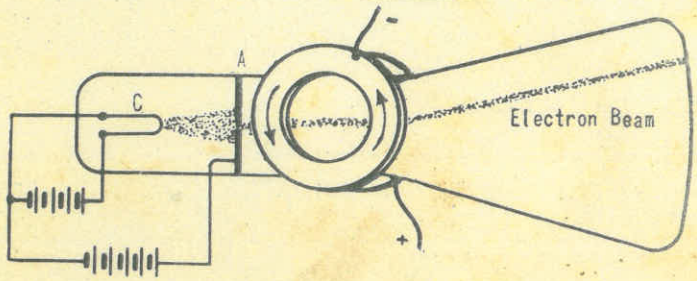


Fig. 6.
If the permanent magnet is replaced by an electro-magnet and its coils are arranged as shown, the cathode stream is forced upwards.
Compare this diagram with the previous one.

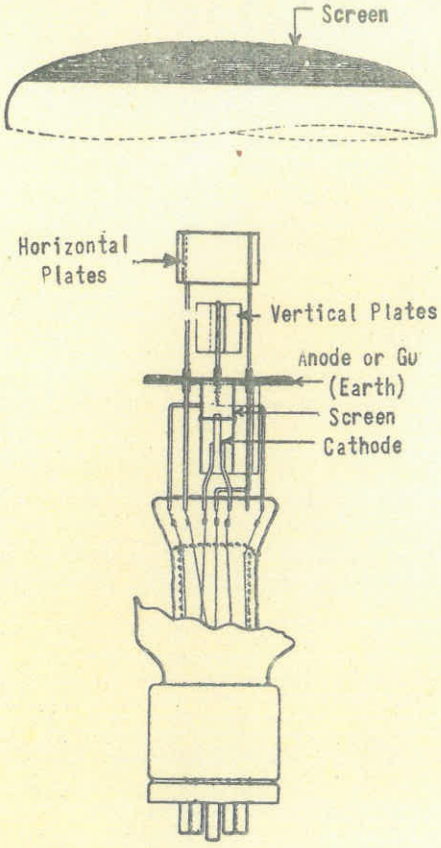


Fig. 7 - Electrode Assembly of a gas filled or soft tube Western Electric or Standard Telephones Pattern.

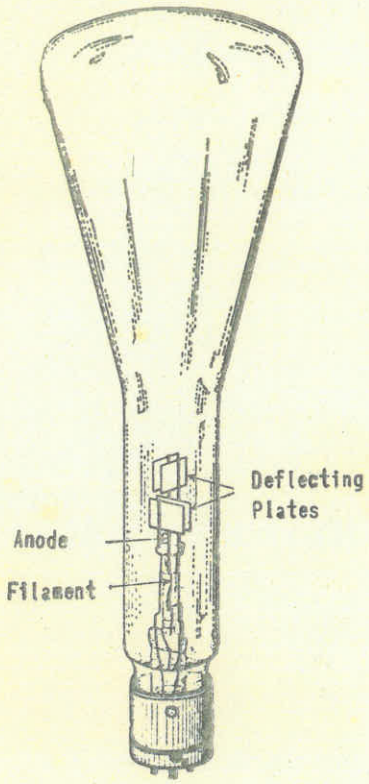


Fig. 8 - Arranged for Electrostic Deflections.

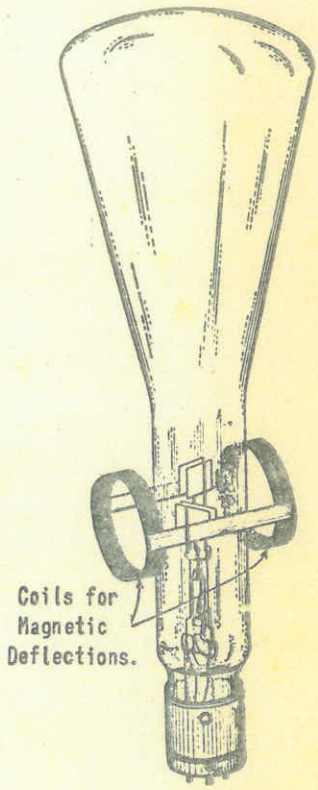


Fig. 9 - Arranged for Electro-magnetic Deflections.

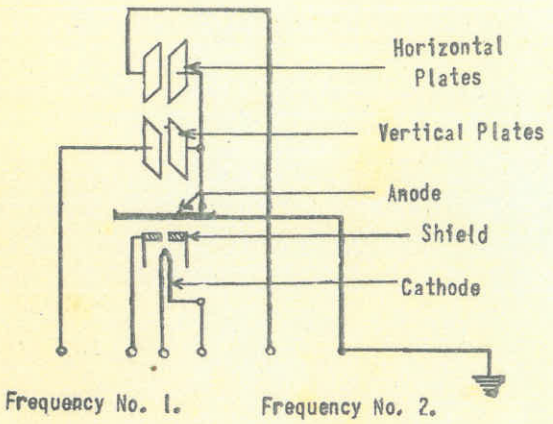


Fig. 10 - Theoretical Element Assembly of Cathode Ray Tube shown above.

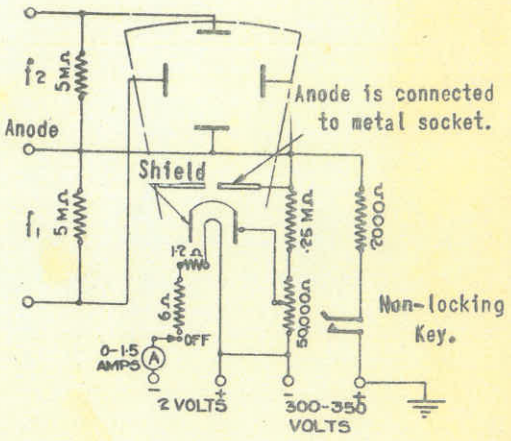


Fig. 11 - Circuit Diagram for Typical Gas filled or soft Cathode Ray Tube.

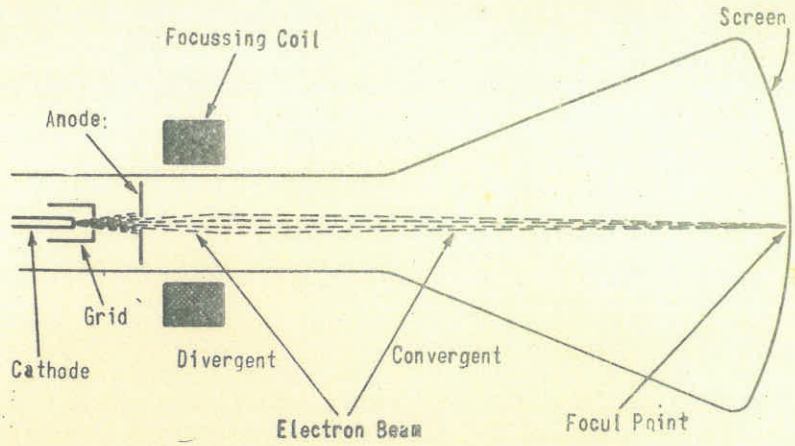


Fig. 12 - Focussing Coil Method of preventing the mutual repulsion effect from diverging the cathode electron stream.

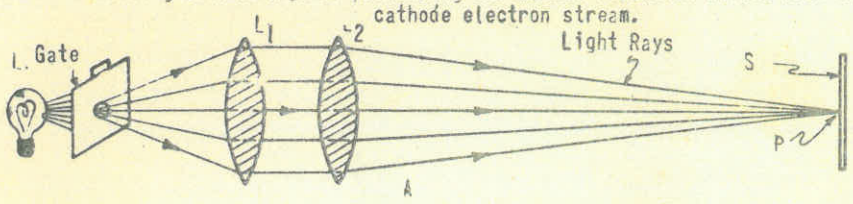


Fig. 13 - Focussing of a beam of light by means of biconvex lenses.

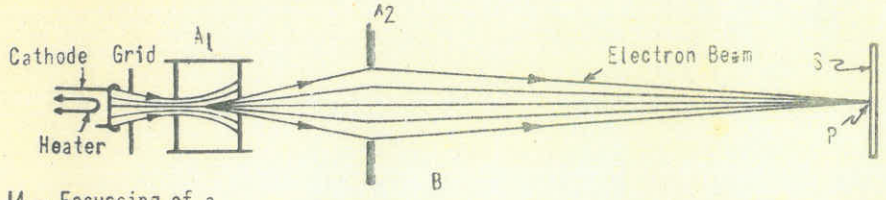


Fig. 14 - Focussing of a Cathode electron stream by charged electrodes which converge the electron stream in exactly the smae manner as the lenses converge the light rays.

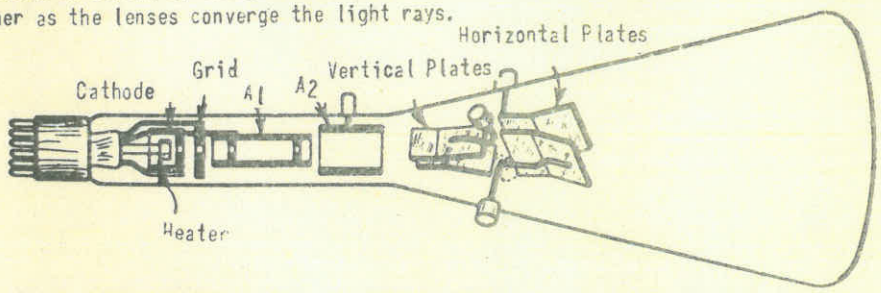


Fig. 15 - Typical High Voltage Vacuum Cathode Ray Tube snowing disposition of the electrodes and electrostatic deflecting plates.

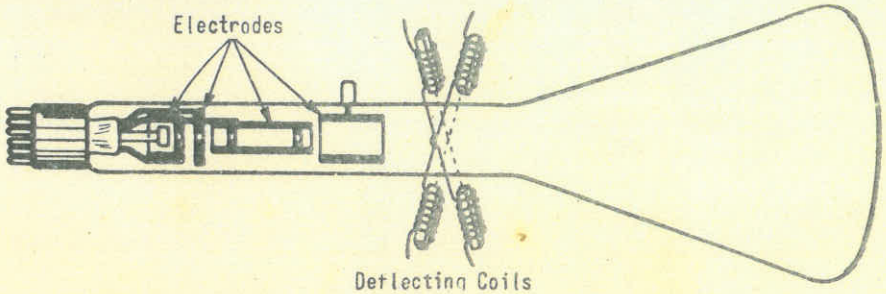


Fig. 16 - Arrangements used for electromagnetic deflection of the cathode electron stream.