



FIG. 8-10. Cross section of magnetic-deflection cathode-ray tube.

8.66 What is the purpose of Aquadag coatings on radar cathode-ray tubes?

Answer. Aquadag is the trade name of a colloidal graphite conducting coating painted upon the inside of cathode-ray tubes in order to form an accelerating or second anode. This conducting coating also acts to some extent as an electrostatic shield to prevent external voltage gradients from deflecting the electron beam.

8.67 Explain the principle of operation of the cathode-ray PPI tube, and explain the function of each electrode.

Answer. A simplified cross-sectional view of a typical electromagnetic-deflection cathode-ray tube is shown in Fig. 8-10. Within the electron-gun assembly at the left is a heater surrounded by a nickel cathode tube. This nickel tube is coated with oxides of various metals that give off electrons when heated. They are effectively shot out of the electron-gun assembly by the influence of the highly positive first anode through which they pass. A suitable negative voltage on the grid controls this electron flow. A still higher positive voltage on the second or accelerating anode speeds up the electron stream so that it strikes the fluorescent screen, causing light to appear wherever the screen is hit.

A movable permanent magnet or coil through which the current