



Fig. 3.2.--Diagram showing relation of experimental target, light source, and camera for transmission experiments.

source. Alignment of the experiment with the camera was accomplished by projecting light through the camera lens and slit out into the test chamber, where it was incident on the reflecting surfaces of the mirrors. These surfaces then reflected the light, at a small angle from the normal to the target surface, onto the glass capillary tube surface of the light source. This insured that light source and mirrors were properly aligned with the camera.

The Cordin 132 streak camera was outside the explosive chamber and protected from blast by a 2.54-cm-thick glass viewing window. The camera was focused on a precision grid placed on the surface of the target. A still picture was taken and developed before every experiment to verify focus. The camera was also run at the same writing speed used in the experiment and an aligned light wire source was exploded to check the amount of light available for the experiment.

The exploding wire light source was a 0.005-cm-diameter tungsten wire with resistance of 3.4 ohm, inside a 10.15-cm-long glass capillary tube having an outer diameter of 0.74 cm and an inner diameter of 0.15 cm. Experience has shown this to be a good light source. Air inside the capillary was shocked to luminescence by discharging a 3 μ F capacitor, which has been charged to 8000 V, through the tungsten wire. The capacitor power supply was connected to the wire by a 3.7-m-long, 10,000-V test prod wire (18 AWG).

Kodak TRI-X 70-mm-wide film was used in the streak camera. It was developed in Kodak D-11 developer and fixed in Kodak