attached to a tubular electrode with a very thin silver foil cap over one end. The inner electrode is set back about 0.0025 cm from the end of the tube and the silver cap. The overall diameter of the completed pin is about 0.09 cm.

When the shock wave strikes the end of the pin, the electrically grounded silver cap is pushed against the charged center wire shorting it to ground. At this instant, the capacitor C discharges and a pulse with a 1 μsec time constant forms across the signal resistor R3. This pulse appears on an oscilloscope trace and is recorded on a glass photographic film plate along with timing and reference pulses. This signal time is closely related to the actual arrival time of the shock front at the pin. By placing pins at selected distances from a reference surface and recording the pin pulses, the shock velocity is determined from the slope of the time-distance data.

C. Shot Construction for the Organic Liquids

Figures 10 and 11 are diagrams of a typical shot assembly used to measure the shock velocities in the ambient temperature liquids and the standard plate. The material chosen for the standard was 2024 dural because the Hugoniot has been previously determined. Dural also has no observed phase transitions below about 1.5 Mbar and is a reasonably good impedance match to the liquids.

The dural plates were machined to 30.5 cm diameter and 1.5 cm thick. In the first quadrant of the plate, flat bottomed holes were drilled to various depths to accept pins for determining the shock velocity. In the second, third, and fourth quadrants, 0.89 cm deep wells were bored for the liquid samples. The bottom of the plate and