which may account for additional error.

The lower U_s-U_p data were found to fit the expression

$$U_s = 1.64 \pm 0.08 + 1.46 \pm 0.08 U_p$$

in the shock velocity range of 2.4 to 3.5 km/sec and the upper line from 3.5 to 8.1 km/sec fits the line

$$U_s = 1.25 \pm 0.06 + 1.32 \pm 0.02 U_p.$$

In the particle velocity interval 1.3 to 1.8 km/sec, the shock velocity is essentially constant. An extrapolation of the lower line to zero particle velocity yields a velocity which is about 40% higher than the measured sound speed suggesting a transition below 20 kbar. The obvious break at a shock velocity of 3.5 km/sec is the type of behavior observed when a solid undergoes a phase transition.

A plot of the P-V/V_0 data presented in Fig. 19 indicates two concave upward curves with a cusp at 64 kbar. The scatter is quite noticeable and causes some difficulty in describing the data with accurate curves. The location of the transition cusp is fairly well defined, especially when using the U_s-U_p information. Based on a knowledge of shape of the isotherm for static pressures in the neighborhood of a transition, a rough estimate of the decrease in volume is 15%. The data in the 20-65 kbar pressure range were fit by the least squares method resulting in the expression

$$P = 10V/V_0 + 139(V/V_0)^2 + 3(V/V_0)^3.$$

From 130 to 520 kbar, the data fit the expression

$$P = 60V/V_0 - 879(V/V_0)^2 + 394(V/V_0)^3.$$

A French curve was used to draw the curve through the remaining data between 65 and 130 kbar.

Carbon disulfide probably undergoes a normal first order