range of 120 to 200°C. The substance is black, stable under normal conditions, an amorphous like structure, probably a semiconductor, and has other physical properties reported in the above references. Some explosive recovery experiments[42] conducted at LRL at Livermore have revealed the presence of a black fluffy material after shocking liquid carbon disulfide to about 200 kbar pressure. If the recovered material is indeed carbon disulfide this would support the hypothesis that the liquid phase is being transformed to the so-called black substance under dynamic conditions. The temperature on the Hugoniot at 64 kbar was calculated to be about 1000°K. This provides an additional point for the phase diagram for carbon disulfide.

F. Carbon Tetrachloride

Carbon tetrachloride, in some respects, has a less complicated behavior under shock conditions than either benzene or carbon disulfide. A shock versus particle velocity (U_s-U_p) plot of the data listed in Table VII is shown in Fig. 20 to fit two straight lines. This differs from similar plots of the other two liquids in that the upper line is not displaced relative to the lower line. A linear least square fit of the data in the shock velocity range 2.3 to 4.7 km/sec yields

$$U_s = 1.47 \pm 0.05 + 1.57 \pm 0.03 U_p$$

and above 4.7 km/sec the linear relationship is

$$U_s = 1.97 \pm 0.13 + 1.31 \pm 0.03 U_p.$$

The points are not sufficiently precise to preclude the possibility of a smooth curve fitting the data equally well. A least squares fit of the data to a quadratic in U_p results in the equation