Table I

Equation of State Parameters for Liquids

Liquid	v_o cc/g	b g/cc	C_v Mbcc/g	Mbars					
				a_1	a_2	a_3	b_1	b_2	b_3
Acetone	1.266	.7717	$.2210 \times 10^{-4}$	.011430	.066642	.06529	.0065389	.072453	.039347
Ethyl Alcohol	1.266	.500	.2390 "	.010664	.012718	.18343	.0084472	.022402	.15276
Hg	.07390	37.14	.0140 "	.28484	.33709	5.2384			
Glycerine	.7950	.9770	.2360 "	.045598	.18572	.39734	.04035	.20832	.29888
Benzene	1.139	1.105	.1700 "	.015154	.076136	.13401	.0082263	.089867	.075642
Ethyl Ether	1.405	.5270	.2260 "	.0072028	.036930	.082756	.0046190	.042386	.063185
Methanol	1.264	.4750	.2510 "	.0099446	.044929	.11398	.0078472	.050666	.092903
CCl_4	.6260	2.114	.08400 "	.014417	.0787315	.159736	.0075315	.095623	.088747
Water	1.002	.1070	.4180 "	.021950	.017078	.07004	.021810	.017614	.067912

2.3 Elastic Solids (G. R. Fowles)

The shock compression of quartz is of particular interest because of its importance to geophysics, its wide-spread use in shock wave studies as a pressure transducer, and because it represents a different class of materials from the more thoroughly studied metals. In this paper we describe measurements similar to those reported by Wackerle (15). The data are in substantial agreement; however, the recording techniques were somewhat different so that the present results* provide independent corroboration, in most respects, of Wackerle's data.

In addition to describing the experiments and the results, we examine the agreement between the uniaxial stress-strain data derived from shock experiments and predictions based on finite strain theory and the second and third-order elastic constants measured by McSkimin, _et al_. (39), and Thurston, _et al_. (40). From this comparison it is clear that shock-wave measurements and low pressure acoustic measurements are complementary methods for evaluating higher order elastic coefficients.

In Section 2.31 we describe the experimental technique and the experimental results; Section 2.32 gives a brief outline of finite strain theory and its application to the shock experiments. Conclusions are discussed in Section 2.33.

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*These data were reported originally in the author's Ph.D. thesis (48).