which causes the larger errors but the low pressures generated by such a system are within the elastic-plastic pressure region of the dural target plate. The elastic wave which precedes the main shock front may be of sufficient strength to short some of the electrical pins prematurely, thereby adding a systematic error to the time-distance points. The errors in the flying plate systems are probably caused by loss of planarity of the shock wave and breakup of the flyer plate.

The transformation of the measured shock velocities and initial density from each sample to pressure-volume data was done by impedance matching to the known dural standard. This was accomplished by a computer program written by John Skalyo, Jr. and Richard H. Warnes of LASL Group GMX-4. The code using the Mie-Gruneisen equation of state along with the conservation relations and continuity conditions provides an analytic solution to the impedance matching problem described graphically in Section E of Chapter II from the experimental data and the dural equation of state information.

The input data required for the program include the initial density and the measured shock velocity for each sample and the 2024 dural standard along with the statistical errors. The equation of state information for the dural standard in the form

$$U_s = C + MU_p$$

and the value for the Gruneisen ratio Γ_0 at $V = V_0$ is also required. The equation of state parameters[26] are $C = 5.460$ km/sec and $M = 1.318$. The dural density is 2.785 g/cc and the value of Γ_0 calculated from Eq. (29) using pure aluminum initial data is 2.22. In the program, Eq. (30) is assumed to hold.

The computer code determines the state to which the dural