TABLE I. Results of impact experiments.

Shot No.	Foil Type	Foil Thickness (μm)	Foil Resistance Ratio $\frac{R_{4.2°K}}{R_{296°K}} \times 10^3$	Impactor Speed and Type[a] (mm/μsec)	Pressure (kbar)	Voltage Ratio ($\frac{E}{E_o}$ at 0.5 μsec)	Initial Rise Time (nsec)
72-065[b]	MRC-A[c]	16.5	3.57	0.637 Al	74.5	1.051	45
72-068[b]	MRC-A	15.6	4.17	0.853 Al	102.1	1.170	65
72-069	MRC-A	17.3	4.14	0.857 Al	103.5	1.073	35
73-009	MRC-A	14.7	4.31	0.390 S	87.1	1.049	37
73-010	MRC-A	14.3	4.38	0.392 S	87.5	1.058[d]	27
73-011	MRC-A	17.0	3.95	0.659 FQ	60.0	1.022	53
73-013	MRC-A	18.0	3.76	0.286 FQ	27.0	1.000	25
73-027	MRC-A	15.9	4.31	0.517 S	115.7	1.120	19
73-028	W3N-A	25.0	2.40	0.531 FQ	48.6	1.035	34
73-029	MRC-UA	16.1	6.85	0.562 FQ	51.8	1.032	36
73-034	MRC-UA	16.0	7.14	0.416 S	92.9	1.087	37
73-036	W3N-A	24.5	2.29	0.395 S	88.2	1.122	84
73-040	W3N-A	24.9	2.39	0.686 FQ	62.4	1.037	32
73-044	W3N-A	24.2	2.38	0.401 S	89.6	1.111	67
73-047	W3N-A	17.6	2.53	0.423 S	94.5	1.149 ± .013	..
73-050	W3N-A	24.0	2.25	0.524 S	117.3	1.185	34
73-051	MRC-A	16.9	4.46	0.525 S	117.5	.....	35
73-056	MRC-A	16.6	4.18	0.89 FQ	83	.....	..
73-059	MRC-A	17.2	4.48	0.530 S	118.6	1.139	34

[a] Al, FQ, and S stand for aluminum, fused quartz, and sapphire impactors, respectively.

[b] Anvils were of Lucalox.

[c] A ≡ annealed, UA ≡ unannealed.

[d] This value read after 0.14 μsec.

electrons at foil surfaces at 4.2°K. To correct them to bulk ratios using Fuchs-Sondheimer theory (Sondheimer, 1952) and a specular coefficient of 0.2 (Nagpal and Duggal, 1972), multiply MRC-A ratios by 0.77, MRC-UA ratios by 0.84, and W3N-A ratios by 0.75. The average bulk resistance ratios are 0.0032 for MRC-A, 0.0059 for MRC-UA and 0.0018 for W3N-A. Measured impactor speed and type and pressure deduced from the impactor and anvil Hugoniot curves (Fowles, 1972) are presented in columns five and six, while column seven gives the ratio of the voltage drop across the silver foil 0.5 microseconds after shock arrival to the pre-shock voltage drop. The last column is the rise time (10% to 90%) of the voltage jump on shock arrival at the foil.

The first two experiments, 72-065 and 72-068, were carried out using ceramic Al_2O_3 anvils; shot 72-069 used sapphire anvils. Although shots 72-068 and 72-069 were shocked to the same pressure and used silver foils cut from the same 3 cm X 5 cm piece of foil, the resistance change was significantly larger using ceramic anvils; apparently the ceramic anvils cause extraneous deformation of the foil. The remaining experiments used polished single crystal Al_2O_3 anvils.

To test whether observed, shock-induced changes in voltage droop across a foil were due to resistance change and not some artifacts, two experiments were carried out monitoring foils with no current flowing through them.

In the initial experiments (73-065, 73-068) two silver foils were put in each sandwich of Al_2O_3 ceramic (G. E. Lucalox);