impact. This droop increased strongly with decreasing separation and then recovered substantially on impact. The droop was eliminated by using non-metallic impactors so that all metallic parts of the projectile were at least 1.2 cm from the impacting surface.

It was concluded that voltage droop was due to inductive coupling between the 150 ampere current in the foil and the moving aluminum plate. Since the experimental configuration did not have a simple symmetry, a calculation to check this was not readily obtainable.

On the other hand, an approximate eddy current analysis was used in order to subtract out the inductive voltage from the voltage-time profile. Fritz and Morgan (1973) have done an eddy current analysis with cylindrical symmetry for a metallic plate moving in a static magnetic field. The essential result is that for discrete accelerations interspersed with constant-velocity, the induced emf is proportional to the relative velocity of the moving plate and the magnetic field source.

A change in the induced emf at time of impact was observed. This change is attributed to deceleration of the projectile face. There will also be an induced emf change, superimposed on the resistance change signal when the shock arrives at the foil. Assuming a proportionality between induced emf and relative speed, the induced emf superimposed on the resistive signal was computed. (The proportionality constant was obtained from the ratio of observed emf change to relative speed change at impact.) The computed emf was subtracted from the observed total signal. For shots 72-065, 72-068, and 72-069, the induced emf values subtracted were 17 mV, 13 mV, and 23 mV, respectively. Non-metallic impactors were used in all other shots.