

LATERAL IMPACT-BEAMS AND PLATES
(4000-4099)

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An experimental investigation designed to study the phenomena incident to the oblique collision of 1/2-inch-diameter steel spheres with mild-steel and annealed drill-rod beams at oblique angles of incidence has been undertaken. Initial ball velocities ranged from 30 ft/sec to 150 ft/sec, beam sizes varied from 1/4 in. x 1/4 in. to 3/4 in. x 3/4 in., angles of incidence were chosen from 85 deg to normal incidence, and simply supported, clamped, and free beams were employed. Information is reported concerning the values of maximum bending stress at various positions along the beam as function of the angle of incidence and as a function of beam size for various angles of incidence. The progressive dispersion of the initial transient has been examined in detail. The effect of end supports, effective beam length, and repetitive shots into the same hole upon stress are described.