

SHOCK-WAVE REFRACTION TAPE (S.R.T.) A NEW TYPE OF EXPLOSIVE FRACTURING CHARGE

S. Alford, Ph.D., M.Sc., F.I. Exp. E.
Sidney Alford Limited,
Pickwick, Wiltshire, England

ABSTRACT

Explosive fracturing of metal is usually considered to be an imprecise process but, by careful consideration of shock-wave geometry, precise results are obtainable. The limited development of such charges is attributed to experimental difficulties. A charge configuration has now been devised in which a prismatic wave-shaping element is used to resolve the shock-waves entering a target plate into two convergent components. The extreme pressure caused by their collision initiates a diamond fracture in the proximal target face, and coincidence of reflected tension waves generates a fracture in the distal face. A combination of these effects breaks the target. An embodiment of S.R.T. is described which is flexible, magnetic and contains no cavities.