

- 1059 Lensky V S
ON THE ELASTOPLASTIC IMPACT OF A ROD AGAINST A RIGID
OBSTACLE (Russian)
Prikladnaia Matematika i Mekhanika
March/April 1949, Vol. 13, pp. 165-170.
- 1060 Lebedev N F
SECONDARY ELASTOPLASTIC WAVE (Russian)
Prikladnaia Matematika i Mekhanika
March/April 1954, Vol. 18, pp. 167-180.
- 1061 Campbell W R
DETERMINATION OF DYNAMIC STRESS-STRAIN CURVES FROM
STRAIN WAVES IN LONG BARS
Proceedings Society for Experimental Stress Analysis
1952, Vol. 10, No. 1, pp. 113-124.
- An exploratory experimental program is conducted to
determine the feasibility of using a tangent modulus
method to determine dynamic stress-strain curves.
Analytical procedure is outlined and experimental
results are presented. Measurements made with SR-4
type strain gages.
- 1062 Zener C and Hollomon J H
EFFECT OF STRAIN RATE UPON PLASTIC FLOW OF STEEL
Journal of Applied Physics
1944, Vol. 15, pp. 22-32.
- 1063 Bell J F
THEORETICAL AND EXPERIMENTAL STUDIES OF PLASTIC WAVE
PROPAGATION IN LONGITUDINAL RODS SUBJECT TO IMPACT
Johns Hopkins University, Institute for Cooperative Research
Contract No. DA-36-034-ORD-2366, 1956.
- A new method employing diffraction gratings of very
short length will be utilized to study propagated plastic
wave fronts of large magnitude. Unloading waves, re-
flected waves from fixed and free ends. Dynamic deter-
mination of Poisson's ratio.
- 1064 Rubin R J
PROPAGATION OF LONGITUDINAL DEFORMATION WAVES IN A
PRESTRESSED ROD OF MATERIAL EXHIBITING A STRAIN-RATE
EFFECT
Journal of Applied Physics
1954, Vol. 25, pp. 528-536.

The longitudinal propagation of stresses above the yield
stress in a material exhibiting a strain-rate effect is
studied analytically. Mathematical expressions are devel-
oped which describe the wave propagation. The system
analyzed is a semi-infinite rod subjected to end impact.

This article is referred to by many investigators and several extensive experiments are being conducted to verify this theory.

1065

Campbell J D
THE YIELD OF MILD STEEL UNDER IMPACT LOADING
Journal of Mechanics and Physics of Solids
1954, Vol. 3, pp. 54-62.

In an extension of work reported in article 1020 the dynamic stress-strain curves of mild steel are obtained. The apparatus is adapted so that the steel rod which transmits the stress to the specimen is larger than the specimen. This increases the stress transmitted into the specimen. The strain gage is attached to the specimen.

1066

Campbell J D and Maiden C J
THE EFFECT OF IMPACT LOADING ON THE STATIC YIELD STRENGTH OF A MEDIUM CARBON STEEL
Journal of Mechanics and Physics of Solids
1957, Vol. 6, pp. 53-61.

Although the results of this investigation are not of particular interest the experimental technique is interesting. A similar test setup is used as in articles 1020, 1065. Stress magnitude is amplified by transmitting the impact through steel rods of two cross-section changes. This amplifies the stress about two times. Strain gages are attached to the anvil bar.

1067

Riparbelli C
A PARADOX IN THE THEORY OF IMPACT
Journal of the Aeronautical Sciences
1954, Vol. 21, pp. 429-430.

1068

Gilhamet J and Goldsmith W (Translators)
PROPAGATION OF PLASTIC STRAIN
Translation of five articles from Russian and French

1. On Explosions in a Compressible Plastic Medium
Altschuler V
2. Concerning a Dynamic Problem of Thermoelasticity
Danilovskaya I
3. Elasto-Plastic Waves of Loading
Bakhshian R A
4. The Propagation of Cylindrical Waves of Plastic Deformation (Torsional Impact)
Rakhmatulin Kh A