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Spallation in Ti-6Al-4V: Stress Measurements and Recovery I.P. JONES, University of Birmingham, J.C.F. MILLETT, Cranfield University, N.K. BOURNE, University of Manchester — Previous work by a number of authors has shown that the spall strength of the engineering alloy, Ti 6Al 4V increases markedly with pulse duration. In this paper, we have reproduced those results in a low oxygen variant of the alloy, over a range of impact stresses. The microstructure consisted of a mixture of primary alpha grains in a matrix of transformed beta. Samples have also been shock loaded and recovered under conditions of one-dimensional strain, to compliment the results of the stress gauge experiments. In all the recovered samples, complete spallation occurred, but examination of damage at secondary sites showed spall occurred via nucleation and growth of pores. Ductile failure appears to progress along primary alpha / transformed beta boundaries.

Prefer Oral Session
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