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The object of this paper is to consider the plastic deformation of the semi-infinite beams subject to dynamic transverse loading at the free end. The type of loading considered is that of a constant bending moment, together with a transverse force the magnitude of which is inversely proportional to the square root of time. Part 1 of the paper consists of a plastic-rigid analysis of the problem, based on the plastic-rigid analysis of infinite beams under transverse, constant velocity, impact loading developed by the author. Part 2 of the paper consists of an elastic-plastic solution of the problem, based on a theoretical analysis of the plastic deformation of infinite beams subject to transverse, constant-velocity impact loading developed by H. F. Bohenblust. Specific problems are considered for which the deflection solutions obtained by elastic ideally plastic and rigid ideally plastic analyses are compared. (Author's abstract)

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- A simply supported uniform beam of ductile material,  
subjected to impulsive loading such that the initial  
velocity is a half-sine wave, is considered in this paper.  
The elastic and elastic-plastic motions are discussed  
under the assumption that plastic flow is confined to one  
cross section, and the final deformations are compared  
with those computed from an analysis which neglects all  
elastic deformations. The purpose of the work is to pro-  
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