calculated dead-load stress minus the maximum calculated counter stress due to live load.

The Canadian Pacific Railway, Baltimore and Ohio Railway, American Bridge Company, and Pencoyd specifications express the impact stress by the following formula:

$$I = S\left(\frac{300}{L+300}\right)$$

where, I = Impact stress, S = Live load stress,
L = Length of loaded distance in feet when the maximum stress in the member occurs.

Dr. J. A. L. Waddell recommends the formula

$$I = \frac{40,000}{L+500} \text{ for Railway bridges,}$$

and

$$I = \frac{10,000}{L+150} \text{ for Highway bridges,}$$

where L = length of span in feet loaded where maximum stress is produced, and I = percentage to be added to maximum static live load stress.

The Chicago, Rock Island & Pacific Railway Company use certain units which they multiply by $\left(1+\frac{\text{minimum}}{\text{maximum}}\right)$, thus changing the units for the various members rather than adding an additional stress for impact.

The Dominion Government, for spans over 80 feet, and the Osborne Engineering Company use the formula

$$I = \frac{L^2}{L+D}$$

when I = the impact stress, L = the live load stress, and D = the dead load stress.

The Dominion Government, for spans less than 80 feet, and for members of trusses subjected to their maximum stresses by a load covering a shorter length of span than 80 feet, use the formula

$$I = \left(1.40 - \frac{S}{200}\right)L$$

where S = loaded length in feet when member receives its maximum stress, and L = live load stress.

Mr. S. Bouscaren has proposed the formula

$$I = S\left(0.1 + \frac{56.25}{l \times 62.5}\right)$$

where I = impact stress, S = Live load stress, l = length in feet of loaded distance which produces maximum stress in member.