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An explanation for the anomalous wave profiles obtained in Composition B-3 impacted by flat nosed steel rods HUGH JAMES, AWE, RICHARD GUSTAVSEN, DANA DATTELBAUM, Los Alamos National Laboratory — When firing flat nosed steel rods into the 60/40 RDX/TNT explosive Composition B-3, Gustavsen et al.("Initiation of Composition B-3 by impact of flat nosed rods," in 15^{th} Int. Det. Symp.) found an apparently anomalous "hump" in particle velocity wave profiles. The hump occurred on the center-line established by the rod, and at relatively late times, > 1 μs, after detonation onset. Several explanations, including that of a late time reaction, were postulated. This report will present evidence that the anomalous late time "hump" is due to the arrival of rarefaction waves from the rod periphery. Simple analytic calculations and reactive-burn hydro-code calculations will be presented supporting this hypothesis.

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