

# Governing Safety with Risk-Based Methods

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## Abstract

Since 1996 there have been at least two teams formed within the U.S. Government to develop a consistent set of risk-based standards to be used to govern safety. The first of these was reported on at the 1997 System Safety Society Seminar in a paper entitled "Debris Safety Standard for Launching from National Ranges." The second team titled the Risk-Based Explosives Safety Criteria Team (RBESCT) is the subject of this paper.

The RBESCT was chartered in the summer of 1997 to define a plan of action for adopting risk-based criteria for explosives safety within the Department of Defense (DoD). The RBESCT is sponsored by the four services and the DoD Explosives Safety Board (DDESB).

This paper outlines the criteria and methodology adopted by the team. The background for the criteria is described. The methodology for assessing risk is defined by the following formula:

$$E_f = E_p \times P_{f/e} \times P_e$$

where  $E_p$  = expected exposure of people  
 $P_{f/e}$  = probability of fatality given an event and people  
 $P_e$  = probability of event  
 $E_f$  = expected fatalities

The basic method defined by this equation can be applied to many varying circumstances. The computer model used to assess the risks is described.



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