

**Title:** A new model of the impact of human factors on risk assessment in emergency services: The Dynamic Cognitive Risk Assessment Model (D-CRAM©).

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**Abstract:**

The problem of how the impact of human factors on risk assessment is modelled and how operators can be trained to better assess operational risk is a perennial conundrum among emergency service organisations. Emergency services have taken up such models as Endsley's model of Situation Awareness and have instituted training in models of Dynamic Risk Assessment. None of these models, however, take account of the human factors in risk assessment which lead to operator error, nor do they identify best practice in performing risk assessments. Previous research by the authors suggests that Dynamic Risk Assessment models commonly employed by emergency services are unreliable and variable in practice. The authors propose a new model of risk assessment which: a) identifies the key steps in performing an operational risk assessment; b) identifies the typical cognitive biases likely to impact on the performance of an operational risk assessment; c) identifies behavioural and decision-making techniques which contribute to effective risk assessment. Rather than being purely theoretically driven this new model is based on a body of research that accounts for the typical limits of human information processing capacity and research into the performance techniques of expert emergency service operators.