Assessment of Models of Human Decision-Making for Air Combat Analysis

[Draft paper, to be put on the web with permission]
Amanda Shakir
Shakir Amanda ASHAKIR@dera.gov.uk
DERA Farnborough,
 Hants.
 GU14 0LX
 Tel: 01252-396639
 Fax: 01252-392028

Draft of 10 Sep 02

Abstract

Air combat outcome is well known to be heavily influenced by human factors. System effectiveness studies of air weapon systems therefore need air combat modelling amenable to rapid changes in human parameters, to quantify the effect of human variability. The requirement of studies for such modelling was explored, applying guidelines on human modelling, and canvassing expert opinion on human factors important to combat outcome. Future studies that would be made possible by such modelling were identified. The requirement for human modelling was defined using essential, desirable and useful criteria. Promising models of decision-making, JACK and SOAR, identified by previous research, were assessed against the criteria, in comparison with the decision-making within the current air combat model, Brawler. Both JACK and SOAR were able to meet the criteria, where the decision-making within Brawler could not. JACK was preferred over SOAR as it has a track record of usage in Operational Analysis.

Copies are available from Amanda Shakir (above), or Frank Ritter (fer2@psu.edu)