Development of the NOTECHS (Non-Technical Skills) System for Assessing Pilots’ CRM Skills

Flin, Rhona; Martin, Lynne*
University of Aberdeen, Scotland

Goeters, Klaus-Martin; Hörmann, Hans-Jürgen*
DLR Hamburg, Germany

Amalberti, René; Valot, Claude
IMASSA, France

Nijhuis, Herman
NLR, Netherlands

Abstract
Crew Resource Management (CRM) courses are designed to teach pilots about non-technical (cognitive and social) skills that are essential for effective and safe flight operations. This article presents a summary of the empirical development of the European taxonomy of pilots’ non-technical skills (NOTECHS) and associated rating method. It describes the system components and the experimental validation. The system has four Categories: Co-operation, Leadership and Managerial Skills, Situation Awareness, Decision Making, each subdivided into Elements and behavioural markers. The latter are examples of effective and ineffective behaviours supporting the evaluation and debriefing, as well as giving indications for retraining, if this is required. Operational principles for fair and objective use of the NOTECHS system and training guidelines for raters are outlined.

* Lynne Martin is now at NASA Ames, California; Hans-Jürgen Hörmann is now at the Boeing Research and Technology Center, Madrid.