

CHAIN OF EVENTS LEADING TO FLIGHT CREW TRAINING

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Abstract

By examining investigations of aviation incidents and accidents, it can be seen that technological progress has significantly reduced possible malfunctions.

Statistics show in fact that most of the accidents that aviation has to face today, are caused by human error or rather by the interactions that man has with technology.

In the past, accidents have been more related to technical problems, while today the human aspect is the element that creates the main problems, but at the same time it is an irreplaceable resource.

We cannot eliminate human beings from the cockpit, organizations, maintenance, control towers or safety supervision, we can only improve their performance, focusing on both personal and system approaches of the error. This is the relevance that the human factor has in aviation; it cannot be replaced.

This research aims to demonstrate how training through innovative technological tools can provide support in the improvement of human performance in aviation.

Specific for this topic is the evolution that the use of flight simulators in aviation training has seen until recent years, which was focused on the reproduction of the various flight phases for the development of piloting skills for the handling of normal and abnormal situations, but that in the last five or so years has evolved in a much broader and articulated approach for an enhanced and more tailored training syllabus.

In fact, such innovative approach, object of this study, represented by EBT - Evidence Base Training, overcomes the simple simulation of scenarios in pilots' flight simulators.

Evidence based training (EBT) is a training and assessment method based on operational data that is characterized by developing and assessing the overall capability of a trainee across a range of core competencies rather than by measuring the performance in individual events or maneuvers.

The aim of an EBT program is to identify, develop and assess the competencies required by pilots in order to operate safely, effectively and efficiently in a commercial air transport environment by managing the most relevant threats and errors based on evidence collected in operations and training.

The scenarios to be faced include, therefore, situations in which the interaction between man and machine plays a major role, recognizing the need to develop and evaluate crew performance

according to a set of competencies without necessarily distinguishing between the ‘non-technical’ and the ‘technical’ competencies needed in order to operate safely.

Any area of competence assessed needs to be associated with an observable behavior, personal or organizational, that could lead to an unacceptable reduction in safety margins.

Compared to the traditional training, the technological improvement offered today by simulators and new formative methods, allow the assessment of flight crew performance across the range of behavioral competencies.

In addition, in fact, EBT requires to focus on the root causes of sub-standard behaviors, rather than merely asking a flight crew to repeat a maneuver with no real understanding as to why it was not successfully flown in the first instance.

The research will then want to demonstrate how - even if is very difficult to foresee all plausible accident scenarios in today’s aviation system, which characterized by complexity and high reliability - the development and assessment of behavioral competencies, hence leads to improved training outcomes, mastering a finite number of defined competencies a pilot will be able to manage previously unseen potentially dangerous situations in flight.

Keywords:

Aviation training, Organizational behavior, Human factor, Evidence base training, Simulation training, Airline flight crew, Job competency

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