UDC 656.7.081(043.2)

Ganna Turlo, Victoria Vakhrina
National Aviation University, Kyiv

THE AVIATION RISK MANAGEMENT SOLUTIONS (ARMS) METHODOLOGY FOR OPERATIONAL RISK ASSESSMENT IN AVIATION ORGANISATIONS

There is a fundamental conceptual problem with the risk assessment of (historical) events which needs to be recognized. To understand the problem, it is necessary to go back to a very basic, elementary definition of risk:"Risk is a state of uncertainty where some of the possibilities involve a loss, catastrophe, or other undesirable outcome."Hence uncertainty is a key element of risk. Therefore if the outcome is a known historical fact, we can refer to loss, damage, etc, but not risk. Risk should technically refer to something in the future, where the outcome is uncertain. In discussing risk assessment in aviation, especially in the context of an airline there is

a natural tendency to focus on Flight Safety risk and, in particular, the risk of an accident with multiple fatalities and hull loss. In practice, a single event may relate to more than one type of risk and airlines must manage different types of risks in parallel.

There are exist several methods for risk assessments. Each of those methods has certain benefits and drawbacks. One of the methods of risk assessment is the ARMS. ARMS is a Methodology for Operational Risk Assessment applicable to Aviation Organisations and developed by the ARMS (Aviation Risk Management Solutions) Working Group between 2007-2010.

A key priority of the ARMS methodology is to reduce the subjectivity inherent in current risk assessment methods. Three steps that help to achieve this are:

- In the Event Risk Classification (ERC), all the circumstances that conspired to produce the event are known and are considered as they were, so the subjectivity associated with determining the likelihood of the event occurring has been greatly reduced.

- The ERC attempts to identify the likelihood of this event having resulted in an accident outcome by assessing the barriers that avoided this event being that outcome. The consideration of these barriers is still subjective but that subjectivity can be reduced by a good understanding of the barriers available in typical scenarios.

- In carrying out a Safety Issue Risk Assessment (SIRA), the analyst him/herself should first define and scope the Safety Issue before risk assessing it. A precisely defined Safety Issue is much easier to assess quantitatively. For example a windshear Safety Issue that concerns only one aircraft type and one airport is easier to examine than one that covers the whole airline fleet and route network. Careful definition will ensure that the risk assessment is more likely to be based on facts rather than imagination and guessing.

There are conceptual difficulties in risk assessing historical events. The first fundamental question one has to answer is: which risk is assessed. Usually, without posing this question consciously, analysts tend to try to assess the risk of a similar event taking place in the future. The problem is that "a similar event" is not at all defined. The only thing that is said is that it is not exactly the same. This results in a significant amount of subjectivity in the assessment.

Supervisor – A.E.Luppo, associate professor