

УДК 681.11.033.1:629.73 (043.2)

Ковальова А.О., Тризна О.О.

Національний авіаційний університет, Київ

## **HUMAN FACTORS OF COMPLEX INDICATION SYSTEMS OF NEW GENERATION AIRCRAFTS**

Aviation maintenance human factors research has the overall goal to identify and optimize the factors that affect human performance in maintenance and inspection. Automated features of indication systems can improve situational awareness by reducing crew workload.

Aircraft`s electronics components must be designed so that, for all situations the flight crew can reasonably be expected to encounter, it will have the data it needs in an easily recognizable form that facilitates proper decision making. Furthermore, the avionics systems should be designed to help the flight crew carry out necessary tasks, especially in emergencies when things are not as expected and safety depends on quick and correct actions by the flight crew.

Presently, there are observation of submission of new avionics systems that have sought to overcome the issues associated with limited outside visibility for the pilot. Except dealing with problem of limited visibility, which still remains the single most critical factor affecting both safety and capacity in worldwide aviation operations. According to visibility problem that would allow all aircraft to be flown under the visual equivalent of visual meteorological conditions or clear daylight operations the «Synthetic vision» was set.

Synthetic vision is a visibility solution to this visibility problem that would allow all aircraft to be flown under the virtual equivalent of visual meteorological conditions or clear daylight operations. The process of systems, through its intuitive display and presentation methods, provide the off-load the pilots from basic spatial awareness tasking (to avoid terrain, traffic, and obstacles) and increase their speed of situation recognition.

In terms of safety benefits and for help-drive to reduce many accident precursors, synthetic vision was selected to the several researches human factors. Issues of the human factors that should be considered when designing such displays, are categorized into three research areas.

To contributing to the growing knowledge of the human factors of synthetic vision displays, researchers developed an extensive list of human factors issues and provided a set of research priority recommendations. The organizational practices, which should be ascending to make sure designers and developers take into account what we know about human factors engineering graduated by Corker and Guneratne (2002) into three cellars:

1. Image Quality
2. Information Integration
3. Operational Concepts

Through the analyses proper constituent elements of the human factors specialist able to translate general guidelines into project. Synthetic vision holds the promise to eliminate the precursor to many accidents and incidents and substantially improve the safety and operational efficiency of aviation.

*Науковий керівник – О.О.Тризна, ст. викладач*