

SUMMARY

The subject of this dissertation is the issue of flight safety risk management based on the load with tasks imposed on a pilot. The primary aim of the dissertation was to develop a method of operational risk management based on the pilot's load with tasks in flight safety.

In the first part of the dissertation, the choice of the subject of the work is justified, the cognitive gap, the subject of the research and the research problem were identified. The purpose of the work was also formulated and seven research tasks were assigned.

Then, based on a thorough analysis of the literature, the concept of flight safety was defined and the issues of flight safety management, operational risk and risk management were discussed. Much attention was paid to the issue of task load and methods of its measurement, dividing it into subjective, semi-objective and objective ones. Next, general aviation organizations and their specificity were characterized, with particular emphasis on the specificity of safety management.

The next part of the dissertation is a description of the research process. The first stage included the design of a flight safety management model, taking into account the task load and the selection of measurement tools based on literature analysis, interviews with experts, own experience, flight tests and preparation of own research tools. The second stage included pilot research. The conclusions obtained on their basis were used to verify the usefulness of the methods used and to modify them. The third stage of the process consisted of basic research, on the basis of which, i.e. correction factors used in the designed method were developed.

The result of the dissertation is the developed method of examining operational risk based on a task load, which is the subject of its last part. It includes the assumptions of the method and a modified - based on the conclusions from the research - flight safety management model based on the pilot's task load. This model became the starting point for developing the method. It consists of a sequence of activities carried out by the pilot and decision-makers aimed at assessing the pilot's task load related to preparation for the flight, assessing the pilot's disposition and forecasting the risks that may occur during the flight. The assessment constitutes the basis for assigning the risk to an appropriate level and appointing a decision-maker regarding the authorization for the flight or the decision to withdraw from the flight.

The dissertation also presents the results of validation of the developed method based on expert opinions. Examples of risk management options within the general aviation organizational structure were also presented.