ABSTRACT

The master's dissertation consists of an introduction, four chapters, a conclusion and two appendices, contains 14 figures, 29 tables and 15 sources. The full volume of the master's dissertation is 99 pages, of which the appendices are 8 pages.

To Kateryna Ihorivna Novosyol's master's thesis on the topic: " Mathematical and software application for aviation meteorological report formulation ".

Actuality of theme.

The aim of the study. The purpose of the master's dissertation is to study the operation of airports in difficult weather conditions, to develop indicators of airport operation under these conditions, to develop methods for their analytical and statistical modeling and to develop application software for reference code that can be used to transmit in closed message.

To achieve this goal it is necessary to solve a set of the following interrelated tasks:

- to analyze the existing indicators of meteorological conditions that affect the functioning of airports in difficult meteorological conditions;

- to analyze the methods of forming meteorological reports and their dependence on weather parameters;

- to investigate the influence of meteorological conditions (namely climatic characteristics) on the flight of the aircraft;

- to study the dynamic processes of development of climatic characteristics taking into account meteorological conditions;

- to develop a method of analytical and statistical modeling of indicators;

- to design and develop the software for formation of the reference with application of the offered technique.

The object of the study is application software for generating help code, which can be used for transmission in a closed message.

The subject of the research is the means of automating the formation of meteorological reference codes taking into account the influence of climatic characteristics on the flight of aircraft in difficult meteorological conditions.

Research methods are general scientific principles of research.

The study used the following methods:

- scientific analysis and synthesis to identify problematic aspects of modeling systems;

- methods of probability theory;

- method of statistical modeling.

Scientific novelty. For the first time a meteorological report was formed, which differs from the existing ones by a new method of deriving the horizontal range of visibility, which allows to increase the accuracy of flight forecasting.

The practical significance of the results. The result of the work is an applied software application for assessing the meteorological characteristics of the aerodrome and the formulation of aviation meteorological information.

Connection of work with scientific programs, plans, themes.

The dissertation of the master was performed at the National Technical University of Ukraine "Kyiv Polytechnic Institute named after Igor Sikorsky" according to the plan of research work of the department of automated information processing and control systems.

Publications. The scientific provisions of the dissertation were published at the V All-Ukrainian scientific-practical conference of young scientists and students "Information systems and management technologies" (ISTU-2020).

KEY WORDS: METER, METHOD, AVIATION METEOROLOGICAL FACTORS, LOWER BOUNDARY OF CLOUDS, MEASUREMENTS, HORIZONTAL RANGE