

## GLIDE PATH BEACONS RELIABILITY INCREASING

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Difficulty and multidimensional of Instrumental Landing Systems (ILS), use them directly for landing makes it necessary to solving a several problems aimed at improving functional possibilities of landing systems as a results of its operation contioucnly monitoring, increasing their operational reliability. In this thesis Glide Path Beacons (GPB) considered as part of ILS, which are designed to form a glide plane in space.

The main task of scientific organizations of civil aviation is providing of high fly safety and regularity, and it's improving. In this task solving, increasing of radio electronic navigation equipment reliability, improving the form and methods of aviation equipment exploitation and air traffic control has necessary role [1]. The main task of thesis is GPB increasing. Calculations of reliability indexes based on the radio beacons functioning monitoring and on this calculation chouse reliability for the optimal variant redundancy [2]. In the explanatory note at the first was considered the possibilities of practical usage of ILS devices and their intention and analyze the methods and evaluation navigation parameters. Also there was described the process of radiation signals modeling in two-channel and one-channel GPB antenna systems, the principle of powering of every antenna in these systems. Main technical and tactical characteristic of GPB and his structural and functional schemes. The main tactical characteristics of radio navigation equipment includes: operation range and the range of that resolution, capability, noise immunity, reliability and efficiency, size, weight, accuracy. Separately considered the scheme of HFB and mathematical modeling of the main signals for basic navigation parameters the radio beacon's functioning monitoring.

In that thesis was considered the concepts of reliability and reliability indexes. Was constructed program of mathematical modeliing of radio beacon's reliability with the help of cover MatLab. At the last conducted study of calculation of reliability indexes based on the radio beacon's functioning monitoring. I was compared analysis of redundancy variants and justification of optimal redundancy variants of equipment and was chosen the optimal variant of redundancy for the purpose of reliability increasing.

### **References:**

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