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The work concerns the issues of risk assessment of ground handling operations performed using Ground Support Equipment GSE, with particular emphasis on the level of training of the GSE operator and the risk of allowing him to work.

In airport traffic, incidents involving aircraft are relatively frequent. As one of the main participants in this movement, ground handling workers have a significant influence on the safety of airport operations. Each mistake they make may lead to an air incident and even to an accident in extreme cases. Therefore, it is necessary to take measures to limit the influence of the GSE operator on the events and their effects through proper personnel management, particularly the appropriate selection of GSE operators for the tasks.

Therefore, the doctoral dissertation aims to create a method to assess the risk of an accident in airport traffic. This requires the use of risk analysis methods adequate to the problem. The literature review shows that the typical methods are not appropriate here. Therefore, in this case, methods for the quantitative assessment of the possibility of the transformation of an incident into an air accident in the event of additional premises and contributing factors were proposed. Due to the necessity to consider many subjective parameters, mainly related to human behavior in a complex system, the work uses fuzzy inference systems. An expert system with a hierarchical structure was built to assess the risk of the transformation of a selected incident into an accident. Then, through the sensitivity analysis, the limit values of the GSE operator's training level were determined. The risk of performing a ground operation is tolerable depending on various external conditions. Based on the conducted research, it can be concluded that the training of the GSE operator plays a unique role in a situation when environmental conditions, such as the condition of the surface or visibility, are unfavorable.

This approach allows supporting ground handling agents in selecting GSE employees for their tasks to reduce the risk of an accident in airport traffic. This enables assistance in the flexible management of ground handling personnel by agents and the efficient management of the safety in the enterprises.