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AIRCRAFT NOISE IMPACT ON THE ENVIRONMENT OF THE GENERAL AVIATION AIRPORT OF BOVEC IN JULIAN ALPS

Dušan Zorić

Department of Air Transportation, University of Beograd, Beograd, Yugoslavia.

INTRODUCTION

The study of the influence of the general aviation airports on their environment is a specific problem not very often treated in Europe, while in Yugoslavia this one, the airport of Bovec, was the first. However, it should not be the last as the flying club activities in Yugoslavia are on the increase. The specific flying technique in training flights (touch-and-go) with high frequency of flights presents specific problems of impact on the inhabitants and their activities in the exposed areas. In this case, another aspect of the problem was also the question whether the increase of the activity of airport will have positive or negative effect on the fast developing winter sports center of the international character in Bovec.

SCOPE OF STUDY

We studied the prospective noise environment to evaluate several aspects of the possible future aircraft noise impact on the Bovec community development.

The community of Bovec is situated in the upper valley of the river Soča. This deep alpine valley enclosed by Julian Alps at Bovec becomes wide enough to accommodate a small town of Bovec and several villages. A small flying club developed here. Now, this community is developing fast as an international skiing center, hotels capacities are busy also in summer. All this brought increase also to the aviation activities, a flying school

is to be organized shortly. The authorities concerned with the overall development became interested in the interaction of these developments and existing activities of valley population. Therefore, it was necessary also to analyze the future impact of general aviation activity on this environment as it is expected to grow considerably because of at least two reasons, flying club activity and general aviation traffic from the Italy and domestic flying where one might expect event regular commercial flights with small aircraft.

The authorities concerned with protection of environment required a careful analysis of the possible effects of aircraft noise on people and animals. They also required insurance that all future situations will be within the brackets set up by the republican environment protection laws.

APPROACH AND RESULTS

Current and anticipated activities of the airport are : training flights, flying school, contest flying, air taxi, third level regular air traffic. In forecasting we anticipated two periods of the airport development: the introductory period of five years and the second period when all potential of anticipated activities will be developed. Total number of operations for the first period forecasted was 35,200 per year, and 47,400 per year for the second period. Single engine aircraft participation of 96% was assumed.

The flying procedure for training flights was established in such a way as to minimize the noise effects on the town of Bovec and on the activities of the valley inhabitants. The flying over the village Čezsoča could not be avoided. To have a proof that our approach was right and no excessive noise shall be experienced in the most sensitive areas, direct measurements were organized at the points 1 and 2 (Fig. 1). The levels measured proved to be acceptable (average of 70.5 dB(A) for point No. 1, and only 59.7 dB(A) for point No.2, Fig. 1).

The establishing of the NEF contours for the first and second period was done through use of data in FAA report FAA-AS-75-1. The resulting contours are compatible with results of the direct measurements.

CONCLUSIONS

First of all one should point out that the right choice of the orientation of the flying procedure shows that the center of Bovec will not even feel the increase of aviation activity, while the investigation of the possible influence of the aviation activity on the people and animals in the village Čezsoča was found to be negligible.

The most positive effect of this work was its influence on the urban planning of the area. It enabled the planners to direct the future development of this skiing center and its environment in such a way that it should not lose the advantage of airport activities, while developing to the utmost other resources.

The future increase of airport activity and the aircraft noise generated is shown to be in compliance with the existing environment protection laws. However, this analysis has also shown that the legislative considerations should be improved by more specialized approach to the aircraft noise.

Finally, the area under aircraft noise impact was zoned according to possible land use criteria.

LITERATURE

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