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ANNOYANCE PRODUCED BY THE NOISE OF THE AIRPORT OF ALTET-ALICANTE, ON THE CITIES OF ALTET, TORREMOLINOS AND ELCHE

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ABSTRACT

The international Altet-Alicante airport is placed in the border of the Mediterranean Sea, in the middle of the Spanish East Coast. During the last years, the airport has grown a lot in number of flights, especially the charter flights. Currently it is the fourth airport over Iberian Peninsula in traffic air. One of its special features is the overload work with only one runway. This produce much more noise (80-65 LDN, [1]) concentrated in a specific area. The present work shows the results of an inquiry accomplished to the resident of three cities located in this zone. That has permitted us to know the annoyance indices of the noise and its relationship to the other environmental factors.

1 - INTRODUCTION

All the reports confirm that in the last years the road traffic noise has raised considerably, the air traffic has been multiplied, and the citizens have experienced a huge noise increase. In the vacation and rest areas the growth of population and transit are being spectacular.

The best tool to solve the demography and tourism increment problem is of course a better planning. With this purpose we started an investigation with the help of an enquiry to determine the annoyance of the neighbourhood. Other questions like the environmental factors and their proposals to solve the problem have been asked as well.

Alicante airport is having five million passengers per year, recording an average of 225 operation per day, increasing a little in summer time.

2 - MEASUREMENTS, TABLES AND RESULTS

We have made 107 test to the resident citizens between May and June of 1998. In the enquiry 27 questions were asked. Being the more relevant the following ones; age, studies degree, labour status, health state, satisfaction level in the city where they live, disappointments about the environment regarding to the city, annoyance produced by the traffic road, aircraft noise, noise disturbances in different activities, when they get more affected by the noise, if it is during the day or at night and in summer or winter, and what kind of measurements and actions are they doing to solve the problem. The result of the questions are shown in the tables below.

Are you happy with your city?	%
A lot	38.5
Enough	37.5
Regular	21.5
Not much	0.9
Nothing	0.9

Table 1.

What displease you more of the city?	%
Atmospheric pollution	2.8
Traffic density	4.7
Lack of green areas	24.3
Better clean service	31.8
Public transportation	7.5
More school, libraries or medical cares	18.7
Without answer	9.8

Table 2.

Is the traffic noise disturbing you?	%
A lot	2.8
Enough	9.3
Regular	32.7
Not much	23.4
Nothing	31.8

Table 3.

Are you disagree with the aircraft noise on the city?	%
A lot	13.1
Enough	14.4
Regular	21.5
Not much	23.4
Nothing	27.1
Without answer	0.9

Table 4.

Does the traffic noise wake you up?	%
Frequently	3.7
Some times	26.7
Never	66.4
Without answer	

Table 5.

Does the aircraft noise wake you up?	%
Frequently	11.2
Some times	24.3
Never	62.6
Without answer	
Nothing	

Table 6.

Is the aircraft noise annoying you to watch the TV or listen the radio?	%
A lot	20.6
Enough	15.9
Regular	14.0
Not much	20.6
Nothing	29.0
Without answer	-

Table 7.

Is the aircraft noise disturbing you to read or study?	%
A lot	19.6
Enough	11.2
Regular	14.0
Not much	16.8
Nothing	38.3
Without answer	-

Table 8.

Is the aircraft noise disturbing you to keep a conversation?	%
A lot	18.7
Enough	15.9
Regular	11.2
Not much	16.8
Nothing	36.4
Without answer	0.9

Table 9.

Do you have isolation at home?	%
Yes	9.3
No	83.2

Table 10.

When is the aircraft noise more annoying?	%
Summer	89.2
Rest of the year	8.1

Table 11.

When is the aircraft noise more annoying?	%
Day	54.5
Night	37.7

Table 12.

Type of aircraft	%
Civil	81.9
Military	2.8

Table 13.

Do the aircrafts fly over your house?	%
Frequently	25.5
Some times	58.5
Never	16.0

Table 14.

Are you worried that an aircraft have an accident?	%
A lot	31.8
Enough	24.3
Regular	22.4
Not much	10.3
Nothing	11.2

Table 15.

What kind suggestions do you propose to solve the problem?	%
Move out the airport	66.7
Cancel night flies	24.8
Do not fly over the city	2.9
Reduce the number of fly operations	5.7
Economical helps	-

Table 16.

A second enquiry was made to 28 workers in the adjacent areas. In a total of 16 question asked we found the next interesting answers:

Are you happy with the job?	%
A lot	60.7
Enough	25.0
Regular	3.6
Not much	10.7
Nothing	-

Table 17.

Where is the noise coming from?	%
Inside	21.4
Outside	75.0

Table 18.

How much is the traffic noise disturbing you?	%
A lot	3.6
Enough	7.1
Regular	25.0
Not much	25.0
Nothing	39.3

Table 19.

How much is the aircraft noise disturbing you?	%
A lot	3.6
Enough	14.3
Regular	17.9
Not much	10.7
Nothing	53.6

Table 20.

How much is the noise created in your place disturbing you?	%
A lot	7.1
Enough	7.1
Regular	10.7
Not much	17.9
Nothing	57.1

Table 21.

Do you consider yourself sensible to the noise?	%
A lot	7.1
Enough	28.6
Regular	35.7
Not much	10.7
Nothing	17.9

Table 22.

Do you have isolation at work?	%
Yes	7.1
No	89.3

Table 23.

Do you think that the noise is affecting you negatively to work?	%
Yes	32.1
No	67.9

Table 24.

Is the noise affecting negatively you health?	%
Yes	35.7
No	64.3

Table 25.

Finally, we made 21 interviews and audiometries to the teacher that belong to the schools placed not further than 50 meters from the private airport area. Among the 16 question formulated to the teachers the values obtained were:

In general how do you value the airport proximity to your job?	%
Very good	64.3
Good	17.9
Regular	10.7
Bad	7.1
Very bad	-

Table 26.

Out of 21 teachers the 33.3% were working in this place for less that a year, 14.1% from one until five years, 23.8% from five to ten. 28.6% were there more than 10 years. The recording audiograms are placed below:

Right Ear (RE)	Min	MAX	Mean	Std. Deviation	Chi-square	df.	Sign.
125 Hz	20	50	33.33	8.85	4000	6	0.677
250	15	55	32.86	9.16	8333	7	0.304
500	10	50	33.10	8.87	12905	7	0.074
1000	10	55	26.10	9.60	12667	6	0.049
2000	15	50	23.57	8.24	5429	4	0.246
4000	10	45	24.05	9.57	5095	7	0.246
8000	10	40	20.95	9.30	4000	6	0.677

Table 27.

The correlation between the period when they were working near the airport and the hearing losses is shown in the table above (to the right). As you see there exists a relation between the hearing losses in the most important frequencies and the years teaching in the school.

3 - CONCLUSION

As it was expected the answers of the residents reflect the discord of having the airport so close. Being agreed the 67% of moving out the airport to another place. Only the 17 % of the employees, working and living in the same area, manifested that they were affected by the aircraft noise. Not having isolation at the place was the 90% and the 85 % of the noise was coming from outside. As they say the airport contribute them a lot of money, since their main part of the work are oriented to the tourist business, with cafés, restaurants, kiosks.

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