

Studies on Influences of Train Noise upon Schoolchildren: I. Outline of Researches

著者	KITAMURA SEIRO
journal or publication title	Tohoku psychologica folia
volume	23
number	1-2
page range	1-2
year	1966-01-10
URL	http://hdl.handle.net/10097/00123700

STUDIES ON INFLUENCES OF TRAIN NOISE UPON SCHOOLCHILDREN: I. OUTLINE OF RESEARCHES

By

SEIRO KITAMURA (北村晴朗)

(Tohoku University, Sendai)

The Japanese National Railways (JNR) initiated a project to construct a cultivated railway at a distance of 40m from a certain elementary school owing to the geographical position. Great fears were entertained, however, as to whether the noises caused by the trains running near the school might have undesirable influences upon the educational circumstances of the pupils.

For this reason JNR requested the Department of Acoustic Engineering, directed by Prof. Nimura of Tohoku University to carry out investigations in: a) estimate of sound conditions of noises in the execution of the project, and b) the effect of sound proof equipment. At the same time, JNR also requested the Department of Psychology to investigate the effects of the noises upon the pupils.

According to Nimura Researching Group, the D.A.E., the preestimated level of the noise caused by the trains passing at a distance of 40m from the school will be 78 phons, and by the equipment of sound proofing it will be reduced to 74 phons.

Our researching group of the Dept. of Psychol., to begin with, tried experiments on pupil's responses in the case of 74 phon-level, and then preestimated the permitted limit of the noise on the basis of the observations at several levels.

The influences of the noise upon educational circumstances of pupils are such a complicated subject that it is very difficult to expect satisfactory results in a short time. So our study was narrowed down to the influences of noises upon their mental performance and commenced according to the following schedule.

1. Stereorecording to the noise made by the passing trains.
2. Research of sound situations of noises in other schools located along the rail-line.
3. Laboratory studies.
4. Research on actual conditions of the school in question.

The aim of this research was to provide some basic informations so that they might pass objective judgement concerning the educational circumstances.

The procedure used and the results will be presented in detail later. On the principal results, the following notice may be previously given here.

Over 60 phon noises empirically exert manifest influences upon their mental per-

formence. Taking into consideration the research of other schools located along the railway and actual conditions of the noises of the school in question, however, we concluded that it would be desirable to take preventive measures against the noise to meet the requirements of the situation by reducing the noises to less than 65 phons.

As a matter of fact, JNR constructed a new railway by taking necessary measures based on the present researches and investigations.

(Received Sept. 10, 1964)