dicted from measurements of the sound pressure level in certain octave bands of the noise.

2 Annoyance caused by noise is a highly individual phenomenon and is not easily predicted or measured, but the fact that a noise produces annoyance does not necessarily mean that it is bad for health.

3 Efficiency in the performance of mental and motor tasks in industrial settings is only temporarily affected by exposure to unfamiliar or intermittent noises

4 Physiological changes resulting from noise-exposure lessen with repetition of the exposure At typical industrial noise levels it appears that no unhealthy physiological reaction results even from prolonged exposures

Auditory effects

Temporary hearing loss Studies of the temporary auditory threshold shift caused by noise-exposure have revealed several important facts related to both temporary threshold shifts and permanent threshold shifts

1. The temporary elevation of auditory threshold which results from one day's exposure to noise levels of 100 db or more may vary from no shift to as much as a 40 db shift

2 Exposure to typical industrial noises produces the largest temporary change at 3,000 to 6,000 c

3 The major portion of the temporary loss occurs during the first one or two hours of exposure

4 The amount of temporary loss is roughly constant for the same person from day to day but it varies from person to person according to a normal statistical distribution, that is, few persons have very large or very small shifts, and most of the losses cluster around an average value midway between the large and small shifts

5 The amount of temporary loss and its frequency location vary with the amount and frequency location of the permanent loss, the more the permanent loss at any frequency the less the temporary loss at that frequency.

6 Recovery from temporary hearing loss occurs mostly within the first hour or two after the noise-exposure has ended

There are a few things that can be said about temporary threshold shift: a noise which does not produce a temporary hearing loss will not produce a permanent hearing loss, hearing loss produced by a specified exposure over a long period will probably not be greater than the temporary hearing loss produced by a specific short term noise-exposure, and the configuration of the audiogram seen in the temporary threshold shift will resemble the audiogram that will be found when the permanent hearing loss is measured

Any temporary threshold shift is a reflection of the long-term process, and some answers may be derived from studying the temporary hearing loss produced by a specified noise-exposure

Much of the earlier work on temporary threshold shift was done with pure tones and the relations of pure tones to broadband noise is clearly not understood Our assumptions are based on the use of broadband noises such as flat spectrum white noise and various bands taken from white noise (With white noise, the sound pressure level measured over a constant-width band is constant over a wide frequency range It is like a time-exposure photograph taken of a lake or of a river While there are small ripples and waves present at any one time, they average out so that the level in the time exposure looks flat)

The temporary threshold shift has other important parameters Some of these are

(1) *Relation to industrial audiometry* We have stated previously that as much as 35 to 40 db of shift in ear sensitivity may be sustained during one work day, therefore an audiogram made at the end of the work day prior to a rest period will include this amount of temporary loss and will not be a true indication of the permanent loss Unfortunately, all audiograms, particularly follow-up audiograms, cannot be made prior to any noise-exposure, even though it would be ideal to be able to do all audiograms in the morning prior to starting work This is not practical, however, and some other method of preventing inclusion of the temporary loss when measuring permanent loss must be devised If an audiogram is made sixty minutes after leaving the noise much of the temporary threshold shift will have disappeared

(2) *The effect of permanent loss* There