



April 7-10, 1980

April 3, 1980

Legal Section
Industrial Commission of Ohio
246 N. High St.
Columbus, Ohio 43215

O.D. 13455-22
Joseph W. Thorley
New Departure Hyatt Bearings
Sandusky, Ohio

Attn: Linda Dolby

Ms. Dolby:

On November 6, 1979, a visit was made to New Departure Hyatt Bearings Division, General Motors Corporation, 25091 Hayes Avenue, Sandusky, to evaluate conditions under which the claimant worked.

The company is engaged in the manufacture of parts for the automotive industry, mainly various types of bearings.

According to company records, the major points in the claimant's work history are as follows:

1-9-53	Hired - Production Grinder
11/12/56	Set-up - Surface and O.D. Grinding
8/19/63	Inspection - Noise Test
9/2/63	Misc. Material Handler
4/63	Set-up - Surface and O.D. Grinding
4/13/64	Misc. Material Handler
8/2/65	Grinding
8/16/65	Janitor
1/31/66	Grinding
9/15/69	Bar Machine Operator

The claimant remained employed as a Bar Machine Operator at the time of this visit. A copy of the claimant's complete work record is attached to this report.

An explanation of the department numbers used in the claimant's work history is as follows:

Dept. 10	Ball Race Grinding - Department Discontinued
Dept. 20	Pump Shaft - Operating
Dept. 64	Instrument Bearing - Discontinued
Dept. 120	Discontinued
Dept. 060	Instrument Bearing - Discontinued
Dept. 100	Formerly Dept. 10 - Discontinued
Dept. 410	Discontinued
Dept. 150	Prop Shaft - Discontinued
Dept. 561	Janitor - Plant wide clean up
Dept. 400	Rear Wheel Bearing - Discontinued
Dept. 140	Rear Wheel Bearing - Discontinued
Dept. 110	Pump Shaft - Renumbered and moved
Dept. 130	Angle Row Ball - Discontinued
Dept. 304	Ball Shop - Discontinued
Dept. 160	Part of Dept. 400 - Discontinued
Dept. 240	Minature Instrument Bearing - Discontinued
Dept. 030	Press Room - Moved Out
Dept. 241	Instrument Bearing
Dept. 300	Ball Shop - Discontinued
Dept. 231	Instrument Bearing - Discontinued
Dept. 500	Discontinued
Dept. 150	Discontinued
Dept. 382	Roller Bearing Grinding - Operating
Dept. 380	Roller Bearing Grinding - Operating
Dept. 330	Bar Machine - Operating
Dept. 140	Discontinued
Dept. 150	Discontinued
Dept. 2&0	Refrigeration and air conditioning
Dept. 140	Transmission parts - Discontinued.

Many changes have been made in the plant. Equipment used in the past has become absolute and been replaced. The Ball Shop and Press Shop, both described as having high noise levels, have been discontinued, along with many other departments. These factors make any accurate determination of the claimant's noise exposure impossible.

In the areas where the claimant worked, even though changes have been made, that are in operation, sound level readings were carried out using a General Radio Type 1565B Sound Level Meter (SLM). The SLM was field checked using a General Radio Type 1562A SLM Calibrator. The results of these measurements are listed in Table I.

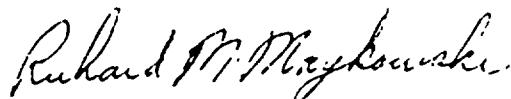
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A copy of a noise survey conducted by company personnel is also attached to this report.

Before any final decisions concerning the possible effects of noise exposure levels, some additional information should be considered. Various standards-setting organizations in the United States have adopted differing criteria for the evaluation of noise exposures. The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) enforces the standards listed in Table II. These standards are based on those recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) in 1970 and are probably outdated. The current standards adopted by the ACGIH are found in Table IV and are very similar to those recommended by the National Institute for Occupational Safety and Health (NIOSH) found in Table III. In addition, the Environmental Protection Agency (EPA) has conducted an independent evaluation of the situation and has published the standards listed in Table V, along with a recommendation that the 8-hour exposure limit eventually be reduced to 80 dBA and ultimately to 75 dBA.

The rationale for this lower standard is that only with a 75 dBA standard can noise-induced hearing loss be prevented in close to 100% of the population. A sizeable percentage of workers will suffer noise-induced hearing loss over a working lifetime of exposure to noise levels at 90 dBA. Fewer will be affected at 85 dB and even less at 80 dBA. However, the EPA feels that the number of persons affected at the higher levels justifies the use of an 8-hour limit of 75 dBA. The complete EPA position was published in the Federal Register.

In conclusion, two statements can be made. The determination of whether or not the claimant was exposed to noise levels which could have damaged his hearing will depend on which set of criteria are applied. Second, the claimant was employed in areas where the noise levels would be excessive, when judged by at least some of the criteria and in areas described as "noisy" where all criteria were most likely exceeded.


Richard M. Maykowski, CIH, CHCM
Industrial Hygienist

RM/nlg

New Departure Hyatt Bearings, Sandusky

November 6, 1979

TABLE I

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	CONCENTRATION DETERMINED	OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
Pump Shaft Dept.	Race Grind Cup Race Assembly Shipping Race Grind O.D. Grind Bar Machine Bar Machine O.D. Grind	Noise		88 - 91 dBA 89 - 92 dBA 88 - 91 dBA 85 - 86 dBA 84 - 86 dBA 83 - 86 dBA 88 - 95 dBA 88 - 91 dBA 86 - 88 dBA	See Table II	See Table III	See Table IV
Dept. 330	Bar Machine	Noise		84 - 86 dBA			
Dept. 050	Bar Machine (large stock) Bar Machine (Small stock)	Noise		87 - 89 dBA Peaks of 92 dBA 88 - 95 dBA			
Cylindrical Roller Grind	O.D. Grinders	Noise		84 - 86 dBA			
Dept. 380 & 382	O.D. Grinders	Noise		84 - 87 dBA			

mg/M³ = Milligrams per cubic meter of air
 ppm = Parts per million of air
 OSHA = Occupational Safety and Health Administration
 NIOSH = National Institute of Occupational Safety & Health
 ACGIH = American Conference of Governmental Industrial Hygienists

TLV - Threshold Limit Value
 TWA - Time Weighted Average
 N.A.S. - No Applicable Standard

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PERMISSIBLE NOISE EXPOSURE

TABLE II

OSHA
(29 CFR 1910.95)

<u>Duration Per Day (Hours)</u>	<u>Sound Level (dBA)*</u>
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

* Sound level in decibels as measured on a sound level meter conforming, as a minimum, to the requirements of the American National Standard Specification for Sound Level Meters, S14 (1971), Type 2A and set to use the A-Weighted network with slow meter response.

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ACCEPTABLE NOISE EXPOSURES

TABLE III

NIOSH

Duration Per Day (Hours)	Sound Level (dBA)
8	85
4	90
2	95
1	100
$\frac{1}{2}$	105
$\frac{1}{4}$	110
$\frac{1}{8}$	115

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NOISE TLVs **

ACGIH

<u>Duration Per Day</u> <u>(Hours)</u>	<u>Sound Level</u> <u>(dBA)</u>
16	80
8	85
4	90
2	95
1	100
$\frac{1}{2}$	105
$\frac{1}{4}$	110
1/8	115*

* No exposure to continuous or intermittent noise in excess of 115 dBA.

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Threshold Limit Values refer to sound pressure levels and duration of exposure that represent conditions under which it is believed that nearly all workers may be repeatedly exposed without adverse effect on their ability to hear and understand normal speech. Due to individual susceptibility, however, threshold limit values should not be regarded as fine lines between safe and dangerous levels.

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TABLE 5

ACCEPTABLE NOISE EXPOSURE

EPA

<u>Duration Per Day</u> <u>(Hours)</u>	<u>Sound Level</u> <u>(dBA)</u>
8	85
4	88
2	91
1	94
$\frac{1}{2}$	97
$\frac{1}{4}$	100
1/8	103

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William D. Kaye
Supervisor, Microfilming Unit

By: *John Frey*
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