

2002 Annual Report on Occupational Noise Induced Hearing Loss in Michigan

A Joint Report
of the
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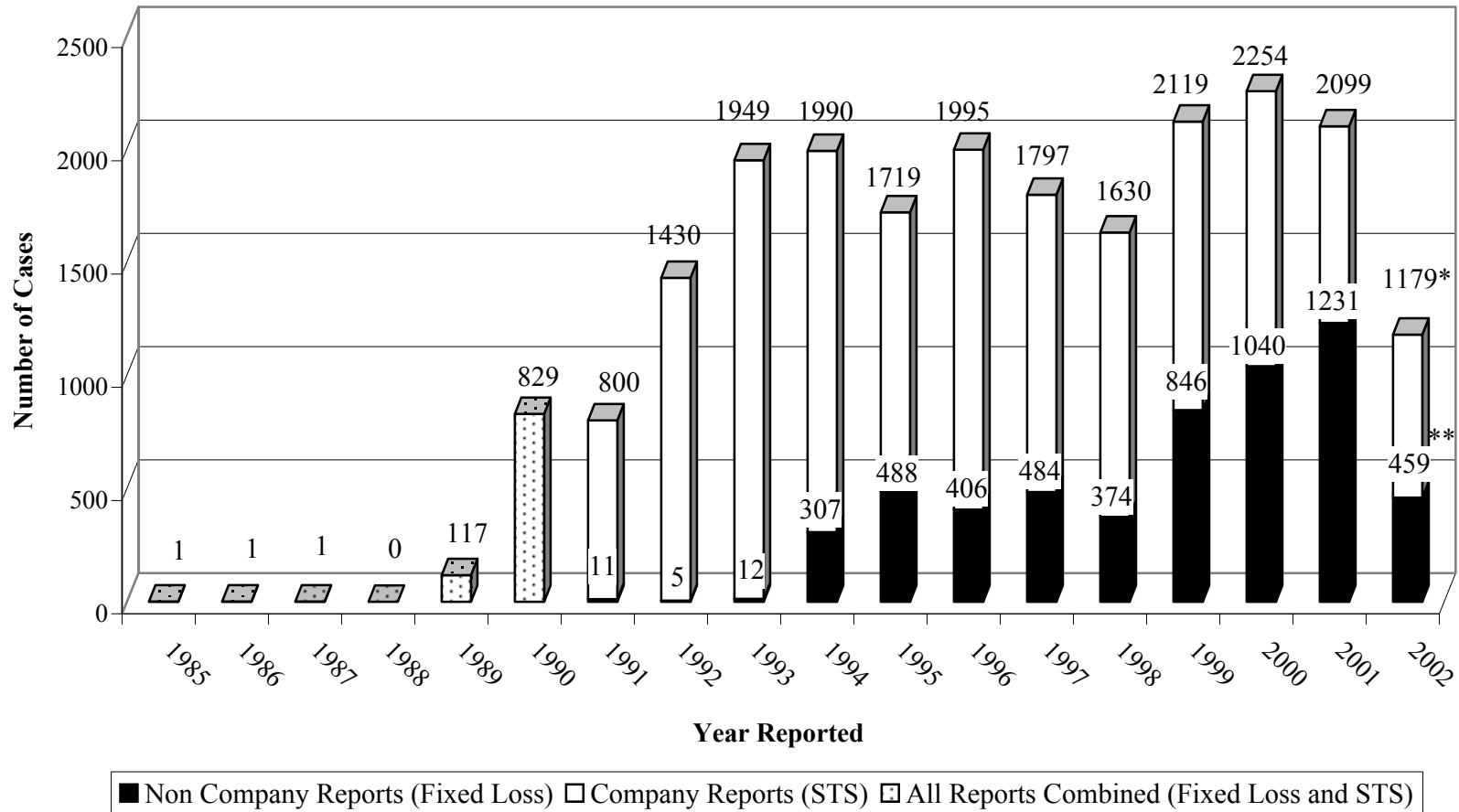
and

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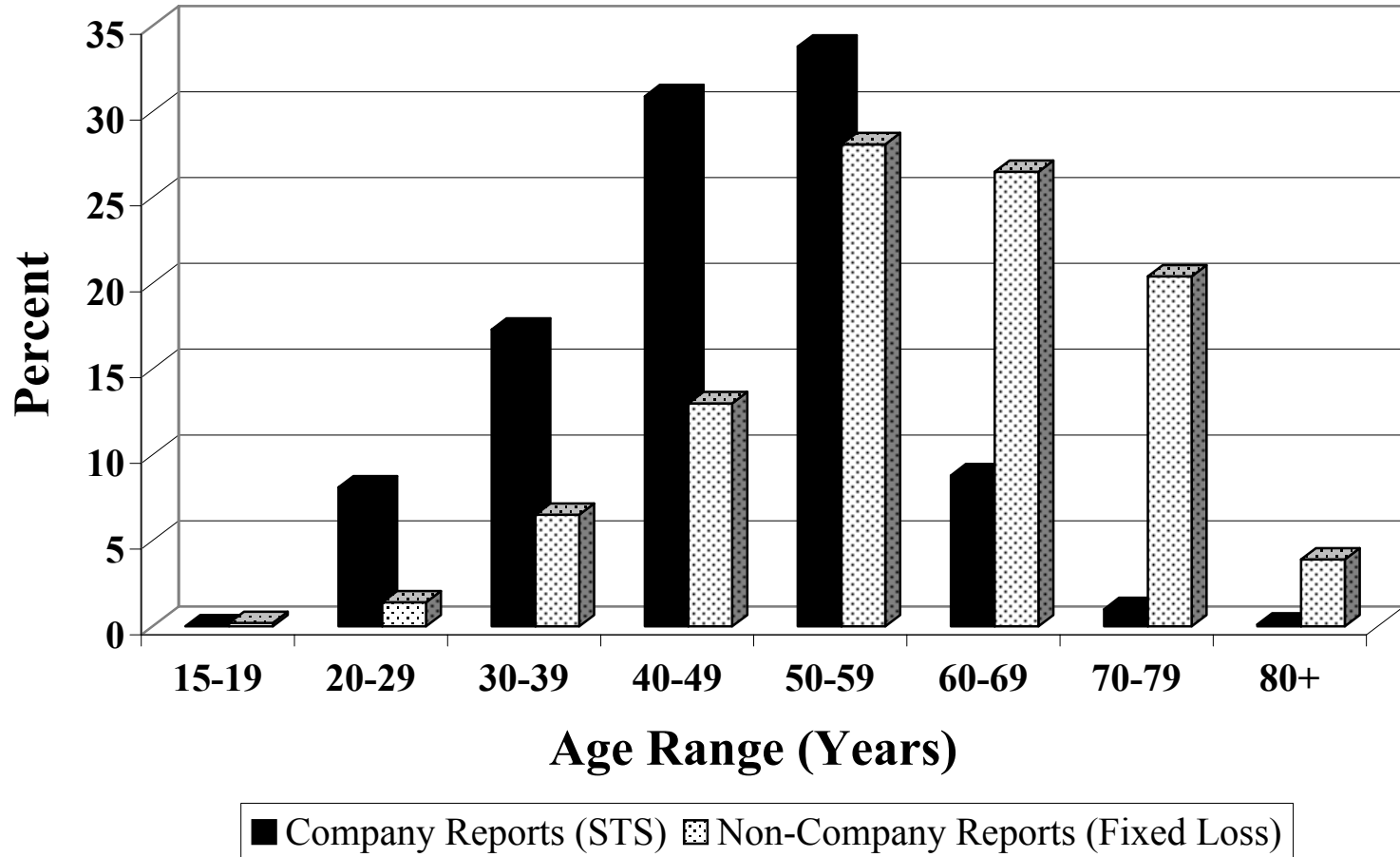
Figure 2. All Individuals with Noise-Induced Hearing Loss Reported to the Michigan Department of Consumer and Industry Services: 1985-2002



*All reports combined (Fixed Loss and STS).

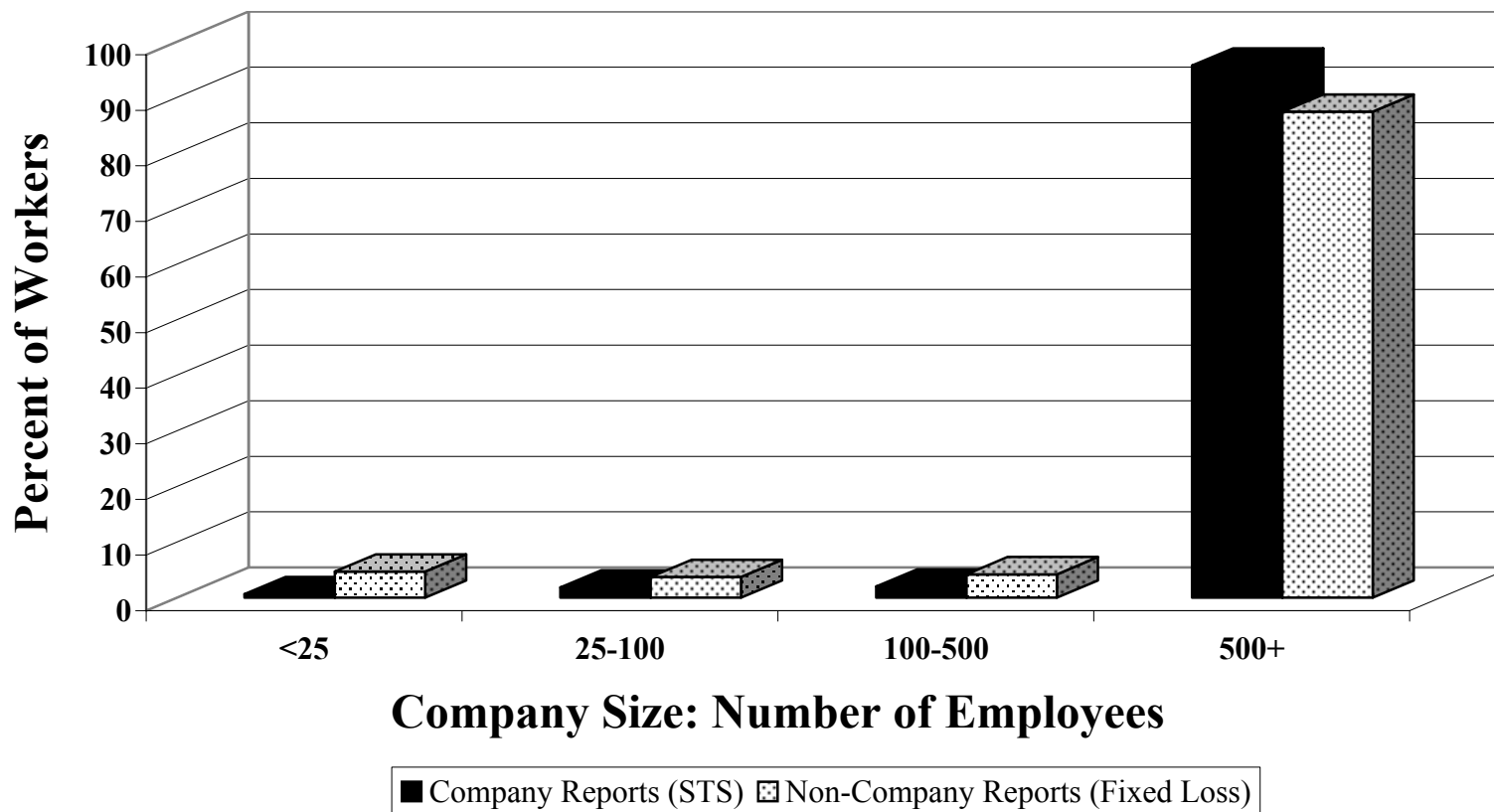
**Fixed Loss Reports.

Figure 3. All Individuals Reported with Noise-Induced Hearing Loss in 2002: Age Range* by Reporting Source



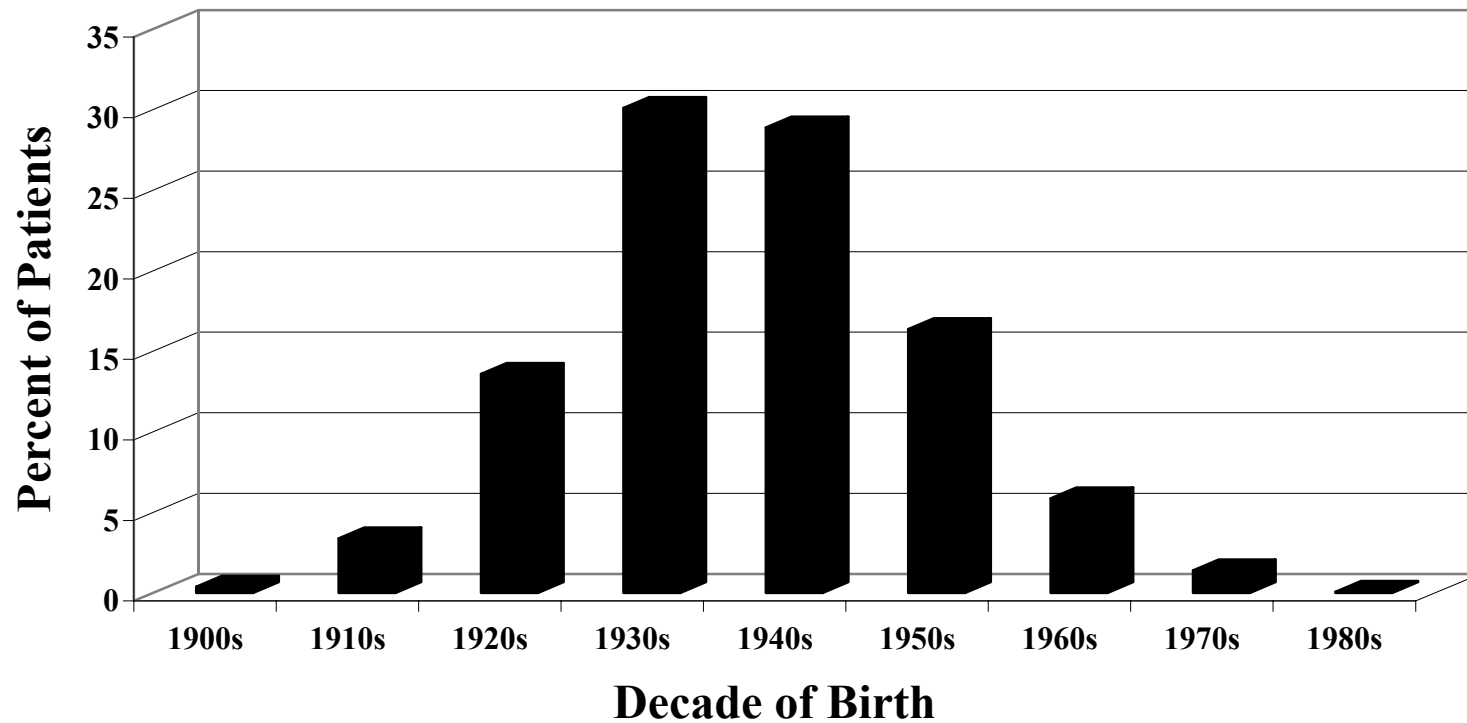
*Age was unknown for 15 individuals reported by company medical departments and 28 individuals reported by non-company hearing health professionals.

**Figure 4. All Individuals Reported with Noise-Induced Hearing Loss in 2002:
Number of Employees* at the Company Where Exposure to Noise Occurred**



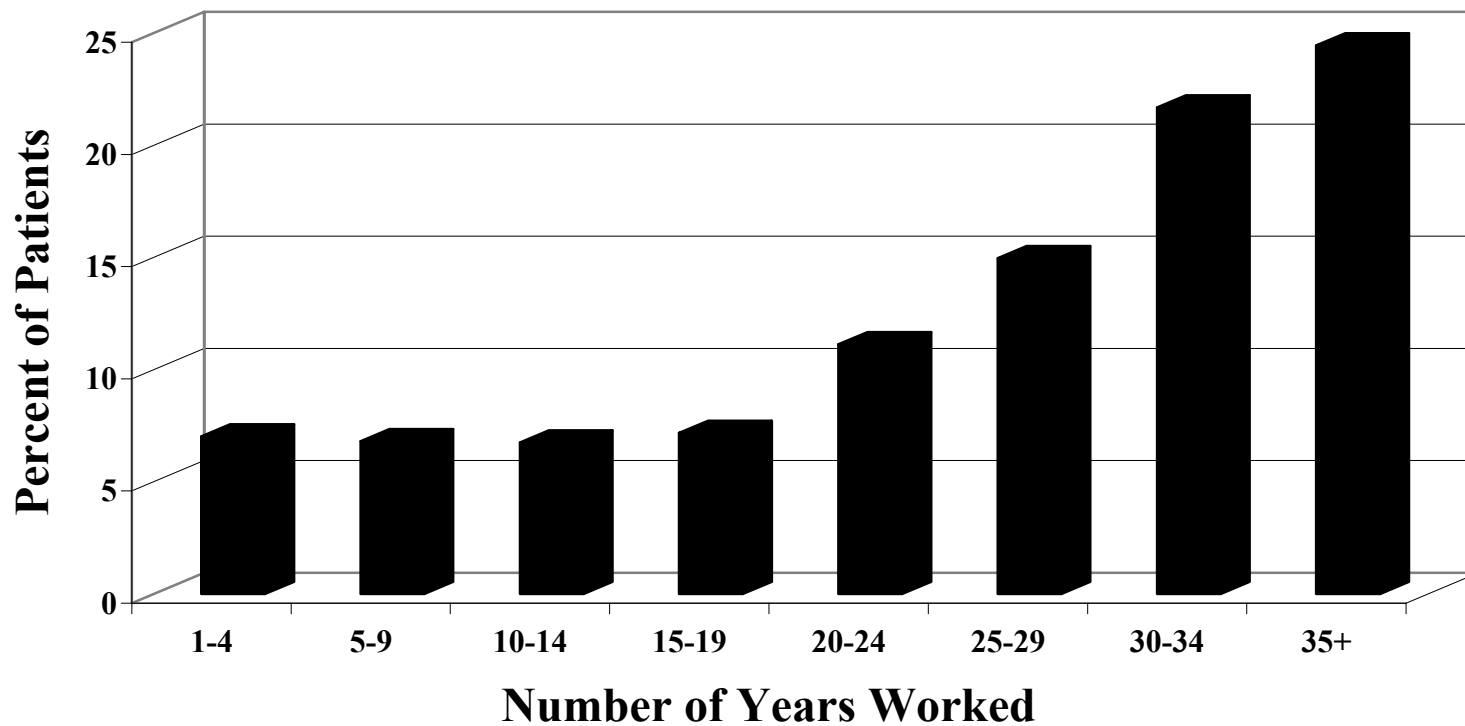
*Number of employees was unknown for 3 individuals reported by company medical departments and 245 individuals reported by non-company hearing health professionals.

**Figure 5. Individuals with a Fixed Hearing Loss:
Distribution of Decade of Birth,* Michigan: 1992-2002**



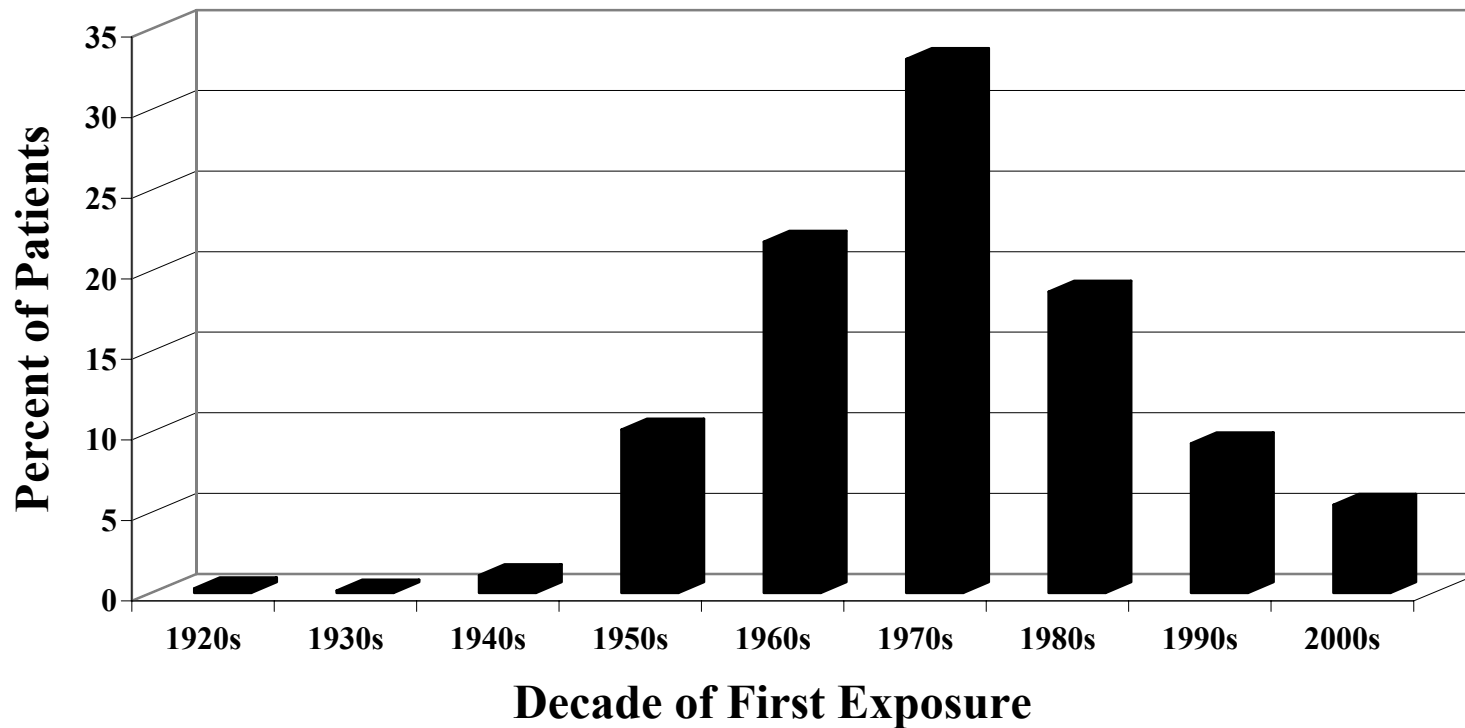
*Decade of birth was unknown for 46 individuals.

**Figure 6. All Interviewed Individuals with a Fixed Hearing Loss:
Total Duration of Years Worked* in Noise, Michigan: 1992-2002**



*Duration was unknown for 1,354 individuals identified between 1992 and 2002.

**Figure 7. All Interviewed Individuals with a Fixed Hearing Loss:
Distribution of Decade of First Exposure* to Noise, Michigan: 1992-2002**



*Decade was unknown for 1,485 individuals identified between 1992 and 2002.

Table 1. Number of Non-Company Based Health Professionals Reporting Individuals with a Fixed Noise-Induced Hearing Loss in Michigan, in Calendar Year 2002

Range of Individuals Reported	Health Professionals Number	Percent	Total Number of Individuals Reported
1	22	56.4	22
2-10	14	35.9	57
11-50	1	2.6	13
51+	2	5.1	318
TOTAL	39 *	100.0	410

*Includes five group practices.

Table 2. All Company and Non-Company Individuals with Noise-Induced Hearing Loss Reported in Calendar Year 2002: Number of Employees at the Company Where Exposure to Noise Occurred

Number of Employees	Total		STS**		Fixed Loss***	
	Number	Percent	Number	Percent	Number	Percent
<25	14	1.5	4	0.6	10	4.7
25-100	21	2.3	13	1.8	8	3.7
100-500	23	2.5	14	2.0	9	4.2
501+	873	93.8	686	95.7	187	87.4
TOTAL*	931	100.0	717	100.0	214	100.0

* Number of employees was unknown for 3 individuals reported by company medical departments and 245 individuals reported by non-company hearing health professionals.

** STS=Standard Threshold Shift, reported by company.

*** Fixed=reported by audiologist/otolaryngologist in private practice.

Table 3. Calendar Year 2002 Occupational Disease Reports of Noise-Induced Hearing Loss: Industry of Individuals Reported

<u>Standard Industrial Classification (SIC)*</u>	Number of		STS***		Fixed Loss****	
	<u>Individuals</u>	<u>Percent</u>	<u>Individuals</u>	<u>Percent</u>	<u>Individuals</u>	<u>Percent</u>
Agriculture/Forestry (01-08)	3	0.3	0	--	3	0.8
Mining (10)	1	0.1	1	0.1	0	--
Oil and Gas Extraction (13)	1	0.1	0	--	1	0.3
Construction (15-17)	43	3.9	0	--	43	11.2
Manufacturing (20-39)						
Lumber (24)	1	0.1	0	--	1	0.3
Paper (26)	2	0.2	1	0.1	1	0.3
Printing (27)	3	0.3	0	--	3	0.8
Chemicals (28)	58	5.2	15	2.1	43	11.2
Rubber (30)	29	2.6	27	3.8	2	0.5
Stone/Clay/Glass (32)	1	0.1	0	--	1	0.3
Primary Metals (33)	100	9.0	38	5.3	62	16.1
Metal Fabrication (34)	152	13.8	144	20.0	8	2.1
Machinery (35)	13	1.2	7	1.0	6	1.6
Electronics (36)	50	4.5	49	6.8	1	0.3
Transportation (37)	548	49.6	430	59.7	118	30.6
Miscellaneous Mfg Industries (39)	11	1.0	0	--	11	2.9
Transport./Comm. Svcs. (40-49)	23	2.1	3	0.4	20	5.2
Retail Trade (50-59)	14	1.3	0	--	14	3.6
Finance, Insurance & Real Estate (60-67)	3	0.3	0	--	3	0.8
Services (70-89)						
Hotels (70)	1	0.1	1	0.1	0	--
Personal Services (72)	1	0.1	0	--	1	0.3
Business (73)	2	0.2	0	--	2	0.5
Automotive Repair (75)	3	0.3	0	--	3	0.8
Recreation (79)	1	0.1	0	--	1	0.3
Health (80)	1	0.1	0	--	1	0.3
Legal Services (81)	1	0.1	0	--	1	0.3
Education (82)	18	1.6	1	0.1	17	4.4
Membership Organizations (86)	2	0.2	0	--	2	0.5
Engineering/Management (87)	3	0.3	0	--	3	0.8
Private Households (88)	4	0.4	0	--	4	1.0
Public Administration (91-97)						
Government (91)	7	0.6	0	--	7	1.8
Police (92)	2	0.2	0	--	2	0.5
Admin. Economic Programs (96)	3	0.3	3	0.4	0	--
Total	1,105	100.0	720	100.0	385 **	100.0

*Standard Industrial Classification (1987 Manual).

**SIC was unknown for 74 individuals reported by private practice health professionals.

***STS=Standard Threshold Shift, reported by company.

****Fixed=reported by audiologist/otolaryngologist in private practice.

**Table 4. Individuals with a Fixed Hearing Loss: Type of Industry
Where Exposed to Noise: Michigan 1992-2002**

<u>Standard Industrial Classification (SIC)*</u>	1992 - 2002	
	<u>Reports by Industry</u>	<u>Percent</u>
Agricultural Production & Services (01-07)	135	2.1
Forestry (08)	5	0.1
Mining (10-14)	31	0.5
Construction (15-17)	776	12.3
Manufacturing (20-39)		
Food (20)	61	1.0
Apparel (23)	8	0.1
Wood (24)	36	0.6
Furniture (25)	19	0.3
Paper (26)	68	1.1
Printing (27)	45	0.7
Chemicals (28)	113	1.8
Petroleum Refining (29)	9	0.1
Rubber (30)	67	1.1
Leather (31)	4	0.1
Stone/Clay/Glass (32)	45	0.7
Primary Metals (33)	911	14.4
Metal Fabrication (34)	296	4.7
Machinery (35)	263	4.2
Electronics (36)	38	0.6
Transportation (37)	1,788	28.2
Measuring Instruments (38)	8	0.1
Miscellaneous Mfg Industries (39)	162	2.6
Transportation/Communication Services (40-49)	453	7.2
Retail Trade (50-59)	117	1.8
Finance, Insurance & Real Estate (60-67)	13	0.2
Services (70-89)		
Hotels (70)	3	0.0
Personal Services (72)	5	0.1
Business (73)	13	0.2
Automotive Repair (75)	87	1.4
Repair (76)	22	0.3
Motion Pictures (78)	1	0.0
Recreation (79)	37	0.6
Health (80)	59	0.9
Education (82)	224	3.5
Social Services (83)	2	0.0
Parks (84)	1	0.0
Membership Organizations (86)	3	0.0
Engineering/Management (87)	14	0.2
Geology (89)	2	0.0
Public Administration (91-97)	390	6.2
Total	6,334 **	100.0

*Standard Industrial Classification (1987 Manual).

**SIC was unknown for 85 work locations from individuals identified between 1992-2002.

**Table 5. All Interviewed Individuals with a Fixed Hearing Loss: Type of Industry
and Performance of Regular Hearing Testing at Most Recent Company
Exposed to Noise: Michigan 1992-2002**

<u>Standard Industrial Classification (SIC)*</u>	1992 - 2002	
	<u>Number of Reports by Industry</u>	<u>Percent Have Hearing Testing</u>
Agricultural Production & Services (01-07)	94	8
Forestry (08)	1	0
Mining (10-14)	19	35
Construction (15-17)	586	7
Manufacturing (20-39)		
Food (20)	39	39
Apparel (23)	4	25
Wood (24)	28	12
Furniture (25)	10	25
Paper (26)	51	42
Printing (27)	25	25
Chemicals (28)	88	40
Petroleum Refining (29)	7	43
Rubber (30)	42	38
Leather (31)	2	0
Stone/Clay/Glass (32)	34	23
Primary Metals (33)	801	35
Metal Fabrication (34)	204	38
Machinery (35)	164	27
Electronics (36)	20	21
Transportation (37)	1,494	38
Measuring Instruments (38)	6	29
Miscellaneous Mfg Industries (39)	93	23
Transportation/Communication Services (40-49)	360	34
Retail Trade (50-59)	84	12
Finance, Insurance & Real Estate (60-67)	11	0
Services (70-89)		
Hotels (70)	2	0
Personal Services (72)	4	20
Business (73)	9	17
Automotive Repair (75)	46	6
Repair (76)	12	0
Motion Pictures (78)	1	0
Recreation (79)	25	9
Health (80)	55	23
Education (82)	202	29
Social Services (83)	2	0
Parks (84)	1	50
Membership Organizations (86)	3	0
Engineering/Management (87)	8	25
Geology (89)	2	33
Public Administration (91-97)	325	23
Total	4,964 **	30

*Standard Industrial Classification (1987 Manual).

**SIC was unknown for 84 work locations from individuals identified between 1992-2002.

Table 6. All Interviewed Individuals with a Fixed Hearing Loss: Number of Employees in Most Recent Company Exposed to Noise by Status of Hearing Testing: Michigan 1992-2002

Company Size: Number of Employees	Number of Reports by Size of Company	1992-2002 Have Hearing Testing	
		Number	Percent
<25	459	62	(14)
25-100	335	80	(21)
100-500	492	218	(33)
501+	2,487	722	(37)
TOTAL	3,773 *	1,082	(45)

*This total excludes 1,203 individuals identified 1992-2002 with unknown number of employees and 307 individuals who we were unable to determine if they had been provided hearing testing while working.

Table 7. All Interviewed Individuals with a Fixed Hearing Loss: Decade Last Worked and Status of Regular Hearing Testing at Most Recent Company Exposed to Noise, by Industry Type*: Michigan 1992-2002

Industry Type (SIC)**	Decade Last Exposed to Noise and Hearing Testing Status															
	1930's		1940's		1950's		1960's		1970's		1980's		1990's		2000's	
	No. of Pts.	% Have RHT***	No. of Pts.	% Have RHT	No. of Pts.	% Have RHT	No. of Pts.	% Have RHT	No. of Pts.	% Have RHT	No. of Pts.	% Have RHT	No. of Pts.	% Have RHT	No. of Pts.	% Have RHT
Agriculture/Forestry (01-08)	0	--	1	0	1	0	2	0	3	0	6	17	40	8	12	0
Mining (13-14)	0	--	0	--	0	--	0	--	1	0	4	33	9	67	1	100
Construction (15-17)	1	--	0	--	2	0	6	0	19	8	98	9	215	5	103	12
Manufacturing (20-39)	2	100	14	8	25	5	57	0	158	15	488	46	1185	66	294	77
Transportation (40-49)	0	--	0	--	0	--	3	33	13	27	45	34	162	60	66	47
Trade (50-59)	0	--	0	--	1	0	1	100	4	0	3	0	46	14	9	14
Finance (60-67)	0	--	0	--	0	--	0	--	1	0	0	--	3	0	1	0
Services (70-89)	0	--	1	0	2	0	2	0	3	0	30	11	199	32	61	40
Public Administration (91-97)	0	--	4	0	4	0	5	0	10	0	18	39	98	36	27	24

*For 1,468 individuals, either industry type or decade last exposed to noise was unknown.

**Standard Industrial Classification (1987 Manual).

***Regular Hearing Test.

Table 8. All Interviewed Individuals with a Fixed Hearing Loss: Decade Last Worked and Status of Hearing Protection at Most Recent Company Exposed to Noise, by Industry Type*: Michigan 1992-2002

Decade Last Exposed to Noise and Offered Hearing Protection Device

<u>Industry Type (SIC)**</u>	1930's		1940's		1950's		1960's		1970's		1980's		1990's		2000's	
	No. of Pts.	% Have HPD***	No. of Pts.	% Have HPD	No. of Pts.	% Have HPD	No. of Pts.	% Have HPD	No. of Pts.	% Have HPD	No. of Pts.	% Have HPD	No. of Pts.	% Have HPD	No. of Pts.	% Have HPD
Agriculture/Forestry (01-08)	0	--	1	****	1	****	2	0	3	33	6	0	40	38	12	40
Mining (13-14)	0	--	0	--	0	--	0	--	1	100	4	75	9	100	1	100
Construction (15-17)	1	0	0	--	2	50	6	33	19	36	98	27	215	64	103	70
Manufacturing (20-39)	2	0	14	7	25	9	57	15	158	46	488	69	1185	86	294	90
Transportation (40-49)	0	--	0	--	0	--	3	0	13	18	45	23	162	56	66	58
Trade (50-59)	0	--	0	--	1	0	1	0	4	0	3	0	46	62	9	14
Finance (60-67)	0	--	0	--	0	--	0	--	1	0	0	--	3	0	1	--
Services (70-89)	0	--	1	0	2	0	2	50	3	0	30	15	199	66	61	64
Public Administration (91-97)	0	--	4	****	4	50	5	0	16	22	19	77	98	70	27	85

*For 1,468 individuals, either industry type or decade last exposed to noise was unknown.

**Standard Industrial Classification (1987 Manual).

***Hearing Protection Device (ear plugs or muffs).

****There is no percentage in this column because the availability of hearing protection was unknown.

Table 9. All Interviewed Individuals with a Fixed Hearing Loss: Decade Last Worked and Status of Regular Hearing Testing at Most Recent Company Exposed to Noise, by Industry Size*: Michigan 1992-2002

Decade	Company Size (Number of Employees)							
	<25		25-100		100-500		500+	
	No. of Pts.	% with RHT**	No. of Pts.	% with RHT	No. of Pts.	% with RHT	No. of Pts.	% with RHT
1930's	0	--	3	100	0	--	0	--
1940's	1	0	1	0	0	--	13	11
1950's	6	0	3	0	6	17	15	0
1960's	8	0	5	25	10	11	40	0
1970's	18	0	23	9	25	8	107	21
1980's	48	17	43	19	74	36	390	47
1990's	244	17	196	27	282	55	992	67
2000	86	17	40	41	67	64	217	70

*For 1,468 individuals, either company size or decade last exposed to noise was unknown.

**Regular Hearing Testing.

Table 10. All Interviewed Individuals with a Fixed Hearing Loss: Status of Hearing Testing in Most Recent Company Exposed to Noise: Michigan 1992-2002

<u>Regular Hearing Tests Conducted</u>	<u>Baseline Hearing Test Conducted</u>			Total
	Yes	No	Unknown	
Yes	583	319	217	1,119 (28%)
No	182	1,104	171	1,457 (36%)
Unknown	33	31	1,421	1,485 (37%)
Total	798 (20%)	1,454 (36%)	1,809 (45%)	4,061