

# HEARING CONSERVATION REPORT

Abc Company

P O Box 1010

Amesbury, MA 01913

R E P O R T P R E P A R E D B Y

Gordon Hearing Conservation, Inc.  
PO Box 1010  
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(978)388-1685

REVIEWED BY

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Consulting Audiologist

VISIT DATES FROM: 05/20/2003 THRU: 05/20/2003

# INTRODUCTION

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The 1983 amendment to the OSHA hearing conservation regulation (1910.95) states that all employees who are exposed to a time weighted average sound level of 85 dBA or greater must be included in a hearing conservation program. They must be provided with hearing protection for use in high noise environments. They must be educated once a year regarding various aspects of hearing conservation, including how to properly fit and care for each major type of hearing protector. In addition, each employee in the program must be provided with a hearing test at least once a year. For details regarding the OSHA regulation, please refer to the regulation itself (29 CFR 1910.95). Some employees fall under the MSHA (Mine Safety and Health Administration) regulation. If the employee falls under MSHA, the follow up actions are discussed in the report sections in terms of the MSHA regulation.

## WHAT IS AN AUDIOGRAM?

The purpose of the audiogram is to determine the minimum amount of loudness required by an individual to just barely detect the presence of tones at various pitches (or frequencies). The loudness range, in decibels, is 0 dB through 90 dB. The minimum loudness point is called the audiometric threshold.

Thresholds are obtained at six different frequencies ranging from a low of 500 Hz to a high of 6000 Hz. This range is where most of the sounds found in speech occur. Our goal is to determine how well an individual is able to communicate.

The normal range of hearing is between 0 and 25 dB. If an individual's threshold at any frequency is greater than 25 dB, he is said to have a hearing loss. Hearing loss from noise exposure usually begins in the higher frequencies (3000 to 6000 Hz). The

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degree of communication impairment relates to the severity of the loss. An individual may have hearing within the normal range (0-25 dB) in the lower frequencies (500-2000 Hz) and have only a mild loss in the higher frequencies. This individual may not even notice a hearing loss. However, an individual with a more pronounced high frequency loss may have difficulty understanding speech, particularly in the presence of competing background sounds.

With continued exposure to noise with no hearing protection, the hearing loss can become worse, first in the higher frequencies and eventually in the lower pitch range as well. When the loss progresses to this point, speech communication becomes significantly impaired. Many individuals with a hearing loss of this degree may benefit from a hearing aid.

In the report, the results of the audiometric test data are presented in two different formats: an alphabetical summary giving the hearing status, change status and recommendations, and lists lists by category.

## HEARING STATUS:

The status of hearing for each ear is broken down using the accepted clinical audiological criteria for degrees of hearing loss.

## EXPLANATION OF COMPARISONS

In the alphabetical summary, the test comparisons (to the baseline or revised baseline) are broken down as follows:

NO COMPARISON: Baseline test; there is no previous data to compare to.

NO CHANGE: No significant change when compared to the baseline or revised baseline

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using the OSHA formula for standard threshold shift. (STS = an average decrease of 10 dB from the baseline or revised baseline at the frequencies of 2000, 3000, and 4000 Hz. in either ear.)

INITIAL THRESHOLD SHIFT: Evidence of the STS for the first time.

PERSISTENT THRESHOLD SHIFT: If an initial STS was seen on the previous test, it is not known whether the loss is permanent or was a temporary loss from exposure to that day's noise. If, on the next test, preferably within a week or so, the shift is still evident, it is said to be persistent. The shift would appear to be noise induced. In this case, the present audiogram becomes the "revised baseline" for the ear in which the shift occurs. All subsequent audiograms are compared to that one.

TEMPORARY THRESHOLD SHIFT: If on the second test the shift did not persist, it could be assumed that the loss on the previous test was a temporary loss.

BORDERLINE SHIFT: An average of 8-9.9 dB decrease at 2000-4000 Hz. Even though it was not enough to be an STS, it is important that the employee recognize that his hearing is slowly decreasing.

IMPROVEMENT: It is possible either through a learning effect or recovery from a temporary loss that the results can show a slight improvement. This calculation is the one for STS in reverse.

REPEAT IMPROVEMENT: The improvement was seen on the second test as well. In this case, the baseline is revised to this test for the ear in which the persistent improvement took place.

EXPLANATION OF FOLLOW UP LISTS:

EMPLOYEES WITH INITIAL THRESHOLD SHIFT: These employees should be retested within 30 days of the date of the original test to determine if the shift is persistent.

Therefore, it is important that the employee be away from noise for at least 14 hours

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prior to this retest. Even if the employer does not wish to retest, he should still conduct the follow up necessary for employees who exhibit a persistent STS. Please refer to Appendix 1 of this report, paragraph 8 of the regulation (1910.95) for a description of the follow up action necessary.

EMPLOYEES WITH PERSISTENT THRESHOLD SHIFT: These employees need to be informed of the shift in writing within 21 days of the time you receive the results back. If his TWA is 85 dBA or greater, the employee must also be refit and retrained on the proper use and care of hearing protection. It must be determined that the NRR of the protector is sufficient enough for the employee's TWA. Please refer to paragraph 8 of the regulation (1910.95) in Appendix 1 for the exact follow-up procedure.

EMPLOYEES WITH OSHA 300 RECORDABLE SHIFT: These employees should be recorded on the OSHA 300 log. As of January 1, 2003, OSHA has a new regulation regarding recordability of hearing loss. All audiograms tested after January 1, 2003 were evaluated using the new criteria. It is important to note that if an audiogram shows an initial threshold shift, IF THE EMPLOYER DOES NOT PERFORM A RETEST, THE EXISTING STS MUST BE RECORDED ON THE OSHA LOG WITHIN 37 DAYS (30 days to retest plus 7 days to record.)

EMPLOYEES RECOMMENDED FOR MEDICAL FOLLOW-UP: These employees exhibited something in their hearing that warrants more in-depth examination by a clinical audiologist or an ear doctor. This could be a significant hearing loss for which the employee might benefit from a hearing aid. Or, it could be a loss or a shift that did not appear to be typically noise induced. This might even be a mild loss in the lower frequencies. The determination for referral is made by the supervising audiologist.

# TEST ENVIRONMENT

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Ambient noise levels (dB) in test chamber: .5KHz 1KHz 2KHz 4kHz 8KHz

UNIT: 4 DATE: 05/20/2003 7:00 OK OK OK OK OK

## EQUIPMENT

EQP#	UN	DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO	SERVICED
1026	4	Test booths (5)	Eckel Ind.	AB2000		/ /
1032	4	Test Booths	Eckel Ind.	AB 2000	9 custom units	/ /
1045	4	Audiometer	Monitor-De	MI 5000	20385	10/10/08
1046	4	Audiometer	Monitor-De	MI 5000	20386	12/03/08
1047	4	Audiometer	Monitor-De	MI 5000	20387	11/06/08
1048	4	Audiometer	Monitor-De	MI 5000	20388	10/22/08
1049	4	Audiometer	Monitor-De	MI 5000	90667	08/26/08
1050	4	Audiometer	Monitor-De	MI 5000	90668	10/10/08
1051	4	Audiometer	Monitor-De	MI 5000	80713	08/26/08
1052	4	Audiometer	Monitor-De	MI 5000	80714	11/10/08
1053	4	Audiometer	Saico	SCR 2	3919	08/26/08
1054	4	Audiometer	Saico	SCR 2	3926	08/26/08
1056	4	Bio. Cal.	Quest	BA 20125	EU0010016	/ /
1057	4	Bio. Cal.	Quest	BA 20125	EU3110011	/ /
1058	4	Bio. Cal.	GSI	17403110	A 0351	/ /
1059	4	Bio. Cal.	GSI	17403110	A 0354	/ /
1060	4	Bio. Cal.	GSI	17403110	A 0356	/ /
1061	4	Bio. Cal.	GSI	17403110	A 0360	/ /
1062	4	Bio. Cal.	GSI	17403110	A 0422	/ /
1068	4	Audiometer	Monitor-De	MI 5000	60397	08/26/08
1069	4	Audiometer	Monitor-De	MI 5000	60301	08/26/08
1070	4	Audiometer	Monitor-De	MI 5000	60300	10/22/08
1072	4	Audiometer	DIGITAL HR	SMARTAud	V4N02100	08/26/08

# TECHNICIANS AND INTERPRETERS

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----- Personnel Reference -----

Code    Technician/Tester/Operator

JCG    John C. Grant                    29542

SGG    Susan G. Grant                   32527

Code    Technician/Tester/Operator

PJG    Pamela J Gordon duPont

Code    Interpreter

PJG    Pamela J Gordon duPont        MS, CCC-A

# EDUCATION AND TRAINING

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Each employee included in the program viewed an educational video tape on the topic of hearing conservation. The video entitled "Hearing Safety" is produced by Long Island Productions of Durham, N.C. and can be viewed in English or Spanish.

The tape begins by showing examples of noises often found in typical industrial settings. Meanwhile, the announcer explains how this noise can cause irreparable damage to a persons hearing.

The basic physics of sound was then explained; how waves travel through the air, are picked up by the ear and then translated by the brain. Examples were given of different sound decibel levels and their potential damage to this hearing process.

The tape explained the progression of noise induced hearing loss. It emphasized the fact that damage to the hair cells of the inner ear (the organ responsible for sending these soundwaves to the brain) is irreparable and the accompanying hearing loss is permanent.

The program went on to explain how the use of hearing protection can prevent hearing loss as a result of industrial noise pollution. The tape demonstrated the proper fitting and care of each major type of hearing protector including plugs and earmuffs. The process of noise monitoring in the workplace was also discussed and how businesses whose working environments have a certain noise level need to institute an annual hearing testing program for their employees.

The tape finished by demonstrating what a permanent hearing loss would sound like and emphasizing that such a loss can be totally avoided by wearing hearing protection.



# EMPLOYEES WITH AN INITIAL STS

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The following employees showed a Standard Threshold Shift (STS) for the first time. It is recommended that they be retested to determine if the STS is persistent. If a retest is done, it MUST be done within 30 days of the original test date. If a retest is not done, you should follow the steps for persistent STS (refit and retrain).

The STS may or may not be OSHA recordable. This is indicated in on the next page.

EMPLOYEE NAME

EAR

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HELIE, CLAIRE

B

# EMPLOYEES WHO SHOULD BE PLACED ON THE OSHA OR MSHA LOG

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The following employees had an initial STS that fits the criteria for OSHA recordability. They should be placed on the OSHA 300 log as follows:

If you are able to conduct a retest within 30 days of the date of the original test, you may wait to put the STS on the log until it is confirmed by the retest.

If you may not be able to retest within 30 days, record the STS on the log. If the STS does not persist on a later retest (or the next annual test), the OSHA entry may be lined out.

If a retest is not done, the entry must be placed on the log within 37 days of the original test date.

EMPLOYEE NAME

EAR

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HELIE, CLAIRE

L

# EMPLOYEES WHOSE STS IS PERSISTENT

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The following employees showed that their initial Standard Threshold Shift (STS) as defined by OSHA was still evident, either on a retest or the next annual test.

The follow-up actions below must be taken for these employees:

- 1) Inform the employee in writing within 21 days of when you receive the test results.
- 2) Retrain the employee in hearing conservation.
- 3) "Refit" HPD'S. Make sure the employee is wearing the hearing protector properly. If the employee's time weighted average exposure level is between 85 and 90 dBA, hearing protection becomes mandatory for that employee.
- 4) Make sure the Noise Reduction Rating (NRR) of the hearing protector is appropriate for the employee's noise exposure.
- 5) It is recommended that you document these procedures, have the employee sign it and keep it in his or her file.

The STS may or may not be OSHA recordable. This is indicated on the next page.

This test will become the "revised" baseline for the ear in which the STS occurred. Future tests will be compared to this one.

EMPLOYEE NAME

EAR

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FISHER, MICHAEL

B

# EMPLOYEES WHO WILL REMAIN ON THE OSHA OR MSHA LOG

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The following employees whose STS was persistent either on a retest or the next annual test must be placed on the OSHA 300 log. The date of the entry should be the date of the test showing the initial Standard Threshold Shift.

The entry must be recorded within 7 days of when you receive the test results.

EMPLOYEE NAME

EAR

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NONE OF YOUR EMPLOYEES WERE INCLUDED IN THIS CATEGORY

# EMPLOYEES WHOSE STS DID NOT PERSIST ON RETEST

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The following employees show that their initial STS was NOT persistent, either on a retest or the next annual test. If the initial STS was OSHA recordable, it may be lined out of the OSHA 300 log. These are indicated on the next page.

EMPLOYEE NAME

EAR

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LAVERTU, MATTHIEU

B

# EMPLOYEES WHO SHOULD BE LINED OUT FROM THE OSHA OR MSHA LOG

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The following employess, on their retest or next annual test showed that either the STS was not persistent or the test no longer meets the OSHA minimum requirements to be logged. These employees may be lined out of the OSHA 300 log.

EMPLOYEE NAME

EAR

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NONE OF YOUR EMPLOYEES WERE INCLUDED IN THIS CATEGORY

## EMPLOYEES WITH AN INITIAL STS "NON-NOISE"

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The following employees showed an initial STS in one or both ears that did not fit the typical pattern of noise induced hearing loss. The audiologist recommends that the employee be retested within 30 days of the original test date to determine if the loss is still evident.

If the loss still looks like it is due to a possible medical cause, the audiologist recommends that the employee be evaluated by an ear, nose and throat physician.

If it is evident that the loss is NOT work related, the STS would NOT be OSHA recordable. The audiologist is able to assist you in determining the work relatedness of the STS.

EMPLOYEE NAME

EAR

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NONE OF YOUR EMPLOYEES WERE INCLUDED IN THIS CATEGORY

# EMPLOYEES WHOSE STS IS PERSISTENT BUT IS "NON-NOISE"

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The following employees showed a persistent Standard Threshold Shift (STS), either on a retest or on the next annual test, that did not fit the typical pattern of noise induced hearing loss.

Even though the cause may be medical, some of the loss might still be from noise exposure at work. Therefore, the follow-up actions below must be taken for these employees:

- 1) Inform the employee in writing within 21 days of the time you receive the test results.
- 2) Retrain the employee in hearing conservation.
- 3) "Refit" HPD's. Make sure the employee is wearing the hearing protection properly. If the employee's time weighted average exposure level is between 85 and 90 dBA, hearing protection becomes mandatory for that employee.
- 4) Make sure the "Noise Reduction Rating" (NRR) of the hearing protector is appropriate for the employee's noise exposure.
- 5) It is recommended that you document these procedures, have the employee sign it and keep it in his or her file.

Because at least part of the hearing loss appears to be due to a possible medical cause, the employee should be referred to an ear, nose, and throat physician.

If it is evident that the STS is NOT work related, the STS would NOT be recorded on the OSHA log. The audiologist is able to assist you in determining the work relatedness of the STS.

This test will become the "revised" baseline for the ear in which the STS occurred. Future tests will be compared to this one.

EMPLOYEE NAME

EAR

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NONE OF YOUR EMPLOYEES WERE INCLUDED IN THIS CATEGORY



# EMPLOYEES WHO SHOULD SEE AN EAR DOCTOR

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The following employees showed a hearing loss or an STS in one or both ears that did not fit the typical pattern of noise induced hearing loss. It is recommended that they be evaluated by an ear, nose and throat physician to determine if the hearing loss has a medical cause.

If the hearing loss is not related to his or her work on the job, it is the employee's responsibility to pay for the medical visit.

EMPLOYEE NAME

EAR

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BOOHER, RICKY

# Individual Audiometric History

From: 05/20/2003 To: 05/20/2003

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
BOOHER, RICKY	01/21/1951		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
04/17/2002	10	5	70	75	75	80	--	W	0	5	5	70	60	65	65	--	Q	0	1
04/17/2002	10	5	70	75	75	85	--	W	1	5	5	70	60	65	65	--	Q	1	1
06/20/2002	10	10	70	75	75	80	--	W	1	10	10	75	55	70	65	--	S	1	2
05/20/2003	5	5	60	65	75	80	80	U	1	5	5	70	65	70	70	70	Q	1	2

# Individual Audiometric History

From: 05/20/2003      To: 05/20/2003

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
BROWN, JEFF	05/16/1952		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
05/20/2003	5	5	0	5	25	20	15	1	0	10	5	5	5	20	10	15	1	0	1

# Individual Audiometric History

From: 05/20/2003      To: 05/20/2003

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
FISHER, MICHAEL	08/28/1953		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
04/19/2001	0	0	0	0	15	5	15	1	0	0	0	0	0	5	5	15	1	0	1
04/30/2002	10	10	0	0	15	5	15	1	1	10	0	0	5	5	5	20	1	1	1
04/18/2003	5	5	5	10	50	25	--	I	5	5	10	5	5	20	30	--	C	1	5
05/20/2003	10	10	5	10	50	15	25	I	P	5	5	0	5	15	30	20	C	1	6

# Individual Audiometric History

From: 05/20/2003 To: 05/20/2003

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
HELIE, CLAIRE	04/04/1964		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
09/10/1985	20	20	20	20	20	20	--	1	0	20	20	20	20	20	20	--	1	0	1
07/02/1990	20	15	15	15	15	15	--	1	1	15	15	15	15	15	15	--	1	1	1
02/16/1995	35	20	20	20	20	20	--	2	1	30	20	20	20	20	20	--	2	1	1
06/19/1996	50	20	20	20	20	20	--	3	1	25	20	20	20	20	20	--	1	1	1
10/13/1997	20	20	20	20	20	20	--	1	1	20	20	20	20	20	20	--	1	1	1
10/21/1998	15	10	5	5	0	15	--	1	2	10	10	10	0	0	0	--	1	2	1
11/18/1999	5	5	5	0	0	5	0	1	8	15	10	15	5	5	10	5	1	8	1
07/25/2001	10	5	0	0	0	10	5	1	1	5	5	5	0	0	0	0	1	1	1
04/17/2002	10	10	5	5	5	20	--	1	1	5	5	5	0	0	0	--	1	1	1
05/20/2003	15	25	25	25	25	30	15	C	5	10	10	20	20	20	20	0	1	5	5

# Individual Audiometric History

From: 05/20/2003      To: 05/20/2003

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
HELIE, ROGER	08/28/1960		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
09/23/1985	20	20	20	20	20	20	--	1	0	20	20	20	20	20	20	--	1	0	1
06/25/1996	20	20	20	20	20	20	--	1	1	20	20	20	20	20	20	--	1	1	1
11/18/1999	10	10	0	10	5	10	25	1	2	15	15	0	5	10	15	5	1	2	1
07/25/2001	10	10	0	10	10	15	15	1	8	10	10	0	10	10	30	20	C	8	1
04/17/2002	15	10	5	10	5	20	--	1	1	10	10	5	10	10	35	--	C	1	1
05/20/2003	10	5	0	10	15	25	--	1	1	10	5	0	5	10	20	--	1	1	1

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
KERR, CAROL	01/08/1954		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
09/22/1994	35	20	20	20	20	20	25	2	0	40	25	20	20	20	20	20	2	0	1
07/25/2001	10	5	5	0	0	15	35	C	2	5	10	5	15	5	15	40	C	2	1
04/17/2002	20	20	10	15	5	25	--	1	8	10	10	10	15	5	25	--	1	8	1
05/20/2003	20	5	10	5	0	30	--	C	1	15	15	15	15	15	30	--	C	1	1

# Individual Audiometric History

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EMPLOYEE NAME & ID	BIRTHDATE	DEPT:	JOB:
LAVERTU, MATTHIEU	09/17/1962		

DATE	LEFT EAR									RIGHT EAR									RECOMM
	.5K	1K	2K	3K	4K	6K	8K	H	C	.5K	1K	2K	3K	4K	6K	8K	H	C	
09/20/1994	20	20	30	20	25	35	--	E	0	20	20	20	20	20	20	--	1	0	1
07/25/2001	15	0	5	30	10	25	45	I	2	5	0	5	5	10	20	35	C	2	1
04/17/2002	10	5	5	20	10	25	--	1	8	5	5	5	10	5	15	--	1	8	1
04/18/2003	10	5	5	20	10	15	--	1	1	10	5	20	15	15	30	--	C	5	5
05/20/2003	15	5	5	25	20	20	--	1	1	10	10	10	10	15	25	--	1	3	1



# STS AND OSHA LOG SUMMARY REPORT

From: 05/20/2003 To: 05/20/2003

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Employee Name	Clock #	Test Date	Ear	Hearing	Change	Recommendation	Osha Log Action
FISHER, MICHAEL		05/20/2003	Lt:	Mod High Freq	Persist. STS - New B/L	Refit H/P & Retrain	
			Rt:	Mild High Freq	No Change		
HELIE, CLAIRE		05/20/2003	Lt:	Mild High Freq	Initial STS	Retest	Record on Log
			Rt:	Within Normal Limits	Initial STS		
LAVERTU, MATTHIEU		05/20/2003	Lt:	Within Normal Limits	No Change	No Referral Necessary	
			Rt:	Within Normal Limits	Temporary Shift		

Total Employees: 3

# ALPHABETICAL SUMMARY REPORT

From: 05/20/2003 To: 05/20/2003

Employee Name	Clock #	Test Date	Ear	Hearing	Change	Recommendation
BOOHER, RICKY		05/20/2003	Lt:	Sev High Freq	No Change	Medical Referral
			Rt:	Mod-Sev Mid/High Freq	No Change	
BROWN, JEFF		05/20/2003	Lt:	Within Normal Limits	No Comparison	No Referral Necessary
			Rt:	Within Normal Limits	No Comparison	
FISHER, MICHAEL		05/20/2003	Lt:	Mod High Freq	Persist. STS - New B/L	Refit H/P & Retrain
			Rt:	Mild High Freq	No Change	
HELIE, CLAIRE		05/20/2003	Lt:	Mild High Freq	Initial STS	Retest
			Rt:	Within Normal Limits	Initial STS	
HELIE, ROGER		05/20/2003	Lt:	Within Normal Limits	No Change	No Referral Necessary
			Rt:	Within Normal Limits	No Change	
KERR, CAROL		05/20/2003	Lt:	Mild High Freq	No Change	No Referral Necessary
			Rt:	Mild High Freq	No Change	
LAVERTU, MATTHIEU		05/20/2003	Lt:	Within Normal Limits	No Change	No Referral Necessary
			Rt:	Within Normal Limits	Temporary Shift	
Total Employees:					7	