SOUND FACTS

HEARING IMPACT ON PERFORMANCE
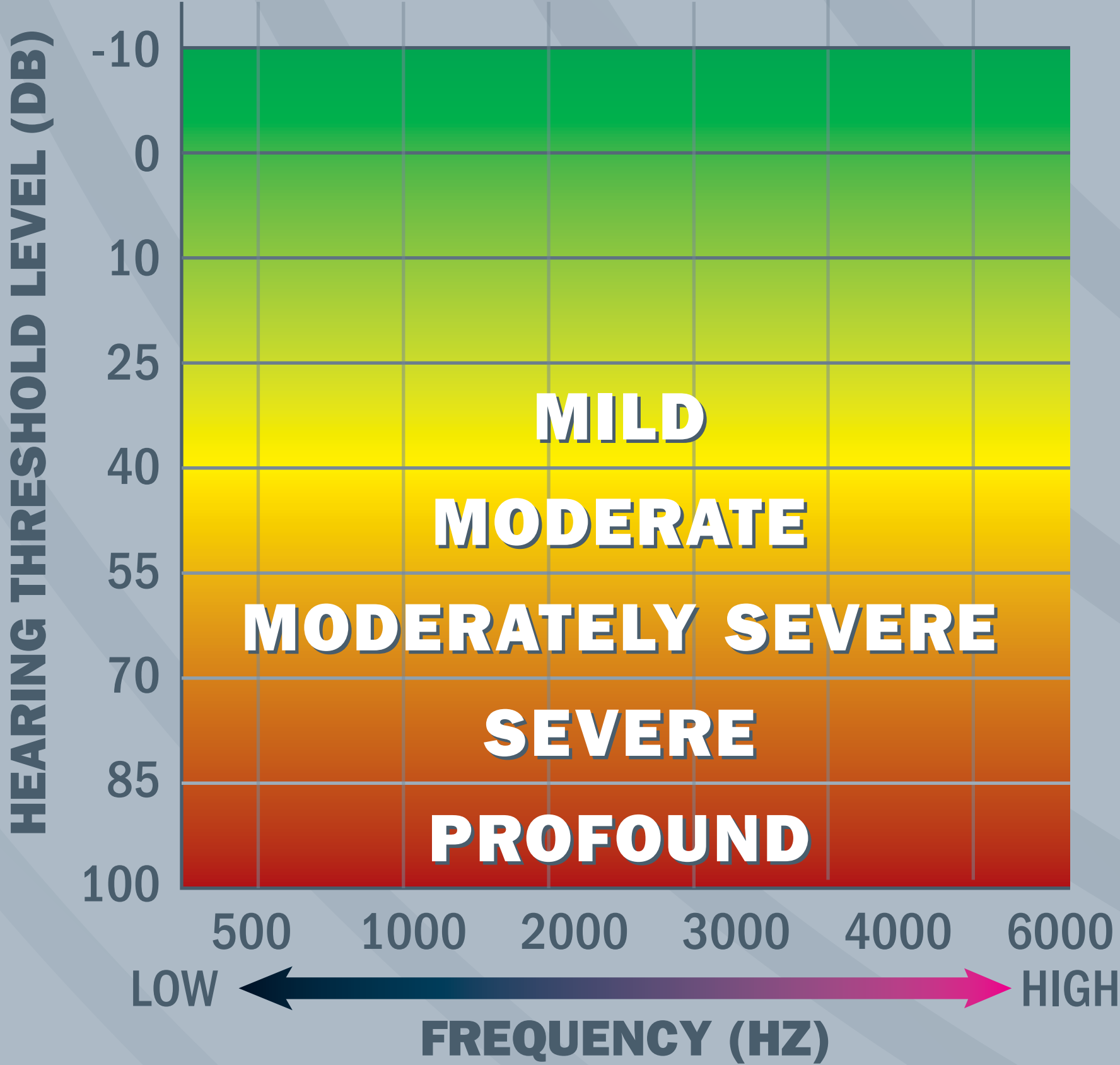
	GOOD HEARING	POOR HEARING
TIME TO IDENTIFY TARGET	40 SEC	90 SEC
INCORRECT COMMAND HEARD	1%	37%
CORRECT TARGET IDENTIFICATION	98%	68%
ENEMY TARGETS KILLED	94%	41%
WRONG TARGET SHOT	0%	8%
TANK CREW KILLED BY ENEMY	7%	28%

Ref: Garinther and Peters, 1990, Tank Gunner Performance and Hearing Impairment, Army RD&A Bulletin, 1990, Jan-Feb 1-5.

IMPACT OF HEARING LOSS ON MISSION

Rifle Bolt
Normal Voice
Footsteps

DISTANCE TO DETECTION (vertical axis: 0m – 1000m)

Normal Hearing H-1 Profile | Poor Hearing H-2 Profile | Poor Hearing + TTS >H-2 Profile
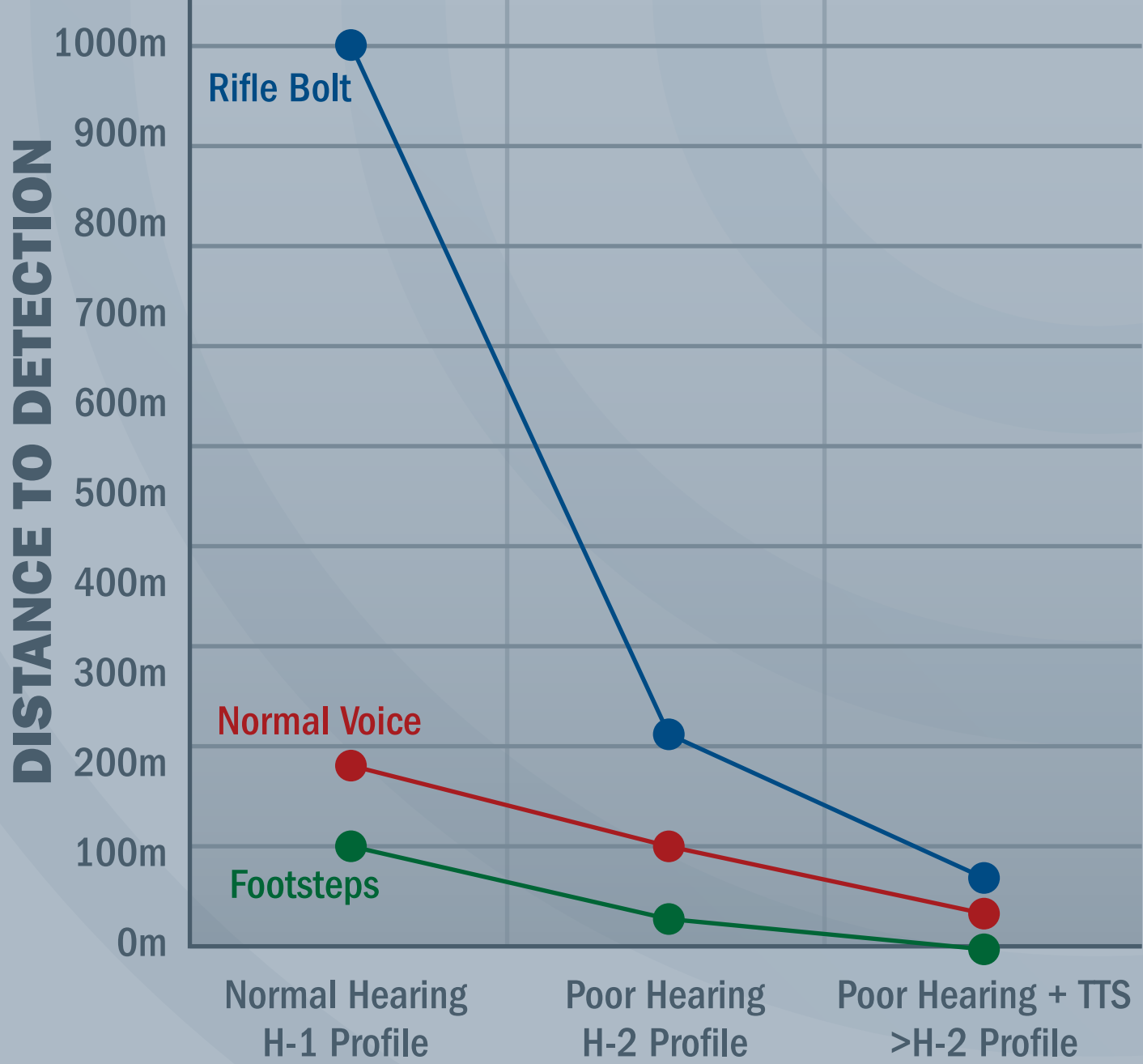
Price, G. R., Kalb, J. T. and Garinther, G. R. (1989). "Toward a measure of auditory handicap in the Army", Ann Otol. Rhinol. Laryngol. 98, 42-52.

HEARING THRESHOLD LEVEL (DB) vs FREQUENCY (HZ)

HEARING THRESHOLD LEVEL (DB): -10, 0, 10, 25, 40, 55, 70, 85, 100

- MILD
- MODERATE
- MODERATELY SEVERE
- SEVERE
- PROFOUND

FREQUENCY (HZ): 500, 1000, 2000, 3000, 4000, 6000

LOW ← → HIGH

HEARING IS A CRITICAL SENSE

- **Hearing loss** - Painless • Progressive • Permanent • Preventable
- **The enemy is often** heard **before they are seen**
- **Sound information is available from** all directions
- Good hearing **can make the difference between** life & death
- Effective **battlefield communications requires** good hearing
- **Good hearing increases** survivability and lethality

LEVELS OF NOISE

FAINT
- 20 - Leaves rustling

SOFT
- 30 - Whisper
- 40 - Quiet library

MODERATE
- 50 - Moderate rainfall
- 60 - Normal conversation - Dishwashers

LOUD
- 70 - Traffic - Vacuums
- 80 - Alarm clocks

VERY LOUD Dangerous over 30 minutes
- 90 - Lawnmowers - Power tools - Blenders - Hair dryers
- 100 - Snowmobiles - MP3 players (at full volume)
- 110 - Concerts (any genre of music) - Car horns - Sporting events

DANGEROUS Dangerous over 30 seconds
- 120 - Jet planes (during take off)

PAINFUL Use hearing protection or avoid
- 130 - Jackhammers - Ambulances
- 140 - Fireworks - Gun shots - Custom car stereos (at full volume)

REFERENCE AUDIOGRAM

(This form is subject to the Privacy Act of 1974 - use Blanket PAS - DD Form 205)

1. ZIP CODE/APO/FPO/PAS

2. DOD COMPONENT
A - ARMY   F - AIR FORCE   1 - OTHER
N - NAVY   M - MARINE CORPS

3. SERVICE COMPONENT
R - REGULAR   G - NATIONAL GUARD
V - RESERVE   1 - OTHER

4. SOCIAL SECURITY NUMBER 5. NAME (Last, First, Middle Initial) 6. DATE OF BIRTH (YYYYMMDD) 7. SEX M - MALE F - FEMALE

8. PAY GRADE, UNIFORMED SERVICES 9. PAY GRADE CIVILIAN 10. SERVICE DUTY OCCUPATION CODE 11. MAILING ADDRESS OF ASSIGNMENT

12. LOCATION - PLACE OF WORK 13. MAJOR COMMAND 14. DUTY TELEPHONE (Include area code)

AUDIOMETRY

15. REASON FOR CONDUCTING AUDIOGRAM
1 - REFERENCES ESTABLISHED PRIOR TO INITIAL DUTY IN HAZARDOUS NOISE AREAS
2 - REFERENCE ESTABLISHED FOLLOWING EXPOSURE IN NOISE DUTIES
3 - REFERENCE RE-ESTABLISHED AFTER FOLLOW-UP PROGRAM

16. AUDIOMETRIC DATA RE: ANSI S3.6 - 1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
17. DATE OF AUDIOGRAM (YYYYMMDD)	0	5	5	10	15	5	0	0	5	0	0	5

18. MEETS REFERRAL CRITERIA 1 - NO 2 - YES
19. MILITARY TIME OF DAY (Optional)
20. HOURS SINCE LAST NOISE EXPOSURE
21. EAR, NOSE, AND THROAT PROBLEM AT TIME OF TEST 1 - NO 2 - YES 3 - UNKNOWN

22. EXAMINER
a. NAME (Last, First, Middle Initial) b. TRAINING CERTIFICATION NUMBER c. SERVICE DUTY OCCUPATION CODE d. OFFICE SYMBOL

23. AUDIOMETER
a. TYPE 1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR
b. MODEL c. MANUFACTURER d. SERIAL NUMBER e. LAST ELECTROACOUSTIC CALIBRATION DATE (YYYYMMDD)

24. PERSONAL HEARING PROTECTION
a. TYPE ISSUED
1 - SINGLE FLANGE (VS1R) 2 - TRIPLE FLANGE 3 - HAND FORMED EARPLUG
4 - EAR CANAL CAPS 5 - NOISE MUFFS 6 - OTHER 7 - NONE
b. SIZE EARPLUGS L R 1 - XS 2 - S 3 - M 4 - L 5 - XL
c. DOUBLE PROTECTION USED 1 - NO 2 - YES
d. GLASSES WORN (Including goggles) 1 - NO 2 - YES
e. FREQUENCY GLASSES WORN 1 - ALWAYS 2 - SELDOM 3 - N/A

25. REMARKS (Include exposure data)

DD2215

HEARING CONSERVATION DATA

(This form is subject to the Privacy Act of 1974 - use Blanket PAS - DD Form 205)

1. ZIP CODE/APO/FPO/PAS

2. DOD COMPONENT
A - ARMY   F - AIR FORCE   1 - OTHER DOD ACTIVITY
N - NAVY   M - MARINE CORPS

3. SERVICE COMPONENT
R - REGULAR   G - NATIONAL GUARD
V - RESERVE   1 - OTHER

4. SOCIAL SECURITY NUMBER 5. NAME (Last, First, Middle Initial) 6. DATE OF BIRTH (YYYYMMDD) 7. SEX M - MALE F - FEMALE

8. PAY GRADE, UNIFORMED SERVICES 9. PAY GRADE CIVILIAN 10. SERVICE DUTY OCCUPATION CODE 11. MAILING ADDRESS OF ASSIGNMENT

12. LOCATION - PLACE OF WORK 13. MAJOR COMMAND 14. DUTY TELEPHONE (Include area code)

15. AUDIOMETRY a. PURPOSE 1 - 90 DAY 2 - ANNUAL 3 - TERMINATION 4 - OTHER

AUDIOMETRIC DATA RE: ANSI S3.6 - 1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE (YYYYMMDD)	0	0	10	30	70	50	0	10	10	15	10	0
c. REFERENCE AUDIOGRAM DATE (YYYYMMDD)	0	5	5	10	15	5	0	0	5	0	0	5
d. SIGNIFICANT THRESHOLD SHIFT (STS) 1 - NO 2 - YES e. THRESHOLD SHIFT	-5	5	20	55	43	0	10	5	15	10	-5

f. REMARKS (Include exposure data)

g. TYPE OF PERSONAL HEARING PROTECTION USED
1 - SINGLE FLANGE (VS1R) 2 - TRIPLE FLANGE 3 - HAND FORMED EARPLUGS 4 - EAR CANAL CAPS 5 - NOISE MUFFS 6 - OTHER

h. EXAMINER NAME (Last, First, Middle Initial) i. TRAINING CERTIFICATE NO. j. SERVICE DUTY OCCUPATION CODE k. OFFICE SYMBOL

l. AUDIOMETER TYPE 1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR
m. MODEL n. MANUFACTURER o. SERIAL NUMBER p. LAST ELECTROACOUSTIC CALIBRATION DATE (YYYYMMDD)

16. FOLLOWUP NO. 1 a. MINIMUM 14 HOURS NOISE FREE SINCE CURRENT AUDIOGRAM (See term 15.b.)

AUDIOMETRIC DATA RE: ANSI S3.6 - 1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	5000	500	1000	2000	3000	4000	5000
b. CURRENT AUDIOGRAM DATE (YYYYMMDD)												
c. REFERENCE AUDIOGRAM DATE (YYYYMMDD)												
d. SIGNIFICANT THRESHOLD SHIFT (STS) 1 - NO 2 - YES e. THRESHOLD SHIFT												

f. EXAMINER NAME (Last, First, Middle Initial) g. TRAINING CERTIFICATE NO. h. SERVICE DUTY OCCUPATION CODE i. OFFICE SYMBOL

j. AUDIOMETER TYPE 1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR
k. MODEL l. MANUFACTURER m. SERIAL NUMBER n. LAST ELECTROACOUSTIC CALIBRATION DATE (YYYYMMDD)

17. FOLLOWUP NO. 2 a. MINIMUM 14 HOURS NOISE FREE SINCE CURRENT AUDIOGRAM (See term 15.b.)

AUDIOMETRIC DATA RE: ANSI S3.6 - 1989

	LEFT						RIGHT					
	500	1000	2000	3000	4000	5000	500	1000	2000	3000	4000	5000
b. CURRENT AUDIOGRAM DATE (YYYYMMDD)												
c. REFERENCE AUDIOGRAM DATE (YYYYMMDD)												
d. SIGNIFICANT THRESHOLD SHIFT (STS) 1 - NO 2 - YES e. THRESHOLD SHIFT												

f. EXAMINER NAME (Last, First, Middle Initial) g. TRAINING CERTIFICATE NO. h. SERVICE DUTY OCCUPATION CODE i. OFFICE SYMBOL

j. AUDIOMETER TYPE 1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR
k. MODEL l. MANUFACTURER m. SERIAL NUMBER n. LAST ELECTROACOUSTIC CALIBRATION DATE (YYYYMMDD)

DD2216

INTERPRETING THE AUDIOGRAM