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**DESCRIPTION OF HEARING IN 13 GROUPS
OF AIR FORCE PERSONNEL WHO ROUTINELY
WORK IN NOISE: JANUARY-JUNE 1975**

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Progress Report for Period January-December 1975

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USAF SCHOOL OF AEROSPACE MEDICINE
Aerospace Medical Division (AFSC)
Brooks Air Force Base, Texas 78235



NOTICES

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This technical report has been reviewed and is approved for publication.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes the hearing of 34,091 military personnel within 13 Air Force Specialty Codes (AFSC) known to constitute routine encounters with potentially hazardous noise. The smallest group contained 1049 persons, and the largest, 11,736. A total of 7678 (22.5%) of the entire sample revealed significant threshold shift. Cumulative percentages of annual audiograms along with median hearing levels are also described. The hearing levels in this study reveal that USAF use of significant threshold shifts to identify in the early stages, persons who are experiencing hearing shifts due to noise prevents significant hearing loss.		

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DESCRIPTION OF HEARING IN 13 GROUPS OF AIR FORCE
PERSONNEL WHO ROUTINELY WORK IN NOISE:
JANUARY-JUNE 1975

INTRODUCTION

Automation of data recorded on Air Force Forms 1490 (Hearing Conservation Data) received at the USAF Hearing Conservation Data Registry provides previously unavailable details concerning the hearing of personnel. The Air Force has used threshold audiometry since October 1956 to monitor the hearing of military and civilian personnel who routinely work in potentially hazardous noise.

An audiometric baseline, or reference audiogram, is established on each person who works in noise. Results of subsequent audiometric tests are compared to the individual's reference, and shifts in hearing, if any, are noted. This relatively simple procedure has proven its worth by allowing threshold shifts that may be due to noise to be identified early enough so that significant amounts of hearing loss in the speech range (500-2000 Hz) can be prevented. After establishment of the reference audiogram, which is recorded on a special form (AF Form 1491), most personnel receive a recheck within 90 to 120 days after entry into a noise-career field. The 90-day audiogram is directly compared to the reference, and persons who are either susceptible to noise or who are inadequately protected can be identified. Once each year those who routinely work in noise receive an audiometric test, and the results are compared with the reference audiogram. If shifts in hearing are noted on any of the routine evaluations (90-day or annual), additional testing is performed.

PROCEDURE

Data for military personnel, recorded on AF Form 1490 (Fig. 1) received at the USAF Hearing Conservation Data Registry from 1 January through 30 June 1975, were screened, and noise-related Air Force Specialty Codes (AFSCs) containing 1,000 or more persons were selected for this study. The intent of this report is to describe the hearing of 34,091 military personnel within 13 AFSCs known to constitute routine encounters with potentially hazardous noise.

Table 1 contains a description of the 13 AFSCs included in this study. AFSCs 10, 11, and 13-15 represent officer personnel; AFSCs 27, 32, 42, 43, 46, 53, 60, and 81 represent enlisted personnel.

The results of this study constitute broad generalizations concerning the hearing of persons who routinely work in these 13 career fields. Later investigations will attempt to provide more detailed resolutions within the AFSC groups.

HEARING CONSERVATION DATA													
LAST NAME-FIRST NAME-MIDDLE INITIAL						SSAN			PURPOSE FOR TEST				
RANK/GRADE		SEX		AGE (Yrs)		DATE OF BIRTH			STATUS				
		1-MALE 2-FEMALE				DAY	MONTH	YEAR	1-MILITARY 2-CIVILIAN				
COMPLETE ADDRESS/ORGANIZATION-ASSIGNMENT						DUTY PHONE			CODE				
AFSC/JOB CODE (Job Title)						TIME IN CURRENT JOB							
						MONTHS			YEARS				
PRIMARY NOISE EXPOSURE			DESCRIBE DUTIES IN NOISE						DATE INITIAL ASGN TO NOISE BY				
1-FLIGHT LINE 2-SHOPS 3-OTHER									MONTH		YEAR		
AUDIOMETRIC DATA													
AUDIOMETER		STANDARD		DATE OF AUDIOGRAM			DAY OF WEEK		HOUR OF DAY AUDIO GIVEN		ESTIMATE OF HEARING		CLASS OF REFERENCE (Audiogram)
1-MANUAL 2-AUTOMATIC		1-ANSI S3.6 2-OTHER (Specify)		DAY	MONTH	YEAR	1-SUN 2-MON 3-TUE 4-WED	5-THU 6-FRI 7-SAT			1-GOOD 2-FAIR 3-POOR	1-A 2-B 3-C	
EAR		LEFT						RIGHT					
FREQUENCY (Hz)		500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
CURRENT AUDIO													
REFERENCE AUDIO (Corrected to ANSI S3.6)													
THRESHOLD SHIFT 1-POORER - BETTER													
FINDINGS (Significant T.S.)						DISPOSITION							
NO		YES		<input type="checkbox"/> RETURN TO DUTY		<input type="checkbox"/> FOLLOW-UP REQUIRED		<input type="checkbox"/> 15 HOUR <input type="checkbox"/> 48 HOUR <input type="checkbox"/> OTHER					
PERSONAL EAR PROTECTION													
EAR PLUGS (Insert Devices)		DEVICES WORN BY INDIVIDUALS				GLASSES (Including Safety)			PROTECTION CONSIDERED				
1-INITIAL ISSUE 2-RE-ISSUE 3-NOT ISSUED		1-PLUGS	4-PLUGS AND MUFFS			1-YES		2-NO					
		2-MUFFS	5-OTHER					1-ADEQUATE					
		3-PLUGS OR MUFFS						2-NOT ADEQUATE					
REMARKS													
DATE		TYPED NAME OF EXAMINER				AFSC		SSAN		OFFICE SYMBOL			

AF FORM 1490 MAR 73 PREVIOUS EDITION IS OBSOLETE.

Figure 1. Hearing conservation data form.

RESULTS

Table 2 shows age distribution for the 13 AFSCs included in this study, and Table 3 ranks the mean ages from oldest to youngest. AFSC 14 (air operations officer) contains the oldest mean age (38 years), and AFSC 81 (security police) contains the youngest (25.3 years). Although the percentage demonstrating significant threshold shift (STS) with each AFSC group will be described later, these values are included in Table 3 to illustrate that age alone does not necessarily correlate with STS.

Significant amounts of threshold shift exist when the thresholds on the current audiogram show poorer hearing than those on the reference audiogram. One of two criteria is used by the Air Force: (1) If the reference audiogram reveals hearing levels no greater than 25 dB at any test frequency (500-6000 Hz), either ear, then a threshold shift of 20 dB or more at any frequency, either ear, would be significant; (2) If the reference audiogram reveals threshold hearing levels of 30 dB or more at any frequency, either ear, then a threshold shift of 10 dB or more at 2000 Hz, and/or 15 dB or more at 3000 Hz, and/or 20 dB or more at 4000 or 6000 Hz would be significant. The first criterion is used with Class A reference audiograms, and the second criterion with either Class B or C reference audiograms. Class A are audiograms with 25-dB or better hearing levels within the 500- through 6000-Hz frequency range, either ear. Class B are audiograms where hearing levels of 30 dB or more are found within this frequency range, either ear, but do not average 30 dB or more in the speech range (500-2000 Hz), either ear. Class C are audiograms showing an average of 30-dB or more hearing levels in the speech range (500-2000 Hz), either ear.

Table 4 shows the number of persons within each AFSC that demonstrated significant amounts of threshold shift. Of the total sample (34,091), 22.5% (7,678) exhibited STS. Eight of the 13 AFSCs in this study show amounts of threshold shift that were less than the total average of 22.5% (AFSCs 10, 11, 13, 15, 27, 32, 60, and 81). The remaining five AFSCs showed threshold shifts that exceeded the total average of 22.5% (AFSCs 14, 42, 43, 46, and 53); among these, AFSC 14 (pilot, operations) contained the highest proportion of STS (33.0%). Table 4 also shows the proportion of Class A, B, and C reference audiograms for those demonstrating STS in each AFSC group. The largest proportion of reference audiograms are Class A (46.3%) or B (52.2%). Relatively few Class C reference audiograms are seen (1.5%) because persons with this reference are usually restricted from entry into known potentially hazardous noise career fields. It is interesting to note that only three AFSC groups demonstrated more than 50% Class A reference audiograms: AFSC 11 (fighter pilots), 13 (miscellaneous pilots), and 15 (navigators).

Table 5 shows the median hearing levels for both reference and current audiograms for each of the 13 AFSCs studied. Reference audiograms represent the baseline against which current audiometric results are compared. The current median hearing levels are ranked according to amounts

of STS shown within each AFSC. Throughout these 13 AFSCs, 22.5% (7,678) revealed significant threshold shift. Generally, the median hearing levels in groups with the most STS yield somewhat poorer threshold hearing levels than those in groups with less threshold shift.

Table 6 shows mean hearing level differences between current and reference audiograms. Consistent mean threshold shifts are most pronounced for hearing levels at 4000 Hz. This finding is commensurate with the changes in hearing due to noise. Although the differences noted between threshold shifts at 500 through 2000 Hz are confusing and require further evaluation and study, several postulations may be made:

(1) The threshold hearing levels specified by the American National Standards Institute (Specification ANSI S3.6-1969) for normal hearing levels may be in error, especially for normative values at 500 Hz.

(2) Many reference audiograms used by USAF medical personnel were extracted directly from the audiometric results reported on the induction physical completed at Armed Forces Entrance and Examining Stations. This audiogram is only intended to obtain acceptable physical profiles; and so long as the hearing of the person receiving the entry examination is acceptable for entry into active duty, the results are considered acceptable and adequate. There is no guarantee that the person receiving the entry examination of hearing was out of noise for at least 48 hours prior to the test.

(3) Medical evaluators were allowed to reestablish reference audiograms for Air Force rated (flying) personnel who demonstrated STS on a current audiogram if their last two audiograms were essentially equal to the current audiogram. This procedure would yield reference hearing levels somewhat poorer than those established in current audiometric examinations.

(4) Finally, excessive amounts of noise present within the audiometric test area may have interfered with the obtainment of threshold at test frequencies below 2000 Hz. Even though the differences noted between current and reference audiometric test results require further study to resolve apparent discrepancies, the changes noted at test frequencies above 2000 Hz apparently serve to identify persons who are exhibiting early shifts in hearing that may be due to excessive exposure to noise. This assumption is partially verified by the relatively good hearing demonstrated on the current annual audiograms described in Table 5.

Table 7 reports the percent of each AFSC group who possessed hearing levels poorer than 30 dB for frequencies between 500 and 6000 Hz, also the percent of each AFSC who showed STS. These data were obtained from current annual audiograms and represent the median hearing of the groups (22.5% of total sample revealed significant threshold shift according to Air Force criteria).

Tables 8 through 20 contain percentage distributions for current and reference audiograms for the 13 AFSCs included in this study, also the median hearing levels for the audiograms. The type of data shown in Tables 8 through 20 provide insight concerning the proportion of personnel who demonstrate hearing levels as good as or better than those described for both current and reference audiograms.

CONCLUSION

This study describes the hearing of 13 groups of Air Force personnel who routinely work in potentially hazardous noise duties and/or areas. Generally, somewhat poorer threshold hearing levels are found in groups showing the highest percentage of individuals with threshold shift than in groups showing less threshold shift. However, a particularly noteworthy fact emerges from this study--the median hearing remains relatively good even in groups showing the greatest STS. Apparently, being aware of significant threshold shifts, both in an individual and, cumulatively, within particular job fields, prevents significant hearing loss within the speech hearing range (500-2000 Hz).

TABLE 1. DESCRIPTIONS FOR AIR FORCE SPECIALTY CODES INCLUDED IN THIS STUDY

AFSC	Job title
10	Pilot (helicopter, search-rescue, transport, tactical air lift, tanker).
11	Pilot (tactical fighter, fighter-interceptor, special tactics fighter, forward air controller, tactical air liaison officer).
13	Pilot (reconnaissance/tactical electronic warfare, flight training instructor).
14	Air Operations Officer (staff officer, transport/airlift, strategic bombardment/refueling, special operations/tactical air control systems, tactical fighter/special tactics, aerospace defense, reconnaissance, helicopter/search and rescue, general).
15	Navigator-Bombardier (strategic, general, airlift, weapons systems officer, navigator-reconnaissance, electronic warfare officer).
27	Ground Control Systems Operation (air operations, air traffic control, electronic warfare countermeasures and intercept director).
32	Avionics Systems (bomber-navigator systems mechanic, defense firepower, precision measuring equipment specialist, aerospace ground equipment, integrated component specialist, navigation systems, airborne early warning radar specialist, inertial and radar navigation systems, avionics sensor systems).
42	Aircraft Accessory Maintenance (aircraft propeller repairman, aircraft pneumatic repairman, aerospace ground equipment repairman, aircraft environmental systems repairman, aircrew egress systems repairman, aircraft electrical repairman, aircraft fuel systems mechanic, inflight refueling systems).
43	Aircraft Maintenance (helicopter mechanic; aircraft reciprocating, turboprop, and jet aircraft engine mechanic; maintenance scheduling specialist).
46	Munitions and Weapons Maintenance (weapons mechanic nuclear weapons specialist, munitions disposal).
53	Metal Working (machinist metals processing, sheet metal, airframe repair, corrosion control and non-destructive inspection).
60	Transportation (packaging, air passenger and household goods, freight traffic vehicle operator/dispenser, air passenger specialist, air cargo specialist).
81	Security Police (security specialist, law enforcement and corrections specialist).

TABLE 2. AGE DISTRIBUTION FOR LISTED AIR FORCE SPECIALTY CODES

Age Range (Yrs)

AFSC (No.)	17-19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-70		Mean Age
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
10 (2,232)	0	.0	102	4.6	1,339	60.0	405	18.2	174	7.8	166	7.1	31	1.4	12	.5	3	.1	0	.0	10.0
11 (1,252)	0	.0	53	4.2	434	34.7	453	36.2	163	13.0	121	9.7	24	1.9	2	.2	1	.1	1	.1	11.8
13 (1,166)	0	.0	69	5.9	716	61.4	234	20.1	79	6.8	60	5.2	8	.7	0	.0	0	.0	0	.0	29.2
14 (1,049)	0	.0	1	.1	77	7.3	205	19.5	311	29.6	340	32.4	87	8.3	23	2.2	4	.4	1	.1	38.0
15 (2,253)	1	.0	105	4.7	1,097	48.7	426	18.9	389	17.3	206	9.1	17	.8	9	.4	3	.1	0	.0	31.1
27 (1,139)	44	3.9	323	28.4	341	29.9	156	13.7	155	13.6	94	8.2	18	1.6	8	.7	0	.0	0	.0	28.9
32 (3,864)	43	1.1	1,373	35.5	937	24.2	501	13.0	655	17.0	273	7.1	66	1.7	11	.3	3	.1	2	.0	28.9
42 (3,652)	77	2.1	1,407	38.5	929	25.4	479	13.1	514	14.1	161	4.4	66	1.8	16	.4	3	.1	0	.0	28.1
43 (11,736)	291	2.5	4,062	34.6	3,039	25.9	1,673	14.3	1,490	12.7	795	6.8	248	2.1	85	.7	51	.4	2	.0	28.7
46 (2,040)	58	2.8	996	48.8	412	20.2	220	10.8	241	11.8	79	3.9	19	.9	1	.0	5	.2	0	.0	26.9
53 (1,250)	40	3.2	490	39.2	330	26.4	162	13.0	131	10.5	58	4.6	20	1.6	9	.7	6	.5	4	.3	27.8
60 (1,318)	48	3.6	440	33.4	295	22.4	195	14.8	219	16.6	93	7.1	21	1.6	6	.5	1	.1	0	.0	29.1
81 (1,140)	67	5.9	646	56.7	199	17.5	102	9.0	81	7.1	39	3.4	4	.4	2	.2	0	.0	0	.0	25
Total (34,091)	669	2.0	10,067	29.5	10,145	29.8	5,211	15.3	4,602	13.5	2,485	7.3	629	1.8	193	.6	80	.2	10	.0	(29.5)

TABLE 3. RANK ORDER OF MEAN AGES (OLDEST TO YOUNGEST),
AND PERCENT DEMONSTRATING SIGNIFICANT THRESHOLD
SHIFT WITHIN EACH AFSC GROUP

<u>AFSC</u>	<u>Mean age (yrs)</u>	<u>% with STS</u>
14	38.0	33.0
11	31.8	19.5
15	31.1	18.1
10	30.0	16.4
13	29.2	17.8
60	29.0	21.6
27	28.9	18.7
32	28.9	20.8
43	28.7	25.1
42	28.1	23.4
53	27.8	24.5
46	26.9	23.4
81	25.3	19.5

TABLE 4. SUMMARY OF HEARING DATA AND OCCURRENCE OF SIGNIFICANT THRESHOLD SHIFT WITHIN 13 AIR FORCE SPECIALTY CODES

AFSC	No.	% of Total	No. w/STS	% w/STS	% of Total w/STS	Reference class and % of No. w/STS			Mean age (years)
						A	B	C	
						No.	No.	No.	
10	2,232	6.6	367	16.4	4.8	176	191	0	30.0
11	1,252	3.7	244	19.5	3.2	146	97	1	31.8
13	1,166	3.4	208	17.8	2.7	134	73	1	29.2
14	1,049	3.1	346	33.0	4.5	165	174	7	38.0
15	2,253	6.6	407	18.1	5.3	218	188	1	31.1
27	1,139	3.3	213	18.7	2.8	105	105	3	28.9
32	3,864	11.3	805	20.8	10.5	334	456	15	28.9
42	3,652	10.7	853	23.4	11.1	370	470	13	28.1
43	11,736	34.4	2,941	25.1	38.3	1,335	1,571	35	28.7
46	2,040	6.0	478	23.4	6.2	210	254	14	26.9
53	1,250	3.7	306	24.5	4.0	132	172	2	27.8
60	1,318	3.9	288	21.6	3.8	131	142	15	29.0
81	1,140	3.3	222	19.5	2.9	99	115	8	25.3
Total	34,091		7,678	22.5		3,555	4,008	115	
						46.3	52.2	1.5	

TABLE 5. MEDIAN HEARING LEVELS (CURRENT AND REFERENCE) FOR EACH AFSC GROUP RANKED BY MOST ST-TO-LEAST PERCENT SHOWING STS IN EACH GROUP

AFSC	% STS		Left Ear					Right Ear							
			500	1000	2000	3000	4000	5000	6000	1000	2000	3000	4000	6000	
14	33.0	Cur.	3.8	2.3	2.3	3	7.5	12.2	17.0	3.4	2.2	1.8	5.8	10.4	14.6
		Ref.	6.8	3.3	3.3		6.9	7.4	13.9	6.5	2.8	2.5	5.6	5.5	12.0
43	25.1	Cur.	8.2	4.4	3.8	8	7.5	10.2	13.9	6.2	3.5	2.7	5.5	8.2	12.3
		Ref.	10.1	4.7	4.3		7.5	7.6	13.5	8.1	3.8	3.2	5.6	5.6	11.4
53	24.5	Cur.	9.0	5.0	4.4	4	8.5	10.5	15.0	6.8	3.9	3.0	6.4	8.6	13.0
		Ref.	10.8	6.1	5.4		8.8	9.2	14.6	8.8	4.6	4.0	7.0	7.3	12.6
42	23.4	Cur.	8.6	4.9	4.1	1	7.3	9.8	13.7	6.5	3.8	2.8	5.6	8.2	12.4
		Ref.	10.5	5.6	4.7		8.1	8.4	14.0	8.5	4.4	3.6	6.3	6.6	12.0
46	23.4	Cur.	8.7	5.0	3.8	8	6.9	9.6	13.3	6.2	3.6	2.5	4.7	7.5	11.9
		Ref.	10.2	5.3	4.3		7.6	8.3	13.9	8.4	4.1	3.2	5.7	6.6	11.9
60	21.6	Cur.	7.8	4.6	4.4	1	7.7	9.6	14.0	6.6	3.7	3.3	5.7	7.8	12.4
		Ref.	9.7	4.7	4.9		8.0	8.1	13.8	8.5	4.0	3.8	6.0	6.1	11.8
32	20.8	Cur.	7.9	4.1	3.2	2	6.2	8.9	13.1	5.7	3.3	2.4	4.6	7.0	11.6
		Ref.	9.9	4.9	4.1		7.2	7.6	13.7	8.0	3.9	3.1	5.6	5.7	11.6
11	19.5	Cur.	2.7	.4	2.2	2 ^a	2.6	6.2	11.0	2.1	-.1	-.8	2.0	4.3	9.3
		Ref.	6.2	2.4	2.2		5.6	5.4	11.8	5.7	2.0	1.6	4.3	4.1	10.4
81	19.5	Cur.	8.9	4.6	4.2	2	6.9	8.6	13.2	6.5	3.2	2.5	4.4	6.7	11.3
		Ref.	10.5	5.1	4.2		6.6	6.8	12.6	7.8	3.6	3.1	4.5	5.0	10.1
27	18.7	Cur.	4.9	2.1	1.2	2	3.7	5.7	9.9	3.9	1.8	.9	2.4	4.4	9.0
		Ref.	7.7	3.7	3.2		5.1	5.2	10.4	6.6	3.2	2.5	3.9	4.4	9.8
15	18.1	Cur.	3.4	1.4	.5	5	3.2	5.5	10.7	2.8	1.0	-.1	2.3	4.8	9.0
		Ref.	6.3	2.3	1.8		4.6	5.2	11.1	5.8	2.0	1.3	3.7	3.9	9.6
13	17.8	Cur.	3.2	0	-.6	6	2.1	4.8	8.9	1.6	-.6	-1.0	.4	2.8	7.4
		Ref.	6.2	1.9	1.0		3.8	3.7	9.8	5.3	1.4	.6	2.8	2.9	8.5
10	16.4	Cur.	3.3	.7	-.2	2	3.1	5.7	10.2	2.3	0	-.4	1.7	3.9	8.1
		Ref.	5.9	2.0	1.5		5.2	5.8	11.5	5.1	1.8	.9	3.7	3.9	9.2

^aMinus values, representing computed median hearing levels based on 5-dB intervals, indicate a dB hearing level better than normative zero; i.e., -.4 means minus four-tenths of a decibel better than zero. The softest hearing level that could be reported is -10.0 dB.

TABLE 6. MEAN AMOUNTS OF THRESHOLD SHIFT NOTED BETWEEN REFERENCE AND CURRENT AUDIOGRAMS FOR EACH AFSC GROUP

AFSC	Left Ear					Right Ear						
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
10	-2.4 ^a	-1.1	-0.8	-0.8	.9	-0.5	-2.9	-1.4	-1.0	-1.1	.9	-0.5
11	-2.9	-1.3	-1.6	-1.6	1.4	-0.3	-3.3	-1.5	-1.8	-1.2	.7	-0.7
13	-2.5	-1.2	-0.7	-0.7	1.8	-0.2	-3.1	-1.4	-1.3	-1.1	1.0	-0.6
14	-2.8	-0.6	-0.3	1.8	5.4	3.9	-2.9	-0.3	.1	1.6	5.3	3.6
15	-2.5	-0.6	-0.5	-0.4	1.3	.3	-2.7	-0.8	-0.7	-0.6	1.7	0
27	-2.6	-1.4	-1.2	-0.6	1.1	-0.4	-2.7	-1.2	-0.9	-0.7	.9	-0.5
32	-1.8	-0.5	-0.4	.1	2.3	.4	-1.9	-0.4	-0.4	0	2.0	.7
42	-1.6	-0.2	0	0	2.3	.5	-1.8	-0.4	-0.2	.1	2.2	1.0
43	-1.6	0	0	.8	3.4	1.3	-1.6	.2	.2	.8	3.1	1.6
46	-1.5	0	.1	.6	2.4	.4	-1.8	-0.3	-0.4	.1	2.1	.7
53	-1.2	-0.2	0	.6	2.4	.6	-1.4	-0.3	-0.2	.4	2.5	1.2
60	-1.7	0	0	.2	1.9	.7	-1.6	0	0	.5	2.4	1.5
81	-0.9	.1	.8	1.2	2.6	1.7	-1.0	0	.3	.8	2.4	2.2

^aMinus indicates reference poorer than current audiogram.

TABLE 7. PERCENT OF EACH AFSC GROUP THAT REVEALED HEARING LEVELS POORER THAN 30 dB (ANSI S3.6-1969) AT EACH TEST FREQUENCY

AFSC No.	Left Ear					Right Ear								
	Frequency (Hz)					Frequency (Hz)								
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000	STS	
10	2,232	.2	.2	.5	4.3	9.5	13.5	.1	0	.2	2.7	7.2	10.6	16.4
11	1,252	8	.7	.6	4.1	8.9	14.1	.1	0	.2	.6	7.0	11.3	19.5
13	1,166	.4	.1	.4	3.3	7.7	11.0	.2	.1	.2	2.0	5.4	8.2	17.8
14	1,049	.4	.5	1.8	11.2	20.3	26.0	.7	.4	1.5	7.4	16.9	22.3	33.0
15	2,253	.2	.4	.8	4.2	9.3	13.0	.1	.2	.5	2.8	7.3	10.5	18.1
27	1,139	.6	.4	1.0	4.2	9.1	12.1	.4	.4	.7	3.8	8.9	11.6	18.7
32	3,864	.9	.9	1.6	7.1	14.0	18.4	1.1	1.2	1.5	4.8	10.6	15.7	20.8
42	3,652	1.5	1.5	2.0	7.0	14.4	18.7	1.6	1.2	1.6	6.4	12.3	16.7	23.4
43	11,736	1.4	1.1	2.0	8.3	15.0	19.7	1.6	1.4	1.9	6.2	12.6	16.8	25.1
46	2,040	1.2	1.7	2.1	9.1	15.8	19.6	1.5	1.2	1.4	6.0	13.0	16.4	23.4
53	1,250	2.2	2.2	2.9	10.6	18.6	20.9	1.5	1.9	2.7	8.6	15.6	18.2	24.5
60	1,318	1.8	1.9	2.8	7.4	14.0	19.0	2.2	2.0	2.1	6.1	12.3	17.2	21.6
81	1,140	2.5	2.0	2.3	6.6	12.1	18.0	2.5	2.0	2.8	5.1	11.1	16.5	19.5

TABLE 8. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
2232 MILITARY PERSONNEL WITHIN AFSC 10

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	25.5	45.7	52.2	36.3	26.8	16.4	32.0	49.9	54.4	40.8	30.2	19.9
1-5	62.5	77.8	75.4	58.6	47.4	33.2	70.7	81.1	80.8	67.2	55.6	39.9
6-10	88.2	93.3	88.4	76.0	65.8	49.2	90.5	94.7	93.2	82.4	70.9	56.0
11-15	96.6	97.8	95.4	85.4	76.8	64.5	97.5	98.7	97.5	90.7	81.9	71.3
16-20	98.9	99.0	98.0	90.1	83.1	75.3	99.2	99.6	98.9	94.6	87.0	81.0
21-25	99.6	99.6	98.9	94.2	88.1	82.5	99.7	99.9	99.6	96.1	91.0	86.3
26-30	99.8	99.8	99.5	95.7	90.5	86.5	99.9	100.0	99.8	97.3	92.8	89.4
31-35	100.0	100.0	99.6	96.9	93.0	89.5	100.0	-	99.9	98.1	94.7	91.9
36-40	-	-	99.8	97.9	94.3	92.1	-	-	100.0	99.1	96.5	94.0
41-45	-	-	99.8	98.8	95.4	94.0	-	-	-	99.6	97.4	95.8
46-50	-	-	99.9	99.2	96.8	95.0	-	-	-	99.7	98.5	97.0
Mdn. HL (dB)	3.3	.7	-.2	3.1	5.7	10.2	2.3	.0	-.4	1.7	3.9	8.1

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	18.4	37.3	42.5	25.8	25.6	12.4	19.1	38.5	44.8	31.6	29.9	16.0
1-5	44.8	68.4	68.2	49.3	47.0	26.1	49.3	70.4	72.8	56.6	55.4	33.0
6-10	73.2	88.3	96.9	72.4	66.8	44.8	75.3	89.8	90.7	78.0	74.8	53.2
11-15	90.7	97.2	95.4	85.6	79.9	61.8	91.0	97.3	96.8	89.8	85.3	69.2
16-20	96.9	99.3	98.4	91.9	86.8	74.3	97.0	99.6	99.1	94.3	90.3	80.7
21-25	98.9	99.9	99.5	95.3	90.9	82.4	99.1	99.9	99.7	96.9	93.0	86.5
26-30	99.7	100.0	99.9	97.2	93.1	88.0	99.8	100.0	99.8	98.2	94.8	90.4
31-35	99.9	-	99.9	98.2	94.7	91.4	99.9	-	99.9	98.7	96.2	92.9
36-40	100.0	-	100.0	98.7	96.0	93.4	100.0	-	100.0	92.2	97.1	94.8
41-45	-	-	-	99.1	97.1	94.9	-	-	-	99.5	98.2	96.3
46-50	-	-	-	99.5	97.9	96.2	-	-	-	99.7	98.7	97.4
Mdn. HL (dB)	5.9	2.0	1.5	5.2	5.8	11.5	5.1	1.8	.9	3.7	3.9	9.2

TABLE 9. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
1252 MILITARY PERSONNEL WITHIN APSC 11

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	32.0	47.6	55.4	38.3	25.4	16.6	35.8	50.6	58.9	39.9	29.8	18.0
1-5	65.4	78.0	77.6	60.7	45.7	31.6	70.0	80.3	82.3	65.1	53.2	34.9
6-10	85.7	91.6	90.1	76.3	63.8	47.0	89.5	93.8	92.9	79.9	69.4	52.6
11-15	96.2	97.8	94.8	85.0	75.3	62.4	97.0	98.1	97.1	88.7	80.1	66.8
16-20	99.4	99.4	97.8	91.2	82.7	73.2	99.5	99.4	98.5	93.6	86.8	77.6
21-25	99.8	99.8	99.0	94.2	86.9	80.5	99.9	100.0	99.6	95.8	91.2	84.2
26-30	99.9	99.8	99.4	95.9	90.1	85.9	99.9	-	99.8	97.4	93.0	88.7
31-35	100.0	99.9	99.8	97.1	91.8	89.5	99.9	-	99.9	98.2	94.6	91.1
36-40	-	99.9	99.8	98.1	94.2	91.9	99.9	-	99.9	98.9	96.1	93.8
41-45	-	100.0	99.9	99.0	95.8	93.8	99.9	-	100.0	99.4	97.3	95.0
46-50	-	-	100.0	99.3	97.0	95.3	99.9	-	-	99.7	97.8	96.4
Mdn. HL (dB)	2.7	.4	-.4	2.6	6.2	11.0	2.1	-.1	-.8	2.0	4.3	9.3

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	18.1	34.9	38.3	23.3	26.0	9.8	18.1	37.9	40.6	26.8	29.4	12.3
1-5	43.6	66.8	64.3	47.4	48.3	24.6	46.4	67.6	69.6	53.8	54.6	29.3
6-10	70.8	88.8	85.8	70.3	67.2	44.2	77.3	90.1	88.4	76.8	72.0	48.6
11-15	89.9	97.0	94.8	84.6	79.5	60.7	91.4	97.2	96.2	88.9	83.2	65.0
16-20	97.7	99.4	98.5	91.4	86.3	74.4	97.2	99.4	98.9	94.6	88.9	77.9
21-25	99.7	99.9	99.4	94.8	89.6	83.3	99.4	99.8	99.6	96.9	91.7	84.7
26-30	100.0	99.9	99.7	96.7	92.0	87.5	99.9	99.9	99.8	97.9	93.2	89.3
31-35	-	99.9	99.9	97.5	94.0	90.6	100.0	99.9	99.9	98.6	95.0	91.9
36-40	-	99.9	99.9	98.4	95.7	92.8	-	99.9	100.0	99.1	96.2	94.1
41-45	-	99.9	100.0	99.0	97.0	94.5	-	100.0	-	99.4	97.8	95.2
46-50	-	100.0	-	99.4	98.2	95.9	-	-	-	99.8	98.4	96.7
Mdn. HL (dB)	6.2	2.4	2.2	5.6	5.4	11.8	5.7	2.0	1.6	4.3	4.1	10.4

TABLE 10. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
1166 MILITARY PERSONNEL WITHIN AFSC 13

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	29.7	50.5	57.5	41.0	30.3	19.3	39.7	57.2	62.7	48.0	37.0	23.0
1-5	61.3	79.8	77.4	62.8	50.7	37.0	72.6	83.4	83.1	71.0	59.9	42.1
6-10	85.4	93.2	88.3	76.8	68.3	53.7	89.7	94.6	93.0	85.5	74.4	58.5
11-15	96.3	97.6	96.4	87.2	79.3	66.3	97.5	97.9	97.0	92.8	84.0	72.6
16-20	98.8	99.1	98.5	93.1	85.8	77.4	99.6	99.3	98.6	95.9	89.4	82.6
21-25	99.4	99.7	99.1	95.9	89.4	84.3	99.7	99.7	99.6	97.5	92.4	87.6
26-30	99.6	99.9	99.6	96.7	92.3	89.0	99.8	99.9	99.8	98.0	94.6	91.8
31-35	99.8	100.0	99.8	97.5	94.2	92.2	99.9	99.9	99.8	98.5	95.7	93.8
36-40	100.0	-	99.9	98.6	95.4	94.3	99.9	99.9	99.9	99.0	96.4	94.8
41-45	-	-	99.9	98.9	96.7	95.3	99.9	99.9	99.9	99.1	97.0	96.2
46-50	-	-	99.9	99.5	97.8	97.1	99.9	100.0	100.0	99.4	98.4	96.9
Mdn. HL (dB)	3.2	0.	- .6	2.1	4.8	8.9	1.6	- .6	-1.0	.4	2.8	7.4

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	16.6	38.6	44.0	31.3	32.3	15.9	19.9	41.3	46.7	35.0	35.6	17.8
1-5	42.9	69.3	73.9	56.2	56.0	31.7	48.2	72.0	75.3	61.8	60.1	35.9
6-10	73.2	90.2	89.1	76.2	73.5	50.6	77.1	91.8	91.5	84.0	78.1	55.9
11-15	90.7	97.9	79.1	87.2	84.1	67.8	93.3	98.2	96.9	91.8	88.2	71.3
16-20	97.8	99.6	99.1	92.9	89.5	79.3	98.2	99.6	98.7	96.1	92.3	82.9
21-25	99.4	99.8	99.6	95.8	93.1	84.8	99.6	99.9	99.7	97.3	95.0	88.6
26-30	99.9	100.0	99.7	97.5	95.3	90.0	99.8	100.0	99.7	98.5	96.1	92.0
31-35	99.9	-	99.9	98.5	96.1	92.4	99.9	-	99.7	98.8	96.7	93.7
36-40	100.0	-	100.0	99.1	97.3	95.1	99.9	-	99.9	99.5	97.9	95.0
41-45	-	-	-	99.4	97.9	96.8	99.9	-	99.9	99.7	98.6	96.3
46-50	-	-	-	99.5	98.8	98.1	99.9	-	99.9	99.8	99.1	97.3
Mdn. HL (dB)	6.2	1.9	1.0	3.8	3.7	9.8	5.3	1.4	.6	2.8	2.9	8.5

TABLE 11. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
1049 MILITARY PERSONNEL WITHIN AFSC 14

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	26.4	36.6	39.8	23.2	16.2	9.3	28.8	37.4	41.7	27.4	20.6	9.8
1-5	57.8	65.7	61.9	40.8	27.1	18.8	59.7	65.4	65.1	46.9	34.0	21.4
6-10	81.7	86.4	80.1	59.5	44.3	30.3	82.3	86.2	82.9	67.1	48.8	35.9
11-15	94.8	95.1	91.1	72.4	57.4	44.2	93.5	95.4	92.2	78.7	63.0	51.3
16-20	98.2	97.6	95.1	81.1	66.4	58.3	98.0	98.2	96.4	85.8	72.2	64.2
21-25	99.1	99.3	97.3	85.1	73.5	67.8	99.1	99.2	97.8	89.8	79.2	72.6
26-30	99.6	99.5	98.2	88.8	79.7	74.0	99.3	99.6	98.5	92.6	83.1	77.7
31-35	99.8	99.7	98.6	91.0	83.2	78.2	99.6	99.7	99.0	94.5	85.9	81.6
36-40	99.8	99.8	99.0	93.0	86.8	81.8	99.7	99.7	99.1	95.8	88.6	85.1
41-45	99.8	99.8	99.1	94.8	89.6	84.8	99.7	99.8	99.4	96.8	91.2	88.8
46-50	99.8	99.9	99.6	96.4	91.9	88.2	99.8	99.9	99.7	97.7	93.8	91.7
Mdn. HL (dB)	3.8	2.3	2.3	7.5	12.2	17.0	3.4	2.2	1.8	5.8	10.4	14.6

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	12.9	29.6	31.9	20.7	23.6	10.0	14.1	33.8	37.1	27.4	27.4	12.1
1-5	40.3	60.7	59.3	41.4	43.1	23.0	41.6	63.0	62.6	47.3	48.4	26.8
6-10	68.0	85.1	81.8	64.4	57.6	39.2	68.9	84.9	85.1	71.0	65.1	44.2
11-15	86.5	95.5	91.1	77.6	71.5	52.9	86.8	95.1	93.8	83.3	76.2	59.0
16-20	95.3	98.5	95.4	85.9	78.7	65.3	94.1	98.6	97.8	90.1	83.9	70.4
21-25	98.8	99.5	98.0	90.0	83.7	74.2	98.4	99.5	99.0	94.5	88.0	78.0
26-30	99.7	99.5	98.7	93.0	87.0	80.2	99.5	99.7	99.5	96.4	90.6	84.2
31-35	99.7	99.7	99.1	95.0	89.8	84.1	99.6	99.8	99.7	97.2	92.7	88.1
36-40	99.7	99.9	99.2	96.6	92.2	87.9	99.7	99.9	99.8	97.8	94.3	91.0
41-45	99.9	99.9	99.7	97.6	93.9	90.8	99.7	99.9	99.8	98.3	95.5	93.6
46-50	99.9	99.9	99.8	98.3	95.8	92.8	99.7	99.9	99.8	99.0	97.0	95.3
Mdn. HL (dB)	6.8	3.3	3.3	6.9	7.4	13.9	6.5	2.8	2.5	5.6	5.5	12.0

TABLE 12 CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF 2253 MILITARY PERSONNEL WITHIN AFSC 15

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	26.0	40.8	47.2	34.3	26.8	14.8	30.7	43.3	50.6	37.5	28.0	17.1
1-5	61.4	74.1	73.4	58.4	48.3	30.7	64.8	77.2	77.3	64.7	50.8	34.4
6-10	85.1	90.3	87.4	74.7	64.9	47.6	86.2	91.5	89.5	81.1	69.4	53.9
11-15	95.4	96.8	94.4	86.3	76.1	63.6	95.8	97.3	96.1	89.6	81.5	69.1
16-20	98.6	98.8	97.0	91.1	83.1	75.2	98.6	98.9	98.1	94.1	87.2	78.4
21-25	99.5	99.5	98.5	94.1	88.6	82.6	99.5	99.5	99.2	96.2	90.2	85.1
26-30	99.8	99.6	99.2	95.8	90.7	87.0	99.9	99.8	99.5	97.2	92.7	89.5
31-35	99.9	99.7	99.7	97.1	92.9	90.5	100.0	99.9	99.8	97.9	94.4	91.9
36-40	99.9	99.9	99.8	98.0	94.8	92.8	-	99.9	99.9	98.4	95.8	93.8
41-45	100.0	99.9	99.9	98.6	96.0	94.4	-	100.0	100.0	99.0	96.8	95.5
46-50	-	100.0	99.9	99.1	97.4	95.9	-	-	-	99.3	97.6	96.4
Mdn. HL (dB)	3.4	1.4	.5	3.2	5.5	10.7	2.8	1.0	-.1	2.3	4.8	9.0

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	15.6	34.8	40.1	26.9	25.4	12.8	17.3	36.9	42.8	31.0	30.4	14.5
1-5	42.2	67.8	68.1	52.1	49.4	28.1	45.8	69.5	70.3	56.7	55.3	30.9
6-10	71.4	89.1	86.6	74.1	69.3	46.3	72.5	89.5	89.2	79.0	74.3	51.5
11-15	90.2	96.8	95.0	86.2	81.0	62.8	89.4	97.1	96.1	89.9	86.2	68.0
16-20	96.9	98.9	98.0	92.1	87.4	76.1	96.8	99.2	98.8	94.7	90.4	79.3
21-25	99.3	99.6	99.2	95.5	91.4	83.8	99.2	99.7	99.6	96.9	93.4	86.6
26-30	100.0	99.8	99.7	96.9	93.4	89.1	99.7	99.8	99.9	98.3	95.2	90.8
31-35	-	99.9	99.8	97.8	94.8	92.1	99.9	99.8	99.9	98.8	96.2	92.7
36-40	-	100.0	99.9	98.6	96.4	94.3	100.0	99.9	100.0	99.1	96.9	94.8
41-45	-	-	99.9	99.1	97.4	95.9	-	100.0	-	99.3	97.9	96.0
46-50	-	-	99.9	99.5	98.2	96.8	-	-	-	99.5	98.8	97.0
Mdn. HL (dB)	6.3	2.3	1.8	4.6	5.2	11.1	5.8	2.0	1.3	3.7	3.9	9.6

TABLE 13. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF 1139 MILITARY PERSONNEL WITHIN AFSC 27

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	20.3	36.1	43.2	32.8	26.1	16.3	24.2	38.2	45.0	37.4	31.3	18.7
1-5	50.5	69.6	72.1	56.1	47.4	31.8	57.3	70.7	73.9	63.5	52.6	36.6
6-10	78.0	87.9	85.7	73.5	65.1	50.5	83.0	88.6	87.9	77.7	70.1	53.4
11-15	92.2	96.4	93.5	84.6	76.9	66.5	93.4	97.0	95.3	86.8	79.8	68.1
16-20	96.3	98.2	96.8	90.1	82.6	76.2	98.0	99.0	97.8	92.0	85.7	78.8
21-25	99.2	99.4	98.2	93.4	87.8	83.2	99.1	99.4	98.8	94.3	89.5	84.6
26-30	99.4	99.6	99.0	95.8	90.9	87.9	99.6	99.6	99.3	96.2	91.1	88.2
31-35	99.7	99.7	99.3	97.0	92.7	90.4	99.8	99.6	99.6	97.3	92.6	91.1
36-40	99.8	99.8	99.6	97.7	93.4	92.1	99.8	99.7	99.6	98.3	94.6	92.7
41-45	100.0	100.0	99.8	98.1	95.4	94.1	100.0	99.8	99.8	98.7	95.8	93.8
46-50	-	-	99.8	98.5	96.8	95.1	-	99.9	99.9	99.2	97.1	95.1
Mdn. HL (dB)	4.9	2.1	1.2	3.7	5.7	9.9	3.9	1.8	.9	2.4	4.4	9.0

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	12.2	26.0	30.1	22.6	23.5	11.0	14.1	29.3	33.8	27.7	26.9	13.0
1-5	37.0	58.7	61.7	49.6	49.2	28.3	42.5	61.6	66.4	56.5	53.1	32.2
6-10	61.3	83.1	82.6	71.4	67.4	48.7	66.3	85.4	87.2	75.9	70.9	50.8
11-15	82.7	94.0	93.1	84.2	79.8	64.4	86.6	95.2	95.1	86.6	82.3	66.1
16-20	93.7	98.0	96.8	91.0	86.7	74.6	95.0	98.4	97.6	92.8	88.5	75.9
21-25	98.0	99.5	99.0	94.9	90.2	82.4	98.2	99.6	99.1	96.0	91.2	84.6
26-30	99.7	99.9	99.4	96.8	92.5	87.4	99.5	99.7	99.6	96.9	93.8	88.2
31-35	99.8	99.9	99.7	97.5	94.5	90.6	99.7	99.7	99.9	97.8	95.3	91.2
36-40	100.0	100.0	99.7	98.2	95.5	92.8	99.8	99.8	99.9	98.7	96.4	93.7
41-45	-	-	99.8	98.7	96.7	94.1	99.8	99.8	99.9	99.1	98.1	94.5
46-50	-	-	99.8	99.2	97.8	95.9	99.8	99.8	100.0	99.4	98.7	96.5
Mdn. HL (dB)	7.7	3.7	3.2	5.1	5.2	10.4	6.6	3.2	2.5	3.9	4.4	9.8

TABLE 14. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
3864 MILITARY PERSONNEL WITHIN AFSC 32

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	9.7	23.9	31.8	24.2	19.3	11.8	16.0	28.1	35.6	28.2	22.0	13.7
1-5	34.5	55.6	60.3	45.6	36.4	25.1	46.4	61.5	65.9	52.0	43.0	29.1
6-10	61.4	78.7	79.4	63.3	53.9	39.8	70.7	82.8	83.6	69.9	60.1	45.1
11-15	84.4	91.4	89.8	77.3	68.4	56.3	88.9	92.9	91.8	82.8	73.2	60.8
16-20	93.9	96.3	94.6	85.1	76.5	67.4	95.5	96.4	95.5	89.1	81.0	72.0
21-25	97.9	98.4	97.3	90.5	82.6	76.5	98.0	98.2	97.8	92.7	86.8	80.0
26-30	99.1	99.1	98.4	92.9	86.0	81.6	98.9	98.8	98.5	95.2	89.4	84.3
31-35	99.5	99.4	99.1	95.0	89.2	85.5	99.3	99.3	99.1	96.4	91.8	87.4
36-40	99.7	99.6	99.4	96.6	91.6	88.3	99.6	99.5	99.3	97.2	93.8	89.6
41-45	99.9	99.8	99.7	97.6	93.6	90.7	99.8	99.7	99.5	98.0	95.1	92.0
46-50	99.9	99.9	99.7	98.2	95.4	92.7	99.9	99.8	99.7	98.6	96.2	93.6
Mdn. HL (dB)	7.9	4.1	3.2	6.2	8.9	13.1	5.7	3.3	2.4	4.6	7.0	11.6

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	7.8	20.3	25.6	18.9	19.2	8.4	10.7	24.8	30.7	21.7	21.7	11.0
1-5	25.6	50.4	55.1	40.7	40.9	20.8	34.9	57.0	61.4	47.3	47.3	26.3
6-10	50.6	75.8	78.5	62.0	58.6	37.2	60.1	80.8	82.1	70.1	65.6	45.0
11-15	75.5	91.3	90.4	77.9	74.1	54.7	82.0	92.3	91.7	83.6	78.9	60.7
16-20	89.9	97.1	96.0	87.2	82.7	67.6	92.2	97.0	96.6	90.7	86.0	72.8
21-25	97.0	99.1	98.3	92.7	87.5	78.4	97.2	99.0	98.3	94.5	90.7	81.0
26-30	98.8	99.4	99.2	95.2	90.0	84.3	98.8	99.4	99.0	96.7	93.1	86.4
31-35	99.5	99.7	99.5	96.9	92.5	88.4	99.5	99.7	99.2	97.6	94.8	90.1
36-40	99.6	99.8	99.7	98.0	94.5	91.2	99.7	99.8	99.5	98.2	95.9	92.2
41-45	99.8	99.8	99.8	98.7	96.1	92.9	99.8	99.8	99.7	98.8	96.8	94.1
46-50	99.9	99.9	99.9	99.2	97.3	94.3	99.8	99.8	99.8	99.2	97.8	95.5
Mdn. HL (dB)	9.9	4.9	4.1	7.2	7.6	13.7	8.0	3.9	3.1	5.6	5.7	11.6

TABLE 15. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
3652 MILITARY PERSONNEL WITHIN AFSC 42

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	10.1	21.2	28.6	20.8	17.4	11.3	15.9	25.4	33.8	24.1	20.1	13.4
1-5	31.1	50.6	54.7	41.1	33.1	24.6	42.6	57.8	62.2	47.7	39.6	27.7
6-10	57.6	73.6	74.4	60.4	50.8	38.1	67.6	78.9	79.6	66.1	56.0	42.7
11-15	81.7	89.5	87.6	75.6	65.4	54.3	86.6	91.2	90.9	80.4	70.7	57.6
16-20	92.0	95.1	93.6	84.1	74.4	66.6	93.5	96.0	95.4	87.5	78.6	69.8
21-25	96.8	98.0	96.7	89.8	81.0	75.9	97.2	98.2	97.6	91.6	84.4	78.4
26-30	98.5	98.5	98.0	93.0	85.6	81.4	98.4	98.8	98.4	93.6	87.7	83.3
31-35	99.2	99.2	98.7	94.5	89.0	85.8	99.0	99.3	98.9	95.5	90.1	86.6
36-40	99.4	99.4	99.1	95.9	91.4	88.9	99.3	99.6	99.3	96.9	92.1	89.5
41-45	99.7	99.6	99.4	97.3	93.3	91.8	99.6	99.7	99.6	97.7	93.8	91.7
46-50	99.8	99.8	99.6	98.1	94.8	93.2	99.9	99.8	99.8	98.1	95.5	93.1
Mdn. HL (dB)	8.6	4.9	4.1	7.3	9.8	13.7	6.5	3.8	2.8	5.6	8.2	12.4

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	7.2	18.1	23.7	15.7	15.8	7.6	9.7	21.8	28.0	19.7	19.3	9.8
1-5	24.0	46.6	51.9	36.3	37.7	21.1	32.4	54.0	58.4	44.4	44.0	26.0
6-10	47.3	72.5	74.2	58.2	55.8	37.5	57.4	77.3	79.9	65.5	62.7	43.8
11-15	73.5	89.3	89.3	76.4	71.2	53.3	78.9	91.2	91.3	80.2	75.7	59.6
16-20	87.6	95.9	95.4	85.7	81.0	66.8	90.7	96.6	96.4	89.1	84.1	71.5
21-25	95.8	98.5	98.0	91.5	86.7	78.4	97.0	98.6	98.4	93.8	88.9	81.2
26-30	98.5	99.2	99.0	94.6	90.0	84.0	98.9	99.2	99.2	95.7	91.7	85.8
31-35	99.6	99.6	99.4	96.1	92.1	88.3	99.5	99.4	99.6	97.0	93.3	89.4
36-40	99.8	99.8	99.6	97.1	93.6	91.0	99.8	99.7	99.7	97.7	95.1	91.6
41-45	99.9	100.0	99.7	98.2	95.7	93.3	99.8	99.8	99.8	98.3	96.4	93.6
46-50	100.0	-	99.8	98.4	97.2	95.0	100.0	99.8	99.9	99.0	97.4	95.3
Mdn HL 9 (dB)	10.5	5.6	4.7	8.1	8.4	14.0	8.5	4.4	3.6	6.3	6.6	12.0

TABLE 16. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF 11,736 MILITARY PERSONNEL WITHIN AFSC 43

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	9.9	22.8	29.8	21.1	16.7	11.4	15.3	96.5	34.6	25.1	19.6	13.1
1-5	32.6	53.6	56.7	40.6	33.2	24.2	44.0	60.2	63.4	48.2	39.4	27.4
6-10	59.9	76.4	75.2	59.1	49.3	37.9	69.2	80.4	80.3	66.3	56.0	42.8
11-15	83.0	90.5	88.2	74.6	64.3	53.4	86.8	91.5	90.8	79.8	70.1	58.5
16-20	92.4	95.4	93.7	83.2	73.4	65.0	93.8	95.8	94.9	86.7	78.1	69.8
21-25	96.8	97.9	96.8	88.6	80.7	74.9	97.2	97.8	97.2	91.3	84.1	78.4
26-30	98.6	98.9	98.0	91.7	85.0	80.3	98.4	98.6	98.1	93.8	87.4	83.2
31-35	99.2	99.3	98.7	93.9	88.2	84.9	99.0	99.1	98.7	95.3	90.2	86.8
36-40	99.6	99.6	99.1	95.5	90.6	88.0	99.4	99.3	99.1	96.5	92.3	89.4
41-45	99.8	99.8	99.4	96.8	92.8	90.5	99.6	99.6	99.4	97.5	94.0	91.4
46-50	99.9	99.8	99.7	97.8	94.5	92.4	99.8	99.7	99.6	98.2	95.5	93.2
Mdn. HL (dB)	8.2	4.4	3.8	7.5	10.2	13.9	6.2	3.5	2.7	5.5	8.2	12.3

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	8.0	20.4	25.0	17.1	18.8	8.4	10.7	24.8	30.0	21.1	22.2	11.4
1-5	25.7	51.9	54.1	39.4	40.7	22.1	34.2	58.2	61.4	47.4	48.1	27.8
6-10	49.5	76.0	75.7	60.4	58.6	38.1	59.5	80.8	81.5	68.0	65.3	45.6
11-15	74.5	91.0	89.6	77.3	72.9	55.1	80.6	93.0	92.4	83.1	77.7	61.0
16-20	88.6	96.8	95.5	86.7	81.7	67.8	91.6	97.3	96.6	90.1	84.9	73.1
21-25	96.1	99.0	98.2	91.8	87.1	78.2	96.9	99.1	98.4	94.0	89.3	81.9
26-30	99.0	99.5	99.0	94.2	90.4	83.8	99.0	99.4	99.2	96.0	91.9	86.5
31-35	99.4	99.7	99.4	96.0	92.8	88.0	99.5	99.7	99.5	97.2	94.1	89.9
36-40	99.8	99.9	99.6	97.3	94.6	91.0	99.7	99.8	99.7	98.0	95.4	92.2
41-45	99.8	99.9	99.7	98.1	96.0	93.1	99.8	99.8	99.8	98.6	96.7	94.0
46-50	99.9	99.9	99.8	98.7	97.2	94.9	99.9	99.9	99.8	99.0	97.6	95.4
Mdn. HL (dB)	10.1	4.7	4.3	7.5	7.6	13.5	8.1	3.8	3.2	5.6	5.6	11.4

TABLE 17. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
2040 MILITARY PERSONNEL WITHIN AFSC 46

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	9.5	20.4	30.6	22.2	18.0	12.9	14.2	27.5	35.3	27.7	21.6	13.1
1-5	31.1	50.2	56.3	43.4	36.4	26.2	44.2	58.9	64.2	51.4	41.9	29.2
6-10	56.9	73.9	74.2	60.8	51.0	39.3	68.7	80.3	80.9	67.2	58.3	44.0
11-15	82.6	89.6	88.1	74.9	64.9	55.3	88.4	92.3	92.0	80.6	71.4	59.8
16-20	92.2	94.8	93.0	81.5	74.9	65.8	94.8	96.0	95.3	87.6	78.6	70.0
21-25	96.9	97.3	96.4	88.1	79.7	75.3	97.6	98.3	97.8	91.9	83.9	78.5
26-30	98.8	98.3	97.9	90.9	84.2	80.4	98.5	98.8	98.6	94.0	87.0	83.6
31-35	99.3	99.0	98.6	93.4	87.0	84.8	99.2	99.3	99.1	95.6	89.8	87.2
36-40	99.5	99.5	99.0	94.7	90.0	88.4	99.8	99.5	99.4	96.6	92.4	89.9
41-45	99.7	99.6	99.2	96.0	92.1	90.5	99.8	99.7	99.6	97.3	94.3	91.9
46-50	100.0	99.8	99.4	97.5	94.2	92.6	99.9	99.8	99.8	98.3	95.6	93.6
Mdn. HL (dB)	8.7	5.0	3.8	6.9	9.6	13.3	6.2	3.6	2.5	4.7	7.5	11.9

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	7.2	19.0	25.8	18.3	18.6	8.6	10.5	23.6	30.2	23.0	22.0	11.8
1-5	24.0	48.4	53.8	39.1	37.6	20.5	33.8	55.6	60.7	47.1	44.0	26.5
6-10	49.3	74.0	76.2	60.2	56.3	37.1	57.7	79.0	81.4	67.8	62.8	44.1
11-15	73.4	89.9	89.7	77.7	71.0	53.8	80.4	91.8	91.8	82.8	77.1	59.7
16-20	86.3	95.8	95.2	86.6	79.7	67.2	91.4	96.8	96.6	89.8	84.5	71.9
21-25	96.2	98.4	98.3	91.6	85.6	77.3	97.2	98.9	98.8	93.7	88.1	81.1
26-30	98.8	99.2	98.9	94.0	88.8	82.8	99.0	99.4	99.3	95.4	91.4	85.5
31-35	99.4	99.6	99.1	95.7	91.4	87.6	99.7	99.7	99.5	97.2	93.6	88.8
36-40	99.7	99.6	99.4	96.9	93.7	90.5	99.8	99.8	99.8	98.3	95.4	91.5
41-45	99.8	99.7	99.6	97.5	94.9	92.8	99.9	99.9	99.8	98.6	96.4	93.0
46-50	99.8	99.8	99.6	98.0	96.5	94.3	99.9	100.0	99.9	99.0	97.5	94.8
Mdn. HL (dB)	10.2	5.3	4.3	7.6	8.3	13.9	8.4	4.1	3.2	5.7	6.6	11.9

TABLE 18. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
1250 MILITARY PERSONNEL WITHIN AFSC 53

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	8.7	19.2	27.4	20.7	17.3	11.9	13.9	25.0	32.9	24.0	18.5	12.9
1-5	28.2	50.0	52.0	38.5	33.1	23.5	41.1	56.7	61.3	44.9	38.6	25.9
6-10	55.3	71.9	70.8	55.0	48.6	36.1	66.3	78.6	78.0	63.4	54.3	41.0
11-15	79.5	88.7	84.6	71.0	61.8	49.9	84.7	90.6	89.9	78.0	67.2	56.1
16-20	89.6	94.0	91.8	80.2	70.3	61.4	92.3	95.7	93.5	84.8	76.7	68.6
21-25	95.3	97.0	95.7	86.1	77.0	72.6	96.6	97.3	95.9	88.7	81.4	76.7
26-30	97.8	97.8	97.1	89.4	81.4	79.1	98.5	98.1	97.3	91.4	84.4	81.8
31-35	98.9	98.9	97.5	91.7	84.9	83.7	98.7	98.8	98.2	93.6	87.8	85.4
36-40	99.4	99.4	98.3	93.4	87.5	86.6	99.0	99.1	98.8	95.2	90.2	88.2
41-45	99.7	99.5	98.6	95.0	91.0	88.9	99.2	99.4	99.0	96.3	92.8	90.1
46-50	99.7	99.7	99.1	96.2	93.8	91.1	99.3	99.5	99.4	97.5	94.2	91.4
Mdn. HL (dB)	9.0	5.0	4.4	8.5	10.5	15.0	6.8	3.9	3.0	6.4	8.6	13.0

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	6.8	16.6	21.4	15.4	16.4	9.0	9.4	20.6	26.0	19.8	20.8	11.7
1-5	20.7	44.6	48.2	34.6	34.8	21.2	30.2	52.6	56.1	40.8	42.3	26.4
6-10	45.9	69.9	70.8	54.8	52.8	35.0	56.6	75.9	77.4	63.7	59.1	42.5
11-15	73.3	88.3	86.7	71.9	68.1	51.3	78.6	90.8	89.6	79.5	73.1	56.9
16-20	88.0	95.8	93.0	83.0	76.5	63.0	90.9	96.3	95.0	87.3	82.2	70.3
21-25	95.0	98.1	96.9	89.2	82.6	73.4	97.0	98.3	97.9	92.6	86.8	78.9
26-30	98.3	99.0	97.9	92.0	86.4	81.0	98.9	99.5	98.8	94.3	89.4	84.0
31-35	99.4	99.4	98.6	94.6	90.2	85.8	99.6	99.6	99.3	95.4	91.6	87.7
36-40	99.8	99.7	99.0	95.7	92.3	89.4	99.8	99.8	99.4	96.3	93.5	90.9
41-45	99.8	99.8	99.7	96.9	93.8	91.4	99.8	99.8	99.6	97.3	95.1	92.2
46-50	99.9	99.8	99.7	97.6	95.7	93.4	99.8	99.8	99.7	97.8	96.8	93.4
Mdn. HL (dB)	10.8	6.1	5.4	8.8	9.2	14.6	8.8	4.6	4.0	7.0	7.3	12.6

TABLE 19. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
1318 MILITARY PERSONNEL WITHIN AFSC 60

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	9.8	21.7	27.8	18.4	16.2	9.1	14.6	27.0	30.8	22.9	18.7	11.9
1-5	32.0	52.2	53.3	38.4	34.5	21.7	40.7	58.4	60.0	47.1	38.8	24.3
6-10	63.8	78.1	75.8	59.9	51.3	36.7	78.6	80.0	80.4	67.7	59.6	42.0
11-15	83.7	91.6	87.1	75.8	67.6	53.5	87.1	91.5	91.1	81.4	73.0	58.7
16-20	93.3	95.7	92.8	83.7	76.0	67.8	93.8	95.4	95.4	88.2	80.4	70.6
21-25	96.8	97.4	96.0	89.6	82.4	75.2	96.6	97.0	97.7	91.7	85.4	78.2
26-30	98.2	98.1	97.2	92.6	86.0	81.0	97.8	98.0	97.9	93.9	87.7	82.8
31-35	99.0	99.0	98.0	94.2	88.4	85.1	98.8	98.5	98.5	95.4	90.4	86.3
36-40	99.2	99.3	98.6	96.0	91.0	87.8	98.9	98.9	98.9	96.0	92.1	89.0
41-45	99.5	99.4	98.9	96.9	93.2	90.7	99.1	99.1	99.1	97.0	93.3	91.6
46-50	99.8	99.7	99.1	97.6	94.9	92.8	99.3	99.5	99.3	98.0	95.7	93.2
Mdn. HL (dB)	7.8	4.6	4.4	7.7	9.6	14.0	6.6	3.7	3.3	5.7	7.8	12.4

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤ 0	8.6	20.9	24.7	16.7	16.6	7.9	9.8	23.6	29.1	20.0	21.7	11.7
1-5	25.2	51.6	50.3	35.7	38.6	21.7	31.0	56.2	56.6	45.3	46.1	25.8
6-10	51.4	75.7	72.9	59.4	57.0	37.4	58.5	79.4	79.7	68.1	64.1	44.8
11-15	74.5	90.1	87.9	76.3	71.5	53.9	80.1	91.4	91.5	83.2	77.8	58.8
16-20	88.6	96.4	93.7	85.4	80.1	67.9	90.1	96.5	96.6	90.9	84.7	71.9
21-25	95.8	98.6	97.0	91.0	86.6	77.3	96.5	98.0	98.0	94.2	89.3	81.0
26-30	98.7	99.1	98.2	93.7	89.7	82.2	98.6	98.7	98.7	95.8	92.0	85.8
31-35	99.3	99.5	99.1	95.4	92.2	86.6	99.4	99.2	99.2	96.4	93.5	89.2
36-40	99.7	99.7	99.3	96.7	93.9	90.1	99.7	99.6	99.5	97.5	94.8	91.6
41-45	99.8	99.8	99.5	97.4	95.5	92.2	99.8	99.7	99.6	98.5	96.0	93.7
46-50	99.8	99.8	99.7	98.2	96.6	94.1	98.8	99.8	99.7	98.8	97.2	95.3
Mdn. HL (dB)	9.7	4.7	4.9	8.0	8.1	13.8	8.5	4.0	3.8	6.0	6.1	11.8

TABLE 20. CUMULATIVE PERCENT OF ANNUAL AUDIOGRAMS OF
1140 MILITARY PERSONNEL WITHIN AFSC 81

Hearing Level (dB)	Current Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
≤0	6.8	20.4	28.3	21.0	18.5	12.1	14.6	27.8	36.5	27.4	22.5	14.4
1-5	29.1	52.2	54.4	43.6	38.1	26.1	42.7	62.2	63.2	53.1	44.2	28.9
6-10	55.8	75.7	72.4	60.4	54.6	39.4	67.5	80.4	79.5	70.2	61.6	46.0
11-15	79.7	89.0	87.0	76.7	70.1	56.0	86.4	92.4	91.0	82.5	74.0	61.6
16-20	91.1	94.6	92.8	84.9	78.2	68.2	93.7	95.4	95.1	88.5	81.4	72.0
21-25	95.8	97.1	96.4	91.3	84.6	77.5	96.6	97.4	96.8	93.1	86.3	79.2
26-30	97.5	98.0	97.7	93.4	87.9	82.0	97.5	98.0	97.2	94.9	88.9	83.5
31-35	98.4	98.8	98.3	94.8	90.1	85.3	98.4	98.2	98.0	95.7	91.3	86.4
36-40	99.1	99.2	98.8	96.2	91.5	87.6	98.7	98.7	98.2	96.4	93.0	89.0
41-45	99.5	99.4	99.2	97.2	92.7	90.2	99.0	99.1	98.8	96.9	94.0	90.8
46-50	99.6	99.5	99.4	97.8	94.4	91.5	99.1	99.2	99.0	98.0	95.4	92.3
Mdn. HL (dB)	8.9	4.6	4.2	6.9	8.6	13.2	6.5	3.2	2.5	4.4	6.7	11.3

Hearing Level (dB)	Reference Audiogram											
	Left Ear						Right Ear					
	Frequency (Hz)						Frequency (Hz)					
	500	1000	2000	3000	4000	5000	500	1000	2000	3000	4000	6000
≤0	7.9	17.5	24.0	18.0	17.5	9.7	11.0	23.2	29.5	23.6	22.7	12.8
1-5	25.4	49.5	55.4	43.4	43.1	23.9	36.4	60.3	62.7	52.7	50.1	31.8
6-10	47.3	74.5	75.3	64.0	61.9	40.4	60.5	80.2	81.1	70.5	67.4	49.8
11-15	72.8	89.6	91.0	79.7	76.0	58.5	80.6	92.5	92.8	85.0	79.3	64.5
16-20	87.4	96.8	96.1	87.9	83.3	69.9	91.6	96.6	97.1	91.0	85.4	75.1
21-25	96.0	99.0	99.0	94.2	88.9	79.5	97.0	98.6	98.6	94.6	90.2	83.2
26-30	98.3	99.6	99.5	96.1	91.7	85.1	98.9	99.1	99.0	96.8	92.6	86.2
31-35	99.4	99.7	99.6	97.7	94.2	88.4	99.3	99.3	99.2	97.7	94.8	89.7
36-40	99.7	99.9	99.7	98.6	95.4	91.3	99.3	99.6	99.4	98.3	96.0	92.5
41-45	99.8	99.9	99.8	98.9	96.2	93.5	99.6	99.6	99.5	99.0	97.4	93.8
46-50	99.9	99.9	99.9	99.2	97.1	95.3	99.6	99.6	99.7	99.1	98.2	95.5
Mdn. HL (dB)	10.5	5.1	4.2	6.6	6.8	12.6	7.8	3.6	3.1	4.5	5.0	10.1