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Insertion Loss of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero Earcup Replacement Products

By William A. Ahroon, Alisa J. LaPrath, Elmaree Gordon, Martin B. Robinette, and Melinda E. Hill

Warfighter Protection Division

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14. ABSTRACT

The insertion loss of the HGU-56/P Aircrew Integrated Helmet System (AIHS) configured with Oregon Aero™ replacement earcup products was evaluated in accordance with the American National Standard Microphone-in-Real-Ear and Acoustic Test Fixture Methods for the Measurement of Insertion Loss of Circumaural Hearing Protection Devices [ANSI S12.42-1995 (R1999)], microphone-in-real-ear method. Insertion loss of the HGU-56/P AIHS configured with the Oregon Aero HushKit™ replacement earcup foam was essentially equivalent to the helmet's standard configuration. Employing the Oregon Aero SoftSeal™ replacement earcup seal with the HushKit™ foam yielded a small improvement in insertion loss over the standard helmet configuration. However, the Oregon Aero SoftSeal/HushKit Combo™ soft replacement earcups provided significantly poorer insertion loss than the standard earcup configuration. As with the Army's current flight helmet/earcup combination, double protection (i.e., earplugs in addition to the sound-protective flight helmet) is required in certain high-noise environments.

15. SUBJECT TERMS

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Introduction

The Gentex HGU-56/P Aircrew Integrated Helmet System (AIHS) (Figure 1) is designed to provide impact protection and noise attenuation for U.S. Army rotary-wing aircraft crewmembers. It has replaced the 1980's-vintage SPH-4 series flight helmet and is used by most U.S. Army and U.S. Air Force rotary-wing aircrew. The main hearing protection and communication components of the helmet include the communications harness, earcups, earcup seals, earcup foam, and speakers.

Figure 1. Gentex HGU-56/P Aircrew Integrated Helmet System.

Oregon Aero, a manufacturer of components for civilian and military vehicles and personal items such as helmets and headsets, has developed and is marketing several earcup replacement products for use in the HGU-56/P AIHS. These products include replacement earcup foam (HushKit™), replacement earcup seals (SoftSeal™) and replacement earcups (SoftSeal/HushKit Combo™) designed for use in a number of different helmet systems. An earlier report described the noise protection of the HGU-56/P AIHS and HGU-84/P Rotary-Wing Helmet System equipped with Oregon Aero earcup replacement products using the real-ear attenuation at threshold test measurement (Gordon, Ahroon, & Hill, 2005). The current report describes the noise protection provided by each of these earcup replacement products when installed in the HGU-56/P AIHS using the microphone-in-real-ear procedure. This measure of noise protection is called the "insertion loss" of the device and is reported as the final document describing the hearing protection of the two helmets used by Army and Navy rotary-wing aircrew. Ahroon,

Hill, Gordon, & Robinette (2004) previously reported the HGU-84/P RWHS insertion loss measurements.

Method

Testing was performed in accordance with (IAW) the American National Standard Microphone-in-Real-Ear and Acoustic Test Fixture Methods for the Measurement of Insertion Loss of Circumaural Hearing Protection Devices (ANSI S12.42-1995 [R1999]), Microphone-in-Real-Ear (MIRE) method. Using miniature microphones positioned at the entrance to the ear canals, noise levels were measured with and without the HGU-56/P AIHS in place. The difference in the two measurements provided a physical measure of the performance (insertion loss) of the device. Evaluations were made with the HGU-56/P AIHS worn using normal-fitting procedures and with the helmet adjusted to a relatively tight, proper fit. Initial evaluations were made with the HGU-56/P AIHS as configured by the manufacturer with the HushKit™ replacement earcup foam, with the SoftSeal™ replacement earcup seal with HushKit™, and with the SoftSeal/HushKit Combo™, a soft replacement earcup with Oregon Aero foam earcup liner.

Subjects

The U.S. Army Aeromedical Research Laboratory (USAARL) recruited 10 volunteer subjects from the USAARL and tenant activities located at the U.S. Army Aviation Warfighting Center, Fort Rucker, Alabama. The purpose of the study was explained to each subject. Each subject read and signed an informed consent form (Appendix A) and then completed a questionnaire regarding his/her hearing health (Appendix B). An otoscopic examination was performed and audiograms were collected on each subject before MIRE testing. At any time during this preliminary process, if a subject failed to qualify for ANSI S12.42-1995 (R1999) MIRE testing, he/she was released. No subjects failed to qualify for the study. Although subjects were permitted to withdraw from the study at any time, no subjects chose to withdraw from the study.

Devices tested

The earcup parts for the standard HGU-56/P AIHS are displayed in Figure 2. The earcup configurations with the HushKit™, SoftSeal™, and SoftSeal/HushKit™ Combo are displayed in Figure 3. To conserve test assets, four HGU-56/P AIHS units were acquired, sizes S, M, L, and XL. The earcups were removed and sets of replacement earcups were configured with HushKit™ and standard earcup seal or with the SoftSeal™ and HushKit™. The configuration of the SoftSeal™ and HushKit™ is hereafter referred to in this report and appendices as SoftSeal™. A fourth configuration with the SoftSeal/HushKit Combo™ also was prepared. The standard speaker (earphone) used in the HGU-56/P AIHS was included in each configuration.

Upon completion of the informed-consent procedure and initial audiometric evaluation, the subject selected the unmodified helmet that provided the best fit with regard to hearing protection and comfort. Following helmet selection, one of the four earcup configurations was

installed into the HGU-56/P AIHS. The fitting of the helmet for all conditions was performed by personnel trained by USAARL Aviation Life Support Equipment (ALSE) specialists.

Equipment

The MIRE test procedure utilized two Knowles Model 1832 electret microphones, two QSC Audio PLX 3402 power amplifiers, three Altec Model 612C speakers, and a personal computer running Microsoft Windows™ 2000 with National Instruments (NI) PCI-4451 Dynamic Signal Acquisition and Generation board (part number 777534-01) and NI LabVIEW™ software package and NI Sound and Vibration Analysis Toolset installed. The sound field created by the described system satisfied the stimulus conditions mandated by ANSI S12.42-1995 (R1999). Control of the test procedure was performed by the Windows™-based computer system running a custom LabVIEW application developed at the USAARL. The test system played broad-band white noise through one channel of the PCI-4451 Dynamic Signal Acquisition and Generation board. Ten seconds of sound were recorded from the two electret microphones through the two analog input channels of the PCI-4451 board. The LabVIEW software analyzed the input noise using the ANSI third-octave band tools available within the Sound and Vibration Analysis Toolset and saved the results on disk for later analysis. The data acquisition system was calibrated daily with an acoustic reference signal produced by a Brüel & Kjær (B&K) Type 4228 pistonphone to provide sound pressure levels referenced to 20 micropascals (µPa), input through a B&K Type 4192 ½-inch microphone, coupled to a B&K Type 2669 preamplifier powered and conditioned by a B&K NEXUS Type 2690 conditioning amplifier.

Procedure

At the start of a test session, each subject was fitted with silicone moldable earplugs (Flents Products, Silaflex™ No. 901) which served both as a hearing protector and a convenient medium for mounting the microphone. The subject then was seated in a hard-walled (reverberant) sound room. A non-directional sound field of wideband noise at approximately 105 dBA sound pressure level (SPL) was presented and unoccluded reference data were collected. To obtain this data, the noise signal was measured by the microphones in the subject's ears, the LabVIEW software performed the two-channel third-octave band analysis, and the results were stored by the computer for later analysis. Twenty-five third-octave bands with center frequencies from 63 Hz to 16,000 Hz were used. The sound field then was turned off and the subject donned the HGU-56/P AIHS with the Oregon Aero earcup replacement products installed. The sound field again was turned on and the noise signal was measured, analyzed, and stored in a like manner. The noise was measured, analyzed, and results stored after the subject doffed and donned the helmet two additional times, thus providing three measures of unoccluded and three measures of occluded noise levels for each subject. The algebraic difference between the mean of the three open and three occluded measurements for each one-third-octave band was defined as the insertion loss of the device IAW ANSI S12.42-1995 (R1999).

The total noise exposure for each subject was approximately 6 minutes for the entire experiment. For the unprotected ear, Department of Defense (DOD) Instruction 6055.12, "Hearing Conservation,"(1991) limits allowable exposure time for a single 24-hour period for 105 dBA SPL (e.g., A-weighted SPL) to 32 minutes. The moldable earplug used in the

measurement extended the maximum allowable exposure time to more than 16 hours. Thus, the subject's hearing was not considered at risk from the noise exposures encountered during this experiment.

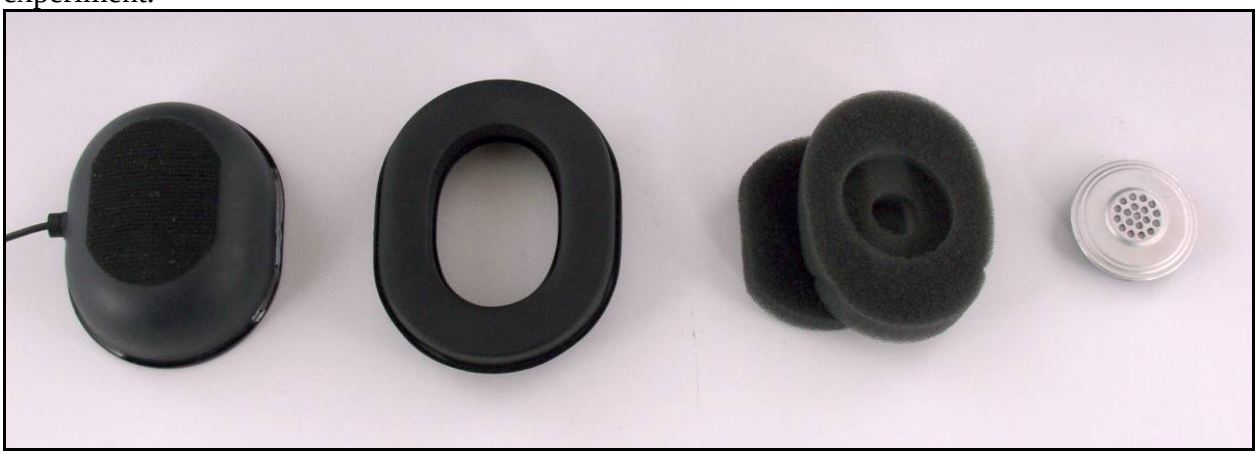


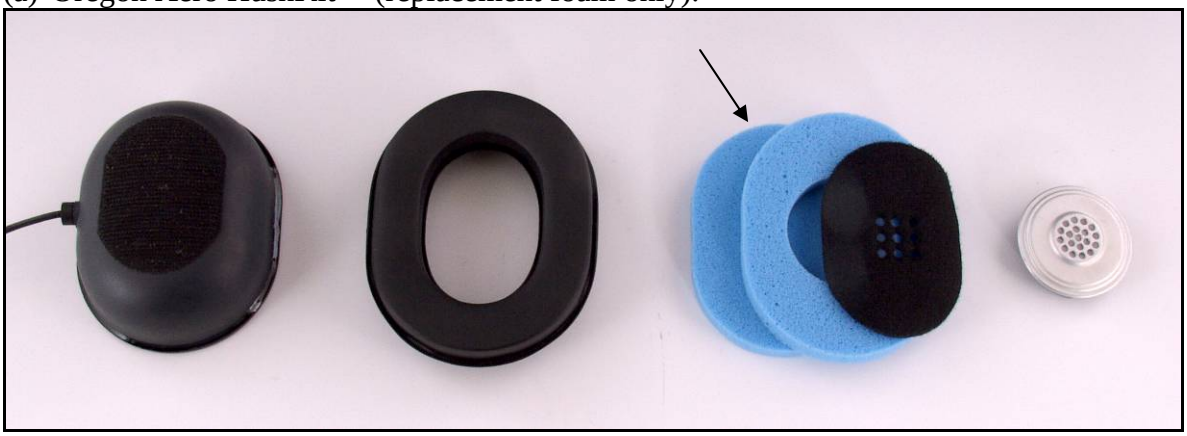
Figure 2. Earcup, earcup seal, insert foam, and speaker (earphone) found in the Gentex HGU-56/P Aircrew Integrated Helmet System.

A reference device (ANSI S12.42-1995, Paragraph 8.1.5) consisting of a string suspended from the test booth ceiling down to a level approximately equal to the elevation of a subject's nose was used to maintain the subject's head at the stimulus reference point, the point where stimulus calibration was performed. During testing, subjects were observed over a closed-circuit television system.

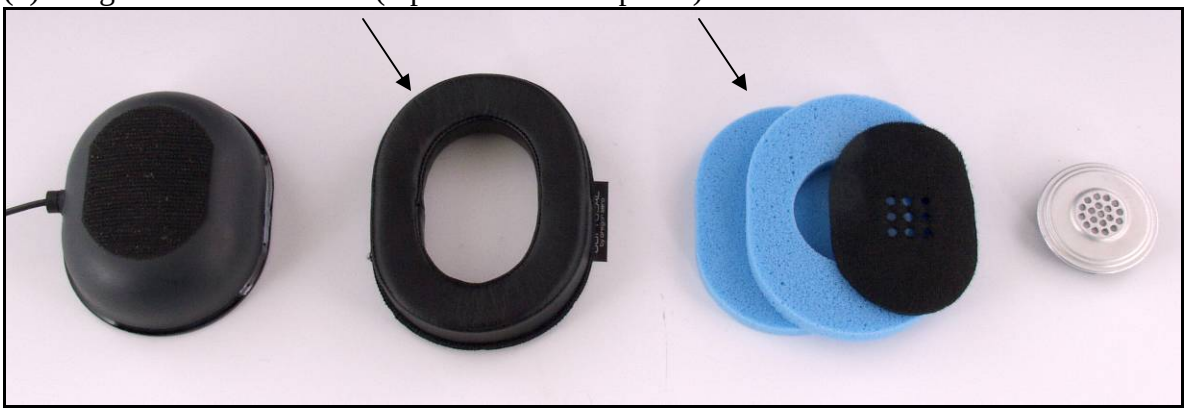
Statistical analyses were performed using STATISTICA® Release 6.1 from StatSoft®, Inc. Post-hoc analyses were performed using the Duncan multiple range test.* The probability of a Type I error was set at 0.05 for all analyses.

* The Duncan's multiple-range test was used for post-hoc comparisons because only a limited set of comparisons, those between real-ear attenuation at threshold at the same test frequencies, were of interest in these analyses (Keppel, 1973).

(a) Oregon Aero HushKit™ (replacement foam only).



(b) Oregon Aero SoftSeal™ (replacement earcup seal) with HushKit™.



(c) Oregon Aero SoftSeal/HushKit Combo™ (soft, non-energy absorbing, replacement earcup).

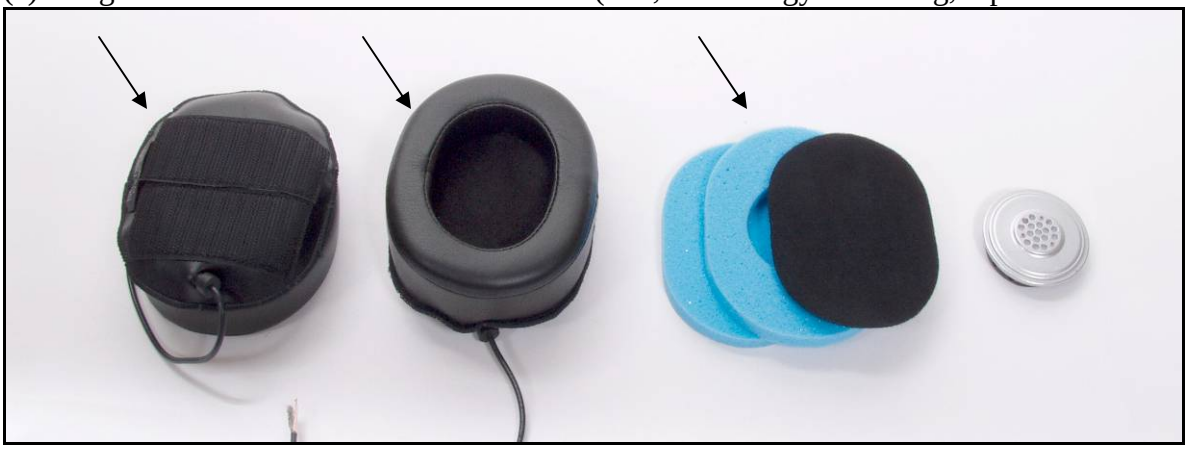


Figure 3. Gentex HGU-56/P Aircrew Integrated Helmet System earcup configuration displayed with the Oregon Aero earcup replacement products evaluated in this study. (a) Oregon Aero HushKit™, (b) Oregon Aero SoftSeal™ with Oregon Aero HushKit™, (c) Oregon Aero SoftSeal/HushKit Combo™. The arrows within each of the photos above denote the replacement product(s).

Results

The individual and summary results for all evaluations are reported in Appendices C and D. For each evaluation, three-way repeated-measures analyses of variance with repeated measures on all factors (Earcup Configuration × Ear × Frequency) were performed on the mean insertion losses for the standard HGU-56/P AIHS configuration and the HGU-56/P AIHS with Oregon Aero earcup replacement products installed. In addition, insertion loss results from left and right earcups were averaged and analyzed using two-way repeated-measures analyses of variance with repeated measures on both factors (Earcup Configuration × Frequency). Analysis of variance summary tables are presented in Appendix E and F. Post-hoc analyses were performed using the Duncan multiple range test and results of the pair-wise multiple contrasts also are presented in Appendix E and F.

The average insertion losses for the HGU-56/P AIHS in standard configuration and when used with the Oregon Aero HushKit™, SoftSeal™ and HushKit™, and SoftSeal/HushKit Combo™ are illustrated in Figures 4 and 5 and tabulated in Tables 1-4. There were statistically significant main effects of frequency in all analyses, which is expected based on our knowledge of the frequency-specific noise attenuation of hearing protectors in general and the HGU-56/P AIHS in particular. Of particular interest, however, were the results of the multiple contrasts which gave definition to the mean insertion-loss differences displayed in each of the figures. A statistically significant post-hoc analysis is indicated by a small vertical mark in the lower portion of each panel in Figures 4 and 5.

The reader should consider the composite results depicted in Figures 4 and 5 when determining the insertion loss effects of the Oregon Aero™ earcup replacement products. Results of the individual ear analyses may result in slightly different conclusions than for the results of the combined (i.e., right and left ear average) insertion losses. In general, however, the results of our analyses demonstrated that helmets equipped with the HushKit™ foam product had lower mean insertion loss values (i.e., less noise attenuation and consequently less presumed hearing protection) than helmets equipped with the standard foam in the midrange frequencies but showed greater insertion loss over the standard foam in the higher frequency range. The Oregon Aero SoftSeal™ replacement earcup seal with the HushKit™ replacement foam provides improvement in insertion loss over most test band frequencies. The Oregon Aero SoftSeal/ HushKit Combo™ provided less insertion loss in the lower and midrange frequencies over that provided by the standard helmet but more insertion loss in the high frequency range (up to 12.5 kHz).

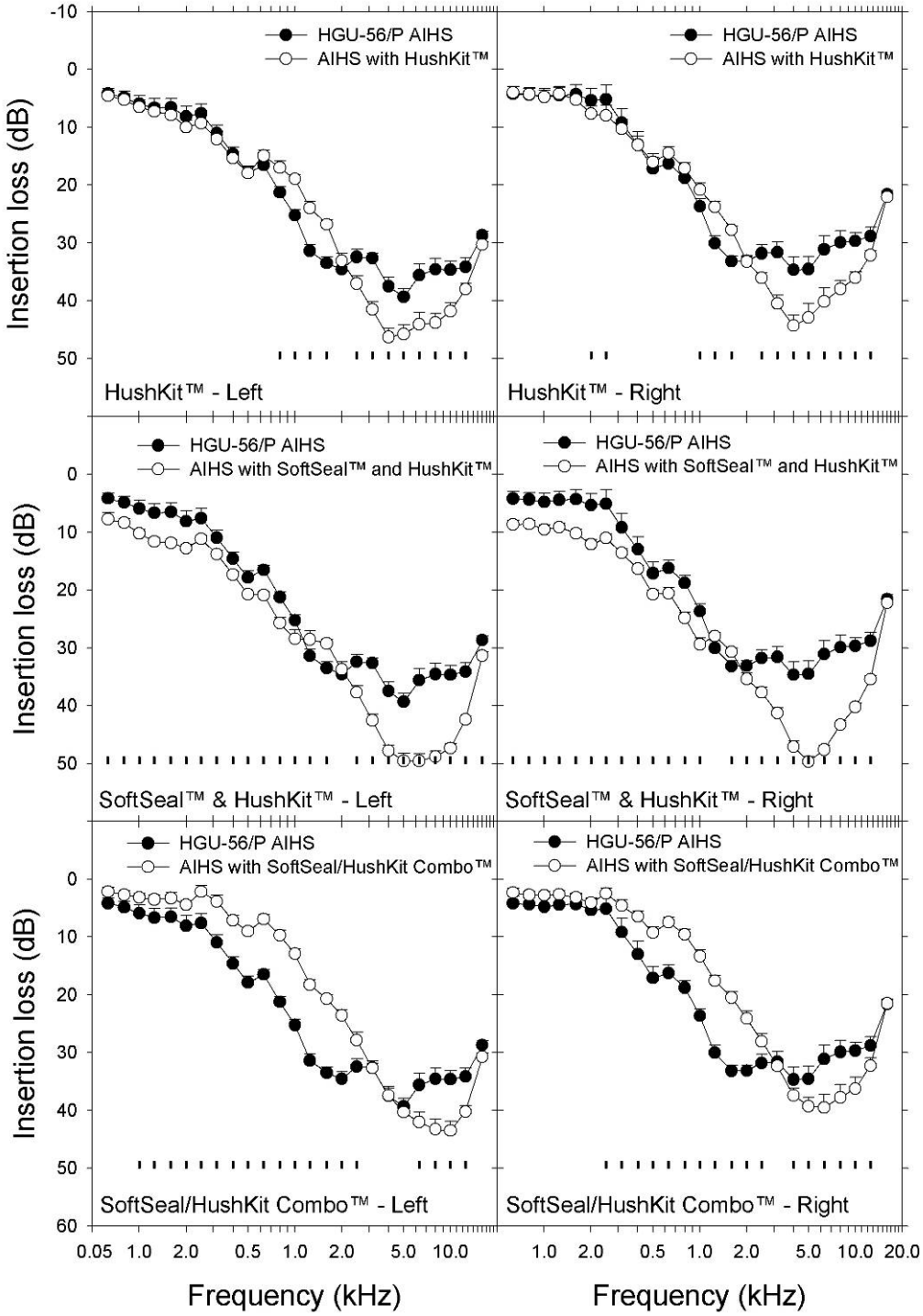


Figure 4. Mean insertion losses for each earcup of the HGU-56/P Aircrew Integrated Helmet System in standard configuration (solid symbols) and with the Oregon Aero earcup replacement products (open symbols).

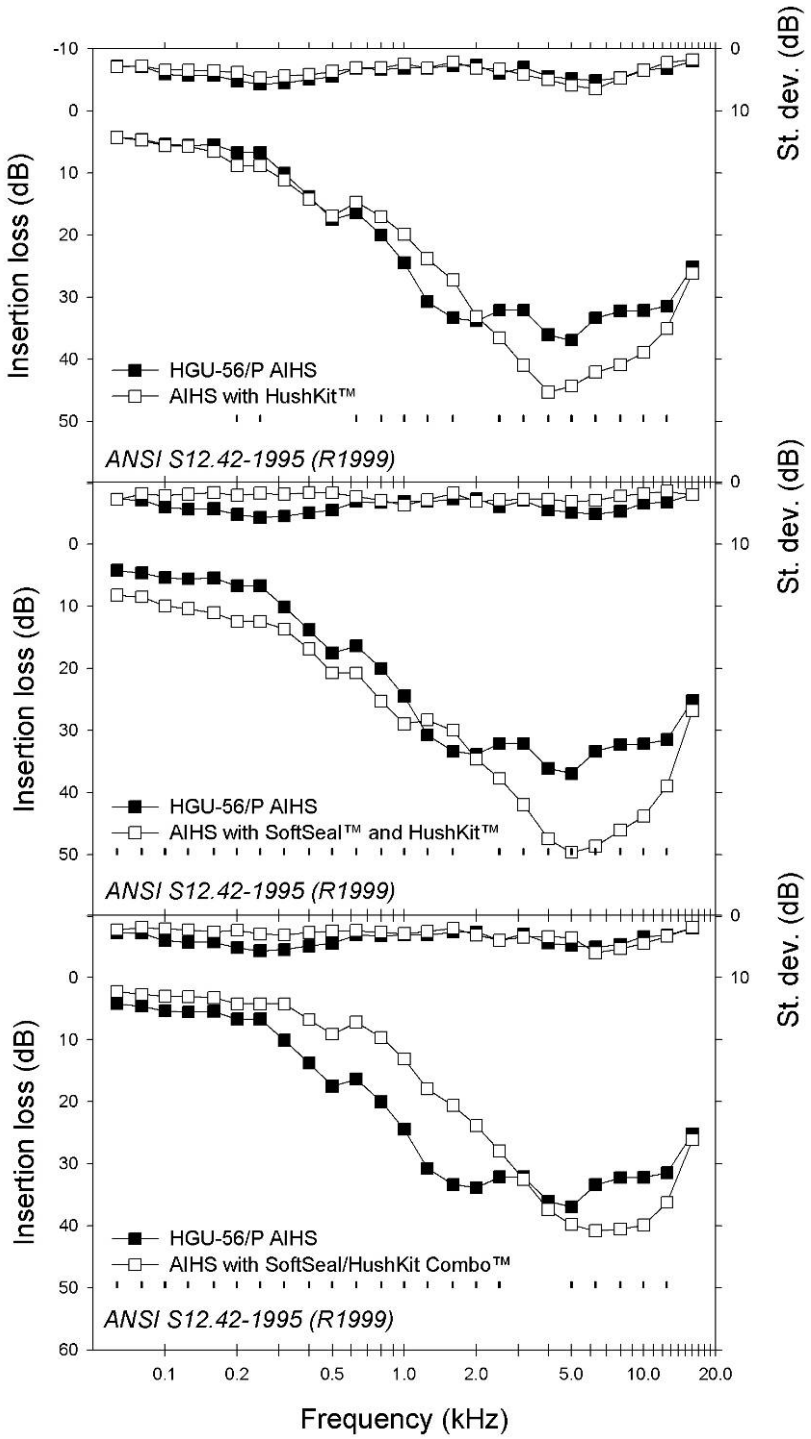


Figure 5. Mean insertion losses for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero HushKit™ (top), SoftSeal™ and HushKit™ (center), and SoftSeal/HushKit Combo™ (bottom).

Table 1.

The mean (n=10) insertion loss values for the HGU-56/P Aircrew Integrated Helmet System in standard configuration using the ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear procedure.

	Test frequency (kHz)								
	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400
Left									
$\overline{X}$	4.17	4.88	5.94	6.67	6.54	8.11	7.60	10.98	14.61
$s_{(df=9)}$	2.81	3.40	4.63	5.09	4.85	5.63	5.31	4.36	3.72
$s_{(df=29)}$	3.12	3.60	4.90	5.48	5.45	6.67	5.79	4.67	4.01
Right									
$\overline{X}$	4.23	4.36	4.77	4.46	4.31	5.34	5.12	9.19	12.98
$s_{(df=9)}$	3.95	3.80	4.72	4.84	5.39	6.34	7.81	7.57	6.86
$s_{(df=29)}$	3.52	3.60	4.55	4.64	4.80	5.99	7.05	7.20	6.62
Combined									
$\overline{X}$	4.20	4.62	5.36	5.57	5.43	6.72	6.36	10.09	13.80
$s_{(df=9)}$	2.77	2.87	4.06	4.33	4.28	5.20	5.68	5.48	4.91

	Test frequency (kHz)								
	0.500	0.630	0.800	1.000	1.250	1.600	2.000	2.500	3.150
Left									
$\overline{X}$	17.89	16.51	21.26	25.24	31.40	33.50	34.56	32.43	32.65
$s_{(df=9)}$	3.64	2.67	3.02	3.06	3.65	3.31	3.91	4.20	2.61
$s_{(df=29)}$	4.06	2.98	3.31	3.51	3.98	3.54	4.01	4.52	3.39
Right									
$\overline{X}$	17.13	16.24	18.77	23.69	30.06	33.17	33.13	31.80	31.58
$s_{(df=9)}$	6.28	4.45	4.01	4.05	4.09	2.90	2.86	4.71	5.62
$s_{(df=29)}$	6.02	4.33	4.10	4.17	4.17	3.01	2.49	4.34	5.15
Combined									
$\overline{X}$	17.51	16.37	20.02	24.46	30.73	33.34	33.84	32.11	32.12
$s_{(df=9)}$	4.49	3.14	3.30	3.12	3.14	2.72	2.66	4.00	2.98

	Test frequency (kHz)								
	4.000	5.000	6.300	8.000	10.000	12.500	16.000	Lin	A-weight
Left									
$\overline{X}$	37.49	39.34	35.61	34.55	34.66	34.13	28.71	15.18	24.46
$s_{(df=9)}$	4.97	4.62	6.33	5.87	4.96	4.83	2.38	4.19	3.99
$s_{(df=29)}$	5.53	5.18	7.07	6.36	5.76	5.30	2.74	4.69	4.47
Right									
$\overline{X}$	34.66	34.54	31.10	29.92	29.68	28.79	21.60	13.44	22.83
$s_{(df=9)}$	7.01	7.04	7.38	6.48	4.47	4.78	2.26	5.63	6.26
$s_{(df=29)}$	6.45	6.84	7.02	6.64	4.59	4.95	2.35	5.14	5.81
Combined									
$\overline{X}$	36.08	36.94	33.35	32.23	32.17	31.46	25.16	14.31	23.65
$s_{(df=9)}$	4.47	4.84	5.11	4.65	3.38	3.22	2.01	4.23	4.64

Table 2.

The mean (n=10) insertion loss values for the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ using the ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear procedure.

	Test frequency (kHz)								
	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400
Left									
$\overline{X}$	4.56	5.24	6.49	7.23	7.87	9.97	9.30	12.04	15.35
$s_{(df=9)}$	2.99	3.07	3.79	3.87	3.77	3.69	4.27	3.99	3.65
$s_{(df=29)}$	3.16	3.14	3.77	3.88	3.74	3.87	4.19	3.91	3.60
Right									
$\overline{X}$	4.00	4.26	4.74	4.22	5.23	7.64	7.96	10.26	13.07
$s_{(df=9)}$	3.42	3.14	3.68	3.62	4.19	4.40	5.65	5.20	4.91
$s_{(df=29)}$	3.54	3.11	3.56	3.46	3.91	4.26	5.42	5.08	4.90
Combined									
$\overline{X}$	4.28	4.75	5.61	5.72	6.55	8.80	8.63	11.15	14.21
$s_{(df=9)}$	2.94	2.76	3.43	3.47	3.55	3.82	4.70	4.39	4.15

	Test frequency (kHz)								
	0.500	0.630	0.800	1.000	1.250	1.600	2.000	2.500	3.150
Left									
$\overline{X}$	17.90	14.94	17.00	18.94	23.95	26.76	33.08	37.02	41.48
$s_{(df=9)}$	3.26	3.06	3.64	2.35	3.78	2.40	4.03	4.30	4.24
$s_{(df=29)}$	3.22	3.03	3.58	2.33	3.70	2.40	3.93	4.19	4.14
Right									
$\overline{X}$	16.01	14.47	17.09	20.78	23.73	27.72	33.20	36.04	40.48
$s_{(df=9)}$	4.38	3.54	3.00	3.46	3.06	2.26	2.76	2.79	4.52
$s_{(df=29)}$	4.33	3.50	2.99	3.39	3.11	2.32	2.83	2.66	4.45
Combined									
$\overline{X}$	16.96	14.70	17.04	19.86	23.84	27.24	33.14	36.53	40.98
$s_{(df=9)}$	3.66	3.06	3.07	2.44	3.09	2.09	3.19	3.28	4.20

	Test frequency (kHz)								
	4.000	5.000	6.300	8.000	10.000	12.500	16.000	Lin	A-weight
Left									
$\overline{X}$	46.27	45.76	44.04	43.80	41.82	37.98	30.28	15.90	23.76
$s_{(df=9)}$	4.69	5.00	6.39	5.04	4.75	3.21	1.61	3.50	3.67
$s_{(df=29)}$	4.63	5.13	6.65	5.51	5.01	3.58	1.60	3.46	3.57
Right									
$\overline{X}$	44.31	42.91	40.14	37.95	35.99	32.13	22.03	14.17	22.94
$s_{(df=9)}$	5.77	7.89	7.58	4.73	3.24	2.50	2.36	4.25	4.36
$s_{(df=29)}$	5.97	7.76	7.46	4.85	3.14	2.70	2.32	4.02	4.17
Combined									
$\overline{X}$	45.29	44.33	42.09	40.88	38.91	35.06	26.15	15.03	23.35
$s_{(df=9)}$	5.02	5.93	6.47	4.74	3.48	2.22	1.76	3.61	3.85

Table 3.

The mean (n=10) insertion loss values for the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ and HushKit™ using the ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear procedure.

	Test frequency (kHz)								
	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400
Left									
$\overline{X}$	7.77	8.41	10.28	11.61	11.86	12.78	11.17	13.81	17.35
$s_{(df=9)}$	3.67	2.24	2.19	1.93	1.52	1.98	1.86	1.76	1.61
$s_{(df=29)}$	3.68	2.23	2.16	1.98	1.58	2.34	1.86	1.74	1.64
Right									
$\overline{X}$	8.67	8.58	9.54	9.16	10.22	12.11	11.02	13.57	16.36
$s_{(df=9)}$	2.27	1.82	2.40	2.26	2.08	2.55	2.11	2.42	2.14
$s_{(df=29)}$	2.35	1.84	2.39	2.29	2.14	2.69	2.11	2.38	2.04
Combined									
$\overline{X}$	8.22	8.49	9.91	10.39	11.04	12.44	11.09	13.69	16.86
$s_{(df=9)}$	2.82	1.87	2.16	1.94	1.68	2.11	1.79	1.97	1.69

	Test frequency (kHz)								
	0.500	0.630	0.800	1.000	1.250	1.600	2.000	2.500	3.150
Left									
$\overline{X}$	20.73	20.89	25.73	28.44	28.56	29.25	33.75	37.74	42.57
$s_{(df=9)}$	1.39	1.83	3.24	4.96	4.74	2.20	4.01	3.60	3.45
$s_{(df=29)}$	1.40	1.88	3.23	4.85	4.61	2.22	3.97	3.53	3.36
Right									
$\overline{X}$	20.74	20.59	24.82	29.41	28.01	30.68	35.42	37.73	41.30
$s_{(df=9)}$	2.25	3.13	3.05	3.36	2.09	2.04	3.39	2.96	2.79
$s_{(df=29)}$	2.22	3.16	2.97	3.41	2.18	2.20	3.65	3.25	3.04
Combined									
$\overline{X}$	20.74	20.74	25.27	28.93	28.29	29.96	34.59	37.74	41.94
$s_{(df=9)}$	1.73	2.33	2.94	3.74	2.85	1.78	3.08	2.89	2.75

	Test frequency (kHz)								
	4.000	5.000	6.300	8.000	10.000	12.500	16.000	Lin	A-weight
Left									
$\overline{X}$	47.81	49.59	49.58	48.81	47.33	42.43	31.35	19.28	28.26
$s_{(df=9)}$	3.19	4.11	4.04	3.08	2.40	1.91	1.89	2.03	2.39
$s_{(df=29)}$	3.13	4.15	4.11	3.31	2.67	2.01	1.83	2.00	2.32
Right									
$\overline{X}$	47.14	49.67	47.61	43.32	40.24	35.46	22.24	18.75	27.84
$s_{(df=9)}$	3.05	2.89	2.31	2.16	2.05	2.07	2.43	2.27	2.77
$s_{(df=29)}$	3.29	3.11	2.85	2.09	2.34	2.12	2.48	2.27	2.75
Combined									
$\overline{X}$	47.47	49.63	48.60	46.07	43.79	38.95	26.79	19.02	28.05
$s_{(df=9)}$	2.75	3.11	2.92	2.25	1.85	1.47	2.04	1.97	2.47

Table 4.

The mean (n=10) insertion loss values for the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ using the ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear procedure.

	Test frequency (kHz)								
	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400
Left									
$\overline{X}$	2.19	2.71	3.19	3.56	3.31	4.47	2.19	3.88	7.18
$s_{(df=9)}$	2.37	2.00	2.35	2.65	3.06	2.56	3.43	3.51	2.75
$s_{(df=29)}$	2.71	2.17	2.49	2.71	3.07	2.94	3.40	3.47	2.79
Right									
$\overline{X}$	2.34	2.76	2.78	2.64	3.19	4.08	2.51	4.58	6.46
$s_{(df=9)}$	2.34	2.02	2.12	2.22	2.43	2.58	2.86	2.95	2.90
$s_{(df=29)}$	2.49	2.04	2.14	2.19	2.47	2.75	2.90	2.88	2.83
Combined									
$\overline{X}$	2.26	2.73	2.98	3.10	3.25	4.27	2.35	4.23	6.82
$s_{(df=9)}$	2.32	1.96	2.15	2.31	2.63	2.39	2.99	3.14	2.76

	Test frequency (kHz)								
	0.500	0.630	0.800	1.000	1.250	1.600	2.000	2.500	3.150
Left									
$\overline{X}$	9.03	6.95	9.75	12.93	18.30	20.72	23.56	27.88	32.68
$s_{(df=9)}$	2.17	2.50	2.85	2.61	2.96	2.14	3.10	4.36	3.73
$s_{(df=29)}$	2.19	2.54	2.84	2.62	3.09	2.28	3.10	4.37	3.67
Right									
$\overline{X}$	9.25	7.48	9.56	13.34	17.58	20.51	24.12	28.07	32.34
$s_{(df=9)}$	2.98	2.70	2.68	3.44	2.75	3.25	4.00	4.20	3.77
$s_{(df=29)}$	2.94	2.76	2.56	3.26	2.70	3.38	4.08	4.50	4.27
Combined									
$\overline{X}$	9.14	7.22	9.65	13.14	17.94	20.62	23.84	27.97	32.51
$s_{(df=9)}$	2.53	2.46	2.71	2.94	2.59	2.06	3.15	4.00	3.51

	Test frequency (kHz)								
	4.000	5.000	6.300	8.000	10.000	12.500	16.000	Lin	A-weight
Left									
$\overline{X}$	37.39	40.32	42.04	43.25	43.49	40.20	30.72	10.62	16.55
$s_{(df=9)}$	3.70	3.42	5.44	5.39	5.03	3.38	1.97	2.88	2.86
$s_{(df=29)}$	3.86	4.35	6.08	6.54	5.78	4.18	2.19	2.87	2.86
Right									
$\overline{X}$	37.40	39.26	39.51	37.78	36.24	32.26	21.50	10.55	16.55
$s_{(df=9)}$	3.67	4.62	7.27	7.18	6.23	4.25	2.37	2.65	3.05
$s_{(df=29)}$	4.34	5.59	7.49	7.34	6.58	4.65	2.67	2.69	3.07
Combined									
$\overline{X}$	37.39	39.79	40.78	40.51	39.87	36.23	26.11	10.59	16.55
$s_{(df=9)}$	3.42	3.57	6.00	5.36	4.51	3.36	1.95	2.73	2.93

A convenient way to interpret the present results is to represent the average insertion loss results in terms of improvement over the insertion loss of the existing helmet. Such a description is illustrated in Figure 6. In this figure, points above the horizontal line at the zero value represent improvements in insertion loss from the Oregon Aero earcup replacement products while points below the horizontal line represent reductions in average insertion loss. An examination of this figure shows the very marginal improvement of insertion loss from replacing the foam lining the inside of the earcup with the Oregon Aero HushKit™ and the general improvement of insertion loss across most frequencies when both the earcup foam and seal were replaced with the Oregon Aero products. The figure also illustrates the relatively poor hearing protection performance of the helmet with the Oregon Aero SoftSeal/HushKit Combo™ replacing the current HGU-56/P AIHS earcup.

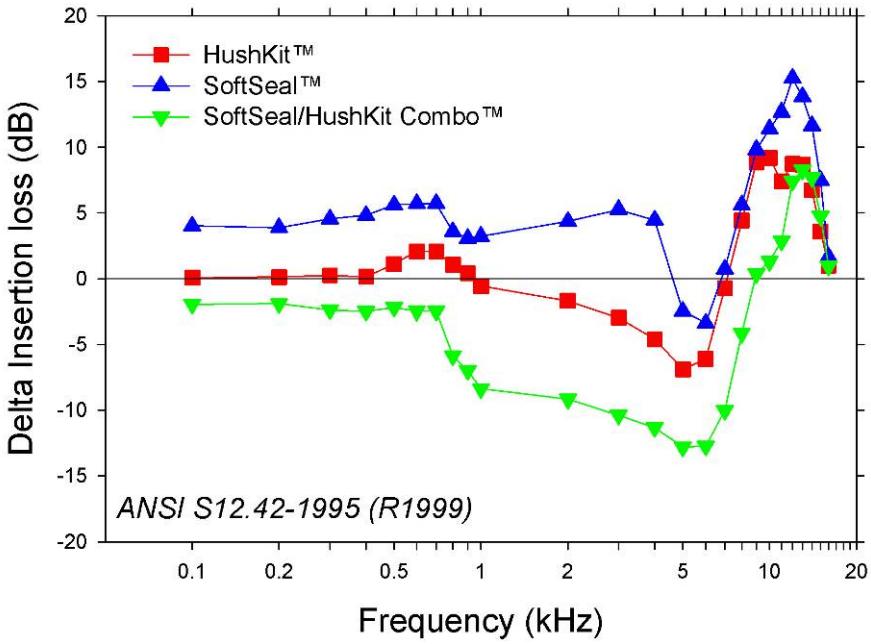


Figure 6. Mean insertion loss improvements of the Oregon Aero HushKit™, the Oregon Aero SoftSeal™, and the Oregon Aero SoftSeal/HushKit Combo™.

For reference, Figure 7 illustrates the mean real-ear attenuation at threshold for the HGU-56/P AIHS with the Oregon Aero replacement earcup components reported by Gordon, Ahroon, and Hill (2005), tested in accordance with ANSI S12.6-1997 (R2002). The insertion loss measurements mirror the real-ear attenuation at threshold results for the Oregon Aero HushKit™ and SoftSeal/HushKit Combo™ with the replacement foam showing very similar to marginal improvements in hearing protection and the replacement earcup and foam showing large reductions in hearing protection. However, the results reported in the present report reveal improvement in insertion loss by replacing the HGU-56/P AIHS earcup seal and foam, a result not evident in the real-ear attenuation at threshold results.

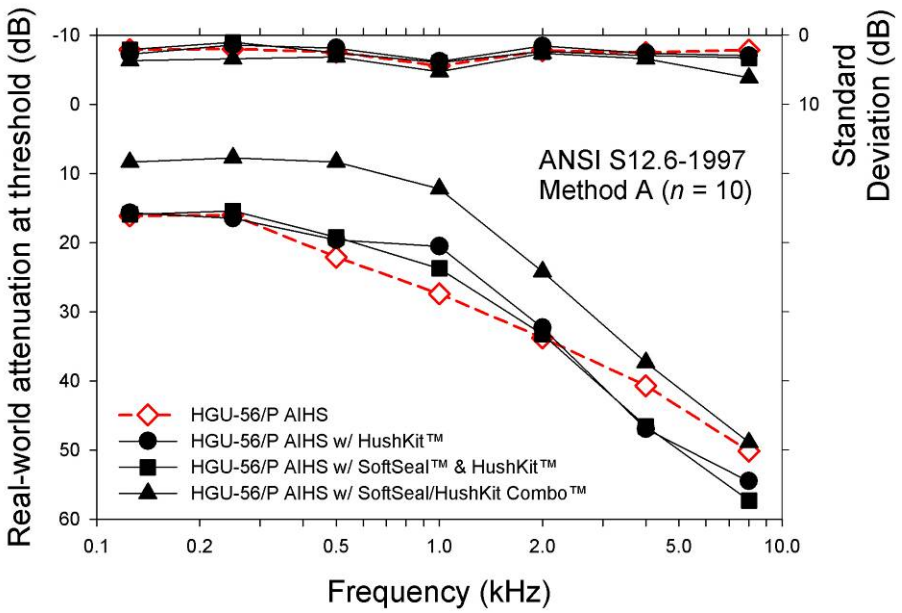


Figure 7. Mean real-ear attenuation at threshold of the HGU-56/P Aircrew Integrated Helmet System in standard configuration compared with the system configured with the Oregon Aero HushKit™, the Oregon Aero SoftSeal™, and the Oregon Aero SoftSeal/HushKit Combo™ (from Gordon, Ahroon, and Hill, 2005).

Discussion

The replacement of the standard HGU-56/P AIHS earcup foam with the Oregon Aero HushKit™ replacement foam or the SoftSeal/HushKit Combo™ does not appreciably improve the noise attenuation of the helmet system when measured by ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear procedures. In fact, the insertion loss of the helmet with the SoftSeal/HushKit Combo™ installed is appreciably poorer than that measured in the unmodified helmet.

Helmets fitted with the Oregon Aero SoftSeal™ replacement earcup seal with HushKit™ replacement foam showed higher insertion losses than the unmodified HGU-56/P AIHS. However, if double hearing protection in the form of earplugs, the Communication Earplug (CEP), or Attenuating Custom Communications Earphone System for Aircrew (ACCES for Aircrew), or similar system are used, the Oregon Aero earcup replacement products may, but most likely will not, improve the hearing protection of the helmet system.

Note that the ANSI S12.42-1995 (R1999) standard used in the conduct of this evaluation is designed for quick, inexpensive, and repeatable measurements of hearing protective devices and not for the measurement of sound attenuation. ANSI S12.42 indicates that "*Neither the MIRE or Acoustic Test Fixture (ATF) procedure … is intended to estimate sound attenuation or the level of hearing protection achieved in the work place.* This standard is intended primarily for use in design, quality control assurance, and compliance with specifications for hearing protection devices. At or below 250 Hz, the MIRE attenuation values often are lower than real-ear values

at threshold" (Paragraph 3). As noted above, the real-ear attenuation at threshold noise attenuation measurements measured in accordance with ANSI S12.6-1997 (R2002) are published in Gordon, Ahroon, and Hill, 2005).

As noted in earlier reports (Ahroon et al., 2004, Gordon, Ahroon, and Hill, 2005), any hazard from a noise field must consider both the noise spectrum and the noise attenuation of a hearing protective system. Using the noise spectrum, the real-ear attenuation at threshold results, and the hearing conservation rules (e.g., 85 dBA considered safe for an eight-hour exposure, 3 dB increase in level resulting in a halving of permissible exposure duration), operational limitations on the noise exposures can be calculated for any combination of noise environment and hearing protection system. The use of the Oregon Aero HushKit™ or SoftSeal™ with HushKit™ provides only marginal changes to the hearing protection in the frequency ranges at which rotary-wing aircraft predominates (i.e., the low frequencies). Furthermore, Berger (1984) notes that the noise attenuation with double protection (helmet and earplugs) at low frequencies (where noise hazards in rotary-wing aircraft are the greatest) are primarily determined by the earplug and that there is little difference in noise attenuation at higher frequencies with any circumaural device. Therefore, any improvement in hearing protection provided by a replacement earcup seal or foam as seen with the Oregon Aero SoftSeal™ and HushKit™ may not alter overall noise protection. In any event, the use of these replacement products does not affect any requirement to use double hearing protection in the form of helmet and earplugs.

The data presented herein are the results of insertion loss measurements and not an endorsement for the use of any earcup replacement products. At the time of this report, none of these replacement products have been authorized for use in the HGU-56/P AIHS. The present report also does not include measurements of other factors that may be affected by substituting earcup parts that must be considered before a safety of flight or airworthiness release could be promulgated by the appropriate DoD agencies. For example, a change in the earcup seal material or substituting an earcup made from soft materials for the standard crushable earcup may affect both helmet retention or the blunt impact performance of the helmet in a crash event. Without these measurements, substitutions for standard helmet components is not advised.

References

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Appendix A.

Volunteer agreement affidavit.

VOLUNTEER AGREEMENT AFFIDAVIT

For use of this form, see AR 70-25 or AR 40-38; the proponent agency is OTSG.

PRIVACY ACT OF 1974

Authority: 10 USC 3013, 44 USC 3101, and 10 USC 1071-1087

Principal Purpose: To document voluntary participation in the Clinical Investigation and Research program. SSN and home address will be used for identification and locating purposes.

Routine Uses: The SSN and home address will be used for identification and locating purposes. Information derived from the study will be used to document the study; implementation of medical programs; adjudication of claims; and for the mandatory reporting of medical conditions as required by law. Information may be furnished to Federal, State, and local agencies.

Disclosure: The furnishing of your SSN and home address is mandatory and necessary to provide identification and to contact you if future information indicates that your health may be adversely affected. Failure to provide the information may preclude your voluntary participation in this investigational study.

PART A -- VOLUNTEER AFFIDAVIT

Volunteer Subjects in Approved Department of Army Research Studies

Volunteers under the provisions of AR 40-38 and AR 70-25 are authorized all necessary medical care for injury or diseases which is the proximate result of their participation in such studies.

I, _____ SSN_____ ,

having full capacity to consent and having attained my _____ birthday, do hereby

volunteer to participate in *the research protocol, Sound Attenuation of the HGU-56/P Aircrew Integrated*

Helmet System with the Oregon Aero HushKit™ and Combo"

under the direction of *CPT Martin B. Robinette, CCC-A*

conducted by *the United States Army Aeromedical Research Laboratory, Fort Rucker, AL 36362-0577*

The implications of my voluntary participation: duration and purpose of the research study; the methods and means by which it is to be conducted; and the inconveniences and hazards that may reasonably be expected have been explained to me by

Dr. William Ahroon, CPT Martin Robinette, Ms. Melinda Hill or Ms. Elmaree Gordon

I have been given an opportunity to ask questions concerning this investigational study. Any such questions were answered to my full and complete satisfaction. Should any further questions arise concerning my rights or study-related injury, I may contact

Dr. Patricia A. LeDuc

at *Human Subject Review Committee, U.S. Army Aeromedical Research Laboratory,*

Building 6901, P.O. Box 620577, Fort Rucker, Alabama 36362-0577 (334) 255-6872

I understand that I may at any time during the course of the study revoke my consent and withdraw from the study without further penalty or loss of benefits; however I may be required (military volunteer) or requested (civilian volunteer) to undergo certain examinations if, in the opinion of the attending physician, such examinations are necessary for my health and well-being. My refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled.

PART B -- TO BE COMPLETED BY INVESTIGATOR

INSTRUCTIONS FOR ELEMENTS OF INFORMED CONSENT: *(Provide a detailed explanation in accordance with Appendix C, AR 40-38 or AR 70-25.)*

You will be participating in a study to measure the sound attenuation of the HGU-56/P Aircrew Integrated Helmet System and HGU-84/P Rotary Wing Helmet System with alternative earcup configurations. All testing is performed in accordance with standards promulgated by the American National Standards Institute (ANSI).

To participate in some aspects of this study, you must have normal hearing relative to the definitions set by ANSI You will be given a hearing test by a certified audiologist or hearing conservationist before your participation in the study. You also will complete a general health screening questionnaire which will include questions on your hearing. Following this introduction, you will be trained in the psychophysical procedure to be used in the evaluations of helmet.

The evaluation will be in two parts. The time required to complete all parts of the evaluation will be approximately 10 hours including training for the real-ear evaluation. (Approximately two hours for training and 90 minutes for each device tested.) Testing may be accomplished over several days.

Real-ear evaluation.—During the testing, you will be asked to adjust (using buttons on a control box) the loudness of a narrow band of noise (that sometimes may be like a “chirping” sound) so that the sound is just barely audible. When the sound is just barely audible, you will press the “SET” button and another trial will start. The number of trials for each stimulus type will depend on the stability of your responses. Seven different sounds will be used. At least five practice “audiograms” will be completed before actual data collection on any helmet configuration will begin. A total of four “audiograms” will be conducted for each device, alternating between devices in place and devices removed. For each condition, two measurements with the helmet on and two measurements with the helmet off will be made.

Microphone-in-Real-Ear evaluation.—You will be fitted with earplugs and a miniature microphone will be attached to the outer portion at the earplug. A brief, but loud, sound will be presented from which you will be protected by the earplugs. Next, you will don the helmet and the procedure will be repeated. You will don and doff the helmet three times.

No risk is anticipated for this study. Sounds presented in the real-ear evaluation (Part 1) are soft and present no risk. Noise exposures in the physical-ear evaluation (Part 2) are brief and are well within the allowable limits of 85 dBA L_{eq} for unprotected noise exposure set forth in DODI 6055.12 (1991). The earplugs worn during physical-ear evaluations provide an additional margin of protection from overexposure. Previous studies of this type have not resulted in any particular discomfort or ill effects to the subjects involved.

You will receive no personal benefit from participation in this study. Participation in this study is strictly voluntary, and you have the right to withdraw at any time without adverse consequences or loss of benefit.

The data from your participation in the study will be kept as confidential as possible. Representatives of the U.S. Army Medical Research and Materiel Command may inspect the records of this test and evaluation. Group data will be summarized in reports, but your name will never be identified with any specific data. None of the information obtained from this study which identifies you in any way will be released to a public forum without your express consent.

I have received a copy of this volunteer consent form and have read and fully understand its contents. I am signing this form voluntarily.

☐ I do ☐ do not (*check one and initial*) consent to the inclusion of this form in my outpatient medical treatment record.

SIGNATURE OF VOLUNTEER DATE

PERMANENT ADDRESS OF VOLUNTEER TYPED NAME OF WITNESS

Appendix B.

Volunteer screening questionnaire.

Volunteer Screening Questionnaire

"Sound Attenuation of the HGU-56/P Aircrew Integrated Helmet System with the Oregon Aero HushKit™. SoftSeal™, and Combo™"

Name _____ SSN: _____

Age: _____ DOB: _____ Height _____ Weight _____

General Health

Do you feel that you are currently in good health?	NO	YES
Do you have any medical waivers or profiles?	NO	YES
Have you ever had any problems with hearing?	NO	YES
Have you ever had any problems with balance, dizziness, motion sickness, ear pain or ear discharge?	NO	YES
Do you have any allergies?	NO	YES
Are you currently suffering from any illnesses?	NO	YES
Have you taken any medication within the past three days?	NO	YES

Following to be completed by audiologist or audiometric technician only

Earcanal Size: _____ Bitragion width: _____ mm. Head height: _____ mm

Audiometric Screening

Frequency	125	250	500	1000	2000	4000	8000
Pre-test	_____	_____	_____	_____	_____	_____	_____

_____

Audiologist/CAOHC Tech Signature & Date

Following to be completed by aeromedical monitor only

Anatomical Features	GO	NO-GO	Reason for disqualification:
Otoscopic Inspection	GO	NO-GO	
Pretest Audiogram	GO	NO-GO	

_____

Principal Investigator's Signature & Date

Appendix C.

Microphone-in-Real-Ear raw data for all subjects.

Table C-1. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 1.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.1	87.9	83.9	86.6	87.7	90.6	87.9	91.3	89.5	89.4	95.7	94.2	95.4
Test 2	86.4	88.2	84.0	86.4	87.2	88.4	88.1	93.0	92.3	92.5	93.7	94.8	94.7
Test 3	84.2	88.1	84.3	87.1	87.5	91.2	87.6	91.7	90.8	91.4	94.0	94.4	94.7
Mean	84.9	88.1	84.1	86.7	87.5	90.0	87.9	92.0	90.9	91.1	94.5	94.4	94.9
Occluded													
Test 1	72.0	76.0	73.5	74.1	73.9	74.5	73.5	75.4	72.2	66.7	71.1	66.5	61.7
Test 2	74.8	77.3	74.0	74.2	73.7	72.6	73.4	75.9	73.1	68.4	70.9	66.4	62.7
Test 3	72.7	77.4	74.4	74.7	73.7	74.2	74.8	75.0	71.5	67.0	71.1	67.7	63.6
Mean	73.1	76.9	74.0	74.3	73.8	73.8	73.9	75.5	72.3	67.4	71.0	66.9	62.7
Left Insertion Loss	**11.8**	**11.2**	**10.1**	**12.4**	**13.7**	**16.2**	**13.9**	**16.6**	**18.6**	**23.7**	**23.4**	**27.6**	**32.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.9	88.1	83.5	86.6	88.9	88.8	87.9	90.8	89.4	91.3	93.2	91.5	94.9
Test 2	87.3	88.4	83.2	85.9	88.8	86.9	87.9	90.9	90.5	92.5	92.5	91.2	94.6
Test 3	85.1	88.4	83.7	86.8	88.6	88.4	87.3	90.3	89.1	91.6	92.9	92.2	95.2
Mean	85.8	88.3	83.4	86.4	88.8	88.0	87.7	90.7	89.7	91.8	92.9	91.6	94.9
Occluded													
Test 1	70.0	73.9	70.9	76.2	75.8	73.7	70.7	73.7	70.3	67.5	67.9	61.6	54.0
Test 2	73.8	75.4	71.4	75.7	76.3	72.0	72.0	74.2	71.5	67.7	67.9	59.9	54.1
Test 3	72.5	75.9	72.1	76.6	77.6	74.2	72.4	73.9	68.9	67.3	67.1	61.2	54.5
Mean	72.1	75.1	71.5	76.2	76.6	73.3	71.7	73.9	70.2	67.5	67.6	60.9	54.2
Right Insertion Loss	**13.7**	**13.2**	**12.0**	**10.2**	**12.2**	**14.7**	**16.0**	**16.7**	**19.5**	**24.3**	**25.3**	**30.7**	**40.7**
Insertion Loss	**12.7**	**12.2**	**11.1**	**11.3**	**12.9**	**15.5**	**15.0**	**16.6**	**19.0**	**24.0**	**24.3**	**29.1**	**36.5**

Table C-1. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 1.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.7	94.5	96.7	99.1	100.1	104.0	101.9	99.6	96.7	90.4	87.7	78.1	110	110
Test 2	92.9	95.1	96.3	98.1	100.1	102.9	101.8	99.5	96.1	90.6	89.0	79.5	110	110
Test 3	93.0	94.5	95.1	98.4	99.9	102.8	101.6	99.1	95.8	90.8	88.9	79.2	109	110
Mean	92.9	94.7	96.1	98.5	100.1	103.2	101.8	99.4	96.2	90.6	88.5	78.9		
Occluded														
Test 1	53.4	57.3	57.4	55.9	59.9	57.6	55.2	48.0	45.4	42.2	47.1	44.3	84	76
Test 2	55.0	57.5	57.5	57.1	61.0	59.3	55.7	49.4	44.5	45.7	51.8	44.8	85	76
Test 3	57.4	57.5	57.7	57.9	61.6	59.3	56.1	48.7	43.4	42.2	44.8	44.0	85	76
Mean	55.3	57.4	57.5	57.0	60.8	58.8	55.6	48.7	44.4	43.4	47.9	44.4		
Left Insertion Loss	**37.6**	**37.3**	**38.5**	**41.5**	**39.2**	**44.5**	**46.1**	**50.7**	**51.8**	**47.3**	**40.6**	**34.6**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.4	94.4	97.0	98.4	101.2	105.4	104.2	102.9	98.5	94.3	90.1	80.6	111	112
Test 2	92.8	95.5	98.1	99.1	100.2	105.5	105.5	103.9	99.5	95.2	90.4	82.2	112	113
Test 3	92.7	95.0	98.0	99.3	101.0	106.1	105.4	103.6	98.9	95.7	91.3	82.5	112	113
Mean	92.6	95.0	97.7	98.9	100.8	105.7	105.0	103.4	99.0	95.1	90.6	81.8		
Occluded														
Test 1	51.7	56.7	62.5	63.6	61.6	62.6	55.6	56.9	48.2	51.7	52.2	54.4	83	76
Test 2	52.1	55.4	60.6	63.1	63.6	63.1	56.8	54.9	48.4	49.3	51.9	54.4	84	76
Test 3	50.8	54.0	56.7	62.1	64.4	63.2	57.3	54.3	48.1	49.6	52.0	54.4	84	76
Mean	51.6	55.3	60.0	62.9	63.2	63.0	56.6	55.3	48.2	50.2	52.0	54.4		
Right Insertion Loss	**41.0**	**39.6**	**37.7**	**36.0**	**37.6**	**42.7**	**48.5**	**48.1**	**50.7**	**44.9**	**38.6**	**27.3**		
Insertion Loss	**39.3**	**38.4**	**38.1**	**38.8**	**38.4**	**43.6**	**47.3**	**49.4**	**51.2**	**46.1**	**39.6**	**30.9**		

Table C-2. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 2.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.4	87.8	83.7	86.6	87.6	89.9	87.0	90.4	91.0	91.3	94.9	94.7	93.8
Test 2	84.3	87.9	83.9	86.7	87.7	89.8	87.3	90.4	90.8	91.3	94.9	94.7	94.0
Test 3	86.6	88.2	83.8	86.4	87.6	87.2	87.3	91.8	92.8	92.9	95.2	95.3	94.2
Mean	85.1	87.9	83.8	86.6	87.6	89.0	87.2	90.9	91.5	91.8	95.0	94.9	94.0
Occluded													
Test 1	73.5	77.4	72.2	72.7	74.3	74.9	73.3	72.3	69.4	67.3	69.8	63.0	56.2
Test 2	74.6	77.7	72.1	73.6	74.3	75.5	74.2	72.4	69.2	67.0	70.0	63.0	56.0
Test 3	74.5	77.8	72.7	73.6	74.6	76.0	74.3	73.4	70.2	68.2	70.1	63.2	56.8
Mean	74.2	77.6	72.3	73.3	74.4	75.5	74.0	72.7	69.6	67.5	70.0	63.1	56.3
Left Insertion Loss	**10.9**	**10.3**	**11.5**	**13.2**	**13.3**	**13.5**	**13.3**	**18.2**	**21.9**	**24.3**	**25.0**	**31.8**	**37.7**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.9	87.8	83.3	86.8	88.2	89.5	86.7	91.2	89.8	92.3	93.8	92.5	94.9
Test 2	85.0	87.9	83.5	87.0	88.4	89.6	86.9	91.2	89.8	92.4	93.7	92.6	94.6
Test 3	87.2	88.1	83.1	86.4	88.4	88.9	87.4	92.2	90.8	92.0	92.2	92.3	93.7
Mean	85.7	87.9	83.3	86.7	88.4	89.3	87.0	91.5	90.2	92.2	93.2	92.4	94.4
Occluded													
Test 1	76.5	79.3	75.5	78.3	79.8	79.6	77.3	74.9	70.7	68.6	73.6	70.6	71.0
Test 2	83.6	85.2	80.7	82.5	83.0	83.4	80.4	78.0	72.7	70.3	75.1	71.6	71.4
Test 3	76.7	79.4	75.4	78.4	79.7	79.7	77.4	75.8	70.9	68.5	73.7	71.4	72.0
Mean	78.9	81.3	77.2	79.7	80.8	80.9	78.3	76.2	71.4	69.1	74.1	71.2	71.4
Right Insertion Loss	**6.8**	**6.6**	**6.1**	**7.0**	**7.5**	**8.4**	**8.6**	**15.3**	**18.8**	**23.1**	**19.1**	**21.3**	**23.0**
Insertion Loss	**8.8**	**8.5**	**8.8**	**10.1**	**10.4**	**11.0**	**10.9**	**16.8**	**20.4**	**23.7**	**22.1**	**26.5**	**30.3**

Table C-2. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 2.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.8	94.3	95.2	97.2	98.1	100.3	99.2	97.8	94.2	91.2	88.9	78.0	108	109
Test 2	92.1	94.0	95.1	96.9	97.8	100.4	98.8	97.3	94.0	91.7	89.7	78.7	108	108
Test 3	91.2	95.0	95.6	97.5	97.4	100.3	98.9	96.4	93.5	92.8	90.3	79.9	108	108
Mean	91.7	94.4	95.3	97.2	97.8	100.3	99.0	97.1	93.9	91.9	89.6	78.9		
Occluded														
Test 1	48.8	51.1	56.1	58.7	61.6	56.9	55.7	48.4	44.9	42.0	43.7	45.0	84	75
Test 2	48.4	51.2	56.6	60.1	61.9	58.2	54.7	48.9	45.2	42.3	44.2	45.6	84	75
Test 3	50.0	51.7	56.2	58.5	63.0	58.7	56.1	49.0	47.3	45.0	46.3	45.0	85	75
Mean	49.1	51.3	56.3	59.1	62.2	57.9	55.5	48.8	45.8	43.1	44.8	45.2		
Left Insertion Loss	**42.6**	**43.1**	**39.0**	**38.1**	**35.6**	**42.4**	**43.5**	**48.4**	**48.0**	**48.8**	**44.9**	**33.7**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	93.9	95.9	98.1	98.5	100.6	99.9	98.2	95.1	97.4	92.0	78.4	109	109
Test 2	92.3	93.6	96.0	98.0	98.3	100.3	99.5	96.8	94.3	97.6	93.8	80.1	109	109
Test 3	91.5	94.1	96.3	97.8	98.3	99.8	98.9	95.6	94.1	97.1	94.0	81.5	108	108
Mean	92.1	93.9	96.1	98.0	98.4	100.2	99.4	96.9	94.5	97.3	93.3	80.0		
Occluded														
Test 1	67.9	68.7	62.0	63.8	62.4	60.0	54.9	50.6	52.6	53.8	53.5	54.5	88	80
Test 2	68.0	69.2	61.7	62.7	63.7	60.7	55.4	54.2	58.9	59.3	57.4	55.1	92	82
Test 3	67.1	68.5	62.5	62.2	61.5	57.5	52.6	53.8	60.1	59.1	58.4	55.4	88	80
Mean	67.6	68.8	62.1	62.9	62.5	59.4	54.3	52.9	57.2	57.4	56.4	55.0		
Right Insertion Loss	**24.5**	**25.1**	**34.0**	**35.1**	**35.9**	**40.9**	**45.1**	**44.0**	**37.3**	**39.9**	**36.8**	**25.0**		
Insertion Loss	**33.5**	**34.1**	**36.5**	**36.6**	**35.7**	**41.6**	**44.3**	**46.2**	**42.7**	**44.4**	**40.9**	**29.3**		

Table C-3. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 3.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	86.9	88.4	83.8	85.9	87.2	85.9	88.1	89.7	90.4	90.8	95.2	94.3	93.5
Test 2	87.1	88.7	84.0	86.4	87.7	86.3	88.2	89.9	90.6	91.2	94.7	93.8	93.1
Test 3	85.1	88.6	84.3	86.8	87.8	88.9	87.9	89.3	90.0	90.2	94.7	95.2	94.0
Mean	86.4	88.6	84.0	86.4	87.6	87.1	88.1	89.6	90.3	90.7	94.9	94.4	93.5
Occluded													
Test 1	76.1	77.9	70.8	68.5	71.5	69.1	72.4	71.1	69.7	68.5	70.5	61.5	56.3
Test 2	74.5	78.4	72.1	69.7	71.9	72.8	72.9	71.6	68.5	67.1	69.7	63.4	56.7
Test 3	75.0	76.8	70.4	68.6	69.7	68.2	70.6	69.7	65.9	64.4	66.8	59.0	52.6
Mean	75.2	77.7	71.1	69.0	71.0	70.0	72.0	70.8	68.0	66.6	69.0	61.3	55.2
Left Insertion Loss	**11.2**	**10.9**	**12.9**	**17.4**	**16.5**	**17.0**	**16.1**	**18.8**	**22.3**	**24.1**	**25.9**	**33.1**	**38.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.5	88.2	82.4	84.9	88.8	88.8	89.9	91.2	90.6	93.2	95.5	91.0	92.3
Test 2	87.4	88.2	82.4	85.3	88.6	89.2	89.5	92.1	91.1	93.3	94.6	91.3	92.0
Test 3	85.3	88.2	83.0	86.1	88.5	88.8	88.8	91.0	90.0	92.7	95.8	92.4	93.0
Mean	86.7	88.2	82.6	85.4	88.6	88.9	89.4	91.5	90.5	93.0	95.3	91.6	92.4
Occluded													
Test 1	77.2	78.2	72.2	74.8	76.7	74.8	76.8	74.3	70.3	68.8	69.4	64.2	59.9
Test 2	74.4	77.6	72.1	75.1	76.6	74.1	75.2	72.8	68.0	67.3	69.8	63.5	59.6
Test 3	75.0	76.5	71.2	73.4	75.2	70.9	73.0	70.6	66.8	66.0	66.0	59.1	55.7
Mean	75.5	77.4	71.8	74.4	76.2	73.3	75.0	72.5	68.4	67.4	68.4	62.3	58.4
Right Insertion Loss	**11.2**	**10.8**	**10.8**	**11.0**	**12.5**	**15.7**	**14.4**	**18.9**	**22.2**	**25.7**	**26.9**	**29.3**	**34.0**
Insertion Loss	**11.2**	**10.8**	**11.9**	**14.2**	**14.5**	**16.4**	**15.2**	**18.9**	**22.2**	**24.9**	**26.4**	**31.2**	**36.1**

Table C-3. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 3.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.0	94.2	94.9	98.9	97.9	99.2	98.3	95.4	91.7	92.3	90.6	79.7	108	108
Test 2	91.5	95.1	96.7	98.5	97.8	99.3	98.9	94.5	91.8	91.9	89.8	79.6	108	108
Test 3	91.8	94.7	95.4	97.5	97.5	99.8	98.3	95.1	92.3	92.2	89.8	79.5	108	108
Mean	91.4	94.7	95.7	98.3	97.7	99.4	98.5	95.0	91.9	92.1	90.1	79.6		
Occluded														
Test 1	52.1	55.3	56.4	57.9	61.3	55.6	52.9	46.8	45.9	44.8	47.6	49.7	83	74
Test 2	53.0	54.8	56.7	57.6	61.2	56.7	54.4	45.6	45.4	45.1	48.1	49.6	83	74
Test 3	50.5	52.6	51.6	53.8	57.6	53.3	49.5	43.6	44.2	44.1	46.2	48.5	82	72
Mean	51.8	54.2	54.9	56.4	60.0	55.2	52.3	45.3	45.2	44.7	47.3	49.3		
Left Insertion Loss	**39.6**	**40.4**	**40.8**	**41.9**	**37.7**	**44.2**	**46.2**	**49.7**	**46.7**	**47.5**	**42.8**	**30.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	90.9	93.2	96.3	99.3	99.2	100.0	98.7	99.6	95.4	94.0	91.0	81.9	109	109
Test 2	91.2	94.6	96.7	98.9	98.3	100.2	98.6	98.6	95.3	94.3	91.3	81.7	109	109
Test 3	91.2	93.4	95.7	98.4	98.1	98.9	98.5	98.7	95.2	94.3	91.5	81.6	108	108
Mean	91.1	93.8	96.2	98.9	98.5	99.7	98.6	98.9	95.3	94.2	91.3	81.7		
Occluded														
Test 1	51.8	57.6	59.9	60.8	60.0	55.7	59.5	52.2	50.8	59.0	58.3	57.9	86	76
Test 2	53.2	56.8	58.1	59.5	59.9	54.6	58.6	49.4	49.7	52.2	54.6	57.1	85	75
Test 3	50.2	52.7	54.7	54.9	56.7	52.2	54.3	48.7	49.2	51.0	52.5	55.0	83	73
Mean	51.7	55.7	57.6	58.4	58.9	54.2	57.4	50.1	49.9	54.1	55.2	56.6		
Right Insertion Loss	**39.4**	**38.1**	**38.6**	**40.5**	**39.7**	**45.5**	**41.2**	**48.8**	**45.4**	**40.2**	**36.1**	**25.1**		
Insertion Loss	**39.5**	**39.2**	**39.7**	**41.2**	**38.7**	**44.9**	**43.7**	**49.3**	**46.0**	**43.8**	**39.4**	**27.7**		

Table C-4. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 4.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.0	87.8	83.9	87.0	87.8	90.6	87.1	91.8	91.4	91.3	93.8	94.1	93.5
Test 2	86.2	87.9	83.8	86.6	87.5	87.6	88.5	93.0	93.3	92.7	94.4	94.5	93.5
Test 3	84.4	88.2	84.2	87.4	88.2	90.8	87.6	90.9	91.7	91.3	94.1	94.1	92.9
Mean	84.9	88.0	84.0	87.0	87.8	89.6	87.7	91.9	92.1	91.8	94.1	94.3	93.3
Occluded													
Test 1	76.7	79.6	73.2	73.7	76.3	78.2	73.8	73.3	69.6	65.5	71.5	67.0	66.7
Test 2	78.0	79.4	72.8	73.3	76.1	74.6	74.7	73.8	70.3	66.6	72.9	67.4	66.1
Test 3	75.6	78.5	73.7	74.4	75.2	77.1	75.2	72.9	69.4	65.3	72.2	68.3	66.5
Mean	76.8	79.2	73.2	73.8	75.9	76.7	74.5	73.3	69.8	65.8	72.2	67.6	66.4
Left Insertion Loss	**8.1**	**8.8**	**10.8**	**13.2**	**12.0**	**13.0**	**13.2**	**18.5**	**22.4**	**26.0**	**21.9**	**26.7**	**26.9**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.0	88.1	83.7	87.0	88.5	89.5	86.6	90.1	89.5	91.7	92.7	91.5	94.3
Test 2	87.3	88.4	83.2	86.2	88.7	88.4	87.8	91.5	90.7	91.9	92.2	91.8	93.8
Test 3	85.2	88.4	84.0	87.4	88.7	89.7	86.7	90.6	89.8	91.2	92.1	92.3	95.0
Mean	85.8	88.3	83.6	86.9	88.6	89.2	87.0	90.7	90.0	91.6	92.4	91.9	94.4
Occluded													
Test 1	75.2	77.4	72.0	75.3	75.7	73.4	73.8	71.5	67.9	66.4	66.8	59.8	57.1
Test 2	76.5	77.0	71.0	75.1	76.3	72.0	75.4	72.0	68.4	67.6	65.8	59.6	55.9
Test 3	73.5	76.0	70.9	76.1	75.4	73.4	73.6	72.8	67.3	67.3	65.8	59.4	58.0
Mean	75.1	76.8	71.3	75.5	75.8	72.9	74.3	72.1	67.9	67.1	66.2	59.6	57.0
Right Insertion Loss	**10.8**	**11.5**	**12.3**	**11.3**	**12.8**	**16.3**	**12.8**	**18.6**	**22.2**	**24.5**	**26.2**	**32.3**	**37.4**
Insertion Loss	**9.4**	**10.1**	**11.5**	**12.3**	**12.4**	**14.6**	**13.0**	**18.6**	**22.3**	**25.2**	**24.0**	**29.5**	**32.1**

Table C-4. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 4.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.2	92.8	95.1	97.4	100.2	101.7	99.9	97.4	92.7	93.7	90.6	79.3	109	109
Test 2	91.8	93.8	95.0	97.2	99.1	100.6	99.2	96.6	92.6	93.9	91.5	80.1	108	109
Test 3	91.9	92.7	95.2	96.8	99.3	101.4	98.7	96.1	93.2	94.1	90.0	79.2	108	108
Mean	92.0	93.1	95.1	97.2	99.6	101.2	99.3	96.7	92.8	93.9	90.7	79.5		
Occluded														
Test 1	57.3	60.5	60.5	58.8	59.9	55.8	55.3	46.9	47.2	44.9	47.2	49.2	86	76
Test 2	61.7	65.1	63.1	58.6	60.4	58.8	53.1	50.4	44.3	47.6	47.4	48.4	86	77
Test 3	63.8	66.0	63.0	58.9	60.5	58.3	52.7	50.4	44.6	45.3	45.5	47.2	85	77
Mean	60.9	63.9	62.2	58.8	60.3	57.6	53.7	49.2	45.4	45.9	46.7	48.3		
Left Insertion Loss	**31.0**	**29.2**	**32.9**	**38.4**	**39.3**	**43.6**	**45.6**	**47.5**	**47.4**	**48.0**	**44.0**	**31.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.9	93.9	96.5	98.9	99.9	101.9	100.5	98.1	97.0	91.4	91.7	82.4	109	110
Test 2	92.8	94.0	96.0	99.0	99.7	101.5	100.6	98.5	96.4	91.4	91.1	80.2	109	110
Test 3	92.6	94.0	95.6	98.4	99.6	102.3	100.7	98.7	97.3	91.8	90.6	79.9	109	110
Mean	92.8	94.0	96.0	98.8	99.7	101.9	100.6	98.4	96.9	91.5	91.1	80.8		
Occluded														
Test 1	54.6	60.6	64.0	65.3	65.9	63.6	59.0	52.8	49.1	51.7	54.4	57.0	84	76
Test 2	51.8	57.4	58.3	61.4	61.9	57.0	53.9	50.3	49.7	51.2	54.2	56.7	84	75
Test 3	54.0	58.5	58.1	60.5	60.7	57.5	54.3	50.9	49.4	51.1	53.8	56.2	84	74
Mean	53.5	58.8	60.1	62.4	62.8	59.3	55.7	51.4	49.4	51.3	54.1	56.6		
Right Insertion Loss	**39.3**	**35.2**	**35.9**	**36.4**	**36.9**	**42.5**	**44.9**	**47.1**	**47.5**	**40.2**	**37.0**	**24.2**		
Insertion Loss	**35.2**	**32.2**	**34.4**	**37.4**	**38.1**	**43.1**	**45.2**	**47.3**	**47.5**	**44.1**	**40.5**	**27.7**		

Table C-5. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 5.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	86.9	88.4	84.0	86.4	87.3	86.8	87.5	90.7	91.3	92.3	95.7	93.4	93.2
Test 2	84.8	88.5	84.4	87.1	87.7	89.9	86.6	89.1	89.8	91.0	95.2	94.6	94.8
Test 3	87.1	88.6	84.2	86.5	87.6	86.7	87.6	90.4	91.6	92.5	96.0	93.9	93.7
Mean	86.2	88.5	84.2	86.7	87.5	87.8	87.3	90.1	90.9	91.9	95.6	94.0	93.9
Occluded													
Test 1	76.1	77.8	72.6	74.2	73.9	76.9	74.6	71.8	67.7	64.5	68.9	66.4	64.3
Test 2	76.1	78.3	73.5	75.5	74.4	77.0	75.0	72.9	68.6	65.6	69.3	67.3	64.5
Test 3	76.4	78.8	73.3	75.0	74.1	76.0	75.5	72.8	67.9	65.6	69.9	66.5	63.1
Mean	76.2	78.3	73.1	74.9	74.1	76.6	75.0	72.5	68.1	65.2	69.4	66.7	64.0
Left Insertion Loss	**10.0**	**10.2**	**11.1**	**11.8**	**13.4**	**11.2**	**12.2**	**17.6**	**22.8**	**26.7**	**26.3**	**27.2**	**29.9**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.3	88.4	83.3	86.0	88.6	89.0	87.9	91.4	90.4	92.8	94.6	91.2	93.3
Test 2	85.2	88.4	83.9	86.9	88.5	90.3	87.2	90.9	89.7	92.2	94.5	91.9	94.6
Test 3	87.5	88.4	83.4	86.1	88.6	89.4	87.8	91.8	90.9	93.1	94.8	91.7	93.2
Mean	86.7	88.4	83.6	86.3	88.6	89.6	87.6	91.3	90.3	92.7	94.6	91.6	93.7
Occluded													
Test 1	71.6	75.8	69.8	76.2	76.2	75.4	76.1	74.0	67.2	66.0	66.7	62.3	61.3
Test 2	72.5	76.4	71.4	76.5	76.5	75.1	76.5	74.6	68.1	66.9	67.7	62.3	60.2
Test 3	86.0	87.8	81.0	81.8	83.0	80.2	79.3	77.7	70.9	70.2	71.7	65.7	62.7
Mean	76.7	80.0	74.1	78.2	78.6	76.9	77.3	75.4	68.7	67.7	68.7	63.4	61.4
Right Insertion Loss	**10.0**	**8.4**	**9.5**	**8.2**	**10.0**	**12.7**	**10.3**	**15.9**	**21.6**	**25.0**	**26.0**	**28.2**	**32.3**
Insertion Loss	**10.0**	**9.3**	**10.3**	**10.0**	**11.7**	**11.9**	**11.3**	**16.7**	**22.2**	**25.8**	**26.1**	**27.7**	**31.1**

Table C-5. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 5.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	94.0	95.6	96.3	98.0	99.3	96.9	95.3	92.6	92.3	88.3	79.4	107	108
Test 2	93.0	94.6	95.8	96.8	98.3	99.0	97.7	95.5	93.2	92.0	88.3	79.2	108	108
Test 3	92.9	94.6	96.1	96.5	98.5	99.5	97.6	95.7	93.4	92.6	88.3	79.4	108	108
Mean	92.8	94.4	95.8	96.5	98.3	99.3	97.4	95.5	93.1	92.3	88.3	79.3		
Occluded														
Test 1	61.1	65.2	61.7	58.8	59.4	57.3	50.8	52.0	45.7	44.5	45.0	46.8	85	76
Test 2	59.3	63.9	62.0	58.6	58.8	57.8	51.4	53.2	45.3	44.6	44.9	46.3	85	76
Test 3	62.3	65.4	63.0	59.2	59.1	59.2	53.5	53.1	46.4	45.3	46.8	48.3	85	76
Mean	60.9	64.8	62.2	58.9	59.1	58.1	51.9	52.8	45.8	44.8	45.5	47.1		
Left Insertion Loss	**31.9**	**29.6**	**33.6**	**37.7**	**39.2**	**41.2**	**45.5**	**42.7**	**47.3**	**47.5**	**42.8**	**32.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.0	93.9	96.3	98.9	98.5	101.1	99.9	98.5	94.3	93.8	90.3	78.4	109	109
Test 2	93.2	94.4	96.5	98.1	98.2	100.5	99.9	96.5	92.8	95.3	90.5	80.2	108	109
Test 3	93.2	94.6	96.9	98.8	99.4	101.5	100.9	99.9	95.4	92.6	90.2	81.6	109	110
Mean	93.1	94.3	96.6	98.6	98.7	101.0	100.3	98.3	94.1	93.9	90.3	80.1		
Occluded														
Test 1	57.9	63.1	63.2	65.9	52.5	48.3	52.2	54.3	48.3	50.4	53.3	55.9	84	76
Test 2	56.7	62.5	61.6	64.3	59.2	49.8	53.2	52.6	47.9	50.8	54.3	56.1	85	76
Test 3	58.3	65.7	64.1	63.0	65.2	56.4	56.8	63.1	58.6	52.4	54.7	56.6	93	80
Mean	57.7	63.8	63.0	64.4	58.9	51.5	54.1	56.7	51.6	51.2	54.1	56.2		
Right Insertion Loss	**35.5**	**30.5**	**33.6**	**34.2**	**39.7**	**49.5**	**46.2**	**41.6**	**42.6**	**42.7**	**36.2**	**23.9**		
Insertion Loss	**33.7**	**30.1**	**33.6**	**35.9**	**39.5**	**45.4**	**45.9**	**42.2**	**44.9**	**45.1**	**39.5**	**28.0**		

Table C-6. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 6.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	86.7	88.5	84.1	86.6	87.4	87.5	87.1	90.0	91.4	91.8	93.6	92.7	93.7
Test 2	84.7	88.5	84.7	87.5	87.5	91.0	86.6	89.5	90.3	90.8	93.7	92.7	94.8
Test 3	84.6	88.6	84.8	87.7	87.8	91.5	86.5	89.9	90.2	90.9	93.7	92.6	94.5
Mean	85.3	88.5	84.5	87.3	87.6	90.0	86.7	89.8	90.7	91.1	93.7	92.7	94.4
Occluded													
Test 1	77.6	78.0	72.1	72.0	73.8	72.3	73.5	73.1	73.1	68.7	73.0	71.7	68.3
Test 2	74.7	77.7	72.4	74.7	75.6	78.4	73.5	73.0	72.7	68.8	72.5	71.3	68.4
Test 3	75.1	79.0	72.9	73.5	75.8	77.5	73.5	74.8	73.2	69.4	72.8	72.5	68.8
Mean	75.8	78.2	72.5	73.4	75.1	76.1	73.5	73.7	73.0	69.0	72.8	71.8	68.5
Left Insertion Loss	**9.5**	**10.3**	**12.1**	**13.9**	**12.5**	**13.9**	**13.3**	**16.1**	**17.7**	**22.2**	**20.9**	**20.9**	**25.8**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.4	88.6	83.5	86.2	89.0	89.1	88.1	92.1	90.5	92.2	92.9	91.7	93.0
Test 2	85.6	88.8	84.2	86.8	89.2	89.0	88.5	90.2	88.8	91.6	95.4	92.2	94.6
Test 3	85.7	89.0	84.3	87.0	89.4	89.2	88.2	90.5	88.7	91.8	95.9	92.4	94.9
Mean	86.2	88.8	84.0	86.7	89.2	89.1	88.3	90.9	89.3	91.9	94.7	92.1	94.1
Occluded													
Test 1	79.1	80.9	74.2	78.1	80.1	76.7	76.3	74.5	71.2	69.0	71.7	67.7	63.7
Test 2	79.6	82.9	77.1	80.2	81.0	80.5	77.2	75.0	70.9	68.1	71.7	68.0	64.9
Test 3	85.0	88.6	82.6	83.4	84.3	82.4	78.7	76.9	72.3	70.7	73.4	69.2	66.8
Mean	81.2	84.1	77.9	80.6	81.8	79.9	77.4	75.4	71.5	69.3	72.3	68.3	65.1
Right Insertion Loss	**5.0**	**4.7**	**6.1**	**6.1**	**7.4**	**9.2**	**10.9**	**15.5**	**17.9**	**22.6**	**22.5**	**23.8**	**29.0**
Insertion Loss	**7.3**	**7.5**	**9.1**	**10.0**	**10.0**	**11.6**	**12.1**	**15.8**	**17.8**	**22.4**	**21.7**	**22.3**	**27.4**

Table C-6. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 6.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.2	94.9	96.8	97.9	99.1	100.8	98.8	96.8	92.6	89.6	89.5	80.2	108	109
Test 2	92.2	95.0	96.1	98.3	98.3	101.6	98.8	95.7	91.5	91.0	89.8	80.7	108	109
Test 3	92.9	95.0	96.5	97.7	98.2	101.5	98.3	95.3	91.6	91.4	89.7	80.2	108	108
Mean	92.4	95.0	96.5	98.0	98.5	101.3	98.7	95.9	91.9	90.7	89.7	80.4		
Occluded														
Test 1	56.9	53.8	57.4	62.3	61.2	58.6	54.8	44.5	44.0	45.9	46.4	44.8	85	78
Test 2	55.0	54.2	58.0	62.1	63.4	59.2	55.3	45.2	46.1	47.2	49.6	46.1	85	78
Test 3	55.7	56.1	58.6	62.7	62.2	58.0	55.3	46.1	49.1	53.4	55.7	49.0	86	78
Mean	55.9	54.7	58.0	62.3	62.2	58.6	55.1	45.2	46.4	48.8	50.6	46.6		
Left Insertion Loss	**36.6**	**40.3**	**38.5**	**35.7**	**36.3**	**42.7**	**43.5**	**50.7**	**45.5**	**41.9**	**39.1**	**33.8**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.7	95.4	98.1	100.1	100.0	101.7	99.8	98.4	94.9	92.9	90.1	80.2	109	110
Test 2	93.9	95.1	97.2	99.4	100.2	103.3	99.6	98.0	95.5	91.8	89.2	79.9	109	110
Test 3	94.9	94.9	97.5	99.5	100.5	103.7	100.2	97.7	94.9	91.3	89.2	79.5	110	110
Mean	93.8	95.1	97.6	99.7	100.2	102.9	99.9	98.0	95.1	92.0	89.5	79.9		
Occluded														
Test 1	57.1	56.6	61.1	64.1	58.2	58.2	53.7	51.1	56.7	63.2	59.9	56.9	88	78
Test 2	58.3	57.6	64.0	63.9	59.4	60.7	57.2	57.6	60.3	61.5	59.0	56.9	89	79
Test 3	60.4	59.6	63.2	63.5	59.6	62.2	62.4	56.8	62.9	68.3	66.3	60.4	93	81
Mean	58.6	57.9	62.8	63.8	59.1	60.4	57.8	55.2	60.0	64.3	61.7	58.1		
Right Insertion Loss	**35.3**	**37.2**	**34.8**	**35.8**	**41.2**	**42.5**	**42.1**	**42.9**	**35.1**	**27.7**	**27.8**	**21.8**		
Insertion Loss	**35.9**	**38.7**	**36.7**	**35.7**	**38.7**	**42.6**	**42.8**	**46.8**	**40.3**	**34.8**	**33.5**	**27.8**		

Table C-7. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 7.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.1	88.6	84.3	86.7	87.7	87.3	87.5	92.7	92.6	92.4	94.0	95.2	94.2
Test 2	87.1	88.6	84.3	86.8	87.8	87.6	87.9	93.0	92.4	92.4	93.8	95.6	94.4
Test 3	84.8	88.5	84.6	87.5	88.0	90.9	87.1	91.6	90.9	91.1	93.8	95.1	95.1
Mean	86.3	88.6	84.4	87.0	87.8	88.6	87.5	92.5	92.0	92.0	93.9	95.3	94.6
Occluded													
Test 1	77.0	80.1	74.6	76.8	78.4	79.8	72.9	73.7	70.6	67.8	73.2	70.3	66.9
Test 2	77.0	79.9	74.2	76.4	78.1	80.2	73.6	73.3	70.7	67.9	73.3	70.0	65.6
Test 3	76.6	80.0	74.8	76.9	78.3	80.2	73.6	73.2	70.4	67.0	73.2	71.0	66.6
Mean	76.9	80.0	74.5	76.7	78.3	80.1	73.3	73.4	70.6	67.6	73.3	70.4	66.4
Left Insertion Loss	**9.4**	**8.6**	**9.9**	**10.3**	**9.6**	**8.6**	**14.2**	**19.0**	**21.4**	**24.4**	**20.6**	**24.9**	**28.2**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.6	88.5	83.5	86.3	88.8	88.8	87.3	91.3	90.7	91.8	92.4	91.7	92.7
Test 2	87.7	88.6	83.7	86.5	88.9	88.7	87.4	91.1	90.7	91.5	92.0	91.4	92.9
Test 3	85.5	88.5	84.2	87.3	88.7	90.2	86.8	90.4	89.6	91.2	92.4	92.2	93.9
Mean	86.9	88.6	83.8	86.7	88.8	89.2	87.2	90.9	90.3	91.5	92.3	91.8	93.2
Occluded													
Test 1	75.5	79.6	74.0	78.2	78.7	78.5	74.2	71.4	67.8	67.1	72.6	69.6	66.6
Test 2	77.4	81.4	75.7	79.4	80.1	80.4	74.6	73.2	69.7	68.1	71.8	71.2	69.0
Test 3	75.4	79.5	74.5	78.8	78.5	79.2	74.3	71.9	68.0	67.0	71.6	70.8	68.8
Mean	76.1	80.2	74.7	78.8	79.1	79.4	74.4	72.2	68.5	67.4	72.0	70.5	68.1
Right Insertion Loss	**10.8**	**8.4**	**9.1**	**7.9**	**9.7**	**9.8**	**12.8**	**18.8**	**21.8**	**24.1**	**20.3**	**21.2**	**25.0**
Insertion Loss	**10.1**	**8.5**	**9.5**	**9.1**	**9.6**	**9.2**	**13.5**	**18.9**	**21.6**	**24.2**	**20.4**	**23.1**	**26.6**

Table C-7. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 7.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.7	92.7	95.0	97.2	96.4	98.2	96.0	95.4	93.4	91.9	90.7	80.5	107	107
Test 2	91.8	92.8	94.5	96.8	97.0	98.0	96.0	95.1	93.9	91.8	89.9	80.4	107	107
Test 3	92.1	92.1	95.1	96.5	96.7	98.4	95.6	94.9	94.1	92.0	90.3	80.3	107	107
Mean	91.9	92.5	94.9	96.8	96.7	98.2	95.9	95.1	93.8	91.9	90.3	80.4		
Occluded														
Test 1	53.8	56.6	55.8	58.7	62.0	56.1	53.5	49.8	46.0	48.0	48.4	49.0	87	77
Test 2	52.4	56.6	56.9	59.1	61.2	54.8	52.8	49.3	48.5	49.9	48.7	48.9	87	77
Test 3	51.1	52.4	54.4	57.3	59.8	54.4	52.1	50.0	46.8	46.6	46.8	48.6	87	77
Mean	52.4	55.2	55.7	58.4	61.0	55.1	52.8	49.7	47.1	48.2	48.0	48.8		
Left Insertion Loss	**39.5**	**37.3**	**39.2**	**38.4**	**35.7**	**43.1**	**43.1**	**45.4**	**46.7**	**43.8**	**42.3**	**31.6**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.4	93.0	95.3	96.8	97.4	98.3	96.9	95.5	93.9	92.4	89.8	80.8	107	107
Test 2	91.9	93.1	94.7	96.8	97.4	98.6	97.3	95.1	95.1	93.1	90.2	81.1	107	107
Test 3	92.7	92.8	95.4	97.5	97.5	98.8	97.5	94.8	95.1	93.2	90.1	81.7	107	108
Mean	92.0	92.9	95.1	97.0	97.4	98.6	97.2	95.1	94.7	92.9	90.0	81.2		
Occluded														
Test 1	60.5	60.3	58.9	55.4	56.7	54.6	54.0	52.3	51.3	54.1	55.5	57.5	87	77
Test 2	59.6	61.2	60.7	57.7	57.4	55.7	56.1	56.1	55.3	59.0	57.3	57.4	88	78
Test 3	59.5	62.0	60.9	56.5	56.3	55.1	53.8	53.1	51.8	53.9	55.2	57.1	87	78
Mean	59.9	61.2	60.2	56.5	56.8	55.1	54.6	53.9	52.8	55.7	56.0	57.3		
Right Insertion Loss	**32.2**	**31.8**	**34.9**	**40.5**	**40.6**	**43.4**	**42.6**	**41.3**	**41.9**	**37.3**	**34.0**	**23.8**		
Insertion Loss	**35.8**	**34.6**	**37.1**	**39.5**	**38.1**	**43.3**	**42.8**	**43.4**	**44.3**	**40.5**	**38.2**	**27.7**		

Table C-8. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 8.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.7	91.4	87.3	89.9	90.2	93.2	89.1	91.9	92.1	92.5	96.2	95.7	96.5
Test 2	88.0	91.6	87.4	89.9	90.5	93.0	89.2	91.6	91.9	92.4	96.7	95.9	96.3
Test 3	87.8	91.5	87.5	90.1	90.3	93.3	89.4	91.8	92.1	92.7	96.9	95.9	96.3
Mean	87.8	91.5	87.4	90.0	90.3	93.2	89.2	91.8	92.0	92.6	96.6	95.8	96.4
Occluded													
Test 1	80.3	82.9	77.5	78.9	80.7	83.2	78.4	79.8	76.1	73.9	80.0	76.5	71.0
Test 2	80.4	82.9	77.0	78.9	80.4	82.3	77.7	78.0	74.1	72.8	78.6	75.8	70.1
Test 3	80.6	83.5	77.9	79.8	81.5	83.2	78.5	79.1	75.7	74.0	78.5	75.3	70.3
Mean	80.4	83.1	77.5	79.2	80.9	82.9	78.2	78.9	75.3	73.6	79.0	75.9	70.4
Left Insertion Loss	**7.4**	**8.4**	**9.9**	**10.8**	**9.5**	**10.3**	**11.0**	**12.8**	**16.7**	**19.0**	**17.6**	**20.0**	**25.9**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.5	91.6	86.7	89.3	91.4	91.6	90.0	92.5	90.9	93.2	97.4	94.1	96.0
Test 2	88.7	91.7	86.8	89.5	91.6	91.4	90.2	92.6	90.5	93.0	97.5	93.9	96.1
Test 3	88.6	91.6	86.8	89.3	91.4	91.4	90.1	92.7	90.8	93.2	97.8	93.8	96.1
Mean	88.6	91.6	86.8	89.4	91.5	91.5	90.1	92.6	90.7	93.1	97.6	93.9	96.1
Occluded													
Test 1	88.6	91.9	86.8	88.6	88.6	88.3	84.4	82.4	76.1	74.1	79.0	75.4	74.7
Test 2	83.4	86.4	79.3	81.7	83.8	83.4	79.8	78.1	71.3	70.4	76.4	72.5	71.7
Test 3	88.4	91.7	85.6	87.2	88.5	87.0	84.1	82.5	75.6	74.2	78.7	74.6	74.1
Mean	86.8	90.0	83.9	85.9	87.0	86.3	82.7	81.0	74.3	72.9	78.0	74.2	73.5
Right Insertion Loss	**1.8**	**1.6**	**2.9**	**3.5**	**4.5**	**5.2**	**7.4**	**11.6**	**16.4**	**20.2**	**19.5**	**19.8**	**22.6**
Insertion Loss	**4.6**	**5.0**	**6.4**	**7.1**	**7.0**	**7.7**	**9.2**	**12.2**	**16.6**	**19.6**	**18.6**	**19.9**	**24.3**

Table C-8. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 8.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.9	96.5	96.7	98.1	99.5	101.8	100.1	95.2	93.4	93.5	91.6	80.5	109	109
Test 2	93.9	96.1	96.4	97.7	99.4	102.1	100.3	95.1	93.2	93.4	91.2	79.9	109	110
Test 3	94.2	96.4	96.7	97.5	99.5	102.3	100.0	94.9	93.5	93.6	91.2	79.6	109	110
Mean	94.0	96.3	96.6	97.8	99.5	102.1	100.1	95.1	93.4	93.5	91.3	80.0		
Occluded														
Test 1	59.0	60.9	60.9	65.7	66.2	59.3	55.9	54.8	53.8	52.6	53.6	51.4	91	83
Test 2	58.7	63.3	61.5	64.5	65.1	58.3	54.8	52.8	52.1	53.2	51.4	50.5	90	82
Test 3	58.9	65.0	63.6	65.3	65.9	60.0	55.1	50.8	49.9	52.2	53.0	50.3	91	82
Mean	58.9	63.1	62.0	65.2	65.7	59.2	55.3	52.8	51.9	52.7	52.7	50.7		
Left Insertion Loss	**35.1**	**33.3**	**34.6**	**32.6**	**33.8**	**42.9**	**44.9**	**42.3**	**41.4**	**40.8**	**38.7**	**29.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.7	97.1	97.4	98.1	99.3	101.8	100.6	97.7	94.9	91.3	87.8	76.6	110	110
Test 2	94.1	97.0	97.7	98.1	99.5	102.2	100.8	97.6	94.8	91.8	88.1	76.7	110	110
Test 3	93.9	96.5	97.8	98.5	99.7	101.9	100.5	97.4	95.0	91.6	88.0	76.6	110	110
Mean	93.9	96.8	97.6	98.2	99.5	102.0	100.6	97.6	94.9	91.6	88.0	76.6		
Occluded														
Test 1	66.4	60.8	60.4	63.9	69.7	70.8	65.8	73.3	71.1	65.1	66.7	58.6	97	86
Test 2	62.5	62.6	62.9	63.2	66.3	61.7	60.4	64.7	69.5	62.7	61.5	58.7	92	82
Test 3	63.9	61.9	63.4	64.7	68.5	66.5	67.1	70.8	72.4	67.1	65.9	59.3	97	85
Mean	64.3	61.8	62.3	63.9	68.2	66.3	64.4	69.6	71.0	64.9	64.7	58.8		
Right Insertion Loss	**29.6**	**35.1**	**35.3**	**34.3**	**31.4**	**35.7**	**36.2**	**28.0**	**23.9**	**26.6**	**23.3**	**17.8**		
Insertion Loss	**32.4**	**34.2**	**35.0**	**33.4**	**32.6**	**39.3**	**40.5**	**35.1**	**32.7**	**33.7**	**31.0**	**23.5**		

Table C-9. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 9.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.9	91.6	87.8	90.9	91.2	94.9	90.3	94.4	93.8	93.9	94.8	96.8	96.1
Test 2	90.0	91.5	87.4	90.0	90.4	91.9	91.2	95.2	95.8	94.3	94.5	96.4	96.5
Test 3	87.8	91.4	87.7	90.8	91.2	95.1	90.4	94.0	94.2	93.8	94.6	97.4	96.3
Mean	88.6	91.5	87.6	90.5	90.9	94.0	90.6	94.5	94.6	94.0	94.6	96.9	96.3
Occluded													
Test 1	80.4	83.4	77.0	79.2	79.4	78.5	78.8	79.5	77.4	70.0	74.4	71.3	67.8
Test 2	82.4	86.1	80.7	79.9	81.3	81.0	80.8	80.8	78.5	71.3	73.4	71.1	67.1
Test 3	88.3	92.2	89.9	93.8	97.0	101.4	95.8	91.9	87.6	82.1	81.5	79.3	76.3
Mean	83.7	87.2	82.5	84.3	85.9	87.0	85.1	84.1	81.2	74.5	76.4	73.9	70.4
Left Insertion Loss	**4.8**	**4.3**	**5.1**	**6.2**	**5.0**	**7.0**	**5.5**	**10.5**	**13.5**	**19.5**	**18.2**	**23.0**	**25.9**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	89.2	92.2	87.2	90.2	91.7	91.0	89.9	91.0	90.0	92.6	95.6	94.9	95.5
Test 2	91.2	92.0	87.2	90.0	91.5	89.0	90.5	92.9	93.0	92.4	93.0	95.4	95.6
Test 3	89.1	92.2	87.5	90.5	91.7	91.6	89.7	91.3	90.6	92.1	94.5	94.6	95.4
Mean	89.8	92.1	87.3	90.2	91.7	90.5	90.0	91.7	91.2	92.3	94.4	95.0	95.5
Occluded													
Test 1	81.2	83.1	78.5	82.0	83.3	79.3	79.4	79.7	77.1	73.2	75.8	75.3	71.0
Test 2	80.9	82.7	77.7	81.2	82.3	78.5	79.1	79.3	76.9	72.5	75.6	74.0	69.0
Test 3	81.2	85.0	79.8	83.0	83.8	83.3	79.4	79.9	77.4	75.6	76.8	76.6	70.4
Mean	81.1	83.6	78.7	82.1	83.1	80.3	79.3	79.7	77.1	73.8	76.1	75.3	70.2
Right Insertion Loss	**8.7**	**8.5**	**8.6**	**8.2**	**8.5**	**10.2**	**10.7**	**12.1**	**14.1**	**18.6**	**18.3**	**19.7**	**25.3**
Insertion Loss	**6.8**	**6.4**	**6.9**	**7.2**	**6.8**	**8.6**	**8.1**	**11.3**	**13.8**	**19.0**	**18.2**	**21.3**	**25.6**

Table C-9. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 9.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	95.0	94.8	98.2	98.4	99.7	102.2	100.9	95.5	96.0	97.2	93.2	81.1	110	110
Test 2	95.1	95.9	96.9	98.2	99.1	100.8	98.4	95.0	96.6	97.2	93.2	80.9	110	109
Test 3	94.5	95.8	97.2	97.7	98.7	100.8	99.5	95.4	97.4	97.4	93.5	81.6	110	109
Mean	94.9	95.5	97.5	98.1	99.2	101.3	99.6	95.3	96.7	97.2	93.3	81.2		
Occluded														
Test 1	61.1	59.5	57.3	61.8	64.4	61.2	54.0	56.6	63.1	59.4	61.7	54.0	90	80
Test 2	58.8	58.0	56.6	61.3	67.2	65.5	63.0	62.5	68.1	70.5	63.9	54.1	92	82
Test 3	68.6	63.9	63.6	73.9	78.7	79.7	72.7	79.1	80.0	79.7	77.0	63.3	105	95
Mean	62.8	60.5	59.2	65.6	70.1	68.8	63.2	66.1	70.4	69.9	67.5	57.1		
Left Insertion Loss	**32.0**	**35.0**	**38.3**	**32.5**	**29.1**	**32.5**	**36.3**	**29.2**	**26.3**	**27.4**	**25.7**	**24.1**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	96.5	97.2	97.7	97.8	100.1	99.3	97.3	93.3	93.3	89.8	78.2	109	109
Test 2	93.6	95.3	96.1	98.2	98.8	99.6	98.3	96.1	93.4	94.3	91.4	79.2	109	108
Test 3	92.9	96.2	96.3	97.1	98.3	100.8	97.9	95.1	93.1	93.7	90.4	77.8	108	108
Mean	93.0	96.0	96.5	97.7	98.3	100.2	98.5	96.2	93.3	93.8	90.5	78.4		
Occluded														
Test 1	60.3	62.7	62.5	63.5	61.1	60.3	58.1	57.9	59.9	60.2	59.1	58.1	91	82
Test 2	60.3	62.5	62.8	62.9	62.2	60.4	57.5	56.5	59.0	59.6	58.5	58.3	90	82
Test 3	60.9	63.5	63.8	64.0	63.0	61.2	59.5	58.2	61.0	63.9	61.5	58.4	92	83
Mean	60.5	62.9	63.0	63.5	62.1	60.6	58.3	57.5	60.0	61.2	59.7	58.3		
Right Insertion Loss	**32.6**	**33.1**	**33.5**	**34.2**	**36.2**	**39.5**	**40.2**	**38.6**	**33.3**	**32.5**	**30.9**	**20.2**		
Insertion Loss	**32.3**	**34.1**	**35.9**	**33.3**	**32.6**	**36.0**	**38.3**	**33.9**	**29.8**	**30.0**	**28.3**	**22.1**		

Table C-10. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 10.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.5	91.0	87.2	90.4	90.6	94.0	89.4	94.6	93.4	93.2	94.9	96.1	94.6
Test 2	87.8	91.2	87.3	90.5	90.7	94.0	89.5	94.0	93.8	93.4	95.0	96.3	95.0
Test 3	87.5	91.1	87.3	90.6	90.8	94.5	89.8	94.2	94.0	93.7	94.7	96.8	95.4
Mean	87.6	91.1	87.3	90.5	90.7	94.2	89.6	94.3	93.7	93.4	94.9	96.4	95.0
Occluded													
Test 1	86.6	89.8	85.0	86.9	86.2	87.6	81.3	82.2	78.7	75.9	80.2	76.1	72.6
Test 2	89.0	92.9	89.0	91.0	90.3	92.7	85.6	84.8	81.0	77.8	81.2	78.4	75.8
Test 3	88.8	92.9	89.9	92.7	91.5	94.1	87.3	86.3	82.7	79.8	82.9	79.7	76.2
Mean	88.1	91.9	87.9	90.2	89.3	91.5	84.7	84.4	80.8	77.9	81.4	78.1	74.9
Left Insertion Loss	**-0.5**	**-0.8**	**-0.7**	**0.3**	**1.4**	**2.7**	**4.8**	**9.9**	**12.9**	**15.6**	**13.4**	**18.3**	**20.1**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.9	91.7	86.8	89.9	91.6	91.5	89.4	91.1	90.3	93.0	94.7	93.4	96.0
Test 2	88.9	91.7	86.8	90.0	91.6	91.6	89.8	91.4	90.5	93.2	94.7	93.4	95.6
Test 3	88.9	91.9	87.0	90.2	91.5	91.5	89.6	91.2	90.3	92.6	94.5	93.6	95.5
Mean	88.9	91.8	86.9	90.1	91.6	91.5	89.6	91.2	90.4	92.9	94.6	93.5	95.7
Occluded													
Test 1	84.1	87.2	82.4	85.4	85.7	85.4	81.5	80.9	75.8	71.2	74.1	74.3	71.1
Test 2	85.1	88.9	83.8	86.4	86.9	86.6	83.0	81.7	77.0	72.5	75.4	75.6	71.1
Test 3	84.3	88.1	83.4	85.5	85.8	85.8	81.9	81.3	76.5	71.5	75.1	74.6	69.5
Mean	84.5	88.1	83.2	85.8	86.1	85.9	82.1	81.3	76.4	71.8	74.9	74.8	70.6
Right Insertion Loss	**4.4**	**3.7**	**3.7**	**4.3**	**5.4**	**5.6**	**7.5**	**9.9**	**13.9**	**21.2**	**19.7**	**18.7**	**25.1**
Insertion Loss	**1.9**	**1.5**	**1.5**	**2.3**	**3.4**	**4.1**	**6.1**	**9.9**	**13.4**	**18.4**	**16.6**	**18.5**	**22.6**

Table C-10. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System – Subject 10.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.7	95.2	96.9	98.2	99.4	99.9	98.7	94.7	96.2	96.5	92.3	80.5	109	109
Test 2	95.0	95.1	97.3	97.9	99.1	100.1	98.5	94.7	96.4	96.3	92.4	79.7	109	109
Test 3	95.0	95.8	97.5	97.9	99.7	100.7	99.2	94.6	95.5	96.5	92.6	81.6	109	109
Mean	94.9	95.4	97.2	98.0	99.4	100.2	98.8	94.7	96.0	96.4	92.5	80.6		
Occluded														
Test 1	65.0	63.5	61.0	63.9	63.4	61.5	56.9	63.6	64.3	67.9	63.5	54.0	96	85
Test 2	67.2	63.8	62.6	66.1	67.8	65.2	58.7	67.9	67.2	67.7	62.6	54.9	99	88
Test 3	65.7	63.6	64.1	66.9	69.7	65.3	61.5	68.3	67.7	67.1	67.6	55.6	100	89
Mean	66.0	63.6	62.6	65.7	67.0	64.0	59.0	66.6	66.4	67.6	64.5	54.9		
Left Insertion Loss	**29.0**	**31.7**	**34.6**	**32.3**	**32.4**	**36.2**	**39.8**	**28.0**	**29.6**	**28.9**	**27.9**	**25.7**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.9	95.7	96.2	98.1	98.0	100.3	97.6	95.8	94.3	93.6	91.2	78.9	108	108
Test 2	92.6	95.5	96.1	98.9	97.4	100.1	99.2	94.5	94.1	93.6	91.1	78.5	109	108
Test 3	92.6	95.9	96.2	98.3	97.7	100.1	98.5	94.7	94.5	93.8	90.9	77.6	108	108
Mean	92.7	95.7	96.2	98.4	97.7	100.2	98.4	95.0	94.3	93.7	91.1	78.4		
Occluded														
Test 1	56.4	61.5	64.4	66.2	62.0	62.9	59.6	62.1	66.3	64.8	61.8	58.7	94	83
Test 2	58.9	62.2	65.7	67.3	63.9	63.6	60.4	62.6	64.5	65.3	65.2	59.4	95	84
Test 3	55.8	62.1	64.6	67.4	62.5	61.5	63.6	61.8	69.2	68.1	65.9	59.0	94	83
Mean	57.0	61.9	64.9	67.0	62.8	62.6	61.2	62.2	66.7	66.1	64.3	59.0		
Right Insertion Loss	**35.7**	**33.8**	**31.3**	**31.5**	**34.9**	**37.5**	**37.2**	**32.8**	**27.6**	**27.6**	**26.8**	**19.3**		
Insertion Loss	**32.3**	**32.8**	**32.9**	**31.9**	**33.7**	**36.9**	**38.5**	**30.4**	**28.6**	**28.2**	**27.3**	**22.5**		

Table C-11. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 1.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.0	88.8	84.8	87.6	88.1	91.3	87.6	90.8	90.1	91.0	95.1	94.7	95.1
Test 2	84.9	88.8	85.0	87.9	88.5	91.9	87.7	92.0	90.8	91.1	94.8	94.4	93.7
Test 3	84.9	88.8	84.9	87.8	88.4	92.0	87.9	91.9	90.8	91.2	94.5	94.6	94.6
Mean	84.9	88.8	84.9	87.8	88.3	91.7	87.8	91.6	90.6	91.1	94.8	94.5	94.4
Occluded													
Test 1	73.7	78.2	75.0	76.3	74.3	76.1	74.1	74.4	72.0	70.6	76.0	73.0	67.9
Test 2	73.3	78.1	74.9	75.8	74.7	77.4	75.0	75.2	72.1	69.9	74.1	71.3	65.8
Test 3	73.5	78.4	75.1	75.6	75.0	77.7	75.0	74.9	71.7	70.0	74.7	71.4	68.4
Mean	73.5	78.2	75.0	75.9	74.7	77.1	74.7	74.8	72.0	70.1	74.9	71.9	67.4
Left Insertion Loss	**11.4**	**10.6**	**9.9**	**11.9**	**13.6**	**14.7**	**13.1**	**16.8**	**18.6**	**21.0**	**19.9**	**22.6**	**27.1**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.7	88.9	84.2	87.2	89.1	89.8	87.6	90.7	89.6	91.5	94.4	91.7	94.9
Test 2	85.5	88.8	84.2	87.4	89.2	89.8	87.7	91.0	89.6	91.1	93.3	92.2	95.2
Test 3	85.6	88.9	84.5	87.6	89.2	89.9	87.5	91.1	89.9	90.8	92.4	92.3	95.4
Mean	85.6	88.8	84.3	87.4	89.2	89.8	87.6	90.9	89.7	91.1	93.4	92.1	95.2
Occluded													
Test 1	70.7	76.4	73.8	78.7	78.0	76.5	71.1	74.3	71.0	67.5	71.6	68.0	67.3
Test 2	70.7	76.4	73.5	78.4	78.7	77.4	72.6	74.8	71.1	66.5	71.8	70.3	70.2
Test 3	71.5	76.7	74.0	78.8	78.4	76.0	71.4	74.9	70.9	67.3	71.0	70.2	70.2
Mean	71.0	76.5	73.7	78.6	78.4	76.6	71.7	74.7	71.0	67.1	71.5	69.5	69.2
Right Insertion Loss	**14.6**	**12.3**	**10.6**	**8.8**	**10.8**	**13.2**	**15.9**	**16.3**	**18.7**	**24.0**	**21.9**	**22.6**	**26.0**
Insertion Loss	**13.0**	**11.5**	**10.2**	**10.3**	**12.2**	**13.9**	**14.5**	**16.5**	**18.6**	**22.5**	**20.9**	**22.6**	**26.5**

Table C-11. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 1.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.7	94.6	97.1	98.3	99.9	103.9	102.1	99.0	95.1	91.5	86.7	77.8	110	110
Test 2	93.0	94.7	97.5	98.5	99.9	103.8	102.6	98.8	94.9	91.8	87.2	78.7	110	111
Test 3	93.1	94.3	96.6	98.7	99.4	104.1	102.8	98.5	94.2	92.0	88.6	78.9	110	110
Mean	93.2	94.5	97.1	98.5	99.7	103.9	102.5	98.7	94.7	91.8	87.5	78.5		
Occluded														
Test 1	61.8	64.6	60.1	58.0	54.9	52.0	47.6	42.8	39.8	41.0	44.4	44.7	86	79
Test 2	62.1	64.1	59.8	58.5	54.7	50.8	45.8	42.8	39.9	40.4	42.9	44.6	86	78
Test 3	65.4	65.7	61.2	58.9	56.0	51.5	46.3	42.2	39.9	41.3	43.2	44.3	86	78
Mean	63.1	64.8	60.4	58.5	55.2	51.4	46.6	42.6	39.9	40.9	43.5	44.6		
Left Insertion Loss	**30.2**	**29.8**	**36.7**	**40.0**	**44.5**	**52.5**	**56.0**	**56.1**	**54.9**	**50.9**	**44.0**	**33.9**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.3	95.1	97.2	100.3	102.4	106.4	105.2	105.0	101.5	96.9	93.8	83.9	113	113
Test 2	92.5	95.5	97.2	99.9	102.2	106.6	105.9	104.7	100.6	95.2	93.1	83.0	113	113
Test 3	93.0	95.2	96.7	99.6	101.8	107.5	106.8	104.7	100.9	95.2	93.4	84.1	113	114
Mean	92.9	95.3	97.0	99.9	102.1	106.9	106.0	104.8	101.0	95.8	93.4	83.7		
Occluded														
Test 1	65.8	65.5	64.7	64.4	57.7	54.7	52.5	47.8	47.0	49.2	52.0	54.6	86	78
Test 2	64.7	64.9	63.9	64.3	57.9	56.1	52.0	48.1	46.9	49.2	52.2	54.7	86	78
Test 3	65.6	64.5	64.1	64.3	57.4	55.5	52.4	47.9	46.8	49.1	52.0	54.5	86	78
Mean	65.4	65.0	64.2	64.3	57.6	55.4	52.3	47.9	46.9	49.2	52.1	54.6		
Right Insertion Loss	**27.5**	**30.3**	**32.8**	**35.6**	**44.5**	**51.4**	**53.7**	**56.9**	**54.1**	**46.6**	**41.3**	**29.1**		
Insertion Loss	**28.8**	**30.0**	**34.8**	**37.8**	**44.5**	**51.9**	**54.8**	**56.5**	**54.5**	**48.7**	**42.7**	**31.5**		

Table C-12. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 2.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.6	88.2	84.2	87.0	87.9	90.6	87.4	91.2	91.4	91.8	95.7	95.4	94.8
Test 2	86.9	88.3	84.0	86.4	87.6	87.3	88.3	92.2	92.9	92.9	96.0	95.9	94.6
Test 3	86.8	88.2	84.1	86.5	87.6	87.8	88.6	92.4	93.2	93.2	96.0	96.3	94.8
Mean	86.1	88.2	84.1	86.6	87.7	88.6	88.1	92.0	92.5	92.7	95.9	95.9	94.7
Occluded													
Test 1	76.5	80.0	75.6	76.6	76.8	77.1	74.2	74.9	71.6	70.3	75.7	71.3	69.9
Test 2	86.2	87.0	81.4	81.8	81.4	78.3	78.8	77.8	74.8	73.4	79.0	74.0	69.6
Test 3	82.0	85.1	80.0	80.8	80.6	81.0	77.7	76.5	73.5	72.1	78.5	75.1	71.7
Mean	81.6	84.0	79.0	79.7	79.6	78.8	76.9	76.4	73.3	71.9	77.7	73.5	70.4
Left Insertion Loss	**4.5**	**4.2**	**5.1**	**6.9**	**8.1**	**9.8**	**11.2**	**15.5**	**19.2**	**20.7**	**18.2**	**22.4**	**24.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.1	88.1	83.8	87.3	88.5	89.9	86.7	91.5	90.1	92.1	93.7	93.2	95.0
Test 2	87.4	88.2	83.3	86.3	88.6	88.8	87.8	92.1	91.1	92.5	92.8	92.4	94.1
Test 3	87.5	88.2	83.4	86.4	88.6	88.3	87.9	92.1	91.0	92.2	92.3	92.3	94.2
Mean	86.7	88.2	83.5	86.7	88.6	89.0	87.5	91.9	90.7	92.3	92.9	92.6	94.4
Occluded													
Test 1	73.3	77.5	72.9	76.4	76.5	74.9	73.4	75.6	70.6	67.3	73.4	73.0	73.4
Test 2	74.9	77.6	72.9	75.8	76.6	73.3	75.1	76.5	72.9	66.6	75.4	72.2	71.6
Test 3	73.0	77.5	73.3	76.4	76.2	74.3	74.5	76.0	71.4	67.7	74.1	73.7	72.3
Mean	73.7	77.6	73.0	76.2	76.5	74.2	74.3	76.0	71.6	67.2	74.3	73.0	72.4
Right Insertion Loss	**13.0**	**10.6**	**10.5**	**10.4**	**12.1**	**14.8**	**13.1**	**15.9**	**19.1**	**25.1**	**18.7**	**19.7**	**22.0**
Insertion Loss	**8.7**	**7.4**	**7.8**	**8.7**	**10.1**	**12.3**	**12.2**	**15.7**	**19.2**	**22.9**	**18.4**	**21.0**	**23.1**

Table C-12. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 2.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.1	94.1	95.8	97.4	98.4	101.0	99.9	97.8	94.5	92.9	87.6	78.3	109	109
Test 2	91.7	95.1	96.0	97.3	98.2	100.9	100.0	97.8	93.4	92.4	87.1	79.4	109	109
Test 3	91.8	94.6	96.3	98.1	98.4	100.6	100.0	96.7	93.9	92.6	87.1	80.2	109	109
Mean	91.9	94.6	96.1	97.6	98.3	100.8	99.9	97.4	93.9	92.6	87.3	79.3		
Occluded														
Test 1	66.4	66.1	63.2	57.7	54.5	55.1	48.8	42.9	42.5	43.6	44.2	46.3	87	79
Test 2	65.7	66.3	64.1	58.7	54.9	54.5	48.0	44.5	50.5	47.3	44.3	45.9	92	82
Test 3	66.7	65.7	63.5	57.9	55.7	54.7	47.8	44.2	49.5	45.3	44.2	46.2	91	82
Mean	66.2	66.0	63.6	58.1	55.0	54.8	48.2	43.9	47.5	45.4	44.2	46.1		
Left Insertion Loss	**25.6**	**28.6**	**32.5**	**39.5**	**43.3**	**46.1**	**51.8**	**53.6**	**46.4**	**47.2**	**43.0**	**33.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.8	93.8	96.4	98.6	99.1	100.5	100.7	98.2	97.0	98.0	88.2	78.4	109	109
Test 2	91.6	94.0	96.1	98.3	98.6	100.2	100.1	98.3	96.1	98.4	88.8	79.3	109	109
Test 3	91.1	94.1	96.2	98.5	98.7	100.2	99.6	98.6	95.8	97.5	88.8	79.4	109	109
Mean	91.5	93.9	96.2	98.5	98.8	100.3	100.1	98.4	96.3	98.0	88.6	79.0		
Occluded														
Test 1	67.5	66.7	60.9	59.7	53.9	50.2	47.0	46.5	48.0	50.3	52.7	55.1	86	79
Test 2	67.3	65.7	61.7	60.5	53.8	50.2	45.8	44.9	47.2	49.8	52.4	55.0	86	80
Test 3	66.9	64.8	61.8	60.6	54.2	50.8	46.5	45.4	47.8	50.0	52.6	55.0	86	79
Mean	67.3	65.7	61.5	60.3	53.9	50.4	46.5	45.6	47.6	50.0	52.5	55.1		
Right Insertion Loss	**24.2**	**28.2**	**34.8**	**38.2**	**44.8**	**49.9**	**53.7**	**52.8**	**48.7**	**47.9**	**36.1**	**24.0**		
Insertion Loss	**24.9**	**28.4**	**33.6**	**38.8**	**44.1**	**48.0**	**52.7**	**53.2**	**47.5**	**47.6**	**39.6**	**28.6**		

Table C-13. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 3.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.4	88.8	84.2	86.3	87.8	86.1	88.8	90.0	90.9	91.8	94.9	94.2	93.5
Test 2	85.5	88.9	84.4	87.0	88.0	88.9	88.2	89.4	89.9	90.4	94.8	95.9	93.9
Test 3	87.7	89.2	84.4	86.7	88.1	86.9	88.7	90.2	91.1	91.5	95.6	94.2	94.1
Mean	86.9	89.0	84.3	86.6	88.0	87.3	88.6	89.9	90.6	91.2	95.1	94.8	93.8
Occluded													
Test 1	76.4	79.5	73.6	74.5	73.6	71.4	72.4	73.8	70.3	69.1	73.7	71.7	69.4
Test 2	82.2	84.2	78.2	78.4	79.6	75.7	76.6	77.4	74.4	73.8	77.6	73.2	71.5
Test 3	80.3	83.9	79.2	79.8	79.2	79.0	76.7	76.7	73.6	71.9	76.4	73.4	70.9
Mean	79.6	82.6	77.0	77.6	77.5	75.3	75.2	76.0	72.8	71.6	75.9	72.8	70.6
Left Insertion Loss	**7.2**	**6.4**	**7.3**	**9.1**	**10.5**	**11.9**	**13.4**	**13.9**	**17.9**	**19.6**	**19.2**	**22.0**	**23.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.7	88.3	82.7	85.4	88.7	89.2	89.4	92.2	91.1	93.6	95.1	91.6	92.6
Test 2	85.7	88.4	83.2	86.3	88.6	89.3	88.7	91.3	90.0	92.5	95.7	92.2	93.3
Test 3	87.8	88.7	82.9	85.8	88.9	89.1	89.8	92.2	90.9	93.3	94.7	90.7	92.3
Mean	87.1	88.5	82.9	85.8	88.7	89.2	89.3	91.9	90.7	93.1	95.2	91.5	92.7
Occluded													
Test 1	72.2	76.9	72.2	76.4	76.2	73.3	73.3	74.7	69.9	68.3	73.3	69.0	66.6
Test 2	74.4	77.0	72.1	75.4	75.7	71.2	74.7	75.1	71.7	69.3	72.9	67.9	65.4
Test 3	74.0	76.6	72.8	76.5	75.3	72.3	73.2	74.5	69.3	68.0	74.0	69.5	67.3
Mean	73.5	76.8	72.4	76.1	75.7	72.3	73.7	74.8	70.3	68.5	73.4	68.8	66.4
Right Insertion Loss	**13.5**	**11.6**	**10.6**	**9.7**	**13.0**	**16.9**	**15.6**	**17.1**	**20.4**	**24.6**	**21.8**	**22.7**	**26.3**
Insertion Loss	**10.4**	**9.0**	**9.0**	**9.4**	**11.7**	**14.4**	**14.5**	**15.5**	**19.1**	**22.1**	**20.5**	**22.3**	**24.8**

Table C-13. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 3.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.9	94.2	95.9	99.2	97.5	99.4	97.8	95.1	91.6	92.3	91.3	80.2	108	108
Test 2	92.2	94.2	94.9	98.4	97.4	99.8	98.0	94.7	91.7	91.6	90.4	79.7	108	108
Test 3	91.5	94.1	95.0	98.3	96.8	98.6	98.1	94.0	91.6	92.7	90.3	80.1	107	108
Mean	91.9	94.2	95.3	98.6	97.2	99.3	98.0	94.6	91.6	92.2	90.7	80.0		
Occluded														
Test 1	68.8	66.9	60.3	57.5	53.8	49.1	47.8	43.3	44.7	47.3	47.9	50.1	85	79
Test 2	70.5	69.8	63.8	59.5	54.9	53.1	53.3	55.4	53.0	54.6	51.7	51.2	90	82
Test 3	71.5	70.3	64.6	59.2	55.0	55.5	54.9	52.8	53.6	54.6	51.3	49.9	90	82
Mean	70.3	69.0	62.9	58.7	54.5	52.6	52.0	50.5	50.4	52.2	50.3	50.4		
Left Insertion Loss	**21.6**	**25.2**	**32.3**	**39.9**	**42.7**	**46.7**	**46.0**	**44.1**	**41.2**	**40.0**	**40.3**	**29.6**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.0	94.0	96.4	98.8	97.5	100.6	98.8	98.2	95.5	94.7	90.6	81.1	109	109
Test 2	91.7	94.1	96.1	98.9	98.0	100.4	98.7	98.8	95.8	94.9	91.3	81.4	109	109
Test 3	91.7	94.2	96.7	98.8	98.2	100.2	99.5	98.9	95.4	95.2	90.5	80.6	109	109
Mean	91.5	94.1	96.4	98.8	97.9	100.4	99.0	98.6	95.5	94.9	90.8	81.0		
Occluded														
Test 1	67.4	65.6	60.3	56.1	55.8	54.0	47.3	45.9	48.7	52.0	54.7	57.0	85	78
Test 2	67.6	66.6	60.7	56.4	55.7	53.4	47.1	46.6	49.1	52.2	55.1	57.7	85	78
Test 3	68.2	66.0	60.8	56.3	54.9	52.6	45.9	46.1	48.4	51.5	54.5	57.2	85	78
Mean	67.7	66.1	60.6	56.3	55.4	53.4	46.8	46.2	48.7	51.9	54.8	57.3		
Right Insertion Loss	**23.7**	**28.0**	**35.8**	**42.5**	**42.4**	**47.0**	**52.2**	**52.4**	**46.8**	**43.0**	**36.1**	**23.7**		
Insertion Loss	**22.7**	**26.6**	**34.1**	**41.2**	**42.6**	**46.9**	**49.1**	**48.3**	**44.0**	**41.5**	**38.2**	**26.7**		

Table C-14. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 4.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	86.8	88.4	84.1	86.9	87.8	87.8	88.7	92.3	93.2	92.8	94.3	94.1	93.7
Test 2	84.7	88.5	84.6	87.6	88.1	90.9	88.0	91.2	91.8	91.6	94.1	93.9	93.6
Test 3	84.9	88.6	84.6	87.7	88.3	91.1	88.1	91.4	92.0	91.8	94.5	94.2	93.2
Mean	85.5	88.5	84.4	87.4	88.1	89.9	88.3	91.6	92.3	92.1	94.3	94.1	93.5
Occluded													
Test 1	78.2	80.1	74.1	76.6	77.7	78.7	73.2	73.2	71.3	68.5	76.7	73.2	70.2
Test 2	80.6	80.8	73.9	76.5	78.0	74.8	73.4	74.2	72.7	69.2	76.3	71.4	68.1
Test 3	77.6	80.1	74.2	76.8	77.8	78.3	73.1	74.2	72.1	68.1	76.5	71.9	69.2
Mean	78.8	80.3	74.1	76.6	77.9	77.2	73.2	73.9	72.0	68.6	76.5	72.2	69.2
Left Insertion Loss	**6.7**	**8.2**	**10.4**	**10.8**	**10.2**	**12.7**	**15.1**	**17.8**	**20.3**	**23.5**	**17.7**	**21.9**	**24.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.6	88.6	83.5	86.5	88.8	89.0	87.7	92.2	91.1	92.1	92.3	92.0	94.0
Test 2	85.3	88.5	84.1	87.4	88.6	90.3	86.8	90.9	90.4	91.6	93.0	92.8	94.9
Test 3	85.7	88.8	84.1	87.5	88.8	90.0	87.0	90.8	90.1	91.5	92.8	92.4	95.3
Mean	86.2	88.6	83.9	87.1	88.7	89.7	87.2	91.3	90.6	91.7	92.7	92.4	94.7
Occluded													
Test 1	79.7	82.2	75.1	78.0	79.2	77.8	74.7	75.6	71.4	71.6	73.9	70.2	72.5
Test 2	81.1	82.3	74.1	77.6	79.8	75.9	75.2	75.8	72.9	72.1	73.2	69.0	71.4
Test 3	81.9	84.5	77.2	79.5	80.5	79.1	76.0	76.5	72.4	72.2	74.1	70.0	72.6
Mean	80.9	83.0	75.4	78.4	79.8	77.6	75.3	76.0	72.2	72.0	73.7	69.8	72.2
Right Insertion Loss	**5.3**	**5.6**	**8.5**	**8.7**	**8.9**	**12.2**	**11.9**	**15.3**	**18.3**	**19.7**	**19.0**	**22.6**	**22.6**
Insertion Loss	**6.0**	**6.9**	**9.4**	**9.8**	**9.6**	**12.4**	**13.5**	**16.5**	**19.3**	**21.6**	**18.4**	**22.3**	**23.4**

Table C-14. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 4.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.6	93.8	95.0	97.6	100.4	101.0	99.1	96.3	92.7	94.4	89.8	79.4	109	109
Test 2	92.2	92.9	95.0	97.0	98.4	100.8	97.6	95.6	93.6	94.2	89.7	78.9	108	108
Test 3	92.3	93.1	95.1	97.2	98.9	101.4	98.2	95.8	93.9	94.1	89.7	79.4	108	108
Mean	92.0	93.3	95.0	97.3	99.2	101.1	98.3	95.9	93.4	94.2	89.7	79.2		
Occluded														
Test 1	66.7	66.0	61.5	57.1	52.4	48.7	46.7	42.3	42.8	44.9	46.9	48.9	87	79
Test 2	66.2	66.5	62.0	57.5	52.8	49.2	46.8	42.9	43.1	44.6	46.6	49.0	87	79
Test 3	66.3	66.6	63.0	57.5	53.2	50.2	47.2	42.1	43.4	46.4	47.0	49.3	87	79
Mean	66.4	66.4	62.2	57.4	52.8	49.4	46.9	42.5	43.1	45.3	46.8	49.1		
Left Insertion Loss	**25.6**	**26.9**	**32.9**	**39.9**	**46.4**	**51.7**	**51.4**	**53.5**	**50.3**	**48.9**	**42.9**	**30.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.3	94.0	95.5	98.6	99.6	102.1	100.6	99.5	97.7	92.3	89.6	80.1	109	110
Test 2	93.0	94.4	95.8	99.0	100.0	101.9	100.6	99.0	97.1	92.1	89.1	79.9	109	110
Test 3	93.0	94.5	95.9	98.8	99.4	102.2	100.7	99.3	97.7	92.0	88.4	80.1	109	110
Mean	92.8	94.3	95.7	98.8	99.7	102.1	100.6	99.3	97.5	92.1	89.0	80.0		
Occluded														
Test 1	69.5	66.1	60.9	60.4	54.6	57.1	55.1	52.4	56.8	53.6	55.5	56.9	88	80
Test 2	69.3	67.1	61.0	61.5	54.9	56.2	54.2	50.7	55.1	53.9	55.4	57.0	88	80
Test 3	69.9	67.1	61.0	61.1	54.7	56.9	57.5	58.6	60.5	56.1	57.6	57.3	90	81
Mean	69.6	66.8	60.9	61.0	54.7	56.8	55.6	53.9	57.5	54.5	56.2	57.0		
Right Insertion Loss	**23.2**	**27.5**	**34.8**	**37.8**	**45.0**	**45.3**	**45.1**	**45.4**	**40.0**	**37.6**	**32.9**	**23.0**		
Insertion Loss	**24.4**	**27.2**	**33.8**	**38.9**	**45.7**	**48.5**	**48.2**	**49.4**	**45.2**	**43.3**	**37.9**	**26.6**		

Table C-15. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 5.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.3	89.1	85.0	87.7	88.2	90.9	87.6	89.7	90.7	91.3	94.5	94.1	95.6
Test 2	85.6	89.2	85.0	87.8	88.4	91.1	87.5	89.9	90.6	91.4	94.8	94.7	95.5
Test 3	85.5	89.2	85.1	87.8	88.4	91.0	87.7	89.7	90.8	91.3	94.4	94.2	95.6
Mean	85.5	89.2	85.0	87.8	88.3	91.0	87.6	89.8	90.7	91.3	94.5	94.3	95.6
Occluded													
Test 1	75.9	79.0	74.1	74.9	74.0	75.9	74.9	74.2	72.0	68.4	75.3	73.3	69.2
Test 2	77.4	79.9	74.9	76.3	72.0	75.8	74.3	73.8	71.9	68.5	75.4	73.9	70.5
Test 3	77.0	79.7	75.6	76.7	74.2	76.8	74.4	74.1	72.2	69.7	75.7	73.8	72.0
Mean	76.8	79.6	74.9	76.0	73.4	76.2	74.5	74.0	72.0	68.8	75.5	73.6	70.6
Left Insertion Loss	**8.7**	**9.6**	**10.2**	**11.8**	**14.9**	**14.8**	**13.1**	**15.7**	**18.7**	**22.5**	**19.1**	**20.7**	**25.0**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.8	88.9	84.3	87.3	89.1	90.1	88.2	90.8	89.4	92.3	94.6	92.0	94.2
Test 2	86.0	89.0	84.3	87.3	89.2	89.8	88.1	90.7	89.2	92.3	94.6	92.1	94.5
Test 3	85.9	89.0	84.3	87.4	89.1	90.0	88.2	90.7	89.3	92.2	94.3	91.8	94.4
Mean	85.9	89.0	84.3	87.3	89.1	90.0	88.2	90.7	89.3	92.3	94.5	92.0	94.4
Occluded													
Test 1	74.6	78.3	72.6	78.1	78.6	77.2	76.7	75.2	69.8	68.4	73.2	67.6	67.8
Test 2	75.8	79.7	73.7	78.8	78.7	76.7	77.3	75.2	71.3	69.8	73.4	69.8	73.5
Test 3	75.3	79.1	73.2	78.3	77.9	76.9	77.6	74.8	70.6	69.7	72.5	69.1	71.8
Mean	75.2	79.0	73.2	78.4	78.4	77.0	77.2	75.1	70.5	69.3	73.0	68.8	71.0
Right Insertion Loss	**10.7**	**10.0**	**11.1**	**9.0**	**10.8**	**13.0**	**11.0**	**15.7**	**18.7**	**22.9**	**21.5**	**23.2**	**23.3**
Insertion Loss	**9.7**	**9.8**	**10.6**	**10.4**	**12.8**	**13.9**	**12.0**	**15.7**	**18.7**	**22.7**	**20.3**	**21.9**	**24.2**

Table C-15. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 5.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.1	95.1	96.7	97.5	99.2	100.2	99.1	95.6	93.7	91.4	87.6	79.4	108	109
Test 2	92.7	94.7	96.6	97.2	98.9	100.1	99.0	95.4	93.5	91.4	88.4	79.6	108	108
Test 3	93.0	95.1	96.3	97.7	99.4	100.5	99.6	96.4	93.6	91.2	88.1	80.1	108	109
Mean	93.0	95.0	96.5	97.4	99.2	100.3	99.3	95.8	93.6	91.3	88.0	79.7		
Occluded														
Test 1	63.5	63.4	60.4	58.2	56.6	50.7	47.7	42.6	42.7	43.7	45.7	46.7	86	79
Test 2	64.3	64.2	61.6	57.0	54.8	49.3	48.1	43.2	44.1	44.0	47.5	48.9	86	79
Test 3	66.4	65.4	62.2	57.9	56.4	53.0	47.6	43.7	43.8	44.0	47.2	47.4	87	80
Mean	64.8	64.3	61.4	57.7	55.9	51.0	47.8	43.2	43.5	43.9	46.8	47.7		
Left Insertion Loss	**28.2**	**30.6**	**35.1**	**39.7**	**43.2**	**49.3**	**51.4**	**52.6**	**50.1**	**47.4**	**41.2**	**32.0**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.8	95.2	97.3	99.5	99.4	102.7	101.8	99.7	95.5	93.2	91.0	81.8	110	110
Test 2	92.5	94.8	96.8	98.9	99.4	102.5	101.2	99.6	95.3	92.1	89.6	81.6	109	110
Test 3	92.0	94.9	97.3	99.2	99.4	102.5	101.4	99.5	94.8	92.9	92.7	83.6	110	110
Mean	92.1	95.0	97.1	99.2	99.4	102.6	101.5	99.6	95.2	92.7	91.1	82.3		
Occluded														
Test 1	67.7	63.6	61.2	56.8	53.5	50.2	47.3	47.3	48.3	51.3	54.2	56.3	86	78
Test 2	69.4	66.5	63.7	59.0	56.7	53.4	45.2	50.3	52.2	54.7	55.8	57.2	87	80
Test 3	68.5	66.5	63.5	58.3	55.8	52.5	44.8	49.7	51.7	55.0	56.3	56.9	87	79
Mean	68.6	65.5	62.8	58.0	55.3	52.0	45.8	49.1	50.7	53.7	55.4	56.8		
Right Insertion Loss	**23.6**	**29.4**	**34.3**	**41.2**	**44.1**	**50.6**	**55.7**	**50.5**	**44.5**	**39.1**	**35.6**	**25.5**		
Insertion Loss	**25.9**	**30.0**	**34.7**	**40.4**	**43.7**	**49.9**	**53.6**	**51.6**	**47.3**	**43.2**	**38.4**	**28.8**		

Table C-16. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 6.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.7	88.7	84.9	87.8	88.1	91.8	87.3	89.8	90.9	91.6	93.3	93.0	94.5
Test 2	85.3	89.1	85.0	87.8	88.3	91.3	86.6	89.5	90.3	90.9	93.7	93.1	94.8
Test 3	85.3	89.1	85.1	87.9	88.3	91.5	87.0	89.7	90.4	91.1	93.9	93.0	95.1
Mean	85.1	89.0	85.0	87.8	88.2	91.5	87.0	89.7	90.5	91.2	93.6	93.0	94.8
Occluded													
Test 1	76.8	80.5	74.9	74.6	73.6	75.9	72.7	72.8	71.5	69.8	77.0	74.0	71.2
Test 2	77.1	81.3	75.7	75.0	74.3	76.1	72.7	73.3	72.8	70.6	77.8	75.0	72.0
Test 3	77.4	81.4	76.0	75.7	75.0	76.7	73.1	73.3	72.3	70.7	77.9	75.3	73.4
Mean	77.1	81.1	75.5	75.1	74.3	76.2	72.8	73.1	72.2	70.4	77.6	74.8	72.2
Left Insertion Loss	**8.0**	**7.9**	**9.5**	**12.7**	**13.9**	**15.3**	**14.1**	**16.5**	**18.3**	**20.9**	**16.0**	**18.2**	**22.6**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.7	89.0	84.3	87.2	89.3	89.4	88.3	90.5	89.0	91.4	93.8	91.5	94.8
Test 2	86.1	89.3	84.4	87.2	89.6	89.0	88.6	90.7	88.8	91.7	95.5	92.5	94.9
Test 3	86.1	89.4	84.5	87.3	89.6	88.6	88.6	90.5	88.9	91.2	95.5	92.3	95.5
Mean	86.0	89.2	84.4	87.2	89.5	89.0	88.5	90.6	88.9	91.4	94.9	92.1	95.1
Occluded													
Test 1	78.0	81.7	75.8	80.6	80.1	78.7	75.0	75.6	71.5	70.8	74.3	70.4	69.5
Test 2	77.2	81.0	75.5	79.9	80.4	78.0	74.3	75.2	71.3	70.6	73.8	69.7	70.2
Test 3	77.8	80.7	75.2	79.7	79.3	77.5	74.6	74.9	70.7	70.8	75.7	71.7	71.0
Mean	77.7	81.2	75.5	80.1	80.0	78.1	74.6	75.3	71.2	70.7	74.6	70.6	70.2
Right Insertion Loss	**8.3**	**8.1**	**8.9**	**7.1**	**9.6**	**11.0**	**13.9**	**15.3**	**17.8**	**20.7**	**20.3**	**21.5**	**24.9**
Insertion Loss	**8.1**	**8.0**	**9.2**	**9.9**	**11.7**	**13.1**	**14.0**	**15.9**	**18.0**	**20.8**	**18.2**	**19.9**	**23.7**

Table C-16. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 6.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	93.8	96.1	97.9	99.3	101.8	98.9	95.4	92.1	91.8	90.9	82.2	108	109
Test 2	92.5	94.2	96.3	98.2	98.6	101.2	98.1	95.0	91.8	91.1	90.3	80.6	108	108
Test 3	92.5	94.7	96.5	98.9	98.6	101.3	98.9	95.2	92.2	91.5	90.3	81.6	108	109
Mean	92.5	94.3	96.3	98.3	98.8	101.4	98.6	95.2	92.0	91.5	90.5	81.5		
Occluded														
Test 1	64.7	66.3	61.6	59.0	51.7	48.9	47.5	42.0	42.6	44.6	43.1	44.3	86	80
Test 2	65.6	66.7	61.8	58.6	52.1	51.0	49.9	46.0	44.4	47.3	44.4	44.4	87	80
Test 3	66.8	68.1	62.2	59.2	52.5	50.7	50.1	47.2	43.7	46.0	45.0	44.3	87	81
Mean	65.7	67.0	61.9	58.9	52.1	50.2	49.2	45.1	43.6	46.0	44.2	44.3		
Left Insertion Loss	**26.8**	**27.2**	**34.4**	**39.4**	**46.7**	**51.3**	**49.5**	**50.1**	**48.5**	**45.5**	**46.3**	**37.1**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.2	94.6	97.0	98.2	100.0	102.8	99.6	97.8	95.9	92.1	89.1	81.3	109	110
Test 2	94.3	94.9	97.5	98.9	100.3	103.5	100.2	97.9	95.4	92.5	88.4	79.8	110	110
Test 3	94.1	95.0	97.1	98.4	99.9	103.8	100.7	98.7	96.5	92.5	87.8	80.2	110	110
Mean	93.9	94.8	97.2	98.5	100.1	103.4	100.2	98.1	95.9	92.4	88.4	80.4		
Occluded														
Test 1	66.1	64.7	60.3	56.1	56.4	55.9	48.2	49.7	49.7	51.5	56.1	55.8	88	79
Test 2	66.7	63.7	59.0	56.6	57.4	54.9	47.5	46.9	48.0	51.5	55.9	56.3	88	79
Test 3	66.5	64.0	59.7	58.9	56.1	55.2	48.3	46.3	47.6	50.2	53.4	55.4	88	79
Mean	66.4	64.1	59.7	57.2	56.6	55.4	48.0	47.6	48.4	51.1	55.1	55.8		
Right Insertion Loss	**27.5**	**30.7**	**37.5**	**41.3**	**43.5**	**48.0**	**52.2**	**50.5**	**47.5**	**41.3**	**33.3**	**24.6**		
Insertion Loss	**27.1**	**29.0**	**36.0**	**40.4**	**45.1**	**49.6**	**50.8**	**50.3**	**48.0**	**43.4**	**39.8**	**30.9**		

Table C-17. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 7.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.3	88.8	84.8	87.6	88.6	90.9	87.4	91.6	91.2	91.2	93.7	94.4	94.4
Test 2	85.0	88.6	84.8	87.7	88.3	90.9	87.4	91.7	91.4	91.5	93.9	94.6	94.7
Test 3	85.3	88.9	84.8	87.7	88.5	90.7	87.2	91.5	91.2	91.4	94.0	94.5	94.5
Mean	85.2	88.8	84.8	87.7	88.5	90.8	87.3	91.6	91.2	91.3	93.9	94.5	94.5
Occluded													
Test 1	79.0	80.9	75.7	77.7	76.5	73.9	74.4	74.7	73.1	67.7	70.1	69.7	67.2
Test 2	80.0	81.1	75.5	77.4	77.1	74.6	75.4	74.7	74.0	68.1	68.8	68.1	67.4
Test 3	79.9	81.5	76.6	78.5	77.4	75.0	74.6	75.0	73.8	68.1	70.5	69.7	69.0
Mean	79.6	81.1	75.9	77.9	77.0	74.5	74.8	74.8	73.6	68.0	69.8	69.2	67.9
Left Insertion Loss	**5.6**	**7.6**	**8.9**	**9.8**	**11.5**	**16.3**	**12.6**	**16.8**	**17.6**	**23.4**	**24.1**	**25.3**	**26.6**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.8	88.7	84.3	87.6	89.1	90.6	86.8	90.6	90.0	91.5	92.7	93.2	94.2
Test 2	85.6	88.5	84.2	87.4	88.8	90.7	86.7	90.8	90.2	91.7	93.3	93.0	94.0
Test 3	85.9	88.8	84.1	87.4	88.9	90.6	86.8	91.0	90.2	92.0	93.4	93.1	94.7
Mean	85.8	88.6	84.2	87.5	88.9	90.6	86.7	90.8	90.1	91.7	93.1	93.1	94.3
Occluded													
Test 1	77.2	79.8	74.0	77.6	78.0	75.3	74.7	76.7	76.1	73.0	76.8	74.0	71.1
Test 2	76.8	79.7	74.2	77.5	78.5	75.2	74.8	75.2	72.8	69.8	74.1	72.6	71.3
Test 3	76.8	79.7	74.7	77.7	78.7	76.3	75.1	75.2	73.0	69.7	74.2	73.3	71.3
Mean	76.9	79.8	74.3	77.6	78.4	75.6	74.9	75.7	73.9	70.8	75.1	73.3	71.2
Right Insertion Loss	**8.8**	**8.9**	**9.9**	**9.9**	**10.5**	**15.0**	**11.9**	**15.1**	**16.2**	**20.9**	**18.0**	**19.8**	**23.0**
Insertion Loss	**7.2**	**8.2**	**9.4**	**9.8**	**11.0**	**15.7**	**12.2**	**15.9**	**16.9**	**22.1**	**21.1**	**22.6**	**24.8**

Table C-17. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 7.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.9	93.0	95.0	96.0	96.2	98.4	95.4	94.3	93.5	92.1	89.2	80.1	107	107
Test 2	92.7	92.9	94.8	96.3	95.8	98.5	95.8	94.6	93.8	92.2	90.1	80.5	107	107
Test 3	92.8	93.7	94.5	96.1	96.4	98.9	96.2	95.6	94.5	92.0	89.5	78.9	107	107
Mean	92.8	93.2	94.8	96.2	96.1	98.6	95.8	94.9	93.9	92.1	89.6	79.8		
Occluded														
Test 1	61.6	63.2	58.9	53.5	56.1	56.0	47.5	43.0	41.7	42.7	45.2	47.4	87	77
Test 2	64.1	63.3	58.5	54.2	56.0	54.1	48.0	42.5	43.4	44.8	47.0	48.8	87	77
Test 3	62.5	63.9	59.1	55.2	57.4	55.8	48.6	43.9	43.5	44.6	47.4	49.2	88	78
Mean	62.7	63.5	58.8	54.3	56.5	55.3	48.1	43.1	42.9	44.0	46.5	48.5		
Left Insertion Loss	**30.1**	**29.7**	**35.9**	**41.8**	**39.7**	**43.3**	**47.8**	**51.7**	**51.1**	**48.1**	**43.1**	**31.4**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.8	92.7	95.1	97.3	97.8	97.9	96.6	95.0	94.8	94.8	90.3	81.1	107	107
Test 2	92.9	92.9	95.7	97.4	97.5	97.6	96.6	94.9	94.8	94.9	90.9	80.8	107	107
Test 3	93.0	93.3	96.2	97.6	97.4	97.9	96.8	94.9	95.7	94.6	91.0	80.9	108	108
Mean	92.9	93.0	95.7	97.4	97.5	97.8	96.7	94.9	95.1	94.8	90.7	80.9		
Occluded														
Test 1	68.3	69.1	61.4	58.0	55.8	51.7	47.7	47.8	51.0	51.6	54.4	56.6	88	81
Test 2	68.0	68.8	61.2	59.5	58.5	52.9	47.7	46.6	50.3	53.6	55.1	57.0	87	80
Test 3	68.7	69.5	61.0	59.5	57.3	52.5	47.6	46.8	49.8	52.7	55.1	57.1	87	80
Mean	68.3	69.2	61.2	59.0	57.2	52.4	47.7	47.1	50.4	52.7	54.9	56.9		
Right Insertion Loss	**24.6**	**23.8**	**34.5**	**38.4**	**40.3**	**45.4**	**49.0**	**47.8**	**44.8**	**42.1**	**35.8**	**24.0**		
Insertion Loss	**27.3**	**26.8**	**35.2**	**40.1**	**40.0**	**44.4**	**48.4**	**49.8**	**47.9**	**45.1**	**39.5**	**27.7**		

Table C-18. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 8.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	90.4	91.9	87.4	89.5	90.1	90.0	90.3	92.4	92.9	93.8	96.9	96.3	95.4
Test 2	88.4	92.0	87.7	90.2	90.6	93.0	89.3	92.0	91.9	92.6	97.1	96.3	95.7
Test 3	88.4	92.0	87.7	90.3	90.8	93.2	89.5	92.0	91.9	92.8	97.2	96.2	95.6
Mean	89.1	92.0	87.6	90.0	90.5	92.1	89.7	92.1	92.3	93.1	97.1	96.3	95.6
Occluded													
Test 1	86.0	87.1	80.9	82.5	83.8	80.5	81.5	81.8	77.7	74.8	80.8	78.2	75.2
Test 2	82.7	85.3	80.2	82.7	82.5	82.8	79.4	81.4	76.6	73.8	79.4	80.3	75.7
Test 3	83.8	86.5	80.7	83.3	83.9	83.3	80.5	81.9	76.6	73.9	80.0	79.1	74.6
Mean	84.2	86.3	80.6	82.8	83.4	82.2	80.5	81.7	77.0	74.2	80.1	79.2	75.2
Left Insertion Loss	**4.9**	**5.7**	**7.0**	**7.2**	**7.1**	**9.9**	**9.2**	**10.4**	**15.3**	**18.9**	**17.0**	**17.1**	**20.4**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	91.2	92.0	86.3	88.3	91.8	89.8	91.2	93.5	91.8	94.1	97.2	92.9	95.2
Test 2	89.1	92.1	86.8	89.3	91.8	91.1	90.6	92.6	90.5	93.3	98.3	94.1	96.3
Test 3	89.1	92.0	86.9	89.4	91.9	91.1	90.6	92.7	90.5	93.3	98.4	94.2	96.2
Mean	89.8	92.0	86.7	89.0	91.8	90.7	90.8	92.9	90.9	93.6	98.0	93.7	95.9
Occluded													
Test 1	82.6	84.1	76.7	79.8	80.8	77.3	78.6	78.3	75.2	75.9	80.4	78.4	79.7
Test 2	81.0	84.0	77.3	81.4	81.4	79.3	77.7	78.5	73.7	74.8	82.5	79.3	79.9
Test 3	81.6	84.4	78.0	81.6	82.1	80.3	78.5	79.0	74.2	74.8	82.0	79.4	79.7
Mean	81.7	84.2	77.3	80.9	81.4	79.0	78.3	78.6	74.4	75.2	81.6	79.0	79.8
Right Insertion Loss	**8.1**	**7.9**	**9.3**	**8.1**	**10.4**	**11.7**	**12.5**	**14.3**	**16.5**	**18.4**	**16.4**	**14.7**	**16.1**
Insertion Loss	**6.5**	**6.8**	**8.2**	**7.6**	**8.7**	**10.8**	**10.9**	**12.4**	**15.9**	**18.7**	**16.7**	**15.9**	**18.3**

Table C-18. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 8.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.5	96.6	96.8	98.0	99.3	102.1	99.9	94.8	92.7	93.2	91.0	81.1	109	109
Test 2	94.3	96.4	96.4	98.2	99.8	102.4	100.0	95.1	93.6	93.2	90.8	81.1	110	110
Test 3	94.3	95.8	96.8	97.9	99.7	102.4	100.0	94.5	93.0	93.1	91.5	80.1	109	110
Mean	94.0	96.3	96.7	98.0	99.6	102.3	99.9	94.8	93.1	93.2	91.1	80.8		
Occluded														
Test 1	65.6	66.3	63.7	59.5	56.8	54.1	52.7	52.2	48.5	47.9	51.9	50.2	93	84
Test 2	66.0	66.8	64.5	59.8	57.3	53.1	49.4	49.2	49.2	48.5	50.2	50.4	92	84
Test 3	64.6	66.8	64.3	60.3	56.7	53.5	54.0	48.8	46.6	47.7	50.4	50.3	93	84
Mean	65.4	66.6	64.2	59.9	57.0	53.6	52.0	50.0	48.1	48.0	50.8	50.3		
Left Insertion Loss	**28.7**	**29.7**	**32.5**	**38.2**	**42.6**	**48.8**	**47.9**	**44.8**	**45.0**	**45.1**	**40.3**	**30.5**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.7	96.5	97.1	98.7	99.6	102.2	100.2	98.4	94.9	91.5	87.6	76.4	110	110
Test 2	94.4	96.3	97.8	98.5	99.6	101.8	100.4	98.1	95.1	92.4	87.7	75.9	110	110
Test 3	94.4	96.2	97.6	98.8	99.7	101.7	100.2	97.7	94.7	92.1	87.9	76.2	110	110
Mean	94.5	96.3	97.5	98.6	99.6	101.9	100.2	98.1	94.9	92.0	87.7	76.1		
Occluded														
Test 1	69.1	67.0	63.9	61.5	55.8	50.5	47.8	49.6	54.8	58.0	61.0	58.4	91	85
Test 2	69.8	67.5	65.2	60.3	54.7	50.3	47.9	49.7	57.3	57.9	60.9	58.6	91	85
Test 3	68.3	67.1	64.6	61.5	56.1	51.3	49.3	52.1	57.5	58.3	61.4	58.7	92	85
Mean	69.1	67.2	64.6	61.1	55.5	50.7	48.3	50.4	56.5	58.1	61.1	58.6		
Right Insertion Loss	**25.4**	**29.1**	**32.9**	**37.5**	**44.1**	**51.2**	**51.9**	**47.6**	**38.3**	**33.9**	**26.6**	**17.6**		
Insertion Loss	**27.1**	**29.4**	**32.7**	**37.9**	**43.4**	**50.0**	**49.9**	**46.2**	**41.7**	**39.5**	**33.5**	**24.0**		

Table C-19. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 9.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.5	92.0	87.7	90.3	90.9	93.6	89.5	93.3	91.2	92.8	97.1	95.6	96.3
Test 2	88.6	92.2	87.8	90.3	91.0	93.4	89.0	93.0	91.3	92.9	96.6	95.9	96.6
Test 3	88.7	92.2	87.7	90.2	90.9	93.0	88.4	92.5	91.3	93.1	96.4	96.9	96.8
Mean	88.6	92.1	87.7	90.2	90.9	93.3	89.0	92.9	91.3	92.9	96.7	96.2	96.6
Occluded													
Test 1	81.8	83.0	76.1	77.8	80.3	80.9	77.5	75.9	72.2	71.1	79.8	77.8	76.9
Test 2	81.9	83.3	76.1	78.2	81.1	81.3	77.1	75.2	71.6	71.2	80.7	78.2	77.2
Test 3	84.4	84.3	75.5	78.6	81.3	77.8	77.0	76.1	72.5	71.8	80.0	76.5	75.6
Mean	82.7	83.6	75.9	78.2	80.9	80.0	77.2	75.7	72.1	71.4	80.1	77.5	76.6
Left Insertion Loss	**5.9**	**8.6**	**11.8**	**12.0**	**10.0**	**13.3**	**11.8**	**17.2**	**19.2**	**21.5**	**16.5**	**18.7**	**20.0**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.9	91.7	87.0	89.9	91.4	93.4	88.6	94.0	92.4	94.4	96.1	96.3	97.5
Test 2	88.8	91.7	86.9	89.8	91.4	93.3	88.9	94.0	92.5	94.5	96.1	96.3	97.6
Test 3	88.9	91.7	87.0	89.8	91.4	93.4	89.0	94.0	92.6	94.8	97.2	96.1	97.3
Mean	88.8	91.7	87.0	89.8	91.4	93.4	88.9	94.0	92.5	94.5	96.5	96.2	97.5
Occluded													
Test 1	83.2	84.2	78.0	81.0	82.5	81.9	76.8	78.2	74.5	73.4	79.6	73.9	70.7
Test 2	83.9	85.0	78.1	80.7	83.5	81.9	77.7	78.5	74.2	73.3	79.8	75.6	71.3
Test 3	89.6	90.1	81.8	84.1	87.2	83.8	81.2	81.6	78.0	76.7	80.6	74.6	71.1
Mean	85.5	86.4	79.3	81.9	84.4	82.6	78.6	79.4	75.6	74.5	80.0	74.7	71.0
Right Insertion Loss	**3.3**	**5.3**	**7.7**	**7.9**	**7.0**	**10.8**	**10.3**	**14.6**	**16.9**	**20.1**	**16.5**	**21.5**	**26.4**
Insertion Loss	**4.6**	**6.9**	**9.7**	**10.0**	**8.5**	**12.1**	**11.0**	**15.9**	**18.0**	**20.8**	**16.5**	**20.1**	**23.2**

Table C-19. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 9.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.3	97.0	98.0	99.0	101.3	102.8	99.3	97.4	95.8	94.2	87.9	77.4	110	110
Test 2	93.7	97.1	98.0	99.2	100.7	102.6	99.7	96.9	95.7	93.6	87.9	77.9	110	110
Test 3	94.0	96.7	98.0	99.1	100.1	102.6	100.0	97.5	95.9	94.8	88.3	77.2	110	110
Mean	93.7	96.9	98.0	99.1	100.7	102.7	99.6	97.3	95.8	94.2	88.0	77.5		
Occluded														
Test 1	70.7	68.6	62.3	58.7	54.5	49.6	46.9	43.4	42.8	44.7	47.8	50.1	90	83
Test 2	69.9	68.4	62.8	58.9	54.2	49.4	47.5	42.9	42.8	44.7	47.6	49.8	90	83
Test 3	70.6	69.0	63.8	59.0	53.6	47.9	46.6	43.7	42.7	45.2	48.6	50.0	91	83
Mean	70.4	68.7	63.0	58.9	54.1	49.0	47.0	43.4	42.8	44.9	48.0	50.0		
Left Insertion Loss	**23.3**	**28.3**	**35.0**	**40.2**	**46.6**	**53.7**	**52.6**	**53.9**	**53.0**	**49.4**	**40.1**	**27.5**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.3	97.1	98.9	98.6	100.2	101.1	99.1	96.0	94.3	94.2	90.7	78.1	110	110
Test 2	94.5	97.1	98.5	98.8	100.3	101.4	99.2	95.3	93.8	93.9	90.1	78.8	110	110
Test 3	94.3	97.1	98.5	99.0	100.3	100.9	99.1	95.3	94.3	94.8	90.0	78.1	110	110
Mean	94.4	97.1	98.6	98.8	100.2	101.2	99.1	95.5	94.1	94.3	90.2	78.3		
Occluded														
Test 1	65.6	65.4	60.8	61.8	55.9	51.3	49.1	46.3	49.5	52.8	56.0	58.8	91	82
Test 2	64.9	66.7	61.2	62.2	57.7	50.9	47.1	46.4	49.3	52.7	55.7	58.5	92	83
Test 3	67.6	67.0	62.5	62.8	56.7	50.7	47.8	47.1	50.2	53.4	56.2	58.7	96	84
Mean	66.0	66.4	61.5	62.3	56.8	51.0	48.0	46.6	49.7	52.9	56.0	58.7		
Right Insertion Loss	**28.4**	**30.8**	**37.1**	**36.5**	**43.5**	**50.2**	**51.1**	**48.9**	**44.5**	**41.4**	**34.3**	**19.7**		
Insertion Loss	**25.8**	**29.5**	**36.1**	**38.4**	**45.0**	**52.0**	**51.9**	**51.4**	**48.8**	**45.4**	**37.2**	**23.6**		

Table C-20. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 10.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.6	91.2	87.5	90.6	90.6	94.5	89.6	94.5	93.7	93.5	95.1	96.8	95.9
Test 2	87.9	91.3	87.5	90.7	91.0	94.6	89.8	93.5	94.3	93.7	94.8	96.8	95.8
Test 3	89.9	91.5	87.4	90.4	90.8	91.0	90.5	94.8	96.0	94.8	94.3	96.4	95.6
Mean	88.5	91.3	87.5	90.6	90.8	93.4	90.0	94.3	94.7	94.0	94.7	96.7	95.8
Occluded													
Test 1	83.1	87.5	81.9	84.0	83.1	84.9	80.3	82.1	78.6	74.9	78.2	78.1	76.6
Test 2	83.3	88.1	82.7	84.5	83.4	85.1	80.4	82.1	78.5	74.6	77.5	78.1	77.0
Test 3	87.2	91.7	86.2	87.3	85.7	87.3	81.8	83.3	79.1	75.5	78.3	78.9	77.7
Mean	84.5	89.1	83.6	85.3	84.1	85.8	80.8	82.5	78.7	75.0	78.0	78.3	77.1
Left Insertion Loss	**3.9**	**2.2**	**3.9**	**5.3**	**6.7**	**7.6**	**9.2**	**11.8**	**16.0**	**19.0**	**16.7**	**18.3**	**18.7**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.7	91.6	87.1	90.3	91.4	92.0	89.4	91.6	91.0	92.3	94.2	94.5	95.7
Test 2	89.0	91.9	87.1	90.4	91.8	91.8	89.7	91.3	90.5	92.5	94.4	94.1	95.7
Test 3	91.3	92.2	86.6	89.6	91.7	89.5	90.0	92.0	91.8	92.8	94.6	94.0	95.3
Mean	89.7	91.9	87.0	90.1	91.6	91.1	89.7	91.6	91.1	92.5	94.4	94.2	95.6
Occluded													
Test 1	82.4	86.4	82.1	86.2	84.8	83.9	79.2	81.2	77.4	74.7	76.7	76.4	72.9
Test 2	84.5	88.6	84.3	88.3	86.7	86.0	80.7	82.9	79.2	76.0	77.7	77.4	73.2
Test 3	88.5	91.7	87.8	91.8	91.0	90.0	83.6	85.1	80.7	77.2	78.9	78.5	74.7
Mean	85.1	88.9	84.7	88.8	87.5	86.6	81.2	83.0	79.1	76.0	77.8	77.4	73.6
Right Insertion Loss	**4.5**	**3.0**	**2.2**	**1.3**	**4.1**	**4.5**	**8.5**	**8.6**	**12.0**	**16.6**	**16.6**	**16.8**	**22.0**
Insertion Loss	**4.2**	**2.6**	**3.0**	**3.3**	**5.4**	**6.1**	**8.8**	**10.2**	**14.0**	**17.8**	**16.7**	**17.6**	**20.3**

Table C-20. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ – Subject 10.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.4	94.7	97.8	98.2	99.3	101.2	100.1	94.6	96.3	96.2	93.0	81.0	110	109
Test 2	95.1	96.1	97.4	98.0	99.9	101.0	99.6	94.4	96.2	96.1	92.9	81.1	110	109
Test 3	93.9	96.0	97.7	98.3	100.0	101.8	100.9	96.3	95.4	96.6	92.9	82.1	110	110
Mean	94.4	95.6	97.6	98.2	99.7	101.3	100.2	95.1	95.9	96.3	92.9	81.4		
Occluded														
Test 1	66.8	67.4	65.4	59.6	56.8	55.1	54.5	53.5	54.3	54.6	53.5	51.6	94	84
Test 2	67.2	67.2	64.3	60.7	56.8	56.5	57.3	57.6	58.2	60.0	58.6	51.1	94	84
Test 3	68.7	69.0	66.2	61.3	57.6	59.0	60.7	64.2	62.7	60.4	59.0	52.2	97	86
Mean	67.6	67.9	65.3	60.5	57.1	56.9	57.5	58.4	58.4	58.3	57.0	51.7		
Left Insertion Loss	**26.9**	**27.7**	**32.3**	**37.7**	**42.7**	**44.5**	**42.7**	**36.7**	**37.6**	**38.0**	**35.9**	**29.7**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.4	95.8	96.7	97.4	98.0	100.2	97.8	93.2	93.6	93.8	90.7	78.1	108	108
Test 2	92.8	95.5	95.6	97.8	97.4	100.0	97.5	92.7	94.1	93.5	90.6	77.5	108	108
Test 3	92.5	95.8	96.4	98.5	98.4	100.6	97.6	96.1	93.7	93.6	91.6	79.0	109	109
Mean	92.6	95.7	96.3	97.9	97.9	100.3	97.6	94.0	93.8	93.6	91.0	78.2		
Occluded														
Test 1	65.6	68.6	64.3	61.5	55.2	57.6	59.6	55.3	61.6	56.0	56.7	58.0	93	84
Test 2	66.4	69.9	65.5	61.5	56.2	60.4	61.9	57.2	62.4	59.2	58.3	58.4	95	85
Test 3	67.9	70.6	66.9	63.4	58.9	65.0	66.3	60.1	64.0	57.1	60.6	59.0	99	87
Mean	66.6	69.7	65.6	62.1	56.8	61.0	62.6	57.5	62.7	57.4	58.5	58.5		
Right Insertion Loss	**25.9**	**26.0**	**30.7**	**35.8**	**41.1**	**39.3**	**35.0**	**36.4**	**31.1**	**36.2**	**32.4**	**19.7**		
Insertion Loss	**26.4**	**26.9**	**31.5**	**36.7**	**41.9**	**41.9**	**38.9**	**36.6**	**34.3**	**37.1**	**34.2**	**24.7**		

Table C-20. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 1.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.4	89.1	84.9	87.6	88.6	90.9	87.9	90.2	89.6	90.6	95.8	94.8	95.3
Test 2	85.1	88.8	85.1	87.8	88.3	91.8	88.1	90.3	90.4	91.1	95.6	94.4	94.8
Test 3	87.2	89.0	84.6	87.1	88.1	88.8	89.4	92.6	92.2	92.7	94.5	95.5	93.8
Mean	85.9	89.0	84.9	87.5	88.3	90.5	88.5	91.0	90.7	91.5	95.3	94.9	94.6
Occluded													
Test 1	71.4	76.0	72.6	74.8	74.7	77.6	75.6	75.8	73.2	71.7	72.3	67.0	60.4
Test 2	71.7	76.3	73.3	75.9	76.0	79.2	76.2	75.9	73.5	71.1	71.8	66.4	60.2
Test 3	74.0	76.6	73.0	74.9	74.6	74.0	75.5	76.8	74.8	72.6	72.3	66.5	60.5
Mean	72.3	76.3	73.0	75.2	75.1	76.9	75.8	76.2	73.8	71.8	72.2	66.6	60.3
Left Insertion Loss	**13.5**	**12.7**	**11.9**	**12.3**	**13.2**	**13.6**	**12.7**	**14.9**	**16.9**	**19.7**	**23.1**	**28.3**	**34.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.8	88.9	84.1	86.9	89.3	89.7	88.2	90.9	89.3	92.0	95.2	91.9	94.2
Test 2	85.4	88.6	84.3	87.2	89.0	90.6	87.6	91.9	89.8	91.4	93.1	91.8	95.5
Test 3	87.6	88.8	83.8	86.6	89.2	88.9	88.4	92.2	91.4	91.9	92.6	93.1	95.0
Mean	86.3	88.8	84.0	86.9	89.2	89.7	88.1	91.7	90.2	91.8	93.6	92.3	94.9
Occluded													
Test 1	74.2	77.0	72.6	77.1	78.3	77.2	74.8	78.1	74.9	73.6	72.8	69.7	69.6
Test 2	74.3	78.2	73.3	77.8	78.6	77.6	75.1	78.5	75.0	73.3	72.1	69.7	69.9
Test 3	75.9	77.2	72.8	76.5	78.8	75.8	75.8	77.9	75.7	73.9	72.1	68.9	69.2
Mean	74.8	77.4	72.9	77.1	78.6	76.9	75.2	78.2	75.2	73.6	72.4	69.4	69.6
Right Insertion Loss	**11.5**	**11.3**	**11.1**	**9.8**	**10.6**	**12.8**	**12.8**	**13.5**	**14.9**	**18.2**	**21.3**	**22.8**	**25.3**
Insertion Loss	**12.5**	**12.0**	**11.5**	**11.0**	**11.9**	**13.2**	**12.8**	**14.2**	**15.9**	**18.9**	**22.2**	**25.6**	**29.8**

Table C-21. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 1.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.2	95.6	97.0	98.1	100.4	103.5	102.0	98.3	94.3	91.5	85.8	78.2	110	110
Test 2	92.9	94.6	97.1	98.0	99.8	103.3	101.6	97.7	94.1	91.5	86.8	78.5	110	110
Test 3	91.9	93.8	97.6	98.9	100.4	103.9	101.5	97.7	93.8	91.7	86.7	79.5	110	110
Mean	92.7	94.7	97.2	98.3	100.2	103.6	101.7	97.9	94.1	91.6	86.5	78.7		
Occluded														
Test 1	58.4	59.7	57.6	57.8	55.6	51.2	47.6	44.4	42.1	46.6	48.9	44.7	85	77
Test 2	58.5	59.5	56.1	58.4	55.6	52.3	49.1	45.0	44.4	51.9	52.1	45.5	86	77
Test 3	57.7	59.9	58.3	57.7	55.1	52.3	46.7	42.1	39.5	40.1	41.9	43.7	85	77
Mean	58.2	59.7	57.3	58.0	55.4	51.9	47.8	43.8	42.0	46.2	47.7	44.6		
Left Insertion Loss	**34.5**	**34.9**	**39.9**	**40.4**	**44.8**	**51.7**	**53.9**	**54.1**	**52.1**	**45.4**	**38.8**	**34.1**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.4	95.5	96.9	98.7	101.7	106.5	107.0	105.0	101.3	95.3	93.0	82.7	113	113
Test 2	92.9	95.6	97.9	100.3	101.7	107.0	106.2	105.2	101.0	96.2	94.5	83.6	113	114
Test 3	91.9	95.0	96.9	99.5	101.2	106.7	106.4	104.6	101.0	94.9	92.7	83.4	113	113
Mean	92.4	95.4	97.2	99.5	101.6	106.7	106.5	104.9	101.1	95.5	93.4	83.3		
Occluded														
Test 1	62.6	62.8	61.6	61.9	58.2	54.4	46.3	44.5	46.0	49.0	51.7	54.3	87	80
Test 2	63.9	63.4	63.0	63.4	58.3	54.6	46.4	43.8	46.2	49.0	51.9	54.4	87	80
Test 3	64.2	63.3	63.5	62.5	58.1	54.0	46.2	43.9	46.1	49.0	51.8	54.4	87	79
Mean	63.5	63.2	62.7	62.6	58.2	54.3	46.3	44.1	46.1	49.0	51.8	54.4		
Right Insertion Loss	**28.9**	**32.2**	**34.5**	**36.9**	**43.3**	**52.4**	**60.2**	**60.9**	**55.0**	**46.4**	**41.6**	**28.9**		
Insertion Loss	**31.7**	**33.6**	**37.2**	**38.6**	**44.1**	**52.0**	**57.0**	**57.5**	**53.5**	**45.9**	**40.2**	**31.5**		

Table C-22. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 2.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.0	88.4	84.1	86.5	87.7	87.5	88.3	92.6	93.0	92.8	96.3	96.0	94.8
Test 2	87.1	88.6	84.3	86.8	88.0	87.4	87.8	91.9	93.1	93.3	95.3	95.1	94.2
Test 3	87.1	88.6	84.2	86.7	88.0	87.4	88.4	91.5	93.3	93.5	95.2	95.6	94.0
Mean	87.1	88.6	84.2	86.7	87.9	87.5	88.2	92.0	93.1	93.2	95.6	95.6	94.3
Occluded													
Test 1	76.1	79.1	73.6	74.6	75.7	76.9	75.2	75.2	73.6	71.1	72.3	65.3	61.6
Test 2	76.1	78.2	72.8	74.5	76.0	74.5	75.6	75.8	75.3	72.2	73.4	67.8	62.6
Test 3	78.0	79.7	73.8	75.8	76.4	74.2	76.5	76.1	74.9	72.3	72.9	67.4	61.7
Mean	76.7	79.0	73.4	74.9	76.0	75.2	75.8	75.7	74.6	71.9	72.9	66.9	62.0
Left Insertion Loss	**10.3**	**9.5**	**10.8**	**11.7**	**11.9**	**12.3**	**12.4**	**16.3**	**18.5**	**21.3**	**22.7**	**28.7**	**32.4**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.5	88.2	83.3	86.3	88.6	88.6	87.8	92.0	91.2	92.6	92.5	92.0	94.2
Test 2	87.5	88.3	83.5	86.9	88.6	89.5	87.3	92.7	91.3	92.1	92.9	92.5	93.8
Test 3	87.5	88.3	83.6	87.0	88.5	89.4	87.7	92.2	91.1	91.7	92.5	92.3	93.9
Mean	87.5	88.3	83.5	86.7	88.6	89.1	87.6	92.3	91.2	92.1	92.6	92.3	93.9
Occluded													
Test 1	77.3	79.6	74.7	77.6	76.8	78.4	77.7	78.4	74.6	72.6	75.9	72.6	71.5
Test 2	78.6	79.0	74.5	78.0	79.1	76.5	79.6	78.4	75.0	72.8	76.3	73.2	72.8
Test 3	79.2	79.8	74.8	77.8	78.2	76.9	78.7	79.1	76.2	73.9	76.9	73.8	73.4
Mean	78.4	79.4	74.7	77.8	78.0	77.2	78.7	78.6	75.3	73.1	76.4	73.2	72.6
Right Insertion Loss	**9.1**	**8.8**	**8.8**	**8.9**	**10.5**	**11.9**	**8.9**	**13.7**	**15.9**	**19.0**	**16.3**	**19.1**	**21.4**
Insertion Loss	**9.7**	**9.2**	**9.8**	**10.3**	**11.2**	**12.1**	**10.7**	**15.0**	**17.2**	**20.2**	**19.5**	**23.9**	**26.9**

Table C-22. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 2.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.8	95.5	96.4	97.9	98.3	100.2	99.1	96.6	93.3	92.3	91.3	80.2	109	109
Test 2	92.2	95.8	96.1	97.7	98.0	100.5	98.7	96.9	94.0	93.0	91.5	80.2	108	109
Test 3	91.6	95.5	96.0	97.4	98.0	100.6	98.6	96.3	93.6	93.9	92.4	81.1	108	108
Mean	91.9	95.6	96.2	97.7	98.1	100.5	98.8	96.6	93.6	93.1	91.7	80.5		
Occluded														
Test 1	64.2	65.3	61.5	57.0	57.5	53.9	47.3	40.7	40.9	41.4	43.7	45.8	86	78
Test 2	60.6	61.7	58.6	57.5	57.8	54.6	47.0	40.0	40.8	41.3	43.4	45.5	86	78
Test 3	62.0	62.8	59.6	57.1	56.7	53.8	45.0	41.2	41.7	41.8	43.7	45.6	87	78
Mean	62.3	63.3	59.9	57.2	57.3	54.1	46.4	40.6	41.1	41.5	43.6	45.6		
Left Insertion Loss	**29.6**	**32.3**	**36.3**	**40.5**	**40.8**	**46.3**	**52.3**	**56.0**	**52.5**	**51.6**	**48.1**	**34.9**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.3	94.1	96.6	97.6	98.3	100.5	99.6	97.7	95.5	97.6	92.2	80.1	109	109
Test 2	92.5	94.4	96.1	98.7	98.7	99.8	98.9	97.8	95.4	97.1	91.8	80.1	109	109
Test 3	92.6	94.1	96.0	98.7	98.2	100.0	99.1	97.2	95.1	96.8	90.6	80.6	108	109
Mean	92.1	94.2	96.2	98.3	98.4	100.1	99.2	97.5	95.3	97.2	91.6	80.3		
Occluded														
Test 1	66.0	70.7	67.0	64.5	56.1	52.1	48.1	46.0	48.6	51.1	52.8	54.9	88	81
Test 2	68.1	69.8	67.6	66.0	55.2	51.0	46.4	44.8	47.7	50.0	52.3	54.8	88	82
Test 3	68.4	70.7	67.3	66.0	56.8	52.5	46.6	45.0	47.0	50.9	52.7	54.8	89	82
Mean	67.5	70.4	67.3	65.5	56.0	51.9	47.0	45.3	47.7	50.7	52.6	54.8		
Right Insertion Loss	**24.6**	**23.8**	**28.9**	**32.9**	**42.3**	**48.2**	**52.1**	**52.3**	**47.6**	**46.5**	**39.0**	**25.5**		
Insertion Loss	**27.1**	**28.0**	**32.6**	**36.7**	**41.6**	**47.3**	**52.2**	**54.1**	**50.1**	**49.0**	**43.5**	**30.2**		

Table C-23. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 3.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.5	88.9	84.7	87.3	88.4	89.5	88.5	89.9	90.1	90.6	94.8	95.3	93.9
Test 2	87.8	89.3	84.5	86.7	88.3	86.6	88.8	90.0	91.3	91.8	95.6	93.8	93.5
Test 3	85.4	88.8	84.7	87.2	88.1	89.4	88.5	89.7	90.6	90.7	95.5	95.2	94.3
Mean	86.2	89.0	84.6	87.1	88.2	88.5	88.6	89.9	90.6	91.0	95.3	94.8	93.9
Occluded													
Test 1	76.6	78.5	72.5	73.2	74.3	71.3	72.6	74.8	73.0	71.4	73.6	66.5	61.7
Test 2	78.5	79.9	73.4	74.7	76.1	72.8	73.3	74.7	73.0	71.4	73.6	67.4	64.6
Test 3	75.0	78.8	73.1	74.3	75.5	74.4	72.3	72.2	72.0	70.7	72.8	69.1	67.1
Mean	76.7	79.1	73.0	74.1	75.3	72.8	72.8	73.9	72.7	71.2	73.3	67.7	64.5
Left Insertion Loss	**9.5**	**10.0**	**11.6**	**13.0**	**12.9**	**15.7**	**15.9**	**16.0**	**18.0**	**19.8**	**22.0**	**27.1**	**29.4**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.7	88.4	83.3	86.5	88.7	89.2	88.7	91.4	90.3	92.7	95.6	92.1	93.5
Test 2	87.9	88.7	82.9	85.9	89.0	89.6	89.8	92.5	91.4	93.1	94.7	91.2	92.4
Test 3	85.6	88.3	83.3	86.4	88.6	89.3	88.8	91.4	90.3	92.8	95.6	92.0	93.5
Mean	86.4	88.5	83.2	86.3	88.8	89.4	89.1	91.8	90.6	92.9	95.3	91.8	93.2
Occluded													
Test 1	77.6	77.5	72.3	75.2	76.3	73.9	76.5	77.7	75.6	74.4	75.7	69.1	67.7
Test 2	77.1	78.1	72.4	75.9	77.1	74.5	77.1	78.2	75.7	74.0	75.0	67.5	64.1
Test 3	75.5	77.4	72.3	75.4	76.4	74.2	76.6	77.4	73.6	72.4	74.3	68.2	65.0
Mean	76.7	77.7	72.3	75.5	76.6	74.2	76.7	77.8	75.0	73.6	75.0	68.3	65.6
Right Insertion Loss	**9.7**	**10.8**	**10.8**	**10.8**	**12.2**	**15.1**	**12.3**	**14.0**	**15.7**	**19.3**	**20.3**	**23.5**	**27.6**
Insertion Loss	**9.6**	**10.4**	**11.2**	**11.9**	**12.6**	**15.4**	**14.1**	**15.0**	**16.8**	**19.5**	**21.1**	**25.3**	**28.5**

Table C-23. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 3.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.4	93.9	96.7	98.0	97.8	99.2	97.8	93.8	92.7	92.8	90.8	80.5	108	108
Test 2	91.7	94.6	95.9	98.8	97.5	99.1	97.9	94.3	92.1	93.2	91.3	80.7	108	108
Test 3	91.8	94.8	96.1	98.5	97.3	99.6	97.8	93.7	91.9	92.6	91.3	80.6	108	108
Mean	91.9	94.4	96.2	98.5	97.5	99.3	97.8	93.9	92.2	92.9	91.1	80.6		
Occluded														
Test 1	61.6	62.0	57.3	54.4	53.5	53.0	47.5	41.9	43.1	44.2	47.1	49.8	85	77
Test 2	61.1	63.7	60.3	56.9	57.1	53.5	46.9	42.6	43.0	44.2	46.9	49.5	86	78
Test 3	62.7	62.8	57.4	52.5	53.8	52.2	48.6	41.5	42.8	44.5	46.6	49.0	85	77
Mean	61.8	62.8	58.4	54.6	54.8	52.9	47.7	42.0	43.0	44.3	46.9	49.4		
Left Insertion Loss	**30.2**	**31.6**	**37.9**	**43.9**	**42.7**	**46.4**	**50.2**	**51.9**	**49.2**	**48.6**	**44.2**	**31.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.4	94.5	95.8	99.3	98.4	100.6	99.4	98.2	95.5	95.5	91.5	81.1	109	109
Test 2	91.2	94.3	96.2	98.7	97.8	100.1	98.3	97.5	95.1	95.9	91.5	81.1	108	108
Test 3	91.5	94.4	95.5	98.7	98.0	100.1	98.8	98.0	95.5	95.3	90.6	81.2	108	108
Mean	91.4	94.4	95.8	98.9	98.1	100.3	98.8	97.9	95.4	95.6	91.2	81.1		
Occluded														
Test 1	65.7	65.1	60.6	55.7	54.0	50.5	43.7	44.9	48.2	51.3	54.3	57.0	87	80
Test 2	63.9	63.5	60.1	56.0	55.4	51.5	43.9	45.0	47.9	51.1	54.2	56.8	87	79
Test 3	62.9	65.9	61.2	57.4	54.5	50.5	44.1	45.1	48.1	51.1	54.0	56.6	86	79
Mean	64.1	64.8	60.6	56.4	54.6	50.8	43.9	45.0	48.1	51.2	54.1	56.8		
Right Insertion Loss	**27.2**	**29.6**	**35.2**	**42.5**	**43.5**	**49.4**	**54.9**	**52.9**	**47.3**	**44.4**	**37.0**	**24.3**		
Insertion Loss	**28.7**	**30.6**	**36.5**	**43.2**	**43.1**	**47.9**	**52.5**	**52.4**	**48.3**	**46.5**	**40.6**	**27.8**		

Table C-24. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 4.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.0	88.8	84.8	87.9	88.5	91.4	87.9	92.1	92.3	92.2	94.7	95.0	93.4
Test 2	84.7	88.5	84.8	87.9	88.4	91.5	88.1	92.1	92.6	92.6	95.0	95.1	93.3
Test 3	85.1	88.8	84.8	88.0	88.6	91.5	88.2	91.4	92.4	92.2	94.9	95.2	93.1
Mean	84.9	88.7	84.8	87.9	88.5	91.5	88.1	91.9	92.4	92.3	94.9	95.1	93.3
Occluded													
Test 1	77.9	80.9	75.4	77.8	77.9	79.9	77.7	79.3	76.8	72.6	74.3	70.2	66.1
Test 2	78.4	81.4	75.7	78.1	78.4	80.4	78.0	79.0	76.6	72.4	74.5	71.4	67.0
Test 3	78.9	81.5	75.9	78.0	78.3	80.0	77.7	79.2	76.3	71.7	73.8	70.8	68.0
Mean	78.4	81.3	75.7	78.0	78.2	80.1	77.8	79.2	76.6	72.2	74.2	70.8	67.0
Left Insertion Loss	**6.5**	**7.4**	**9.1**	**9.9**	**10.3**	**11.4**	**10.3**	**12.7**	**15.8**	**20.1**	**20.7**	**24.3**	**26.2**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.7	88.8	84.1	87.5	88.9	90.1	87.3	90.6	90.1	92.0	93.1	91.9	94.6
Test 2	85.6	88.8	84.2	87.4	88.9	89.9	87.4	90.5	89.9	91.6	93.1	91.9	94.9
Test 3	85.8	89.0	84.3	87.7	89.0	89.9	87.3	90.8	89.9	91.3	92.6	92.4	95.3
Mean	85.7	88.9	84.2	87.5	88.9	89.9	87.3	90.6	89.9	91.6	92.9	92.1	94.9
Occluded													
Test 1	78.5	80.9	74.3	76.4	76.9	75.5	72.6	72.7	68.6	70.4	72.8	66.6	66.1
Test 2	78.4	80.8	74.0	76.4	76.8	75.6	73.7	72.0	69.2	70.9	73.6	65.9	64.9
Test 3	77.9	80.5	74.4	76.5	76.7	76.0	73.1	73.2	70.0	71.6	73.2	66.0	64.1
Mean	78.3	80.7	74.2	76.4	76.8	75.7	73.1	72.6	69.2	71.0	73.2	66.1	65.1
Right Insertion Loss	**7.4**	**8.2**	**10.0**	**11.1**	**12.1**	**14.3**	**14.2**	**18.0**	**20.7**	**20.6**	**19.7**	**25.9**	**29.9**
Insertion Loss	**7.0**	**7.8**	**9.6**	**10.5**	**11.2**	**12.8**	**12.2**	**15.3**	**18.3**	**20.4**	**20.2**	**25.1**	**28.1**

Table C-24. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 4.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.3	93.2	95.3	97.8	99.4	101.4	98.6	95.9	93.9	94.6	90.2	79.3	109	109
Test 2	92.3	93.4	95.4	97.7	99.7	100.4	99.4	95.6	94.1	94.4	90.8	80.0	109	109
Test 3	92.4	93.8	95.7	97.7	99.6	100.9	99.4	95.5	93.7	94.4	90.2	80.1	109	109
Mean	92.3	93.5	95.5	97.7	99.6	100.9	99.2	95.7	93.9	94.5	90.4	79.8		
Occluded														
Test 1	62.3	62.9	60.2	59.0	57.0	52.2	46.1	41.1	43.8	46.8	48.2	49.2	88	80
Test 2	61.6	62.3	61.1	59.5	57.9	53.3	47.0	41.6	42.6	44.1	46.7	49.1	89	80
Test 3	62.4	63.2	59.5	59.6	57.7	53.9	46.1	40.9	42.5	46.2	47.7	48.8	89	80
Mean	62.1	62.8	60.3	59.4	57.6	53.1	46.4	41.2	43.0	45.7	47.5	49.0		
Left Insertion Loss	**30.2**	**30.6**	**35.2**	**38.4**	**42.0**	**47.7**	**52.8**	**54.5**	**50.9**	**48.8**	**42.9**	**30.8**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.0	94.6	96.2	99.3	99.8	101.9	101.3	98.8	97.9	92.2	89.6	79.7	109	110
Test 2	92.7	94.5	96.5	99.2	98.9	102.0	100.5	99.0	97.7	92.3	88.2	79.7	109	110
Test 3	92.7	94.2	96.7	98.9	99.6	102.3	101.2	99.1	98.0	92.8	88.1	79.5	109	110
Mean	92.8	94.4	96.5	99.1	99.4	102.1	101.0	99.0	97.9	92.4	88.6	79.6		
Occluded														
Test 1	62.2	61.5	61.0	58.9	56.9	57.6	53.7	50.3	51.0	52.0	55.1	57.2	86	77
Test 2	61.0	61.9	60.7	58.0	57.3	57.8	54.3	49.3	52.7	53.8	56.6	57.2	86	77
Test 3	62.1	62.9	61.0	59.2	55.9	56.5	53.8	49.3	51.7	53.6	55.8	57.2	86	77
Mean	61.8	62.1	60.9	58.7	56.7	57.3	53.9	49.6	51.8	53.1	55.8	57.2		
Right Insertion Loss	**31.0**	**32.3**	**35.6**	**40.4**	**42.7**	**44.8**	**47.0**	**49.4**	**46.1**	**39.3**	**32.8**	**22.4**		
Insertion Loss	**30.6**	**31.5**	**35.4**	**39.4**	**42.4**	**46.3**	**49.9**	**51.9**	**48.5**	**44.0**	**37.8**	**26.6**		

Table C-25. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 5.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.6	89.3	85.1	87.9	88.7	90.8	87.5	89.3	90.6	91.2	94.3	94.7	95.2
Test 2	87.8	89.3	84.8	87.2	88.2	87.6	88.5	90.8	92.2	92.8	95.5	94.5	94.0
Test 3	87.7	89.3	84.8	87.2	88.2	87.6	88.5	91.0	92.2	92.8	95.3	94.2	93.9
Mean	87.0	89.3	84.9	87.4	88.4	88.7	88.2	90.4	91.6	92.2	95.1	94.5	94.4
Occluded													
Test 1	78.5	81.3	76.1	77.8	77.1	78.3	77.6	78.6	75.9	73.9	75.3	71.6	65.6
Test 2	78.0	81.1	76.0	77.9	77.7	78.3	77.0	77.2	74.9	72.9	73.6	69.2	66.4
Test 3	78.3	81.4	75.8	78.0	77.1	78.2	77.5	77.1	74.5	72.1	73.4	68.4	66.5
Mean	78.2	81.3	76.0	77.9	77.3	78.3	77.4	77.6	75.1	73.0	74.1	69.7	66.2
Left Insertion Loss	**8.8**	**8.0**	**8.9**	**9.5**	**11.1**	**10.4**	**10.8**	**12.8**	**16.5**	**19.3**	**21.0**	**24.8**	**28.2**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.8	89.0	84.5	87.6	89.2	90.6	87.7	91.2	89.8	92.3	94.4	92.7	94.1
Test 2	88.0	89.0	83.9	86.6	89.2	89.6	88.3	92.1	91.1	93.0	94.7	92.0	93.4
Test 3	88.1	89.1	84.0	86.6	89.3	89.7	88.4	92.0	91.1	93.3	94.9	92.2	93.6
Mean	87.3	89.0	84.1	87.0	89.2	90.0	88.1	91.8	90.7	92.9	94.7	92.3	93.7
Occluded													
Test 1	73.3	77.2	72.0	77.0	76.8	76.5	77.6	74.7	69.7	70.3	70.8	66.7	65.1
Test 2	75.3	78.9	72.9	77.9	78.1	77.7	77.8	74.6	70.6	70.7	70.5	64.7	64.9
Test 3	75.0	78.5	72.9	77.6	77.7	77.6	77.8	74.6	70.2	70.7	71.5	65.5	63.2
Mean	74.6	78.2	72.6	77.5	77.5	77.3	77.7	74.6	70.2	70.6	70.9	65.7	64.4
Right Insertion Loss	**12.8**	**10.8**	**11.5**	**9.4**	**11.7**	**12.7**	**10.4**	**17.1**	**20.5**	**22.3**	**23.8**	**26.7**	**29.3**
Insertion Loss	**10.8**	**9.4**	**10.2**	**9.5**	**11.4**	**11.6**	**10.6**	**14.9**	**18.5**	**20.8**	**22.4**	**25.7**	**28.8**

Table C-25. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 5.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.2	94.6	96.9	97.5	98.7	100.4	98.6	96.1	93.8	91.5	87.7	79.6	108	108
Test 2	93.2	95.2	97.0	97.2	99.0	101.2	98.8	97.2	94.0	91.7	87.4	80.1	109	109
Test 3	93.2	95.1	97.0	97.3	98.7	101.1	98.8	97.3	94.3	92.0	87.8	80.3	109	109
Mean	93.2	95.0	97.0	97.3	98.8	100.9	98.7	96.8	94.0	91.8	87.6	80.0		
Occluded														
Test 1	62.0	62.1	59.6	60.0	53.5	49.9	48.4	43.4	45.5	46.1	49.1	47.0	88	80
Test 2	65.7	63.5	60.6	60.8	55.5	50.8	47.1	44.5	46.0	44.7	50.4	47.5	88	79
Test 3	65.7	65.2	62.0	60.7	55.4	51.5	47.5	44.5	44.8	43.7	47.7	47.0	88	79
Mean	64.5	63.6	60.7	60.5	54.8	50.8	47.7	44.1	45.4	44.8	49.1	47.2		
Left Insertion Loss	**28.7**	**31.4**	**36.2**	**36.8**	**44.0**	**50.1**	**51.1**	**52.7**	**48.6**	**46.9**	**38.6**	**32.8**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.2	95.5	97.8	99.3	100.3	102.4	101.6	99.9	95.9	93.9	91.8	82.2	110	110
Test 2	91.8	95.3	97.4	99.3	99.8	102.1	101.6	100.1	95.4	93.8	92.3	83.0	110	110
Test 3	91.8	95.4	97.2	99.0	99.8	101.9	101.5	99.9	95.5	93.8	92.2	83.2	110	110
Mean	91.9	95.4	97.5	99.2	99.9	102.1	101.6	100.0	95.6	93.9	92.1	82.8		
Occluded														
Test 1	62.9	60.2	56.1	55.5	54.1	52.7	47.2	46.8	48.4	50.7	53.7	56.0	86	77
Test 2	63.6	62.6	60.7	59.8	55.4	53.6	46.7	47.2	48.9	50.8	53.8	56.4	87	78
Test 3	63.7	61.0	59.2	59.1	55.6	53.7	45.9	46.4	48.2	51.0	53.7	56.4	86	78
Mean	63.4	61.3	58.7	58.1	55.0	53.3	46.6	46.8	48.5	50.8	53.7	56.2		
Right Insertion Loss	**28.5**	**34.1**	**38.8**	**41.1**	**44.9**	**48.8**	**55.0**	**53.2**	**47.1**	**43.0**	**38.4**	**26.6**		
Insertion Loss	**28.6**	**32.8**	**37.5**	**38.9**	**44.5**	**49.5**	**53.0**	**52.9**	**47.9**	**45.0**	**38.5**	**29.7**		

Table C-26. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 6.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.2	89.5	85.0	88.1	88.7	89.7	87.7	91.8	93.0	92.8	92.5	93.7	93.2
Test 2	85.1	89.0	85.2	88.3	88.7	92.6	87.1	90.7	91.8	91.6	92.9	94.3	93.1
Test 3	87.3	89.1	84.9	87.7	88.4	89.4	88.4	92.9	93.3	92.9	92.9	94.1	92.5
Mean	86.5	89.2	85.0	88.0	88.6	90.6	87.7	91.8	92.7	92.5	92.8	94.0	93.0
Occluded													
Test 1	75.9	78.9	74.0	74.6	72.4	75.3	73.4	73.2	73.2	70.3	70.7	64.4	61.0
Test 2	75.9	79.5	73.4	74.9	72.7	76.4	74.3	73.7	74.1	70.8	71.0	64.7	61.3
Test 3	78.2	79.9	73.4	74.7	73.4	72.4	75.1	74.9	75.1	71.5	71.5	63.5	60.2
Mean	76.7	79.4	73.6	74.7	72.8	74.7	74.3	74.0	74.1	70.9	71.0	64.2	60.8
Left Insertion Loss	**9.8**	**9.8**	**11.4**	**13.3**	**15.8**	**15.8**	**13.4**	**17.8**	**18.6**	**21.6**	**21.7**	**29.8**	**32.1**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.9	89.8	84.5	87.8	89.7	89.7	88.1	91.1	90.5	90.9	91.8	92.6	94.3
Test 2	85.9	89.3	84.9	87.9	89.6	91.0	87.4	90.9	89.8	91.5	93.6	92.2	95.4
Test 3	88.3	89.5	84.3	87.1	89.8	88.9	87.9	91.8	90.9	92.2	92.0	92.4	94.4
Mean	87.4	89.5	84.6	87.6	89.7	89.9	87.8	91.3	90.4	91.5	92.5	92.4	94.7
Occluded													
Test 1	79.1	81.8	76.5	79.5	79.7	79.1	76.4	76.1	72.8	69.2	70.2	65.6	70.7
Test 2	78.4	81.9	76.1	79.6	79.3	79.6	76.8	75.9	72.5	69.8	70.6	66.5	71.2
Test 3	81.1	82.2	75.9	78.6	79.3	76.6	77.3	76.0	73.5	70.0	70.1	67.6	72.6
Mean	79.6	82.0	76.2	79.2	79.4	78.4	76.9	76.0	72.9	69.7	70.3	66.6	71.5
Right Insertion Loss	**7.8**	**7.5**	**8.4**	**8.4**	**10.3**	**11.4**	**11.0**	**15.2**	**17.5**	**21.9**	**22.2**	**25.8**	**23.2**
Insertion Loss	**8.8**	**8.6**	**9.9**	**10.8**	**13.0**	**13.6**	**12.2**	**16.5**	**18.1**	**21.7**	**21.9**	**27.8**	**27.7**

Table C-26. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 6.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.5	94.3	96.6	97.7	99.0	101.0	99.5	96.5	93.0	90.8	90.0	81.5	108	109
Test 2	93.7	94.7	96.2	97.8	99.0	101.4	99.1	95.3	92.3	91.5	90.5	81.4	108	109
Test 3	93.5	94.7	96.6	97.7	98.7	101.0	99.3	95.7	92.8	91.6	90.1	81.0	108	109
Mean	93.6	94.6	96.4	97.8	98.9	101.1	99.3	95.8	92.7	91.3	90.2	81.3		
Occluded														
Test 1	62.0	62.3	60.6	58.6	54.3	53.5	47.0	41.5	41.6	40.6	42.5	44.2	85	76
Test 2	62.7	61.7	59.6	58.8	53.1	49.8	46.3	40.3	40.2	40.3	42.5	44.2	85	77
Test 3	61.8	62.2	59.8	57.5	52.9	50.4	45.5	41.5	43.1	40.9	42.3	43.9	86	77
Mean	62.2	62.1	60.0	58.3	53.4	51.3	46.3	41.1	41.6	40.6	42.4	44.1		
Left Insertion Loss	**31.4**	**32.5**	**36.4**	**39.4**	**45.4**	**49.9**	**53.1**	**54.7**	**51.1**	**50.7**	**47.7**	**37.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.2	97.5	97.1	98.8	100.7	101.3	98.1	96.8	95.7	92.3	90.7	82.0	109	109
Test 2	93.2	96.3	96.6	98.4	100.5	101.4	98.8	96.9	95.2	92.0	89.5	81.0	109	109
Test 3	93.0	97.0	97.0	99.0	100.4	101.1	98.9	96.9	95.2	92.0	88.9	80.7	109	109
Mean	92.8	96.9	96.9	98.7	100.5	101.2	98.6	96.9	95.3	92.1	89.7	81.2		
Occluded														
Test 1	66.4	65.3	62.4	59.5	58.7	56.9	46.4	45.8	48.1	51.1	53.6	55.4	88	79
Test 2	67.3	66.7	63.9	60.7	58.5	56.5	45.2	44.9	47.8	51.6	55.1	55.7	88	79
Test 3	68.1	66.9	64.6	62.3	60.6	58.0	46.0	46.4	47.8	50.8	55.0	55.7	89	79
Mean	67.2	66.3	63.7	60.8	59.3	57.2	45.9	45.7	47.9	51.1	54.6	55.6		
Right Insertion Loss	**25.6**	**30.6**	**33.2**	**37.9**	**41.2**	**44.1**	**52.7**	**51.2**	**47.5**	**41.0**	**35.2**	**25.6**		
Insertion Loss	**28.5**	**31.6**	**34.8**	**38.7**	**43.3**	**47.0**	**52.9**	**53.0**	**49.3**	**45.8**	**41.4**	**31.4**		

Table C-27. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 7.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.5	89.0	84.8	87.7	88.5	90.7	87.2	91.5	91.3	91.3	94.1	94.6	95.1
Test 2	87.5	89.0	84.6	87.0	88.2	87.2	88.3	92.9	92.9	92.7	94.7	95.1	94.4
Test 3	87.5	89.0	84.6	87.0	88.2	87.2	88.1	93.0	92.8	92.7	94.6	95.3	94.6
Mean	86.9	89.0	84.7	87.2	88.3	88.4	87.9	92.4	92.3	92.2	94.4	95.0	94.7
Occluded													
Test 1	78.1	79.5	74.6	75.4	74.8	72.5	75.3	75.0	73.7	70.4	69.3	62.9	58.4
Test 2	75.5	78.9	74.6	76.0	75.3	77.3	75.4	74.9	72.6	68.9	68.9	65.4	62.5
Test 3	78.4	80.4	74.9	75.9	75.7	74.0	75.3	74.6	74.7	69.9	68.9	64.3	62.0
Mean	77.3	79.6	74.7	75.8	75.2	74.6	75.4	74.8	73.7	69.7	69.0	64.2	61.0
Left Insertion Loss	**9.5**	**9.4**	**10.0**	**11.5**	**13.1**	**13.8**	**12.5**	**17.6**	**18.7**	**22.5**	**25.4**	**30.8**	**33.7**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.9	88.8	84.2	87.4	89.1	90.3	87.0	90.9	90.0	92.1	93.6	92.6	93.9
Test 2	88.0	88.8	83.7	86.6	89.1	89.6	87.6	91.7	91.3	92.2	93.6	92.7	92.7
Test 3	88.0	88.8	83.7	86.5	89.1	89.6	87.6	91.6	91.3	92.4	93.8	92.5	92.6
Mean	87.3	88.8	83.9	86.8	89.1	89.9	87.4	91.4	90.8	92.2	93.6	92.6	93.1
Occluded													
Test 1	78.9	80.4	74.6	77.8	78.5	77.2	78.1	77.3	75.5	72.9	72.3	68.1	68.1
Test 2	76.5	80.4	75.4	79.2	78.4	79.5	77.7	76.6	73.4	71.4	72.1	67.8	68.3
Test 3	79.2	80.9	75.3	78.7	79.0	77.9	77.8	77.3	74.9	72.0	71.7	68.1	68.0
Mean	78.2	80.6	75.1	78.5	78.6	78.2	77.9	77.1	74.6	72.1	72.0	68.0	68.1
Right Insertion Loss	**9.1**	**8.2**	**8.8**	**8.3**	**10.4**	**11.7**	**9.5**	**14.3**	**16.2**	**20.1**	**21.6**	**24.6**	**25.0**
Insertion Loss	**9.3**	**8.8**	**9.4**	**9.9**	**11.8**	**12.7**	**11.0**	**16.0**	**17.5**	**21.3**	**23.5**	**27.7**	**29.4**

Table C-27. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 7.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.0	93.4	95.6	96.3	96.5	99.0	96.3	95.6	94.5	93.1	88.4	78.9	107	107
Test 2	92.4	94.1	94.8	96.7	96.2	98.0	95.0	95.3	94.2	92.5	90.1	79.7	107	107
Test 3	92.3	94.0	95.1	96.6	96.5	98.3	95.3	94.9	93.5	92.1	89.8	78.7	107	107
Mean	92.5	93.8	95.1	96.6	96.4	98.4	95.5	95.3	94.1	92.5	89.4	79.1		
Occluded														
Test 1	55.8	60.0	58.9	57.5	57.1	54.1	46.7	42.3	42.6	42.7	45.2	47.8	86	76
Test 2	57.5	59.3	55.4	56.3	56.8	53.8	48.3	44.9	43.4	43.3	45.8	48.3	86	76
Test 3	55.5	58.7	57.4	57.0	55.3	52.3	48.1	45.2	44.8	44.8	46.5	48.4	86	77
Mean	56.3	59.4	57.2	56.9	56.4	53.4	47.7	44.1	43.6	43.6	45.8	48.2		
Left Insertion Loss	**36.3**	**34.5**	**37.9**	**39.7**	**40.0**	**45.1**	**47.8**	**51.1**	**50.5**	**48.9**	**43.6**	**30.9**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.9	93.3	96.5	97.7	97.4	98.5	97.2	95.4	96.1	94.8	90.7	81.0	108	108
Test 2	91.8	92.8	95.7	97.6	97.0	97.6	96.6	95.4	95.2	94.6	90.6	81.0	107	107
Test 3	91.8	93.0	95.9	97.8	97.0	97.5	97.2	95.9	95.6	94.6	90.7	80.4	107	108
Mean	92.1	93.1	96.1	97.7	97.1	97.9	97.0	95.6	95.7	94.6	90.7	80.8		
Occluded														
Test 1	68.5	68.9	62.6	57.4	54.4	52.8	46.0	46.0	48.4	51.2	54.1	56.7	88	80
Test 2	68.7	70.1	62.7	59.7	56.8	53.1	47.4	47.5	49.4	51.7	54.4	56.9	88	80
Test 3	69.1	69.9	62.6	60.1	56.6	53.2	48.1	47.0	48.7	51.6	54.4	57.0	88	80
Mean	68.8	69.6	62.6	59.1	55.9	53.0	47.2	46.8	48.8	51.5	54.3	56.9		
Right Insertion Loss	**23.4**	**23.4**	**33.4**	**38.6**	**41.2**	**44.9**	**49.8**	**48.7**	**46.8**	**43.2**	**36.4**	**23.9**		
Insertion Loss	**29.8**	**28.9**	**35.7**	**39.1**	**40.6**	**45.0**	**48.8**	**49.9**	**48.7**	**46.0**	**40.0**	**27.4**		

Table C-28. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 8.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.6	92.2	87.9	90.3	90.9	92.9	89.2	91.7	91.7	92.4	97.1	96.5	95.8
Test 2	88.7	92.2	87.8	90.3	90.8	93.0	89.2	91.8	91.9	92.6	97.2	96.3	95.8
Test 3	88.6	92.3	87.9	90.4	90.8	93.3	89.4	92.1	92.2	92.8	97.2	96.2	96.0
Mean	88.6	92.2	87.9	90.4	90.8	93.1	89.3	91.9	92.0	92.6	97.2	96.3	95.9
Occluded													
Test 1	83.2	84.5	77.0	77.5	78.0	76.4	79.2	79.8	76.3	72.6	75.0	69.1	60.6
Test 2	80.8	84.0	76.9	77.7	78.5	80.5	79.1	79.8	75.2	71.7	75.5	71.8	61.7
Test 3	83.0	83.5	76.2	77.0	77.7	76.4	80.0	80.4	77.1	72.6	75.8	71.7	63.2
Mean	82.3	84.0	76.7	77.4	78.1	77.7	79.4	80.0	76.2	72.3	75.4	70.9	61.8
Left Insertion Loss	**6.3**	**8.2**	**11.2**	**13.0**	**12.7**	**15.3**	**9.9**	**11.9**	**15.8**	**20.3**	**21.7**	**25.5**	**34.0**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	89.1	92.1	87.0	89.6	91.9	91.3	90.6	92.6	90.5	93.2	98.1	94.1	96.2
Test 2	89.2	92.1	87.0	89.4	91.9	91.1	90.7	92.7	90.5	93.3	98.3	94.2	96.3
Test 3	89.1	92.2	87.0	89.5	91.8	91.2	90.6	92.7	90.8	93.4	98.3	94.1	96.4
Mean	89.1	92.1	87.0	89.5	91.9	91.2	90.6	92.7	90.6	93.3	98.2	94.1	96.3
Occluded													
Test 1	81.3	83.3	75.2	78.4	79.9	76.9	80.1	78.9	74.4	73.1	74.1	66.1	63.5
Test 2	79.4	83.2	76.2	79.7	80.6	79.5	79.0	78.6	72.6	71.9	74.3	68.0	65.9
Test 3	82.4	83.4	75.9	79.0	80.7	77.2	80.1	78.7	74.6	73.5	74.5	66.7	64.1
Mean	81.0	83.3	75.8	79.0	80.4	77.8	79.7	78.7	73.9	72.8	74.3	67.0	64.5
Right Insertion Loss	**8.1**	**8.9**	**11.2**	**10.5**	**11.5**	**13.4**	**10.9**	**13.9**	**16.7**	**20.5**	**24.0**	**27.2**	**31.8**
Insertion Loss	**7.2**	**8.6**	**11.2**	**11.7**	**12.1**	**14.4**	**10.4**	**12.9**	**16.2**	**20.4**	**22.9**	**26.3**	**32.9**

Table C-28. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 8.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.3	95.9	96.5	98.0	100.1	102.6	100.3	94.4	93.3	93.3	90.9	81.1	110	110
Test 2	94.3	96.5	96.6	98.2	100.2	102.2	99.6	94.9	93.0	93.2	90.7	79.6	110	110
Test 3	94.7	96.9	97.0	98.3	99.7	102.5	99.9	95.1	93.5	93.6	91.2	80.3	110	110
Mean	94.4	96.4	96.7	98.2	100.0	102.4	99.9	94.8	93.3	93.4	90.9	80.3		
Occluded														
Test 1	63.5	66.8	66.1	62.0	56.7	54.0	47.0	42.2	43.3	46.8	49.0	50.6	90	80
Test 2	60.8	66.4	65.4	60.1	56.4	53.7	45.6	42.4	44.1	47.7	50.1	50.6	90	80
Test 3	61.4	65.7	64.1	60.2	56.1	53.3	45.9	43.0	44.2	45.5	48.6	50.3	90	81
Mean	61.9	66.3	65.2	60.7	56.4	53.7	46.1	42.5	43.8	46.7	49.2	50.5		
Left Insertion Loss	**32.5**	**30.1**	**31.5**	**37.4**	**43.6**	**48.7**	**53.8**	**52.3**	**49.4**	**46.7**	**41.7**	**29.9**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.3	96.1	97.2	98.5	99.4	101.8	100.1	97.5	95.1	92.4	88.3	76.4	110	110
Test 2	94.3	96.3	97.7	98.5	99.8	101.7	100.4	97.9	94.7	92.6	88.1	75.9	110	110
Test 3	94.3	96.4	98.1	98.5	99.7	101.9	100.0	98.3	94.6	92.9	88.1	76.2	110	110
Mean	94.3	96.3	97.7	98.5	99.6	101.8	100.1	97.9	94.8	92.6	88.2	76.2		
Occluded														
Test 1	63.1	63.3	61.0	57.5	54.1	51.7	48.5	48.2	55.2	56.1	57.7	58.6	89	80
Test 2	60.9	64.1	60.9	57.8	55.3	52.7	50.9	49.5	53.3	54.4	56.5	58.6	89	79
Test 3	63.0	64.3	60.7	57.6	55.4	51.4	48.6	50.0	54.8	58.0	58.1	58.6	90	80
Mean	62.4	63.9	60.8	57.7	55.0	52.0	49.3	49.2	54.4	56.2	57.4	58.6		
Right Insertion Loss	**31.9**	**32.4**	**36.8**	**40.9**	**44.7**	**49.8**	**50.8**	**48.7**	**40.4**	**36.5**	**30.7**	**17.6**		
Insertion Loss	**32.2**	**31.3**	**34.2**	**39.1**	**44.1**	**49.3**	**52.3**	**50.5**	**44.9**	**41.6**	**36.2**	**23.7**		

Table C-29. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 9.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.7	92.1	87.7	90.2	91.1	93.2	88.6	92.8	91.5	93.1	96.1	96.6	96.8
Test 2	88.4	91.9	87.8	90.2	90.8	93.3	88.6	92.9	91.8	93.3	96.4	96.6	97.1
Test 3	88.4	91.9	87.9	90.3	90.7	93.6	89.0	93.3	91.9	93.4	97.2	96.8	96.8
Mean	88.5	91.9	87.8	90.3	90.9	93.4	88.7	93.0	91.7	93.2	96.6	96.7	96.9
Occluded													
Test 1	81.4	83.6	76.6	78.3	78.7	80.4	78.6	77.7	72.7	71.2	74.9	68.8	69.3
Test 2	82.2	84.3	77.3	79.2	79.9	81.2	78.6	77.7	73.2	71.4	75.2	68.8	69.0
Test 3	81.9	84.0	77.1	79.3	79.9	81.3	78.7	77.6	73.4	71.3	75.0	68.7	68.7
Mean	81.8	84.0	77.0	78.9	79.5	81.0	78.7	77.7	73.1	71.3	75.0	68.7	69.0
Left Insertion Loss	**6.7**	**8.0**	**10.8**	**11.3**	**11.4**	**12.4**	**10.1**	**15.3**	**18.6**	**22.0**	**21.5**	**27.9**	**27.9**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.9	91.6	87.0	89.9	91.5	93.4	88.8	94.0	92.5	94.6	97.0	96.4	97.3
Test 2	88.7	91.5	86.9	89.7	91.3	93.4	89.1	93.9	92.6	94.6	97.5	96.0	97.4
Test 3	88.7	91.5	86.9	89.6	91.3	93.1	89.2	93.6	92.3	94.7	97.6	95.7	97.2
Mean	88.8	91.5	87.0	89.7	91.4	93.3	89.0	93.8	92.5	94.6	97.4	96.1	97.3
Occluded													
Test 1	78.2	81.3	75.1	78.8	80.8	80.1	78.0	77.8	74.1	71.3	74.7	68.1	61.5
Test 2	78.7	81.7	75.8	79.6	81.2	80.2	78.2	77.9	73.7	71.5	74.9	68.2	61.5
Test 3	78.4	81.6	75.7	79.2	81.0	80.6	78.1	77.4	74.0	71.1	75.0	68.1	63.3
Mean	78.4	81.5	75.5	79.2	81.0	80.3	78.1	77.7	73.9	71.3	74.9	68.1	62.1
Right Insertion Loss	**10.4**	**10.0**	**11.4**	**10.5**	**10.4**	**13.0**	**10.9**	**16.1**	**18.5**	**23.4**	**22.5**	**27.9**	**35.2**
Insertion Loss	**8.5**	**9.0**	**11.1**	**10.9**	**10.9**	**12.7**	**10.5**	**15.7**	**18.6**	**22.7**	**22.0**	**27.9**	**31.5**

Table C-29. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 9.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.8	97.0	98.0	99.4	101.3	102.5	99.6	96.8	95.6	94.2	88.3	77.7	110	110
Test 2	94.3	97.1	98.1	99.3	101.1	102.1	98.8	97.5	97.2	95.0	87.3	77.3	110	110
Test 3	94.2	96.5	98.3	99.9	100.8	101.9	99.2	97.8	96.7	93.7	88.5	77.4	110	110
Mean	94.1	96.9	98.1	99.5	101.1	102.2	99.2	97.4	96.5	94.3	88.0	77.5		
Occluded														
Test 1	67.9	67.6	63.6	60.2	55.8	53.2	49.7	42.8	42.8	44.6	47.4	50.1	90	80
Test 2	67.1	69.2	66.4	61.3	56.2	53.8	50.7	43.7	42.9	44.6	47.3	50.0	90	80
Test 3	66.0	68.3	65.7	61.3	56.4	53.1	50.3	43.7	42.5	44.4	47.1	49.8	90	80
Mean	67.0	68.4	65.2	60.9	56.1	53.4	50.2	43.4	42.8	44.5	47.3	49.9		
Left Insertion Loss	**27.1**	**28.5**	**32.9**	**38.6**	**44.9**	**48.8**	**49.0**	**54.0**	**53.8**	**49.8**	**40.8**	**27.5**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.1	96.8	98.3	99.1	100.2	101.2	99.4	96.4	94.4	94.3	89.7	78.2	110	110
Test 2	94.0	97.1	98.8	98.5	100.0	100.9	98.9	95.6	94.2	94.6	89.9	78.0	110	110
Test 3	93.6	96.5	98.4	99.1	99.7	100.3	99.2	96.4	94.8	95.4	90.1	77.8	110	109
Mean	93.9	96.8	98.5	98.9	100.0	100.8	99.2	96.1	94.4	94.8	89.9	78.0		
Occluded														
Test 1	65.0	64.4	57.7	59.0	55.0	48.9	46.3	47.7	50.6	53.2	56.1	58.8	89	80
Test 2	65.1	64.2	57.6	58.4	54.6	49.8	46.3	46.9	49.9	52.8	55.9	58.7	89	80
Test 3	65.0	63.6	58.3	59.7	55.4	49.9	46.7	46.9	49.8	52.7	55.6	58.6	89	80
Mean	65.0	64.1	57.9	59.0	55.0	49.5	46.4	47.2	50.1	52.9	55.9	58.7		
Right Insertion Loss	**28.9**	**32.7**	**40.6**	**39.9**	**45.0**	**51.3**	**52.7**	**48.9**	**44.3**	**41.9**	**34.0**	**19.3**		
Insertion Loss	**28.0**	**30.6**	**36.8**	**39.2**	**45.0**	**50.0**	**50.8**	**51.4**	**49.0**	**45.8**	**37.4**	**23.4**		

Table C-30. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 10.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.7	91.2	87.6	90.7	90.8	94.5	89.8	94.5	94.2	93.6	95.5	96.9	95.5
Test 2	90.0	91.4	87.4	90.2	90.5	90.7	90.9	95.3	95.8	94.6	95.1	95.7	94.8
Test 3	88.0	91.5	87.7	90.9	91.1	94.9	89.9	93.6	94.4	93.7	94.5	97.1	96.2
Mean	88.6	91.4	87.6	90.6	90.8	93.4	90.2	94.4	94.8	94.0	95.0	96.6	95.5
Occluded													
Test 1	75.2	79.1	74.4	76.6	76.3	80.0	78.0	80.2	76.8	71.7	72.2	68.4	62.2
Test 2	76.4	80.2	74.7	77.0	77.3	80.7	76.9	79.4	75.9	71.5	71.6	67.4	64.4
Test 3	75.1	79.4	74.4	77.1	77.6	80.3	78.3	79.7	76.5	71.6	71.3	68.2	63.0
Mean	75.6	79.6	74.5	76.9	77.1	80.3	77.8	79.7	76.4	71.6	71.7	68.0	63.2
Left Insertion Loss	**13.0**	**11.8**	**13.1**	**13.7**	**13.7**	**13.0**	**12.5**	**14.7**	**18.4**	**22.4**	**23.3**	**28.6**	**32.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.8	91.6	87.1	90.3	91.5	92.2	89.6	91.6	91.1	92.6	93.9	94.1	95.6
Test 2	91.2	91.9	86.6	89.4	91.5	89.8	90.0	92.8	92.4	93.6	94.0	93.5	95.7
Test 3	89.2	92.1	87.1	90.3	91.7	91.3	89.7	91.4	90.3	92.8	95.5	94.3	95.8
Mean	89.7	91.9	86.9	90.0	91.6	91.1	89.8	91.9	91.2	93.0	94.5	94.0	95.7
Occluded													
Test 1	78.6	82.4	77.5	81.8	81.9	80.5	78.7	80.7	76.4	70.2	69.9	68.0	65.6
Test 2	80.2	83.7	78.2	82.5	81.2	80.7	78.1	79.4	75.2	70.8	72.0	70.8	66.7
Test 3	79.9	83.5	77.9	82.3	82.1	81.3	78.8	80.1	75.7	70.5	71.9	69.3	65.5
Mean	79.5	83.2	77.9	82.2	81.7	80.8	78.5	80.0	75.7	70.5	71.3	69.4	66.0
Right Insertion Loss	**10.2**	**8.7**	**9.1**	**7.8**	**9.8**	**10.3**	**11.2**	**11.9**	**15.5**	**22.5**	**23.2**	**24.6**	**29.8**
Insertion Loss	**11.6**	**10.2**	**11.1**	**10.7**	**11.8**	**11.6**	**11.9**	**13.3**	**16.9**	**22.4**	**23.3**	**26.6**	**31.0**

Table C-30. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ – Subject 10.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.6	95.7	98.0	97.9	99.8	100.4	99.2	93.9	96.4	96.3	93.2	81.4	110	109
Test 2	93.7	96.0	97.8	98.2	100.0	100.2	98.2	94.0	95.9	97.4	93.1	81.1	109	109
Test 3	94.9	95.6	97.3	98.0	99.8	101.6	99.8	94.8	96.7	97.2	93.1	81.7	110	110
Mean	94.4	95.8	97.7	98.1	99.9	100.8	99.1	94.2	96.4	96.9	93.1	81.4		
Occluded														
Test 1	59.5	62.9	59.5	59.4	57.1	52.8	47.0	46.2	44.7	44.2	46.7	49.3	88	79
Test 2	60.2	64.4	61.8	57.2	55.2	50.9	46.5	42.6	43.3	44.6	47.2	49.3	88	79
Test 3	59.0	64.0	60.1	59.0	55.9	51.5	48.3	47.8	47.8	45.5	47.0	49.1	88	79
Mean	59.6	63.7	60.5	58.5	56.1	51.8	47.2	45.5	45.2	44.8	47.0	49.2		
Left Insertion Loss	**34.9**	**32.0**	**37.2**	**39.5**	**43.8**	**49.0**	**51.8**	**48.7**	**51.1**	**52.1**	**46.2**	**32.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	95.4	96.4	97.5	97.7	100.3	98.1	92.6	94.2	93.8	90.9	78.3	108	108
Test 2	92.6	95.8	96.7	98.7	98.3	100.1	99.9	98.5	94.1	93.9	91.1	79.1	109	109
Test 3	92.8	96.3	96.4	98.4	97.8	100.4	99.5	95.1	94.3	94.1	91.4	78.5	109	109
Mean	92.6	95.9	96.5	98.2	97.9	100.3	99.2	95.4	94.2	93.9	91.1	78.6		
Occluded														
Test 1	65.2	64.6	59.0	59.2	56.8	53.3	45.0	45.9	48.6	51.8	55.0	57.8	90	80
Test 2	65.5	67.2	63.2	63.0	61.8	56.2	48.2	45.8	48.7	52.4	55.0	57.8	90	80
Test 3	65.8	66.2	61.7	62.2	60.4	55.7	46.8	45.6	48.7	52.1	54.9	57.8	90	80
Mean	65.5	66.0	61.3	61.5	59.7	55.1	46.6	45.8	48.7	52.1	55.0	57.8		
Right Insertion Loss	**27.1**	**29.9**	**35.2**	**36.7**	**38.2**	**45.2**	**52.5**	**49.6**	**45.5**	**41.9**	**36.1**	**20.8**		
Insertion Loss	**31.0**	**31.0**	**36.2**	**38.1**	**41.0**	**47.1**	**52.2**	**49.2**	**48.3**	**47.0**	**41.1**	**26.5**		

Table C-31. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 1.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.4	89.2	85.0	87.8	88.7	91.5	88.1	92.0	90.5	90.6	95.6	94.7	95.3
Test 2	87.3	89.1	84.7	87.2	88.1	88.9	89.0	92.3	93.0	93.4	94.7	95.5	94.8
Test 3	85.0	88.9	85.2	88.0	88.5	92.1	88.0	92.7	91.4	91.3	96.0	94.6	95.1
Mean	85.9	89.0	85.0	87.7	88.4	90.8	88.4	92.3	91.6	91.7	95.4	94.9	95.1
Occluded													
Test 1	85.3	86.8	82.5	84.6	85.0	84.2	86.0	87.6	86.9	86.8	90.5	88.0	85.0
Test 2	83.8	87.4	83.4	86.0	86.4	88.8	86.2	87.5	86.1	86.0	90.7	88.9	85.7
Test 3	84.6	88.2	84.2	86.9	87.5	89.6	86.9	88.3	86.5	86.3	90.9	89.3	85.8
Mean	84.6	87.5	83.4	85.8	86.3	87.5	86.4	87.8	86.5	86.4	90.7	88.7	85.5
Left Insertion Loss	**1.3**	**1.6**	**1.6**	**1.8**	**2.1**	**3.3**	**2.0**	**4.5**	**5.1**	**5.3**	**4.7**	**6.2**	**9.6**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.7	88.8	84.2	87.4	89.3	89.8	88.0	90.9	89.9	91.7	93.4	91.8	94.9
Test 2	87.7	88.8	83.7	86.4	89.1	88.0	88.3	91.7	90.9	91.9	92.6	91.9	94.8
Test 3	85.5	88.6	84.1	87.3	89.0	89.9	87.7	91.3	89.7	91.2	93.0	91.8	95.1
Mean	86.3	88.7	84.0	87.0	89.1	89.2	88.0	91.3	90.1	91.6	93.0	91.8	94.9
Occluded													
Test 1	82.9	83.2	78.5	81.8	83.8	80.4	82.1	83.8	81.9	81.8	82.0	81.2	81.5
Test 2	80.9	83.4	79.1	82.9	83.9	83.4	82.1	83.8	81.4	82.4	84.4	84.5	84.1
Test 3	80.7	83.5	79.3	83.1	84.2	83.6	82.3	84.3	81.4	82.3	84.0	84.1	83.5
Mean	81.5	83.4	79.0	82.6	84.0	82.5	82.1	84.0	81.6	82.2	83.4	83.3	83.0
Right Insertion Loss	**4.8**	**5.4**	**5.0**	**4.4**	**5.1**	**6.8**	**5.9**	**7.3**	**8.6**	**9.4**	**9.5**	**8.6**	**11.9**
Insertion Loss	**3.1**	**3.5**	**3.3**	**3.1**	**3.6**	**5.0**	**3.9**	**5.9**	**6.8**	**7.4**	**7.1**	**7.4**	**10.7**

Table C-31. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 1.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.8	94.7	97.1	98.7	100.5	103.6	101.8	97.4	92.9	91.9	87.7	79.5	110	110
Test 2	91.6	93.2	96.6	99.0	100.1	103.4	101.1	98.1	93.5	92.6	87.9	80.2	110	110
Test 3	92.8	93.7	96.3	98.6	99.9	103.2	101.5	97.6	93.4	92.2	87.9	79.9	110	110
Mean	92.4	93.9	96.7	98.7	100.1	103.4	101.5	97.7	93.3	92.3	87.8	79.9		
Occluded														
Test 1	76.4	74.1	72.9	68.7	65.3	63.7	58.0	50.2	46.5	42.7	42.1	43.5	98	93
Test 2	76.5	73.6	73.2	70.0	66.9	64.6	58.7	50.9	47.1	44.9	42.4	43.7	98	93
Test 3	77.2	73.2	72.8	70.7	67.2	63.6	59.3	52.3	48.2	43.6	42.2	43.6	99	94
Mean	76.7	73.6	73.0	69.8	66.4	64.0	58.6	51.2	47.3	43.7	42.3	43.6		
Left Insertion Loss	**15.7**	**20.2**	**23.7**	**29.0**	**33.7**	**39.5**	**42.8**	**46.6**	**46.0**	**48.5**	**45.6**	**36.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.0	94.5	97.1	100.2	102.4	107.9	107.0	105.5	101.1	95.9	92.4	82.4	113	114
Test 2	92.4	95.5	97.0	100.5	101.9	107.2	105.6	104.9	101.1	95.6	92.4	83.5	113	114
Test 3	92.4	94.9	97.1	100.1	102.1	107.3	106.3	104.7	100.9	96.0	92.7	83.9	113	114
Mean	92.6	95.0	97.1	100.3	102.1	107.4	106.3	105.0	101.0	95.8	92.5	83.3		
Occluded														
Test 1	70.4	72.1	69.9	67.5	66.3	63.2	58.6	51.4	47.2	48.9	51.7	54.3	93	88
Test 2	72.8	70.7	70.4	68.6	65.3	62.5	57.3	52.7	47.3	49.0	51.8	54.4	94	90
Test 3	71.8	71.3	70.8	68.5	65.6	63.5	57.9	51.4	47.0	49.0	51.9	54.3	94	89
Mean	71.7	71.4	70.4	68.2	65.7	63.1	57.9	51.8	47.2	49.0	51.8	54.3		
Right Insertion Loss	**20.9**	**23.6**	**26.7**	**32.1**	**36.4**	**44.4**	**48.4**	**53.2**	**53.9**	**46.9**	**40.7**	**28.9**		
Insertion Loss	**18.3**	**21.9**	**25.2**	**30.5**	**35.1**	**41.9**	**45.6**	**49.9**	**49.9**	**47.7**	**43.1**	**32.6**		

Table C-32. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 2.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	84.9	88.4	84.5	87.3	88.0	90.6	87.7	91.2	91.4	92.2	95.3	95.5	94.5
Test 2	84.9	88.4	84.5	87.2	88.1	90.5	88.0	90.9	91.6	92.2	95.3	95.4	94.4
Test 3	85.1	88.7	84.6	87.4	88.2	90.5	87.2	91.0	91.4	92.1	95.5	95.5	94.6
Mean	85.0	88.5	84.5	87.3	88.1	90.5	87.6	91.1	91.5	92.2	95.4	95.4	94.5
Occluded													
Test 1	85.4	88.8	85.0	87.5	88.5	89.9	87.9	86.8	83.8	84.4	89.8	87.2	83.8
Test 2	85.9	89.3	85.7	89.1	91.7	92.7	93.3	93.4	89.0	87.6	93.0	92.0	88.0
Test 3	85.9	89.4	86.0	89.4	91.1	92.4	91.1	91.3	86.6	86.1	91.4	89.5	86.5
Mean	85.8	89.2	85.6	88.6	90.4	91.7	90.8	90.5	86.5	86.0	91.4	89.6	86.1
Left Insertion Loss	**-0.8**	**-0.7**	**-1.0**	**-1.3**	**-2.3**	**-1.1**	**-3.1**	**0.6**	**5.0**	**6.1**	**4.0**	**5.9**	**8.4**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.3	88.1	84.0	87.4	88.4	90.2	86.9	91.7	90.4	92.1	94.3	93.0	93.8
Test 2	85.2	88.1	84.0	87.5	88.3	90.2	87.1	91.7	90.2	91.9	94.1	92.9	93.7
Test 3	85.6	88.5	84.2	87.7	88.8	90.0	86.6	91.6	90.0	92.1	95.1	93.4	95.0
Mean	85.4	88.2	84.1	87.5	88.5	90.1	86.9	91.7	90.2	92.0	94.5	93.1	94.1
Occluded													
Test 1	82.4	84.8	80.8	84.4	84.8	85.4	84.3	85.0	82.3	81.7	86.1	85.2	83.6
Test 2	84.0	86.2	81.9	85.3	86.3	86.3	84.8	85.5	82.7	82.7	86.7	85.0	83.3
Test 3	80.9	83.6	79.5	83.1	83.7	84.4	82.7	84.6	82.0	82.1	85.7	83.6	82.2
Mean	82.4	84.9	80.7	84.3	84.9	85.4	83.9	85.0	82.3	82.2	86.2	84.6	83.0
Right Insertion Loss	**2.9**	**3.3**	**3.3**	**3.2**	**3.6**	**4.8**	**3.0**	**6.6**	**7.9**	**9.9**	**8.4**	**8.6**	**11.1**
Insertion Loss	**1.1**	**1.3**	**1.1**	**0.9**	**0.6**	**1.8**	**-0.1**	**3.6**	**6.4**	**8.0**	**6.2**	**7.2**	**9.8**

Table C-32. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 2.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.0	95.0	95.7	97.6	98.0	100.1	98.9	95.8	94.1	92.9	90.5	80.6	108	108
Test 2	91.6	94.8	96.0	97.8	98.3	99.8	98.5	96.2	93.7	93.0	91.1	80.8	108	108
Test 3	92.0	94.4	96.2	97.4	97.9	100.1	98.8	95.8	93.3	93.4	91.6	81.1	108	108
Mean	91.9	94.7	95.9	97.6	98.1	100.0	98.7	95.9	93.7	93.1	91.1	80.8		
Occluded														
Test 1	72.1	72.1	73.0	70.9	67.3	61.5	55.5	49.2	45.2	43.0	44.0	45.4	98	92
Test 2	79.2	77.8	79.5	75.9	72.2	68.0	64.7	59.4	55.3	51.9	48.8	45.9	102	97
Test 3	77.0	73.7	75.3	71.9	68.3	64.9	60.7	55.9	52.2	47.0	45.9	45.8	101	95
Mean	76.1	74.6	75.9	72.9	69.3	64.8	60.3	54.8	50.9	47.3	46.2	45.7		
Left Insertion Loss	**15.7**	**20.2**	**20.0**	**24.7**	**28.8**	**35.2**	**38.5**	**41.1**	**42.8**	**45.8**	**44.8**	**35.2**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	94.5	96.2	98.2	98.9	100.9	101.0	99.6	97.6	99.0	90.8	79.1	109	110
Test 2	92.2	94.7	96.2	97.7	98.8	100.1	100.4	100.1	97.9	98.4	90.7	78.7	109	109
Test 3	92.9	94.4	96.1	98.2	98.6	100.1	100.2	98.9	98.4	99.8	90.9	79.2	109	109
Mean	92.5	94.5	96.2	98.0	98.8	100.4	100.5	99.5	98.0	99.1	90.8	79.0		
Occluded														
Test 1	73.6	76.2	72.1	72.4	68.6	62.9	57.9	51.3	48.7	50.1	52.2	54.7	95	90
Test 2	74.0	75.0	71.7	71.6	67.7	62.7	56.9	50.9	49.0	49.9	52.3	54.8	96	90
Test 3	73.4	75.9	71.6	70.7	68.0	63.5	56.4	51.8	48.4	49.9	52.3	54.8	94	89
Mean	73.7	75.7	71.8	71.5	68.1	63.0	57.1	51.4	48.7	50.0	52.3	54.8		
Right Insertion Loss	**18.8**	**18.9**	**24.4**	**26.5**	**30.6**	**37.4**	**43.5**	**48.2**	**49.3**	**49.1**	**38.5**	**24.2**		
Insertion Loss	**17.3**	**19.5**	**22.2**	**25.6**	**29.7**	**36.3**	**41.0**	**44.6**	**46.0**	**47.4**	**41.7**	**29.7**		

Table C-33. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 3.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.5	88.9	84.8	87.3	88.3	89.7	88.9	90.0	90.2	91.0	94.6	95.1	93.9
Test 2	85.5	88.9	84.8	87.3	88.1	89.8	89.0	90.4	90.8	90.7	95.2	95.3	94.9
Test 3	85.6	89.0	84.8	87.3	88.2	89.7	88.8	90.3	90.8	90.5	94.8	95.2	94.7
Mean	85.5	88.9	84.8	87.3	88.2	89.7	88.9	90.2	90.6	90.7	94.9	95.2	94.5
Occluded													
Test 1	86.4	87.3	81.9	82.8	84.3	81.6	84.6	84.4	83.0	83.8	88.2	83.7	79.2
Test 2	84.9	86.3	80.6	81.7	83.4	81.3	83.8	84.6	83.2	83.1	87.8	82.9	78.5
Test 3	85.8	89.0	84.8	87.0	88.6	88.9	88.4	88.0	84.5	85.0	91.1	89.1	83.5
Mean	85.7	87.5	82.4	83.8	85.5	83.9	85.6	85.7	83.6	84.0	89.1	85.2	80.4
Left Insertion Loss	**-0.2**	**1.4**	**2.4**	**3.5**	**2.7**	**5.8**	**3.3**	**4.6**	**7.1**	**6.7**	**5.8**	**10.0**	**14.1**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.6	88.2	83.2	86.4	88.6	89.4	88.8	91.6	90.8	92.9	95.8	92.6	93.5
Test 2	85.8	88.4	83.3	86.4	88.7	89.0	89.0	91.4	90.7	93.1	95.8	91.9	93.2
Test 3	85.7	88.5	83.4	86.4	88.7	89.0	89.0	91.3	90.6	93.0	95.9	91.9	93.3
Mean	85.7	88.4	83.3	86.4	88.7	89.2	88.9	91.4	90.7	93.0	95.8	92.2	93.3
Occluded													
Test 1	83.2	83.6	78.4	81.2	83.3	82.1	83.4	85.2	83.7	84.1	86.5	80.6	78.6
Test 2	83.3	84.2	78.7	81.7	84.0	82.4	84.0	85.5	83.8	83.0	85.8	80.1	78.4
Test 3	81.6	84.1	79.0	82.2	83.2	81.7	83.3	84.6	82.1	82.7	86.3	81.4	79.4
Mean	82.7	83.9	78.7	81.7	83.5	82.1	83.6	85.1	83.2	83.3	86.2	80.7	78.8
Right Insertion Loss	**3.0**	**4.4**	**4.6**	**4.7**	**5.2**	**7.1**	**5.4**	**6.3**	**7.5**	**9.7**	**9.7**	**11.5**	**14.5**
Insertion Loss	**1.4**	**2.9**	**3.5**	**4.1**	**3.9**	**6.4**	**4.3**	**5.4**	**7.3**	**8.2**	**7.7**	**10.7**	**14.3**

Table C-33. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 3.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.2	94.3	96.5	98.5	97.8	99.8	97.5	94.4	92.8	92.0	90.7	80.9	108	108
Test 2	91.8	94.7	95.6	98.3	97.1	98.9	97.0	93.3	92.5	93.0	90.6	81.0	108	108
Test 3	91.9	94.4	95.3	98.2	97.0	98.5	96.1	93.4	92.7	92.7	90.6	81.1	107	107
Mean	92.0	94.5	95.8	98.3	97.3	99.1	96.9	93.7	92.7	92.6	90.6	81.0		
Occluded														
Test 1	73.7	69.6	66.5	64.5	64.0	61.5	55.2	50.5	46.2	44.4	45.3	47.7	96	90
Test 2	74.2	72.1	69.2	65.1	65.5	62.8	56.0	50.2	46.6	44.0	45.3	47.6	95	90
Test 3	78.8	75.3	73.8	69.9	66.7	65.1	58.2	53.3	50.3	49.5	46.0	47.8	99	94
Mean	75.6	72.3	69.8	66.5	65.4	63.2	56.5	51.3	47.7	45.9	45.6	47.7		
Left Insertion Loss	**16.4**	**22.1**	**26.0**	**31.8**	**31.9**	**35.9**	**40.4**	**42.4**	**45.0**	**46.6**	**45.1**	**33.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	91.2	94.4	95.6	98.2	98.1	99.8	99.4	97.8	95.6	95.9	92.7	81.7	109	108
Test 2	91.6	93.8	96.0	98.0	98.5	100.0	98.7	98.5	95.3	96.1	92.3	81.8	109	108
Test 3	91.7	94.4	96.2	98.1	98.0	100.0	98.7	98.5	95.5	96.1	92.4	82.2	109	108
Mean	91.5	94.2	95.9	98.1	98.2	99.9	98.9	98.3	95.4	96.0	92.5	81.9		
Occluded														
Test 1	74.0	72.5	68.6	64.0	60.4	59.1	55.4	46.9	48.1	50.7	53.5	56.2	94	89
Test 2	73.2	71.9	68.5	63.4	59.8	59.7	54.5	46.8	48.9	51.3	53.6	56.1	94	89
Test 3	74.9	73.8	70.1	65.6	61.9	61.1	54.9	46.5	48.2	50.8	53.7	56.3	94	89
Mean	74.1	72.7	69.1	64.4	60.7	60.0	54.9	46.8	48.4	50.9	53.6	56.2		
Right Insertion Loss	**17.4**	**21.4**	**26.9**	**33.7**	**37.5**	**40.0**	**44.0**	**51.5**	**47.0**	**45.1**	**38.9**	**25.7**		
Insertion Loss	**16.9**	**21.8**	**26.4**	**32.8**	**34.7**	**38.0**	**42.2**	**47.0**	**46.0**	**45.9**	**42.0**	**29.5**		

Table C-34. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 4.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.2	88.9	84.9	88.0	88.7	91.3	88.1	92.0	92.3	91.8	94.0	93.7	93.5
Test 2	87.4	89.1	84.7	87.5	88.5	88.1	88.7	92.5	93.1	93.0	94.4	94.1	93.9
Test 3	85.1	89.0	85.0	88.1	88.8	91.4	88.1	91.5	92.4	91.9	94.7	94.4	93.3
Mean	85.9	89.0	84.9	87.9	88.7	90.3	88.3	92.0	92.6	92.2	94.4	94.1	93.6
Occluded													
Test 1	81.8	84.9	79.8	82.0	82.9	84.2	83.6	85.0	82.2	80.8	84.9	82.4	81.1
Test 2	81.6	85.0	80.1	82.2	83.0	84.5	84.0	85.5	82.8	81.2	85.4	82.9	81.4
Test 3	83.9	85.4	80.0	82.1	83.4	81.3	84.3	86.8	84.8	83.5	86.2	83.7	82.5
Mean	82.5	85.1	79.9	82.1	83.1	83.3	84.0	85.8	83.2	81.8	85.5	83.0	81.7
Left Insertion Loss	**3.5**	**3.9**	**4.9**	**5.8**	**5.6**	**7.0**	**4.3**	**6.2**	**9.4**	**10.4**	**8.9**	**11.0**	**11.9**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.8	88.9	84.4	87.7	89.0	90.1	87.2	90.8	90.1	91.8	92.5	92.5	94.8
Test 2	87.9	89.0	83.8	87.1	89.0	90.0	87.6	92.2	91.4	92.1	92.8	92.6	93.4
Test 3	85.9	89.0	84.4	87.8	89.2	89.9	87.0	90.8	90.1	91.5	93.0	92.7	95.4
Mean	86.5	89.0	84.2	87.5	89.1	90.0	87.3	91.2	90.5	91.8	92.8	92.6	94.5
Occluded													
Test 1	82.0	84.9	79.4	82.8	83.5	83.6	81.8	85.0	83.7	83.7	85.0	81.7	79.5
Test 2	82.3	85.2	79.9	83.1	83.9	84.1	82.1	85.2	84.1	83.6	85.4	82.2	80.1
Test 3	84.6	85.4	79.4	82.5	83.9	82.7	83.3	85.7	84.9	84.1	84.4	81.6	79.6
Mean	82.9	85.1	79.6	82.8	83.8	83.5	82.4	85.3	84.2	83.8	84.9	81.8	79.7
Right Insertion Loss	**3.6**	**3.8**	**4.6**	**4.7**	**5.3**	**6.5**	**4.9**	**5.9**	**6.3**	**8.0**	**7.8**	**10.8**	**14.8**
Insertion Loss	**3.5**	**3.9**	**4.8**	**5.2**	**5.4**	**6.8**	**4.6**	**6.1**	**7.8**	**9.2**	**8.4**	**10.9**	**13.3**

Table C-34. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 4.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.8	93.5	95.9	97.5	99.3	101.0	97.9	95.3	93.8	94.2	89.6	79.7	108	108
Test 2	91.9	94.1	95.1	96.9	98.9	101.2	98.0	95.4	93.8	94.7	90.2	79.2	108	108
Test 3	92.3	93.8	95.5	97.6	99.5	100.6	98.5	95.3	94.3	94.7	89.9	79.8	108	109
Mean	92.4	93.8	95.5	97.3	99.2	101.0	98.1	95.3	94.0	94.6	89.9	79.6		
Occluded														
Test 1	72.7	72.4	69.7	67.6	64.2	56.2	51.1	45.3	43.5	44.0	46.3	48.7	94	89
Test 2	72.8	72.6	70.4	67.2	64.6	55.5	50.3	45.7	43.9	44.3	46.6	49.2	95	89
Test 3	73.9	72.2	71.2	68.4	64.3	55.7	49.4	45.5	43.9	44.2	46.7	49.1	95	90
Mean	73.2	72.4	70.4	67.8	64.4	55.8	50.3	45.5	43.8	44.2	46.5	49.0		
Left Insertion Loss	**19.2**	**21.4**	**25.1**	**29.6**	**34.9**	**45.2**	**47.8**	**49.8**	**50.2**	**50.4**	**43.4**	**30.5**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.2	93.8	96.6	98.9	100.0	102.7	101.0	99.3	97.6	92.0	89.3	80.0	110	110
Test 2	92.4	94.3	96.4	99.3	100.3	102.2	100.7	99.3	97.3	92.3	91.7	79.8	109	110
Test 3	93.2	94.3	96.3	99.3	99.7	102.3	101.4	98.6	97.7	92.1	90.5	79.6	109	110
Mean	92.9	94.2	96.4	99.2	100.0	102.4	101.0	99.1	97.6	92.2	90.5	79.8		
Occluded														
Test 1	75.7	74.2	69.5	68.3	66.5	67.2	63.0	57.7	51.2	53.7	55.1	57.0	94	89
Test 2	76.3	75.0	70.9	69.7	67.5	68.0	63.8	60.9	55.2	55.6	57.1	57.1	95	90
Test 3	76.6	75.9	71.5	70.7	68.2	69.1	64.6	62.0	52.6	54.2	55.8	57.0	95	90
Mean	76.2	75.0	70.6	69.6	67.4	68.1	63.8	60.2	53.0	54.5	56.0	57.0		
Right Insertion Loss	**16.7**	**19.2**	**25.8**	**29.6**	**32.6**	**34.3**	**37.2**	**38.9**	**44.6**	**37.7**	**34.5**	**22.8**		
Insertion Loss	**18.0**	**20.3**	**25.5**	**29.6**	**33.7**	**39.7**	**42.5**	**44.4**	**47.4**	**44.0**	**38.9**	**26.6**		

Table C-35. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 5.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	87.9	89.4	84.9	87.3	88.2	87.5	88.5	91.3	92.0	92.7	95.1	94.3	93.9
Test 2	85.6	89.3	85.2	88.0	88.5	91.2	87.8	90.2	90.6	91.4	94.6	94.3	95.2
Test 3	85.7	89.3	85.2	88.0	88.7	91.0	87.6	90.1	90.6	91.5	95.0	94.6	95.0
Mean	86.4	89.3	85.1	87.8	88.5	89.9	88.0	90.5	91.0	91.9	94.9	94.4	94.7
Occluded													
Test 1	83.7	85.0	79.8	81.1	82.0	80.1	83.7	83.9	82.4	81.8	85.9	82.4	80.5
Test 2	81.7	84.7	80.4	82.1	82.7	84.4	83.7	83.2	80.9	80.4	84.9	81.9	79.0
Test 3	81.7	84.7	80.2	82.1	83.1	84.9	83.9	82.9	80.6	80.0	84.9	81.8	79.2
Mean	82.3	84.8	80.2	81.8	82.6	83.1	83.8	83.3	81.3	80.7	85.3	82.0	79.5
Left Insertion Loss	**4.1**	**4.5**	**4.9**	**6.0**	**5.9**	**6.8**	**4.2**	**7.2**	**9.7**	**11.1**	**9.7**	**12.4**	**15.2**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.2	89.1	83.9	86.6	89.3	89.7	88.7	91.8	90.9	93.2	94.1	91.9	93.4
Test 2	86.0	89.1	84.5	87.5	89.2	90.5	88.1	90.7	89.6	92.4	94.5	92.2	94.4
Test 3	86.1	89.2	84.6	87.6	89.3	90.3	88.1	90.6	89.4	92.5	94.6	92.3	94.2
Mean	86.8	89.1	84.3	87.2	89.2	90.2	88.3	91.1	90.0	92.7	94.4	92.1	94.0
Occluded													
Test 1	84.1	85.3	79.6	83.1	84.2	83.1	84.2	83.9	81.2	81.1	83.7	79.8	77.8
Test 2	81.5	84.6	79.8	83.8	84.1	84.1	83.2	82.6	79.0	79.4	83.5	79.1	76.7
Test 3	82.4	85.2	80.2	84.1	84.5	84.4	83.8	83.1	79.5	80.2	84.3	79.6	77.1
Mean	82.7	85.0	79.9	83.7	84.3	83.9	83.8	83.2	79.9	80.3	83.8	79.5	77.2
Right Insertion Loss	**4.1**	**4.1**	**4.4**	**3.6**	**5.0**	**6.3**	**4.5**	**7.8**	**10.1**	**12.5**	**10.6**	**12.6**	**16.8**
Insertion Loss	**4.1**	**4.3**	**4.7**	**4.8**	**5.4**	**6.5**	**4.4**	**7.5**	**9.9**	**11.8**	**10.1**	**12.5**	**16.0**

Table C-35. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 5.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.7	95.1	96.7	98.0	99.3	100.6	98.8	97.1	93.5	92.2	88.9	80.5	109	109
Test 2	93.3	95.2	97.0	97.0	98.5	100.7	98.8	97.2	93.5	92.2	89.0	80.8	108	109
Test 3	93.1	95.3	97.2	97.2	98.8	100.4	98.8	97.0	93.8	92.4	89.5	80.2	108	109
Mean	93.0	95.2	97.0	97.4	98.9	100.6	98.8	97.1	93.6	92.3	89.1	80.5		
Occluded														
Test 1	71.9	70.7	69.5	65.5	65.1	61.4	52.5	47.5	44.9	43.6	46.0	47.8	94	89
Test 2	73.8	76.0	74.0	68.1	67.5	63.1	54.1	48.6	42.9	43.5	45.7	47.9	94	89
Test 3	74.2	76.1	74.6	69.0	67.7	62.8	55.5	50.0	43.6	44.0	46.7	48.9	94	89
Mean	73.3	74.3	72.7	67.5	66.8	62.4	54.0	48.7	43.8	43.7	46.2	48.2		
Left Insertion Loss	**19.7**	**20.9**	**24.3**	**29.9**	**32.1**	**38.1**	**44.8**	**48.4**	**49.8**	**48.6**	**43.0**	**32.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.2	95.3	97.7	99.6	100.1	102.9	101.6	99.9	95.5	92.3	91.1	83.2	110	110
Test 2	92.3	95.4	97.5	100.1	99.6	102.7	102.2	100.1	95.9	92.8	90.8	82.5	110	110
Test 3	92.3	95.3	97.4	99.8	99.4	103.0	102.2	100.4	95.9	93.1	90.7	82.6	110	110
Mean	92.3	95.3	97.5	99.8	99.7	102.9	102.0	100.1	95.8	92.7	90.9	82.8		
Occluded														
Test 1	72.2	75.6	70.9	66.9	63.8	60.6	57.5	55.4	49.6	51.6	54.5	56.6	94	88
Test 2	74.9	76.3	71.1	66.8	65.3	64.3	60.3	55.0	51.3	51.4	54.1	56.7	94	87
Test 3	74.8	75.4	71.3	67.6	65.3	63.4	59.1	57.6	52.1	52.8	54.8	57.0	94	88
Mean	74.0	75.8	71.1	67.1	64.8	62.8	59.0	56.0	51.0	51.9	54.5	56.8		
Right Insertion Loss	**18.3**	**19.6**	**26.5**	**32.7**	**34.9**	**40.1**	**43.1**	**44.1**	**44.8**	**40.8**	**36.4**	**26.0**		
Insertion Loss	**19.0**	**20.2**	**25.4**	**31.3**	**33.5**	**39.1**	**43.9**	**46.2**	**47.3**	**44.7**	**39.7**	**29.2**		

Table C-36. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 6.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.4	89.3	85.7	87.6	89.0	92.8	86.3	90.9	91.9	92.4	93.0	94.0	93.4
Test 2	87.9	89.7	86.4	88.5	87.6	88.4	87.7	91.4	92.2	92.9	92.8	93.4	92.3
Test 3	85.8	89.6	86.3	88.7	88.3	91.8	86.7	90.8	90.7	90.9	91.3	91.3	93.9
Mean	86.4	89.5	86.1	88.3	88.3	91.0	86.9	91.0	91.6	92.0	92.4	92.9	93.2
Occluded													
Test 1	81.1	84.7	81.1	82.5	82.2	84.2	82.7	84.4	82.8	82.1	84.6	82.2	81.9
Test 2	83.6	85.0	81.3	82.4	82.0	80.9	82.9	84.5	83.5	83.0	85.0	81.9	80.0
Test 3	81.8	85.3	81.7	83.4	82.6	84.6	81.8	82.4	81.4	81.3	85.3	82.5	81.0
Mean	82.2	85.0	81.4	82.8	82.2	83.2	82.4	83.8	82.5	82.1	85.0	82.2	80.9
Left Insertion Loss	**4.2**	**4.5**	**4.8**	**5.5**	**6.0**	**7.8**	**4.4**	**7.2**	**9.1**	**9.9**	**7.4**	**10.7**	**12.3**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	86.1	89.4	85.1	87.1	89.9	91.8	86.2	92.0	89.7	91.6	93.0	92.6	94.1
Test 2	88.5	89.7	85.3	87.6	89.0	89.5	88.0	90.2	90.3	91.2	92.1	92.2	93.4
Test 3	86.5	89.7	85.4	87.8	89.9	90.8	88.3	89.6	88.7	91.8	93.1	91.9	95.9
Mean	87.0	89.6	85.3	87.5	89.6	90.7	87.5	90.6	89.6	91.5	92.8	92.2	94.5
Occluded													
Test 1	86.3	89.8	87.1	90.1	90.8	92.7	89.4	89.6	87.6	86.8	88.3	85.5	84.3
Test 2	88.4	89.7	86.9	89.6	91.3	91.9	91.1	90.0	88.5	87.3	87.0	84.6	83.5
Test 3	86.6	90.1	87.3	90.7	91.2	93.6	89.1	88.2	85.6	87.1	86.5	84.4	83.2
Mean	87.1	89.9	87.1	90.1	91.1	92.7	89.8	89.3	87.2	87.1	87.3	84.8	83.7
Right Insertion Loss	**-0.1**	**-0.3**	**-1.8**	**-2.6**	**-1.5**	**-2.0**	**-2.3**	**1.3**	**2.4**	**4.4**	**5.5**	**7.4**	**10.8**
Insertion Loss	**2.0**	**2.1**	**1.5**	**1.4**	**2.3**	**2.9**	**1.1**	**4.3**	**5.7**	**7.2**	**6.5**	**9.0**	**11.5**

Table C-36. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 6.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.2	94.3	95.2	96.6	97.7	99.2	96.9	93.9	91.4	91.1	89.6	79.5	107	107
Test 2	91.6	93.8	95.8	98.1	98.8	100.4	97.3	93.9	91.3	91.3	90.6	81.3	108	108
Test 3	92.0	93.6	94.6	97.2	98.2	99.5	96.9	92.2	91.2	90.8	89.5	80.7	107	107
Mean	92.3	93.9	95.2	97.3	98.2	99.7	97.0	93.3	91.3	91.1	89.9	80.5		
Occluded														
Test 1	71.5	69.1	67.6	63.7	61.1	58.4	51.7	48.0	48.3	45.6	43.5	43.8	94	88
Test 2	70.5	68.8	68.6	64.0	63.2	59.3	51.4	46.2	44.7	45.5	45.5	44.6	94	88
Test 3	73.5	72.3	71.0	64.1	63.1	59.9	52.3	45.8	43.6	43.5	42.6	44.0	94	89
Mean	71.8	70.0	69.0	63.9	62.5	59.2	51.8	46.7	45.5	44.9	43.8	44.2		
Left Insertion Loss	**20.4**	**23.9**	**26.1**	**33.4**	**35.8**	**40.5**	**45.2**	**46.6**	**45.8**	**46.2**	**46.1**	**36.3**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.9	96.0	95.3	97.5	99.4	100.7	97.2	95.8	94.6	91.8	87.6	78.5	108	108
Test 2	92.7	95.1	96.3	97.5	99.0	101.1	98.0	96.0	94.1	92.0	87.3	80.1	108	109
Test 3	93.1	95.0	95.7	97.3	98.5	101.1	99.1	95.2	93.1	89.3	86.5	78.7	108	108
Mean	92.9	95.4	95.8	97.4	99.0	101.0	98.1	95.6	93.9	91.0	87.2	79.1		
Occluded														
Test 1	79.1	78.9	76.5	72.4	69.8	69.2	65.7	66.8	62.5	59.9	60.1	57.1	100	93
Test 2	79.8	79.8	78.4	73.5	71.3	69.6	66.9	68.7	62.6	58.7	61.1	57.5	100	94
Test 3	80.1	80.1	76.9	73.0	69.9	70.2	65.2	65.1	60.6	59.2	59.5	56.8	100	93
Mean	79.7	79.6	77.2	73.0	70.3	69.7	65.9	66.8	61.9	59.2	60.2	57.1		
Right Insertion Loss	**13.2**	**15.8**	**18.5**	**24.5**	**28.6**	**31.3**	**32.1**	**28.8**	**32.0**	**31.8**	**26.9**	**22.0**		
Insertion Loss	**16.8**	**19.8**	**22.3**	**28.9**	**32.2**	**35.9**	**38.7**	**37.7**	**38.9**	**39.0**	**36.5**	**29.2**		

Table C-37. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 7.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	85.5	89.1	85.0	87.8	88.6	90.7	87.4	91.7	91.3	90.9	94.4	95.4	95.6
Test 2	85.2	88.8	85.0	87.7	88.3	91.0	87.5	91.8	91.4	91.4	94.2	95.1	95.5
Test 3	85.2	88.8	85.0	87.7	88.3	91.1	87.8	91.8	91.7	91.5	94.2	95.2	94.8
Mean	85.3	88.9	85.0	87.8	88.4	90.9	87.6	91.7	91.5	91.3	94.3	95.2	95.3
Occluded													
Test 1	84.1	87.7	83.8	86.1	86.7	88.2	87.1	88.7	84.1	82.4	87.4	85.5	83.4
Test 2	84.8	86.7	82.2	84.2	85.1	83.2	86.2	88.2	85.1	83.7	87.0	84.6	83.1
Test 3	87.5	89.3	85.5	88.4	90.2	88.5	91.2	93.3	89.3	86.4	89.7	87.6	86.1
Mean	85.5	87.9	83.8	86.2	87.4	86.6	88.2	90.1	86.2	84.2	88.0	85.9	84.2
Left Insertion Loss	**-0.2**	**1.0**	**1.1**	**1.5**	**1.0**	**4.3**	**-0.6**	**1.7**	**5.3**	**7.1**	**6.2**	**9.3**	**11.1**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	86.0	88.9	84.2	87.4	89.2	89.9	87.5	90.5	89.7	92.0	93.3	92.1	94.0
Test 2	85.7	88.7	84.3	87.3	88.9	90.1	87.2	90.7	89.8	91.9	93.7	92.0	93.7
Test 3	85.8	88.6	84.4	87.4	88.8	90.3	87.1	90.6	90.0	91.5	93.0	92.2	93.8
Mean	85.8	88.7	84.3	87.4	89.0	90.1	87.2	90.6	89.8	91.8	93.3	92.1	93.8
Occluded													
Test 1	81.5	84.3	79.6	82.9	84.4	84.9	83.4	85.3	83.3	82.7	86.0	83.0	81.0
Test 2	84.5	85.7	80.8	84.0	85.7	83.9	85.2	86.6	85.6	83.0	85.1	82.2	81.0
Test 3	86.0	87.1	82.3	85.3	86.8	85.3	86.6	88.0	86.8	83.6	84.9	83.5	81.5
Mean	84.0	85.7	80.9	84.1	85.6	84.7	85.1	86.7	85.2	83.1	85.4	82.9	81.2
Right Insertion Loss	**1.8**	**3.1**	**3.4**	**3.3**	**3.3**	**5.4**	**2.2**	**3.9**	**4.6**	**8.7**	**8.0**	**9.2**	**12.7**
Insertion Loss	**0.8**	**2.0**	**2.3**	**2.4**	**2.2**	**4.9**	**0.8**	**2.8**	**4.9**	**7.9**	**7.1**	**9.3**	**11.9**

Table C-37. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 7.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.6	92.6	96.0	96.6	96.3	98.1	96.4	94.5	92.8	92.5	89.6	80.3	107	107
Test 2	92.7	92.9	95.9	96.5	96.3	98.1	96.0	94.3	93.0	92.5	89.7	79.9	107	107
Test 3	92.3	92.3	95.6	96.3	96.5	98.0	95.8	94.4	93.7	92.2	89.3	79.8	107	107
Mean	92.5	92.6	95.8	96.5	96.4	98.1	96.1	94.4	93.1	92.4	89.5	80.0		
Occluded														
Test 1	76.3	74.9	72.0	70.0	69.8	67.0	57.5	53.3	52.3	48.5	51.0	48.7	97	91
Test 2	75.9	74.2	70.6	70.0	67.6	66.2	58.4	50.9	47.7	46.9	49.7	48.9	97	91
Test 3	79.6	79.1	76.0	71.6	70.9	67.8	60.9	61.7	57.1	50.8	54.2	49.8	100	94
Mean	77.3	76.0	72.9	70.5	69.4	67.0	58.9	55.3	52.4	48.7	51.6	49.1		
Left Insertion Loss	**15.3**	**16.6**	**23.0**	**26.0**	**26.9**	**31.1**	**37.1**	**39.1**	**40.8**	**43.6**	**37.9**	**30.8**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.7	93.5	95.9	97.8	96.8	98.4	97.3	95.0	95.9	94.3	90.3	80.9	107	108
Test 2	92.7	93.6	95.7	97.2	96.6	98.5	97.0	95.2	95.6	94.2	90.4	81.4	107	108
Test 3	92.8	92.7	94.9	96.7	96.7	97.8	97.2	95.0	96.0	94.5	90.7	81.4	107	107
Mean	92.7	93.3	95.5	97.2	96.7	98.2	97.2	95.0	95.8	94.3	90.4	81.2		
Occluded														
Test 1	72.9	72.3	67.9	66.7	66.7	62.4	53.9	48.8	49.0	51.6	54.3	56.8	95	90
Test 2	72.8	73.1	70.0	68.0	67.1	62.4	53.6	51.6	51.3	53.4	55.5	57.0	96	90
Test 3	73.2	74.9	71.2	69.7	67.1	63.1	56.1	56.8	55.1	54.0	57.6	57.2	97	91
Mean	73.0	73.4	69.7	68.1	66.9	62.7	54.5	52.4	51.8	53.0	55.8	57.0		
Right Insertion Loss	**19.8**	**19.8**	**25.8**	**29.1**	**29.7**	**35.6**	**42.6**	**42.7**	**44.1**	**41.3**	**34.6**	**24.2**		
Insertion Loss	**17.5**	**18.2**	**24.4**	**27.5**	**28.3**	**33.3**	**39.9**	**40.9**	**42.4**	**42.5**	**36.3**	**27.5**		

Table C-38. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 8.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.4	92.0	88.0	90.6	90.5	93.4	89.3	92.5	92.2	92.9	97.0	96.2	96.8
Test 2	88.3	92.0	88.0	90.6	90.6	93.7	89.4	92.5	92.5	93.0	96.9	96.2	96.9
Test 3	88.5	92.0	87.9	90.6	91.0	93.8	89.6	92.7	92.5	93.1	96.8	96.5	95.7
Mean	88.4	92.0	88.0	90.6	90.7	93.6	89.5	92.6	92.4	93.0	96.9	96.3	96.5
Occluded													
Test 1	89.9	90.8	85.5	86.9	87.7	85.3	87.1	88.5	85.4	84.0	89.7	88.2	85.2
Test 2	83.9	86.8	82.0	84.1	84.5	86.0	84.1	87.0	83.9	83.0	87.2	87.1	84.1
Test 3	84.0	86.7	82.1	84.4	84.3	86.5	84.5	87.0	84.3	83.6	87.8	86.8	84.2
Mean	85.9	88.1	83.2	85.1	85.5	85.9	85.2	87.5	84.5	83.5	88.2	87.4	84.5
Left Insertion Loss	**2.4**	**3.9**	**4.8**	**5.5**	**5.2**	**7.7**	**4.3**	**5.0**	**7.8**	**9.5**	**8.6**	**8.9**	**12.0**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	89.0	91.9	87.0	89.6	91.6	91.2	90.4	92.5	90.7	93.3	97.7	94.3	96.6
Test 2	88.9	92.0	87.1	89.7	91.6	91.4	90.2	92.6	91.1	93.4	97.3	94.3	96.9
Test 3	89.2	92.1	87.1	89.8	91.9	91.5	90.2	92.7	91.0	93.5	96.9	94.2	96.4
Mean	89.0	92.0	87.1	89.7	91.7	91.4	90.2	92.6	91.0	93.4	97.3	94.3	96.6
Occluded													
Test 1	89.2	89.6	84.0	86.1	87.8	84.5	86.3	86.6	83.9	84.7	87.1	84.5	84.5
Test 2	84.7	87.4	82.2	85.2	86.2	85.1	84.8	86.2	82.5	83.1	87.7	84.7	85.0
Test 3	84.8	87.4	82.4	85.4	86.1	85.7	85.0	86.5	82.9	82.8	87.3	85.2	85.7
Mean	86.2	88.1	82.9	85.6	86.7	85.1	85.4	86.4	83.1	83.6	87.4	84.8	85.0
Right Insertion Loss	**2.8**	**3.9**	**4.2**	**4.1**	**5.0**	**6.3**	**4.9**	**6.1**	**7.9**	**9.8**	**9.9**	**9.5**	**11.6**
Insertion Loss	**2.6**	**3.9**	**4.5**	**4.8**	**5.1**	**7.0**	**4.6**	**5.6**	**7.9**	**9.7**	**9.3**	**9.2**	**11.8**

Table C-38. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 8.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.0	97.3	97.3	97.9	100.4	102.4	99.7	95.1	93.0	93.1	91.5	80.2	110	110
Test 2	94.2	97.3	97.6	98.0	99.6	102.4	100.1	95.5	93.6	93.2	91.5	80.2	110	110
Test 3	94.5	96.6	97.3	98.7	99.7	101.9	100.2	94.9	94.0	93.8	91.2	80.3	110	110
Mean	94.3	97.1	97.4	98.2	99.9	102.2	100.0	95.2	93.5	93.4	91.4	80.2		
Occluded														
Test 1	75.9	74.3	74.8	72.6	68.2	65.3	59.0	48.2	44.7	45.4	47.7	50.2	99	93
Test 2	73.4	73.3	73.5	70.4	68.0	65.9	59.3	48.2	45.0	45.2	48.0	50.1	96	91
Test 3	74.6	74.2	72.8	71.2	68.6	64.7	59.0	47.7	45.2	45.0	47.7	50.0	97	91
Mean	74.6	74.0	73.7	71.4	68.2	65.3	59.1	48.0	45.0	45.2	47.8	50.1		
Left Insertion Loss	**19.6**	**23.1**	**23.7**	**26.8**	**31.6**	**36.9**	**40.9**	**47.2**	**48.5**	**48.2**	**43.6**	**30.1**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.5	96.2	98.1	97.9	99.6	101.8	99.8	97.7	94.9	92.1	88.5	76.5	110	110
Test 2	94.3	96.2	98.1	98.3	99.6	102.2	100.2	97.1	95.2	92.5	88.1	76.7	110	110
Test 3	94.1	96.0	98.1	98.0	99.5	102.0	101.0	97.5	95.1	92.3	88.1	75.9	110	110
Mean	94.3	96.1	98.1	98.1	99.6	102.0	100.3	97.5	95.1	92.3	88.3	76.4		
Occluded														
Test 1	76.7	74.5	73.0	70.7	65.2	62.4	58.3	51.5	50.8	53.0	55.7	58.5	98	91
Test 2	75.6	72.6	69.6	69.3	66.1	61.9	57.8	49.9	50.5	53.3	56.4	58.4	96	91
Test 3	76.0	72.8	71.7	69.4	65.6	61.7	56.2	49.5	50.3	53.3	56.3	58.5	97	91
Mean	76.1	73.3	71.4	69.8	65.6	62.0	57.4	50.3	50.6	53.2	56.1	58.5		
Right Insertion Loss	**18.1**	**22.9**	**26.7**	**28.2**	**33.9**	**40.0**	**42.9**	**47.2**	**44.5**	**39.1**	**32.1**	**17.9**		
Insertion Loss	**18.9**	**23.0**	**25.2**	**27.5**	**32.8**	**38.5**	**41.9**	**47.2**	**46.5**	**43.7**	**37.9**	**24.0**		

Table C-39. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 9.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	88.7	92.1	87.8	90.3	91.0	93.6	88.9	93.4	92.0	93.3	96.8	96.4	96.9
Test 2	88.5	92.0	87.8	90.3	90.8	93.3	88.7	92.8	91.8	93.2	97.0	96.9	97.2
Test 3	88.8	92.2	87.8	90.3	91.0	93.3	88.8	92.9	91.7	93.2	96.3	96.7	97.1
Mean	88.6	92.1	87.8	90.3	90.9	93.4	88.8	93.0	91.9	93.2	96.7	96.7	97.0
Occluded													
Test 1	85.4	88.1	82.4	84.1	85.5	86.1	85.8	86.3	81.6	82.1	88.3	86.2	83.8
Test 2	84.9	87.8	82.6	84.2	85.6	86.5	86.1	86.9	82.1	82.2	88.2	86.3	83.8
Test 3	85.4	88.0	82.3	84.1	85.6	86.2	86.0	86.2	81.4	82.2	88.4	86.1	84.1
Mean	85.3	88.0	82.4	84.2	85.6	86.3	86.0	86.5	81.7	82.2	88.3	86.2	83.9
Left Insertion Loss	**3.4**	**4.1**	**5.4**	**6.1**	**5.4**	**7.1**	**2.8**	**6.5**	**10.1**	**11.1**	**8.4**	**10.5**	**13.1**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	89.0	91.7	87.0	89.9	91.6	93.2	89.1	93.9	92.3	94.6	97.1	95.9	96.5
Test 2	88.7	91.5	87.0	89.8	91.3	93.4	89.1	94.0	92.6	94.8	97.3	96.0	97.3
Test 3	89.0	91.8	86.9	89.8	91.4	93.2	89.2	93.9	92.5	94.7	97.3	95.9	97.3
Mean	88.9	91.7	87.0	89.8	91.4	93.2	89.1	94.0	92.5	94.7	97.2	95.9	97.0
Occluded													
Test 1	85.9	87.9	82.6	85.4	86.6	85.9	84.6	86.6	83.4	82.5	88.5	84.4	81.2
Test 2	84.7	87.1	82.0	84.6	85.6	85.5	84.1	86.2	83.3	82.3	88.9	84.8	82.0
Test 3	85.2	87.3	82.1	84.9	86.2	86.0	84.5	86.1	83.0	82.1	88.2	83.9	81.3
Mean	85.3	87.5	82.2	85.0	86.1	85.8	84.4	86.3	83.2	82.3	88.5	84.4	81.5
Right Insertion Loss	**3.6**	**4.2**	**4.7**	**4.8**	**5.3**	**7.4**	**4.8**	**7.6**	**9.3**	**12.4**	**8.7**	**11.5**	**15.6**
Insertion Loss	**3.5**	**4.2**	**5.1**	**5.5**	**5.3**	**7.3**	**3.8**	**7.1**	**9.7**	**11.7**	**8.5**	**11.0**	**14.4**

Table C-39. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 9.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.2	96.8	97.9	99.4	101.4	102.2	99.4	97.5	96.3	93.9	88.6	77.8	110	110
Test 2	94.1	96.6	98.6	99.3	101.1	101.9	99.2	97.6	96.1	94.0	89.4	77.4	110	110
Test 3	94.7	97.3	98.3	99.2	101.0	101.6	99.2	98.0	96.0	94.6	89.0	77.8	110	110
Mean	94.3	96.9	98.2	99.3	101.2	101.9	99.2	97.7	96.1	94.2	89.0	77.7		
Occluded														
Test 1	75.7	75.7	70.8	65.4	63.9	60.7	54.0	47.6	44.0	44.6	47.3	49.9	97	91
Test 2	74.8	72.8	69.7	65.2	63.7	60.2	53.8	48.0	44.2	44.7	47.2	50.0	97	91
Test 3	75.9	74.7	69.9	65.1	63.6	60.0	54.0	47.2	44.2	45.0	47.4	50.1	97	91
Mean	75.4	74.4	70.1	65.2	63.7	60.3	53.9	47.6	44.1	44.8	47.3	50.0		
Left Insertion Loss	**18.9**	**22.5**	**28.1**	**34.0**	**37.4**	**41.6**	**45.4**	**50.1**	**52.0**	**49.4**	**41.7**	**27.7**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	93.5	96.5	98.2	99.1	100.3	100.9	99.2	96.2	94.9	95.0	90.3	78.0	110	109
Test 2	93.7	96.5	98.6	99.1	100.0	100.3	99.0	95.5	94.2	94.8	90.3	78.1	110	109
Test 3	93.5	96.5	98.5	98.4	99.4	100.5	98.8	95.4	94.5	94.7	90.8	78.4	109	109
Mean	93.6	96.5	98.4	98.9	99.9	100.6	99.0	95.7	94.6	94.8	90.4	78.2		
Occluded														
Test 1	73.7	74.3	71.2	70.3	67.2	63.0	56.8	50.2	49.8	52.8	55.9	58.7	97	91
Test 2	74.1	74.8	71.2	68.8	65.6	61.0	55.9	49.8	49.9	53.1	56.2	58.8	96	91
Test 3	73.7	75.0	72.4	70.7	66.6	62.1	56.3	49.6	49.7	52.7	55.9	58.8	96	91
Mean	73.9	74.7	71.6	69.9	66.5	62.0	56.4	49.8	49.8	52.9	56.0	58.8		
Right Insertion Loss	**19.7**	**21.8**	**26.9**	**28.9**	**33.4**	**38.5**	**42.6**	**45.8**	**44.8**	**42.0**	**34.4**	**19.4**		
Insertion Loss	**19.3**	**22.1**	**27.5**	**31.5**	**35.4**	**40.1**	**44.0**	**48.0**	**48.4**	**45.7**	**38.1**	**23.6**		

Table C-40. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 10.

Left	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	90.1	91.6	87.5	90.2	90.5	91.2	91.0	95.6	95.9	94.3	94.0	96.7	96.4
Test 2	87.6	91.2	87.6	90.8	91.0	94.9	90.3	94.0	94.5	94.1	94.8	97.1	95.9
Test 3	87.8	91.4	87.7	90.8	91.0	94.8	90.2	94.3	94.4	93.9	95.1	97.0	95.8
Mean	88.5	91.4	87.6	90.6	90.8	93.6	90.5	94.6	94.9	94.1	94.6	96.9	96.0
Occluded													
Test 1	83.0	86.8	82.1	84.8	85.2	87.8	85.7	88.7	86.2	84.6	87.1	86.8	84.0
Test 2	88.5	91.8	87.9	89.6	88.6	91.5	88.2	91.0	88.3	86.7	88.7	87.5	83.1
Test 3	84.3	87.8	83.8	86.7	86.8	89.7	87.3	89.6	87.8	86.2	89.3	89.2	85.0
Mean	85.3	88.8	84.6	87.0	86.8	89.7	87.1	89.8	87.4	85.8	88.4	87.8	84.0
Left Insertion Loss	**3.2**	**2.6**	**3.0**	**3.6**	**4.0**	**4.0**	**3.5**	**4.8**	**7.5**	**8.3**	**6.3**	**9.1**	**12.0**
Right	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Unoccluded													
Test 1	91.4	92.2	86.7	89.3	91.7	88.6	90.2	92.3	92.2	93.7	95.7	94.1	94.8
Test 2	88.9	92.0	87.2	90.2	91.6	91.4	89.5	91.3	90.4	92.1	94.3	94.6	95.5
Test 3	88.9	91.9	87.1	90.1	91.5	91.3	89.7	91.2	90.3	92.3	94.5	94.6	95.6
Mean	89.7	92.0	87.0	89.9	91.6	90.4	89.8	91.6	91.0	92.7	94.8	94.4	95.3
Occluded													
Test 1	84.5	87.3	82.5	86.2	86.7	86.4	85.0	86.9	83.7	81.4	85.6	86.6	83.5
Test 2	87.9	90.4	85.8	89.1	89.3	89.0	87.0	88.1	84.7	82.8	87.0	87.5	82.0
Test 3	84.9	87.7	83.7	87.2	86.8	87.6	86.2	87.8	85.5	82.5	85.4	87.3	85.0
Mean	85.8	88.5	84.0	87.5	87.6	87.6	86.0	87.6	84.6	82.2	86.0	87.1	83.5
Right Insertion Loss	**4.0**	**3.5**	**3.0**	**2.4**	**4.0**	**2.8**	**3.8**	**4.0**	**6.3**	**10.5**	**8.8**	**7.3**	**11.8**
Insertion Loss	**3.6**	**3.0**	**3.0**	**3.0**	**4.0**	**3.4**	**3.6**	**4.4**	**6.9**	**9.4**	**7.5**	**8.2**	**11.9**

Table C-40. Raw data for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ – Subject 10.

Left	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	94.2	95.2	97.2	97.7	98.9	101.2	99.0	95.2	97.2	96.7	93.2	81.8	110	109
Test 2	95.1	96.0	97.1	98.0	99.2	101.5	99.4	94.9	97.1	97.5	93.2	81.4	110	110
Test 3	94.6	95.7	97.6	98.3	99.2	101.1	99.2	94.5	97.0	96.5	93.3	81.4	110	109
Mean	94.6	95.6	97.3	98.0	99.1	101.3	99.2	94.9	97.1	96.9	93.2	81.5		
Occluded														
Test 1	74.3	71.2	69.5	65.4	66.5	60.9	52.9	49.5	46.3	44.8	47.2	49.1	97	92
Test 2	70.5	74.1	73.5	71.6	68.0	68.1	70.5	68.0	68.7	60.2	53.9	50.2	100	93
Test 3	75.2	71.3	71.2	69.4	67.4	61.5	52.8	50.4	47.9	45.1	48.4	49.5	99	94
Mean	73.3	72.2	71.4	68.8	67.3	63.5	58.7	55.9	54.3	50.0	49.8	49.6		
Left Insertion Loss	**21.3**	**23.4**	**25.9**	**29.2**	**31.8**	**37.8**	**40.5**	**38.9**	**42.8**	**46.8**	**43.4**	**31.9**		
Right	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**LIN**	**Awt**
Unoccluded														
Test 1	92.5	96.4	97.2	98.9	97.7	100.2	99.4	97.5	93.4	93.3	91.9	79.3	109	109
Test 2	92.3	96.1	96.9	97.7	98.7	100.7	97.8	95.8	93.9	93.6	91.1	77.9	109	109
Test 3	92.3	96.2	97.2	97.8	98.2	100.4	98.1	95.0	94.1	93.6	91.4	78.6	109	108
Mean	92.4	96.2	97.1	98.1	98.2	100.4	98.4	96.1	93.8	93.5	91.5	78.6		
Occluded														
Test 1	75.6	76.3	73.3	67.4	65.3	62.9	56.3	55.6	53.4	52.3	55.9	57.9	97	91
Test 2	74.6	78.8	76.3	70.0	65.5	62.5	60.8	61.4	60.8	54.6	57.7	58.0	99	92
Test 3	76.4	78.5	75.0	69.2	66.2	60.8	55.7	57.1	56.9	52.8	56.0	57.9	98	92
Mean	75.5	77.9	74.9	68.8	65.7	62.1	57.6	58.0	57.1	53.2	56.5	57.9		
Right Insertion Loss	**16.8**	**18.4**	**22.2**	**29.3**	**32.6**	**38.3**	**40.8**	**38.0**	**36.8**	**40.2**	**34.9**	**20.7**		
Insertion Loss	**19.1**	**20.9**	**24.0**	**29.3**	**32.2**	**38.1**	**40.6**	**38.5**	**39.8**	**43.5**	**39.2**	**26.3**		

Appendix D.

Microphone-in-Real Ear summary tables.

Table D-1. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System.

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	-0.32	-0.57	-2.34	-3.51	-3.82	-4.66	-4.45	0.44	4.92	9.18	10.96	13.81	18.82
02	3.98	4.90	5.55	6.13	6.60	8.17	7.96	12.58	15.73	17.42	15.82	19.70	23.18
03	6.31	7.35	10.00	9.22	9.66	11.22	11.99	14.52	17.77	21.85	20.17	22.78	28.37
04	1.71	3.33	4.28	4.47	2.90	5.64	2.28	7.44	11.48	14.57	13.91	19.94	24.97
05	8.67	8.70	10.84	10.99	9.48	11.16	12.32	16.08	19.04	22.60	18.99	22.70	26.79
06	2.47	2.80	2.26	2.25	2.43	2.21	-0.98	1.31	6.51	11.35	12.01	16.31	21.26
07	5.89	6.85	8.20	9.48	9.87	12.99	11.04	15.13	18.77	21.10	18.47	25.19	28.74
08	4.59	4.99	6.40	7.14	6.97	7.74	9.20	12.21	16.57	19.61	18.56	19.87	24.29
09	6.78	6.39	6.86	7.22	6.78	8.61	8.12	11.27	13.76	19.04	18.24	21.35	25.63
10	1.94	1.45	1.50	2.30	3.39	4.14	6.15	9.89	13.42	18.36	16.60	18.50	22.60
Mean	4.20	4.62	5.36	5.57	5.43	6.72	6.36	10.09	13.80	17.51	16.37	20.02	24.46
s	2.77	2.87	4.06	4.33	4.28	5.20	5.68	5.48	4.91	4.49	3.14	3.30	3.12
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	27.79	30.73	28.84	23.38	29.20	32.36	33.30	30.98	30.40	30.67	30.76	25.98
02	27.39	31.17	31.90	30.13	30.89	33.27	34.66	32.60	31.78	35.82	34.78	27.03
03	30.95	31.29	32.91	35.95	35.63	40.15	41.91	35.88	39.27	36.14	35.08	26.64
04	31.17	34.62	32.09	29.84	28.53	32.21	32.93	30.75	30.76	30.21	30.79	25.26
05	33.23	37.51	37.30	35.82	34.32	41.85	43.08	41.49	38.03	35.51	36.50	27.46
06	24.75	29.65	34.25	30.38	27.61	28.19	27.32	23.18	24.14	26.87	27.62	23.83
07	35.08	37.44	37.35	36.97	36.17	40.61	38.92	39.18	36.87	34.57	32.47	27.19
08	32.36	34.17	34.98	33.44	32.55	39.27	40.54	35.12	32.66	33.72	30.97	23.53
09	32.31	34.07	35.88	33.33	32.62	36.00	38.26	33.94	29.80	29.95	28.31	22.13
10	32.31	32.75	32.95	31.91	33.66	36.88	38.51	30.43	28.62	28.22	27.34	22.53
Mean	30.73	33.34	33.84	32.11	32.12	36.08	36.94	33.35	32.23	32.17	31.46	25.16
s	3.14	2.72	2.66	4.00	2.98	4.47	4.84	5.11	4.65	3.38	3.22	2.01
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-1. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System (left ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	-0.38	-0.59	-2.43	-3.78	-4.37	-4.65	-5.21	0.45	6.39	10.91	12.38	16.14	21.41
02	3.54	5.01	6.08	7.10	7.77	8.60	8.49	11.68	14.79	16.31	15.12	19.20	23.32
03	5.44	7.58	10.62	10.54	10.60	12.24	11.45	14.86	19.87	24.60	21.69	24.28	30.38
04	5.62	7.67	9.48	10.63	10.48	13.83	10.67	13.51	15.81	17.98	16.04	22.53	26.88
05	7.73	8.40	10.65	11.87	9.97	11.96	12.16	14.44	16.80	20.22	17.74	23.57	26.07
06	3.35	3.60	3.74	4.46	5.64	6.55	5.55	7.58	12.02	15.41	15.22	19.80	24.34
07	4.75	5.25	6.83	8.58	9.48	12.53	11.55	14.19	17.38	19.36	17.69	25.73	28.03
08	7.38	8.36	9.95	10.78	9.45	10.27	11.03	12.81	16.72	18.97	17.60	19.96	25.94
09	4.83	4.26	5.12	6.24	5.03	7.04	5.52	10.47	13.46	19.54	18.18	23.02	25.92
10	-0.52	-0.78	-0.67	0.31	1.35	2.69	4.83	9.85	12.91	15.55	13.45	18.34	20.10
Mean	4.17	4.88	5.94	6.67	6.54	8.11	7.60	10.98	14.61	17.89	16.51	21.26	25.24
s	2.81	3.40	4.63	5.09	4.85	5.63	5.31	4.36	3.72	3.64	2.67	3.02	3.06
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	30.14	32.85	26.73	21.77	28.01	30.52	32.11	30.29	28.49	31.25	30.41	27.91
02	28.61	31.75	30.85	29.83	30.45	32.67	34.39	33.88	35.04	37.04	35.11	30.71
03	30.97	31.66	33.18	35.82	34.76	38.43	42.81	39.87	44.63	40.96	40.43	30.50
04	35.91	36.54	37.13	34.18	33.78	40.93	40.66	40.38	36.23	37.92	37.34	29.59
05	31.94	36.51	38.34	35.94	33.83	40.91	43.97	39.85	37.32	37.92	38.00	31.71
06	24.40	27.05	32.55	33.77	34.69	34.55	34.78	28.12	30.28	30.34	34.28	27.58
07	35.91	38.63	39.23	35.58	35.75	45.35	43.73	44.11	36.10	34.11	33.41	29.94
08	35.13	33.28	34.61	32.61	33.75	42.88	44.86	42.28	41.44	40.82	38.67	29.29
09	32.05	35.03	38.30	32.47	29.08	32.47	36.34	29.25	26.30	27.38	25.75	24.10
10	28.95	31.74	34.63	32.33	32.41	36.22	39.80	28.05	29.61	28.86	27.92	25.73
Mean	31.40	33.50	34.56	32.43	32.65	37.49	39.34	35.61	34.55	34.66	34.13	28.71
s	3.65	3.31	3.91	4.20	2.61	4.97	4.62	6.33	5.87	4.96	4.83	2.38
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-1. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System (right ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	-0.27	-0.55	-2.24	-3.24	-3.27	-4.66	-3.68	0.42	3.46	7.44	9.55	11.48	16.23
02	4.42	4.79	5.02	5.16	5.42	7.74	7.43	13.48	16.66	18.53	16.53	20.20	23.04
03	7.17	7.13	9.39	7.90	8.73	10.19	12.53	14.17	15.67	19.10	18.65	21.29	26.37
04	-2.20	-1.00	-0.92	-1.68	-4.68	-2.55	-6.12	1.37	7.16	11.15	11.78	17.35	23.05
05	9.60	8.99	11.03	10.10	9.00	10.35	12.49	17.73	21.29	24.99	20.25	21.83	27.51
06	1.59	2.00	0.77	0.03	-0.79	-2.14	-7.50	-4.96	1.00	7.29	8.80	12.83	18.18
07	7.04	8.45	9.57	10.38	10.26	13.46	10.54	16.08	20.16	22.84	19.24	24.66	29.44
08	1.79	1.62	2.86	3.51	4.49	5.21	7.36	11.61	16.42	20.25	19.52	19.79	22.63
09	8.72	8.53	8.59	8.19	8.53	10.19	10.72	12.07	14.06	18.55	18.31	19.67	25.34
10	4.41	3.68	3.66	4.29	5.42	5.59	7.46	9.93	13.93	21.17	19.75	18.66	25.11
Mean	4.23	4.36	4.77	4.46	4.31	5.34	5.12	9.19	12.98	17.13	16.24	18.77	23.69
s	3.95	3.80	4.72	4.84	5.39	6.34	7.81	7.57	6.86	6.28	4.45	4.01	4.05
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	25.44	28.60	30.94	24.98	30.38	34.20	34.49	31.68	32.32	30.08	31.10	24.04
02	26.16	30.59	32.95	30.43	31.33	33.88	34.92	31.31	28.51	34.60	34.45	23.35
03	30.92	30.91	32.63	36.07	36.49	41.86	41.01	31.88	33.91	31.32	29.73	22.77
04	26.42	32.69	27.04	25.50	23.27	23.49	25.20	21.12	25.29	22.51	24.24	20.93
05	34.52	38.51	36.26	35.70	34.81	42.79	42.19	43.12	38.73	33.10	34.99	23.21
06	25.09	32.24	35.95	26.98	20.53	21.83	19.85	18.23	18.00	23.40	20.95	20.07
07	34.25	36.25	35.46	38.35	36.59	35.86	34.10	34.26	37.63	35.03	31.53	24.43
08	29.58	35.07	35.34	34.28	31.36	35.66	36.22	27.96	23.87	26.62	23.27	17.76
09	32.57	33.10	33.47	34.20	36.16	39.52	40.18	38.63	33.31	32.52	30.87	20.15
10	35.66	33.76	31.27	31.48	34.92	37.53	37.23	32.82	27.64	27.58	26.77	19.33
Mean	30.06	33.17	33.13	31.80	31.58	34.66	34.54	31.10	29.92	29.68	28.79	21.60
s	4.09	2.90	2.86	4.71	5.62	7.01	7.04	7.38	6.48	4.47	4.78	2.26
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-2. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™.

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	1.81	2.73	3.03	3.29	5.35	8.19	8.10	9.11	11.83	13.78	12.65	13.27	17.97
02	3.09	4.43	4.49	4.83	6.04	9.23	7.74	11.73	13.74	15.61	12.78	15.83	19.08
03	5.57	5.97	7.74	7.82	8.57	10.63	12.06	13.14	15.78	19.24	16.40	18.25	20.06
04	3.24	3.98	4.74	4.54	5.26	7.57	7.82	11.29	15.01	17.21	15.26	18.24	21.21
05	5.39	5.70	7.24	8.34	8.52	11.05	10.06	12.16	15.67	17.79	15.39	18.73	20.29
06	-1.34	-0.70	-1.24	-1.43	-1.94	-0.33	-3.60	0.18	3.77	8.40	7.32	11.22	15.08
07	9.74	9.04	9.18	8.92	11.00	12.73	13.40	15.45	18.35	20.27	17.38	21.37	23.11
08	6.47	6.77	8.18	7.63	8.75	10.82	10.86	12.38	15.92	18.67	16.68	15.89	18.26
09	4.59	6.93	9.74	9.97	8.52	12.07	11.02	15.88	18.04	20.80	16.51	20.10	23.20
10	4.22	2.62	3.05	3.33	5.44	6.06	8.84	10.19	13.98	17.78	16.69	17.56	20.34
Mean	4.28	4.75	5.61	5.72	6.55	8.80	8.63	11.15	14.21	16.96	14.70	17.04	19.86
s	2.94	2.76	3.43	3.47	3.55	3.82	4.70	4.39	4.15	3.66	3.06	3.07	2.44
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	24.88	26.46	32.90	37.29	41.35	42.56	39.80	41.39	40.86	37.49	33.99	28.30
02	22.76	26.23	29.86	33.61	36.62	40.04	39.95	36.90	39.31	39.05	34.14	27.51
03	21.87	27.24	36.18	39.18	44.65	50.27	50.37	45.80	43.97	40.01	37.33	27.41
04	22.16	26.46	36.13	35.83	38.50	45.49	42.56	39.55	39.43	34.47	35.06	25.80
05	24.34	28.26	33.38	36.55	41.59	48.16	48.28	43.63	41.57	40.96	37.75	27.35
06	16.78	22.60	26.61	29.02	31.94	36.36	34.58	30.21	33.17	33.50	30.69	24.83
07	26.33	29.38	36.02	40.84	44.83	46.19	47.15	49.23	45.69	41.62	36.85	28.01
08	27.06	29.39	32.71	37.86	43.36	49.97	49.91	46.19	41.67	39.53	33.46	24.01
09	25.81	29.51	36.09	38.39	45.04	51.96	51.88	51.43	48.76	45.36	37.17	23.59
10	26.41	26.87	31.52	36.73	41.90	41.88	38.86	36.57	34.34	37.09	34.16	24.73
Mean	23.84	27.24	33.14	36.53	40.98	45.29	44.33	42.09	40.88	38.91	35.06	26.15
s	3.09	2.09	3.19	3.28	4.20	5.02	5.93	6.47	4.74	3.48	2.22	1.76
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-2. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ (left ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	1.64	2.63	3.20	3.88	5.67	8.51	8.08	9.75	14.20	14.31	10.83	11.89	15.62
02	3.33	4.91	5.30	6.33	7.94	10.77	8.75	13.01	15.17	16.16	12.61	13.36	17.02
03	5.10	6.17	8.52	8.62	8.74	10.33	10.57	13.31	16.52	20.49	15.71	19.13	21.10
04	6.55	7.90	8.96	9.13	10.80	11.74	12.32	14.70	17.45	19.41	17.52	19.38	20.90
05	6.13	6.50	8.56	11.02	10.57	12.31	11.36	13.05	16.88	19.93	17.05	19.73	20.07
06	-1.46	-0.82	-1.30	-1.09	-1.13	1.14	-1.80	2.48	5.73	10.78	8.81	10.88	14.67
07	9.59	8.60	8.92	9.91	12.24	14.01	13.57	14.75	17.12	18.49	16.58	21.50	20.91
08	4.89	5.67	7.04	7.17	7.10	9.91	9.23	10.43	15.28	18.92	17.01	17.09	20.40
09	5.90	8.58	11.82	12.03	10.05	13.31	11.77	17.16	19.17	21.55	16.53	18.67	19.97
10	3.92	2.22	3.87	5.31	6.73	7.63	9.16	11.79	15.95	18.99	16.74	18.34	18.70
Mean	4.56	5.24	6.49	7.23	7.87	9.97	9.30	12.04	15.35	17.90	14.94	17.00	18.94
s	2.99	3.07	3.79	3.87	3.77	3.69	4.27	3.99	3.65	3.26	3.06	3.64	2.35
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	24.83	25.30	32.37	37.12	41.15	42.42	40.21	41.19	42.76	41.85	37.61	31.68
02	24.13	26.81	28.93	33.31	36.52	40.79	39.42	38.49	42.90	41.32	36.16	31.45
03	19.69	24.92	35.04	38.48	43.97	48.42	47.55	46.63	48.44	44.41	40.52	31.77
04	23.25	26.95	37.92	39.16	41.00	47.38	47.87	47.05	42.74	38.79	38.93	29.44
05	24.65	27.35	33.66	37.05	43.99	49.61	48.62	43.85	42.44	42.62	40.34	31.41
06	16.14	21.42	24.75	26.73	32.10	38.27	39.18	34.96	35.82	32.05	30.29	27.79
07	27.97	29.18	38.23	42.27	44.18	48.84	51.54	52.86	47.32	44.69	39.76	31.53
08	28.68	29.65	32.52	38.17	42.63	48.76	47.91	44.76	45.01	45.14	40.28	30.45
09	23.27	28.25	35.03	40.24	46.62	53.74	52.62	53.93	53.05	49.36	40.06	27.51
10	26.88	27.73	32.35	37.67	42.66	44.48	42.68	36.71	37.55	37.99	35.91	29.73
Mean	23.95	26.76	33.08	37.02	41.48	46.27	45.76	44.04	43.80	41.82	37.98	30.28
s	3.78	2.40	4.03	4.30	4.24	4.69	5.00	6.39	5.04	4.75	3.21	1.61
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-2. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero HushKit™ (right ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	1.98	2.83	2.85	2.70	5.02	7.88	8.11	8.48	9.46	13.25	14.47	14.64	20.32
02	2.86	3.94	3.68	3.33	4.13	7.69	6.73	10.46	12.32	15.06	12.95	18.30	21.15
03	6.05	5.78	6.95	7.02	8.40	10.94	13.56	12.98	15.05	17.99	17.08	17.36	19.02
04	-0.07	0.06	0.51	-0.06	-0.27	3.40	3.33	7.87	12.57	15.01	13.01	17.10	21.52
05	4.64	4.90	5.92	5.66	6.46	9.78	8.76	11.28	14.47	15.66	13.73	17.72	20.50
06	-1.21	-0.58	-1.18	-1.76	-2.75	-1.80	-5.40	-2.11	1.81	6.02	5.83	11.57	15.49
07	9.89	9.47	9.44	7.93	9.76	11.45	13.23	16.16	19.59	22.05	18.18	21.24	25.31
08	8.06	7.87	9.33	8.09	10.39	11.72	12.50	14.33	16.55	18.42	16.36	14.68	16.13
09	3.29	5.28	7.66	7.91	6.99	10.83	10.27	14.60	16.92	20.06	16.49	21.53	26.44
10	4.52	3.02	2.22	1.34	4.14	4.48	8.52	8.60	12.01	16.56	16.63	16.78	21.98
Mean	4.00	4.26	4.74	4.22	5.23	7.64	7.96	10.26	13.07	16.01	14.47	17.09	20.78
s	3.42	3.14	3.68	3.62	4.19	4.40	5.65	5.20	4.91	4.38	3.54	3.00	3.46
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	24.94	27.61	33.43	37.46	41.55	42.70	39.39	41.59	38.96	33.13	30.36	24.92
02	21.40	25.66	30.79	33.91	36.72	39.28	40.48	35.32	35.71	36.77	32.12	23.57
03	24.05	29.56	37.32	39.87	45.33	52.11	53.20	44.96	39.50	35.61	34.15	23.05
04	21.07	25.98	34.34	32.49	36.00	43.60	37.25	32.05	36.12	30.15	31.20	22.17
05	24.04	29.17	33.09	36.04	39.19	46.72	47.95	43.41	40.71	39.30	35.16	23.29
06	17.42	23.77	28.47	31.30	31.78	34.45	29.97	25.46	30.52	34.96	31.08	21.86
07	24.68	29.58	33.82	39.41	45.49	43.54	42.77	45.60	44.06	38.55	33.93	24.49
08	25.44	29.13	32.90	37.54	44.10	51.19	51.91	47.63	38.33	33.92	26.64	17.57
09	28.36	30.76	37.14	36.55	43.46	50.19	51.13	48.93	44.46	41.36	34.28	19.68
10	25.94	26.01	30.69	35.79	41.14	39.28	35.04	36.44	31.13	36.19	32.42	19.73
Mean	23.73	27.72	33.20	36.04	40.48	44.31	42.91	40.14	37.95	35.99	32.13	22.03
s	3.06	2.26	2.76	2.79	4.52	5.77	7.89	7.58	4.73	3.24	2.50	2.36
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-3. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ and HushKit™.

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	7.82	7.64	8.20	8.73	10.85	11.05	11.49	13.02	16.97	21.20	22.17	26.52	29.24
02	5.03	7.03	7.86	9.11	9.58	12.71	9.68	13.60	15.35	19.14	17.65	22.67	25.82
03	5.70	7.43	10.33	10.71	10.99	14.16	12.68	15.14	16.09	21.04	20.68	24.79	26.10
04	11.02	10.17	11.65	12.31	12.58	12.30	12.03	15.14	19.13	21.79	21.43	26.43	30.65
05	7.64	9.41	11.48	12.15	11.99	15.26	11.05	13.41	16.67	20.78	21.05	24.30	28.41
06	4.77	4.63	5.09	6.00	7.04	7.68	7.35	9.04	13.70	16.73	15.82	18.52	20.92
07	12.92	10.85	11.12	11.48	12.59	12.57	13.90	15.59	18.92	21.22	20.46	28.70	32.68
08	7.19	8.55	11.19	11.72	12.12	14.35	10.40	12.92	16.24	20.38	22.85	26.32	32.92
09	8.51	9.01	11.11	10.92	10.88	12.71	10.49	15.73	18.57	22.66	22.01	27.91	31.51
10	11.60	10.24	11.06	10.74	11.77	11.65	11.85	13.29	16.95	22.43	23.26	26.59	31.01
Mean	8.22	8.49	9.91	10.39	11.04	12.44	11.09	13.69	16.86	20.74	20.74	25.27	28.93
s	2.82	1.87	2.16	1.94	1.68	2.11	1.79	1.97	1.69	1.73	2.33	2.94	3.74
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	26.97	30.96	36.03	38.19	41.41	47.37	46.16	46.85	43.19	41.87	38.56	29.19
02	26.89	26.79	28.77	31.96	36.81	43.08	45.43	44.57	44.06	44.00	38.63	29.51
03	26.89	29.93	36.12	40.00	44.73	50.81	53.60	50.81	46.38	44.19	39.66	27.27
04	25.71	29.25	35.74	37.78	41.63	47.07	47.96	48.05	47.27	42.49	38.69	26.48
05	30.39	30.21	34.53	38.03	42.38	50.04	52.08	50.45	47.83	45.19	40.80	27.77
06	23.41	27.21	29.48	33.44	38.19	42.89	45.46	43.07	42.58	41.85	38.83	26.15
07	31.39	32.44	38.05	41.46	44.11	47.08	50.27	51.10	47.08	43.86	39.56	27.96
08	32.22	31.26	34.17	39.13	44.14	49.28	52.31	50.46	44.89	41.59	36.23	23.71
09	28.00	30.61	36.76	39.22	44.96	50.01	50.84	51.44	49.05	45.82	37.38	23.40
10	30.99	30.96	36.23	38.13	41.01	47.09	52.17	49.15	48.32	47.01	41.14	26.47
Mean	28.29	29.96	34.59	37.74	41.94	47.47	49.63	48.60	46.07	43.79	38.95	26.79
s	2.85	1.78	3.08	2.89	2.75	2.75	3.11	2.92	2.25	1.85	1.47	2.04
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-3. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ and HushKit™ (left ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	7.31	7.56	8.69	9.96	11.38	11.08	11.02	12.84	18.07	20.79	21.36	27.55	29.72
02	3.41	5.91	7.44	9.52	9.83	13.08	9.23	13.29	14.92	18.36	17.40	21.56	22.93
03	4.19	6.64	9.94	11.18	11.51	14.47	11.61	14.61	16.54	21.50	20.73	24.97	23.20
04	10.32	10.39	12.12	13.61	13.36	11.08	11.95	15.68	19.49	21.59	22.21	25.76	31.44
05	7.12	9.18	11.39	12.83	12.06	15.68	11.31	13.57	16.56	20.49	20.49	25.18	29.51
06	5.00	5.14	6.25	8.04	9.19	9.47	8.90	10.35	15.90	18.43	18.12	19.71	19.66
07	14.37	11.22	11.89	13.02	13.41	12.17	15.26	15.79	19.28	21.52	21.92	30.64	33.79
08	6.27	8.25	11.17	12.95	12.74	15.34	9.88	11.91	15.77	20.29	21.75	25.48	34.01
09	6.66	7.97	10.79	11.31	11.37	12.40	10.06	15.32	18.62	21.96	21.54	27.91	27.85
10	13.00	11.83	13.06	13.69	13.71	13.03	12.47	14.70	18.40	22.39	23.34	28.55	32.27
Mean	7.77	8.41	10.28	11.61	11.86	12.78	11.17	13.81	17.35	20.73	20.89	25.73	28.44
s	3.67	2.24	2.19	1.93	1.52	1.98	1.86	1.76	1.61	1.39	1.83	3.24	4.96
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	26.41	29.66	33.51	36.40	39.37	45.99	42.98	45.20	46.31	46.05	42.67	33.57
02	26.54	25.96	27.60	32.14	36.22	41.47	44.22	44.86	45.24	45.03	39.68	33.67
03	23.28	27.35	33.85	39.05	46.20	50.87	54.94	52.78	50.61	47.86	42.14	31.91
04	25.96	29.62	37.58	39.12	42.69	48.53	50.59	50.34	49.31	45.49	40.68	30.43
05	32.36	30.72	35.49	39.78	43.76	51.81	52.81	53.33	50.47	48.35	44.31	32.35
06	21.72	26.28	27.96	31.70	38.47	43.70	45.55	42.59	43.38	44.13	42.65	30.03
07	34.89	32.23	39.89	43.65	46.65	49.18	50.16	51.79	48.46	47.84	43.52	31.99
08	32.50	30.12	31.49	37.41	43.62	48.74	53.79	52.26	49.42	46.70	41.71	29.86
09	27.12	28.51	32.89	38.56	44.95	48.77	48.97	53.95	53.76	49.76	40.77	27.52
10	34.86	32.04	37.24	39.54	43.80	48.99	51.84	48.70	51.12	52.15	46.16	32.15
Mean	28.56	29.25	33.75	37.74	42.57	47.81	49.59	49.58	48.81	47.33	42.43	31.35
s	4.74	2.20	4.01	3.60	3.45	3.19	4.11	4.04	3.08	2.40	1.91	1.89
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-3. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal™ and HushKit™ (right ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	8.33	7.73	7.71	7.50	10.33	11.03	11.97	13.20	15.87	21.60	22.97	25.49	28.77
02	6.65	8.15	8.28	8.70	9.33	12.34	10.14	13.91	15.79	19.92	17.90	23.78	28.71
03	7.20	8.22	10.72	10.24	10.47	13.84	13.74	15.66	15.64	20.57	20.63	24.62	29.00
04	11.72	9.95	11.18	11.02	11.79	13.52	12.11	14.60	18.76	21.99	20.65	27.10	29.86
05	8.17	9.63	11.56	11.47	11.93	14.84	10.78	13.24	16.78	21.07	21.61	23.41	27.32
06	4.54	4.11	3.94	3.97	4.89	5.90	5.80	7.74	11.50	15.03	13.52	17.34	22.18
07	11.48	10.49	10.34	9.94	11.77	12.96	12.54	15.39	18.55	20.93	19.00	26.76	31.57
08	8.12	8.86	11.20	10.49	11.49	13.36	10.91	13.93	16.71	20.47	23.96	27.16	31.82
09	10.35	10.04	11.42	10.53	10.39	13.01	10.92	16.14	18.53	23.35	22.48	27.91	35.17
10	10.20	8.65	9.06	7.78	9.83	10.27	11.24	11.88	15.50	22.47	23.18	24.62	29.75
Mean	8.67	8.58	9.54	9.16	10.22	12.11	11.02	13.57	16.36	20.74	20.59	24.82	29.41
s	2.27	1.82	2.40	2.26	2.08	2.55	2.11	2.42	2.14	2.25	3.13	3.05	3.36
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	27.53	32.27	38.54	39.98	43.45	48.76	49.34	48.50	40.06	37.69	34.45	24.82
02	27.25	27.62	29.94	31.79	37.39	44.69	46.63	44.29	42.88	42.98	37.58	25.35
03	30.49	32.51	38.40	40.95	43.25	50.74	52.25	48.85	42.16	40.53	37.18	22.64
04	25.46	28.88	33.90	36.44	40.57	45.61	45.33	45.76	45.22	39.49	36.69	22.54
05	28.41	29.71	33.57	36.28	41.01	48.27	51.35	47.56	45.20	42.03	37.29	23.20
06	25.10	28.14	31.01	35.19	37.92	42.07	45.38	43.54	41.79	39.57	35.00	22.26
07	27.88	32.65	36.21	39.27	41.57	44.98	50.38	50.41	45.70	39.87	35.60	23.94
08	31.94	32.39	36.84	40.85	44.66	49.81	50.83	48.66	40.36	36.48	30.75	17.56
09	28.88	32.72	40.63	39.88	44.97	51.26	52.71	48.92	44.34	41.87	33.99	19.29
10	27.13	29.88	35.22	36.72	38.23	45.19	52.50	49.61	45.53	41.86	36.13	20.79
Mean	28.01	30.68	35.42	37.73	41.30	47.14	49.67	47.61	43.32	40.24	35.46	22.24
s	2.09	2.04	3.39	2.96	2.79	3.05	2.89	2.31	2.16	2.05	2.07	2.43
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-4. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™.

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	1.29	1.76	2.01	1.87	2.07	3.16	2.11	3.11	5.84	8.28	6.05	8.10	11.14
02	0.40	1.44	1.63	1.94	2.05	3.62	0.91	3.73	5.19	7.62	5.40	9.39	12.16
03	2.04	2.47	3.01	3.06	3.50	4.46	3.06	6.96	8.86	11.01	9.59	11.44	16.55
04	5.25	5.34	5.51	5.74	6.01	5.54	4.92	6.04	9.26	11.73	9.78	12.41	16.92
05	-0.82	0.03	0.25	0.22	-0.33	2.02	-0.99	1.01	4.49	6.77	4.68	7.16	10.49
06	-0.95	-0.09	-0.53	-0.75	-1.45	-0.28	-4.08	-2.70	0.94	3.92	2.46	5.21	8.85
07	5.71	5.26	5.38	5.64	6.18	6.57	5.57	7.08	9.15	11.29	8.82	14.41	17.23
08	2.64	3.88	4.49	4.81	5.12	6.98	4.56	5.59	7.86	9.67	9.30	9.20	11.80
09	3.49	4.19	5.07	5.49	5.33	7.28	3.78	7.09	9.70	11.73	8.54	11.00	14.35
10	3.59	3.05	3.00	2.97	3.98	3.38	3.61	4.40	6.91	9.37	7.55	8.21	11.90
Mean	2.26	2.73	2.98	3.10	3.25	4.27	2.35	4.23	6.82	9.14	7.22	9.65	13.14
s	2.32	1.96	2.15	2.31	2.63	2.39	2.99	3.14	2.76	2.53	2.46	2.71	2.94
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	16.78	19.58	22.13	27.82	32.43	38.69	39.65	39.83	39.34	40.08	38.96	29.07
02	15.18	18.47	19.95	22.67	26.22	31.24	36.48	34.39	37.21	38.77	32.88	27.69
03	18.49	20.41	24.92	29.64	34.06	39.06	37.91	36.00	33.88	32.10	29.55	24.51
04	20.89	21.81	26.73	31.21	34.17	38.67	41.19	44.29	43.89	39.87	36.61	25.08
05	15.98	19.09	21.88	25.21	34.15	39.44	39.89	38.69	36.88	38.01	36.86	27.55
06	13.28	17.19	18.45	21.12	26.64	30.76	32.22	31.95	33.41	33.36	32.76	24.98
07	21.49	23.58	27.59	33.78	37.05	39.49	44.03	48.98	45.81	43.58	39.57	28.35
08	18.90	23.00	25.18	27.52	32.79	38.45	41.91	47.16	46.51	43.67	37.87	24.04
09	19.31	22.14	27.49	31.50	35.41	40.08	43.99	47.98	48.41	45.69	38.07	23.56
10	19.08	20.90	24.04	29.27	32.18	38.06	40.64	38.48	39.79	43.54	39.19	26.31
Mean	17.94	20.62	23.84	27.97	32.51	37.39	39.79	40.78	40.51	39.87	36.23	26.11
s	2.59	2.06	3.15	4.00	3.51	3.42	3.57	6.00	5.36	4.51	3.36	1.95
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-4. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ (left ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	1.56	2.21	2.76	2.74	2.54	3.74	2.50	2.63	6.74	8.19	5.44	8.31	12.38
02	0.67	1.94	2.52	3.03	3.09	5.45	2.42	4.72	5.92	7.60	6.65	9.69	12.29
03	2.68	3.11	4.15	4.77	4.62	5.04	3.37	7.17	9.65	11.02	9.36	12.06	16.96
04	4.69	5.13	5.34	5.65	6.02	4.81	5.07	5.33	9.29	11.58	10.21	12.16	15.99
05	-1.52	-0.72	-0.84	-1.03	-2.28	0.40	-3.32	-1.06	3.42	6.70	3.15	6.25	9.97
06	-1.18	-0.21	-0.65	-0.80	-1.79	0.08	-4.56	-3.38	1.91	5.24	3.01	5.48	8.86
07	5.91	5.03	5.42	5.98	6.33	6.36	5.89	6.96	9.35	11.15	8.38	15.03	15.75
08	2.45	3.88	4.78	5.47	5.20	7.66	4.25	5.03	7.84	9.50	8.65	8.93	12.02
09	3.37	4.15	5.40	6.14	5.35	7.15	2.80	6.53	10.15	11.06	8.40	10.46	13.15
10	3.23	2.58	3.02	3.58	3.97	3.96	3.47	4.83	7.49	8.26	6.26	9.12	11.98
Mean	2.19	2.71	3.19	3.56	3.31	4.47	2.19	3.88	7.18	9.03	6.95	9.75	12.93
s	2.37	2.00	2.35	2.65	3.06	2.56	3.43	3.51	2.75	2.17	2.50	2.85	2.61
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	19.23	20.79	23.93	29.78	33.74	39.29	40.86	40.47	40.75	40.71	41.92	33.03
02	15.81	21.36	21.82	24.01	28.16	31.06	37.81	36.74	42.80	44.00	36.52	32.17
03	18.67	20.44	24.43	28.92	34.94	41.65	42.75	42.97	44.54	43.29	37.24	30.36
04	20.26	20.06	24.81	30.56	32.69	37.13	40.50	43.02	42.46	39.24	37.78	28.98
05	14.80	18.86	21.07	23.69	34.24	37.82	37.56	39.38	36.83	42.32	41.14	32.39
06	12.60	16.21	16.74	19.66	25.30	31.15	33.38	33.01	33.98	32.93	34.58	28.02
07	21.75	20.46	25.06	32.11	36.85	39.48	43.66	48.66	47.74	48.02	44.09	32.52
08	19.64	23.13	23.69	26.80	31.64	36.95	40.91	47.16	48.53	48.19	43.59	30.13
09	18.89	22.46	28.12	34.05	37.43	41.61	45.36	50.12	52.04	49.40	41.71	27.71
10	21.31	23.44	25.88	29.23	31.79	37.78	40.45	38.91	42.80	46.84	43.44	31.95
Mean	18.30	20.72	23.56	27.88	32.68	37.39	40.32	42.04	43.25	43.49	40.20	30.72
s	2.96	2.14	3.10	4.36	3.73	3.70	3.42	5.44	5.39	5.03	3.38	1.97
n	10	10	10	10	10	10	10	10	10	10	10	10

Table D-4. Summary results for ANSI S12.42-1995 (R1999) Microphone-in-Real-Ear evaluations of the HGU-56/P Aircrew Integrated Helmet System with Oregon Aero SoftSeal/HushKit Combo™ (right ear only).

	Third-octave band center frequency (Hz)												
Subject	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
01	1.02	1.32	1.25	1.00	1.60	2.57	1.73	3.58	4.93	8.37	6.65	7.88	9.91
02	0.14	0.95	0.74	0.85	1.01	1.79	-0.59	2.74	4.46	7.65	4.16	9.09	12.04
03	1.39	1.84	1.87	1.34	2.38	3.87	2.74	6.75	8.06	10.99	9.82	10.82	16.14
04	5.81	5.55	5.68	5.82	5.99	6.27	4.77	6.74	9.22	11.89	9.35	12.67	17.84
05	-0.11	0.79	1.33	1.47	1.62	3.63	1.35	3.09	5.55	6.84	6.21	8.08	11.01
06	-0.71	0.04	-0.42	-0.71	-1.10	-0.64	-3.59	-2.02	-0.03	2.60	1.91	4.95	8.84
07	5.51	5.49	5.35	5.30	6.03	6.77	5.26	7.19	8.94	11.43	9.26	13.79	18.71
08	2.82	3.88	4.20	4.15	5.04	6.29	4.87	6.15	7.88	9.83	9.95	9.46	11.58
09	3.61	4.22	4.74	4.83	5.30	7.42	4.75	7.64	9.25	12.40	8.69	11.53	15.56
10	3.96	3.51	2.99	2.35	3.99	2.80	3.76	3.98	6.33	10.48	8.84	7.31	11.82
Mean	2.34	2.76	2.78	2.64	3.19	4.08	2.51	4.58	6.46	9.25	7.48	9.56	13.34
s	2.34	2.02	2.12	2.22	2.43	2.58	2.86	2.95	2.90	2.98	2.70	2.68	3.44
n	10	10	10	10	10	10	10	10	10	10	10	10	10

	Third-octave band center frequency (Hz)											
Subject	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**
01	14.33	18.38	20.34	25.87	31.11	38.10	38.44	39.19	37.94	39.45	36.01	25.11
02	14.54	15.58	18.08	21.34	24.29	31.41	35.15	32.05	31.61	33.54	29.25	23.20
03	18.31	20.37	25.42	30.35	33.19	36.47	33.08	29.04	23.23	20.91	21.87	18.66
04	21.53	23.55	28.64	31.85	35.64	40.21	41.89	45.56	45.31	40.51	35.45	21.19
05	17.15	19.33	22.70	26.73	34.07	41.05	42.21	38.00	36.93	33.70	32.57	22.71
06	13.97	18.17	20.16	22.58	27.98	30.38	31.06	30.88	32.84	33.79	30.94	21.94
07	21.24	26.71	30.12	35.46	37.25	39.51	44.40	49.30	43.89	39.13	35.05	24.19
08	18.15	22.86	26.66	28.25	33.95	39.96	42.90	47.15	44.50	39.14	32.15	17.95
09	19.73	21.81	26.85	28.94	33.40	38.55	42.63	45.85	44.78	41.97	34.43	19.41
10	16.84	18.35	22.21	29.30	32.57	38.33	40.82	38.04	36.77	40.24	34.94	20.68
Mean	17.58	20.51	24.12	28.07	32.34	37.40	39.26	39.51	37.78	36.24	32.26	21.50
s	2.75	3.25	4.00	4.20	3.77	3.67	4.62	7.27	7.18	6.23	4.25	2.37
n	10	10	10	10	10	10	10	10	10	10	10	10

Appendix E.

Analysis of variance and Duncan multiple range test summary tables (by ear).

Table E-1.
Analysis of variance summary table for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero HushKit™.

Effect	*SS*	*df*	*MS*	*F*	*p*
Intercept	486422.4	1	486422.4	490.823	0.0000
Error	8919.3	9	991.0		
Device	728.4	1	728.4	5.613	0.0420
Error	1168.0	9	129.8		
Ear	1242.8	1	1242.8	7.203	0.0250
Error	1552.8	9	172.5		
Frequency	166633.4	24	6943.1	591.423	0.0000
Error	2535.8	216	11.7		
Device × Ear	3.7	1	3.7	0.044	0.8390
Error	765.2	9	85.0		
Device × Frequency	5054.7	24	210.6	42.338	0.0000
Error	1074.5	216	5.0		
Ear × Frequency	994.5	24	41.4	5.734	0.0000
Error	1560.9	216	7.2		
Device × Ear × Frequency	89.7	24	3.7	0.983	0.4898
Error	821.5	216	3.8		

Table E-2.
Probabilities of the Duncan multiple range post-hoc comparisons for insertion losses at each frequency and ear for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero HushKit™.

	Third-octave band center frequency (Hz)								
	63	80	100	125	160	200	250	315	400
Left	0.7173	0.7126	0.5265	0.5232	0.1876	0.0502	0.0950	0.2249	0.4330
Right	0.8164	0.9109	0.9680	0.8106	0.3902	0.0218	0.0051	0.2669	0.9160

	Third-octave band center frequency (Hz)								
	500	630	800	1000	1250	1600	2000	2500	3150
Left	0.9823	0.1095	0.0000	0.0000	0.0000	0.0000	0.1597	0.0000	0.0000
Right	0.2690	0.0766	0.0859	0.0019	0.0000	0.0000	0.9425	0.0000	0.0000

	Third-octave band center frequency (Hz)						
	4000	5000	6300	8000	10000	12500	16000
Left	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.1179
Right	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.6226

Table E-3.
Analysis of variance summary table for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal™ and HushKit™.

Effect	*SS*	*df*	*MS*	*F*	*p*
Intercept	577574.6	1	577574.6	1032.754	0.0000
Error	5033.3	9	559.3		
Device	8016.1	1	8016.1	42.821	0.0001
Error	1684.8	9	187.2		
Error	897.6	1	897.6	6.982	0.0268
Error	1157.0	9	128.6		
Frequency	165279.3	24	6886.6	821.273	0.0000
Error	1811.2	216	8.4		
Device × Ear	52.2	1	52.2	0.439	0.5243
Error	1070.0	9	118.9		
Device × Frequency	5135.3	24	214.0	36.039	0.0000
Error	1282.5	216	5.9		
Ear × Frequency	1185.7	24	49.4	8.865	0.0000
Error	1203.8	216	5.6		
Device × Ear × Frequency	159.1	24	6.6	1.645	0.0341
Error	870.3	216	4.0		

Table E-4.
Probabilities of the Duncan multiple range post-hoc comparisons for insertion losses at each frequency and ear for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal™ and HushKit™.

	Third-octave band center frequency (Hz)								
	63	80	100	125	160	200	250	315	400
Left	0.0004	0.0004	0.0000	0.0000	0.0000	0.0000	0.0004	0.0060	0.0056
Right	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005

	Third-octave band center frequency (Hz)								
	500	630	800	1000	1250	1600	2000	2500	3150
Left	0.0028	0.0000	0.0000	0.0007	0.0065	0.0000	0.4354	0.0000	0.0000
Right	0.0002	0.0000	0.0000	0.0000	0.0546	0.0170	0.0313	0.0000	0.0000

	Third-octave band center frequency (Hz)						
	4000	5000	6300	8000	10000	12500	16000
Left	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0109
Right	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4811

Table E-5.
Analysis of variance summary table for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal/HushKit Combo™.

Effect	*SS*	*df*	*MS*	*F*	*p*
Intercept	387886.6	1	387886.6	611.239	0.0000
Error	5711.3	9	634.6		
Device	2270.1	1	2270.1	7.814	0.0209
Error	2614.7	9	290.5		
Ear	867.3	1	867.3	9.072	0.0147
Error	860.5	9	95.6		
Frequency	167818.4	24	6992.4	709.758	0.0000
Error	2128.0	216	9.9		
Device × Ear	59.8	1	59.8	0.363	0.5617
Error	1481.9	9	164.7		
Device × Frequency	9508.4	24	396.2	59.846	0.0000
Error	1429.9	216	6.6		
Ear × Frequency	1237.5	24	51.6	8.893	0.0000
Error	1252.5	216	5.8		
Device × Ear × Frequency	157.4	24	6.6	1.455	0.0851
Error	973.4	216	4.5		

Table E-6.
Probabilities of the Duncan multiple range post-hoc comparisons for insertion losses at each frequency and ear for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal/HushKit Combo™.

	Third-octave band center frequency (Hz)								
	63	80	100	125	160	200	250	315	400
Left	0.0914	0.0676	0.0168	0.0057	0.0039	0.0008	0.0000	0.0000	0.0000
Right	0.1094	0.1712	0.0898	0.1243	0.3303	0.2875	0.0259	0.0000	0.0000

	Third-octave band center frequency (Hz)								
	500	630	800	1000	1250	1600	2000	2500	3150
Left	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.9778
Right	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.4729

	Third-octave band center frequency (Hz)						
	4000	5000	6300	8000	10000	12500	16000
Left	0.9207	0.3543	0.0000	0.0000	0.0000	0.0000	0.0621
Right	0.0082	0.0000	0.0000	0.0000	0.0000	0.0011	0.9151

Appendix F.

Analysis of variance and Duncan multiple range test summary tables (averaged across ears).

Table F-1.
Analysis of variance summary table for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero HushKit™.

Effect	*SS*	*df*	*MS*	*F*	*p*
Intercept	243211.2	1	243211.2	490.823	0.0000
Error	4459.7	9	495.5		
Device	364.2	1	364.2	5.613	0.0420
Error	584.0	9	64.9		
Frequency	83316.7	24	3471.5	591.423	0.0000
Error	1267.9	216	5.9		
Device × Frequency	2527.4	24	105.3	42.338	0.0000
Error	537.3	216	2.5		

Table F-2.
Probabilities of the Duncan multiple range post-hoc comparisons for insertion losses at each frequency for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero HushKit™.

	Third-octave band center frequency (Hz)								
	63	80	100	125	160	200	250	315	400
p-Value	0.9113	0.8564	0.7437	0.8380	0.1686	0.0045	0.0024	0.1305	0.5591

	Third-octave band center frequency (Hz)								
	500	630	800	1000	1250	1600	2000	2500	3150
p-Value	0.4647	0.0180	0.0001	0.0000	0.0000	0.0000	0.3703	0.0000	0.0000

	Third-octave band center frequency (Hz)						
	4000	5000	6300	8000	10000	12500	16000
p-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1565

Table F-3.
Analysis of variance summary table for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal™ and HushKit™.

Effect	*SS*	*df*	*MS*	*F*	*p*
Intercept	288787.3	1	288787.3	1032.754	0.0000
Error	2516.7	9	279.6		
Device	4008.0	1	4008.0	42.821	0.0001
Error	842.4	9	93.6		
Frequency	82639.6	24	3443.3	821.273	0.0000
Error	905.6	216	4.2		
Device × Frequency	2567.7	24	107.0	36.039	0.0000
Error	641.2	216	3.0		

Table F-4.
Probabilities of the Duncan multiple range post-hoc comparisons for insertion losses at each frequency for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal™ and HushKit™.

	Third-octave band center frequency (Hz)								
	63	80	100	125	160	200	250	315	400
p-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001

	Third-octave band center frequency (Hz)								
	500	630	800	1000	1250	1600	2000	2500	3150
p-Value	0.0001	0.0000	0.0000	0.0000	0.0027	0.0000	0.3339	0.0000	0.0000

	Third-octave band center frequency (Hz)						
	4000	5000	6300	8000	10000	12500	16000
p-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0434

Table F-5.
Analysis of variance summary table for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal/HushKit Combo™.

Effect	*SS*	*df*	*MS*	*F*	*p*
Intercept	193943.3	1	193943.3	611.239	0.0000
Error	2855.7	9	317.3		
Device	1135.0	1	1135.0	7.814	0.0209
Error	1307.4	9	145.3		
Frequency	83909.2	24	3496.2	709.758	0.0000
Error	1064.0	216	4.9		
Device × Frequency	4754.2	24	198.1	59.846	0.0000
Error	715.0	216	3.3		

Table F-6.
Probabilities of the Duncan multiple range post-hoc comparisons for insertion losses at each frequency for the HGU-56/P Aircrew Integrated Helmet System in standard configuration and with the Oregon Aero SoftSeal/HushKit Combo™.

	Third-octave band center frequency (Hz)								
	63	80	100	125	160	200	250	315	400
p-Value	0.0379	0.0465	0.0102	0.0078	0.0180	0.0071	0.0000	0.0000	0.0000

	Third-octave band center frequency (Hz)								
	500	630	800	1000	1250	1600	2000	2500	3150
p-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6657

	Third-octave band center frequency (Hz)						
	4000	5000	6300	8000	10000	12500	16000
p-Value	0.1420	0.0007	0.0000	0.0000	0.0000	0.0000	0.2390

Appendix G.

Subject head and ear measurement demographics and fitting notes.

Subject	Gender	Bitragion width (mm)	Head height (mm)	Ear Canal Size (L/R)	HGU-56/P AIHS size	Helmet Spacers* (L/R)
1	M	145	140	L/L	S	2/2 std
2	M	138	138	M/M	M	2/2 std
3	M	142	136	M/M	M	1/1 std Combo:1std+1 TH each
4	M	142	148	M/L	M	2 XT + 1 TN each Combo:2XT+1std+1TN
5	M				M	3/3 std
6	M	143	142	M/M	M	2/3 std
7	M	139	134	L/L	M	3/2 std
8	M	144	148	L/L	L	5TN/4TN in various positions
9	M	140	142	L/L	M	2 ½ /2 std
10	M	149	141	M/L	L	1/1 std

*Helmet spacer thickness abbreviations:

Std = Standard
TH = Thick
XT = Extra thick
TN = Thick