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Flt.Lt.DARUNEE DAUNGRUSSAMI : NOISE-INDUCED HEARING LOSS AMONG ROYAL THAI AIR FORCE PILOTS. THESIS ADVISORS: CHEAMCHIT THAWIL, M.A., USA THANOMSING, M.A., SIRIPARN SRIWANYONG, M.B.A., M.Sc.,MONTIP TIENSUWAN, Ph.D. 88 P. ISBN 974-662-918-2

The purpose of this research was to study the effects of aircraft noise on the hearing of Royal Thai Air Force pilots. The audiological analysis was conducted in 262 pilots who operated helicopters, jets and transport aircraft. The results showed 36.20 %, of the pilots had sensorineural hearing loss. The severity of hearing loss was classified using United States Air Force Standard of hearing loss. Most of the subjects (60.9%) had normal hearing (class A). Hearing loss class B or high frequency sensorineural hearing loss was found in 38.3% of the pilots. Hearing loss class C or speech frequency hearing loss was found in 0.8% of the pilots.

In this research it was found that hearing loss occurred in the range of 3,000-8,000 Hz, with the ability to hear sounds at 6,000 Hz being most impaired (54.60%). The results showed that 59% of the sensorineural hearing loss pilots had unilateral hearing loss, while 41% of them had bilateral hearing loss. The results also indicated that most pilots who had unilateral hearing loss had the hearing loss in their left ears (74.58%) rather than in their right ears (25.42%). Regarding the pilots with bilateral hearing loss, symmetrical hearing loss (68.29%) was more common than asymmetrical hearing loss (31.71%). However no difference of means of hearing threshold was found at 4,000 and 6,000 Hz in the pilots who operated helicopters, jets and transport aircraft. The results showed that all pilots used hearing protectors during flight. In the airfield, the percentage of the pilots who constantly used hearing protectors was 53.13%, of those who inconsistently used hearing protectors was 44.14% and who did not use hearing protector was 2.73%.

The factor that significantly affected the prevalence of hearing loss was total flight hours. The pilot type was not a factor that affected the prevalence of hearing loss. This research found that there was a relationship between total flight hours and hearing threshold at 4,000 Hz and 6,000 Hz in the sensorineural hearing loss pilots group. Furthermore, the result showed that there was a moderate relationship between total flight hours and mean hearing threshold at 4,000 and 6,000 Hz in transport and jet pilots. However there was no relationship between total flight hours and mean hearing threshold of both frequencies in the helicopter pilots group. The correlation coefficient between total flight hours and mean hearing threshold at 4,000 and 6,000 Hz of transport aircraft and jet pilots may be used as a guideline to construct a mathematical equation to predict hearing loss, and may be useful in developing a hearing conservation program for Royal Thai Air Force pilots.