HEARING ASSESSMENT OF TRAFFIC POLICEMEN IN CAIRO

Thesis submitted in partial fulfillment of the M. S. Degree

In

AUDIOLOGY

By

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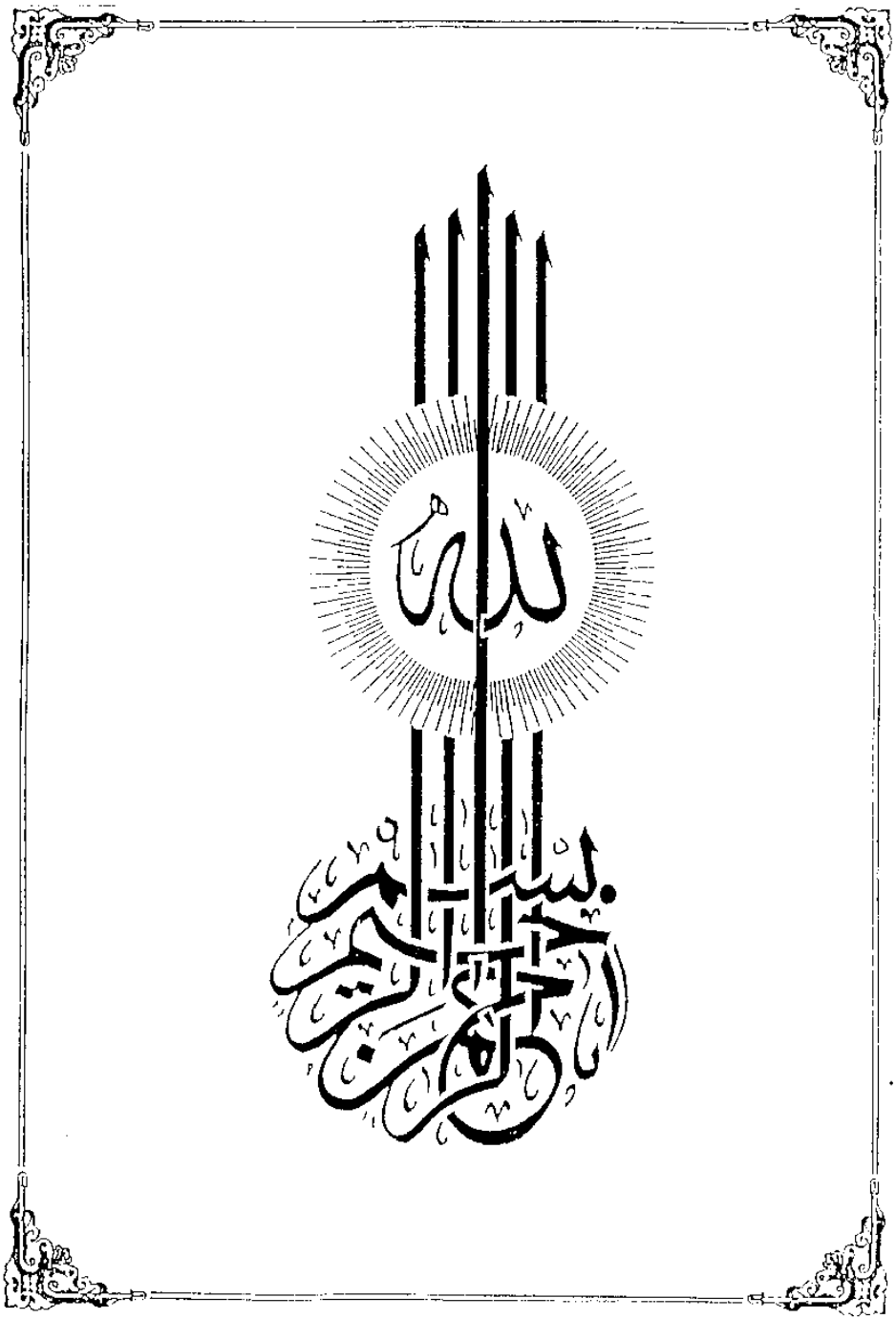

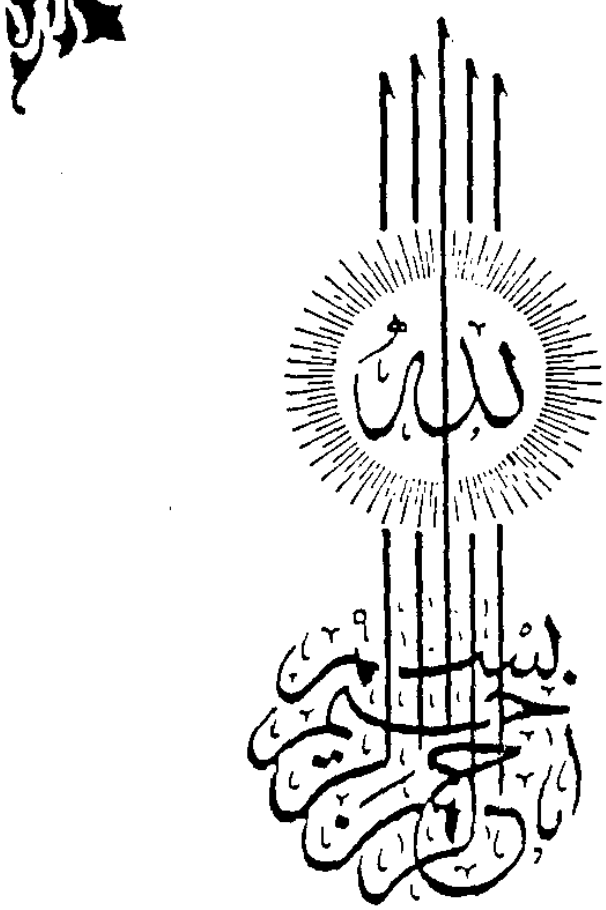

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ.

صدق الله العظيم
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CONTENTS

INTRODUCTION

INTRODUCTION AND RATIONALE

The natural environment of earth constitutes a closed system in which basic components are constantly recycled with the energy is the sun. Pollution is not easily defined, but it can be taken as the presence of abnormal quantities of a material due to disturbance of the natural state of equilibrium (Rowland and Cooper, 1983).

In the late twentieth century, serious changes in human activities started to upset the natural balance. In early days of industrial revolution there was a transition to an urban industrial society from the previous rural and agricultural way of life. The problem became more serious, by development of new industrial processes, greatly increased consumption of fuel such as smoke and chemical fumes to the atmosphere. Air pollution occurs in three forms; chemical which is the commonest form as dust, fumes, gases, heavy metals and smoke; biological pollution as pathogenic organism and physical pollution as radiation and noise (Khalil, 1986).

For many years the daily life of people, particularly in urban communities, has been more and more invaded by noise pollution as airplanes, firearms and industrial noise. Fortunately community disturbance due to industrial noise can be controlled by area planning, so that industrial noise areas are isolated from residential areas of the country. Road traffic noise can not be controlled and produces serious community disturbances due to upward increase in speed, weight or both together (Burns, 1973). Several studies were conducted to assess traffic noise levels in Cairo (Soliman et al., 1984, Kamal et al., 1989 and Hassan et al., 1991). These studies reported high noise levels

that ranged from 70 to 110 dB (A). This range constitutes a risk factor for hearing particularly for those whose job necessitates continuous and long exposure to noise. Tawfik (1996) reported hearing impairment in bus drivers predominantly in the high frequencies. Traffic policemen are another vulnerable group as reported by Kamal et al., (1989).

Hearing screening for noise is usually done using pure tone audiometry at the frequency range 500 to 6000 Hz (Melnick, 1994). This method has its own limitation as conventional audiometry in young adult often gives an impression of relatively normal hearing sensitivity in a potentially abnormal ear due to limited frequencies tested (Fausti et al., 1981b). Randell and Miller (1983) recommended measurements of hearing sensitivity at extended high frequency routinely for early detection of noise induced hearing loss, which is a major tool for hearing conservation programs.

This study is designed to evaluate hearing sensitivity of traffic policemen including measurements of extended high frequency. It also aims to correlate between the hearing sensitivity and the duration of traffic exposure.