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NAVAL AIR STATION
PENSACOLA, FLORIDA 32508

September 1979

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Thomas R. Jimenez
Hospital Corpsman First Class
United States Navy

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Naval Medical Research
and Development Command

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WORK UNIT

ZF51.524.002-5013 An Evaluation of Omnibus Personality November 1978
NAMRL-1253 Inventory in the Prediction of Attrition
(AD A065001) in Naval Aviation Training.

Glenn R. Griffin and Julie A. Hopson

Abstract: The numerous Navy research efforts to identify motivational predictors of student naval aviator and/or student naval flight officer attrition have met with little success. In spite of the failures associated with the application of personality or motivation measures to naval aviation populations, there is little doubt that much of the attrition in naval aviation training is of a motivational origin. As a result, research personnel continue to seek motivational measures that may identify those individuals most likely to succeed in training. The present report describes an evaluation of the Omnibus Personality Inventory (OPI) as a predictor of student motivational attrition in naval aviation training.

ZF51.524.002-5013 Development and Evaluation of a Naval December 1978
NAMRL-1256 Flight Officer Scoring Key for the
 Naval Aviation Biographical Inventory.

Julie A. Hopson, Glenn R. Griffin,
Norman E. Lane, and Rosalie K. Ambler

Abstract: Naval flight officer candidate attrition in undergraduate training has increased from a low of 20 percent in the early 1960's to more than 40 percent within the last five years. One means of reducing attrition is to increase the efficiency of the Naval and Marine Aviation Selection Test Battery used to select candidates for the various naval flight officer (NFO) aviation training programs. The scoring key for the Biographical Inventory (BI) developed for a pilot population is currently being used to select both aviators and naval flight officers into naval aviation training programs. Previous experience with biographical data suggested that a scoring key developed specifically for the NFO subject population should increase the efficiency of the Biographical

Inventory selection test. The present report represents an evaluation of such a scoring key.

ZF51.524.004-9017
NAMRL-1254
(AD A063048)

A System for the Assessment of Human Performance in Concurrent Verbal and Manual Control Tasks.

September 1978

Steven D. Harris, Robert A. North, and
Jerry M. Owens

Abstract: The requirement placed on the human operator of a complex man-machine system to maintain continuous control while simultaneously receiving or transmitting verbal communications poses a variety of problems. A review of the research literature revealed several variables that affect human performance of concurrent verbal and control tasks. The purpose of this paper is to describe a laboratory system, and the results of a pilot study designed to investigate the interaction of continuous tracking and a verbal information processing task.

ZF51.524.004-9017
NAMRL-1259
(AD A070275)

Human Performance in Time-Shared Verbal and Tracking Tasks.

April 1979

Steven D. Harris, Jerry M. Owens, and
Robert A. North

Abstract: Significant progress has been made in the development of automated speech understanding systems for application of naval aviation systems. One advantage that is anticipated for speech over conventional man-machine interfaces is that speech could function as an independent channel for the control of systems. The experiment reported in this paper represents a preliminary investigation of the assumption that an automatic speech synthesizing and recognition system can provide the human operator an additional and parallel channel for processing information and effecting control responses.

ZF51.524.015-0036
NAMRL-1261
(AD A078215)

Recent Progress in Electromagnetic Absorption and Dosimetry in Biological Systems.

December 1978

Richard G. Olsen

Abstract: Dosimetry, as a subset of research in electromagnetic (EM) bioeffects, has made such rapid progress during the last decade that many scientific investigators are unaware of the present state-of-art. As a result, inadequate utilization of available technology is seen in much research currently in progress. Such research, conducted in the absence of sound dosimetry design, lacks credibility. This study provides a usable orientation in present and future dosimetric technology through a documentation of the swift progress in this area since 1969. The information contained in this report can assist researchers in making full use of the latest dosimetric techniques and devices to quantitatively establish the existence of observed effects.

MF51.524.023-2004
NAMRL-1255
(AD A06500)

The Landing Signal Officer: Auditory Aspects December 1978

Ronald M. Robertson, Donald W. Maxwell,
and Carl E. Williams

Abstract: Landing signal officers (LSOs) who are exposed to high noise levels in the execution of their duties during carrier air operations do not routinely wear any hearing protective device. Noise measurements and noise exposure data are needed in order to determine whether such exposures can, over time, produce significant noise-induced hearing loss. Noise measurement data and noise exposure data obtained during carrier qualifications on board the USS Lexington (AVT-16) and the USS Forrestal (CVA-59) confirm a potential damage risk to hearing. The wearing of hearing protective devices is presently the only reasonable way to control the LSO's exposure to noise.

MO096. PN.001-3012
MO099. PN.003-3020
NAMRL-1257
(AD A066559)

The Pendular Eye Tracking Test Under Two Background Viewing Conditions. January 1979

Fred E. Guedry, Jr., Kimberly S. Davenport,
Catherine B. Brewton, and Gene T. Turnipseed

Abstract: The Pendular Eye Tracking Test (PETT) is conducted under a variety of conditions that may influence the range of variation

in response among normal subjects and the diagnostic significance of the test in its clinical application. This report describes normative data collected under two conditions of viewing a moving target, with and without a visible background.

PN.001-3012
MR041.01.03-0156
NAMRL-1260
(AD A074545)

Evaluation of an Automatic Device for
Scoring Nystagmus

July 1979

Gene T. Turnipseed, Ralph M. Jell, and
Fred E. Guedry, Jr.

Abstract: Quantitative scoring of vestibular nystagmus can be expensive and time consuming. Quantitative computer scoring of nystagmus offers attractive, time saving economy for both research and clinical applications. This report evaluates a relatively simple and inexpensive nystagmus velocity computer.

ZF51.524.005-7032
NAMRL-1258

Airsickness during Naval Flight Officer
Training: Basic Squadron VT-10

April 1979

W. Carroll Hixson, Fred E. Guedry, Jr.,
Garry L. Holtzman, J. Michael Lentz,
and Patrick F. O'Connell

Abstract: This report is the first in a series dealing with a longitudinal study of Naval Flight Officer airsickness in the Basic, Advanced, and Fleet Readiness (RAG) squadrons comprising the complete training program. Data from 5,394 hops flown by 408 VT-10 students indicate that airsickness occurred on approximately 16 percent of the total hops flown, vomiting occurred on 7 percent of the total, and performance degradation caused by airsickness occurred on 11 percent of the flights. Approximately 74 percent of the students reported being airsick on at least one flight, 39 percent reported vomiting on one or more flights, and 59 percent considered their flight performance to have been degraded by airsickness on one or more hops. The report details the incidence of airsickness by hops and by students; presents the results of several brief motion reactivity tests to which a large segment of the population was exposed; and relates the flight and test data for different student subpopulations.

MRO41.01.02.0005
NAMRL-1262

Normative Bilateral Brainstem Evoked
Response Data for a Naval Aviation
Student Population: Group Statistics

August 1979

W. Carroll Hixson and James D. Mosko

Abstract: Brainstem auditory evoked response data based upon simultaneous ipsilateral and contralateral recordings have been collected and analysed for a selected population (age 20 to 24 years) of naval aviation students. An extensive set of statistical tables is provided for both forms of recordings which establishes the normative range of brainstem responses for this population, using acoustic click stimuli with a 21-Hz repetition rate and peak levels 40, 60, and 80 dB above sensory threshold. These tables include latency, transmission time, half-period, and peak-to-peak amplitude measurements for brainstem Waves I through VI. The latency and transmission time data are based upon individual measures of both the negative and positive peaks of the individual brainstem waves. Timing and amplitude differences observed between the ipsilateral and contralateral brainstem recordings for certain of the waves are described in detail. A set of correlation matrices is included to describe the relationships that exist among both the brainstem waves and the brainstem measurement parameters.

SPECIAL REPORTS

NAMRL 78-5
(AD A064336)

Role of the Veterinary Pathologist on November 1978
the Tropical Medicine Research Team:
Observations in Indonesia

Richard J. Brown, and Peter I. Joseph

Abstract: In areas where public health and sanitary conditions are such that man comes in frequent daily contact with animals in his environment, rodent-borne human diseases are an important health hazard. Because of the year-round warm, humid climate in the tropics, inhabitants of such areas spend a considerable portion of their time out of doors. In tropical nations, such conditions are conducive to less than optimal health conditions; frequently the environment is contaminated by animals and their excreta. In such tropical areas of the world, a major portion of the preventive medicine efforts is involved in the identification of rodent-borne human diseases. Consequently, the experience of a veterinarian in rodent diagnostic and field laboratory studies makes him especially well suited as a member of the tropical medicine team to investigate these hazards. Many areas of the Republic of Indonesia were surveyed for animal diseases transmissible to man. These include schistosomiasis, scrub typhus, filariasis, capillariasis, and leptospirosis. All of these zoonotic diseases were present in this vast archipelago.

NAMRL 78-6
(AD A064426)

Selection and Paring of "Normal"
Rhesus Monkeys (Macaca mulatta)
for research

November 1978

Matthew J. Kessler, James L. Kupper,
James D. Grissett, and Richard J. Brown

Abstract: To select a homogeneous population of experimental nonhuman primates for research projects, a selection process has been developed by the authors to insure investigators that animal subjects used in their experiments will accurately reflect biological changes associated with the project design.

The procedure involved the following: complete physical examination; complete hemogram, serum electrolytes, serum biochemistry, body weight, and anthropometric determinations; aging by dentition; electrocardiography; total-body radiography; fecal culture; fecal ova, and parasite examinations; and examination of other conditions. On the basis of the selection criteria, 47 of the original 120 monkeys in the group were deleted due to abnormalities, severe illness, disability, or death. Also described are: the methods and techniques used to select paired rhesus monkeys on the basis of normal values established for the population from which they were derived, the reasons for rejecting subjects, and some observations and experiences of the authors. Specific techniques for cholecystography and intravenous pyelography in rhesus monkeys using radio-opaque contrast media have been detailed.

NAMRL 78-7
(AD A065025)

A Comparison of Black Student Performance November 1978
and White Student Performance in Naval
Aviation Training.

Annette G. Baisden, and Richard E. Doll

Abstract: This report represents the first of a series of reports analyzing minority officer accessions as related to the Naval Aviation Training Program. It involves a comparison of black students and white students in pilot training during calendar years 1973 - 1976, using such performance measures as Aviation Selection Tests, Peer Rating, Officer-Like-Quality grade, Environmental Indoctrination Final grade, Basic and Advanced Flight grades, Basic and Advanced Academic grades, and pass/attrite.

NAMRL 78-8
(AD A078530)

The Experimental Pathology of
Lake Lindu Strain of Schist
japonicum in the Crab-Eating
Macaque (Macaca fasciculata) in
Indonesia.

October 1978

Richard J. Brown, E. E. Stafford, Sutani,
D. T. Dennis, and W. P. Carney

Abstract: The detailed pathology of the Lake Lindu,

Central Sulawesi, Indonesia, strain of Schistosoma japonicum has not been described in experimentally infected nonhuman primates. Two male Macaca fascicularis monkeys were exposed in the laboratory to Schistosoma japonicum cercariae obtained from Onchomelina hupensis lindoensis snails from Lake Lindu, Central Sulawesi (Celebes), Indonesia. The animals were sacrificed at four and six months post infection. Pathologic observations and results of serial stool examination for Schistosoma ova are described.

NAMRL 78-9
(AD A073530)

Enteric Parasites of Orangutans (Pongo pygameaeus) in Indonesia

Richard J. Brown, Erick E. Stafford,
Austin L. Moede, Birute Galdikas-Brindamour,
and Monica Boerner

Abstract: Diarrheal diseases are a common problem in nearly all species of nonhuman primates. The treatment of diarrheal diseases in the less widely used nonhuman primates, such as orangutans, is difficult because of the lack of information as to possible etiologic agents. This paper tabulates identified enteric parasitic ova in three groups of orangutans living in their native habitat. This information will be useful to those laboratories attempting to treat parasitic diarrheal diseases in orangutans.

ZF51.524.004-2011
NAMRL 79-2

Documentation and User's Manual for the Visual Detection Simulator (VDS) April 1979

Julie A. Hopson

Abstract: The Visual Detection Simulator (VDS) is comprised of three individual subsystems: A Link GAT-1 Trainer, a projection system, and a PDP 8/E controller. These systems have been custom interfaced to permit the study of target acquisition in a simulated in-flight environment. The purpose of this report is to provide an operational and maintenance manual for the VDS system.

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CHNAVPERS

A Comparison of Black Civilian Procured Applicants and White Civilian Procured

May 1979

Richard E. Doll, and Annette G. Baisden

Abstract: This report represents the second in a series of reports analyzing minority officer accessions and attritions as related to the Naval Aviation Training Program. It involves a comparison of black and of white civilian procured applicants for naval aviation training during calendar years 1976 - 1978. The two groups were compared in terms of passing rates for different cutting scores of the Academic Qualification Test (AQT) and of the Flight Aptitude Rating (FAR), the two components of the U. S. Navy and Marine Corps Aviation Selection Tests. In addition, AQT/FAR cutting score comparisons were made for the two races according to test region and college major. Finally, the black applicants and white applicants who passed the aviation selection tests were compared as to reasons for nonselection and reasons for declination.

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