

Scientific Program and Highlights of 1958 Aero Medical Association Meeting, Washington, March 24-26

Geared to man's impending venture into space, the scientific program of the forthcoming twenty-ninth annual meeting of the Aero Medical Association at the Statler Hotel in Washington, D. C., March 24, 25 and 26, will present a notable group of more than 100 speakers on important subjects bearing directly on the biologic aspects of flight in theory and in practice.

Captain Ashton Graybiel, MC, USN, coordinator of research at the U. S. Navy School of Aviation Medicine, is president of the Association, and Captain Norman L. Barr, MC, USN, is general chairman of the meeting.



DR. BARR



DR. SCHAEFER

The extensive program, arranged by a committee under the chairmanship of Dr. Hermann J. Schaefer, includes panels on "Simulated Atmospheres and Foreign Environments in Space Operations" and "Experimental Analysis of Human Behavior in Flight," and a symposium on "Human Factors in Low Level Flight." Special sessions will be devoted to protection at extreme altitude, accidents and flight safety, hyperoxia and hypoxia, hyper- and hypothermic stress, aviation physiology, sensory problems, acceleration, oxygen equipment, aviation psychology, and clinical problems. Dr. John A. Tamisiea, president of the Civil Aviation Medical Association, will preside at a panel devoted to aviation preventive



CAPTAIN ASHTON GRAYBIEL, MC, USN
President, Aero Medical Association

medicine and pilot health. Abstracts of all formal papers to be presented at the meeting will be published in the March JOURNAL.

LOUIS BAUER LECTURE

The fourth annual Louis H. Bauer lecture, established in 1955 in honor of the founder of the Association, will be given by Dr. Rudolfo Margaria, professor of physiology and biochemistry at the University of Milan, Italy, an eminent pioneer in the field of aviation medicine. Dr. Margaria was director of the Research Center for Aviation Medicine in Rome from 1938 to 1943, and is deputy chairman of the Aeromedical Panel of Advisory Group for Aeronautical Research and Development (AGARD) of NATO. The title of his lecture is "Some Recent Work on Acceleration and Fatigue."

SCIENTIFIC PROGRAM AND HIGHLIGHTS

Wide interest in the 1958 meeting is indicated by the record number of scientific and technical exhibits that have been scheduled for this year. All available space for booths and wall displays has been scheduled for several weeks.



DR. MARGARIA



MRS. NEWMAN

SOCIAL EVENTS

Among the highlights of the social calendar for the meeting is the President's International Reception, for members and guests from other countries, at the National Naval Medical Center, Bethesda, Maryland, on the evening of March 25. At the traditional cocktail party and banquet of the Association on the following evening announcement will be made of the winners of the Association's four coveted awards—named in honor of the late distinguished Doctors Lyster, Longacre, Tuttle and Liljencrantz. The U. S. Navy band and the Sea Chanters will provide music and entertainment for the affair and a nationally-known speaker will give an address of importance to all members. The Fellows' Dinner will be held at the officers' club of the Naval Gun Factory, Washington, on March 24, and both the Civil Aviation Medical Association and the Space Medicine Association, with President Al Mayo presiding, will hold business meeting luncheons at the Statler on that day. The annual business meeting of the Aero Medical Association will be called to order by Dr. Graybiel at 12 noon on March 25.

The Airline Medical Directors Association, under the presidency of Dr. Charles I. Barron, Burbank, California, will hold

its annual scientific and business meeting at the Statler on Saturday, March 22. The scientific program, arranged by Dr. Ludwig G. Lederer, includes a continuation of the group's symposium on sudden incapacitation of pilots with a report on the application of the electroencephalogram to airline operations by Dr. Howard F. Conn, editor of *Current Therapy*. Colonel Frank M. Townsend, USAF (MC), deputy director of the Armed Forces Institute of Pathology, will present a paper on the pathologic aspects of accident investigation. Dr. André Allard, medical director of Sabena Belgian Airlines, is president-elect and will be installed as Dr. Barron's successor.

WIVES' WING PROGRAM

A gala program for entertainment and sight-seeing has been arranged for ladies attending the annual meeting by various committees of the Wives' Wing under the presidency of Mrs. Langdon C. Newman, Pensacola, Florida. The traditional hospitality room and coffee bar for the ladies will be sponsored by United Air Lines. A reception tea and fashion show will welcome the ladies and their guests on March 24, and on the following day Burroughs Wellcome and Company will be their hosts at luncheon, followed by the annual business meeting and election of officers.

BRING THE KIDS!

Washington is unsurpassed in historic and educational features of interest to children—so bring the kids along to the 1958 meeting of the Aero Medical Association. There is no extra charge at the Statler Hotel for children under 14 occupying the same room or suite with parents. If a second room is required, it's yours at the single room rate.

President Graybiel has sent all members a postage-paid reservations card. To be sure of the accommodations you desire, return this postcard at once. If you've misplaced it, write or wire the Statler Hotel, 16th and K Streets, N.W., Washington 5, D. C., your requirements and be sure and mention the Aero Medical Association.

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The program for the Wives' Wing also includes a tour of the White House, visits to selected foreign embassies, and to the Voice of America and Washington's new wax museum. Mrs. Ashton Graybiel is honorary president of the Wing and Mrs. Charles H. Roadman, Arlington, Virginia, is first vice president and successor to Mrs. Newman in the presidency. Wives of mem-

bers of the Association who have not yet joined the Wives' Wing may send an informal application to Mrs. Frank B. Voris, treasurer, Box 5589, Washington 16, D. C., and inclose current annual dues of two dollars. There is no initiation fee.

The Association's 1958 scientific program, subject to unforeseen changes, follows:

FIRST DAY, MONDAY, MARCH 24, 1958

Statler Hotel, Washington, D. C.

Opening Ceremony—9:00 A.M.

ADDRESS—Captain Ashton Graybiel, MC, USN, President, Aero Medical Association

THE LOUIS H. BAUER LECTURE—Dr. Rodolfo Margaria, Professor of Physiology and Biochemistry, University of Milan, Italy

SOME RECENT WORK ON ACCELERATION AND FATIGUE

Session on Protection at Extreme Altitude—10:30 A.M.

THE NAVY'S FULL PRESSURE HIGH ALTITUDE SUIT

C. F. Gell, E. L. Hays, and J. V. Corraale, Jr., Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

THE EFFECTS OF VENTILATING AND HIGH AMBIENT TEMPERATURES ON FLOW RATES NECESSARY TO MAINTAIN COMFORT IN A FULL PRESSURE SUIT

L. J. SantaMaria, H. R. Greider, and S. J. Klein, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

EXPLOSIVE DECOMPRESSION OF ANIMALS WITH A FULL BLADDER SUIT (MC-4 TYPE), HELMET, AND AUTOMATIC REGULATOR

D. A. Rosenbaum, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

EFFECTS OF VARIOUS MASK CONFIGURATIONS ON SIMULATED LUNG PRESSURE DURING RAPID DECOMPRESSIONS

D. R. Collier, Jr., C. I. Barron, and T. J. Cook, Lockheed Aircraft Corporation, California Division, Burbank, California

OBSERVATIONS ON SIMULATED 12-SECOND DECOMPRESSIONS TO 32,000 FEET

C. I. Barron, D. R. Collier, Jr., and T. J. Cook, Lockheed Aircraft Corporation, California Division, Burbank, California

Session on Accidents and Flight Safety—10:30 A.M.

RELATION OF INJURIES TO FORCE AND DIRECTION OF DECELERATION IN AIRCRAFT ACCIDENTS

H. G. Moseley and A. P. Zeller, Directorate of Flight Safety Research, Norton Air Force Base, California

CORONARY SCLEROSIS AS A FACTOR IN AIRCRAFT ACCIDENT FATALITIES

W. M. Glantz and V. A. Stenbridge, Forensic and Aviation Pathology Section, Armed Forces Institute of Pathology, Washington, D. C.

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PULMONARY EMBOLI; ITS OCCURRENCE IN AIRCRAFT ACCIDENT FATALITIES AND COMPARISON WITH HOSPITAL AUTOPSIES

J. L. Hickey and *V. A. Stenbridge*, Forensic and Aviation Pathology Section, Armed Forces Institute of Pathology, Washington, D. C.

HEALTH HAZARDS OF PRESENT-DAY PROPELLANTS

A. R. Stumpe, U. S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas

VERTEBRAL FRACTURES IN USAF AIRCRAFT ACCIDENT SURVIVORS

S. E. Neely, Aero Medical Safety Division, Directorate of Flight Safety Research, Norton Air Force Base, California

VERTEBRAL INJURIES FROM EJECTION FORCES

R. L. Carter, Human Factors Division, North American Aviation, Inc., Columbus, Ohio

Session on Space Medicine—2:00 P.M.

P. A. Campbell, Colonel, USAF (MC), Chairman
Air Force Office of Scientific Research, Washington, D. C.

AVIATION MEDICINE ON THE THRESHOLD OF SPACE: SIGNIFICANT EVENTS OF THE PAST YEAR

P. A. Campbell, Air Force Office of Scientific Research, Washington, D. C.

NEW KNOWLEDGE CONCERNING COSMIC RADIATION

H. J. Schaefer, U. S. Naval School of Aviation Medicine, Pensacola, Florida

THE POTENTIALITIES AND RAMIFICATIONS OF LIFE UNDER EXTRAORDINARY ENVIRONMENTAL CONDITIONS

D. E. Beischer, U. S. Naval School of Aviation Medicine, Pensacola, Florida

MAN IN A VACUUM

H. Reich and *F. B. Quinn, Jr.*, Litton Industries, Beverly Hills, California, and Department of Surgery, University of California Medical Center, Los Angeles, California

SOME CONSIDERATIONS IN DESIGN OF A BALLOON-BORNE PRESSURIZED CAPSULE FOR HIGH ALTITUDE BAILOUT STUDY

E. E. Beson, General Mills, Inc., Balloon Department, Minneapolis, Minnesota

EXPERIMENTS DURING WEIGHTLESSNESS: A STUDY OF THE OCULO-AGRAVIC ILLUSION

S. J. Gerathewohl and *H. D. Stallings*, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas

THE FEASIBILITY OF RE-CYCLING HUMAN URINE FOR UTILIZATION IN CLOSED BIOLOGICAL SYSTEMS

W. R. Hawkins, USAF School of Aviation Medicine, Randolph Air Force Base, Texas

A CLOSED FOOD CYCLE ATOMIC CONSERVATION FOR SPACE MEDICINE

C. C. Clark, Aviation Medical Acceleration Laboratory, U.S. Naval Air Development Center, Johnsville, Pennsylvania

Session on Civil Aviation Medicine—2:00 P.M.

- I. Panel Discussion on Preventive Medicine and Pilot Health.
Presiding: John A. Tamisiea, M.D., Omaha, Nebraska, President, Civil Aviation Medical Association
Chairman: George B. McNeely, M.D., Bloomington, Indiana
Co-Chairman: Charles I. Barron, M.D., Burbank, California, President, Airline Medical Directors Association

OPERATIONAL FATIGUE IN AVIATION

R. A. McFarland, Harvard University School of Public Health, Boston, Massachusetts

PHYSICAL INCAPACITATION IN AIR CREWMEN

C. I. Barron, Lockheed Aircraft Corporation, Burbank, California

RESPONSIBILITIES OF THE CAA EXAMINER FOR VISUAL TESTING

H. S. Kuhn, Kuhn Clinic, Hammond, Indiana

THE USE OF DRUGS BY PILOTS

W. F. Ashe, The Ohio State University, Columbus, Ohio

LIMITS AND EFFECTS OF NUCLEAR RADIATION RELATIVE TO ATOMIC POWERED AIRCRAFT

C. M. Whitlock, Convair, San Diego, California

PHYSICAL CONDITIONING OF PILOTS

T. Freedman, North American Aviation, Los Angeles, California

PHYSICAL FITNESS: A PILOT'S VIEW POINT

H. R. Salmon, Lockheed Aircraft Corporation, Burbank, California

SUMMARY OF PERTINENT INFORMATION DISCUSSED BY PANELISTS

J. P. Stapp, Aero Medical Field Laboratory, Holloman Air Force Base, New Mexico

II. Technical Paper Session

ROCKET ACCELERATION AND TOLERANCE TO ZERO GRAVITY

J. Ryan, Convair-Astronautics, San Diego, California

PHYSICAL STANDARDS AND THEIR ROLE IN JET AND ROCKET AIRCRAFT FLIGHT

C. A. Berry, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas

THE SEALED CABIN, A STUDY IN ARTIFICIALLY CONTROLLED ENVIRONMENT

F. A. Hitchcock, The Ohio State University, Columbus, Ohio

SECOND DAY, TUESDAY, MARCH 25, 1958

Symposium on Human Factors in Low Level Flight—8:30 A.M.

Dr. T. C. Helvey, Chairman
The Martin Company, Orlando, Florida

LOW FREQUENCY VIBRATION IN AIRCRAFT

E. J. Kirchman, The Martin Company, Orlando, Florida

PHYSIOLOGICAL EFFECTS OF LOW FREQUENCY; HIGH AMPLITUDE VIBRATION ON THE HUMAN ORGANISM

(Speaker to be announced).

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THE PSYCHOLOGICAL EFFECTS OF LOW-FREQUENCY HIGH-AMPLITUDE VIBRATION ON HUMAN PERFORMANCE

C. A. Sarnoff, Jamaica, New York

VIBRATION, BUFFETING AND IMPACT RESEARCH

J. Roman, R. Coermann, and G. Ziegenruecker, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

BEHAVIORAL EFFECTS OF WHOLE BODY VIBRATION

M. M. Mozell and D. C. White, Aviation Medical Acceleration Laboratory, U.S. Naval Air Development Center, Johnsville, Pennsylvania

HAZARD TO PILOT FROM BIRD-WINDSHIELD IMPACT

C. M. Whitlock, Jr., Convair, San Diego, California

Session on Hyperoxia and Hypoxia—8:30 A.M.

OXYGEN TOXICITY IN AVIATION MEDICINE; A REVIEW

P. F. Mullinax, Jr., and D. E. Beischer, U.S. Naval School of Aviation Medicine, Pensacola, Florida

OXYGEN TOXICITY IN AVIATION MEDICINE: EXPERIMENTAL APPROACH

D. E. Beischer, J. G. Harris, Jr., D. M. Iverson, and D. P. Morris, Jr., U.S. Naval School of Aviation Medicine, Pensacola, Florida

EFFECTS ON CEREBRO-SPINAL FLUID PRESSURE OF HYPERCAPNIA, HYPOXIA AND OF COMBINED HYPOXIA AND HYPERCAPNIA

G. G. Nahas, H. S. Small, and S. W. Weitzner, Walter Reed Army Institute of Research, Washington, D. C.

CUMULATIVE EFFECTS OF REPEATED HYPERVENTILATION IN NORMAL ADULTS

H. P. Brent, W. J. Scott, and W. R. Franks, Royal Canadian Air Force Institute of Aviation Medicine, Toronto, Canada

MORPHOLOGIC CHANGES ASSOCIATED WITH ACUTE HYPOXIA IN EXPERIMENTAL ANIMALS

F. W. Lovell, Forensic and Aviation Pathology Section, Armed Forces Institute of Pathology, Washington, D. C.

CEREBRAL ANOXIA RESULTING FROM HYPERVENTILATION; A DANGEROUS PARADOX

W. G. Malette and B. Eiseman, University of Colorado Medical Center, Denver, Colorado

Session on Aviation Safety—8:30 A.M.

THE DETECTION OF THERAPEUTIC AMOUNTS OF DRUGS IN POSTMORTEM TISSUES

L. R. Goldbaum, Forensic and Aviation Pathology Section, Armed Forces Institute of Pathology, Washington, D. C.

INSIDIOUS INTOXICATION BY NOXIOUS GASES IN THE C-118; POSSIBILITY AND PREVENTION

E. S. Miller and J. C. McDonald, McGuire Air Force Base, New Jersey

A COMPARATIVE EVALUATION OF TWO EJECTION CONTROLS: THE STANDARD FACE CURTAIN VS. A "D-RING" LOCATED ON THE FRONT OF THE EJECTION SEAT

J. H. Hill and J. L. Brown, Aviation Medical Acceleration Laboratory, U. S. Naval Air Development Center, Johnsville, Pennsylvania

A LEG RETENTION DEVICE FOR HIGH PERFORMANCE AIRCRAFT

A. Holcomb, North American Aviation, Columbus, Ohio

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DYNAMIC TESTING OF ENERGY-ABSORBING MATERIALS

F. Girling and *E. D. L. Topliff*, Defence Research Medical Laboratories, Toronto, Canada

THE PRESENT STATUS OF THE NAVY FATIGUE RELIEVING PNEUMATIC SEAT CUSHION

T. D. Hanna and *L. M. Libber*, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

Session on Hyper- and Hypothermic Stress—10:30 A.M.

DEHYDRATION EFFECTS ON MODERATELY HEAT-STRESSED SUBJECTS WEARING A FULL PRESSURE SUIT IN AMBIENT CONDITIONS REQUIRING A HIGH VENTILATING AIR FLOW

L. M. Libber, *L. J. SantaMaria*, and *V. Vaccaro*, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

MK5 CONSTANT WEAR ANTI-EXPOSURE SUIT

F. A. Catroppa and *M. Sloane*, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

EFFECTS OF *In Vivo* AND *In Vitro* HYPOTHERMIA ON RAT VENTRICULAR METABOLISM AND FUNCTION

J. P. Hannon, Arctic Aeromedical Laboratory, Ladd Air Force Base, Alaska

HUMAN PHYSIOLOGICAL RESPONSES TO A STANDARDIZED COLD STRESS AS MODIFIED BY CHANGING LEVELS OF PHYSICAL FITNESS

T. Adams and *E. J. Heberling*, Arctic Aeromedical Laboratory, Ladd Air Force Base, Alaska

Panel Session on Experimental Analysis of Human Behavior in Flight—2:00 P.M.

Neil D. Warren, Ph.D., Chairman

Professor of Psychology, University of Southern California,
Los Angeles, California

DEALING WITH THE PILOT CONSIDERED AS A "NOISY SERVO"

F. V. Taylor, U. S. Naval Research Laboratory, Washington, D. C.

STUDIES OF FATIGUE IN FLIGHT

J. A. Kraft, Lockheed Aircraft Corporation, Marietta, Georgia

HUMAN PILOT PERFORMANCE DURING BOOST AND ATMOSPHERE RE-ENTRY

R. Kaehler, North American Aviation, Columbus, Ohio

THE ROLE OF INDIVIDUAL DIFFERENCES

W. B. Webb, U.S. Naval School of Aviation Medicine, Pensacola, Florida

HUMAN BEHAVIOR IN GROUPS

S. B. Sells, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas

Session on Aviation Physiology—2:00 P.M.

TEACHING AIDS IN RESPIRATORY PHYSIOLOGY

W. Appleman, Douglas Aircraft Company, El Segundo, California

THE DETERMINATION OF THE EFFECTIVE DEAD AIR SPACE OF RESPIRATORY EQUIPMENT AND SYSTEMS THROUGH PHYSIOLOGICAL MEASUREMENT

E. L. Michel and *H. S. Sharma*, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

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- EFFECTS OF CONTINUOUS EXPOSURE TO CARBON MONOXIDE
M. H. Weeks, N. P. Musselman, W. A. Groff, and F. W. Oberst, U.S. Army Chemical Warfare Laboratories, Army Chemical Center, Maryland
- INFLUENCE OF 5 PER CENT CO₂, EXERCISE, AND ADRENALIN ON POST-MORTEM BRAIN LACTATE LEVELS IN HYPOXIC MICE
C. S. Lennox, J. Chisholm, and W. R. Franks, University of Toronto, Toronto, Canada
- THE EFFECTS OF DIRECT INFUSION OF PURE CARBON DIOXIDE INTO ANIMALS
F. G. Hall and J. Salzano, Duke University Medical Center, Durham, North Carolina
- CHANGE IN PLASMA TRANSAMINASE OF RHESUS MONKEYS AFTER EXPOSURE TO VIBRATION, ACCELERATION, HEAT, OR HYPOXIA
F. W. Cope and D. Polis, Aviation Medical Acceleration Laboratory, U. S. Naval Air Development Center, Johnsville, Pennsylvania
- POST-PRANDIAL T-WAVE LOWERING IN APPARENTLY HEALTHY YOUNG AVIATORS—1957
W. J. R. Taylor, A. J. Kerwin, and W. R. Franks, Royal Canadian Air Force Institute of Aviation Medicine, Toronto, Canada
- EFFECT OF A FATTY MEAL ON CARDIAC FORCE
R. A. Malt and W. R. Harlan, U.S. Naval School of Aviation Medicine, Pensacola, Florida
- IN-FLIGHT STUDIES OF HYPOGLYCEMIA
J. H. Robbins, C. H. Kratochvil, and J. P. Ellis, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas

Session on Sensory Problems—2:00 P.M.

- REMARKS ON THE HUMAN AUDITORY REFLEX IN RELATION TO AIRCRAFT ENGINE NOISE
E. S. Mendelson, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania
- COMPARISON OF PURE TONE AND JET ENGINE NOISE IN ELICITING REFLEX DISPLACEMENT OF THE TYMPANIC MEMBRANE
E. S. Mendelson, R. W. Langevin, and R. A. Bosee, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania
- A PRELIMINARY STUDY OF THE EFFECTS OF HYPERVENTILATION ON SPEECH AND HEARING
H. C. Robinson, Defence Research Medical Laboratories, Toronto, Canada
- THE EFFECT OF SHOUTING ON ARTERIAL BLOOD OXYGEN AND ALVEOLAR CARBON DIOXIDE
A. L. Hall and H. Kelley, U.S. Naval School of Aviation Medicine, Pensacola, Florida
- A HEARING CONSERVATION PROGRAM APPLICABLE TO COMMERCIAL AVIATION TURBO-PROP OPERATION
L. G. Lederer, Washington National Airport, Washington, D. C.
- EAR DEFENDERS FOR PROTECTION FROM NOISE
G. J. Thiessen and E. A. G. Shaw, National Research Council, Ottawa, Canada
- EVALUATING AUDIO WARNING DISPLAYS FOR WEAPON SYSTEMS
D. E. Erlick, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio
- PHYSIOLOGY OF SCOTOPIC (NIGHT) AND PHOTOPIC (DAYLIGHT) VISION
L. F. Raymond, East Orange, New Jersey
- THE COMBINED EFFECTS OF VITAMIN A AND E ON DARK ADAPTATION IN MEN
H. S. Fang, A. L. Hall, and T. F. Hwang, National Taiwan University, Taipei, Taiwan, China, and U.S. Naval School of Aviation Medicine, Pensacola, Florida
- THE DETECTION OF SPHERICAL TARGETS IN A HOMOGENEOUS VISUAL FIELD
J. W. Miller, Kresge Eye Institute and U.S. Naval School of Aviation Medicine, Pensacola, Florida

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THIRD DAY, WEDNESDAY, MARCH 26, 1958

Session on Acceleration—8:30 A.M.

CLINICAL OBSERVATIONS ON CENTRIFUGE SUBJECTS

M. G. Webb, Jr., Aviation Medical Acceleration Laboratory, U.S. Naval Air Development Center, Johnsville, Pennsylvania

DURATION OF TOLERANCE TO POSITIVE G

H. Miller, M. B. Riley, S. Bondurant, and E. P. Hiatt, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

END POINT VARIATION AT CONSTANT ACCELERATION

G. H. Kydd and R. L. Fenichel, Aviation Medical Acceleration Laboratory, U.S. Naval Air Development Center, Johnsville, Pennsylvania

THE PATHOLOGIC FINDINGS IN EXPERIMENTAL ANIMALS SUBJECTED TO RAPID ACCELERATION AND ABRUPT DECELERATION

J. E. Cook, J. P. Stapp, F. M. Townsend, and V. A. Stembridge, Armed Forces Institute of Pathology and Aero Medical Field Laboratory, Holloman Air Force Base, New Mexico

THE RELATIONSHIP BETWEEN CARDIOVASCULAR RESPONSE AND POSITIVE G TOLERANCE

J. J. Zarriello, M. E. Norsworthy, and L. M. Seale, U.S. Naval School of Aviation Medicine, Pensacola, Florida

AN INVESTIGATION INTO THE FEASIBILITY OF USING THE STANDARD EJECTION SEAT SYSTEM FOR UNDERWATER ESCAPE FROM DITCHED AIRCRAFT

E. Beckman, J. Rawlins, and D. McNutt, R.A.F. Institute of Aviation Medicine, Farnborough, England

THE EFFECTS OF POSITIVE ACCELERATION ON PERFORMANCE OF AN AIR-TO-AIR TRACKING TASK

D. E. Fletcher and C. C. Collins, Aviation Medical Acceleration Laboratory, U.S. Naval Air Development Center, Johnsville, Pennsylvania

SUBJECTIVE EFFECTS OF TRANSVERSE ACCELERATION ON SUBJECTS IMMERSSED IN WATER

W. Blanchard, S. Bondurant, N. Clarke, and F. Moore, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

STUDIES ON THE G TOLERANCE OF INVERTEBRATES AND SMALL VERTEBRATES WHILE IMMERSSED

D. P. Morris, Jr., J. J. Zarriello, and D. E. Beischer, U.S. Naval School of Aviation Medicine, Pensacola, Florida

THE SPATIAL VECTOR CARDIOGRAM DURING ACCELERATION

S. Bondurant and W. A. Finney, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

CHANGES IN FORCE OF CONTRACTION OF THE HEART DURING POSITIVE ACCELERATION

S. D. Leverett and N. P. Clarke, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

THE EFFECTS OF RAPID DECELERATION—LETHAL AND INJURIOUS LIMITS

J. D. Mosely and J. P. Stapp, Aero Medical Field Laboratory, Holloman Air Force Base, New Mexico

Session on Oxygen Equipment—8:30 A.M.

PRESENT STATUS OF AIRCRAFT LIQUID OXYGEN BREATHING SYSTEMS

R. W. Roundy and C. G. Roach, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio

WHAT'S NEW IN MASK MOUNTED REGULATORS AND MASK MOUNTED SYSTEMS

J. Jones, Robertshaw-Fulton Controls Company, Anaheim, California

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- CLOSED BREATHING-VENTILATING SYSTEMS USING RECIRCULATED OXYGEN
P. Webb, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio
- AIRCRAFT PASSENGER OXYGEN BY CONTINUOUS FLOW TECHNIQUES
E. T. Carter, Ohio State University, Columbus, Ohio
- A STUDY OF QUICK DONNING OXYGEN MASK SUSPENSIONS; SOME THEORETICAL AND PRACTICAL CONSIDERATIONS
A. Bloom, Sierra Engineering Company, Sierra Madra, California
- A FIRST APPROACH TO THE USE OF VENTILATING AIR IN THE APH-5 CRASH HELMET
P. R. Tiller and *L. M. Libber*, Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia, Pennsylvania

Session on Aviation Psychology—8:30 A.M.

- CONTEMPORARY PILOT SELECTION. A COMPARISON OF PILOT SELECTION IN THE AIR SERVICES OF THE UNITED STATES, CANADA, GREAT BRITAIN, AND FRANCE
R. R. Burwell and *S. B. Sells*, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas
- PREDICTION OF FLIGHT TRAINING ATTRITION BY GRADE SLIPS FOR THE FIRST 10 FLIGHTS
D. K. Trites, *B. B. Cobb*, and *W. F. Brown*, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas
- MOTIVES DETERMINING DECISIONS TO REMAIN IN THE NAVAL AIR TRAINING PROGRAM
A. S. Morton, *J. T. Bair*, *M. B. Jones*, and *R. K. Ambler*, U.S. Naval School of Aviation Medicine, Pensacola, Florida
- ADAPTABILITY SCREENING OF FLYING PERSONNEL: CROSS-VALIDATION OF THE PERSONAL HISTORY BLANK UNDER FIELD CONDITIONS
S. B. Sells, *D. K. Trites*, *R. C. Templeton*, and *M. R. Seaquist*, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas
- INCREASING THE PROPORTION OF OUTSTANDING OFFICERS AMONG NAVAL AIR TRAINING GRADUATES
J. R. Berkshire, U.S. Naval School of Aviation Medicine, Pensacola, Florida
- SIMPLICIAL ANALYSIS IN THE NAVAL AIR TRAINING PROGRAM
M. B. Jones, U.S. Naval School of Aviation Medicine, Pensacola, Florida
- A UNIFIED CONCEPT OF STRESS TOLERANCE; ITS RELATIONSHIP TO DRUGS AND THE AIRMAN AND ITS RELATIONSHIP TO A SYSTEM OF AIRCREW SELECTION BASED UPON PHYSIOLOGIC AND PSYCHOLOGIC CRITERIA
T. F. McGuire and *F. J. Leary*, Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio
- "EMOTIONAL G" IN AIRSICKNESS
P. B. Phillips and *G. M. Neville*, U.S. Naval School of Aviation Medicine and NAAS, Saufley Field, Pensacola, Florida
- CHARACTERISTICS OF PERSONNEL WHO VOLUNTEER FOR EXTRA-HAZARDOUS DUTY
J. T. Bair and *T. J. Gallagher*, U.S. Naval School of Aviation Medicine, Pensacola, Florida
- MEASUREMENT OF BEHAVIORAL EFFECTS ATTRIBUTED TO CERTAIN ATARACTIC AND ANALEPTIC DRUGS
R. M. Ritter, *S. B. Sells*, and *J. C. Nebane*, U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas

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ACCIDENT DATA AND INSTRUCTOR COMMENTS AS INDICATORS OF PROBLEM AREAS IN
TRANSITION TRAINING

L. M. Seale and *W. B. Webb*, U.S. Naval School of Aviation Medicine, Pensacola,
Florida

HUMAN ABILITY AND HIGH PERFORMANCE FLIGHT

A. F. Zeller, Directorate of Flight Safety Research, Norton Air Force Base, California

THE ROLE OF HUMAN FACTORS AT THE AIR FORCE FLIGHT TEST CENTER

B. Rowen, Air Force Flight Test Center, Edwards Air Force Base, California

Session on Clinical Problems—10:30 A.M.

EXPERIENCE GAINED IN EVACUATING 400,000 PATIENTS BY AIR IN 10 YEARS

L. R. Braswell, Headquarters, Military Air Transport Service, Scott Air Force Base,
Illinois

THE ROLE OF THE ALTITUDE CHAMBER IN THE DIAGNOSIS AND DISPOSITION OF PROBLEM
AEROMEDICAL CASES

C. A. Berry and *A. H. King*, U.S. Air Force, School of Aviation Medicine, Randolph
Air Force Base, Texas

THORACOTOMY AND REHABILITATION OF THE FLYER

F. E. Foley, *S. H. Bear*, *J. A. Jarman*, and *W. R. Whitsell, Jr.*, U.S. Air Force Hos-
pital, Maxwell Air Force Base, Alabama

PULMONARY CAVITARY DISEASE IN JET PILOTS: REPORT OF TWO CASES

R. H. Lang and *M. J. Nareff*, U.S. Air Force Hospital, Wiesbaden, Germany

METHODS FOR EVALUATING CARDIOVASCULAR AND RESPIRATORY RESERVES OF PRESELECTED
NORMAL INDIVIDUALS

R. R. Secrest, *W. R. Lovelace, II*, *C. S. White*, *U. C. Luft*, and *R. B. Streeper*,
Lovelace Clinic and Lovelace Foundation, Albuquerque, New Mexico

CIRCULATION TIME WITH THE VALSALVA MANEUVER AS A POSSIBLE TEST FOR PATENCY
OF THE FORAMEN OVALE

D. D. Smith, *J. S. Casselle*, and *R. A. Malt*, U.S. Naval School of Aviation Medi-
cine, Pensacola, Florida

**Panel Session on Simulated Atmospheres and Foreign
Environments in Space Operations—2:00 P.M.**

H. Strughold, M.D., Ph.D., Chairman

Advisor for Research, U.S. Air Force School of Aviation Medicine,
Randolph Air Force Base, Texas

FINAL PROGRAM TO BE ANNOUNCED. TOPICS TO BE DISCUSSED:

EXPERIENCES IN PRESSURE SUITS AND SPACE CABIN SIMULATORS.

EXPERIENCES WITH SIMULATED ATMOSPHERES IN PROJECT "MAN HIGH" AND
"STRATOLAB."

MEDICAL IMPLICATIONS OF THE OZONOSPHERE FOR PRESSURIZED CABINS.

EXPERIENCES WITH THE ENVIRONMENT IN SUBMARINES.

LIFE IN VACUUM.

BEHAVIOR OF MICROORGANISMS UNDER SIMULATED MARTIAN CONDITIONS.