AEROSPACE MEDICAL ASSOCIATION

36th Annual Meeting, April 26-29, 1965
NEW YORK HILTON HOTEL, NEW YORK, N. Y.

On Monday, April 26th, President Theodore C. Bedwell, Jr., will convene the largest Annual Scientific Meeting in the thirty-six year history of the Aerospace Medical Association. More than 2500 of the world's foremost specialists in aerospace and aviation medicine and the allied sciences will attend the many sessions scheduled on the following four-day program.

More than 200 carefully selected scientific papers will be presented by internationally known aerospace physicians, life scientists and specialists, having an intense interest in improving the safety and health of the world's rapidly growing flying population—civil, military and aeronautics.

These outstanding papers will assure a diversity of subjects sufficiently broad in scope and interest that all who attend will find a session in each period of significant interest.

Unusual highlights of the scientific sessions will be four closed-circuit color TV programs on "The Doctor's Role in Air Traffic Control"; "Progress Report on Project Gemini"; "Pilot Physical Examinations"; and "Cardiovascular Problems in Aerospace Medicine."

Four special sessions have been arranged, with outstanding speakers, on subjects of rapidly increasing importance: "Medical Aspects of Supersonic Transport Operations" and "Circadian Rhythms in Aerospace Operations," and two sessions co-sponsored with the Flying Physicians on "Civil Aviation Medicine."

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Opening Ceremony

APRIL 26, 1965

Monday 8:45 a.m. East Ballroom

8:45 a.m. INVOCATION
The Reverend Frederick M. Morris, D.D.
Rector, St. Thomas Church, New York City

WELCOMING ADDRESS
Theodore C. Bedwell, Jr.,
Major General, U.S. Air Force, MC
President, Aerospace Medical Association

9:00 a.m.

THE LOUIS H. BAUER LECTURE
"The Impact of Research and Development on Science and Engineering"

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Scientific Sessions

APRIL 26, 1965

Monday 10:30 a.m. Sutton Ballroom

ENVIRONMENTAL PHYSIOLOGY I
—RESPIRATION

Chairman: Henry C. Hunley, Jr., Captain, MC, USN, Pensacola, Florida
Co-Chairman: James P. Henry, Colonel, USAF, MC, Brooks AFB, Texas

10:30 a.m. HYPERVENTILATION APNEA
Kenneth M. Moser, P. Gregg Rhodes, and L. Kwaan
Georgetown Clinical Research Institute, FAA, and Georgetown University Hospital, Washington, D. C.

10:45 a.m. RESPIRATORY WATER LOSS
E. C. Wortz
The Garrett Corporation, Los Angeles, Calif.

11:00 a.m. POLAROGRAPHIC MEASUREMENT OF BLOOD OXYGEN TENSION: SOURCES OF ERROR
P. Gregg Rhodes and Kenneth M. Moser
Georgetown Clinical Research Institute, FAA, Washington, D. C.

11:15 a.m. SOME RESPIRATORY CHANGES ASSOCIATED WITH MILITARY FLIGHT EQUIPMENT
Frank J. Formeller and K. N. Tinklepaugh
Life Sciences Dept., U. S. Naval Missile Center, Point Mugu, California

11:30 a.m. THE EFFECT OF HYPOXIC HYPOXIA ON NYSTAGMUS INDUCED BY ANGULAR ACCELERATION
P. D. Newberry, W. H. Johnson, and J. R. Smiley
RCAF Institute of Aviation Medicine, Toronto, Canada

11:45 a.m. EFFECT OF EXERCISE ON OXYGEN CONSUMPTION AT DECREASED PRESSURE
D. G. Quigley, W. G. Robertson, and G. L. McRae
USAF School of Aerospace Medicine, Brooks AFB, Texas
APRIL 26, 1965
Monday 10:30 a.m.  Murray Hill Suite

CLINICAL AVIATION MEDICINE I

Chairman: J. Harold Brown, M.D., Seattle, Washington
Co-Chairman: Robert A. Patterson, Colonel, USAF, MC, Washing-
ton, D. C.

10:30 a.m.  AIRSICKNESS IN STUDENT AVIATORS
G. J. Tucker, D. J. Hand, A. L. Godby and
R. F. Reinhardt
Naval School of Aviation Medicine and Naval
Auxiliary Air Station, Saufly Field, Pensacola,
Florida

10:45 a.m.  THE "BREAK-OFF" PHENOMENON: A
PRECIPITANT OF ACUTE ANXIETY IN
JET FLYING
John A. Sours
Department of Psychiatry, Columbia-Presby-
terian Medical Center, New York, New York

11:00 a.m.  THE FAIL-SAFE APPROACH TO HUMAN
FACTOR PROBLEMS
Raymond M. Tamura
Honolulu, Hawaii

11:15 a.m.  FEAR OF FLYING AND THE COUNTER-
PHOBIC PERSONALITY
Alan L. Morgenstern
USAF School of Aerospace Medicine, Brooks
AFB, Texas

11:30 a.m.  AN INVESTIGATION ON THE SUBJECT-
IVE EFFECTS OF TIME CHANGES ON
FLYING STAFF IN CIVIL AVIATION
J. Laverne, E. LaFontaine, and R. LaPlane
Service Medical d’Air France, Paris, France

11:45 a.m.  A TREADMILL EXERCISE TEST IN THE
AEROMEDICAL EVALUATION ON FLY-
ING PERSONNEL
Robert L. Johnson
USAF School of Aerospace Medicine, Brooks
AFB, Texas

APRIL 26, 1965
Monday 10:30 a.m.  Regent Room

IMPACT

Chairman: Edward J. Baldes, Ph.D., Washington, D. C.
Co-Chairman: John P. Stapp, Colonel, USAF, MC, Washing-
ton, D. C.

10:30 a.m.  FEASIBILITY STUDY: LATERAL IMPACT
WITH MINIMAL RESTRAINT
Jerry D. Rothstein and William K. Brown
Aeromedical Research Laboratory, Holloman
AFB, New Mexico

10:45 a.m.  INVESTIGATIONS IN HUMAN TOLER-
ANCE TO LATERAL IMPACT
Albert V. Zaborowski, Jerry D. Rothstein and
William K. Brown
Aeromedical Research Laboratory, Holloman
AFB, New Mexico

11:00 a.m.  HUMAN RESPONSE TO PREDICTED
APOLLO LAND IMPACTS IN SELECTED
BODY ORIENTATIONS
William K. Brown, Jerry D. Rothstein, and P.
Foster
Aeromedical Research Laboratory, Holloman
AFB, New Mexico

11:15 a.m.  HUMAN TOLERANCE LIMITS IN WATER
IMPACT
Richard G. Snyder
Civil Aeromedical Research Institute, FAA,
Oklahoma City, Oklahoma

11:30 a.m.  IMPACT PROTECTION BY THE AIRSTOP
RESTRAINT SYSTEM
Carl Blechschmidt, Carl Clark and Fay Gordon
Life Sciences Research, Martin Company,
Baltimore, Maryland

11:45 a.m.  EXPERIENCE AS A FACTOR IN EXPERI-
MENTAL IMPACT
Peter Foster
Aeromedical Research Laboratory, Holloman
AFB, New Mexico

APRIL 26, 1965
Monday 2:00 p.m.  Sutton Ballroom

THE DOCTOR’S ROLE IN THE FED-
ERAL AVIATION AGENCY AIR
TRAFFIC CONTROL SYSTEM

CLOSED CIRCUIT COLOR TELEVISION

MODERATOR
M. S. White, M.D., Federal Air Surgeon,
Office of Aviation Medicine, FAA,
Washington, D. C.

PANEL
Peter V. Siegel, M.D., Chief, Aeromedical
Certification Division, Office of
Aviation Medicine, FAA, Oklahoma
City, Oklahoma
Frank K. Raymond, M.D., Chief, Aeromedical
Standards Division, Office of
Aviation Medicine, FAA, Washington,
D. C.
Arthur E. Wentz, M.D., Director, Georgetown
Clinical Research Institute, FAA,
Washington, D. C.
Lawrence Marinelli, M.D., FAA Regional
Flight Surgeon, Eastern Region, New
York, New York

The television program will depict the medical aspects asso-
ciated with the movement of air traffic in the United States. Air
Traffic Controllers and their associated workload will be shown
in real time by closed circuit television. The support of the
Office of Aviation Medicine will be indicated through practical
demonstrations in a typical setting. The panel will discuss with
the audience some of the day-to-day problems associated with
the Office of Aviation Medicine program in the Federal Aviation
Agency. *All TV programs are sponsored by Smith Kline &
French Laboratories with cooperation of the Federal Aviation Agency.

APRIL 26, 1965
Monday 2:00 p.m.  Murray Hill Suite

LIFE SUPPORT I

Chairman: James N. Waggoner, M.D., Los Angeles, California
Co-Chairman: Charles F. Ccll, M.D., Dallas, Texas

2:00 p.m.  THE STUDY OF THE EXPLOSIVE EFFECTS
OF SIMULATED MICROMETEOROID PEN-
ETRATIONS INTO A SEALED GAS-CON-
TAINING ANIMAL CAPSULE
C. F. Ccll and Ray McKinney
Ling-Temco-Vought, Astronautics Division,
Dallas, Texas

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2:15 p.m. MONITORING THE BIOEFFLUENTS OF MAN TO ESTABLISH SPACE VEHICLE ENVIRONMENTAL CONTROL REQUIREMENTS
R. A. Dora, E. Vigh, and T. B. Weber
Space Engineering Dept., Beckman Instruments, Inc., Fullerton, California

2:30 p.m. A BIOENGINEERING APPROACH FOR DEFINING THE FUNCTIONAL REQUIREMENTS FOR TRACE CONTAMINANT CONTROL IN SPACE STATIONS
T. B. Weber and Charles Spezia
Space Engineering Dept., Beckman Instruments, Inc., Fullerton, California

2:45 p.m. ANALYTICAL GAS DESORPTION APPARATUS
W. H. Toliver, Sr., R. E. Bennett, and C. G. Roach
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

3:00 p.m. DISPERSION OF RESPIRED GAS IN MANNED SPACE ENCLOSURES
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

APRIL 26, 1965
Monday 2:00 p.m. Regent Room

ENVIRONMENTAL PHYSIOLOGY II
Co-Chairman: Vincent M. Downey, M.D., Menlo Park, California

2:00 p.m. LUNG CHANGE RESULTING FROM PROLONGED EXPOSURE TO 100% OXYGEN AT PRESSURES BELOW ATMOSPHERIC
George H. Kydd
Aviation Medical Acceleration Laboratory, Johnsville, Pennsylvania

2:15 p.m. THE INFLUENCE OF ALVEOLAR NITROGEN CONCENTRATION AND ENVIRONMENTAL PRESSURE UPON THE RATE OF GAS ABSORPTION FROM NON-VENTILATED LUNG
J. Ernsting
RAF Institute of Aviation Medicine, Farnborough, England

2:30 p.m. EFFECTS OF GAS EMBOLISM UPON THE PULMONARY CIRCULATION
P. Howard, D. H. Claister, and W. K. Stewart
RAF Institute of Aviation Medicine, Farnborough, England

2:45 p.m. RESPIRATORY RESPONSES TO GASEOUS EMBOLISM
D. I. Fryer
RAF Institute of Aviation Medicine, Farnborough, England

3:00 p.m. BENDS IN OXYGEN-NITROGEN MIXTURES DURING EXERCISE AT DECREASED PRESSURES
T. H. Allen, K. G. Ikels, and E. A. Degner
USAF School of Aerospace Medicine, Brooks AFB, Texas

APRIL 26, 1965
Monday 3:45 p.m. Murray Hill Suite

LIFE SUPPORT II
Chairman: Stanley C. White, Lt. Colonel, USAF, MC, San Antonio, Texas
Co-Chairman: Alfred M. Mayo, Dallas, Texas

3:45 p.m. THE DYNAMIC PERFORMANCE OF AIRCREW BREATHING EQUIPMENT
G. R. Allen and G. F. Rowlands
Human Engineering Division, Farnborough, England

4:00 p.m. DEVELOPMENT OF AUTOMATIC CONTROLS FOR A TWO GAS ATMOSPHERIC SUPPLY SYSTEM
J. K. Jackson
Missile and Space Systems Division, Douglas Aircraft Company, Inc., Santa Monica, Calif.

4:15 p.m. APPLICATION OF WATER ELECTROLYSIS TO THE RECOVERY OF OXYGEN IN LONG DURATION SPACE MISSIONS
C. S. Coe
AirResearch Manufacturing Company, Garrett Corporation, Los Angeles, California

4:30 p.m. MICROCONTACTOR UTILIZING HIGH-DENSITY METALLIC SUPEROXIDES
T. V. Bolles, H. Wallman, and D. Rosen
General Dynamics/Electric Boat, Groton, Connecticut

4:45 p.m. SUPEROXIDE ATMOSPHERE CONTROL SYSTEM FOR MANNED SPACE ASSEMBLIES
J. W. Mausteller, M. J. McGoff, D. A. Keating, and K. Weiswurm
MSA Research Corporation, Callery, Pennsylvania, and Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

APRIL 26, 1965
Monday 3:45 p.m. Regent Room

SAFETY AND SURVIVAL I
Chairman: Fratis L. Duff, Brig. General, USAF, MC, Langley AFB, Virginia
Co-Chairman: Joseph M. Blumberg, Brig. General, MC, USA, Washington, D. C.

3:45 p.m. AIR TRAINING COMMAND EJECTION EXPERIENCE, 1 JANUARY 1962 to 31 DECEMBER 1964
Robert A. Farmer, Alonzo M. Donnell, and John P. McCann
Air Training Command, Randolph AFB, Texas

4:00 p.m. COMPRESSION FRACTURES OF THE SPINE DURING USAF EJECTIONS
Life Sciences Division, OTIG, Norton AFB, California

4:15 p.m. VERTEBRAL FRACTURE IN JET AIRCRAFT ACCIDENTS; A STATISTICAL ANALYSIS FOR THE PERIOD 1959 THROUGH 1963 IN THE U.S. NAVY
Channing L. Ewing
U. S. Naval School of Aviation Medicine, Pensacola, Florida
4:30 p.m. THE EFFECT OF AGE ON VERTEBRAL BREAKING STRENGTH AND STIFFNESS
Ernest L. Stech
Frost Engineering Development Corporation,
Englewood, Colorado

4:45 p.m. HELICOPTER ROTOR BLADE INJURIES
Frank W. Kiel
Armed Forces Institute of Pathology, Washington, D.C.

APRIL 27, 1965
Tuesday 8:30 a.m. Sutton Ballroom

ENVIRONMENTAL PHYSIOLOGY III
—TEMPERATURE
Co-Chairman: A. Pharo Gagge, Ph.D., New Haven, Connecticut

8:30 a.m. A REVIEW OF CURRENT CONCEPTS AND PRACTICES APPLICABLE TO THE
CONTROL OF HEAT LOSS DURING WATER IMMERSION
E. L. Beckman, E. Reeves, and Ralph Goldman
Naval Medical Research Institute, Bethesda, Maryland

8:45 a.m. PLASMA FREE FATTY ACID CHANGES IN MAN DURING ACUTE COLD EXPOSURE AND NICOTINIC ACID INGESTION
Peter G. Hanson, Robert E. Johnson, and George Engel
Human Environmental Laboratory, University of Illinois, Urbana, Illinois

9:00 a.m. A NOVEL APPROACH TO THE MEASUREMENT OF MAN'S HEAT EXCHANGE WITH A COMPLEX RADIANT ENVIRONMENT
A. P. Gagge, J. A. J. Stolwijk, and J. D. Hardy
John B. Pierce Foundation Laboratory, Yale University School of Medicine, New Haven, Connecticut

9:15 a.m. EFFECTS OF BRIEF THERMAL TRANSIENT TO 205° C (400° F) ON THE CLOTTING MECHANISM IN HUMAN SUBJECTS
R. H. Murray
Indiana University Cardiopulmonary Laboratory, Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

9:30 a.m. PREDICTION OF NEAREST SAFE DISTANCES FOR THERMAL RADIATION OF NUCLEAR WEAPONS
W. C. Kaufman and James C. Pittman, Jr.
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

9:45 a.m. HEAT EXCHANGE DURING EXERCISE IN A HELIUM-OXYGEN ATMOSPHERE
W. L. Epperson, D. G. Quigley, W. C. Robertson, V. S. Behar, and B. E. Welch
USAF School of Aerospace Medicine, Brooks AFB, Texas

APRIL 27, 1965
Tuesday 8:30 a.m. Murray Hill Suite

LIFE SUPPORT III—PROTECTIVE GARMENETS
Chairman: Roland A. Bosee, Captain, MSC, USN, Washington, D.C.
Co-Chairman: Rufus R. Hessberg, Colonel, USAF, MC, Houston, Texas

8:30 a.m. SOVIET HIGH ALTITUDE PRESSURE SUIT DEVELOPMENT, 1934-1955
Charles L. Wilson

8:45 a.m. EFFICACY OF AIR COOLING SYSTEMS IN PRESSURE SUITS IN HOT ENVIRONMENTS
James H. Vege
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

9:00 a.m. SOME PERFORMANCE ASPECTS OF WATER CONDITIONER SUITS
D. R. Burton and L. Collies
Royal Aircraft Establishment, Farnborough, England

9:15 a.m. AN EVALUATION OF THE FOAMED NEOPRENE "DIVERS' WETSUIT" AS A SURVIVAL GARMENT FOR HELICOPTER AIRCREW
E. Reeves, M. P. Stephens, and E. L. Beckman
Naval Medical Research Institute, Bethesda, Maryland

9:30 a.m. MODIFIED AND VENTILATED DIVERS' WET SUIT AS A POTENTIAL SUBSTITUTE FOR THE U.S. NAVY ANTI-EXPOSURE ASSEMBLIES AS USED IN THE S-2 AIRCRAFT
Walter L. Goldenrath, Nathan Barrett, and Ronald L. Hansen
Medical Department, Naval Air Station, San Diego, California

9:45 a.m. DESIGN REQUIREMENTS FOR LIFE SUPPORT HELMETS
Roland A. Bosee
Bureau of Naval Weapons and Bureau of Medicine and Surgery, Department of the Navy, Washington, D.C.

APRIL 27, 1965
Tuesday 8:30 a.m. Regent Room

ACCELERATION I
Chairman: James D. Hardy, Ph.D., New Haven, Connecticut
Co-Chairman: Andres I. Karstens, Colonel, USAF, MC, Los Angeles, California

8:30 a.m. EFFECTS OF REPEATED, LOW-INTENSITY, LONG DURATION, POSITIVE ACCELERATIONS (+Gz) IN DOGS
R. H. Murray, James Prine, and Richard P. Menninger
Indiana University Cardiopulmonary Laboratory and Toxicology Branch, Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio
8:45 a.m. CARDIOVASCULAR RESPONSE TO ACCELERATION (+Gx) IN UNANESTHETIZED NORMAL AND IN CARDIAC DE- NERVATED DOGS
   H. L. Stone and Eugene Dung, Jr.
   USAF School of Aerospace Medicine, Brooks AFB, Texas

9:00 a.m. PLEURAL PRESSURES IN DOGS DURING TRANSVERSE ACCELERATION
   W. Rutishauser, N. Banchero, A. G. Tsakiris,
   R. E. Sturm and E. H. Wood
   Mayo Clinic and Mayo Graduate School of Medicine, Rochester, Minnesota

9:15 a.m. THE EFFECT OF FORWARD, BACKWARD, RIGHT LATERAL AND LEFT LATERAL ACCELERATION ON BLOOD OXYGEN SATURATION IN DOGS
   N. Banchero, W. Rutishauser, A. G. Tsakiris,
   R. E. Sturm, and E. H. Wood
   Mayo Clinic and Mayo Graduate School of Medicine, Rochester, Minnesota

9:30 a.m. CINERADIOGRAPHIC OBSERVATIONS OF HUMAN SUBJECTS DURING TRANSVERSE ACCELERATIONS OF +5 AND +10 Gx
   Harold Sandler
   Naval Aeromedical Acceleration Laboratory, Johnsville, Pennsylvania

9:45 a.m. THE DISTRIBUTION OF PULMONARY BLOOD FLOW DURING POSITIVE ACCELERATION
   A. C. Bryan and W. D. Macnamara
   RCAF Institute of Aviation Medicine, Toronto, Canada

APRIL 27, 1965

Tuesday 8:30 a.m. Beekman Room

BEHAVIORAL SCIENCES I

Chairman: Richard H. Kastner, M.D., Ph.D., Bladensburg, Maryland
Co-Chairman: Richard Trumbull, Ph.D., Washington, D.C.

8:30 a.m. THE VALIDITY OF A BRIEF VESTIBULAR DISORIENTATION TEST IN SCREENING PILOT TRAINEES
   Rosalie K. Ambler and Fred E. Guedry, Jr.
   Naval School of Aviation Medicine, Pensacola, Florida

8:45 a.m. PSYCHOLOGICAL AND PSYCHIATRIC PROBLEMS IN COMMERCIAL AVIATION
   C. L. Blanc, E. LaFontaine, and R. LaPlane
   Service Medical d'Air France, Paris, France

9:00 a.m. THE LIMITATIONS AND RELIABILITY OF THE HUMAN OPERATOR OF CONTROL SYSTEMS TO PROCESS INFORMATION
   J. Szafran
   The Lovelace Foundation, Albuquerque, New Mexico

9:15 a.m. TRAINING THE VESTIBULE FOR AEROSPACE OPERATIONS: I. USING CORIOLIS ACCELERATION TO ASSESS ROTATION
   Kent K. Gillingham
   USAF School of Aerospace Medicine, Brooks AFB, Texas

9:30 a.m. UPPER THERMAL TOLERANCE LIMITS FOR UNIMPAIRED MENTAL PERFORMANCE
   John F. Wing
   Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

9:45 a.m. EFFECTS OF ADRENALIN OR INSULIN ON THE PERFORMANCE OF RESTING AND WORKING SUBJECTS
   Clayton R. Coler, William A. McLaurin, and Donald R. Young
   NASA Ames Research Center, Moffett Field, California

APRIL 27, 1965

Tuesday 10:30 a.m. Beekman Room

ENVIRONMENTAL PHYSIOLOGY IV—HYPOGRAVIC SIMULATION

Chairman: Frederick J. Frese, Colonel, USAF, MC, Washington, D.C.
Co-Chairman: Richard W. Lawton, M.D., Hatboro, Pennsylvania

10:30 a.m. FREE FATTY ACID RESPONSE TO TILTING FOLLOWING IMMERSION
   Michael MCally and Jack Goldman
   Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

10:45 a.m. RENAL HEMODYNAMICS: THE EFFECT OF GRAVITY ON SODIUM AND WATER EXCRETION
   William M. Stahl
   University of Vermont College of Medicine, Burlington, Vermont

11:00 a.m. HEMODYNAMIC EFFECTS OF WATER IMMERSION
   J. A. Bowers, W. B. Hood, Jr., R. H. Murray,
   C. W. Urschel, and J. K. Goldman
   Aerospace Medical Research Laboratories and Indiana University Cardiopulmonary Laboratory, AMRL, Wright-Patterson AFB, Ohio

11:15 a.m. THE INFLUENCE OF ACTIVITY AND INACTIVITY ON ORTHOSTATIC TOLERANCE AND PLASMA VOLUME DURING WATER IMMERSION FOR SIX HOURS WITH BALANCED PRESSURE BREATHING
   D. E. Torphy
   USAF School of Aerospace Medicine, Brooks AFB, Texas

11:30 a.m. A FACTORIAL STUDY OF IMMERSION DIURESIS AND ITS INHIBITION BY POSITIVE PRESSURE
   Noel C. Hunt, III
   USAF School of Aerospace Medicine, Brooks AFB, Texas

11:45 a.m. POSSIBLE PHYSIOLOGICAL EFFECTS OF LONG-TERM WEIGHTLESSNESS ON MAN
   Vincent M. Downey and Clarence C. Cain
   Lockheed Missiles and Space Company, Sunnyvale, California

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Tuesday 10:30 a.m. Murray Hill Suite

INSTRUMENTATION AND TECHNIQUES I

Chairman: Charles A. Berry, M.D., Houston, Texas
Co-Chairman: J. C. Wickett, Group Captain, RCAF, Ottawa, Canada

10:30 a.m. TECHNIQUES OF HUMAN RESEARCH FOR THE SPACE ENVIRONMENT
   D. Amorelli, J. T. Celentano, and B. G. Peters
   Space and Information Systems Div., North American Aviation, Inc., Downey, California

10:45 a.m. A METHOD OF RECORDING BODY TEMPERATURE FOR PROLONGED TIME
   Michael A. B. Vianello and Donald I. Tepas
   MPG Research Laboratory, Honeywell, Inc., St. Paul, Minnesota

11:00 a.m. A VIRTUALLY CONTINUOUS MEASUREMENT OF HUMAN SYSTOLIC AND DIASTOLIC BLOOD PRESSURE TRANSIENTS WITHOUT DIRECT ARTERIAL PUNCTURE
   Michael T. Lategola, Charles Barnard, and Hiley Harrison
   Civil Aeromedical Research Institute, Oklahoma City, Oklahoma

11:15 a.m. OBJECTIVE DETERMINATIONS OF BONE CALCIUM LEVELS
   J. M. Dick
   Missile and Space Systems Div., Douglas Aircraft Company, Inc., Santa Monica, California

11:30 a.m. A METHOD FOR DETERMINATION OF CALCIUM IN SERUM, PAROTID FLUID, AND URINE IN THE WEIGHTLESS STATE
   Bruce A. Butcher, Joseph F. Eastis, and Dale A. Clark
   USAF School of Aerospace Medicine, Brooks AFB, Texas

11:45 a.m. A SIMPLE METHOD FOR DETERMINING BODY SPECIFIC GRAVITY
   M. Passaglia, E. Reeves, and E. L. Beckman
   Naval Medical Research Institute, Bethesda, Maryland

APRIL 27, 1965

Tuesday 10:30 a.m. Sutton Ballroom

MEDICAL ASPECTS OF SUPERSONIC TRANSPORT OPERATIONS

Chairman: Charles I. Barron, M.D., Burbank, California
Co-Chairman: Kenneth G. Bergin, M.D., Cranford, England

(Topics and speakers to be announced in February issue)

APRIL 27, 1965

Tuesday 2:00 p.m. Murray Hill Suite

ENVIRONMENTAL PHYSIOLOGY V

Chairman: Hermann J. Schaefer, Ph.D., Pensacola, Florida
Co-Chairman: Karl H. Houghton, M.D., Santa Monica, California

2:00 p.m. PERMISSIBLE CONTAMINATION LEVELS IN MANNED SPACECRAFT
   E. N. Carlsen and T. B. Weber
   Beckman Instruments, Inc., Fullerton, California

2:15 p.m. COMPARATIVE STUDIES ON 1285 AND 2800 MEGACYCLES/SEC., PULSED MICROWAVES
   Sol. M. Michaelson, R. A. E. Thomson, and Joe W. Howland
   University of Rochester School of Medicine and Dentistry, Rochester, N. Y., and Griffiss AFB, Rome, N. Y.
2:30 p.m.  RADAR HAZARDS EVALUATION—CONCEPTS AND CRITERIA
Joe W. Howland and Sol. M. Michaelson
University of Rochester School of Medicine and Dentistry, Rochester, N. Y., and Griffiss AFB, Rome, N. Y.

2:45 p.m.  USAF WHOLE BODY GAMMA SPECTROMETRY
Alvin M. Burner, Robert G. Thomas, and Richard E. Benson
Radiological Health Laboratory, Wright-Patterson AFB, Ohio

3:00 p.m.  SOME OBSERVATIONS ON DOGS FOLLOWING LOWER BODY EXPOSURE TO 1 MEV X-RAYS
Laurence T. Odland and Sol. M. Michaelson
Air Force Logistics Command, Wright-Patterson AFB, Ohio, and University of Rochester School of Medicine and Dentistry, Rochester, N. Y.

APRIL 27, 1965
Tuesday 2:00 p.m.  Regent Room

OPERATIONAL AVIATION MEDICINE
Chairman: Raymond A. Yerg, Colonel, USAF, MC, Patrick AFB, Florida
Co-Chairman: Joseph W. Weaver, Captain, MC, USN, Washington, D. C.

2:00 p.m.  SELF-REPORTED STRESS-RELATED SYMPTOMS AMONG AIR TRAFFIC CONTROL SPECIALISTS (ATCS) AND NON-ATCS PERSONNEL
John D. Dougherty, David K. Trites, and J. Robert Dille
Office of Aviation Medicine, FAA, Oklahoma City, Oklahoma

2:15 p.m.  REVERSAL OF DECABORANE-MEDIATED NORADRENALINE DEPLETION BY METHYLENE BLUE
James H. Merritt and John A. Merritt
USAF School of Aerospace Medicine, Brooks AFB, Texas

2:30 p.m.  AEROMEDICAL FACTORS OF TITAN II ICBM SUPPORT—A SUMMARY OF TWO YEARS OF OPERATIONAL EXPERIENCE
Charles H. Sawyer, Emory J. Sobieski, and Burton Joy
803rd Medical Group, Davis-Monthan AFB, Arizona, Johns Hopkins School of Hygiene, Baltimore, Maryland, and Danville, Pennsylvania

2:45 p.m.  BETWEEN TWO GENERATIONS
Harold A. Myers
Eighth Air Force, Westover AFB, Massachusetts

3:00 p.m.  ASPECTS OF ORAL HYGIENE AND EMERGENCY DENTAL CARE FOR LONG TERM SPACE FLIGHT—STOMATOLOGIC EVALUATION—USAF-NASA NUTRITION STUDY
Jack L. Hartley
USAF School of Aerospace Medicine, Brooks AFB, Texas

FLIGHT NURSE SECTION
AEROSPACE MEDICAL ASSOCIATION

APRIL 27, 1965
Tuesday 2:00 p.m.  Nassau Suite

CLINICAL ASPECTS OF AEROSPACE MEDICINE

PANEL CHAIRMAN
Alice L. Montgomery, Colonel, USAF, NC
Wilford Hall USAF Hospital, Lackland AFB, Texas

MODERATOR
Janice A. Albert, Lt. Colonel, USAF, NC
Field Extension, Office of Surgeon General, Randolph AFB, Texas

PANEL AND AREAS OF PRESENTATION

INTRODUCTION
Janice A. Albert, Lt. Colonel, USAF, NC

THE PHYSICIAN’S ROLE IN AEROSPACE MEDICINE
James W. Humphreys, Jr., Brig. General, USAF, MC
Wilford Hall USAF Hospital, Lackland AFB, Texas

NURSING PROBLEMS IN AEROSPACE MEDICINE
Ellen M. Respini, Lt. Colonel, USAF, NC
USAF School of Aerospace Medicine, Brooks AFB, Texas

NUTRITION IN SPACE
Mary K. Fesenmyer, Major, USAF, NC
Wilford Hall USAF Hospital, Lackland AFB, Texas

QUESTION AND ANSWER PERIOD

SUMMARY—THE MODERATOR

APRIL 27, 1965
Tuesday 2:00 p.m.  Sutton Ballroom

PROGRESS REPORT ON PROJECT GEMINI

CLOSED CIRCUIT COLOR TELEVISION
MODERATOR
Charles A. Berry, M.D., Chief, Center Medical Programs, NASA Manned Space Flight Center, Houston, Texas

DEMONSTRATORS
(To be announced.)

Progress during the past year in readying the bio-medical support for Project Gemini will be presented. The program will include research and development progress to provide the medical support, operational medical planning and support, and the planned medical experiments program. Flight hardware will be demonstrated.

APRIL 27, 1965
Tuesday 3:45 p.m.  Beekman Room

VISUAL PHYSIOLOGY

Chairman: Henry G. Wagner, Captain, MC, USN, Philadelphia, Pennsylvania
Co-Chairman: Victor A. Byrnes, M.D., St. Petersburg, Florida
PERIPHERAL VISUAL FIELD LOSS AT ALTITUDE AND RECOVERY RATES WITH DESCENT

W. L. Smith and J. J. Tully
Bureau of Medicine and Surgery, Department of the Navy, Washington, D. C.

THE EFFECT OF ANTHOCYAN GLUCOSIDES ON THE NIGHT VISION CAPABILITIES OF AIRCREW

A. Mercier, E. LaFontaine, J. Robion, and G. Perdriel
Service Medical d'Air France, Paris, France

THE INFLUENCE OF EYE LID MOVEMENT UPON ELECTRO-OCULOGRAPHIC RECORDING OF VERTICAL EYE MOVEMENTS

W. Barry and G. Melvill Jones
Aviation Medical Research Unit, McGill University, Montreal, Canada

PILOCARPINE EFFECTS ON VISUAL PERFORMANCE OF PILOTS

Richard Feinberg
Federal Aviation Agency, Washington, D. C.

APRIL 27, 1965

Tuesday 3:45 p.m. Murray Hill Suite

ENVIRONMENTAL PHYSIOLOGY VI—RADIATION AND MAGNETIC FIELDS

Chairman: Dietrich E. Beischer, Ph.D., Pensacola, Florida
Co-Chairman: Alvin F. Meyer, Colonel, USAF, MSC, Washington, D. C.

3:45 p.m. TISSUE DOSAGES FROM ALPHA PARTICLES AND HEAVY NUCLEI IN SOLAR PARTICLE BEAMS IN SPACE

Hermann J. Schaefer
Naval School of Aviation Medicine, Pensacola, Florida

4:00 p.m. X-RADIATION EFFECTS ON VIBRATION TOLERANCE OF RATS

Leland L. Short, Bernard D. Newsom, and James F. Brady
General Dynamics/Astronautics, San Diego, California

4:15 p.m. ENZYME-ISOENZYME MEASURE OF RADIATION EXPOSURE

E. J. Hawrylewicz and W. H. Blair
Life Sciences Research Division, Illinois Institute of Technology-Research Institute, Chicago, Illinois

4:30 p.m. EXPOSURE OF MAN TO LOW INTENSITY MAGNETIC FIELDS

Dietrich E. Beischer, Earl F. Miller, and James C. Knepton, Jr.
Naval School of Aviation Medicine, Pensacola, Florida

4:45 p.m. RESPONSE OF TISSUE CULTURE CELLS TO LOW-MAGNETIC FIELDS

A. E. Greene and M. H. Halpem
South Jersey Medical Research Foundation, Camden, New Jersey, and The Franklin Institute, Philadelphia, Pennsylvania

APRIL 27, 1965

Tuesday 3:45 p.m. Regent Room

CIRCADIAN RHYTHMS IN AEROSPACE OPERATIONS

Chairman: Hubertus Strughold, M.D., Brooks AFB, Texas
Co-Chairman: Robert LaPlane, M.D., Paris, France

3:45 p.m. COLIN PITTENDRIGH, Ph.D. (Title to be furnished)

4:25 p.m. PHASE SHIFTS OF THE HUMAN CIRCADIAN SYSTEM AND PERFORMANCE DEFICIT DURING PERIODS OF TRANSITION

G. T. Hauty and T. Adams
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

4:45 p.m. EFFECTS OF ISOLATION IN A CONSTANT ENVIRONMENT ON PERIODICITY OF PHYSIOLOGICAL FUNCTIONS AND PERFORMANCE

US Naval Medical Research Laboratory, New London, Connecticut

5:10 p.m. DISCUSSION:

Professor Juergen Aschoff
Max Planck Institut Fur Verhaltenphysiologie, Erling-Andechs, W. Germany
APRIL 28, 1965

Wednesday 8:30 a.m. Sutton Ballroom

LIFE SUPPORT IV

Chairman: Walton L. Jones, Captain, MC, USN, Washington, D. C.
Co-Chairman: Romney H. Lowry, M.D., Washington, D. C.

8:30 a.m. OBSERVATIONS ON RATS EXPOSED TO A SPACE CABIN ATMOSPHERE FOR TWO WEEKS
Philip Felig
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

8:45 a.m. RESPIRATORY STUDIES IN A HELIUM-OXYGEN ATMOSPHERE
W. G. Robertson, H. J. Zeft, V. S. Behar, and B. E. Welch
USAF School of Aerospace Medicine, Brooks AFB, Texas

9:00 a.m. GROWTH RESPONSES OF VASCULAR PLANTS UNDER EXOTIC ATMOSPHERES
S. S. Wilks
USAF School of Aerospace Medicine, Brooks AFB, Texas

9:15 a.m. THE EFFECTS, REAL AND RELATIVE, OF A SPACE TYPE DIET ON THE AEROBIC AND ANAEROBIC MICROFLORA OF HUMAN FECES
P. E. Riely, L. S. Gall, and G. A. Albright
Space Environment and Life Science Laboratory, Republic Aviation Corporation, Farmingtown, Long Island, New York

9:30 a.m. STUDIES OF OXYGEN TOXICITY IN THE CENTRAL NERVOUS SYSTEM
L. C. Zirkle, C. E. Mengel, B. D. Horton, and E. J. Duffy
Department of Medicine, Duke University, Durham, North Carolina

9:45 a.m. FURTHER STUDIES OF THE MECHANISM OF IN VIVO RBC DAMAGE BY OXYGEN
C. E. Mengel, L. G. Zirkle, B. W. O'Malley, and B. D. Horton
Department of Medicine, Duke University, Durham, North Carolina

APRIL 28, 1965

Wednesday 8:30 a.m. Murray Hill Suite

INSTRUMENTATION AND TECHNIQUES II

Chairman: Eugene B. Konecci, Ph.D., Washington, D. C.
Co-Chairman: Spurgeon Neel, Colonel, MC, USA, Washington, D. C.

8:30 a.m. RESPIRATION AND HEART RATE PATTERN VALUES COMPUTED FROM IN-FLIGHT DATA
David G. Simons, Neal E. Lof, and Paul Carkin
USAF School of Aerospace Medicine, Brooks AFB, Texas

8:45 a.m. SOME PHYSIOLOGICAL OBSERVATIONS AND MONITORING TECHNICS ASSOCIATED WITH AUTO RACING
Rita M. Rapp, Lawrence F. Dietlein, and John C. Nuttall

9:00 a.m. CORRELATION OF ELECTROCARDIOGRAPH AND RESPIRATION WAVE FORM BY AREA ANALYSIS ON A DIGITAL COMPUTER
V. R. Scott and M. E. Fitzwater
Western Development Laboratories, Philco Corporation, Palo Alto, California

9:15 a.m. DETERMINATION OF INFLIGHT BIOCHEMICAL RESPONSES UTILIZING THE PAROTID FLUID COLLECTION TECHNIQUE
B. W. Warren, B. W. Ware, I. L. Shannon, and S. D. Leverett, Jr.
USAF School of Aerospace Medicine, Brooks AFB, Texas

9:30 a.m. MONITORING BRAIN RESPONSE TO STRESS BY EVOKED RESPONSES
John A. Freeman
USAF School of Aerospace Medicine, Brooks AFB, Texas

APRIL 28, 1965

Wednesday 8:30 a.m. Regent Room

ACCELERATION II

Chairman: Stuart Bondurant, M.D., Indianapolis, Indiana
Co-Chairman: Donald G. Nelson, Air Commodore, RCAF, Ottawa, Canada

8:30 a.m. CONSEQUENCE OF ACCELERATION GRADIENT FOR TOLERANCE TO POSITIVE ACCELERATION (+ Gz)
J. W. Nyberg, R. H. Grimes, and W. J. White
Missile and Space Systems Division, Douglas Aircraft Company, Inc., Santa Monica, Calif.

8:45 a.m. HUMAN TOLERANCE TO Gz 100% GRADIENT SPIN
T. E. Fienne, A. S. Hyde, M. McCally, and G. Potor
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

9:00 a.m. THE EFFECT OF ACCELERATION AND HYPOHYDRATION UPON THE PERIPHERAL BLOOD LEUKOCYTE DISTRIBUTION IN MAN
Charles C. Conley, Patricia A. Cook, and John E. Greenleaf
NASA Ames Research Center, California

9:15 a.m. CARDIOVASCULAR EFFECTS OF ROTATION IN THE Z AXIS
Charles W. Urschel and William B. Hood, Jr.
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

9:30 a.m. THE EFFECTS OF TRANSIENT WEIGHTLESSNESS ON BRIGHTNESS DISCRIMINATION
W. J. White
Missile and Space Systems Division, Douglas Aircraft Company, Inc., Santa Monica, California

9:45 a.m. PHYSICAL CONDITIONING VERSUS + Gz TOLERANCE
Kenneth R. Cooper and Sidney D. Leverett, Jr.
USAF School of Aerospace Medicine, Brooks AFB, Texas
APRIL 28, 1965
Wednesday 8:30 a.m. Beekman Room

BEHAVIORAL SCIENCES II

Chairman: Ralph L. Christy, Captain, MC, USN, Washington, D. C.
Co-Chairman: Walter F. Grether, Ph.D., Wright-Patterson AFB, Ohio

8:30 a.m. A MODEL FOR THE STUDY OF PSYCHOLOGICAL STRESS
Robert J. Wherry Jr.
US Naval School of Aviation Medicine, Pensacola, Florida

8:45 a.m. THE USE OF TWO QUALITATIVE INDICES AS PREDICTORS OF SUCCESS IN FLIGHT TRAINING
Paul R. Jeanneret and Charles W. Hutchins, Jr., US Naval School of Aviation Medicine, Pensacola, Florida.

9:00 a.m. EFFECTS OF MEPROBAMATE AND HYPOXIA ON PSYCHOMOTOR PERFORMANCE
Tulio R. Figarola, Charles E. Billings, and Lester B. Roberts
Department of Preventive Medicine, The Ohio State University, Columbus, Ohio

9:15 a.m. A COMPARISON OF DRUG-INDUCED PERFORMANCE DECREMENTS IN AIRCRAFT AND INSTRUMENT FLIGHT TRAINER
John F. Zieglschmid, Charles E. Billings, and Jack J. Eggelsbuehler
Department of Preventive Medicine, The Ohio State University, Columbus, Ohio

9:30 a.m. A MEASURE OF SUSCEPTIBILITY TO PSYCHOLOGICAL STRESS
Patrick M. Curran and Robert J. Wherry Jr.
US Naval School of Aviation Medicine, Pensacola, Florida

9:45 a.m. HUMAN PERFORMANCE UNDER PROLONGED WORK STRESS
William A. McLaurin and Clayton R. Coler
NASA Ames Research Center, Moffett Field, California

APRIL 28, 1965
Wednesday 10:30 a.m. Sutton Ballroom

CARDIOVASCULAR PROBLEMS IN AEROSPACE MEDICINE

CLOSED CIRCUIT COLOR TELEVISION

MODERATOR Lawrence E. Lamb, M.D., Chief, Clinical Sciences Division, USAF School of Aerospace Medicine, Brooks AFB, Texas

DEMONSTRATOR Robert L. Johnson, Lt. Colonel, USAF, MC, Clinical Sciences Division, USAF School of Aerospace Medicine, Brooks AFB, Texas

Advanced aerospace medical evaluation techniques will be presented. The demonstrations will include a subject instrumented for monitoring during stress testing, ergometer techniques, tilt table procedures, and illustrations of aeromedical monitoring of problem cases in aircraft.

APRIL 28, 1965
Wednesday 10:30 a.m. Murray Hill Suite

INSTRUMENTATION AND TECHNIQUES III

Chairman: Stanley R. Mohler, M.D., Oklahoma City, Oklahoma
Co-Chairman: David G. Simons, Lt. Colonel, USAF, MC, Brooks AFB, Texas

10:30 a.m. FISH ELECTROCARDIOGRAMS AS A TOOL IN DECELERATION RESEARCH
D. W. Bates, R. M. Bullock, J. M. Shelton, and A. V. Zoborowski
9410th Air Reserve Squadron, Vancouver Barracks, Washington, and Aeromedical Research Laboratory, Holloman AFB, New Mexico

10:45 a.m. A NEW MINIATURIZED SEVEN-CHANNEL PERSONAL TELEMETER SYSTEM
Adolf R. Marko
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

11:00 a.m. REPEATED OR CONTINUAL MEASUREMENT OF CARDIAC OUTPUT BY A NEW THERMODILUTION METHOD APPLICABLE TO TELEMETERS DURING SPACE FLIGHT
Hassan H. Khalil
Naval School of Aviation Medicine, Pensacola, Florida

11:15 a.m. A TELEMETER SYSTEM FOR THE ACQUISITION OF CIRCADIAN RHYTHM DATA
C. M. Winget and T. B. Fryer
NASA Ames Research Center, Moffett Field, California

11:30 a.m. PHYSIOLOGICAL DATA ACQUISITION WITHOUT ATTACHED SENSORS
W. A. Schafer
General Dynamics/Astronautics, San Diego, California

11:45 a.m. EXPERIMENTS WITH THE BIOELECTRIC POTENTIALS
J. J. Kon-koff
General Electric Company, King of Prussia, Pennsylvania

APRIL 28, 1965
Wednesday 10:30 a.m. Regent Room

ACCELERATION III—VESTIBULAR

Chairman: Ashton Graybiel, Captain, MC, USN, Pensacola, Florida
Co-Chairman: Harold V. Ellingson, Colonel, USAF, MC, Brooks AFB, Texas

10:30 a.m. THE EFFECT OF WEIGHTLESSNESS UPON THE NORMAL NYSTAGMIC REACTION
Margaret M. Jackson and C. W. Sears
Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

10:45 a.m. DYNAMIC COUNTERROLLING OF THE EYE IN NORMAL AND LABYRINTHINE DEFECTIVE SUBJECTS
Robert S. Kellogg, Ashton Graybiel, and Earl F. Miller, II
Aerospace Medical Research Laboratories,
11:00 a.m. OTOLITH ACTIVITY AS A FUNCTION OF GRAVITATIONAL ACCELERATION FROM ZERO TO ONE G
Earl F. Miller II, Ashton Graybiel, and Robert S. Kellogg
Naval School of Aviation Medicine, Pensacola, Florida, and Aerospace Medical Research Laboratories, Wright-Patterson AFB, Ohio

11:15 a.m. OPTOKINETIC AND VESTIBULAR INFLUENCES UPON THE CONTROL OF COMPENSATORY EYE MOVEMENT DURING HEAD ROTATION IN VARIOUS PLANES
C. Melvill Jones
Aviation Medical Research Unit, McGill University, Montreal, Canada

11:30 a.m. INTERACTION OF LINEAR AND ANGULAR ACCELERATIONS ON VESTIBULAR RECEPTORS
A. J. Benson and M. A. Bodin
RAF Institute of Aviation Medicine, Farnborough, England

11:45 a.m. A THEORETICAL MAN-MACHINE INTERACTION WHICH MIGHT LEAD TO LOSS OF AIRCRAFT CONTROL
J. F. Martin and C. Melvill Jones
Unica Research Company and DRB Aviation Medical Research Unit, McGill University, Montreal, Canada

AUGUST 28, 1965

Wednesday 2:00 p.m. Regent Room

LIFE SUPPORT V

Chairman: Jack Bollerud, Colonel, USAF, MC, Washington, D. C.
Co-Chairman: Don Flickinger, M.D., Washington, D. C.

2:00 p.m. DRINKING WATER SUPPLIES FOR PROJECT GEMINI SPACE FLIGHTS
W. W. Kemmerer
NASA Manned Spacecraft Center, Houston, Texas

2:15 p.m. QUALITY STANDARDS FOR DRINKING WATER IN SPACE TRAVEL
Robert C. Kroner and Herbert E. Stokinger
Division of Water Supply and Pollution Control, U.S. Public Health Service, Cincinnati, Ohio

2:30 p.m. BACTERIOLOGIC POTABILITY OF CONDENSATE WATER FROM HEAT EXCHANGERS OF PRESSURE SUITS
J. E. Moyer and C. H. Ward
USAF School of Aerospace Medicine, Brooks AFB, Texas

2:45 p.m. WATER HANDLING IN THE ABSENCE OF GRAVITY
Martin Macklin
TRW Equipment Laboratories, Cleveland, Ohio

3:00 p.m. WASTE MANAGEMENT SYSTEM FOR AEROSPACE STATIONS
H. Wallman, J. L. Dodson, and D. Rosen
General Dynamics/Electric Boat, Groton, Connecticut

AUGUST 28, 1965

Wednesday 2:00 p.m. Sutton Ballroom

PREVENTIVE MEDICAL TECHNIQUES AS APPLIED TO PILOT PHYSICAL EXAMINATIONS

CLOSED CIRCUIT COLOR TELEVISION

MODERATOR
George A. Kidder, M.D., Medical Director, United Air Lines, Chicago, Illinois

PANEL
John E. Smith, M.D., Director, Cardiovascular Services, United Air Lines, Washington, D.C.
C. Earle Wight, M.D., Medical Director, Canadian Pacific Air Lines, Montreal, Canada

DEMONSTRATORS
Emerson L. Day, M.D., F.A.C.P., Director, Strang Clinic, New York, N.Y.
Henry M. Selby, M.D., New York, N.Y.

In this presentation live subjects will be used to demonstrate the techniques of proctoscopy, the aerosol sputum analysis test for early detection of lung malignancy, and contrast colon radiography. The last thirty minutes of the program will be actual clinical case presentations with panel and audience participation.

AUGUST 28, 1965

Wednesday 2:00 p.m. Murray Hill Suite

SAFETY AND SURVIVAL II

Chairman: Richard L. Bohannon, Major General, USAF, MC, Washington, D.C.
Co-Chairman: Richard E. Luehrs, Captain, MC, USN, Norfolk, Virginia

2:00 p.m. AIR FORCE AIRCRAFT DISASTER INCIDENTS
Anchard F. Zeller
Life Sciences Division, Office of the Inspector General, Norton AFB, California

2:15 p.m. INJURIES DUE TO EXPLOSION, DECOMPRESSION, AND IMPACT ON A BOEING 707
J. Robert Dine and A. Howard Hasbrook
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

2:30 p.m. THE BIOCHEMICAL POST-MORTEM AS AN EMERGENCY IN ACCIDENT INVESTIGATION
W. R. Franks
RCAF Institute of Aviation Medicine, and University of Toronto, Canada

2:45 p.m. DESIGN AND TESTS OF AN INFLATED "AIRCUTTER" FOR TRANSPORT OF THE INJURED
Carl Clark, Carl Blechschmidt, and Fay Gordon
Life Sciences Research, Martin Company, Baltimore, Maryland
APRIL 28, 1965
Wednesday 3:45 p.m. Sutton Ballroom

ENVIRONMENTAL PHYSIOLOGY VII—HYPOGRAVIC SIMULATION

Chairman: Clifford P. Phoebus, Captain, MC, USN, Norfolk, Virginia
Co-Chairman: William M. Helvey, M.D., Sunnyvale, California

3:45 p.m. EFFECTS OF INTRAVASCULAR INSTRUMENTATION ON ORTHOSTATIC TOLERANCE
Paul M. Stevens and Robert L. Johnson
USAF School of Aerospace Medicine, Brooks AFB, Texas

4:00 p.m. COMPARATIVE EFFECTS OF LOWER BODY NEGATIVE PRESSURE AND ORTHOSTASIS ON PERIPHERAL VASCULAR REFLEXES
Charles A. Gilbert, Paul M. Stevens, and Robert L. Johnson
USAF School of Aerospace Medicine, Brooks AFB, Texas

4:15 p.m. THE EFFECT OF LOWER BODY NEGATIVE PRESSURE DURING PROLONGED BED REST ON CIRCULATORY FUNCTIONS IN MAN
P. B. Miller, P. M. Stevens, R. L. Johnson, and L. E. Lamb
USAF School of Aerospace Medicine, Brooks AFB, Texas

4:30 p.m. NEUTRAL BUOYANCY AS A MEANS OF SIMULATING 0-G EFFECTS ON HUMAN PERFORMANCE
John W. Chaffee, Albert F. Emanuel, and James E. Mabry
Aero-Space Division, The Boeing Company, Seattle, Washington

4:45 p.m. ZERO-BUOYANCY: SIMULATION OF WEIGHTLESSNESS TO EVALUATE THE PSYCHO-PHYSIOLOGICAL AND ANTHROPOMETRIC PARAMETERS THAT AFFECT SPACE STATION DESIGN
Carl R. Adams and George K. Bulk
Research and Development, Douglas Aircraft Co., Inc., Santa Monica, California

APRIL 28, 1965
Wednesday 3:45 p.m. Murray Hill Suite

CLINICAL AVIATION MEDICINE II

Chairman: Charles C. Gullett, M.D., Kansas City, Missouri
Co-Chairman: George B. McNeely, M.D., Bloomington, Illinois

3:45 p.m. THE EVALUATION OF VISUAL FUNCTION IN TERMS OF SIMPLE OBJECTIVE EYE TESTS
Emanuel Krimsky
Brooklyn, New York

4:00 p.m. A NEW APPROACH TO DYSBARISM: SUCCESSFUL THERAPY WITHOUT RECOMPRESSION
A. T. K. Cockett and R. M. Nakamura
Harbor General Hospital, Torrance, California, and UCLA School of Medicine, Los Angeles, California

4:15 p.m. GLAUCOMA IN FLYING PERSONNEL
William B. Clark, Jed L. Howard, and James F. Culver
USAF School of Aerospace Medicine, Brooks AFB, Texas

4:30 p.m. THE EFFECT OF TEMPORARY HEARING LOSS ON USAF BAND MEMBER
Paul R. Hanson
821st Medical Group, Ellsworth AFB, South Dakota

4:45 p.m. A PRELIMINARY REPORT OF A WIDE RANGE VECTORCARDIOGRAM
George F. Humbert Jr., and Clifford C. Phipps
U.S. Naval Missile Center, Point Mugu, California

APRIL 28, 1965
Wednesday 3:45 p.m. Regent Room

ACCELERATION IV—VESTIBULAR EFFECTS

Chairman: Carl C. Clark, Ph.D., Baltimore, Maryland

3:45 p.m. VESTIBULAR STUDIES OF FIGURE SKATERS
William E. Collins
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

4:00 p.m. SYMPTOMATOLOGY UNDER STORM CONDITIONS IN THE NORTH ATLANTIC IN CONTROL SUBJECTS AND IN PERSONS WITH BILATERAL LABYRINTHINE DEFECTS
R. S. Kennedy, R. C. McDonough, F. D. Beckwith, and A. Graybiel
Naval School of Aviation Medicine, Pensacola, Florida

4:15 p.m. EFFECT OF HEAD MOVEMENTS IN VARIOUS PLANES ON PERFORMANCE DURING ROTATION
B. D. Newsom, J. F. Brady, and J. M. Lagerwerff
Aerospace Medicine, General Dynamics/Astronautics, San Diego, California

4:30 p.m. COMPARATIVE EFFECTS OF PROLONGED ROTATION AT 10 RPM IN THE CORIOLIS ACCELERATION PLATFORM ON THE POSTURAL EQUILIBRIUM FUNCTIONING OF VESTIBULAR NORMAL AND VESTIBULAR DEFECTIVE HUMAN SUBJECTS
Alfred R. Fregly and Robert S. Kennedy
Naval School of Aviation Medicine, Pensacola, Florida

4:45 p.m. ADAPTATION TO PROLONGED EXPOSURES IN THE REVOLVING SPACE STATION SIMULATOR
J. F. Brady, B. D. Newsom, W. A. Shafer, R. S. French, and J. L. Piatt
Aerospace Medicine, General Dynamics/Astronautics, San Diego, California

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Thursday 8:30 a.m. Sutton Ballroom

CLINICAL AVIATION MEDICINE III

Joint Session of the Flying Physicians and Aerospace Medical Associations

Chairman: John R. Finlay, M.D., Greenwich, Connecticut
Co-Chairman: Neal E. Baxter, M.D., Bloomington, Indiana

8:30 a.m. RESPONSE TO CARBOHYDRATE LOADING AS A CRITERION IN COMMERCIAL PILOT SELECTION
G. F. Catlett and G. J. Kidera
United Air Lines Medical Department, Chicago, Illinois

8:45 a.m. THE COMPULSIVE FLYER
Roger F. Reinhardt
Naval School of Aviation Medicine, Pensacola, Florida

9:00 a.m. FIRST DEGREE A-V BLOCK—ANATOMY AND PHYSIOLOGY AS ILLUSTRATED BY A 20-YEAR FOLLOW-UP
Alan R. Bures
USAF School of Aerospace Medicine, Brooks AFB, Texas

9:15 a.m. ALCOHOL EFFECTS AT GROUND AND ALTITUDE: IMMEDIATE AND DELAYED EFFECTS UPON A SERIAL SELF PACED COORDINATION AND LOGIC TASK
William F. O'Connor and Robert Rosenstein
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

9:30 a.m. IN-FLIGHT RESPONSE TO A NEW NON-GYROSCOPIC ANTIVERTIGO BLIND FLIGHT INSTRUMENT
Stanley R. Mohler and A. Howard Hasbrook
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

9:45 a.m. TASK INTERRUPTION AND PERFORMANCE DECREMENT FOLLOWING RAPID DECOMPRESSION
George E. Pendergrass and William F. O'Connor
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

10:30 a.m. METEOROLOGIC FACTORS IN THE FALLOUT OF POLLENS AND MOLDS
Herman A. Heise
Milwaukee, Wisconsin

10:45 a.m. DISTANT VISUAL ACUITY AND CIVIL AEROMEDICAL STANDARDS
Robert C. Wick, Jr.
The Garrett Corporation, Los Angeles, California

11:00 a.m. THE RELATIONSHIP BETWEEN BODY LIPIDS AND PHYSICAL CONDITIONING
Stanley R. Shane
USAF School of Aerospace Medicine, Brooks AFB, Texas

11:15 a.m. EFFECTS OF TWENTY YEARS OF FLYING UPON THE HEARING OF NAVAL AVIATORS
Vernon C. Bragg
Naval School of Aviation Medicine, Pensacola, Florida

11:30 a.m. PULMONARY MECHANICS AT ALTITUDE IN NORMAL SUBJECTS AND OBSTRUCTIVE LUNG DISEASE PATIENTS
Silvio Finkelstein, Frederich H. Shillito, and Joseph F. Tomaszewski
Department of Preventive Medicine, The Ohio State University, Columbus, Ohio

AEROSPACE MEDICINE • January 1965

BEHAVIORAL SCIENCES III

Chairman: Ross A. McFarland, Ph.D., Boston, Massachusetts
Co-Chairman: Don E. Flinn, Colonel, USAF, MC, Washington, D.C.

8:30 a.m. TASK INTERRUPTION AND PERFORMANCE DECREMENT FOLLOWING RAPID DECOMPRESSION
George E. Pendergrass and William F. O'Connor
Civil Aeromedical Research Institute, FAA, Oklahoma City, Oklahoma

8:45 a.m. THE ANALYSIS OF QUALITATIVE DATA IN THE BIOLOGICAL SCIENCES
Norman E. Lane
Naval School of Aviation Medicine, Pensacola, Florida

9:00 a.m. THE RELATIONSHIP BETWEEN PAST HISTORY OF MOTION SICKNESS AND ATTENTION FROMaktiv Training
Charles W. Hutchins Jr., and Robert S. Kennedy
Naval School of Aviation Medicine, Pensacola, Florida

10:30 a.m. COMPARATIVE PHYSICAL PERFORMANCE OF NAVAL AVIATOR TRAINEES FROM VARIOUS PROCUREMENT SOURCES
James R. Berkshire
Naval School of Aviation Medicine, Pensacola, Florida

10:45 a.m. VOLUNTARY WITHDRAWAL FROM PRIMARY FLIGHT TRAINING AS A FUNCTION OF THE INDIVIDUAL FLIGHT INSTRUCTOR
Richard S. Pemmarilli and Rosalie Ambler
Naval School of Aviation Medicine, Pensacola, Florida

11:00 a.m. PROBLEMS IN AIR TRAFFIC MANAGEMENT: VII. JOB AND TRAINING PERFORMANCE OF AIR TRAFFIC CONTROL SPECIALISTS—MEASUREMENT, STRUCTURE, AND PREDICTION
David K. Trites, Clinton E. Miller, and Bart B. Cobb
Office of Aviation Medicine, FAA, and Biostatistical Unit, University of Oklahoma Medical Center, Oklahoma City, Oklahoma