

JAMES M. ESTABROOK
EDWARD H. MAHLA
JOHN C. MOORE
MACDONALD DEMING
GORDON W. PAULSEN
M. E. D'ORCHIS
DAVID P. H. WATSON
RICHARD G. ASHWORTH
EDWARD L. JOHNSON
RICHARD B. BARNETT
MAURICE L. NOYER
SANFORD C. MILLER
FRANCIS X. BYRN
THOMAS R. H. HOWARTH
STEPHEN K. CARR
WALTER E. RUTHERFORD
R. GLENN BAUER
THEODORE M. SYSOL
CARROLL E. DUBUC
THOMAS F. MOLANPHY
LENNARD K. RAMBUSCH
JAMES J. SENTNER, JR.
RANDAL R. CRAFT, JR.
WILLIAM J. HONAN III
CHESTER D. HOOPER
EMIL A. KRATOVIL, JR.
JOHN J. REILLY
BARTON T. JONES
RICHARD D. BELFORD
BRIAN D. STARER
ROBERT B. HASEROT
JOHN K. WEIR
JUAN A. ANDUIZA
DONALD J. KENNEDY
RICHARD L. JARASHOW
WILLIAM F. PAN

HAIGHT, GARDNER, POOR & HAVENS
FEDERAL BAR BUILDING
1819 H STREET, N.W.
WASHINGTON, D. C. 20006

CABLE: MOTOR WASHINGTON

WU: TELEX 892598

TELEPHONE (202) 737-7847

August 18, 1981

BERNARD D. ATWOOD
SPECIAL PARTNER

J. WARD O'NEILL
COUNSEL

NEW YORK OFFICE
ONE STATE STREET PLAZA
NEW YORK, N.Y. 10004
TEL. (212) 344-6800
CABLE: MOTOR NEW YORK
RCA TELEX: 222974
WU: TELEX: 620362
ITT TELEX: 424674
WU TELEX: 127683

PARIS AFFILIATE
FRANCOIS LEGREZ
34, AVENUE GEORGE V
75008 PARIS, FRANCE
TELEPHONE 720-8202
CABLE: MOTOR PARIS
TELEX: 640669

CARROLL E. DUBUC*
RESIDENT PARTNER WASHINGTON

RALPH E. CASEY*
JOHN W. MCCONNELL, JR.*
OF COUNSEL WASHINGTON

*ADMITTED TO D.C. BAR

James Turnbow

FFAC v. LOCKHEED AIRCRAFT CORPORATION
Our file 2041-1278-2S

Dear Dr. Turnbow:

We enclose a list of addresses and telephone numbers and copies of the curriculum vitae of the expert attendees at the conference on Saturday, August 15, 1981, as well as a seating chart for ease of reference.

Best regards.

Very truly yours,

HAIGHT, GARDNER, POOR & HAVENS

By


John J. Connors

/dh

| | | | |
|-------------------|------------------|--------------------|--------------------------|
| Harold Stevens | Edwin Kessler | Anne Wake Davis | Phyllis Schottenstein |
|-------------------|------------------|--------------------|--------------------------|

| | | | | | | | |
|---------------------|---------------------|--------------------|---------------------------|-------------------------|------------------|----------------------|------------------|
| Thomas Boll | Harry L. Gibbons | Jared Dunn | Paul Wender | James Turnbow | John Edwards | Government Artist | Major Jones |
| David Lachar | | | | | | | |
| Carroll Dubuc | | | | | | | |
| Mary Grad | | | | | | | |
| Harrison Pledger | | | | | | | |
| James P. Piper | | | | | | | |
| Robert McMeekin | Andrew Horne | Edward Sheridan | Annapurni Jayam-Trouth | Christian Lambertsen | Charles Berry | James Gaume | Anita Solomon |

Charles Berry, M.D.
2537 South Gessner
Suite 238
Houston, TX 77063
(713) 978-7755


Dr. Thomas Boll
University of Health Sciences
Department of Psychology
The Chicago Medical School
Bldg. 50
North Chicago, IL 60064
(312) 473-9200

Anne W. Davis, Ph.D.
The Kingsbury Center
2138 Bancroft Place, NW
Washington, DC 20008
(Ans. Service): 652-0204
(Kingsbury Center): 232-5878
Psychology

Jared Dunn, M.D.
Hyperbaric Medicine, P.A.
Methodist Plaza
4499 Medical Drive
San Antonio, TX 78229
(512) 696-7293
H -

John Edwards
Lockheed-Georgia Company
63 South Cobb Drive
Marietta, GA 30063
W - (404) 424-4004

James Gaume, M.D.
1517 Espinosa Circle
Palos Verdes Estates, CA 90274
H -
W - (213) 593-4425, -4746



Harry L. Gibbons, M.D.
Department of Health
610 South 200 East
Salt Lake City, UT 84111
W - (801) 532-2002
W - night & weekends
 (801) 277-5128
H -

Page -

Andrew Horne, M.D.
Federal Aviation Administration
Office of Aviation Medicine
Accident Investigation - 3rd Floor
800 Independence Avenue, SW
Washington, DC 20591
(202) 426-3427

Annapurni Jayam-Trouth, M.D.
Department of Neurology
Howard University Hospital
Room 5B36
2401 Georgia Avenue, NW
Washington, DC 20060
W - (202) 745-1546
Child Neurology

Edwin Kessler, M.D.
5415 Connecticut Avenue, NW
Washington, DC 20015
H/W -

H -

Child Psychiatry

David Lachar, M.D.
Lafayette Clinic
951 E. Lafayette, Detroit
Detroit, Michigan
DIRECT - (313) 256-9505
CLINIC - (313) 256-9350
H -

Paul H. Wender, M.D.
Professor of Psychiatry
Mailman Research Center
McLean Hospital
Belmont, Mass. 02178
(801) 581-8075

or Emma Pendleton Bradley Hospital
Providence, Rhode Island

CURRICULUM VITAE

CHARLES A. BERRY M.D., M.P.H.

Social Security #

OFFICE ADDRESS: President
National Foundation for Prevention of Disease
2537 South Gessner, Suite 238
Houston, Texas 77063
Telephone: 713/978-7755

RESIDENCE
ADDRESS:

BIRTHPLACE
AND DATE: Rogers, Arkansas
September 17, 1923

MARITAL STATUS: Married to the former Addella (Del) Nance
from Thermal, California, born May 19, 1923

CHILDREN: Son - Michael A., born June 2, 1946 (Wife: Mary
Frances, 1 daughter born April 30, 1978)

Daughter - Charlene A., born May 22, 1949 (Mrs.
David Forester, 1 daughter born May 3, 1974;
1 son born June 24, 1978)

Daughter - Janice A., born January 19, 1951 (Mrs.
Jay Dudley, 1 son born May 3, 1976; 1 son born
January 3, 1978)

EDUCATION:

1941 - 1945 University of California B.A. 1945
Berkeley, California

1944 - 1947 University of California Medical M.D. 1947
School, San Francisco, California

1947 - 1948 Rotating Intern of the University
of California Service, City and
County Hospital, San Francisco,
California

1951 - 1952 Aviation Medicine Residency Training
Program, USAF School of Aerospace
Medicine, Randolph AFB, Texas

1955 - 1956 Harvard School of Public Health M.P.H. 1956
Boston, Massachusetts (cum laude)
(also an aerospace medicine residency, year)

CURRICULUM VITAE

CHARLES A. BERRY, M.D., M.P.H.

PAGE 2

MEDICAL SPECIALTY CERTIFICATION:

American Board Preventive Medicine
Aerospace Medicine June 27, 1957
Certificate Number 816

LICENSED TO PRACTICE MEDICINE:

California; Oct. 6 1947 #A12306
Texas; December 6, 1963 #D1289

FEDERAL AVIATION ADMINISTRATION MEDICAL EXAMINER (AME):

Class I, II and III exams.
Certificate #15917-8
Since 1962

Senior Aviation Medical Examiner (ATR)

CERTIFIED INSTRUCTOR CARDIO PULMONARY RESUSCITATION - AMERICAN
HEART ASSOCIATION

1979 - present.

PROFESSIONAL EXPERIENCE:

| | |
|--------------|--|
| July 1947 - | <u>Rotating Intern of the University of</u> |
| July 1948 | <u>California Service, City and County</u> |
| | <u>Hospital, San Francisco, California</u> |
| June 1948 - | <u>Self-employed Physician, Indio and</u> |
| July 1951 | <u>Coachella, California</u> |
| | General Practice |
| July 1951 - | <u>USAF, Hamilton AFB, California</u> |
| Sept. 1951 | Chief of Internal Medicine and also worked in Flight Surgeon's office |
| Sept. 1951 - | <u>Aviation Medicine Residency Training</u> |
| Aug. 1952 | <u>Program, USAF School of Aerospace</u> |
| | <u>Medicine, Randolph AFB, Texas</u> |
| Aug. 1952 - | <u>Base Flight Surgeon and Deputy Command</u> |
| July 1955 | <u>Surgeon, Caribbean Air Command, Albright</u> |
| | <u>Air Force Base, Canal Zone.</u> |
| | Responsible for medical care and annual flight physicals all USAF and Army air crews in Caribbean area. Established Physiological Training Center and trained U.S. & Latin American aircrews. Provided medical care for air missions in countries of Central and South America and helped these countries develop aeromedical programs. Served as surgeon on numerous air Rescue operations (See book "Rescue" by Elliott Arnold, Publ. Duell, Sloan, & Pierce.) |

PROFESSIONAL EXPERIENCE CONT.:

July 1955 - Completion of final year of Aviation Medicine
June 1956 Residency Training Program as student (USAF),
 Harvard School of Public Health, Boston,
 Massachusetts. Master of Public Health courses
 included regular and special courses in
 Epidemiology, Toxicology, Biostatistics,
 Microbiology, occupational medicine, automobile
 and aviation health and safety and human
 engineering.
 Thesis: Epidemiology of Dysbarism.

June 1956 - USAF School of Aerospace Medicine, Randolph AFB,
June 1959 Texas. In July 1956, he was assigned as
 Assistant Chief of the Department of Aviation
 Medicine and in July 1958, he became Chief of
 the Department. Administered Department
 personnel and activities. Responsible for
 teaching aerospace medicine to primary and
 advanced physicians. Developed clinical
 consultation service to which USAF aircrew
 were referred with medical questions concerning
 flight status. Reviewed and recommended
 changes in USAF Physical Standards and developed
 special mission and space flight physical
 standards. Conducted clinical and aerospace
 medical research. During this period, he
 participated in the selection of the original
 seven astronauts.

June 1959 - Technical advisor for "Man Into Space" TV series,
Sept. 1959 ZIV Studio, Hollywood, California.

Sept. 1959 - Chief of Flight Medicine, USAF Surgeon General's
July 1962 Office, Washington, D.C. Responsible for
 aircrew effectiveness program for all USAF,
 teaching crew awareness of flight hazards,
 preventive medicine programs, clearance to fly
 for problem cases, etc. In September 1959, he
 was selected as an Aeromedical Monitor for
 Project Mercury flight operations. Served as
 prime monitor at the Canary Island and Bermuda
 sites and also trained other medical monitors
 at these sites. On June 17, 1960, he was
 qualified for duty as A "Space Surgeon."

PROFESSIONAL EXPERIENCE CONT.:

July 1962 - Chief Medical Operations office, NASA Manned
May 1966 Spacecraft Center, Houston, Texas.
 (LT. Col. USAF, MC on loan to NASA July 1962 -
 July 1963. Lt. Col. USAF, MC Reserve to present.)
 Responsible for developing and conducting
 astronaut selection programs, providing
 medical care to astronauts and families,
 medical monitoring of space missions, occupational
 medicine support for all of center, obtain data
 on man's capability to perform in space and
 make the key medical decisions concerning the
 safety of man in flight and for the next step
 into space.

May 1966 - Director of Medical Research and Operations
Sept. 1971 NASA Manned Spacecraft Center, Houston, Texas.
 Responsible for managing 300 - 350 civil
 service and support contractor personnel
 (60 - 70% professionals) and a budget of
 30 million dollars (research, space experiments,
 occupational medicine, etc.). Responsible
 for planning, implementing and evaluating the
 total medical effort of the Center, for being
 medical spokesman and insuring coordinated
 medical support for current and future flight
 missions. During manned missions also served
 as Director Medical Operations (the Chief
 Medical Flight Controller). During this
 period, responsible for developing a lunar
 quarantine program to meet national requirement
 to protect earth's biosphere from possible
 lunar organisms and develop medical support for
 accomplishing first lunar landing.

Sept. 1971 - Director for Life Sciences
April 1974 Headquarters, National Aeronautics and Space
 Administration, Washington, D.C.
 Responsible for management of development and
 conduct of all Life Science programs from search
 for extraterrestrial life to manned spaceflight
 at all NASA's Centers. Overall responsibility
 for bringing together and managing all biomedical
 research, bioenvironmental systems, aeronautical
 life sciences, bioengineering, planetary
 biology and quarantine programs, ecological
 applications, medical health care delivery and
 medical engineering applications and occupational
 medicine. Responsible for management of a

PROFESSIONAL EXPERIENCE CONT.:

Sept. 1971 - April 1974 Headquarters staff of 40, support of some 600 personnel at the Life Science Centers and a HQ budget of 40.5 million. Responsible for budget presentation to Congressional committees and for life science interface with National Academy of Sciences, all levels of government agencies, and the public foreign and domestic. Chairman U.S. - U.S.S.R. joint working group on Space Biology and Medicine 1971 - 1974 starting first exchange space medicine data. The positions from 1962 through 1974 gave pioneering experience in making key decisions and prognostications allowing man to take the next longer and more difficult steps into the cosmos. They provided a wealth of experience with 3 of our nation's president's, heads of many foreign governments, lessons in international diplomacy, travel in many countries and wide exposure to international scientists and scientific groups as speaker as well as national and international press, T.V., radio, speeches and conferences.

April 1974 - Feb. 1977 President, The University of Texas Health Science Center at Houston. Newly created position (1st President) reporting to Chancellor and Regents. Created to bring under supervision of one administrator all the health oriented schools and services of the University of Texas in Houston. Responsible for managing as a "Health University" schools of medicine, dentistry, public health, nursing, graduate biomedical sciences, allied health sciences, a speech and hearing institute, a continuing education division and relationships with a primary and two secondary teaching hospitals. Responsible for some 1400 faculty and administration personnel, 3000 students, an operating budget of 50.4 million and a physical plant investment of 90.25 million. (Built medical school, school of public health and modifications to other schools during tenure). Significant administrative problem experience included development of new medical school, transition of private hospital to University teaching hospital,

CURRICULUM VITAE

CHARLES A. BERRY, M.D., M.P.H.

PAGE 6

PROFESSIONAL EXPERIENCE CONT.:

- April 1974 - reaccreditation of schools, starting allied
Feb. 1977 health school, assimilating a nursing school,
combining individual school services to central
services for better functions and economy,
and relationships with health community and
state legislature.
- Feb. 1977 - Special Assistant to Deputy Chancellor,
Sept. 1977 University of Texas System. Assistance and
consultation on health school matters.
- July 1977 - Medical Director, The Houstonian Foundation
July 1978 and Chairman, Houstonian Preventive Medicine
Center, Houston, Texas.
Plan development of preventive medicine center
using space medicine experience to include
detailed physical examinations and reports to
patients, dietary and physical fitness
prescriptions, health education, behavioral
modification and research activities. Examined
patients for above evaluations and for FAA
certification to fly. Responsible for medical
relationships and many preventive medicine
speeches.
- Sept. 1977 - Channel 2 "House Physician" KPRC - TV
Present Houston, Texas
Responsible for selecting topic and preparation
of material and tape or live presentation of
3 - 5 minute medical segment on news program
3 nights per week. Supported by Harris County
Medical Society. Response has been tremendous
to "down to earth" straight, friendly medical
information. Ratings excellent.
- July 1978 - Founder and President, The National Foundation
Present for Prevention of Disease.
National and International Consultant Preventive
and Aerospace Medicine.
The Foundation's goal is to create awareness by
the public and health professionals of disease
prevention strategies by a variety of means,
stimulate research in prevention and help
develop demonstration prevention projects.
Consultation on all facets of preventive and
aerospace medicine such as disease prevention
and health promotion programs, develop-
ment preventive medicine centers,

PROFESSIONAL EXPERIENCE CONT.:

July 1978 - application of space medicine to health care
Present delivery problems, fitness for flight, etc.
National and international speaker on disease
prevention topics, space medicine, space
benefits and combinations of these.
Currently average 30 - 40 speeches per year.

SPECIAL HONORS: The American Campaign Medal; World War II
(MILITARY) Victory Medal; National Defense Service Medal;
Navy Good Conduct Ribbon, USAF Commendation
Ribbon; Wings of the Nicaraguan Air Force;
Commendation for Contributions to Republic
of Korea Air Force, October 1979.

AWARDS: 1961 - Arnold D. Tuttle Award of the Aerospace
Medical Association for original research
toward solving a challenging problem in
Aerospace Medicine.

February 9, 1962 - USAF Certificate of
Achievement by The Surgeon General in
recognition of outstanding qualifications in
Aerospace Medicine.

February 20, 1962 - Certificate Team Member
launch of 1st U.S. manned orbital flight.

1962 - Special Aerospace Medicine Honor
Citation from the American Medical Association
for "Outstanding service to the citizens of
the USA in the successful orbital flights of
its astronauts."

1963 - John J. Montgomery Award of the Society
of Aerospace Professionals for "His role in
Project Mercury."

September, 1965 - NASA Exceptional Service Medal
presented by President Johnson at the White
House "For his outstanding contributions to
space medicine through his direction of and
personal participation in the medical planning
and control of the Gemini manned space flights
which have greatly extended our knowledge of
man's capability in space."

AWARDS CONT.:

April 6, 1966 - Hoyt S. Vandenberg Trophy of the Arnold Air Society for "His great skill and leadership as Medical Director of the manned Gemini orbital flights markedly advancing the progress of aerospace medicine and for his outstanding scientific contributions to aerospace development in the field of science."

April 21, 1966 - The Louis H. Bauer Founders Award of the Aerospace Medical Association for the most significant contribution to space medicine.

May 1966 - The Melbourne W. Boynton Award of the American Astronautical Society for "Outstanding contributions to the advancement of astronautics through medical research."

June 23, 1966 - First Annual Round Table Award of the Raritan Valley Hospital, New Jersey, for "Outstanding contributions to medicine in the field of space."

June 26, 1966 - Gold Medal of the American College of Chest Physicians for "Outstanding contributions to the investigation of diseases of the chest."

September 26, 1966 - Gold Medal of the Czechoslovakian Academy at Prague for "Outstanding medical contributions to manned space flight."

October, 1966 - The John Jeffries Award by the American Institute of Aeronautics and Astronautics "For exceptionally outstanding contribution to the medical support of manned space flight."

April, 1967 - The Hubertus Strughold Award by the Space Medicine Branch, Aerospace Medical Association for "Dedication to the advancement of the science and art of space medicine and distinguished contributions to manned space flight."

March, 1968 - Richard Hopper Day Memorial Medal presented by the Academy of Natural Sciences, Philadelphia, Pennsylvania. For "His pioneering work in the vertical frontier of space."

AWARDS CONT.:

October, 1968 - Group Achievement Award, Manned Spacecraft Center for Apollo 7 Operations Team.

July 13, 1969 - The American Medical Association presented a citation to Charles A. Berry, M.D., and The Medical Staff of the Manned Spacecraft Center, National Aeronautics and Space Administration, Houston, Texas, "In recognition of their efforts in solving the difficult and complex problems of assuring the health and contributing substantially to the safety and survival of astronauts participating in the United States space exploration program."

July, 1969 - Group Achievement Award Manned Spacecraft Center for 1st Lunar Landing.

July, 1969 - Certificate Manned Spacecraft Center for service as Director Medical Operations 1st Lunar landing.

July, 1969 - Group Achievement Award, Manned Spacecraft Center, to Medical Research and Operations Directorate for 1st Lunar landing.

July, 1969 - NASA Apollo Achievement Award, for 1st Lunar landing.

October 2, 1969 - Premio Missione del Medico (Physician Mission Award) presented by the Carlo Erba Foundation of Milan, Italy.

"He has given astronauts physical and psychic security and provided through space flights basic knowledge useful in the diagnosis and care of patients."

October 3, 1969 - Gold Medal of Istituto Giannina Gaslini, Genoa, Italy, from Germana Gaslini to Charles A. Berry, M.D., for "He has ferreted out of space new elements for human health and happiness."

October 3, 1969 - Silver Medal (Grifon) of city of Genoa, Italy "In recognition of another explorer - a medical one."

AWARDS CONT.:

October 3, 1969 - Silver Medal for Distinguished Service of the Ministry of Health and Welfare. Presented by Ministry of Health and Welfare of Portugal for "His outstanding contributions to successful manned spaceflight, efforts to translate this knowledge to terrestrial and personal efforts toward increased understanding among peoples of the world."

October 10, 1969 - The Daniel and Florence Guggenheim International Astronautics Award by the International Academy of Astronautics meeting at Mar del Plata, Argentina. "To an individual who has made an outstanding contribution to space research and exploration through work done during the preceding five years."

October 16, 1969 - NASA Exceptional Scientific Achievement Medal. "For his significant contributions to the scientific determination of man's capabilities and limitations in the hostile environment of space. His leadership and personal efforts in the field of Aerospace Medicine were key factors in the success of the first manned lunar landing."

January 24, 1970 - Award for Space Medicine of Mennonite Hospital (50th anniversary award) and Citizens of Bloomington - Normal, Illinois for "Outstanding contributions to space medicine through his direction of and personal participation in, the medical planning and control of the manned space flights which have greatly extended our knowledge of man's capabilities in space."

April 18, 1970 - Presidential Medal of Freedom Award for member Apollo 13 Mission operations team.

April 22, 1970 - American College of Surgeons Annual Award for Extraordinary Performance in the Medical Service of Mankind. The presentation was "In grateful recognition of his outstanding contributions to the new frontiers of Aerospace Medicine."

AWARDS CONT.:

May 2, 1970 - Distinguished Citizen Award from Nebraska Wesleyan University for "His contributions to the U.S. space program and our nation's future."

December, 1971 - Group Achievement for member Lunar Quarantine Operations Team.

April 4, 1973 - The NASA Distinguished Service Medal, "For his outstanding services as NASA Director for Life Sciences, personal physician to the astronauts, and manager of the medical research and technology program. His scientific learning, medical skill, leadership, and devotion to the needs of this nation's man-in-space program were essential factors in the success of the Mercury, Gemini, and Apollo programs and their contributions to medical knowledge."

June, 1974 - Hermann Oberth Award presented at 23rd Space Congress, Salzburg, Austria for "His excellent work in space medicine, his outstanding efforts in the realization of manned flight to the moon, his pioneering work in preparing man for longer duration flight through the Skylab missions and his efforts to transfer benefits of space flight to earth medicine."

September, 1974 - Commander Order of the Cedars Award from the President of Lebanon at Beirut for "His outstanding contributions to the benefit of mankind and our future through his leadership in the medical support of the conquest of space, his application of this knowledge for humanity and his efforts toward understanding between the world's people."

1974 - Honorary Fellow by American Society Clinical Cardiologists, for "His outstanding contributions to cardiology in space."

July 22, 1979 - The Sheen Award of the American Medical Association for "His pioneering in the field of manned spaceflight, his preeminent scientific leadership in the advancement of

AWARDS CONT.:

July 22, 1979 - space medicine during the first decade of spaceflight and his research proving his belief that man can adapt to extremely long periods of space flight and perform meaningful work in space making its further exploration possible."

1979 - Nominated for the Nobel Prize in Medicine/Physiology for "His pioneering efforts and discoveries concerning man's capability to adapt to the space flight environment and readapt to earth's gravity after prolonged stays in space. The magnitude and future implications of Dr. Berry's research on men in space has had a decided impact on the practice of medicine. His work has enlarged our understanding of the limits and capabilities of the human body and has given us new methodologies in the prevention of disease."

PROFESSIONAL AND HONORARY SOCIETY AFFILIATIONS

National Affiliations:

Member of:

The American Medical Association (AMA)
1948 - Present
(AMA Committee on Aerospace Medicine, member 1969 - 1972, Chairman 1972.
Alternate Preventive Medicine Residency Review Committee 1979 - Present).

The Aerospace Medical Association (ASMA)
1951 - Present
(President 1969 - 1970,
On Executive Council, International activities, nominating and other committees over 20 years.
Chairman, The Fellows Group 1978 - Present).

The Space Medicine Branch (ASMA) 1956 - Present
(President 1965 - 1966).

American College of Preventive Medicine
1956 - Present
(President 1972 - 1973, Vice President for Aerospace Medicine 1970 - 1971).

PROFESSIONAL AND HONORARY SOCIETY AFFILIATIONS CONT.:

National Affiliations:

Member of:

(President 1966 - 1967, Vice President 1965 - 1966).

(Senior Advisory Council 1975 - Present).

The American Public Health Association 1958 to Present

Astronautics 1959 - Present

American Platform Association 1972 - Present

(Founder)

(Charter - Life)

Nutrition Today Society 1974 - Present

Nu Sigma Nu (Medical fraternity) 1944 - Present

1975 - Present

organization) 1956 - Present

Honorary Member of:

of Southern California, Los Angeles, California.

(California)

(California)

Fellow of:

The Aerospace Medical Association
The American College of Preventive Medicine
The American Astronautical Society, Inc.
The American College of Chest Physicians
The American Society of Clinical Cardiologists

Local Affiliations:

Harris County Medical Society, Houston, Texas.
(Public Service and Communications Board
1978 - 1980. Smoking Cessation Committee
1978 - 1979. Citizens Concerned about
America's Health Care Committee 1978 -
1979. Continuing Education Committee
1975 - 1978. Medical Precepts Committee
1980 - Present. Townhall Committee
1979 - Present).

Texas Medical Association
Arrangements Committee - Visiting Speakers
1980.

Chamber of Commerce - Houston.
(Health Committee 1978 - Present).

San Jacinto Lung Association
(Harris County Chairman 1979 - 1980).

International Affiliations:

International Astronautical Federation (IAF)
(Bioastronautics, Awards and Fellowship
Committees).

The International Academy of Astronautics -
Full Member.
(Orbiting International Laboratory committee
1970 - 1974).

The International Academy of Aviation and Space
Medicine
(President 1973 - 1975, Vice President 1971 -
1973).

International Affiliations Cont.:

Civil Aviation Medical Association International

Pan American Medical Association
(Diplomate Member, Section on Preventive
Medicine, Past Chairman, Section on Space
Medicine and Biology).

Joint U.S./U.S.S.R. Working Group on Space
Biology and Medicine
(1st Chairman June 1971 - 1975).

Deutsche Gesellschaft Fur Luft and Raumfahrt
(Elected corresponding member September 17,
1974 - Present).

Honorary Member of:

Australian Medical Society

Argentina Medical Society 1971

Association Ibero-Latino-Americana Psiquiatria
(Extraordinary member) June 1975.

Brazilian Academy of Military Medicine

Korean Medical Association (#168) October 4, 1979

ACADEMIC APPOINTMENTS:

Visiting Lecturer in Aerospace Medicine, Harvard
School of Public Health, Boston, Massachusetts,
1961 - 1970.

Professor and Chairman, Department of Aerospace
Medicine, The University of Texas Medical
Branch, Galveston, Texas, 1966 - 1970.

Clinical Associate Professor, Department of
Preventive Medicine, The Ohio State University,
Colombus, Ohio, 1965 - 1970.

Professor of Aerospace Medicine, The University
of Texas School of Public Health, Houston, Texas,
1974 - 1977

ACADEMIC APPOINTMENTS CONT.:

Professor of Preventive Medicine, Department of
Community Medicine, The University of Texas
Medical School at Houston, Texas, 1974 - 1977

Professor of Aerospace Medicine, Department of
Community Medicine, Wright State University,
School of Medicine, Dayton, Ohio, 1980 - Present.

EDITORIAL BOARDS:

Aerospace Medicine (The Journal of the Aerospace
Medical Association).

Space Life Sciences (International Journal of
Space Biology and Medicine).

Journal of the American Medical Association

(All above for several years during 1960 - 1977).

U.S. - U.S.S.R. Joint Editorial Board for
"Foundations of Space Biology and Medicine"
1971 - 1976.

BOARD OF DIRECTORS:

Smith-Kline Corporation, Philadelphia, Pennsylvania
1974 - Present.
(Compensation Committee).

Nassau Bay National Bank, Houston, Texas.
1965 - Present.
(Loan Committee).

United Savings Association, Houston, Texas.
1975 - Present.

The Blood Center, Houston, Texas, 1976 - Present.

American Heart Association, Houston Affiliate
1978 - Present.
(Program Committee, 1978 - 1979).
(Professional Education Committee, 1979 - Present)
(Education Committee Texas Heart Association,
1978 - Present).

BOARD OF DIRECTORS CONT.:

Joslin Diabetes Foundation, Inc., Boston,
Massachusetts, 1975 - Present.

San Jacinto Lung Association, 1980 - Present.

CONSULTANTS AND ADVISORY COMMITTEES:

Advisory Council on Education for Health,
1978 - Present.
(American Council of Life Insurance).

Air Force Studies Board, 1979 - Present.
(National Research Council of National
Academy of Sciences and National Academy
of Engineering).

Consultant in Aerospace Medicine to Surgeon
General USAF,
(National) 1976 - Present.

NASA Life Sciences Advisory Committee (National)
1974 - Present.

Air France, 1971 - Present
(Paris, France).

Olive W. Garvey Center for Improvement of
Human Functioning, 1979 - Present.
(Wichita, Kansas).

Memorial Hospital System, 1979 - Present.
(Houston, Texas).

Continental Medical Group, 1979 - Present.
(Miami, Florida).

Center for Heart and Health Improvement, 1979.
(Inglewood, California).

Boeing, 1979.

REFERENCE BOOKS LISTING:

1. Who's Who in America
Marquis-Who's Who Building
200 East Ohio Street
Chicago, Illinois 60611
2. The International Who's Who
Europa Publications Ltd.
18 Bedford Square, London WC1
England
3. Directory of Medical Specialists
Published under the Direction of the American
Board of Medical Specialists by
Marquis-Who's Who, Inc.
200 East Ohio Street
Chicago, Illinois 60611
4. American Men and Women of Science
The Physical and Biological Sciences
Edited by The Jacques Cattell Press
R.R. Bowker Company, N.Y.
New York, New York 10036
5. Who's Who in Space
Space Publications, Inc.
1341 G Street, N.W.
Washington, D.C. 20005
6. Dictionary of International Biography
Francis House
Francis Street
London S.W.1
England
7. The Blue Book 1971
St. James Press
1a Montagu Mews North
London W1
England
8. The Two Thousand Men of Achievement - 1970
(Published by Kay, Sons & Daughters, Ltd.)
15, Duke Street, Dartmouth
Devon, England
9. Who is Who in Arkansas
River City Publishers
P.O. Box 7388
Little Rock, Arkansas 72207

CURRICULUM VITAE

CHARLES A. BERRY, M.D., M.P.H.

PAGE 19

REFERENCE BOOKS LISTING CONT.:

10. Current Biography
Volume 30, Number 4, April 1969
The T.H. Wilson Company
New York, New York
11. Who's Who in American Education
Leaders in American Science Edition
Box 1898, 701 Main Street
Hattiesburg, Mississippi 39401
12. The National Register of Prominent Americans
Research Center
Drawer 3588
Sarasota, Florida 33578
13. The National Register of Who's Who, Inc.
Drawer Eight
Osprey, Florida 35554
14. Who's Who in Government
Marquis Who's Who, Inc.
200 East Ohio Street
Chicago, Illinois 60611
15. Personalities of the South
Subsidiary of American Biographical Institutes
Second Floor, Lawyers Building, P.O. Box 226
Raleigh, North Carolina 27602

PUBLICATIONS

1. Berry, C.A.: "Inflight Holder for Intravenous Fluid Containers," Medical Technicians Bulletin, Vol. 6, No. 3, May - June 1955.
2. Berry, C.A.: "Crash Ambulance Modification," Medical Technicians Bulletin, Volume 7, Number 6, November - December 1956.
3. Berry, C.A.: "Transport of Patients by Air," Texas State Journal of Medicine, Volume 54, pp. 11-17, January 1958.
4. Berry, C.A.: "The Environment of Space in Human Flight," Aeronautical Engineering Review, Volume 17, Number 3, March 1958. Presented Space Medicine Session, IAS 26th Annual Meeting, New York, January 27-30, 1958.
5. Berry, C.A.: "Medical Problems of Air Rescue," Journal of Aviation Medicine, Volume 29, pp. 316, 324, April 1958.
6. Berry, C.A.: "Severe Dysbarism in Air Force Operations and Training," United States Armed Forces Medical Journal, Volume 9, Number 7, July 1958.
7. Berry, C.A. and Wayne, H.W.: "Dysbarism, Grade 1 Chamber Reactions or Instances of Neurocirculatory Collapse Occuring in the U.S. Air Force," 1950 - 1955, SAM Report 58-85, School of Aviation Medicine, USAF, Randolph AFB, Texas, June 1958.
8. Sells, S.B. and Berry, C.A.: "Human Requirements for Space Travel," Air University Quarterly, 1958, Volume X, Number 2 (Summer Issue).
9. Berry, C.A.: "Physical Standards and Their Role in Jet and Rocket Aircraft Flight," Journal of Aviation Medicine, 29:631-640, September 1958.
10. Berry, C.A. and King, A.H.: "The Altitude Chamber as an Aid in Diagnosis and Disposition of Problem Aeromedical Cases," Aeromedical Reviews, Number 7-5, USAF School of Aviation Medicine. Presented Aeromedical Association Meeting, March 1958. Journal of Aviation Medicine, April 1959, Volume 30, pp. 258-267.
11. Berry, C.A. and King, A.H.: "Severe Dysbarism in Actual and Simulated Flight." Presented Third International Congress of Aviation Medicine, Brussels, Belgium, September 1958, U.S. Armed Forces Medical Journal, Volume X, Number 1, January 1959.

PUBLICATIONS CONT.:

12. Berry, C.A. and King, A.H.: "Aeromedical Problem Cases," Aerospace Medicine, 30:86, November 1959.
13. Berry, C.A. and Eastwood, H.K.: "Helicopter Problems: Noise, Cockpit Contamination and Disorientation," Aerospace Medicine, 31:179. March 1960.
14. Berry, C.A. and Eastwood, H.K.: "Disorientation in Helicopter Pilots," Aerospace Medicine, 30:191, March 1960.
15. Berry, C.A.: "Major Problems in Manned Space Flights," General Electric Technical Presentation Report (Support System for Manned Space Flight), August 4, 1959 (Classified).
16. Berry, C.A.: "X-ray Survey for Bone Changes in Low-Pressure Chamber Operators," Aerospace Medicine, 31:760-765, September 1960.
17. Berry, C.A.: "Dysbarism: An Inflight Case and a Discussion of the Present Status," Aerospace Medicine, 32:107-112, February 1961.
18. Berry, C.A.: "Aviation Medicine Consultation Problem Cases," AGARD Book. "Escape and Survival: Clinical and Biological Problems in Aerospace Medicine," 46-62, 1961. Pergamon Press.
19. Steinkamp, G.R., Berry, C.A., and Hawkins, W.R.: "Human Factors in Supersonic Air Transport," IATA Symposium on the Supersonic Transport Aircraft, Montreal, Canada, April 17, 1961.
20. Berry, C.A.: "Space Programs and the Future," Aerospace Medicine, 33:464-468, April 1962.
21. Berry, C.A.: "Human Factors in Jet and Space Flight," Illinois Medical Journal, 120, Number 1, July 1961.
22. Berry, C.A.: "Man, Drugs, and Space Flight," Annals of Otology, Rhinology and Laryngology, 70:418-427, June 1961.
23. Berry, C.A.: "Recent USAF Experience with Inflight Dysbarism," 4th Scientific Session of Joint Committee on Aviation Pathology, Toronto, October 1961, and Pan American Medical Meeting, Albroom Air Force Base, Canal Zone, March 1962. Aerospace Medicine, 33:995-1000, August 1962.

PUBLICATIONS CONT.

24. Berry, C.A., Smith, M.R., and Hawkins, W.R.: "Peptic Ulcer in Flying Personnel - A Follow Up Study," Presented Aerospace Medical Association meeting, Atlantic City, New Jersey, April 1962. Aerospace Medicine, 34:67-69, January 1963.
25. Berry, C.A.: "Human Qualifications, Selection and Training for Space Flight." Presented at First Australian Medical Congress, Adelaide, Australia, May 1962. Medical Journal of Australia, March 1963.
26. Berry, C.A.: "Visual Standards for and Problems of Space Flight." Presented at First Australian Medical Congress, Adelaide, Australia, May 1962. Medical Journal of Australia, July 1963.
27. McCutcheon, E.R., Berry, C.A., et al.: "Physiological Responses of the Astronaut." Results of the Second U.S. Manned Orbital Space Flight. May 24, 1962, NASA Manned Spacecraft Center, pp. 54-62.
28. Berry, C.A., et al.: "Aeromedical Analysis." Results of the Third U.S. Manned Orbital Space Flight, October 3, 1962. NASA Manned Spacecraft Center, pp. 23-36.
29. Berry, C.A.: "Problems of Astronaut Selection." Presented at 17th Meeting American Rocket Society, Los Angeles, California, November 1962.
30. Bland, W.M., Berry, C.A.: "Project Mercury Experiences," Astronautics and Aerospace Engineering, 29-34, February 1963.
31. Berry, C.A.: "Aeromedical Preparations." Mercury Project Summary Including Results of the Fourth Manned Orbital Flight, May 15-16, 1963. NASA Manned Spacecraft Center, pp. 199-209.
32. White, S.C., Berry, C.A.: "Resume of Present Knowledge of Man's Ability to Meet the Space Environment." Presented Aerospace Medical Association Meeting, Los Angeles, California, April - May 1963. Aerospace Medicine, 35:43-48, January 1964.
33. Berry, C.A.: "Visual Standards for and Problems of Spaceflight," Reprinted from The Medical Journal of Australia, 1963, 2:674, (October).

PUBLICATIONS CONT.:

34. Berry, C.A.: "Crew Selection and Training for Space Flight," School of Aviation Medicine, USAF, Randolph Air Force Base, Texas.
35. Berry, C.A.: "Physiological Monitoring," AIAA Paper No. 66-928. Presented at AIAA Third Annual Meeting, Boston, Massachusetts, November 29 - December 2, 1966.
36. Berry, C.A.: "Space Medicine in Perspective, a Critical Review of the Manned Space Program." Presented at American Medical Association Clinical Convention, Las Vegas, Nevada, November 28, 1966. JAMA, July 24, 1967, Volume 201, Number 4, pp. 86-95.
37. Berry, C.A.: "Pharmaceuticals in Space Medicine," Journal of the American Pharmaceutical Association, Volume NS5, Number 7, July 1965. Presented to the Industrial Pharmacy Section at the Annual Meeting of the American Pharmaceutical Association, New York City, August 4, 1964.
38. Berry, C.A.: "Space Medicine Experience in Manned Space Flight and Applications to Apollo." Presented at the American Astronautical Society, 10th Annual Meeting, May 4-7, 1964.
39. Berry, C.A., Coons, D.O., Catterson, A.D., Kelly, G.F.: "Man's Response to Long-Duration Flight in Gemini Spacecraft." Gemini Midprogram Conference, pp. 235-261, February 23-25, 1966, MSC, Houston.
40. Berry, C.A.: "Medizinsche Aspekte der Gemini-Fluge," Umschau, pp. 565-569. 1966.
41. Berry, C.A.: "Man's Response to a New Environment Including Weightlessness: Gemini Biomedical Results." Presented to the XII IAF Congress, Madrid, Spain, October 10, 1966.
42. Berry, C.A.: "Pre-Gemini Medical Predictions Versus Gemini Flight Results." Presented to Gemini Summary Conference, February 2, 1967, MSC, Houston.
43. Graybiel, A., Miller, II, E.F., Billingham, J., Waite, R., Berry, C.A., and Dietlein, L.F.: "Vestibular Experiments in Gemini Flights V VII," Aerospace Medicine, Volume 38, Number 4, April 1967.

PUBLICATIONS CONT.:

44. Berry, C.A.: "The Medical Legacy of Gemini." Presented at X COSPAR Plenary Meeting, London, England, July 27, 1967. Life Sciences and Space Research, Volume VI, Ed. A.H. Brown and F. Favorite, North Holland Publishing company, Amsterdam 1968, pp. 1-19.
45. LaChance, P.A. and Berry, C.A.: "Luncheon in Space," Nutrition Today, Volume 2, Number 2, June 1967, pp. 2-11.
46. Berry, C.A.: "Medicine at the Threshold of the Universe," Harvard Public Health Alumni Bulletin, Volume 24, Number 1, January 1967, pp. 2-17, 17.
47. Berry, C.A.: "Man's Demonstrated Capability in Space." Presented at the AIAA Space Program Issues of the 70's Meeting, Seattle, Washington, August 30, 1967.
48. Berry, C.A.: "Medical Directorate Aids Manned Flight." Published in U.S. Medicine, January 15, 1968, Volume 4, Number 2.
49. Berry, C.A.: "A Status Report on Space Medicine in the United States." Presented to the 17th International Congress on Aviation and Space Medicine, Oslo, Norway, August 7, 1968. Aerospace Medicine, Volume 40, Number 7, pp. 762-769, July 1969.
50. Berry, C.A.: "Orbital Flight Results." Presented to the 4th International Symposium on Bioastronautics and the Exploration of Space, San Antonio, Texas, June 25, 1968.
51. Gooch, P.C. and Berry, C.A.: "Chromosome Analysis of Gemini Astronauts," Aerospace Medicine, Volume 40, Number 6, June 1969.
52. Berry, C.A.: "Preliminary Clinical Report of the Medical Aspects of Apollos VII and VIII," Aerospace Medicine, Volume 40, Number 3, pp. 245-254, March 1969. Also published as NASA TMX 58027.
53. Berry, C.A., Smith, M.: "Dinner on the Moon," Nutrition Today, Volume 4, Number 3, pp. 37-42, 1969.
54. Berry, C.A.: "Lunar Medicine." Science Journal, pp. 103-107, Volume 5, Number 5, May 1969.

PUBLICATIONS CONT.:

55. Berry, C.A.: "Health as the Physician Views it and the Use of Space Technology to Achieve and Maintain it." Presented at the Challenge of Life Biomedical Progress and Human Values Symposium, September 2, 1971, Basle, Switzerland. The Challenge of Life, Ed. R. Kunz and H. Fehr., Birkheuser Verlag, Basel, pp. 129-132, 379-391.
56. Berry, C.A.: "Recent Advances in Aerospace Medicine." Proceedings of XVIII International Congress of Aviation and Space Medicine, Amsterdam, The Netherlands, 1969.
57. Berry, C.A.: "Apollo 7 to 11: Medical Concerns and Results." Presented at the XVIII International Congress of Aerospace Medicine, Amsterdam, The Netherlands, September 18, 1969. Aerospace Medicine, Volume 41, Number 5, May 1970.
58. Halberg, F., Vallbona, C., Dietlein, L.G., Rummel, J.A., Berry, C.A., Pitts, G.C. and Nunneley, S.A.: "Human Circadian Circulatory Rhythms During Weightlessness in Extraterrestrial Flight or Bedrest With and Without Exercise." Space Life Sciences, International Journal of Space Biology and Medicine, Volume 2, 1970, pp. 18-32, D. Reidel Publishing Co., Dordrecht - Holland.
59. Berry, C.A.: "Medical Results of Apollo 14 - Implications for Longer Duration Space Flights." Presented at XXIInd International Astronautical Congress, Brussels, Belgium, September 25, 1971.
60. Berry, C.A.: "Biomedical Findings on American Astronauts Participating in Space Missions - Man's Adaptation to Weightlessness." Presented at Fourth International Symposium on Basic Environmental "Problems of Man in Space," Yerevan, Armenia, U.S.S.R., on October 1971.
61. Berry, C.A.: "Past and Future Space Flight Experiments on Man and Their Spin-Off Contribution to World Health," Astronautica Acta, Volume 17, pp. 209-214, Pergamon Press, 1972 - Great Britain.
62. Berry, C.A.: "Impact of Emerging Technology on Health Care Systems Space Medicine Brought to Earth." Presented at the Conference on Technology and Health Care Systems in the 1980's, January 19-21, 1972, San Francisco, California.

PUBLICATIONS CONT.:

63. Fischer, C.L., Gill, C., Daniels, J.C., Cobb, E.K., Berry, C.A. and Ritzmann, S.E.: "Effects of the Space Flight Environment on Man's Immune System: 1. Serum Proteins and Immunoglobulins," Aerospace Medicine, Volume 43, Number 8, August 1972.
64. Berry, C.A. and Smith, M.: "What We've Learned From Space Exploration," Nutrition Today, September/October 1972.
65. Berry, C.A. and Homic, G.L.: "Findings on American Astronauts Bearing on the Issue of Artificial Gravity for Future Manned Space Vehicles," Aerospace Medicine, Volume 44, Number 2, pp. 163-168, February 1973.
66. Berry, C.A., Rummel, J.A., and Michel, E.L.: "The Physiological Response to Exercise after Space Flight - Apollo 7-11," Aerospace Medicine, Volume 44, Number 3, pp. 235-238, March 1973.
67. Berry, C.A.: "The Medical Legacy of Apollo." Presented at the 21st International Congress of Aviation and Space Medicine, Munich, Germany, September 17, 1973. Aerospace Medicine, Volume 45, Number 9, pp. 1046-1057, September 1974.
68. Berry, C.A.: "View of Human Problems to be Addressed for Long-Duration Space Flights," Aerospace Medicine, Washington, D.C., Volume 44, Number 10, pp. 1136-1146, October 1973.
69. Berry, C.A.: "Effects of Weightlessness in Man," COSPAR Life Sciences and Space Research XI, Proceedings of the Open Meeting of the Working Group on Space Biology of the 15th Plenary Meeting of COSPAR. May 10-24, 1972, Madrid, Spain. Ed. P.H.A. Sneath, Publ., Akademik-Verlag, Berlin 1973. pp. 187-199.
70. Berry, C.A.: "Opening Remarks" in Basic Environmental Problems of Man in Space. Ed. A. Graybiel Pergamon Press 1976. pp. XIX-XX.
71. Berry, C.A.: "Closing Remarks" in Basic Environmental Problems of Man in Space. Ed. A. Graybiel Pergamon Press 1976. pp. XXVII-XXXII.

PUBLICATIONS CONT.:

72. Berry, C.A.: "Medical Legacy of Skylab as of May 9, 1974: The Manned Skylab Missions." Aviation, Space and Environmental Medicine, 47 (4):418-424, 1976.
73. Berry, C.A.: "The Current Status of Man's Response to the Space Environment." In The Eagle Has Returned. Ed. E. Steinhoff, AAS Publication, Volume 43, pp. 165-172, 1976.
74. Berry, C.A.: "Greatest Legacy from Space: Fallout to Ground Medicine." Harris County Physician, pp. 10-15, August 1976.
75. Berry, C.A.: "A Current Look at the Medical Legacies of Mercury, Gemini and Apollo." Presented at 25th American Astronautical Society (AAS) Conference, Houston, Texas, October 31, 1978. Proceedings in Press.
76. Berry, C.A.: "Preventive Medicine on a New Frontier: From Space to Earth," in Proceedings of the 26th International Congress of Aerospace Medicine, London, England, September 4-8, 1978. In press
77. Berry, C.A.: "Health Promotion - Definitions and Directions." Keynote Address in Central South/Southwest Forum on Community Health Promotion Proceedings, May 22-23, 1979, Dallas, Texas. In press.
78. Berry, C.A.: "Health Promotion and Disease Prevention in the 80's," in Proceedings of 26th Annual Pennsylvania Health Conference, Philadelphia, Pennsylvania, July 29-31, 1979. In press.
79. Berry, C.A.: "Modern Preventive Medicine," in Proceedings of the Third International Conference on Human Functioning, Biomedical Synergistics Institute, Wichita, Kansas, September 14-16, 1979. In press.
80. Berry, C.A.: "Coronary Artery Disease Risk Factors at Selection in U.S. Astronauts." Presented XXVIIth International Congress of Aviation and Space Medicine, Manila, Phillipines, October 8-12, 1979. In press
81. Berry, C.A.: "Benefits from Space-Aids to Your Health," in Proceedings Republic of China Aviation Medical Association Annual Meeting, Taipei, Taiwan, October 15, 1979. In press.

BOOKS

1. Man in Space, Duell, Sloan & Pearce, New York, 1959
Chapter 10: "Human Requirements for Space Travel"
by C.A. Berry
2. Human Factors in Jet and Space Flight, co-edited by
S.B. Sells and C.A. Berry, Ronald Press Co., New York,
1961
Chapter 7: "Human Qualifications for and Reaction
to Jet Flight"
by C.A. Berry
Chapter 8: "Human Requirements for Space Travel"
by C.A. Berry and S.B. Sells
3. Medicine and Surgery for the Attorney, Volume 9, Butterworth
Publishing Company, 1963.
Chapter : "Aviation Medicine Medical Aspects of
Air Travel"
by C.A. Berry
Chapter : "Decompression Sickness: (Caisson Disease
and Dysbarism)"
by C.A. Berry
4. Progress in Atomic Medicine, Grune & Stratton, Inc., Publ.
Chapter 8: "Space Radiation & Other Medical
Aspects of Space Travel"
by C.A. Berry and S.B. Curtis
5. The Proceedings of the Fourth International Symposium
on Bioastronautics and the Exploration of Space,
San Antonio, Texas, June 25, 1978.
Chapter : "Orbital Flight Results"
by C.A. Berry
6. Aerospace Medicine, edited by Col. H.W. Randel, USAF, MC,
Williams and Wilkins Publishing Co., Baltimore, Maryland,
November 1971.
Chapter 32: "The Results of Manned Space Flight"
by C.A. Berry
7. The New Age of Medical Discovery, Wilbur Cross, Hawthorne
Books, Inc., 70 Fifth Avenue, New York, N.Y., 10011,
Copyright 1972.
Preface by C.A. Berry

CURRICULUM VITAE

CHARLES A. BERRY, M.D., M.P.H.

PAGE 29

BOOKS CONT.

8. Bioastronautics Data Book, Second Edition, co-edited by J.F. Parker, JR. and V.R. West, Biotechnology, Inc.: NASA SP-3006, Scientific and Technical Information Office, NASA, Washington, D.C., 1973.
Chapter 8: "Weightlessness"
by C.A. Berry
9. Problem-Directed and Medical Information Systems, edited by Marshall F. Driggs, M.D., Intercontinental Medical Book Corporation (Symposia Specialists Medical Books), New York, New York, 1973.
Chapter : "Implications of Aerospace Systems"
by C.A. Berry
10. Precis de Medecine Aeronautique et Spaciale, E. Evrard., Maloine S.A. Editeur, Paris, 1975.
Preface by C.A. Berry
11. Foundations Space Biology and Medicine (Joint USA/USSR Publications in 3 volumes, Publ. Supt. Documents U.S. Government Printing Office, Washington, D.C., Ed. M. Calvin and O. Gazenko.
Volume 3, Part 3 Berry, C.A.
Chapter 12 p. 345 - Medical Care of Space Crews
Chapter 13 p. 372 - Descent and Landing of Spacecrews
and Survival in Unpopulated Areas.
12. Academic American Encyclopedia; Publ. by Arete, March 1980.
Articles by C.A. Berry
Space Medicine
Weightlessness

March 31, 1981

CURRICULUM VITAE

JEFFERSON C. DAVIS, M.D.

Present Position: Director, Hyperbaric Medicine
Southwest Texas Methodist Hospital
San Antonio, Texas 78229

Office Address: 4499 Medical Drive
San Antonio, Texas 78229

Office Phone: (512) 696-7293

Home Address:

Home Phone:

Marital Status: Married

Personal Data: Date of Birth: December 8, 1932
Place of Birth: Sulphur Springs, Arkansas

Education: B.S. in Medicine, University of Missouri, 1955.
M.D., University of Missouri at Columbia, 1957.
Internship: Bellevue Hospital, New York,
July, 1957-July, 1958.
M.P.H., University of California at Berkeley,
1963.
Residency in Aerospace Medicine, 1962-1965:
University of California, USAF School of
Aerospace Medicine.

Specialty
Certification: Certified in Aerospace Medicine by The American
Board of Preventive Medicine, 1966.

Professional
Societies: Fellow, Aerospace Medical Association. President-
Elect, 1981-1982.

Fellow, American College of Preventive Medicine:
President-Elect, 1980-81.

Past-President, Undersea Medical Society, 1979-80.

President, Society of United States Air Force
Flight Surgeons, 1976-77.

Chairman, Membership Committee, Aerospace
Medical Association, 1974-1976.

Member, American Medical Association.

Member, Texas Medical Association; Bexar County Medical Society.

Member, Aerospace Physiologists Section, Aerospace Medical Association.

Chairman, Program Committee, Undersea Medical Society, 1976.

Chairman, Program Committee, Aerospace Medical Association, 1978.

Member, NOAA Medical Review Board 1977 to present.

Honors: Scientist of the Year, Air Force Association.

Major Gary Wratten Award, Association of Military Surgeons of the United States, 1975.

Awards and
Decorations:

Legion of Merit with Oak Cluster.

Air Medal

Air Force Commendation Medal with Oak Cluster

Presidential Unit Citation

Public Health Medal (1st Class Vietnamese)

Honor Medal (1st Class, Vietnamese Army)

Air Force Systems Command Certificate of Achievement.

Specialized
Training:

Aerospace Medicine Primary Course, Randolph AFB, Texas, Sept.-Dec., 1958.

USAFSAM Compression Team Training Course, two weeks, 1964.

Aircraft Accident Investigation Course, University of Arizona, Tempe, 1964.

Global Medicine Course, Walter Reed Army Institute of Research, 1964.

Aviation Accident Pathology Course, Armed Forces Institute of Pathology, 1965.

Arctic Survival Training Course, Fort Wainwright, Alaska, 1964 and 1972.

Tropic Survival Courses, Panama, 1972, and the Philippines, 1968.

Water Survival Course, Homestead AFB, Fla, 1972.

U.S. Navy Diving Medical Officer Course, two weeks, 1965 (US Navy Deep Sea Diving School, Washington, DC). Conducted by Doctors Robert Workman, M.W. Goodman and Robert Bornman.

USAFSAM Compression Team Training Course, two weeks, 1965 (with all dives).

Hyperbaric Medicine Course, one week, 1965, (University of New York at Buffalo. Conducted by Doctors Herman Rahn, Ed Lanphier, Al Behnke, Harry Alvis, Claude Hitchcock, et al).

Third International Conference on Hyperbaric Medicine, Duke University, 1965.

Underwater Physiology Symposium
Freeport, Bahamas, August 1972.

Fifth International Conference on Hyperbaric Medicine, Vancouver, B.C., August, 1973.

Sixth International Underwater Physiology Symposium, San Diego, 1975.

Thermal Problems in Diving, Workshop, Wilmington, California, March, 1976.

FAA Aviation Medical Examiner Course, Oklahoma City, April, 1979.

FAA Aviation Medical Examiner Seminar, Chicago, November 20-23, 1979.

American Medical Association Physicians Recognition Award for Continuing Medical Education, June, 1979-June, 1982.

Advanced Life Support Course, University of Texas at San Antonio Health Science Center, March 14-16, 1980.

BIBLIOGRAPHY

JEFFERSON C. DAVIS
COLONEL, USAF, MC, CFS

Publications:

Davis, J.C. and Beyer, D.H., "Personal Habits Among USAF Aircrew Members: A Survey, "Aerosp. Med, 36:4, 357-60, 1965.

Hodgson, C.J. and Davis, J.C., "Seven Year Follow-up X-Ray Survey for Bone Changes in Low Pressure Chamber Operators," Aerosp. Med. 39:1968.

Davis, J.C., Boyle, J., "Preliminary Studies on the Passively Pressurized Partial Pressure Suit," SAM TR, 1968.

Davis, J.C., Tager, R., Polkovitz, H.P. and Workman, R.D., "Neurological Decompression Sickness: Report of Two Cases at Minimal Altitudes with Subsequent Seizures," Aerosp. Med., 42:1, 85-88, 1971.

Davis, J.C., Dunn, J.M., Bassett, B.E., "Hyperbaric Medicine in the U.S. Air Force," J.A.M.A., 224:2, 1973.

Davis, J.C., "Decompression Sickness and Air Embolism," Chapter 17, 91-96, in "Immediate Care of the Acutely Ill and Injured," Ed. Stephenson, H.E., Pub. C.V. Mosby, 1975 and 1978 (2nd ed).

Davis, J.C., "National Oceanic and Atmospheric Administration," Diving Manual, 1975, 2nd Edition 1979, Major Contributor and Reviewer.

Davis, J.C., "Decompression Sickness and Mechanical Effects of Pressure Changes," Chapter for USAF Flight Surgeon's Guide, AFP 161-18.

Sheffield, P.J. and Davis, J.C., "Application of Hyperbaric Oxygen Therapy in a Case of Prolonged Cerebral Hypoxia Following Rapid Decompression," Aviation, Space and Environmental Medicine.

"Alterations in Atmospheric Pressure," Chapter for Cecil: Textbook of Medicine, 1978.

"Evaluation of Altered Barometric Pressure,"
Chapter for Patty, Industrial Toxicology,
Vol.III, 1978.

Hyperbaric Oxygen Therapy, editors J.C. Davis
(author 2 chapters) and T.K. Hunt. Monograph
published by the Undersea Medical Society and
National Library of Medicine. Feb. 1978.

"Diving and Barotrauma", Chapter in Management
of Wilderness and Environmental Emergencies,
Ed.P.Auerbach and E. Geehr., MacMillan,
in-Press, 1981.

"Management of Diving Accidents" J.C. Davis
and D.A. Youngblood, in The Physiology and
Medicine of Diving. Ed. P.B. Bennett and D.H.
Elliott, 3rd Ed. in -Press, 1981.

"Treatment of Decompression Disorders" J.C.
Davis and D.H. Elliott, in The Physiology and
Medicine of Diving. Ed. P.B. Bennett and D.H.
Elliott, 3rd ed. in-Press, 1981.

"Causes of Diving Accidents", D.H. Elliott and
J.C. Davis, in Physiology and Medicine of Diving.
Ed. P.B. Bennett and D.H. Elliott, 3rd Ed. in-
Press, 1981.

The Return to Active Diving After Decompression
Sickness or Arterial Gas Embolism. Report of
May 28, 1980 meeting held at New Orleans, La.,
Undersea Medical Society, NOAA, NIOSH. Chairman
and Editor, J.C. Davis.

Davis, J.C. Treatment of decompression accidents
among sport scuba divers with delay between onset
and compression. In: Treatment of Serious Decom-
pression Sickness and Arterial Gas Embolism.
Undersea Medical Society Workshop No. 20, Duke
University, Jan. 11-14, 1979, funded by NOAA.
Chairman and Editor, J.C. Davis.

Morrey, B.F., Dunn, J.M., Heimbach, R.D. and
Davis, J.C. Hyperbaric oxygen and chronic
osteomyelitis. Clin. Orthoped. and Rel. Rsch.
p. 121-127, Oct. 1979.

Davis, J.C., Sheffield, P.J., Schuknecht, L.,
et al. Altitude decompression sickness: hyperbaric
therapy results in 145 cases. Aviat. Space
Environ Med. 48: 722-730, 1977.

Davis, J.C., Dunn, J.M., Gates, G.A., Heimbach, R.D., Hyperbaric oxygen: a new adjunct in the management of radiation necrosis. Arch. Otolaryngol. 105:58-61, 1979.

Davis, J.C., Dunn, J.M., Heimbach, R.D. Indications for hyperbaric oxygen therapy. Tex. Med. 76:44-47, 1980.

Davis, J.C.

1. Physical Standards for Diving
2. Diving Accidents, Case discussions
3. Clinical hyperbaric oxygen

Three self-assessment lessons for physicians:
1977-1979 40 lesson series: Weekly Update:
Hyperbaric and Undersea Medicine. Publisher,
Biomedica, Princeton. Chairman, Editorial Board,
J.C. Davis.

Davis, J.C. Soft Tissue Radiation Necrosis:
the role of hyperbaric oxygen. Invited paper
for submission by Undersea Medical Society
to National Institute of Health. in-Press 1981.

"Hyperbaric Medicine," Eglin AFB Hospital
Staff, 1970.

"Medical Aspects of Diving," Lectures, Fifteen
NAUI, YMCA Instructor Certification Courses
throughout Texas, 1972-1976.

"Decompression Sickness and Air Embolism,"
Five NAUI Safety Seminars, Houston, Texas,
1972-1976.

"Gas Gangrene," Surgical Staff Meeting, Palm
Springs Hospital, Miami, Florida, January 1973,

"Hyperbaric Medicine," Omaha-Douglas-Sarpy
County Medical Society, 1973.

"Diving Casualties-Lessons Learned," Seaspace
Symposium, National Underwater Meeting, 500
attendees, Houston, Texas, 1973.

"Clinical Applications, Hyperbaric Medicine,"
University of Nebraska School of Medicine, 1978.

"Hyperbaric Medicine and Physiology," Creighton
University School of Medicine, 1973.

"Hyperbaric Oxygen in Clostridial Infections," University of Texas at San Antonio, School of Medicine, Weekly Surgical Conference, May 17, 1974.

"Altitude Decompression Sickness," Federal Aviation Agency, Aviation Medical Examiner Seminar, San Francisco, April 30, 1976 and May 13, 1975, 3 seminars per year, 1979 to present.

"Hyperbaric Medicine," Lecture Series, University of Southern California School of Medicine, May 19-20, 1975; Jan. 1980.

"Hyperbaric Medicine," Lecture Series, Commercial Diving Center, Wilmington, California, June 28-July 3, 1975.

"Diving Safety," Seventh International Conference on Underwater Education, Sept. 26-28, 1975.

"Current Concepts of Altitude Decompression Sickness," FAA, Aviation Medical Examiner Seminar, San Francisco, October 7, 1975.

"Hyperbaric Oxygen Therapy," A workshop sponsored by the National Heart and Lung Institute, National Library of Medicine and Undersea Medical Society. Colonel Davis was selected as Workshop Coordinator and Co-Editor, with Dr. Thomas K. Hunt, Professor of Surgery, University of California, at San Francisco, of the textbook, same title.

"Clinical Considerations for Multiplace Hyperbaric Chambers," Hyperbaric Oxygen Therapy (above).

"Soft Tissue Wound Healing Enhancement," with Dr. D.J. Perrins, Oxford, Hyperbaric Oxygen Therapy (above).

"Hyperbaric Oxygen Therapy, Current Concepts," Hospital Professional Staff, Sherman Oaks Hospital, Van Nuys, California Nov. 11, 1975.

Heimbach, R.D. and Davis, J.C., "Hyperbaric Oxygenation -Current Concepts," American College of Physicians, San Antonio, Texas.

Couch, P., Heimbach, R.D., Davis, J.C.,
 "Hyperbaric Oxygen in Gas Gangrene,"
 American Academy of Orthopedics; "Gas
 Gangrene in USAF Experience," New Orleans.1976.

Davis, J.C., "Hyperbaric Oxygen Therapy,
 Current Concepts," Texas Surgical Association
 Meeting, San Antonio, Texas, April 5, 1976.

Lecture Series, "Treatment of Diving Casualties",
 University of Southern California School of
 Medicine--Los Angeles County, Department of
 Emergency Medicine, April 7-10, 1976.

Invited Lecture: "Current Concepts in Hyper-
 baric Oxygen Therapy," Ogden Utah County
 Medical Society, April 20, 1976.

Lecture, "Hyperbaric Oxygen Therapy in Gas
 Gangrene and Osteomyelitis," A.B.C. Visiting
 Fellows in Orthopaedics and Department of
 Orthopaedic Surgery, University of Texas
 Medical School at San Antonio, April 28, 1976.

Invited Paper, "Hyperbaric Oxygen Therapy-
 A New Look," Texas Medical Association, Dallas,
 Texas, May 7, 1976.

"Diving Safety," Our World Underwater, Chicago,
 Ill. May 8, 1976. Invited, May, 1981.

Davis, J.C., et al, "Altitude Decompression
 Sickness-Experience in the Treatment of 130
 Cases," Forty-Seventh Annual Scientific Meeting
 of the Aerospace Medical Association, Miami,
 Florida, May 11, 1976.

Davis, J.C., "Altitude Decompression Sickness,"
 FAA Aviation Medical Examiner Seminar, Miami,
 Florida, May 11, 1976.

Program Chairman, Scientific Meeting of the
 Undersea Medical Society, Carillon Hotel, Miami,
 Florida, May 12-13, 1976 (34 papers, 20 posters),
 200 attendees.

Exhibit, Hyperbaric Oxygen Therapy, Aerospace
 Medical Association Scientific Meetings, San
 Francisco, May 1975, and Miami, Florida, 1976.

Lecture, University of Texas at San Antonio,
 Medical School, Carbon Monoxide, Feb. 28, 1980.

Diving Medicine Lecture, Undersea Medical Society, Ocean Corp., Houston, Texas, March 1, 1980.

Diving Medicine Lecture, Medical Education Day, Lakeland Florida Hospital, 300 physicians attending, March 8, 1980.

Hyperbaric Medicine, To Travis County Medical Society, Austin, Texas, March 18, 1980.

Hyperbaric Medicine, Dept. of Otolaryngology, U.T.S.A., Medical School, April 9, 1980.

Internal Medicine Grand Rounds. Hyperbaric Oxygen. Wilford Hall Medical Center, April 11, '80.

Lecture. Diving Medicine. University of Texas at Houston Medical School, April 14, 1980.

Lecture and Tour hyperbaric chamber. Dive-masters Course, April 29, 1980.

Hypo-Hyperbaric Medicine and Physiology Lectures, 4 hours each to U.S. Military Medical School (Uniformed Services Health Science Center, Bethesda) 1978-1979. Same to UTSA Medical School, 1980-81.

Invited Paper. Texas Oral Surgeons, Hyperbaric Medicine, May 7, 1980, San Antonio.

Hyperbaric Medicine, invited lecture, American College of emergency Physicians, San Antonio, May 19, 1980.

Air Embolism. Invited paper to 5th Annual Conference on Clinical Application of Hyperbaric Oxygen, Memorial Medical Center, Long Beach, Ca. June 11, 1980.

Shell Corse on Diving Medicine. Faculty. Hazardous Marine Life and Decompression Accident Case Discussions, Aberdeen, Scotland, July 6-10, 1980.

Hyperbaric Medicine, Invited paper. National Medical Association, Dallas, August 4, 1980.

Hyperbaric Medicine, invited lecture, Family Practice Grand Rounds, Robert B. Green Hospital San Antonio, Sept. 3, 1980.

Diving Accident Case Discussions, Hyperbaric oxygen and Altitude Decompression Sickness. Invited lectures. NOAA-UMS 3 week Diving Medicine Course for Physicians, Key Biscayne, Florida.

Medical-Surgical Conference, Baptist Hospital, Hyperbaric Medicine, October 15, 1980.

Southern Medical Association. Invited paper for Basic Emergency Techniques Session. Diving Accident Management. San Antonio, Nov. 16, 1980.

Hyperbaric Medicine. Invited Lecture to Orthopedic Surgery Grand Rounds, University of Penn. Medical School, Philadelphia, Dec. 3, 1980.

Lecture Series. Hyperbaric Medicine, Bay Area Hospitals (hospital staff meetings) San Francisco, Dec. 15-19, 1980.

Invited Lecture. Hyperbaric Medicine, Operational Aeromedical Problems Course, USAF School of Aerospace Medicine, Jan. 21, 1981.

Invited Lecture Series on Hyperbaric and Diving Medicine, Dayton Surgical Society, Kettering Hospital, Dayton, Ohio, Feb. 27, 1981.

Boston Sea Rovers Diving Convention. Lecture on Immediate Care of Diving Casualties. Boston March 14, 1981.

MAJOR POSITIONS HELD

| | |
|-----------------------|---|
| 1958-1961 | Flight Surgeon, B-52 Wing, Ellsworth AFB, S.D. |
| 1961-1962 | Instructor, Aviation Medicine, USAF School of Aerospace Medicine (USAFSAM), Brooks, AFB, Texas. |
| 1962-1965 | Residency in Aerospace Medicine. |
| 1965-1968 | Instructor and Research in Altitude and diving physiology and medicine, USAFSAM. |
| 1968-1969 | Director of Base Medical Services and Flight Surgeon, Phu Cat Air Base, Republic of Viet Nam. |
| 1969-1970 | Assistant Chief, Biodynamics and Bionics Division (Research), Wright-Patterson AFB, Ohio. |
| 1970-1972 | Course Supervisor, Aerospace Medicine Primary Courses, (9 week) for USAF Flight Surgeons. USAFSAM. |
| 1972-1974 | Course Supervisor, Aerospace Medicine Residency and Chief Aerospace Medicine Branch, USAFSAM. |
| 1974-1978 | Founder and Director USAF Hyperbaric Medicine Center, USAFSAM. Director "LEOFAST". 24 hour emergency telephone service for decompression accidents - diving and altitude. |
| 1978-1979 | Vice-Commander, Aerospace Medical Division (5,000 personnel), Brooks AFB, Texas. |
| Oct. 1979 | USAF Retirement at grade of Colonel. |
| Oct. 1979 -present | Director, Hyperbaric Medicine, Southwest Texas Methodist Hospital, San Antonio, Texas. |

CURRICULUM VITAE

JARED M. DUNN, M.D., MPH
Colonel, USAF, MC, SFS

Present Duty Practicing physician, Hyperbaric Medicine
Department, Southwest Texas Methodist Hospital,
San Antonio, Texas.

Home Address:

Home Phone:

Marital Status: Married (9 children)

Personal Data: Date of Birth-November 8, 1924
Place of Birth-Hemingford, Nebraska

Education: BS University of Utah 1950 (Genetics & Physiology)
MD University of Utah 1959
MPH John Hopkins University 1962
Residency in Aerospace Medicine 1961-1964
John Hopkins School of Public Health 1961-1962
USAF School of Aerospace Medicine 1962-1963
Wright-Patterson AFB 1963-1964
Postgraduate course in Occupational Medicine
Ohio State University College of Medicine,
Columbus, Ohio, 1963.
Postgraduate course in Occupational Medicine,
Ohio State University College of Medicine,
Columbus, Ohio, 1963
Military management, Air University, Montgomery,
Alabama.

Specialty
Certification: Certified in Aerospace Medicine by the American
Board of Preventive Medicine, 1964.

Professional
Societies: Aerospace Medical Association
Society of the USAF Flight Surgeons
Space Medicine Sections AMA
Aerospace Physiologists Society AMA
Undersea Medical Society
American Medical Association
Resolution Committee, Aerospace Medical Association
1970-1981.
Texas Medical Association
Bexar County Medical Society.

Honors: Outstanding Scientist 1972 by Air Force Association
 Military Consultant to the USAF Surgeon General
 in Aerospace Medicine, 1977-1979.
 Outstanding Instructor Award, 1972. School of
 Aerospace Medicine.

Awards & Decorations: Army Good Conduct Medal
 Air Force Outstanding Unit Citation with Two Oak
 Leaf Clusters
 Presidential Unit Citation
 Air Force Commendation Medal
 Air Medal with One Oak Leaf Cluster
 Distinguished Flying Cross.
 Legion of Merit with Two Oak Leaf Clusters
 Air Force Systems Command Certificate of
 Achievement.
 USAF Surgeon General Certificate of Achievement
 Senior Instructor School of Aerospace Medicine.

Military Service: Infantry Man 1943
 Tail Gunner B-24 1943
 Bombardier 1944
 Navigator 1945
 Fighter Pilot 1951-1954
 Instructor Pilot Air Force Instrument School
 Instructor Pilot Luke AFB
 Special Weapon Officer Sandia Base New Mexico
 Special Weapon Officer Instructor Luke AFB
 Intern Walter Reed Hospital 1959-1960.
 Primary Course Aviation Medicine 1960.
 Research at USAFSAM 1960-1961.
 Residency in Aerospace Medicine (RAM) 1961-1964.
 Chief Aviation Medicine at Wright-Patterson AFB
 1964-1965.
 Medical Advisor to SPO Director 412 A SPO, 1965-
 1968.
 Vietnam 1968-1969 Chief Professional Services,
 Deputy Command Surgeon, Command Surgeon 7th AF
 Chief Physiological Education Branch USAFSAM,
 1969-1973.
 Chief USAF Hyperbaric Therapy Team 1969-1973.
 Hospital Commander-Hahn AB Germany, 1973-1975.
 Special Assistant for Medical Consultation to
 USAF Hyperbaric Unit 1975-1977.
 Chief Hyperbaric Medicine Division
 Retired from Air Force as Colonel Oct., 1979.

Specialized Training: Basic and Advanced Infantry Training - Camp
 Callen, California 1943.
 CTD-Springfield, Mo 1943.
 Aerial Gunnery School - Harlingen, Texas 1943.
 Bombardier School-Big Spring, Texas 1944.
 Navigator School-Hondo, Texas 1945.
 Basic Pilot Training-Goodfellow AFB, Texas, 1950.

Specialized Training

(Continued)

- : Advanced Pilot Training-Craig AFB Alabama, 1951.
- Jet Pilot Training-Williams AFB, Arizona, 1951.
- Pilot Combat Crew Training (Fighter)-Nellis AFB, Nevada, 1951.
- IPIS-Moody AFB, Georgia 1952.
- Gunnery Instructor Pilot Training-Luke AFB, Arizona, 1953.
- Special Weapon School-Sandia Base, New Mexico, 1954.
- Aerospace Medicine Primary Course-Brooks AFB, Texas, 1960.
- BMMR Course-Brooks AFB, Texas 1960.
- Navy Experimental Diving Course-Washington D.C., 1960.
- Aviation Accident Pathology Course-AF IP, 1961.
- Nuclear Weapons Effects Course-Sandia Base, New Mexico, 1962.
- Chemical, Biological, and Radiological Effects Course-Brooks AFB, Texas 1962.
- Survival Course-Eglin AFB, Florida 1962.
- Advanced Course in Aerospace Medicine-Ohio State University, 1963.
- Advanced Course in Preventive Medicine-Ohio State University, 1964.
- Water Survival Course-Langley AFB, Virginia 1965.
- Parachute Jump Training-Fort Benning, Georgia 1966.
- Tropical Survival Course-Phillipines, 1968.
- USAFSAM Compression Course-Brooks AFB, Texas 1969.
- Global Medicine Course-Brooks AFB, Texas 1979.
- Aerospace Medical Problems-Brooks AFB, Texas, 1971.
- Medical Aspects of Advanced Warfare, 1964.
- Medical Support For Missile Operation, 1963.
- Lectures in Aerospace Medicine, 1960-61-62-63.
- Medical Officer Flight Familiarization Training.
- Bio-Environmental engineering symposium, 1960-61-62-63.
- Ejection Seat Training.

BIBLIOGRAPHY

JARED M. DUNN, M.D., MPH
Colonel, USAF, MC, SFS

Publications:

Dunn, J.M. Psychomotor functioning while breathing varying partial pressures of oxygen nitrogen. SAM-TR 62-82 June, 1962.

Dunn, J.M. Oxygen Toxicity, A review SAM Rep. 1963.

Davis, J.C., Dunn, M.M., Bassett, B.E. Hyperbaric Medicine in the U.S. Air Force JAMA 224:2 1973.

"Diets and Safe Weight Loss" Wayne State University, Ohio, 1964.

"Space Medicine", Problem & Future School of Nursing, Cinn., Ohio, 1964.

"Medical Aspects of Diving" Ten lecture series for YMCA Instructor Certificate Courses. Ohio 1963-1968

"Life Support SPO and Life Support Equipment Problem in Aerospace Medicine" Brooks AFB, Texas 1965, 1966, 1967.

"Gas Gangrene and Hyperbaric Oxygen" Trauma and Orthopedic Surgeon Conference Brooke Army Hospital, San Antonio, Texas 1969.

"Hyperbaric Oxygen", Bexar County Medical Society, 1970.

Hyperbaric Medicine, NASA Houston Space Center, 1971-73-75-78.

"Hyperbarics and Diving Medicine" University of Texas Medical School Galveston, 1971.

"Hyperbarics" USAF Surgeon Review, 1971.

"Physical and Physiological Basis for Hyperbaric Oxygenation" Navy Experimental Diving Unit, Washington, D.C. 1972.

"Safety and Aircraft Accident Investigation" SAFE Symposium 1972.

"Physiological Training and Aircraft Escape NATO Oslo, Norway 1972.

"Hyperbaric Medicine" Hospital Staff, Hahn AB Germany, 1974.

"Current Status of Hyperbaric Medicine" Surgeon
Staff Wiesbaden Hospital, Wiesbaden, Germany
1975.

Morrey, B.F., Dunn, J.M., Heimbach, R.D. and
Davis, J.C., Hyperbaric Oxygen and Chronic
Osteomyelitis, Clinical Orthopedics and Related
Research p. 121-127, Oct. 1979.

Davis, J.C., Dunn, J.M., Gates, G.A., Heimbach, P.D.
Hyperbaric Oxygen: A New Adjunct for the Management
of Radiation Necrosis, Archives of Otolaryngology
105: 58-61, 1979.

Davis, J.C., Dunn, J.M., Heimbach, R.D., Indications
for Hyperbaric Oxygen Therapy, Tex. Med. 76: 44-
47, 1980.

Hyperbaric Oxygen Therapy, Edited by Davis & Hunt
Contributed to 6 chapters-Published by Undersea
Medical Society and National Library of Medicine,
Feb., 1978.

Hyperbaric Medicine-Lecture Series to St. Louis,
Mo. School of Osteopathy.

Hyperbaric Medicine & Aviation Medicine-Lecture Series
to Kirksville, Mo. School of Osteopathy.

Hyperbaric Medicine-to local County Medical Societies
throughout Texas, 1975-1981.

Hyperbaric Medicine, University of Texas at San
Antonio, 1979-1980.

Hyperbaric Medicine University of Texas at San Antonio
1979-1980.

Altitude Decompression Sickness, Federal Aviation
Agency, Aviation Medical Examiner Seminars, San
Antonio, Texas, Oklahoma City, Oklahoma, Alhambra,
New Mexico.

Hyperbaric Medicine, Lecture Series University of
Southern California Medical School, 1976, 1977, 1978.

Life Support Equipment. Lectures in Aerospace
Medicine Brooks AFB, Texas 1964-65-66-67.

Survival & Aircraft Accidents-Problems in Aerospace
Medicine, Brooks AFB, Texas 1969-1973.

Qualifications:

Developed concept and supervised development of the modern cold water survival system using spacer undergarment, ventile fabric immersion suit and insulated one man life raft.

Introduced Ballistic body armor into the Air Force with concept of special design to meet special needs.

Supervised development and did final evaluation of the tree penetration rescue device for downed airman.

Did medical monitoring and evaluation of PBI Flight Suits.

Served as the inside medical monitor in a three week space simulation chamber experiment at Wright-Patterson AFB where the following was evaluated- He, O₂ atmosphere, water reclamation system- exercise effects on physical conditioning-ability to wear space suits continuously and the physiological impact of this, spread of enteric organisms in closed system, development of waste collection and sampling systems, evaluation of radiation hazards of these collection and sampling techniques, evaluation of nutrition and palatability of Apollo II space diet. Thermo regulation in the atmosphere inside space suits.

Medical evaluation of crew fatigue and performance while flying helicopter long distance missions by refueling and drafting behind C-130.

Medical evaluation of one man helicopter rescue devices.

Introduced air craft accident investigation training into Flight Surgeon, RAN, RAM, physiological training at Brooks AFB.

Developed Aircraft accident investigation Kit for USAF, 1973.

Investigated all private aircraft accidents within 150 miles of San Antonio for FAA to develop equipment, techniques and reporting, 1970-1973.

Developed concept of specialized physiological training for the Flight Nurse course using the type of equipment and procedure they will use in field.

Developed concept to make explosive decompression training in C-9 trainer for Flight Nurses more realistic with fogging, wind and noise.

Developed Disaster Medicine training procedure at Hohn AB that became the prototype for disaster medicine training throughout USAFE.

NAME: Channing L. Ewing, M.D.

BORN: 28 May 1927 Jefferson City, Missouri

EDUCATION: Degrees

| | | |
|-------------|------|---|
| 1944 - 1947 | | University of Richmond, Virginia |
| 1948 - 1952 | MD | Medical College of Virginia |
| 1952 - 1953 | | Internship, USNH, Portsmouth, Virginia |
| | 1953 | Naval School of Aviation Medicine (Flight Surgeon) |
| 1956 - 1957 | | University of Rochester (Surgical Residency) |
| 1962 - 1963 | MPH | Johns Hopkins University |
| 1963 - 1964 | | Crew Systems Department, Naval Air Development Center Johnsville, PA (Aviation Medicine Residency) |

MEDICAL SPECIALTY:

Diplomate, American Board of Preventive Medicine (Aerospace Medicine 1964)

TRAINING AND EXPERIENCE:

| | |
|---------------------|---|
| 1954 - 1956 | Naval Flight Surgeon |
| 1957 - 1958 | General Practice, Florida |
| 1958 - 1962 | Naval Flight Surgeon |
| 1963 - 1964 | Resident, Preventive Medicine, Aerospace Crew Equipment Laboratory, Philadelphia, PA |
| 1964 - 1966 | Naval Flight Surgeon Founder and first chief, Bioengineering Sciences Division, Naval Aerospace Medical Institute. Project Director and Principal Investigator - Determination of Human Dynamic Response to Impact Acceleration |
| Jun 69 - Feb 70 | Naval Flight Surgeon |
| Mar 70 - Mar 71 | Chief, Bioengineering Sciences Division, Naval Aerospace Medical Research Laboratory; Project Director and Principal Investigator - Determination of Human Dynamic Response to Impact Acceleration. |
| Apr 1 76 - Jan 76 | Officer in Charge, Naval Aerospace Medical Research Laboratory Detachment, New Orleans, LA; Project Director and Principal Investigator of Joint Army-Navy Project, "Determination of Human Dynamic Response to Impact Acceleration". |
| Jun 22 76 - present | Scientific Director, Naval Aerospace Medical Research Laboratory Detachment, New Orleans, LA. |

SUMMARY OF ADMINISTRATIVE AND RESEARCH EXPERIENCE:

Since 1959, I have been working on research in human protection against the impact acceleration of crashes and ejections. This research was originally directed toward development of physiologically-based crash helmet test methods, but gradually evolved to determination of: (a) the inertial responses of body segments of human volunteers to impact acceleration; (b) the physiological responses of the human volunteers to those inertial responses; and (c) more recently to the pathological bases of the physiological responses.

This work was originated by me in coordination with engineers. I then performed the experimental design, costed out the program; obtained the funding from Governmental program managers; obtained, designed or built the facilities necessary to perform the work; obtained the human volunteers on whom the program was performed; identified, attracted and personally selected some of the nation's experts in the disciplines necessary to perform the program; obtained or constructed the buildings necessary to house the experimental facilities; and became the Officer in Charge of the facility. I have managed and directed this major research program involving academic institutions, multiple military services, multiple nondefense Government agencies and private industry since 1966, including personal management of all funds. Annual budget for FY-1975 was 2.2 million dollars.

The program described measures the basic engineering characteristics of the human body subjected to force fields and is unique. Data are being supplied to all the Armed Forces, NASA, FAA and the United States Department of Transportation. An International Information Exchange Program (B-58) has been approved by the Governments of the United States and the United Kingdom, covering in part the Human Impact Acceleration and the Human Tolerance to Ship Motion R&D Programs. Facilities used in the program are also unique, and have a replacement value of \$25 million obtained at a cost to the Government of approximately \$2 million.

I have served as the Navy expert in human biodynamic and bioengineering research and development since 1964.

In crash helmet research and development, I conducted all the Navy in-house helmet R&D for the period 1959 through 1968, as well as substantially all development of physiologically-based crash helmet test methods for both Army and Navy for the period 1964 - 1968.

Some of the programs and projects performed, managed and directed both directly and indirectly are listed below:

Principal Investigator:

1. 63771NM4312-.01-5001BEIJ

Title: Determination of Human Dynamic Response to Impact Acceleration
1966 - present.

Funding: Approximately \$8,500,000 extending through FY-1980.

2. 62755N MF 51.524.017 0001BA8H
Title: Development of a Means for Protecting Naval Warfare Casualties from Vehicular, 1972 - present.
Funding: Approximately \$2,100,000 extending through FY-1978 for 2 and 3 together.
- 3 63706N M 4311
Title: Development of Human Vibration Tolerance Envelope for Advanced Seaborne Vessels, 1972 - present.

Associate Investigator

1. 62755N MF 51.524.0057024DAIJ
Title: Human Head and Neck Response to Multiaxis Accelerations During Military Parachuting, 1972 - present.

Co-Principal Investigator

1. Title: Verification of the Mechanism for Vertebral Fracture Due to Caudocephalad Accelerations During Ejection.
ONR Contract with Wayne State University, Detroit, Michigan, N00017-A-0001, 1969 - 1976.
- 2 Title: Biomechanics of Chimpanzees
ONR Contract with Delta Regional Primate Research Center, Tulane University, N00014-69-A-0248-0004, 1971 - present.
- 3 Title: Determination of Human Tolerance to Impact Acceleration
Navy Contract with Wayne State University, Detroit, Michigan, N00600-67-C-0922, 1967 - 1970.

Scientific Coordinator

1. "Development of a Method for Evaluating Means for Reducing Impact Injuries to Pilots in Aircraft Accidents", 1967 - 1968.
2. ONR Contract with Georgia Tech. N00014-A-0159-0006, "Study of the Requirements for an Acceleration Facility for Bioengineering", 1969.
3. ONR Contract with Space Defense Corp. N00014-70-C-0115, "Investigation of the Scientific Bases of an Aircrew Impact Injury Prevention Program", 1969 - 1970.
4. ONR Contract with QEI Corp. N00014-70-C-0082, "Development of the Mathematical Basis of Human Impact Acceleration Response and Data Processing Programs for its Analysis", 1969 - present.
5. ONR Contract with HRB Singer, Inc. N00014-C-0381, Task NR105-668 "Development of a Mathematical Model for Predicting the Probability of Human Injury from Impact Forces", 1972 - 1973.

6. ONR Contract with Tulane University Medical School N00014-69-0248-0001, Task Order 105-541, "Determination of Some Physical Measurements of the Head and Neck of Human Cadavers", 1968-1970.
7. ONR Contract with Desmatics, Inc. N00014-74-C-0154, "Investigation of Statistically-Based Methods for Providing Solutions to Problems Associated with the U. S. Navy's Research on Impact Acceleration Injury Prevention", 1973-1975.

Assistant Investigator

1. Development of a Means for Detecting Hypoxia. BuAer Task Unit TEDNMAE-5112, 1959. Principal Investigator, MR. E. L. Michel. Air Crew Equipment Laboratory, Naval Air Engineering Center, Philadelphia, PA.
2. Development of Crash Helmet Test Methods. Air Crew Equipment Laboratory, Naval Air Engineering Center, Philadelphia, PA, 1959-1960, 1963-1964.

MEDICAL LICENSURE:

1. Virginia.
2. Florida.
3. California.
4. Louisiana.

PROFESSIONAL AND SCIENTIFIC SOCIETY AFFILIATIONS:

1. American College of Preventive Medicine
- 2. Aerospace Medical Association
 - a. Space Medicine Branch
 - b. Aerospace Physiology Branch
3. International Society for the Study of the Lumbar Spine, (Invited Membership).
4. Aerospace Industrial Life Sciences Association.
5. SAFE

PROFESSIONAL COMMITTEES:

1. Education Committee, American College of Preventive Medicine, (Member)
2. American National Standards Institute
 - a. Z-90 Committee on Crash Helmets (Member)
 - b. Z-90 Subcommittee on Impact (SC-1) (Member)

3. Committee on Hearing, Bioacoustics and Biomechanics of the National Academy of Sciences National Research Council (Member).
 - a. Ad Hoc Working Group on Biomechanics (Member).
4. Expert, Biodynamics Committee, Aerospace Medical Panel, Advisory Group for Aerospace Research and Development, North Atlantic Treaty Organization.
5. SAE Safety Test Instrumentation Subcommittee of SAE Automotive Safety Committee, Member, "Non-Dummy" Test Instrumentation Task Group.
6. Aerospace Medical Panel, Advisory Group for Aerospace Research and Development, North Atlantic Treaty Organization, Working Group for:
 - a. Spinal Injuries (Member).
 - b. Impact Testing (Member) (Both now terminated)
7. Research Committee of the Human Factors Section of the American Society of Mechanical Engineers (Appointed by Dr. Herbert Lissner, Chairman) Member 1964-1967.
8. Education Committee, Aerospace Medical Association, Member 1967-1970.
9. Nominations Committee, Aerospace Physiologists' Section, Aerospace Medical Association (Member) 1975 - present.
10. Chairman, Arrangements Committee, Annual Conference on Engineering in Medicine and Biology, Alliance for Engineering in Medicine and Biology, New Orleans, LA, 20-24 Sept 75.
11. Stapp Conference Advisory Committee (Member) 1975 - present.
12. Aerospace Medical Association.
 - a. Honors Committee, member 1978-1979.
 - b. Science and Technology Committee, member 1978-1979. Chairman, 1979.

HONORS AWARDS AND OTHER PROFESSIONAL RECOGNITION:

1. Liljencrantz Award for Acceleration Research, May 1977, Aerospace Medical Association.
2. Fellow, Aerospace Medical Association, 1973.

3. Fellow, American College of Preventive Medicine.
4. Awarded U. S. Patent No. 3,698,670 on Invention of a Vertebral Fracture Prevention System.
5. Appointed Adjunct Professor of Bioengineering, School of Engineering, Tulane University, New Orleans, LA, 1975.
6. Letter of appreciation from Commanding Officer, Naval Aerospace Medical Institute, Pensacola, Florida, dated 1 April 1966, for development and implementation of the Navy residency training program in Aerospace Medicine at NAMI and for receiving an "Outstanding" grade from the site inspector for the American Board of Preventive Medicine.
7. Served as examiner, American Board of Preventive Medicine (Aerospace Medicine), 1973, 1974.
8. Letter of appreciation from Commander, USAF 6570th Aerospace Medical Research Laboratory, Wright-Patterson AFB, Ohio, dated 30 March 1970, for technical assistance and advice during a NASA Life Raft Study, conducted at Kodiak (Alaska) Naval Station.
9. Letter of Appreciation from Commanding Officer, Naval Air Engineering Center, Philadelphia, PA, dated 26 August 1964, for devoted and valuable service in developing proposals for development and improvement in aircrew equipment.
10. Letter of Appreciation from Department of Defense Manager for Manned Space Flight Support Operations, dated 7 October 1965, for accomplishment of all assigned tasks in an outstanding manner while serving as an Aeromedical Flight Controller on Gemini GT-5.
10. Letter of Appreciation and certificate from Department of Defense, Manager for Manned Space Flight Support Operations, dated 28 August 1967, for support of Project Gemini as an Aeromedical Flight Controller (Monitor) for Gemini Missions GT-5 and GTA-9.
12. Listed in American Men of Science, 12th Edition under Physical and Biological Science.
13. Listed in Who's Who in Aviation, Harwood and Charles Publishing Company, 1973.
14. Letter of Appreciation from Surface Effect Ships Project Office for support provided during a simulation of the 2000-ton Surface Effect Ship, dated 28 Sept 1973.
15. Listed in the 16th and 17th Editions of the Directory of Medical Specialists.
16. Listed in American Men and Women of Science, Jacques Cattell Press, Tempe, AZ, 14th Edition.

17. Listed in Who's Who in Louisiana.
18. Listed in Who's Who in the South and Southwest, 15th Edition.
19. Military decorations and service medals:
 - a. Legion of Merit.
 - b. Naval Reserve Medal.
 - c. Naval Expeditionary Medal.
 - d. American Theatre World War II.
 - e. World War II Victory Medal.
 - f. Korean Service Medal.
 - g. United Nations Service Medal.
 - h. National Defense Service Medal.
 - i. Armed Forces Expeditionary Medal (Berlin).

CONSULTANT SERVICE:

1. The consultant for the U. S. Navy from 1964 to present date, on biodynamics relating to impact acceleration, crash protection, crash helmet design and evaluation of vertebral fracture due to crashes and ejections, to other military services, other branches of the Government, private industry, and for dissemination of data and information to friendly foreign governments.
2. United States Department of Transportation.
Area of Interest: Human Biodynamics, 1971 - present.
3. National Aeronautics and Space Administration.
Area of Interest: Human Head and Neck Dynamics, 1972 - present.
4. United States Army.
Area of Interest: Design of Crash Helmets, specifically including the SPH-4, which I designed were adopted as the standard Army crash helmet - 1967-1969.
5. United States Army
Area of Interest: Test methods for evaluation of crash helmets which I designed were adopted by the Army and are included in Army Military Specifications - 1966-1969.

6. Naval Air Systems Command
Area of Interest: a. Design and evaluation of crash helmets, 1964 - present.
b. Mechanisms of vertebral fracture due to ejection from aircraft 1964 - present.
c. Human Dynamic Anthropometry.
7. Naval Material Command, Surface Effect Ship Project Office.
Area of Interest: Tolerance limits of man to vehicular vibration, 1973 - present.
8. United States Army
Area of Interest: Protection of the human vertebral column against fracture in the OV-1 aircraft, 1968-1969.
9. The Society of Automotive Engineers.
Area of Interest: Human Head and Neck Response to Impact Acceleration, 1971-1972.
10. United States Air Force.
Area of Interest: Crash Helmet Test Methods, 1970-1972.
11. American National Standards Institute, Z-90.1 Committee.
Area of Interest: Crash Helmet Test Methods, 1964 - present.
12. Naval Weapons Center.
Area of Interest: Anthropomorphic dummy design criteria, 1971 - present.
13. North American Rockwell Corp., Honeywell, Inc., Grumman Aircraft Corp., others.
Area of Interest: Helmet Test Methods for Weapons Systems Integration, 1969-1973.
14. Royal Navy.
Area of Interest: a. Impact Acceleration and Deceleration, 1972 - present.
b. Personnel Injury due to Ship Vibration and Impact Shock.
15. National Highway Traffic Safety Advisory Council.
Area of Interest: Head and Neck Injury.
16. National Parachute Test Range.
Area of Interest: Human Tolerance Limits to Impact Acceleration due to Parachute Opening Shock, 1975 - present.

PANELS CONDUCTED

1. Co-chairman, Session: Impact 1, 10 April 1967, 38th Annual Scientific Session Aerospace Medical Association.

PANELS CONDUCTED (Cont)

2. Co-chairman, Session: Acceleration 11, 8 May 1968, 39th Annual Scientific Session, Aerospace Medical Association.
3. Co-chairman of Impact Session: International Symposium on Biomechanics conducted by the University of California, San Diego, 29 Jul 1979.
4. Panel Member: Head/Neck/Chest Injury Workshop. Fifteenth (15th) Stapp Crash Conference, 1971.
5. Host, Government Agency Seating Conference, 25 - 26 October 1972.
6. Chairman, Session: Impact 11, 29 Apr 1975, 46th Annual Scientific Session, Aerospace Medical Association.
7. Chairman, Session: Cardiopulmonary Mechanics - Impact and Vibration, Alliance for Engineering in Medicine and Biology, 28th Annual Conference, New Orleans, LA, Sep 20 - 24, 1975.
8. Co-chairman Session 1: Prediction of Response and Injury Resulting from Localized Impact. Symposium on Biodynamic Models and Their Applications. Dayton, OH, 15 - 17 February 1977.
9. Chairman of the 21st Stapp Car Crash Conference, New Orleans, LA, Oct 1977.
10. General Chairman, Neuroelectric Society Scientific Meeting, Marcos Island, FL, Nov 77.
11. Co-chairman, Session: Ejection, 16 May 79. 50th Annual Scientific Session, Aerospace Medical Association.

SEMINARS CONDUCTED

1. Impact Acceleration: Effects on the Human Head and Neck. Invited seminar presented to the Crash Survival Investigator's School, conducted by Dynamic Science, Inc., Phoenix, AZ, 21 Mar 69.
2. Living Human Response to Impact Acceleration. Invited seminar presented to Scientific Staff, NASA, George C. Marshall Space Flight Center, Huntsville, AL, 19 May 70.
3. Human Dynamic Response to Impact Acceleration. Invited seminar presented at National Institute to Neurological Diseases and Stroke, Bethesda, MD, 5 Oct 70.
4. Dynamic Response of a Living Human to Impact Acceleration. Invited seminar, Tulane University Engineering Seminar Series, New Orleans, LA, 7 Oct 71.
5. Protection of Naval Personnel Against Impact Acceleration Injuries. Invited Seminar presented to Commander and staff, Naval Safety Center, Norfolk, VA, 9 Mar 72.

6. Human Deceleration and Impact Research. Invited seminar presented to Southwest Research Institute, San Antonio, TX, 15 Jun 72.
7. Impact Acceleration and Deceleration. Invited all day seminar presented in United Kingdom to Medical Director General, Navy; Commandant, RAF Institute of Aviation Medicine; Dean of Naval Medicine; and about 40 other dignitaries representing the entire U.K. Defense staff in Bioengineering, at Royal Naval Air Medical School, Seafield Park, Hants, U.K., 15 Sep 72.
8. Human Response to Impact Acceleration. Invited Seminar presented at Louisiana State University, New Orleans Medical School, New Orleans, LA, 4 Mar 74.
9. Aircrew Impact Acceleration Research and Naval Aviation Safety. Invited seminar presented to the staff, Crew Systems Division, Naval Air Systems Command, Wash DC, 10 Jun 75.
10. Human Impact Acceleration Research and Naval Aviation Safety. Invited seminar presented to the Commander and staff, Naval Safety Center, Norfolk, VA, 16 Jul 75.
11. Human Acceleration Research. Invited seminar presented to staff, Texas Research Institute of Mental Sciences, Texas Medical Center, Houston, TX, 26 Mar 76.
12. Impact Acceleration Research on the Living Human Being. Invited seminar presented to the staff, Medical College of Wisconsin Neuroscience Center, Apr 76.
13. Human Head and Neck Response to Lateral Impact Acceleration. Invited seminar presented to General Motors Research Center Technical Staff, Detroit, MI, 20 Oct 76.
14. Human Responses to Inertial Forces, Invited colloquium to Applied Physics Laboratory, John Hopkins University, Laurel, MD, 23 Feb 79.

UNPUBLISHED PRESENTATIONS TO PROFESSIONAL MEETINGS:

1. Emergency Underwater Survival and Escape from Aircraft. Presented to 17th Emergency Egress Group. Wash DC, 15 - 16 Nov 66.
2. Factors Involved in Vertebral Injuries During Ejection. Presented to 17th Emergency Egress Group, Wash DC, 16 Nov 66.
3. Position Paper on Crash Helmet Testing presented to USA Standards Institute by letter, Nov 67.
4. Original presentation entitled, "A Proposal for Determination of Human Dynamic Response to Impact Acceleration". Presented to Joint Army-Navy Panel at Ft. Rucker, AL.
5. Crash Helmet Testing Methods. A position paper from the point of view of Naval Aviation. Presented to the Z-90 Committee, United States of America Standards Institute in Los Angeles, CA, 22 - 24 Feb 68.

UNPUBLISHED PRESENTATIONS TO PROFESSIONAL MEETINGS: (Cont)

6. Evaluation of Human Protective Capability of Various Helmet Design Features. Presented to the National Academy of Sciences, National Research Council, Advisory Council on Military Personnel Supplies, Natick, MS, 14 Jun 68.
7. Human Dynamic Response to Impact Acceleration. A progress report. Presented to 4th Joint Army-Navy Conference for Flight Medical Research, 14 Jun 68.
8. Joint Army-Navy Medical Research on Human Head Protection. Presented to National Academy of Sciences. National Research Council Committee on Head Protection, Ft Rucker, AL, Nov 68.
9. Determination of Human Dynamic Response to Impact Acceleration. A progress report. One-hour presentation to the 5th Joint Army-Navy Flight Medical Research Panel, 18 Dec 68.
10. Human Biomechanics and Biodynamics Research. Invited lecture presented at Harvard School of Public Health, 28 May 69.
11. Determination of Human Dynamic Response to Impact Acceleration. A progress report. Presented to the 6th Joint Army-Navy Flight Medical Research Panel, Jun 69.
12. Determination of Human Dynamic Response of the Helmeted Head to Selected Impact Accelerations. A preliminary report. Presented to the 6th Joint Army-Navy Flight Medical Research Panel, Jun 69.
13. Determination of the Mechanism of Ejection Vertebral Fracture. A progress report. Presented to the 6th Joint Army-Navy Flight Medical Research Panel, Jun 69.
14. Determination of Human Dynamic Response to Impact Acceleration. A progress report. Presented to the Joint Army-Navy Aviation Medicine Research Panel, Pensacola, FL, 13 Nov 69.
15. Human Bioengineering Data Available at Naval Aerospace Medical Research Laboratory. Presented to Naval Air Systems Command, Wash DC, 11 - 12 Jun 70.
16. Progress on the Joint Army-Navy Program, "Human Dynamic Response to Impact Acceleration". Joint Army-Navy Aviation Medicine Symposium, 23 Jun 70.
17. The Navy Human Impact Injury Prevention Program. Presented to Chief of Naval Research and 17 other officers and high-ranking civilian scientists. New Orleans, LA, 9 Apr 71.
18. Prevention of Injury Due to Impact. Presented to 10th Army-Navy Aviation Medical Research Symposium, 21 Jul 71.
19. Human Space Envelope Requirements. Presented to Aircraft Cockpit Standardization Conference, New Orleans, LA, 16 Sep 71.

UNPUBLISHED PRESENTATIONS TO PROFESSIONAL MEETINGS (Cont)

20. Impact Acceleration, Helicopter Escape, and Helmet Design and Evaluation. Presentation to the Consultant in Aviation Medicine, Royal Navy. New Orleans, LA, 26 - 27 Jan 72.
21. Protection of Naval Personnel Against Impact Acceleration Injuries. Invited seminar presented to Commander and staff, Naval Safety Center, Norfolk, VA, 9 Mar 72.
22. Ewing, C. L., and Thomas, D. J., Living Human Dynamic Response to -Gx Impact Acceleration 1. Displacements of head and neck. Presented at the 43rd Annual meeting of the Aerospace Medical Association, Miami Beach, FL, 11 May 72.
23. Progress on the Joint Army-Navy Program "Determination of Human Dynamic Response to Impact Acceleration". Presented to the Joint Army-Navy Aviation Medicine Research Symposium, Ft Rucker, AL, 19 Jul 72.
24. Prevention of Injuries due to Vehicular Crashes. Invited lecture presented to New Orleans Chapter, American Society of Mechanical Engineers, New Orleans, LA, 15 Jan 73.
25. The Navy Biomechanics Research Program. Presented to the Government Crash-worthiness Coordination Meeting, sponsored by the Officer of Naval Research. Wash DC, 23 Jan 73.
26. The Navy Aircrew Impact Injury Prevention Program. Invited presentation to Joint Medical Research Conference, Department of Defense, Director of Defense Research and Engineering, 1 Mar 73.
27. The Navy Research Program on Human Response to Vibration. Invited presentation to Joint Medical Research Conference, Director of Defense Research and Engineering, Dept of Defense, 29 Mar 73.
28. Some Bioengineering Aspects of Ejection Seat Design. Presented to Emergency Egress Conference, Wash DC, 2 May 73.
29. Progress on the Joint Army-Navy Impact Injury Prevention Program. Presented to the Joint Army-Navy Aviation Medicine Research Symposium, Pensacola, FL, 18 Jul 73.
30. Inertial Instrumentation of Living Human Subjects. Presented to the 32nd Research Conference on Instrumentation Science, Geneva, NY, 26 Jul 73.
31. Vertebral Fracture and Military Aviation. XXI International Congress of Aviation and Space Medicine, Munich, Germany 22 Sep 73.
32. Role of Articular Facets During +Gx Acceleration. Presented to American Society of Mechanical Engineers Scientific Conference, 11 - 15 Nov 73.
33. Personnel Injuries and Vibration. Presented to Joint Seminar of the Royal Navy and Royal Air Force at the Royal Navy Air Medical School, Seafeld Park, Britain, 21 Jan 74.

34. Human Response to Impact Acceleration. Presented at a Seminar at the Dept. of Physiology, Medical School, Louisiana State University, New Orleans, LA, 4 Mar 74.
35. Joint Army-Navy Aviation Medicine Research Symposium. Status Report on the Joint Army-Navy Impact Injury Prevention Program - 15 minutes. (Include Anderson, Weiss, Becker, Thomas, Hartfield, Ewing), 16 - 17 Jul 74.
36. Dorsal and Lumbar Spine Injury Tolerances. Presented at the 27th Annual Conference of the Alliance for Engineering in Medicine and Biology, Philadelphia, PA, 6 - 10 Oct 1974.
37. Required Space Envelopes Around the Head and Neck for Aircraft Subjected to -Gx Impact Acceleration. Presented at the Second Ad Hoc Government Interagency Coordination Meeting on Crashworthiness Research and Development. NASA-Langley Research Center, Hampton, VA, 12 - 13 Nov 74.
38. Human Head and Neck Response to Impact Acceleration. Presented to the 2nd meeting of the Cervical Spine Research Society, New Orleans, LA, 21 - 23 Nov 74.
39. Call, D. and Ewing, C. L. Human Head and Neck Response to Multiaxis Accelerations During Military Parachuting. Presented at Aerospace Medical Association Meeting, San Francisco, CA, 1 May 75.
40. Ewing, C.L. Non-Fatal Vertebral Fracture Due to Ejection, U. S. Navy, 1959-1970. Presented at Aerospace Medical Association Meeting, San Francisco, CA, 1 May 75. (To be submitted for publication).
41. Ewing, C. L. Motion Capacities of the Cervical Spine. Presented as a portion of the American Academy of Orthopedic Surgeons Courses on "The Neck", New Orleans, LA, 21 - 23 Apr 77.
42. Ewing, C. L., and Thomas, D. J. Biomechanical Effects of Experimental Impact Acceleration on the Head and Neck of Volunteers. Presented at 9th meeting of the Neuroelectric Society at Marco Beach, FL, 25 Nov 77.
43. Thomas, D.J., Lustick, L., Jessop, M.E., Muzzy, W.H., and Ewing, C.L. Dynamic Response of the Primate Head and Neck to +Y Impact Acceleration. Presented to the 9th Neuroelectric Society Meeting, Marco Beach, FL, 25 Nov 77.
44. Recent Developments in Biodynamic Research Relative to Aircraft Seating Systems. Presented to 15th Government Agency Aircraft Seating Systems Panel, Fort Eustis, VA, 26 Sep 78.
45. Ewing, C. L. A Method for Prevention of Vertebral Fracture in +Gz. Presented at SAFE Conference, San Diego, CA, 10 Oct 78.
46. Kazarian, D., and Ewing, C. L. Navy and Air Force Non-Fatal Vertebral Injury Ejection Fractures. Presented to SAFE Conference, San Diego, CA, 10 Oct 78.

UNPUBLISHED PRESENTATIONS TO PROFESSIONAL MEETINGS (Cont)

47. Ewing, C. L. The U.S. Navy Research Program in Human Effects of Ship Motion. Invited presentation to the Ship Motion Working Party, Royal Naval Personnel Research Committee, Medical Research Council, London, England, 11 Oct 78.

PRESENTATIONS FOR RESEARCH PROJECT ON WHICH I WAS PRINCIPAL INVESTIGATOR:

1. Guignard, J.C., Landrum, G.J., and Reardon, Experimental Evaluation of Human Long-Term Vibration Exposures Permitted by the Current International Standard ISO 2631 - 1974. Presented to Annual Science Meeting, Aerospace Medical Assoc, Miami, FL, 10-13 May 76.
2. Berger, M.D. Covariance and Correlation Studies of Raw Sensory Evoked Potentials. Presented to the Society of Neuroscience, 6th Annual Meeting, Toronto, Canada, 7-11 Nov 76,
3. Unterharnscheidt, F. Preliminary Report on the Neuropathological Findings in Rhesus Monkeys Undergoing Short Duration -Gx Acceleration. Presented at the World Federation of Neurological Surgery, Sao Paulo, Brazil, 19-25 Jun 77.
4. Unterharnscheidt, F.J. Potential Relationship Between Human Central Nervous System Injury and Impact Forces Based on Primate Studies. Presented at the 9th Neuroelectric Society Meeting at Marco Beach, FL, 25 Nov 77.
5. Anderson, William and Call, Doug. Human Response to Parachute Opening Shock. Presented at Range Commander's Conference, El Centro, CA, 14-16 Mar 78.
6. Kennedy, R.S. Bioelectric Indicants of Diver's Ability to Perform Useful Work. Presentation Undersea Medical Society, Washington, DC, Mar 78.
7. Weiss, M.S. and Berger, M.D. Impact Acceleration Related Changes in Brain Electrical Activity. Presented to the 9th Neuroelectric Society Meeting at Marco Beach, FL, 25 Nov 77.
8. Kennedy, R.S. and Bittner, A.C., Jr. The Stability of Complex Human Performance for Extended Periods. Applications for Studies of Environmental Stress. Presented to the Aerospace Medical Assoc Meeting, New Orleans, LA, 8-11 May 78.
9. Muzzy, William H, III, and Willems, Gilberto C. Human Response to Vibration and Shock. Presented to 49th Shock and Vibration Symposium, 17-19 Oct 78.

PUBLICATIONS:

1. Ewing, C.L. Physiological Significance of Breathing Pattern Changes as a Means of Detecting Hypoxia: A review. NADC-ACEL-407, Philadelphia, PA. Naval Air Development Center, Air Crew Equipment Laboratory, 1959.
2. Ewing, C.L. Design Criteria and Parameters of Life Support Helmets. In: Effective Life Support Helmets. Report 64-3. Biotechnology, Inc., Arlington, VA, 1963.

PUBLICATIONS Cont):

3. Ewing, C.L. Defects of Current Navy Helmets. In: Effective Life Support Helmets. Report 64-3, Biotechnology, Inc. Arlington, VA, 1963.
4. Ewing, C.L. Vetebral Fracture in Jet Aircraft Accidents: A statistical for the period 1959 through 1963, U.S. Navy. Aerospace Medicine, 37:505, 1966.
5. Ewing, C.L., Thomas, D.J., Beeler, G.W., Jr., Patrick, L.M. and Gillis, D.B., Dynamic response of the head and neck of the living human to -Gx impact accelerations. In: Proceedings of the Twelfth Stapp Car Crash Conference, New York: Society of Automotive Engineers, 1968, pp 424-439.
6. Ewing, C.L., Scientific Editor, U.S. Navy Flight Surgeon's Manual. Washington, DC, U.S. Government Printing Office, 1968, pp 896.
7. Ewing, C.L., Casualty Management and Aeromedical Evaluation: In: U.S. Navy Flight Surgeon's Manual. Washington, DC: U.S. Government Printing Office, 1968, pp 764-788.
8. Ewing, C.L., and Passaglia, M. Gas Physiology in Naval Aerospace Medicine. In: U.S. Navy Flight Surgeon's Manual. Washington, DC: U.S. Government Printing Office, 1968, pp 395-494.
9. Ewing, C.L. and Millington, R. Enviromental Factors in Survival, Work, Injury and Disease. In: U.S. Navy Flight Surgeon's Manual, Washington, DC, U.S. Government Printing Office, 1968, pp 495-544.
10. Ewing, C.L., Hearing. Part of Chapter 7, Otorhinolaryngology in Aerospace Medicine. U.S. Navy Flight Surgeon's Manual, Washington, DC: U.S. Government Printing Office, 1968, pp 170-215.
11. Ewing C.L., Physical Selection, part of Chapter 15, Selection of Aviation Personnel. In: U.S. Navy Flight Surgeon's Manual, Washington, DC, U.S. Government Printing Office, 1968, pp 635-639.
12. Ewing, C.L., Operational Aspects. Part of Chapter 9, Vision in Aerospace Medicine. In: U.S. Navy Flight Surgeon's Manual, Washington, DC: U.S. Government Printing Office, 1968, pp 354-369.
13. Ewing, C.L. Evaluation of Head Protection in Aircraft. Aerospace Medicine 40:596, 1969.
14. Ewing, C.L., Thomas, D.J., Patrick, L.M., Beeler, G.W., Jr., and Smith, M.J., Living Human Dynamic Response to -Gx Impact Acceleration. 11. Accelerations Measured on the Head and Neck. In: Proceedings, Thirteenth Stapp Car Crash Conference. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, 1969.
15. Ewing, C.L., King, A.I., Prasad, P., and Vulcan, P. A method for Increasing Threshold Level for Vertebral Fracture due to +Gz Impact Acceleration. In: Digest of Proceedings of Ninth International Conference in Engineering on Medicine and Biology, Melbourne, Australia, Aug 71, p 154.
16. Ewing, C.L., Non-fatal Ejection Vertebral Fracture, U.S. Navy, fiscal years 1959 - 1965. Costs. Aerospace Medicine, 42:1226, 1971.

PUBLICATIONS (Cont):

17. Ewing, C.L. and Thomas, D.J. Human Dynamic Response to -Gx Impact Acceleration. In: AGARD Conference Proceedings No 88 on Linear Acceleration of Impact Type. AGARD-CP-88-71. London: Technical Editing and Reproduction Ltd. 1971, pp 11-1 and 11-12.
18. Thomas, D.J. and Ewing, C.L. Theoretical Mechanics for Expressing Impact Acceleration Response of Human Beings. In: AGARD Conference Proceedings No 88 on Linear Acceleration of Impact Type. Aerospace Medical Panel, AGARD-CP-8801. London: Technical Editing and Reproduction Ltd, 1971, pp 12-1 through 12-7.
19. Ewing, C.L., King, A.I., and Prasad, P. Structural Considerations of the Human Vertebral Column under +Gz Impact Acceleration. AIAA, Journal of Aircraft, 9:84, 1972.
20. Ewing, C.L., and Thomas, D.J. Human Head and Neck Response to Impact Acceleration. Monograph 21, Naval Aerospace Medical Research Laboratory Detachment, New Orleans, LA 70189, Aug 72, p 377.
21. Ewing, C.L. Non-fatal Ejection Vertebral Fracture and its Prevention. In: AGARD Conference Proceedings No 110 on Current Status in Aerospace Medicine. AGARD-CP-110. Scotland. Technical Editing and Reproduction, Ltd, 1973, pp C2-1 through C2-8.
22. Prasad, P., King, A.I., and Ewing, C.L. The Role of the Articular Facets During +Gz Acceleration. Proceedings of the 25th Annual Conference on Engineering in Medicine and Biology, Miami Beach, Florida, 4 Oct 72, p 241.
23. Ewing, C.L. and Thomas, D.J. Bioengineering Aspects of Spinal Injury in OV-1 (Mohawk) Aircraft, AGARD Conference Proceedings No. 134. The Netherlands. Technical Editing and Reproduction Ltd., 1974, pp A2-1 through A2-9.
24. Muzzy, W.H., Ewing, C.L. and Seal, P.W. Industrial Electrodynamic Vibrator for Human Experimentation. A Feasibility Study. Proceedings of Human Response to Vibration Conference, Salford, England, 19 Sep 73.
25. Ewing, C.L. and Thomas, D.J. Torque versus Angular Displacement Response of the Human Head to -Gx Impact Acceleration, Proceedings, 17th Stapp Car Crash Conference. Society of Automotive Engineers. 400 Commonwealth Drive, Warrendale, PA 15096, 17 Nov 73, pp 309-342.
26. Prasad, P., King, A.I., and Ewing, C.L. Role of Articular Facets During +Gz Acceleration, Journal of Applied Mechanics. Jun 74, pp 321-322.
27. King, A.I., Prasad, P., and Ewing, C.L. Mechanism of Spinal Injury due to Caudocephalad Acceleration, Symposium on the Lumbar Spine, 19-21 Jun 74, Montreal, Canada, Orthopedic Clinics of North America, Vol 16, No. 1, Jan 75.

PUBLICATIONS (Cont):

28. Ewing, C.L. Injury Criteria and Human Tolerance for the Neck. Aircraft Crashworthiness, edited by Kenneth Saczalski, George T. Singley, III, Walter D. Pilkey, and Ronald L. Huston, published by the University Press of Virginia, Charlottesville, VA, 1975.
29. Ewing, C.L., Thomas, D.J., Lustick, L., Becker, E., Willems, G., and Muzzy, W. The Effect of the Initial Position of the Head and Neck on the Dynamic Response of the Human Head and Neck to -Gx Impact Acceleration. Proceedings, 19th Stapp Car Crash Conference, Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, 1975.
30. Jex, H.R., O'Hanlon, J.F., and Ewing, C.L. Simulated Rough Water Operations During Long Cruises in a 2000 Ton Surface Effect Ship, Phases I and IA. Systems Technology, Inc., Hawthorne, CA 90250. Technical Report No. 1057-2, Feb 76. ADB009519.
31. Dahnke, J.W., Palmer, J.F., and Ewing, C.L. Results of Parachute Opening Forces Test Program. National Parachute Test Range, El Centro, CA 92243. Technical Report No. 2-76, Apr 76.
33. Ewing, C.L., Thomas, D.J., Lustick, L., Muzzy, W.H., Willems, G., and Majewski, P. The Effect of Duration, Rate of Onset and Peak -Gx Acceleration on Dynamic Response of the Human Head and Neck, Proceedings, 20th Stapp Car Crash Conference, Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, 1976.
33. Call, D.W., Palmer, J.F., and Ewing, C.L. Further Studies of Human Head and Neck Response to Multiaxis Accelerations During Military Parachuting. Presented at Aerospace Medical Association Meeting, Miami, FL, May 76. Preprints only.
34. Ewing, C.L. and Unterharnscheidt, F.J., Neuropathology and Cause of Death in U.S. Naval Aircraft, AGARD Conference Proceedings 190. Recent Advances in Aviation Pathology. AGARD-CP-190, Denmark, Technical Editing and Reproduction Ltd., 1974, pp B16-1 through B16-6.
35. Ewing, C.L., Thomas, D.J., Jessop, M.E., Lustick, L., Willems, G.C., Muzzy, W.H., and Bcker, E.B. Dynamic Response of Human and Primate Head and Neck to Gy Impact Acceleration. Final report on an Interagency Agreement Number DOT-HS-4-00852 between the National Highway Traffic Safety Administration and the Naval Aerospace Medical Research Laboratory Detachment, 4 Nov 76. DOT Report No. HS-803 058.
36. Call, D.W., Moynihan, R.W. and Ewing, C.L. Human Response to Multiaxis Accelerations During Military Parachuting. Presented at Aerospace Medical Association Meeting, Las Vegas, NV, May 77. (Preprint only).
37. Ewing, C.L. Proposed Human Tolerance Limits for Parachute Opening Shock in Parachutists. Presented at Aerospace Medical Association Meeting, Las Vegas, NV, May 77. Submitted for publication, Aviation, Space and Environmental Medicine.

PUBLICATIONS (Cont):

38. Ewing, C.L., Thomas, D.J., Lustick, L., Muzzy, W., Willems, G., and Majewski, P. The Dynamic Response of the Human Head and Neck to Gy Impact Acceleration. Proceedings 21st Stapp Car Crash Conference, SAE, 400 Commonwealth Drive, Warrendale, PA, 15096, Oct 77.
39. Ewing, C.L., Thomas, D.J., Majewski, P., Black, R., and Lustick, L. Measurement of Head, T₁ and Pelvic Response to -Gx Impact Acceleration on Man. Proceedings 21st Stapp Car Crash Conference, SAE, 400 Commonwealth Drive, Warrendale, PA, 15096, Oct 77. Also, selected for publication, SAE Transactions, Vol 86, 1978.
40. Thomas, D.J., Majewski, P., Ewing, C.L., and Gilbert, N., Medical Qualification Procedures for Hazardous Duty Aeromedical Research. Presented to NATO/AGARD Meeting in London, England, 24-28 Oct 77. Published, AGARD Conference Proceeding No 231, pp A3 through A-13, Sep 78.
41. Thomas, D.J., Majewski, P.L., Guignard, J., Ewing, C.L. Clinical Medical Effects on Volunteers Undergoing 48-hour Simulations of the Modeled 2000-ton SES Motion. Presented at Aerospace Medical Association Meeting, New Orleans, LA, 8-11 May 78. Preprint only.
42. Sances, Jr., A., Larson, S. J, Cusick, J. F, Myklebust, J., Ewing, C. L, Jodat, R., Ackmann, J. J, and Walsh, P. Early Somatosensory Evoked Potentials. Electroencephalography and Clinical Neurophysiology, 45: 505-514, 1978.
43. Ewing, C.L, Thomas, D.J, Lustick, L, Muzzy, W.H, Willems, G.C, and Majewski, P.L. Effect of Initial Position on the Human Head and Neck Response to +Y Impact Acceleration Proceedings. 22nd Stapp Car Crash Conference, SAE, Oct 78. Also published in Transactions, Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, Aug 79.
44. Unterharnscheidt, F.J, and Ewing, C.L. Potential Relationship between Central Nervous System Injury and Impact Forces Based on Primate Studies. Presented at AGARD Conference, Paris, France, Nov 78. Published in AGARD Conference Proceedings. No. 253, 7 Rue Ancelle, 92200 Nuilly-Sur-Seine, France, pp A18: 1-18, May 1979.
45. Ewing, C.L, and Thomas, D.J, Lustick, L. Multi-axis Dynamic Response of the Human Head and Neck to Impact Acceleration. Presented AGARD, Paris, France, Nov 78. Published in AGARD Conference Proceedings. No 253, 7 Rue Ancelle, 92200 Nuilly-Sur-Seine, France, pp A5: 1-27, May 1979.
46. Majewski, P.L, Borgman, T.J, Thomas, D.J, and Ewing, C.L. Transient Intraventricular Conduction Defects Observed During Experimental Impact in Human Subjects. Presented at AGRAD Conference, Paris, France, Nov 78. Published in AGARD Conference Proceedings, NO 253, 7 Rue Ancelle, 92200 Nuilly-Sur-Seine, France, pp A6: 1-11, May 1979
47. Walsh, P.R, Larson, S.J, Sances, A., JR, Ewing, C.L, Thomas, D.J, Weiss, M., Berger, M., Myklebust, J, Cusick, J.F, and Saltzbert, B. Experimental methods for evaluating spinal cord injury during impact acceleration. In Electrotherapeutic Sleep and Electroanesthesia, Vol V, F.M. Wageneder and R.H. Germann, Eds., Universitt Graz, 1978.

PUBLICATIONS FROM RESEARCH PROJECT ON WHICH I WAS PRINCIPAL INVESTIGATOR:

1. Thomas, D.J. Specialized Anthropometric Requirements for Protective Equipment Evaluation. AGARD Conference Proceedings #110 on Current Status in Aerospace Medicine. Published Feb 73.
2. Becker, E.B. Measurement of Mass Distribution Parameters of Anatomical Segments. Proceedings 16th Stapp Car Crash Conference. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA, 1972, pp 160-185.
3. Becker, E.B. Preliminary Discussion of an Approach to Modeling Living Human Head and Neck Response to -Gx Impact Acceleration. In: Human Impact Response (W.F. King and H.J. Mertz, Eds.) NY. Plenum Press, 1973, pp 321-329.
4. Walker, L.B., Harris, E.H., Pontius, U.R. Mass, Volume, Center of Mass and Mass Moment of Inertia of Head and Neck of the Human Body. Proceedings 17th Stapp Car Crash Conference, SAE, 400 Commonwealth Dr., Warrendale, PA 15096, 1973.
5. Walker, L.B. Determination of Some Physical Measurements of the Head and Neck of Human Cadavers. Final Contract Report, Tulane University, New Orleans, LA, 1974. Contract #
6. Becker, E.B. A Photographic Data System for Determination of 3-D Effects of Multiaxis Impact Acceleration on Living Humans. Proceedings, Society of Photo-optical Instrumentation Engineers, Vol 57, Box 146, Palo Verdes Estates, CA 90274, 1975.
7. Smith, D.E., and Anderson, W.R. A Linear Model of the Human Head-Neck System for -Gx Impact Acceleration. Presented to Aerospace Medical Association, 1 May 75. Preprint only.
8. Becker, E.B., and Willems, G. An Experimentally Validated 3-D Inertial Tracking Package for Application in Biodynamics Research. Proceedings, 19th Stapp Car Crash Conference, SAE, 400 Commonwealth Dr., Warrendale, PA 15096, 1975.
9. Shugar, T.A. Transient Structural Response of the Linear Skull-Brain System, Proceedings, 19th Stapp Car Crash Conference, SAE, NY, Nov 75.
10. Muzzy, W.H., and Lustick, L. Comparison of Kinematic Parameters between Hybrid II Head and Neck System with Human Volunteers for -Gx Acceleration. Proceedings 20th Stapp Car Crash Conference, Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, 1976.
11. Weiss, M.S. Modification of Kolmogorov-Smirnov Statistic for use with Correlated Data. Journal of American Statistical Association, Vol 23, No 364, pp 872-875, Dec 78.

12. Frisch, G.D, O'Rourke, J, and D'Aulerio, L. The Effectiveness of Mathematical Models as a Human Analog, Paper 760774. Presented at 1976 SAE National Automobile Engineering and Manufacturing Meeting. Mathematical Modeling of Biodynamic Response to Impact. Published in SAE, p 412. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096. 1976.
13. Tennyson, S.A, Mital, N.K, and King, A.I. Electromyographic Signals of the Spinal Musculature During +Gz Impact Acceleration. Symposium on the Lumbar Spine-II Orthopedic Clinics of North America, Jan 77.
14. Deutsch, S. A Fifteen-Electrode Totally Implanted Time-Multiplex Telemetry Unit. Final Report to ONR under Contract N00014-76-C-0241, Jan 77.
15. Frisch, G.D, O'Rourke, J, and D'Auterio, L. The Mechanism of Head and Neck Response to -Gx Impact Acceleration. A Math Modeling Approach. Presented at the 47th Aerospace Medical Association Meeting, Bal Harbor, FL, 10-13 May 76. Published, Aviation, Space and Environmental Medicine, 48: 223, Mar 77.
16. Willems, G. A Detailed Performance Evaluation of Subminiature Piezoresistive Accelerometers. Presented to the 23rd International Instrumentation Symposium in Las Vegas, NV, 1-5 May 77. Published, Proceedings of Instrumentation in the Aero-space Industry, Vol 23, Instrument Society of America, 400 Stanwix St, Pittsburg, PA 15222, pp 531-540.
17. Shugar, T.A. A Finite Element Head Injury Model Vol. I and II. Civil Engineering Laboratory Technical Report R 854-1 and R854-2, Jul 77. AD No. A043582.
18. Kennedy, R.S, and Bittner, A.C, Jr. The Development of a Navy Performance Evaluation Test and Environmental Research (PETER). Presented at the Personnel Performance Measurement Conference on 12-14 Oct 77, San Diego, CA. Published in Symposium Proceedings: Productivity Enhancement: Personnel Performance Assessment in Navy Systems, Navy Personnel Research and Development Center, San Diego, CA 92152.
19. Becker, E. Stereoradiographic Measurements for Anatomically Mounted Instruments. Proceedings of the 21st Stapp Car Crash Conference, SAE, 400 Commonwealth Drive, Warrendale, PA 25096, Oct 77.
20. Anderson, William R, and Smith, Dennis E. A Linear Model of the Human Head-Neck System for -Gx Impact Acceleration. Presented at Symposium on Biodynamic Models and their Applications, 15-17 Feb 77 at the Bergamo Center, Dayton, OH. Aviation, Space and Environmental Medicine. Vol 49, No. 1, Section II, pp 224, Jan 78.
21. Anderson, William R, Richard A, and Willems, Giberto C. An Empirical Model of Intracranial Pressure and Head Motion Resulting from Vibratory Motion of a Seated Rhesus Monkey, Symposium on Biodynamic Models and their Applications, 15-17 Feb 77. Published in Aviation, Space and Environmental Medicine. Vol 49, No. 1, Section II, pp 240-252, Jan 78.

22. Frisch, G.D, and Cooper, C.W. Mathematical Modeling of the Head and Neck Response to -Gx Impact Acceleration. Minimum Articulation Requirements. Presented at Symposium on Biodynamic Models and their Applications, 15-17 Feb 77. Published in Aviation, Space and Environmental Medicine. Vol 49, No. 1, Section II, pp 196-204, Jan 78.
23. Schneider, L, Wand Bowman, B.M. Prediction of Head/Neck Dynamic Response of Selected Military Subjects to -Gx Acceleration. Aviation Space and Environmental Medicine, Vol 49, No. 1, Section II, p 211, Jan 78.
24. Frisch, Georg D. A Human Body and Crew Station Modeling System for Motion Studies. Presented at AGARD Conference, Paris, Nov 78. Published AGARD Conference Proceedings, No 253. 7 Rue Ancelle, 92200 Nully-Sur-Seine, France, pp A21: 1-23, May 1979.
25. Weiss, M.S, and Berger, M.D. Impact Acceleration Related Changes in Brain Electrical Activity. Presented at AGARD Conference, Paris, Nov 78. Published in Conference Proceedings, No 253, 7 Rue Ancelle, 92200 Nully-Sur-Seine, France, pp A20: 1-9, May 1979.

RESEARCH LETTER REPORTS:

1. Hazardous Duty Pay for Human Subjects Injured in Experiments. ACEL-MANC ltr XG:421:CLE:Ida, Ser 1320 (3563) of 3 Sep 59 to Chief of Naval Personnel. (Resulted in change in law covering payment of hazardous duty pay to human subjects in 1963 or 64 Military Pay Bill).
2. Design Consideration of the APH-5 Crash Helmet. NAMC ltr, XR:421:CLE:Ida, 10126 (1885) of 36 Feb 60 to Commanding Officer, U.S. Army Aviation Center, Fort Rucker, AL.

This letter was used as a basis for a large part of the position paper by the U.S. Army Surgeon General's office which Dr. Anthony Bezreh presented at the, "In-process review (of) Army Aircraft Crewman's Helmet on 28 Sep 61 at Natick, MS, entitled, "Leveled and Priority of Protective Requirements".
3. Design Requirements for Crash Helmets. NAEC ltr, XG:451:CLE:aea; 10126 (3) (5262) of 16 Dec 63 to Chief, Bureau of Naval Weapons (RAAE-2). Outlines a complete research program for crash helmet investigation.
4. Research, Development and Evaluation of Dome Type Full Pressure Suit Helmet, Interim Report. Problem Assignment #C44AE22-42. NAEC Philadelphia, PA ltr, C-451:CLE:aca; 10126(3)/C44AE22-42(5659) of 20 May 64.
5. Acceleration Concussion in Naval Aviation; a working paper on the problem to Bureau of Medicine and Surgery (Code 522), dated Dec 64.

This letter was "considered to be of sufficient significance to justify the study of head protection as set forth. In addition, a General Operations Requirement to set forth the need and objectives of development of a head restraint device" was prepared as a result of this paper.

RESEARCH LETTER REPORTS (Cont):

Also, at my request a conference was scheduled at the Naval Medical Research Institute, Bethesda, Maryland on 27 Jan 1965, and BuWeps airmail speedletter, RAAE-25/47:AM of 14 Jan 1965 to C.O., NAMI requested that I furnish a (1) bibliography and abstracts pertinent to the establishment of research theories of injury mechanisms and (2) a research program plan. The program was presented, accepted, funded by BuWeps as Wep Task #RAE 20 B 073/4401/FO12 1011. However, I could not be transferred to NMRI to do my work and, therefore, Dr. Ayub Ommaya of N.I.H. subsequently performed the research.

6. A Study of Aviation Medical Education in the U.S. Navy, 1964. Fifty copies printed.

This study represents the only investigation of the Navy's needs in aviation medicine education ever put in writing. Except for a tabulation in 1950 of the results of questionnaires submitted to Navy flight surgeons, it is the only attempt to indicate needed directions of aviation medical education.

7. Comments Concerning NATO Standardization Agreement 3474 - Temporary Restrictions on Flying due to Extraneous Physiological Reasons: U.S. Naval School of Aviation Medicine letter 4B/asd;3750; to Chief, Bureau of Naval Weapons (RREN-512). 30 April 65. This letter established Navy policy in this matter for NATO.

8. Deficiencies in APH-6A Helmets. NAMI letter 4B/asd;3750; 2 Jun 65, to Chief, BuWeps (RAAE-2), 2 Jun 65. This letter caused recall of a \$2 million helmet procurement due to defective manufacture.

9. A Critical Analysis of the Qualitative Material Requirement for Aircrewman Protective Headgear (u) (CDOG paragraph 1439 b (12)). Ten pages. To: Office of the Surgeon General, U.S. Army, Colonel Sid Marvin, MC USA, dtd 16 Feb 66. .

10. The Medical Effects of an Attempted Simulation of Surface Effect Ship Motion. Thomas, D.J., Majewski, P., Spence, C, and Ewing, C.L. Report to Surface Effect Ship Project Office, Feb 74.

Letter Reports to U.S. Army Aeromedical Research Laboratory, Fort Rucker, Alabama

11. Bioengineering considerations of human anthropometry of the AH-56A aircraft and the Honeywell helmet-mounted gunsight, 13 Jun 67.

12. Bioengineering considerations of spinal injury in Mohawk aircraft. 5 pp plus 3 photographs, 3 Jul 67.

13. Kent Helmet Retention Device: A preliminary evaluation report, 9 Jan 68.

14. AFH-1 Crash Helmet Weights: A preliminary report, 9 Jan 68.

15. An Evaluation of the AFH-1 Crash Helmet. 22 pp plus 21 figures, Mar 68.

16. An Evaluation of the SPH-3 Helmet and Various Modifications. A preliminary report, 16 pp, Sep 68.

RESEARCH LETTER REPORTS (Cont):

17. An Evaluation of the Improved Martin-Baker Ejection Seat Torso Harness for the Army OV-1 (Mohawk) Aircraft, 4 pp, 27 May 69.
18. Thomas, D.J, Majewski, P.K, Guignard, J.C, and Ewing, C.L. Clinical Medical Effects on Volunteers Undergoing 48-Hour Motion Simulations of the 2000-Ton Surface Effect Ship Model. Final medical report to Surface Effect Ship Project Office, 7 Apr 76.

Letter Reports from Research Projects of which I was Investigator

19. Majewski, P.L. Final Report on the Medical Effect of Simulated 2000-Ton Surface Effect Ship Motions on Human Volunteer Subjects, Aug and Oct 74, 29 Jul 75.
20. Guignard, J.C, and McCauley, M.E. Motion Sickness Incidence Induced by Complex Periodic Waveforms. Final Report to ONR, Dec 76.

CONTRACT RESEARCH REPORTS:

1. DAYTON T. BROWN, INC.

a. Development of Test Methods for Determination of Helmet Impact Attenuation Capability:

- (1) Impact Testing of Helmet Liner Materials. Dayton T. Brown Engineering Report 9399A, 12 Sep 67, 44 pp plus 2 photographs.
- (2) Static Load Testing of Helmet Shell Materials. Dayton T. Brown, Technical Report TR-9959, 7 pp.
- (3) Impact Testing of Helmet Shell Material. Dayton T. Brown Technical Report TR-9951. 2 Nov 67, 7 pp.
- (4) Impact Tests on Complete Helmet Assemblies. Dayton T. Brown Engineering Report 9438D, 8 Mar 68. 21 Nov 68, 48 pp.
- (5) Impact Tests on Complete Helmet Assemblies. Addendum 1. Dayton T. Brown Engineering Report 9438, 21 Nov 68, 48 pp.
- (6) Comparison of Impact Test Results from Swingaway and Rigid Anvil Modes. Dayton T. Brown Technical Report TR-680575, 15 Apr 68, 23 pp plus 2 photographs.
- (7) Development of High Velocity Helmet Test Methods and Apparatus. Dayton T. Brown Engineering Report TR-681888, 25 Nov 68, 17 pp plus 2 photographs.
- (8) High Velocity Helmet Impact Methods and Apparatus. Dayton T. Brown Test Report DTB02R70-0756, 20 May 70, 66 pp.

(9) Effect of Temperature and Humidity Sensitivity of Quartz Accelerometers used in Crash Helmet Testing. Dayton T. Brown Technical Note 70-TRM-0146.

(10) Instrumentation Systems for Determination of Helmet Impact Protective Capability. Dayton T. Brown Test Report DTB02R70-1196, Sep 70, 61 pp.

(11) Fastener Effects on Helmet Impact Tests. Dayton T. Brown Test Report DTB02R70-0360, Mar 70, 22 pp.

(12) Local Curvature of Headform Effects on Helmet Impact Tests. Dayton T. Brown Test Report DTB02R70-0539, Apr 70, 22 pp plus 11 illustrations.

b. Development of Test Methods for Determination of Helmet Mass Distribution

(1) A Laboratory Methods for Locating the Center of Mass of Crash Helmets. Dayton T. Brown Technical Report, 10 Jun 65, 22 pp plus 7 photographs.

(2) Development of an Improved Test Method for Determination of Helmet Center of Mass and Mass Moment of Inertia. Dayton T. Brown Technical Report 9763B, 13 Feb 68, 60 pp.

(3) Measurement of Center of Mass and Mass Moments of Inertia of Selected Helmets with or without Helmet-Mounted Gunsights. Dayton T. Brown Test Report 9763B, Addendum, 1 Nov 68, 19 pp plus 4 photographs.

(4) Modification of Equipment for Determination of Helmet Center of Mass. Dayton T. Brown Technical Note DTB02R70-1336, 28 Sep 70, 12 pp.

c. Development of Test Methods for Determination of Helmet Shell Composition

(1) Ignition Loss of Cured Reinforced Resin versus Helmet Design Parameters. Dayton T. Brown Test Report DTB02R70-1080, 24 Jul 70, 28 pp.

d. Development of Comprehensive Helmet Evaluation Methods

(1) First Article Test Units. Dayton T. Brown Technical Report DTB02R70-0289, 2 Mar 70, 102 pp.

(2) Proposed Technical Test Specifications Outline for Helmets. Dayton T. Brown Test Report DTB02R70-1002, 26 Jun 70, 28 pp.

2. TULANE UNIVERSITY

a. Walker, L.B., Jr, Harris, E.H, and Pontius, U.R, Mass, Volume, Center of Mass and Mass Moment of Inertia of Head and Head and Neck of Human Body. Proceedings Seventeenth Car Crash Conference. Society of Automotive Engineers, NY, 1973, pp 525-537.

b. Walker, Leon B. Determination of some Physical Measurement of the Head and Neck of Human Cadavers, Final Contract Report, Tulane University, New Orleans, LA, 1973.

3. SPACE DEFENSE CORPORATION

a. Theoretical Analysis of the Motions of the Head in Three Dimensional Space, with One-point, Two-point and Three-point Mounting Systems. Preliminary Report, 66 pp plus 16 figures, TR 70-103A, 27 Feb 70.

b. State of the Art Analysis of Transducers for Use on Air Crew Impact Injury Prevention Studies. Preliminary report, 94 pp, 16 tables, 21 figures and Appendices A-E, TR 70-112, 4 May 70.

c. Data Train Analysis, Air Crew Impact Injury Prevention Program. Interim Report, 77 pp, 7 tables plus 3 figures, TR-70-118A, 9 Jun 70.

d. Data Train Analysis Air Crew Impact Injury Prevention Program. Final Report, 203 pp plus figures plus tables plus 79 pp of Appendices A-C, TR 70-122, 31 Jul 70.

4. SERENDIPITY ASSOCIATES

a. Development of a Method for Evaluating Means for Reducing Impact Injuries to Pilots in Aircraft Accidents. Final report, 118 pp, 11 tables, plus 11 figures, TR 69-68-7, Jun 68.

5. HRB - SINGER, INC

a. Research on the Construction of an Impact Injury Model. Final report, 12 pp. Final Report No. 4619-F, Aug 73.

6. GEORGIA INSTITUTE OF TECHNOLOGY

a. An Engineering Study of the Requirement for an Acceleration Facility for Bioengineering Research. Final Report, 37 pp, 3 figures, 5 tables plus 30 pp of Appendices 1 through 111, Sep 70.

7. DESMATICS, INC

a. Tentative Plans for Human Acceleration Runs, 9 pp, 28 Feb 74.

b. Revised Plans for Human Acceleration Runs, 3 pp, 6 May 74.

c. Investigation of Statistically-based Methods for Providing Solutions to Problems Associated with the U.S. Navy's Research on Impact Acceleration Injury Prevention, 8 pp, 31 May 74.

d. Analysis of the Initial Human Accelerator Runs to Provide Information for use in Injury Prediction Model Development 1: Discussion, 7 pp, 27 Jun 74.

e. Ibid.11: Calculation Procedures, 8 pp, 1 Jul 74.

f. Testing Proposed Head/Neck Models with the Data from the Initial Experiment, 4 pp, 3 Jul 74.

CONTRACT RESEARCH REPORTS (Cont):

- g. The Number of Human Accelerator Runs Required to Provide an Adequate Estimate of Dynamic Response Variability Within a Run Profile: A guideline, 5 pp, 19 Aug 74.
- h. Statistical Power Considerations When Testing Human Dynamic Response, 5 pp, 3 Sep 74.
- i. Testing and Monitoring Human Dynamic Response Under Run Profiles of Increasing Severity: A discussion, 6 pp, 23 Sep 74.
- j. Run Profile Order for the Next Set of Accelerator Runs Involving Human Volunteers, 6 pp, 8 Oct 74.
- k. A Tentative Approach for Development of an Impact Injury Prediction Model.
 - 1. Discussion of an Approach for Development of an Impact Acceleration Injury Prediction Model Incorporating Bayesian Estimates.
- m. Estimation of the Peak Sled Acceleration Level Corresponding to a 50% Injury Probability.
- n. Some Comments on the University of Michigan Highway Safety Research Institute Report, "A Prediction of Response of the Head and Neck of the U.S. Adult Military Population to Dynamic Impact Acceleration from Selected Dynamic Test Subjects".
- o. Some Statistical Considerations of the April - June 1976 Human Motion Sickness Incidence Experiment.
- p. An Examination of Three Approaches for Predicting Motion Sickness Incidence.
- q. Report No. 102-1: Research on Human Impact Acceleration Dynamic Response and Injury. Some Statistical Aspects of Modeling.
- r. Report No. 102-2: Research on Construction of a Statistical Model for Predicting Impact Acceleration Injury.
- s. Report No. 102-3: A Small-Scale Investigation of Statistics for Determining the Numbers of Clusters in a Data Base.
- t. Report No. 102-4: Prediction of Motion Sickness Incidence: A Statistical Examination of Three Approaches.

RESUME

JAMES G. GAUME, M.D.

EDUCATIONAL BACKGROUND

1975-present Continuing Medical Education Requirements
1978-1980 Psychology Graduate Studies, University of Southern California
1960-1964 Aerospace Medicine Lectures, USAF School of Aviation Medicine, Brooks AFB
1950-1953 Graduate Studies, University of Kansas Medical Center
1943 USAF School of Aviation Medicine, Randolph Field, San Antonio, Texas
1943 US Army Medical Field Service School, Carlisle Barracks, Pennsylvania
1936-1940 M.D. Creighton University School of Medicine, Omaha, Nebraska
1932-1936 B.S., Chemistry, Kansas State University, Manhattan, Kansas

PROFESSIONAL HISTORY

McDONNELL DOUGLAS CORPORATION: 1964 to present

Present Position: Principal Staff Engineer for Aviation Medicine and Safety Research, Human Factors Engineering
Douglas Aircraft Company, Long Beach, California

Responsible for biomedical and Human Factors research and development and management. Also responsible for design problem analysis and solution in relation to Human Factors in support of various programs in the Division.

NORTHROP SPACE LABORATORIES: 1962-1964. Hawthorne, California

Director of Life Sciences. Research and development in biodynamics, bioastronautics, behavioral sciences and human engineering.

MARTIN-MARIETTA CORPORATION: 1958-1962. Denver, Colorado

Chief, Space Medicine and Biotechnology. Responsible for overall development and director of space biotechnology research program. Directed conceptual research on development of life support systems for manned space operations. Hydroponic food production.

USAF SCHOOL OF AEROSPACE MEDICINE: 1956-1958. San Antonio, Texas

Research Scientist in Department of Space Medicine. Worked directly with Dr. Hubertus Strughold, world-renowned pioneer in Space Medicine. Subject and monitor of experiments in zero-gravity and underwater weightlessness.

PRACTICE OF MEDICINE: 1946-1956 and 1941-1942. Ellinwood, Kansas

General practice of medicine and surgery. Staff physician, St. Rose Hospital, Great Bend, Kansas, and Ellinwood District Hospital. Industrial medicine for oil companies. Member, Barton County Medical Society, Kansas State Medical Society and American Medical Association.

MILITARY SERVICE: 1942-1946. United States Air Force Medical Corps

Flight Surgeon. Served in North Africa, Italy, Burma, China and India. Entered October 1, 1942 as First Lieutenant and separated May 10, 1946 as Major.

PRIVATE CONSULTING PRACTICE: 1972 to present.

Human Factors in Accident Reconstruction and Investigation in association with:

Roy D. Jablonsky, P.E., Inc.

1829 Pepper Drive

Altadena, California

Cases have included injuries/deaths due to: Gunshot wounds; roller coaster accidents; medical equipment-related accidents; automobile and motorcycle accidents; and recreational vehicle accidents.

PROFESSIONAL AFFILIATIONS

Aerospace Medical Association: Fellow, 1972

President, Space Medicine Branch, 1964-1965

American Institute of Aeronautics and Astronautics, Associate Fellow

American Academy of Family Physicians

California Academy of Family Physicians

Editorial Advisory Board, Journal of Combustion Toxicology

Who's Who in the West

Advisory Board Member, Donald Douglas Museum and Library, Santa Monica, CA

ASTM E5.21.03 Task Group on Toxicity Practice

FAA Special Aviation Fire and Explosion Reduction (SAFER) Committee: Member,
Subgroup on Toxicity

Kansas State Board of Healing Arts, Certificate No. 8376

TEACHING APPOINTMENTS

University of Southern California, Graduate School, Department of Industrial and Systems Engineering, Adjunct Professor, 1967-present.

St. Rose Hospital, Ellinwood, Kansas, Instructor in Obstetrics, 1950-1956.

St. Francis Hospital, Wichita, Kansas, Instructor in Anatomy and Human Physiology, 1940-1941.

Kansas State University, Manhattan, Kansas, Instructor, Human Physiology, 1935-1936.

PUBLICATIONS

- "Man's Flight Into Space: Making the World of Tomorrow," International Relations Institute Publication, St. Mary's University, San Antonio, Texas, Sept. 1957.
- "Plants as a Means of Balancing a Closed Ecological System," Advances in Astronautical Sciences, Vol. 1, 107-116, Dec. 1957.
- "Design of an Algal Chamber Adaptable to a Space Ship Cabin," Fourth Annual Meeting of American Astronautical Society, New York, Advances in Astronautics, Vol. 2, 222 Jan 1958.
- "Nutrition in Space Operations," Annual Meeting of Institute of Food Technologists, Chicago, Illinois, Food Technology, XII, No. 9, 433-435, Sept. 1958.
- "Life Support Systems for the Lunar Base," Semi-Annual Meeting of American Rocket Society, Preprint No. 1227-60, May 1960.
- "Lunar Life Support Systems," Missile Design and Development, Vol. 7, No. 1, 46, January 1961.
- "Physiopathologic Implications of Chronic Weightlessness," Proceedings of First USAF Latin American Medical Conference, Albrook AFB, Panama Canal Zone, Office of Surgeon General, USAF, publishers, March 1962.
- "Effects of Chronic Lunar Gravity on Human Physiology," Lunar Missions Meeting of American Rocket Society, Cleveland, Ohio, July 1962; Technology of Lunar Exploration-Progress in Astronautics and Aeronautics, Vol. 10, 381-411, Academic Press, 1962, with W. Kuehnegger.
- "Space Cabin Life Support Systems Engineering and Development Tests in a Manned Space Laboratory Simulator," Volume II, Douglas Aircraft Company Report No. SM--49256, Aerospace Medicine/Man Systems Date, May 1966.
- "Space Cabin Life Support Systems Engineering and Development Tests in a Manned Space Laboratory Simulator" Volume IV, Douglas Aircraft Company Report No. DAC-49256, Aerospace Medicine/Man Systems Date, with C. R. Adams, Nov. 1966.
- "Evaluation of an Exercise System for Nul-Gravity Applications" Douglas Aircraft Company Report No. 60623, with D. L. Carpenter, Jan 1967.
- "Some Results of Using Helium as a Space Cabin Atmosphere Diluent," Douglas Aircraft Company Report No. 4270, with C. R. Adams, Sept 1967.
- "Crashworthiness Program - Detailed Analysis and Significance of the Gas Measurement," Data from the AIA Cleveland Fire Tests of 1967, Report No. SR-76, June 1968.
- "Life Support Systems Technologies for Sealed Environments," Douglas Aircraft Company Report No. 5041, July 1968. Presented as Keynote Address at CYRO/68 Exposition, Chicago, Illinois; Applications of Cryogenic Technology, Chapter 5, R.W. Vance and A. Weinstock, Editors, Tinnen-Brown, 1969.
- "Notes on the "E" Wave," Report No. SR-86, October 1968.

PUBLICATIONS (Continued)

"Analysis of Requirement for Individual Air Outlets on the DC-10," Report No. SR-90
November 1968.

"A Method of Estimating the Dynamic Envelope of the Seated, Lap-belt restrained
Human Body Under Forward Linear Decelerations," Report No. SR-95, March 1969.

"Safe Animal Transportation Criteria in 'Class D' Baggage Compartments," Douglas Air-
craft Company Report No. 67949, with P. Bartek, April 1969.

"Theoretical Determination of the Time of Useful Function (TUF) on Exposure to
Combinations of Toxic Gases," Aerospace Medicine, 40:12, 1354-1357, Dec 1969.

"Experimental Technique for TUF Studies Under Mixed Contaminants," McDonnell Douglas
Report No. MDC J0617, January 1970.

"Factors Influencing the Time of Safe Unconsciousness (TSU) for Commercial Jet Passengers
Following Cabin Decompression":

Free Communications Volume of XVIII International Congress of Aerospace Medicine
445-456, September 1969;

Aerospace Medicine, 41:4, 382-385 April 1970;

Recent Advances in Aerospace Medicine, Proceeding of XVIII International Congress
of Aviation and Space Medicine, D. E. Busby, Editor, Amsterdam, 193-203,
D. Reidel Publishing Company, Dordrecht, Holland, 1969.

"Dynamics Analysis for Time of Useful Function (TUF) Predictions in Toxic Combustive
Environments," Aerospace Medicine, 41:12, 1392-1395, December 1970.

"Experimental Results on Time of Useful Function (TUF) After Exposure to Mixtures of
Serious Contaminants" Aerospace Medicine, 42:9, 987-990, September 1971.

"Physiological Conditioning for Minimizing Aircrew Fatigue" McDonnell Douglas Report
No. MDC J1076, August 1972.

"Pilot Incapacitation: An Expression of Convergent Factors"(Co-author), Aerospace
Medicine 43:9, 974-977, September 1972.

"Advances in Physiological Conditioning and Exercise Monitoring Procedures" (Co-author),
McDonnell Douglas Report No. MDC J5789, April 1973.

"Analysis of the Effect of Increased Production Rate in DC-10 Paint Operations on
Atmospheric Concentrations of Chemicals Used for Stripping" (Co-author),
McDonnell Douglas Report No. MDC J5986, May 1973.

"Physiological Conditioning for Minimizing Aircrew Fatigue: Phase II-Application to
DAC Flight Crews," McDonnell Douglas Report No. MDC J6664, Autust 1974.

"Mental Workload Assessment II. Physiological Correlates of Mental Workload: Report
of Three Preliminary Laboratory Tests," McDonnell Douglas Report No. MDC
J7023/01, with R. T. White, January 1976.

PUBLICATIONS (Continued)

"Mental Workload Assessment III. Laboratory Evaluation of One Subjective and Two Physiological Measures of Mental Workload," McDonnell Douglas Report No. MDC J7024/01, with R. T. White, January 1976.

"Animal Exposure During Burn Tests," Final Report, Contract No. NAS 2-8668, NASA Ames Research Center, January 1976.

"Bioassay Technologies," McDonnell Douglas Report No. MDC J7453, February 1977.

"Work/Rest Cycles for SIGINT and Other Long-Term Missions," McDonnell Douglas Report No. MDC J7904/01, May 1978.

"Biomedical Hazards Analysis for the KC 10," McDonnell Douglas Report No. MDC J8160, May 1978.

"Instrumented Animal Systems for Toxic Threat Assessment of Materials," Journal of Combustion Toxicology, May 1981. Presented at the California Conference on Fire Toxicity, August 1979.

"Further Development of an Instrumented Animal System for Toxic Threat Assessment of Materials," Proceedings of Fifth International Conference on Fire Safety, San Francisco, January 1980.

ADDITIONAL RECENT PAPERS

"Initial Tests of the ECG/R/T_i Animal Exposure System Using Carbon Monoxide," Journal of Combustion Toxicology, (In Press).

"Cardiac Responses of the Rat to Various Levels of CO," Presented at the Aerospace Medical Association Annual Scientific Meeting, Anaheim, California, May 1980.

"Comparison of the Cardiac Arrhythmia (C_a) and the Time to Incapacitation (T_i) Under Carbon Monoxide Exposures," Presented at the Aerospace Medical Association Annual Scientific Meeting, San Antonio, Texas, May 1981.

"Animal Responses in the BART Full Scale Vehicle Fire Tests," Presented at the Third Annual California Conference on Fire Toxicity, Stanford Research International, Menlo Park, California, July 1981.

"Physical Conditioning for the Prevention of Pilot Fatigue," Proceedings of the Human Factors Workshop of the Fifth International Conference of the System Safety Society, Denver, Colorado, July 1981.

PRESENTATIONS AT SCIENTIFIC MEETINGS (Not Published)

In addition to the presentations listed, I have been a guest speaker and lecturer at more than 254 meetings of various scientific, military and civic organizations and universities. These have included:

- American Rocket Society
- American Association for the Advancement of Science
- American Astronautical Society
- American Medical Association
- American College of Physicians
- Nebraska Academy of Science
- Colorado University Medical Center
- Medical Education for National Defense Program, Creighton University
- Air Force Academy - First Lecturer in Space Medicine
- Sheppard AFB Missile Training School

and many other local, regional and national meetings of medical educational and engineering societies. I have also participated in several television panel discussions and educational series.

CURRICULUM VITAE

Harry L. Gibbons, M.D., M.P.H.

1. Present Position (June 1971 to present):

Director, Salt Lake City-County Health Department; responsible for direction of all public health programs in Salt Lake County which has a population of one-half million and covers 764 square miles. Responsibility includes water, meat, milk and restaurant inspection as well as immunization, venereal disease, well child, prenatal, midwife and numerous other clinics plus overall drug abuse responsibility. The City-County Health Department employs 190 people, two of which are full time physicians and about 28 of which are part time physicians, and is financed through a health mill levy with additional federal and state grants and fees.

2. Date and Place of Birth:

May 21, 1930, Kanab, Utah

3. Degrees:

| | |
|--------|----------------------------------|
| B.S. | Utah State University, June 1955 |
| M.D. | University of Utah, June 1958 |
| M.P.H. | Harvard, June 1963 |

4. Background:

Raised in Logan, Utah

Graduated from Logan High School - 1948

Attended Utah State University, September 1948 - December 1950

Served as LDS Missionary (Mormon) in Germany, January 1951 - August 1953

Attended Utah State University, September 1953 - June 1954

Attended University of Utah College of Medicine, September 1954 - June 1958

Attended Harvard School of Public Health, Boston, September 1962 - June 1963

5. Professional Experience:

Post Flight Surgeon, Ft. Bragg, North Carolina, October 1959 - July 1961

5. Professional Experience (continued):

Assistant Regional Flight Surgeon, Southwest Region, Federal Aviation Administration, July 1961 - February 1962

Regional Flight Surgeon, Southwest Region, Federal Aviation Administration, February 1962 - August 1966. During this time residency was completed in Aerospace Medicine which included attendance at Harvard School of Public Health, September 1962 - June 1963. Duties involved working with 700 aviation medical examiners and 50,000 pilots. This included teaching physicians the usual aspects of aviation medicine such as altitude physiology, toxicology of pesticides, and the physiology of spatial disorientation.

Chief, Aeromedical Research Branch, Civil Aeromedical Institute, Oklahoma City, Oklahoma, August 1966 - June 1971, Complement of 90; includes 25 scientists at the Ph.D. level. Duties involved the supervision of the four laboratories; Pharmacology-Biochemistry, Physiology, Protection and Survival, and Psychology, involved in biomedical flight safety research.

6. Appointments, Honors and Other Information:

Johansen and Rotary Scholarships, Utah State University.

Intramural High Point Winner Award (sports competition), Utah State University.

Rotating Internship at William Beaumont Army Hospital, El Paso, Texas, June 1958 - July 1959.

Primary Course in Aerospace Medicine, Brooks Air Force Base, San Antonio, Texas, August 1959 - October 1959.

Certificate of Achievement, U.S. Army, July 1961.

Advanced Course in Aerospace Medicine, Brooks Air Force Base, San Antonio, Texas, July 1963 - June 1964.

Continuing Lecturer at National Aircraft Accident Investigation School (conducted by Federal Aviation Agency and Civil Aeronautics Board) 1967-71

Board Certified, American Board of Preventive Medicine in Aerospace Medicine, June 1966

FAA Quality Performance Award, March 1966

FAA Certificate of Achievement, August 1966

Commercial Pilot with single and multiengine and instrument ratings.

Associate Professor of Research Preventive Medicine and Public Health University of Oklahoma School of Medicine, 1967 - resigned 1971.

Visiting Lecturer in Physiology & Pharmacology, University of Arkansas School of Medicine, 1967 - resigned 1971.

Appointed Assistant Professor, Graduate Faculty, Department of Environmental Health, University of Oklahoma Medical Center, October 1967 - resigned 1971.

Lecturer in Physiology, University of Arkansas, June 1968 through 1972.

Member of Registration Committee, Aerospace Medical Association, 1964-1966.

Member of Science and Technology Committee, Aerospace Medical Association, 1968 - 1972.

Member, General Aviation Safety Subcommittee, Aerospace Medical Association, 1969 to present (now Aviation Safety Committee).

Chairman, Aviation Safety Subcommittee, Aerospace Medical Association, 1970 to 1971.

Member, Ad Hoc Air Ambulance Committee, Aerospace Medical Association, 1973

Chairman, Aviation Safety Committee, Aerospace Medical Association, 1971 to 1974.

Elected Associate Fellow in Aerospace Medical Association, August 1969.

Chairman, Air Ambulance Safety Committee, Aerospace Medical Association, 1975-1980.

Elected Fellow, Aerospace Medical Association, May 1972.

FAA Employee Suggestion Awarded 1969 (Oxygen Availability Notification in Airman's Information Manual).

Elected to the National Councilor Group for 5 year term, University of Oklahoma Research Institute, October 1969. Resigned August 1973.

Named member of Board of Directors of Air Mobility Council, Boston, Massachusetts, September 1970.

Elected honorary member of Engineering Society, Order of St. Patrick, University of Oklahoma, March 1971.

Named to Board of Directors, Neighborhood Health Center, Salt Lake City, 1971.

Named to Board of Directors, Suicide Prevention Center, Salt Lake City, 1971.

Named to Board of Directors, Community Nursing Services, Salt Lake City, 1971.

Medical Director, Methadone Maintenance Program, Salt Lake City-Salt Lake County, July 1971 to February 1972.

Utah State Medical Society Representative to the Utah Committee Pesticide Study, 1971 to 1973.

Member, Emergency Technician Training Committee, Utah State Medical Society, 1971 to present.

Member, Greater Salt Lake Health Planning Council Board of Directors, 1971 to 1974.

Member, Salt Lake City Ambulance Review Committee, 1971.

Named Medical Director and member of Board of Directors of Project Reality, Salt Lake City, February 1, 1972.

Clinical Assistant Professor, University of Utah Medical Center, May 1973 to present. Includes lecturing in Pediatrics, Pharmacy and Pharmacology.

Elected Honorary Membership, Utah Dental Association, 1972.

Appointed Safety Counselor, Federal Aviation Administration, May 1973.

Honorary Chief, Otoe Indian Tribe, Oklahoma, June 1971.

Holder of U. S. Patent 3,820,059 Quick Connect Terminal Apparatus and Device for Providing Terminals and Splices on Coaxial Cable Leads. Filed January 10, 1973, Serial No. 322,437.

Consultant, Aerospace Medicine, (a) involving aircraft accident litigation, (b) involving air ambulance operation. This has involved serving as advisor of Air Medic, Los Angeles, evaluating Air Evacuation of Phoenix, Arizona, for Kellogg Foundation, advising State Division of Health of Utah and Wyoming on Air Ambulance regulations, appearing before Arizona State Corporations Commission regarding air ambulance licensing.

Chairman, Subcommittee, LDS Church, Heritage Arts Committee, Salt Lake City, October 1974.

Chairman Environmental and Public Health Committee, Utah State Medical Association, 1974-75.

Selected by American Medical Association to evaluate Continuing Education Program of (a) FAA Aviation Medical Examination Seminar, October 1973, and (b) Aerospace Medical Association, April 1975.

Member PARA-MED Foundation, December 1976.

Member PARA-MED Foundation Executive Committee, December 1976.

Adjunct Associate Professor of Health, University of Utah College of Health, June 1976 to present.

Recipient of John A. Tamisiea Aerospace Medical Association Memorial Award for outstanding contributions to the advancement of the art and science of aviation medicine, May 1976.

Member, Editorial Board, Utah State Medical Association, June 1976.

Recipient of Certificate of Award from Utah Lung Association for Initiative and Leadership in Implementation of Utah Indoor Clean Air Act, September 1976.

Elected Secretary, Salt Lake County Medical Society, November 1976, one year term.

Second Vice President, Utah Academy of Preventive Medicine, November 1976.

Member, Advisory Council on Nutrition, College of Health, December 1976.

Member, State Emergency Medical Services Council, January 1977.

Member, Executive Committee, State Emergency Medical Services, January 1977 to present.

Chairman, Transportation & Equipment Subcommittee, State Emergency Medical Services Committee, January 1977 to present

Deputy Medical Examiner, State of Utah, January 1977 to present.

Honorary member, Experimental Aircraft Association, January 1978.

Member, Technical Advisory Committee, Thrasher Research Committee, May 1978 to present.

Recipient, Theodore B. Beatty Award, presented by Utah Public Health Association for outstanding service in public health, June 1978.

Member, Institutional Review Board, Project Reality, June 1978.

Chairman, Editorial Board, Utah State Medical Association, 1978-1979.

Board member, Utah Citizens League for Nursing, November 1978 to January 1980.

Member, Community and Media Public Relations Committee, Utah State Medical Association, 1978 to present.

Honorary member, Utah Association of Emergency Medical Technicians, September 1978.

Trustee, International Visitors, Utah Council, January 1979, three year term.

Member, Board of Directors, Utah Pilots Association, 1979-80.

Recipient, Salt Lake Retail Grocers Association Award for outstanding service as Salt Lake City-County Health Department Director, in serving the needs of the community and the Retail Food Industry, May 1979.

Recipient, Utah-Idaho Farmers Union Bright Idea Award for contributions to environmental health, May 1979.

Member, Vitro Tailings Committee, August 1979 to present.

Member, Board of Directors, International Association for Prevention of Accidental Choking, Inc., September 1979 to present.

Member, Community Public Broadcasting Advisory Board, September 1979-81.

Participant in two-day Health Needs Survey for Nicaragua, Church of Jesus Christ of Latter-day Saints, November 1979.

President, Utah Academy of Preventive Medicine, December 1979 to present.

Member, Community & Media Relations Committee, Salt Lake County Medical Society, December 1979 to present.

Member, Environmental Health Committee, Salt Lake County Medical Society, December 1979 to 1980.

Member, Utah State Task Force on Prevention of Alcohol Problems, January 1980 to present.

Consultant, United States Forest Service, aircraft accident in Idaho, submitted written opinion, April 1980

Recipient, Honorary Life Membership, Utah Congress of Parents and Teachers, for devoted and distinguished service to children and youth, May 1980

Adjunct Professor, Brigham Young University, September 1980.to present.

Member, Unproven Health Practices Committee, Salt Lake County Medical Society, November 1980, to present.

Designated Pilot of the Year for 1980 by the Utah Pilots Association "for dedicated, consistent and tireless service" to Utah Pilots Association and Aviation, May 1981.

7. Religious Affiliation:

Church of Jesus Christ of Latter-day Saints (Mormon). Served in various high councils, two stake presidencies and as bishop.

8. Family

| | |
|----------|-------------|
| Wife | Marjorie J. |
| Son | Scott L. |
| Son | Mark C. |
| Daughter | Meri L. |
| Son | Jon L. |
| Son | Larry A. |

PUBLICATIONS

- Gibbons, H. L., et al.: Inhalant Allergy to the Screwworm Fly, Arch. Environ. Health, 10:424, March 1965.
- Gibbons, H. L. and Judith L. Plechus: Analysis of Medical Factors in Fatal Aircraft Accidents, Texas State Journal of Medicine, 61:667, September 1965.
- Gibbons, H. L., et al.: Alcohol Induced Hypoglycemia as a Factor in Aircraft Accidents, Aerospace Medicine, 37:1057, September 1966.
- Gibbons, H. L., et al.: Medical Factors in 1964-1965 Fatal Aircraft Accidents in the Southwest, Aerospace Medicine, 37:959, October 1966.
- Gibbons, H. L. et al.: Analysis of Medical Factors in Fatal Aircraft Accidents in 1965, Texas Medicine, 63:64, January 1967.
- Gibbons, H. L.: Consideration of Volitional Acts in Aircraft Accident Investigation, Aerospace Medicine, 38:1057, October 1967.
- Gibbons, H. L.: The Physician, the Pilot and the Public or Hippocrates and Hypocrisy, The Flying Physician, 11:28, October 1968
- Gibbons, H. L.: The Physician and the Aviation Community, Medical Times, 96:921, September 1968. (Also reprinted in Aerospace Medicine and Resident and Staff Physicians)
- Reals, W. J., Mohler, S.R., Doyle, B.C., and Gibbons, H.L.: An Integrated Approach to the Aeromedical Investigation of Civil Aircraft Accidents, Aerospace Medicine, 39:32, January 1968. (Reprinted in Canadian Airline Pilot)
- Mohler, S.R., Dille, J.R., and Gibbons, H.L.: The Time Zone and Circadian Rhythms in Relation to Aircraft Occupants Taking Long-Distance Flights, American Journal of Public Health, Vol. 58, No. 8, August 1968.
- Dille, J. Robert, Gibbons, H.L., and Spikes, George A.: Allergic Problems in Screwworm Fly Eradication Program Personnel, Aerospace Medicine 39:1116-1119, October 1968.
- Gibbons, H. L.: Organic Phosphorus Pesticides, published in Proceedings of the Western Regional Pesticide Chemical Application Short Courses, University of California, 1968-1969.
- Gibbons, H. L. and Lewis, M. F.: A Discussion of Color Signals and Their Flight Safety Relationship to Radio Communications in Civil Aviation, AGARD Advisory Report 19, December 1969.
- Chiles, W. D., Gibbons, H. L., and Smith, P.W.: Effects of Two Common Medications on Complex Performance, Office of Aviation Medicine Report No. AM 69-9, May 1970.

- Iampietro, P. F., Chiles, W. D., Higgins, E. A., and Gibbons, H. L.: Complex Performance During Exposure to High Temperatures, Aerospace Medicine, 40:1331-1335, December 1969.
- Gibbons, H. L. and Lewis, Mark F: Color Signals and General Aviation, Aerospace Medicine, 40:668-669, June 1969.
- Gibbons, H. L. and Fromhagen, C.: Aeromedical Transportation and General Aviation, Aerospace Medicine, 42:772-779, July 1971.
- Gibbons, H. L.: The American Connection, Utah Medical Bulletin, October 1974.
- Gibbons, H. L.: Medical Information for Air Ambulance Operators, co-authored for Aerospace Medical Association, and printed by Department of Transportation, Federal Aviation Administration, Advisory Circular AC No. 67-1, March 4, 1974
- Snyder, R. G. and Gibbons, H.L., Aircraft Crashworthiness, University Press of Virginia, Virginia, 1975, "Crashworthiness in Emergency Ditching of General Aviation Aircraft", pps. 121-139.
- Gibbons, H. L., Carbon Dioxide Hazards in General Aviation, Aviation, Space and Environmental Medicine, 48:261-263, March 1977
- Gibbons, H. L.: A Private Solution to a Public Problem, Utah Medical Bulletin, March 1979
- Gibbons, H. L.: The Biopolitics of Choking, Utah Medical Bulletin Section of The Western Journal of Medicine, Vol. 132, No. 3, March 1980
- Gibbons, H. L.: The Biopolitics of Choking, reprinted in The Journal of the Indiana State Medical Association, Vol. 73, No. 6, June 1980.
- Gibbons, H. L.: What About Utah, For Health's Sake", Utah Medical Bulletin, August 1978
- Gibbons, H. L.: Spatial Disorientation - The #1 Human Factors Problem in General Aviation Safety, published in the Proceedings of the Fifteenth Annual SMU Air Law Symposium, April 1981

PRESENTATIONS

Suppressio Mali, the Airman's Syndrome, Texas State Medical Association,
April 1962.

Drugs and Alcohol, Aeromedical Symposium, Des Moines, Iowa, March 1965.

Medical Factors in Aircraft Accidents, Texas State Medical Association,
April 1965.

Aviation Medicine, Television presentation for Hawaiian Medical Society,
Honolulu, Hawaii, August 1965

Aviation Physiology, Hospital Staff, Fort Worth Osteopathic Hospital,
January 1966.

Aviation Physiology, Minnesota Aviation Trades Association Annual Meeting,
Minneapolis, Minnesota, February 1966.

General Aviation Accident Experience, Southwestern Osteopathic Association,
New Mexico, April 1966.

Aeromedical Factors Symposium, Aeronautical Center (conducted by Civil
Aeronautics Board) September 1966

Aviation Medical Research and Human Factors in Flight, Utah State University,
Logan, Utah, October 1966.

Medical Factors of Flight, Iowa State University, Ames, Iowa, November 1966.

Alcohol and the Pilot, USAF School of Aerospace Medicine, Operational Aero-
medical Problems Course, Class 66-A, Brooks AFB, Texas, November 1966

Medical Problems in Aviation, Dallas Aero Flying Club, Dallas, Texas,
November 1966.

Human Aspects of Pesticides, Arkansas Aerial Applicators Association, Hot
Springs, Arkansas, February 1967.

Human Aspects of Pesticides, Mississippi Aerial Applicators Association,
Biloxi, Mississippi, February 1967.

Toxicology, Pesticides and Public Health Implications, University of Arkansas
Medical Center, Little Rock, Arkansas, February 1967.

Human Aspects of Pesticides, Louisiana Aerial Applicators Association, Baton
Rouge, Louisiana, February 1967.

Medical Factors in Aircraft Accidents, Wichita County Medical Society,
Wichita Falls, Texas, March 1967.

Consideration of Volitional Acts in Aircraft Accident Investigation, Aero-
space Medical Association Meeting, Washington, D.C., April 1967.

Medical Aspects of Aviation, Third Annual General Aviation Seminar, Fayette-
ville, Arkansas, May 1967.

Medical Factors of Flight, Flight Instructor Clinic, Orlando, Florida, May
1967.

Physiology of Flight, University of Arkansas School of Medicine, Little
Rock, Arkansas, May 1967.

Medical Aspects of Aviation, Aviation Medical Seminar, Kansas City, Missouri,
June 1967.

Aeromedical Factors of Flight, Oklahoma Flight Instructor Refresher Clinic,
Tahlequah, Oklahoma, June 1967.

Aviation Medicine, Aero Club of Greater Kansas City, Kansas City, Missouri,
June 1967.

Aeromedical Factors of Flight, CESSNA Aircraft Company, Wichita, Kansas,
August 1967.

Aviation Medicine, Birmingham Aero Club Annual Meeting and Fly-In, Birming-
ham, Alabama, August 1967.

The Physician, The Pilot and The Public, 13th Annual Meeting of the Flying
Physicians Association, Williamsburg, Virginia, September 1967.

Numerous Aeromedical Seminars organized and conducted for private and profes-
sional pilots and physicians at the following Air Force Bases and cities:

Little Rock Air Force Base X 2
Cannon Air Force Base
Laughlin Air Force Base
Laredo Air Force Base X 3
Brooks Air Force Base
Carswell Air Force Base X 4
Lake Charles, Louisiana
Perryton, Texas
Midland, Texas
Los Alamos, New Mexico
Albuquerque, New Mexico
El Paso, Texas X 2
Shreveport, Louisiana
Little Rock, Arkansas
Kansas City, Missouri
Fayetteville, Arkansas
Ardmore, Oklahoma
Fort Worth, Texas X 2

Aviation Medicine, Norman Sooner Lions Club, Norman, Oklahoma, October 1967.

Aviation Medicine, Norman Kiwanis Club, Norman, Oklahoma, December 1967.

Aeromedical Factors of Flight, Aircraft Owners and Pilots Association
Instructor Revalidation Course, Salt Lake City, Utah, January 1968.

Medical Problems of Pesticide Application, The University of California Short
Course for Pesticide Applicators, Denver, Colorado, January 1968.

Medical Problems of Pesticide Application, The California Aerial Applicators
Association, Lake Tahoe, Nevada, January 1968.

Medical Impact of Pesticides, The University of California Short Course for
Pesticide Applicators, Billings, Montana, January 1968.

Aeromedical Research, Cleveland County Medical Society, Norman, Oklahoma,
February 1968.

Current Medical Research, Federal Safety Council for Western Oklahoma,
Advanced Investigation Technology Course, National Aircraft Accident
Investigation School, Oklahoma City, Oklahoma, February 1968.

Aeromedical Factors of Flight, Aviation Northwest, Inc., Enid, Oklahoma,
February 1968.

Aeromedical Factors of Flight, Aircraft Owners and Pilots Association
Instructor Revalidation Course, Pomona, California, February 1968.

Aeromedical Factors of Flight, Aircraft Owners and Pilots Association
Instructor Revalidation Course, New Orleans, Louisiana, March 1968.

Aeromedical Factors of Flight, Instrument Flight Instructor Refresher Clinic,
Max Westheimer Airport, Norman, Oklahoma, April 1968.

Aeromedical Factors of Flight, Aircraft Owners and Pilots Association In-
structor Revalidation Course, Denver, Colorado, April 1968.

Aerospace Medicine, Preventive Medicine Seminar, University of Oklahoma Medical
Center, Oklahoma City, Oklahoma, May 1968.

Aeromedical Factors of Flight, Aviation Northwest, Inc., Enid, Oklahoma, May
1968.

Altitude Physiology, University of Arkansas School of Medicine, Little Rock,
Arkansas, May 1968

Aviation Medicine to Make Traveling Safer, Stillwater Lions Club, Stillwater,
Oklahoma, June 1968.

Aeromedical Factors of Flight, Instrument Flight Instructor Course, Salt Lake
City, Utah, June 1968.

Medical Aspects of Flight, International Flying Bankers Association Meeting, Colorado Springs, Colorado, July 1968.

Medical Aspects of Flight, High School Teachers' Seminar, sponsored by Cessna Aircraft Company, Wichita, Kansas, August 1968.

Medical Aspects of Instruments and Weather, Birmingham Aero Club's Fifth Annual Southeastern Aircraft Exposition, Birmingham, Alabama, August 1968.

Aeromedical Factors of Flight, Flight Instructor Refresher Clinic, Oklahoma State University, Stillwater, Oklahoma, September 1968.

Research at the Civil Aeromedical Institute, Civil Aviation Medical Association (CAMA), Brooks AFB, San Antonio, Texas, September 1968.

Medical Aspects of Flight, St. Louis Instrument Flight Instructor Refresher Course, St. Louis, Missouri, October 1968.

Programs in Space vs Problems on Earth, 20th Annual Scientific Assembly of the Tennessee Academy of General Practice, Gatlinburg, Tennessee, November 1968.

Medical Aspects of Flight, The University of California Short Course for Pesticide Applicators, Boise State College, Boise, Idaho, November 1968.

Medical Aspects of Flight, The Airline Owners and Pilots Association Instrument Flight Instructor Refresher Course, Fresno City College, Fresno, California, December 1968.

Medical Impact of Agricultural Chemicals, The University of California Short Course for Pesticide Applicators, Phoenix, Arizona, January 1969.

Medical Impact of Agricultural Chemicals, The University of California Short Course for Pesticide Applicators, Las Cruces, New Mexico, January 1969.

Effects of Chemicals on the Human Body, Texas Agricultural Applicators Conference, Kerrville, Texas, January 1969.

Medicine, Man and Flying Machines, Oklahoma Academy of General Practice 21st Annual Scientific Assembly, Oklahoma City, Oklahoma, March 1969

Medical Aspects of Flight, The Aircraft Owners and Pilots Association Flight Instructor Course, Denver, Colorado, April 1969

A Discussion of Color Signals and Their Flight Safety Relationship to Radio Communications in Civil Aviation, AGARD/ASMP Symposium, Brooks AFB, San Antonio, Texas, May 1969

Medical Aspects of Flight, AOPA Instrument Flight Instructor Refresher Course, Walnut, California

Hippocrates vs. Hypocrisy, San Antonio Chapter, American Academy of General Practice, San Antonio, Texas, May 1969

FAA Aeromedical Research, Downtown Rotary Club, Oklahoma City, Oklahoma, June 1969

Color Vision Problems, Flying Physicians Association 15th Annual Meeting,
Lake Placid, New York, June 1969.

Aeromedical Factors of Flight, Oklahoma Aeronautics Commission Flight
Instructor Refresher Clinic, Norman, Oklahoma, June 1969.

Medical Factors of Flight, Aviation/Aerospace Education Short Course,
Weatherford, Oklahoma, June 1969

Medical Factors of Flight, Oklahoma Aeronautics Commission Aerospace Education
Workshop, Stillwater, Oklahoma, July 1969.

FAA Aeromedical Research, North Side Oklahoma City Rotary Club, Oklahoma City,
July 1969

Medical Factors of Flight, AOPA Flight Instructors Revalidation Clinic, Costa
Mesa, California, August 1969

Medical Factors of Flight, Instrument Flight Instructors' Revalidation Course,
Auburn University, Auburn, Alabama, August 1969.

Do A Guy A Favor, AOPA Plantation Party, Atlantic City, New Jersey, September
1969

Medical Factors of Flight, AOPA Flight Instructor Course, Atlantic City, New
Jersey, September 1969

Medicine, Women and Flying Machines, Ninety-Nines, Inc., South Central Section
Meeting, Oklahoma City, Oklahoma, September 1969

Aviation Medicine and Flight Safety, General Assembly of the Bethany High School,
Bethany, Oklahoma, October 1969

Human Factors in Flight Safety, 937th Military Airlift Group, Oklahoma City,
Oklahoma, October 1969

Aeromedical Factors of Flight, Flight Instructors Revalidation Clinic,
Stillwater, Oklahoma, November 1969

Medical Aspects of Flight, AOPA Flight Instructors Revalidation Course,
Fresno, California, December 1969.

Medical Aspects of Flight Safety, American Business Club, Enid, Oklahoma,
December 1969

Medical Factors of Flight, AOPA Flight Instructors Revalidation Course, Las
Vegas, Nevada, February 1970.

Pesticides & Poisoning, Arkansas Aerial Applicators Association, Hot Springs,
Arkansas, January 1970

Transportation, Doctors & You, American Council of Independent Laboratories,
Oklahoma City, Oklahoma, May 1970

Doctors, Lawyers & Airplanes, Garfield County Bar Association and Garfield
County Medical Society, May 1970

Aircraft Accidents & You, Flying Dentists Association, Jackson Hole, Wyoming,
June 1970

Medical Factors of Flight, Oklahoma Flight Instructors Refresher Class, Norman,
Oklahoma, June 1970

Human Factors, Airways Engineering Society, Oklahoma City, Oklahoma, June 1970

Medical Factors of Flight, AOPA Flight Instructors Revalidation Clinic, Costa
Mesa, California, September 1970

Pesticides & Physicians, Nebraska Academy of General Practice, September 1970

Aeromedical Ambulance Services, CAMA, Mexico City, October 1970

The Physician and Aeromedical Transportation, CAMA Banquet, Mexico City,
October 1970

Civil Aviation Safety and the Flight Surgeon, U.S. Army Advanced Warrant
Officer Course, Ft. Rucker, Alabama, December 1970

Aviation Medicine and Flight Safety, AOPA Flight Instructor Clinic, Lincoln,
Nebraska, December 1970

Hippocrates vs. Hypocrisy, The Physician and Transportation Safety, Sedgewick
County Medical Society, Wichita, Kansas, February 1970

Medical Aspects of Aerial Application, Louisiana Aerial Applicators Associa-
tion, Baton Rouge, Louisiana, February 1970

Aviation Safety and the Biological Sciences (Aerial Application), Department
of Zoology, University of Oklahoma, March 1971

Doctors, Engineers, and Flying Machines, Oklahoma Chapter of the American
Institute of Industrial Engineers, March 1971

Medical Factors of Flight Safety, FAA sponsored Flight Safety Symposium,
Omaha, Nebraska, March 1971

Aviation Medicine and Flight Safety, AOPA Flight Instructor Clinic, West
Covina, California, March 1971

Chaired the Crashworthiness Session at the 1971 SAE National Business and
Utility Aircraft meeting, March 1971

Altitudes, Disorientation, and Doctors, Rocky Mountain Flight Standards,
Division and Air Rescue Group, Aspen, Colorado, April 1971

Medicine and Transportation Safety, Fleet Supervisors Round Table Luncheon,
Oklahoma City, Oklahoma, April 1971

Engineers, Doctors and Flying Machines, Tinker Air Force Base Professional
Engineers Society, April 1971

Doctors, Pilots and Air Safety, Idaho Pilots and Idaho 99's Organization,
Boise, Idaho, June 1971

Medical Aspects of Flight Safety, AOPA Flight Instructor Clinic, Reno, Nevada,
September 1971

Hypoxia and Soaring, University of Utah Soaring Society, Salt Lake City, Utah,
January 1972

How It Was With FAA, Utah Pilots Association, Salt Lake City, Utah, January
1972

Human Factors of Civilian Aircraft Accidents, Hunter Army Airfield and Stewart
Army Airfield, January 1972

Community Relationships in a Developing Methadone Program, presented at the
Fourth Regional Methadone Seminar, San Francisco, California, January 1972

Salt Lake's Health Isn't Public, Granger Rotary Club, August 1972; Murray
Rotary Club, September 1972

Aviation Safety, Hercules Flying Club, Salt Lake City, Utah, February 1973

Medicine, Man and Flying Machines, Sugar House Rotary Club, Salt Lake City,
Utah, March 1973; Bountiful, Utah Rotary Club, March 1973

Evaluation of a Disabled Pilot Restraint System, presented at Aerospace Medical
Association Annual Meeting, May 1973

Hazards of Carbon Dioxide in General Aviation, presented at CAMA meeting,
Guadalajara, Mexico, October 1973

Disorientation and Utah Aircraft Accidents, presented to two large pilot
groups in Utah for Federal Aviation Administration, November 1973

Infectious Disease and the Medical Technician, Salt Lake Dental Assistants
Association, November 1973

A Funny Thing Happened on the Way to Fluoridation, Salt Lake Kiwanis Club,
December 1973; Salt Lake Rotary Club, February 1974; Murray Rotary
Club, February 1974

For Health's Sake, District Rotary Conference, St. George, Utah, May 1974

Air Ambulance Technician Training Course, Phoenix, Arizona, May 1974

Drug Treatment and Rehabilitation, Section Leader, School on Alcoholism and
Drugs, University of Utah, 1972-73-74-75

Medical and Other Aspects of Venereal Disease, Fourth Annual Institute of
Criminal and Social Justice, Venereal Disease Session, Brigham Young
University, June 1974

Drug Abuse Is Only A Symptom, Prevention and Education Section, School of
Alcoholism and Drugs, University of Utah, June 1974-75

Medicine and Aviation Safety, AOPA, Minneapolis, Minn., July 1974

Women, Airplanes and Aviation Medicine, 99's Regional Meeting, Snowbird, Utah,
September 1974

So You're Over 40, Utah Association of CPA's, Salt Lake City, June 1974;
Sugarhouse Rotary, September 1974

Motivational Factors of Flight, Civil Aviation Medical Association, Colorado Springs, Colorado, October 1974

Physiology - Emergency Medical Technicians Training Course, State of Utah, June 1974, November 1974

Patients, Ambulances, and Aviation Safety, Air Ambulance Meeting, Palm Springs, California, November 1974

Drugs, Alcohol and Flight Safety, FAA Operation Rain Check, Salt Lake City, Utah, November 1974

Practical and In-Flight Instruction in Air Ambulance Operation, Ground School For Air Ambulance Technicians, Salt Lake City, Utah, January 1975

Physical Fitness and The Young Adult, presented to organization of Young Adults, Salt Lake City, Utah, January 1975

The Health Department and The Young Family, presented to organization of Young Parents, Salt Lake City, Utah, January 1975

For Health's Sake, presented to Sugarhouse Kiwanis Club, Salt Lake City, Utah, February 1975

For Health's Sake, presented to Salt Lake Lions Club, Salt Lake City, Utah, February 1975

Health Protection for the Elderly, presented at Health Services Seminar for Aging, Salt Lake City, Utah, October 1975

Treating the Choking Victim, (Use of the Heimlich Maneuver) presented to Utah Power and Light, Mountain Bell, Salt Lake Rotary Club, Kiwanis Club, (West Salt Lake Valley) and numerous smaller groups, including LDS Relief Societies, approximately a total of 600 persons, 1975

Pioneers and Public Health, presented to Sons of Utah Pioneers, November 1975

The Status of Legislation and Smoking in Public Places, presented to Youth and Tobacco Advisory Council, Salt Lake City, Utah, January 1976

Treating the Choking Victim, (Use of the Heimlich Maneuver) presented to Junior League, Salt Lake Kiwanis Club, Holy Cross Hospital, University of Utah, Logan Kiwanis Club, Harvard Club, City Police Supervisors, Association of Independent Insurance Agents, Bonneville Kiwanis Club, and Cottonwood Hospital, 1976

Preventive Services for Cancer - Scope and Direction of Public Health Responsibility, presented to College of Nursing, University of Utah, Salt Lake City, February 1976

Second Hand Smoke and the Law, presented to Annual Meeting, Utah Chapter, American Cancer Society, Salt Lake City, February 1976

The Public Health Physician & Industrial Health Hygiene, presented to Utah Section, American Industrial Hygiene Association, Salt Lake City, March 1976

Treating the Choking Victim, (Use of the Heimlich Maneuver) presented to Cottonwood Kiwanis Club, Argenta Lodge (Masonic), Salt Lake City School Superintendents and Golden Kiwanis Club, March 1976

Health Department Services and the Disadvantaged, presented to University of Utah School of Medicine, Salt Lake City, April 1976.

Utah Indoor Clean Air Act, presented to Utah Retail Grocers Association and Food Executives Association, Salt Lake City, March & April 1976.

The Choking Husband, presented to Salt Lake Business Women's Club, Salt Lake City, April 1976.

Religion and Public Health, presented to Medical Student Study Group, University of Utah, Salt Lake City, April 1976.

Public Health and Air Pollution, presented to Department of Meteorology, University of Utah, Salt Lake City, May 1976.

Public Health and Advertising, presented to the Advertising Club of Salt Lake, Salt Lake City, May 1976.

Medical Manager's Responsibility to Public Health, presented to Medical Group Management Society, Salt Lake City, July 1976

Public Health and Malpractice Problems, presented to Defense Research Institute, Utah Trial Lawyers Association, Salt Lake City, September 1976.

Public Health and The Health Insurance Company, presented to Utah Health and Accident Assurance, Salt Lake City, September 1976.

Family Planning Service, Fluoridation and Nursing Home Care, panel member, presented to Utah State Conference on Human Services, October 1976

Public Health and the CPA, presented to Utah Association of Certified Public Accounts, Salt Lake City, December 1976

Disease Prevention & Insurance, presented to Underwriter's Association, Salt Lake City, January 1977.

Multiple Sclerosis, Preventive Medicine and Antifreeze, presented to Multiple Sclerosis Society, Salt Lake City, January 1977.

Stress and the Businessman, presented to student group, LDS Business College, Salt Lake City, January 1977.

Public Health and Cancer, presented to College of Nursing, University of Utah, Salt Lake City, February 1977.

Immunizations, presented to Family Practice Group, University of Utah, Salt Lake City, February 1977.

Maternal and Child Health and Causes of Death, presented to College of Nursing, University of Utah, Salt Lake City, February 1977.

Public Health Responsibilities, presented to College of Nursing, University of Utah, Salt Lake City, February 1977

Witch Doctors and Patient Contact, presented to Utah Pharmaceutical Association Annual Meeting, St. George, Utah, April 1977

Availability and Accessibility of Health Care for Disadvantaged Populations, presented to Family and Community Medicine, University of Utah, Salt Lake City, April 1977.

Partnerships for Progress, presented to Salt Lake Association of School Administrators, Salt Lake City, September 1977.

Preventive Medicine in the School, presented to Salt Lake Association of School Administrators, Salt Lake City, September 1977.

Emergency Medical Services and the Air Ambulance, presented to Tri-Regional HEW Workshops at Columbia, S.C., Chicago, IL, and Phoenix, AZ, March, September and October 1977

Physiology of Flight and Medical Aspects of Patient Transportation By Air, Alpha Aviation, Dallas, Texas, September 1977

Medical Aspects of the International Air Ambulance, presented at Medical Association Meetings, Mexico City, Mexico, November 1977

Treating the Choking Victim, presented to Children's Service Society, Salt Lake City, November 1977.

Preventive Medicine and/or The Emergency Room, presented to Cottonwood Health Care Foundation, Salt Lake City, November 1977.

Flight Safety and Preventive Medicine, presented to Annual Aviation Safety Conference, Utah Army National Guard, Salt Lake City, December 1977.

Industrial Hygiene and Preventive Medicine, presented to American Industrial Hygiene Association, Salt Lake City, December 1977.

Preventive Medicine - Then and Now, presented to Kiwanis Club of America, Salt Lake City, January 1978.

Flight Safety, the Doctor and FAA, presented to Experimental Aircraft Association, Salt Lake City, January 1978.

Health Insurance, Preventive Medicine and The Dropped Ball, presented to Utah Life and Health Claims Association, Salt Lake City, February 1978.

Preventive Medicine and Flight Safety, presented to Flying Physicians Association, Salt Lake City, February 1978.

The Doctor and Flight Safety, presented to Aviation Education Association, Salt Lake City, February 1978.

Quackery and Medical Insurance, presented to Utah Health and Claims Association,
Salt Lake City, February 1978.

Preventive Medicine and General Practice, University of Utah Continuing Medical
Education Center, Salt Lake City, February 1978.

Herbs and Quackery, presented to Payson Rotary Club, Payson, Utah, February 1978.

Preventive Medicine, presented to Holladay Rotary Club, Salt Lake City,
March 1978.

Feeling Older But Better, presented to Community Services Council, Salt
Lake City, March 1978

Preventive Medicine & Health Claims, presented to Utah Claims Adjusters,
Salt Lake City, April 1978.

Jogging vs. the Jiggle - Women and Exercise, presented to LDS Relief
Society, Bountiful, Utah, April 1978

Politics and Medicine, presented to Bountiful Kiwanis Club, Bountiful,
Utah, April 1978

Utah Is Great for Health's Sake, presented to Federal Executives Association,
Sugarhouse Rotary Club, Consulting Engineer's Council & CES Auxiliary,
Elks Club, Salt Lake City, September 1978.

Is Salt Lake City Ready for a Doggy Scoop Law?, Public Pulse, KSL Radio,
Salt Lake City, September 1978

Stress & The Executive, presented to IBM Executive Group, Salt Lake City,
September 1978.

EMS & The Civil War, presented to Utah Association of EMT's Annual Meeting,
Provo, Utah, September 1978

Self-Help and Health Care: Facts & Fallacies, presented to Utah Citizens
League for Nursing, Salt Lake City, November 1978

Quackery, presented to Pleasant Grove Rotary, Pleasant Grove, Utah, January
1979

Pioneer Health Conditions, presented to East Mill Creek Chapter, Sons of
Utah Pioneers, Salt Lake City, January 1979

Managing Stress, presented to Utah Association of CPA's, Sugarhouse-Cottonwood
Exchange Club, Sugarhouse Kiwanis Club, and University of Utah Library
Staff, Salt Lake City, February 1979

Wives, Women, Witches & County Commissioners, or For Health's Sake, Don't
Nag, presented to Utah Association of Counties, 56th Annual Meeting,
Salt Lake City, March 1979

Regulations & Enforcement of Food Code, presented to International Food
Service Executive Association, Salt Lake City, April 1979

- Exercise & Physical Fitness, presented to Institute of Internal Auditors, Salt Lake Chapter, Salt Lake City, May 1979
- Health Budgeting, Panel Chairman, presented to Utah Public Health Association, Salt Lake City, May 1979.
- Human Factors in Aerospace Medicine, presented to Aerospace Education Workshop, Weber State College, Ogden, Utah, June 1979
- Food Faddism, presented to Sugarhouse Business & Professional Womens Club, Salt Lake City, June 1979
- Air Ambulance & The Yellow Page Peril, presented to National Medical Association, Detroit, Michigan, July 1979
- Public Health Administration, presented to Brigham Young University School of Nursing, Salt Lake City, September 1979
- Preventive Medicine - The Only Viable Health Care Cost Containment, presented to American Guild of Patient Account Managers, Salt Lake City, September 1979
- Dealing With Executive Stress, presented to Utah Society of Association Executives, Salt Lake City, Utah, November 1979
- Inspection and Maintenance, presented to Utah Parts and Service Club, Salt Lake City, Utah, November 1980
- Managing Stress, presented to Sheet Metal Contractor's Association and Executive Women's International, Salt Lake City, Utah, January 1980
- Medical Aspects of Helicopter Flight, presented to Basic Aircraft Accident Investigation Course, National Academy of Aviation Safety, Salt Lake City, Utah, January 1980
- Master of Ceremonies, Community Recognition at the retirement of Charles Wilson, Salt Lake City Water Department, 50 years of service, Salt Lake City, Utah, January 1980
- The Automobile As A Polluter, presented to Utah Automobile Dealers Association, Salt Lake City, Utah, January 1980
- The Health Importance of Adequate Animal Control, presented to Utah Association of Animal Control Officers, Salt Lake City, Utah, January 1980
- Utah Is Great for Health's Sake, presented to American College of Hospital Administrators Journal Club, Salt Lake Kiwanis Club, Cottonwood Study Club, Bonneville Kiwanis Club, and Footprinters Association, Salt Lake City, Utah, February-October 1980
- Do Your Own Thing, or How To Get The Health Department Off Your Back, presented to Biennial Convention, Utah Restaurant Association, Salt Lake City, Utah, February 1980
- Immunization Apathy, presented to Utah Association of Family Practitioners, Salt Lake City, Utah, March 1980

Current Trends in Sexually Related Diseases, Tuberculosis, and Refugee Health Problems, presented to Utah College Health Association, Salt Lake City, Utah, March 1980

Fetal Alcohol Syndrome, presented to Alcoholism Prevention Symposium, Salt Lake City, Utah, June 1980

Emergencies Can Be Fun, presented to Utah Association of Emergency Medical Technicians, St. George, Utah, September 1980

How to Provide Medicine on the Frontiers of Utah, presented to Commissioner's Fall Workshop, Logan, Utah, October 1980

Things Are Better Than They Might Not Seem, presented to Utah Chapter of the American Society of Heating, Refrigeration, and Air Conditioning Engineers, Salt Lake City, Utah, October 1980

Medical Hazards of Embalming, presented to Larkin Mortician's Association, Salt Lake City, Utah, November 1980

Hot to Avoid Stress and Be Legal, presented to Legal Secretaries Association, Salt Lake City, Utah, November 1980

Aviation Medicine and The Air Ambulance, State of Utah and University of Utah video taping, November 1980

Immunizations in Utah, presented to Footprinters Association, Salt Lake City, Utah, December 1980

Disorientation, presented to Federal Aviation Administration Accident Prevention Program and Aviation Safety Seminar, Salt Lake City, Utah, December 1980 (approximately 300 in attendance)

Utah Is Great for Health's Sake, presented to Utah Chapter of Retired Federal Employees, January 1981

How Nurses Affect Pollution, presented to Annual Meeting of Student Nurses Association of Utah, Salt Lake City, Utah, January 1981

Air Pollution, presented to Salt Lake County Medical Society and Environmental Health Committee, Salt Lake City, Utah, January 1981

Human Factors of Aviation Safety, presented to Basic Aircraft Accident Investigation Course, National Academy of Aviation Safety, Salt Lake City, Utah, February 1981

The Second of May is Clean Air Day, presented to Utah Automobile Dealers Association, Salt Lake Chapter, Salt Lake City, Utah, March 1980

Spatial Disorientation and Aviation Safety, Civilian vs. Military, presented to Utah Air National Guard, Salt Lake City, Utah, March 1980 (approximately 200 in attendance)

Spatial Disorientation - The #1 Human Factors Problem in General Aviation Safety, presented at the Fifteenth Annual SMU Air Law Symposium, Dallas, Texas, April 1981

News of Members



Harry L. Gibbons, M.D., former Chief, Aeromedical Research Branch, FAA Civil Aeromedical Institute, has been named Director of Health for Salt Lake City-Salt Lake County, Utah. In his new position, Dr. Gibbons is responsible for all aspects of community health in the Salt Lake area and directs a staff of over 140 people. A native of Utah, Dr. Gibbons was born in Kanab and received his B.S. from Utah State University (1955) and his M.D. from the University of Utah (1958). He later earned an M.P.H. from Harvard University (1963). A commercial pilot with single, multi-engine, and instrument ratings, and board certified in Aerospace Medicine, Dr. Gibbons has been associated with aviation since obtaining his medical degree. He was the post flight surgeon at Fort Bragg, N.C. from 1959-1961 after serving a one-year rotating internship at William Beaumont Army Hospital, El Paso, Texas. He subsequently joined FAA as assistant regional flight surgeon, Southwest Region, from 1962-1966, served as the regional flight surgeon. He was appointed to his CAMI position in 1966, assumed supervision of biomedical safety research, and began vigorous application of the research results obtained by his branch to the safety needs of the aviation public. He promoted through his educational activities the need for cholinesterase checks among crop dusters, and for physiological training, hearing protection, and disorientation training for all pilots. His activities have merited him achievement and performance awards, both military and civilian, based on contributions which include the following: institution of an interview and indoctrination program of candidates prior to their designation as aviation medical examiners; organization of physiological training sessions for AME's; establishment of a near-100% autopsy rate for fatal civil aviation accidents in the Southwest Region;

promotion of physiological training courses for general aviation pilots; organization of physiological training sessions for airline pilots; and organization of air ambulance operators into the Aeromedical Service Association for the purpose of elevating the quality of their services on a national basis. Dr. Gibbons has also been a frequent contributor to *AEROSPACE MEDICINE* and to the annual meetings of the Aerospace Medical Association. He is an Associate Fellow and has served on the Association's Registration Committee, Science and Technology Committee, and Scientific Program Committee and is chairman of the Aviation Safety Subcommittee. Although leaving the FAA, Dr. Gibbons will continue to play an active role in aviation safety. He has already initiated a collaborative program with the University of Utah Medical School concerned with research on transportation of premature infants in aircraft, and has begun laying the groundwork for proposed state legislation regarding air ambulance services. As with so many of his activities, accomplishment of the latter could represent another aviation safety "first."

CAPT Laura E. Ferguson, NC, USA, a 10-year veteran of military nursing in the Air Force and the Army, has been transferred to Camp Zama, Japan, where she is head nurse of the Far East Burn Unit in charge of all thermal injuries from helicopter crashes, high voltage accidents, etc. She was formerly head nurse of the Special Wound Care Ward of the 249th General Hospital at Camp Drake, Japan, and received a citation for her "high standards . . . industrious and ingenious manner . . . exemplary ability." Before her Japan tour, she was stationed at Fort Campbell, Kentucky, where she received the Army Commendation Medal for her work as head nurse of the hospital's Surgical Ward.

Col. Ernst Ebeling, GAF, MC, has been named command surgeon of the GAF technical command, Porz-Wahn, Germany. Col. Ebeling is a helicopter pilot, flight surgeon, and specialist in internal medicine. He studied aerospace medicine at both Randolph AFB and Brooks AFB, Texas, and has published several papers on aviation medicine.

Col. Fredric F. Doppelt, USAF, MC, has assumed the post of senior medical advisor to the Republic of Korea Air Force, assigned as surgeon, Air Force Section JUSMAG-K in Seoul. Col. Doppelt, who was promoted in June, has formerly been chief of hospital and aeromedical services, March AFB, California, and Chief, Crew Systems Division, Directorate of Bioastronautics, Manned Orbiting Laboratory, Los Angeles, Calif.



Col. H. E. Wuesthoff, USAF, MC, former commander of the USAF regional hospital at Davis-Monthan AFB, Ariz., has retired from service and entered the private practice of psychiatry in Tucson, Ariz. He is also an associate in psychiatry at the University of Arizona College of Medicine. Col. Wuesthoff was awarded the Air Force Meritorious Service ribbon on his retirement.

LCDR Robert J. Knuff, MC, USN, former assistant medical officer flight surgeon at the Los Alamitos, Calif., Naval Air Station, has been assigned as flight surgeon to the Naval Air Reserve Training Unit at Point Mugu NAS, Calif.

Albert J. Rice, M.D., formerly associated with the Department of Orthopedics, Southern California Permanent Medical Group, has entered private orthopedic practice at Douglas, Ariz. He retired from the USAF in 1966 with the rank of colonel.

Capt. Dorothy S. Holbert, USAF, NC, former staff nurse with the 26th ASF, Cam Ranh Bay Republic of Vietnam, has been reassigned as nurse supervisor in general therapy services at Sheppard AFB, Texas.

Lt. Col. Sara Jordan, USAF, NC, who previously served with the 388th USAF Hospital in Korat, Thailand has been made chief of nursing service at the 314th TAC Hospital, Little Rock AFB, Arkansas.

Lt. Col. Corrin J. Hodgson, USAF, MC, former director of base medical services for the 3615th Pilot Training Wing, Craig AFB, Alabama, has been assigned as Chief, Vibration Branch, 6570th AMRL (BBV) at Wright-Patterson AFB, Ohio. He holds the USAF Commendation Medal for his work in Alabama.



HARRY L. GIBBONS

Doctor to an Industry

Chief of the FAA's Aeromedical Research Branch, he uses humor to help the patient through the hard spots.

RIGHT OFF, A VISITOR to the office of Harry L. Gibbons, M.D., gets the impression that the doctor has an impish sense of humor, which he does. On one office wall, among other things, is a framed message: "In the event of an atomic attack, all rules against praying in this school are indefinitely suspended."

"In this business," says the doctor, "a sense of humor helps. The patients are responding to treatment, but their health is not what it ought to be."

The patients, although not acutely aware of any examination, treatment or prescription, number in the thousands. They are the pilots and passengers that daily make up the world of aviation. The doctor's practice, to which he is intensely dedicated, is directed toward the human factor in the prevention of accidents.

In contrast to most physicians, who exercise authority in conjunction with tonics and pills, Dr. Gibbons relies solely on research and education. In his practice, there is no arbitrary prescription to cure the patients' ills.

Dr. Gibbons is chief of the Aeromedical Research Branch of the FAA's Civil Aeromedical Institute in Oklahoma City. The responsibility of Dr. Gibbons' branch, one of four within the institute, is research toward preventing accidents, preventing or reducing injury in the event of an accident and discovering improved techniques for treating injuries.

In its research into accident prevention, the obvious target is the pilot. "Eighty-six percent of all accidents are a result of pilot error," says Dr. Gibbons. "We can reduce this figure, but we can't do as much through legislation as we can through research and education."

"Whatever affects a pilot as a human being gets our attention. He is under more stress today than ever before. The demands on him are much greater. Since the beginning of aviation, everything—the airframes, the engines, the airways system, everything—has improved greatly. But the pilot is the same."

"We also pay attention to improving the crash survivability characteristics of aircraft. We have documented in tests, for example, the importance of shoulder harnesses, which have been common equipment in military aircraft for years. We have attempted to convince business aircraft manufacturers of their importance, and we are succeeding [Cessna has added as standard equipment a one-strap shoulder harness for

pilot and copilot, and Piper an inertia reel harness on some 1971 models].

"But safety, for some reason, is something that many industry personnel have been reluctant to discuss. Their attitude has been that 'if we talk about improving safety, we're admitting that our product isn't safe now', but this attitude is changing."

Studies of fatalities and injuries in crashes have convinced the institute that interiors of airplanes should be shielded with an absorbent material. The success of this research is well illustrated by a carpet of one such material about 1 in. thick that the institute has stretched on a floor. Eggs have been dropped onto it from as high as 22 ft without breaking.

In 1970, the institute, with the cooperation of military bases, markedly increased attendance in high-altitude flying courses, including "flights" in pressure chambers.

This year, more than 7000 have signed up for the courses.

As regards alcohol, which always seems to get attention, Dr. Gibbons says its role is magnified.

"Alcohol as a factor in fatal air crashes is tapering off," he says. "A few years ago, it was involved in about one-third of the fatal crashes, but today the figure is probably less than 20 percent. However, this is not the case in automobile accidents."

Being a Mormon (he interrupted his college education to serve for two years as a missionary in Germany), Dr. Gibbons doesn't indulge. But he does, he says, brew the "best home-made root-beer" known to lovers of soft drinks. "It's made with yeast, but it is non-alcoholic," he says. As of late 1970, he had brewed over 900 gal, giving it away, never selling it.

Dr. Gibbons, now 40, got his medical degree at the University of Utah and later a master of public health degree at Harvard. He took his internship in the Army, served two more years as a flight surgeon, and then joined the FAA. "I thought I would try working for the FAA for six months," he says, "but I'm still at it. This work is both fascinating and fun, so I will stay in aerospace medicine."

He took flying lessons when he was 15, but he had to drop out because of the expense. He got back to lessons as an intern and to date has about 1300 flight hours. He also has a hobby connected with aviation. He collects aerospace tie clips and lapel pins, of which he has 420 or so. A contributor is a friend for life. BG

Andrew F. Horne, M.D., M.P.H.
800 Independence Ave., SW
Washington, D.C. 20591

Phone: 202-426-3427 Work

Summary of Qualifications: Physician with twenty years as career medical officer in the Public Health Service. Board certification in Aerospace Medicine with experience in care of aviation personnel, flight safety programs, and operational aeromedical evacuation including approximately 2000 flight hours. Masters of Public Health in Occupational Health.

Experience in primary health care of military beneficiaries and in the administration of hospital program providing full medical and dental care and of occupational health program for Civil Service personnel.

Aircraft accident investigation duties both as a military flight surgeon and while detailed to the National Transportation Safety Board.

Education: Bachelor of Science in Chemistry
Davidson College, 1951

Bachelor of Science in Medicine
West Virginia University, 1954

Master of Science in Physiology
West Virginia University, 1954

Doctor of Medicine
Duke University, 1956

Master of Public Health
University of California at Berkeley, 1968

Certification in Aerospace Medicine after residency
Naval Aerospace Medical Institute, 1970

Personal Data: Date of Birth: 1929 Married Children, ages 24, 22, and 20
Medical Director (0-6) in Public Health Service 1969-1979 (Retired).

Member of Aerospace Medical Association
Member of Society of Air Safety Investigators
Medical License, State of North Carolina
Medical License, State of Virginia

Experience: December 1979 to Present: Program Scientist, Accident Investigation
Biomedical and Behavioral Sciences Division
Office of Aviation Medicine
Federal Aviation Administration

Principal scientist in the national Aviation Medicine Program who assures that all agency requirements for information concerned with decreasing aircraft accidents and injuries from them and increasing post-accident survival, are fulfilled. Monitors and coordinates all ongoing agency projects in the medical investigation of aircraft accidents, and evaluates educational measures.

August, 1978 to November 1979

Medical Officer
National Transportation Safety Board
Washington, D.C.

Detailed to NTSB by the U.S. Coast Guard. Served as the Medical Officer in the Human Factors Division, of the Bureau of Technology. Participated in the Human Factors aspects of accidents in all modes, but, in particular aviation. Performed special studies as related to the medical investigation of accidents.

August, 1975 to August 1978

Senior Medical Officer
U.S.C.G. Medical Facility
U.S.C.G. Support Center, Kodiak,

Supervisor for medical facility providing full medical and dental care, inpatient and outpatient, to beneficiaries in the area. Director of an Environmental Health Program and Civil Service Occupational Health Program for the Support Center.

Additional duties include:

17th District Medical Officer - providing consultation to District Commander on health care delivery and management in Alaska. C.G. Air Station, Kodiak Flight Surgeon - providing regular health care to aviation personnel and direct involvement in aeromedical evacuation in Alaska by the Air Station.

July, 1970 to July, 1975

U.S.C.G. Headquarters
Office of Chief Medical Officer
Washington, D.C.

Chief, Special Medical Operations Branch - duties include health care for aviation personnel in the area and serving as reviewing authority for Aviation Medicine Program. Served as a member of the following boards:

- Physical Review Board
- Physical Disability Appeal Board
- Aviation Safety Board
- Pilot Disposition Board
- Aircraft Characteristics Board
- Medium Range Search (Aircraft) Selection
- Short Range Recovery Helicopter Study Board
- Commandant's Aircraft Accident Analysis Board
- Medical member of Coast Guard representation at Tri-Service Safety Symposium

July, 1968 to July, 1970

Naval Aerospace Medicine Institute
Pensacola, Florida

Residency training leading toward certification in Aerospace Medicine.

September, 1967 to July, 1968

School of Public Health
University of California, Berkeley

Graduate studies leading to completion of degree requirements for a Master of Science in Public Health with a major in Occupational Health as required for certification in Aerospace Medicine Residency.

July, 1964 to September, 1967

U.S.C.G. Air Station
Port Angeles, Washington

Senior Medical Officer -- provided primary health care for all Coast Guard beneficiaries. Direct involvement in aeromedical evacuation in mountainous and sea environment as medical attendant and flight surgeon. Involved in flight safety programs and performed regular flight surgeon's duties regularly for additional air stations, Annette (Alaska) and Astoria (Oregon). Consultant flight surgeon for West Coast and Alaska and Flight Surgeon Member of Aircraft Analysis Boards for all Coast Guard accidents on the West Coast and Alaska (9 accidents) at this time.

January, 1964 to July, 1964

U.S.C.G. Air Station
Elizabeth City, North Carolina

Senior Medical Officer - provided primary health care for all Coast Guard beneficiaries. Direct involvement in aeromedical evacuation, and all duties of Flight Surgeon for Military personnel.

July, 1963 to January, 1964

Naval School of Aviation Medicine
Pensacola, Florida

Student Flight Surgeon in training leading to designation a Naval Flight Surgeon. Course included Primary Flight Training through solo in T-34. Served as Class Leader.

January, 1959 to July, 1963

U.S.C.G. Air Station
Elizabeth City, North Carolina

Senior Medical Officer provided direct health care for all Coast Guard beneficiaries in the area. Served as medical attendant on aeromedical flights. Qualified as aircrewman on HH-19 (helicopter).

July, 1957 to January, 1959

U.S.P.H.S. Indian Health Hospital
Claremore, Oklahoma

General Medical Officer - one of three general medical officers for a 72 bed hospital providing full medical care for Indian Health beneficiaries.

July, 1956 to July, 1957

Duke University Hospital
Durham, North Carolina

Internship in Pediatrics.

CURRICULUM VITAE

C. J. Lambertsen, M.D.

Home Address:

Office Address: Institute for Environmental Medicine
University of Pennsylvania
Medical Center G2
Philadelphia, Pennsylvania 19104

Citizenship: U.S.A.

Date of Birth: 15 May 1917

Place of Birth: Westfield, Union, New Jersey

Education: 1937-39 B.S. Rutgers University
1939-43 M.D. University of Pennsylvania
Medical School

Postgraduate Training and Fellowship Appointments:

1 April 1943 - Internship - University of Pennsylvania
30 December 1943 Hospital, Philadelphia, Pennsylvania

Military Service: 1944-46 U.S. Army

Faculty Appointments:

1946-48 Instructor, Department of Pharmacology, University
of Pennsylvania School of Medicine

1948-51 Assistant Professor, Department of Pharmacology,
University of Pennsylvania School of Medicine

1948-72 Associate, Department of Medicine, University of
Pennsylvania School of Medicine

1951-53 Associate Professor, Department of Pharmacology,
University of Pennsylvania School of Medicine

1951-52 Visiting Research Associate Professor, Department
of Physiology, University College, London

1953-62 Professor of Pharmacology, University of Pennsyl-
vania School of Medicine

Faculty Appointments (Continued)

| | |
|------------------|---|
| 1962- Present | Professor of Pharmacology & Experimental Therapeutics, University of Pennsylvania School of Medicine |
| 1972- Present | Professor of Medicine, University of Pennsylvania School of Medicine |
| 1976- | Professor, University of Pennsylvania School of Veterinary Medicine |

Hospital and Administrative Appointments:

| | |
|------------------|---|
| 1955-71 | Secretary for Basic Sciences, National Board of Medical Examiners |
| 1968- Present | Director, Institute for Environmental Medicine University of Pennsylvania Medical Center |

Licensure: Pennsylvania - M.D.

Representative Academic Committees at the University of Pennsylvania:

| | |
|---------|---|
| 1955-59 | Educational Policy Committee |
| 1957-60 | Chairman, President's Committee on Future Size and Composition of the University of Pennsylvania |
| 1967-69 | University Research Policy Committee |
| 1969-72 | Advisory Committee on Clinical Research Policy, Hospital of the University of Pennsylvania |
| 1969-72 | Space Committee, Medical Center |
| 1971-73 | Committee for Clinical Investigation of New Drugs in Human Beings |
| 1971-73 | Greater Philadelphia Committee for Medical-Pharmaceutical Sciences |
| 1971-73 | Medical Board, Hospital of the University of Pennsylvania |
| 1972 | Advisory Committee to Pulmonary Program, Cardiovascular Pulmonary Division |
| 1972 | Basic Sciences Chairmen Committee |
| 1973-74 | Chairman, Lindbach Teaching Award Selection Committee |
| 1973-74 | Thouron Scholar Selection Committee |
| 1974 | Scientific Advisory Committee; Cerebrovascular Research Center |

University Representative Academic Committees (Continued)

| | |
|------|---|
| 1974 | Department of Bioengineering Advisory Board |
| 1975 | Heart-Lung Center Advisory Committee |
| 1976 | Long Range Planning Committee, Medical Center |
| 1976 | Chairman, Educational Subcommittee |

Awards, Honors and Membership in Honorary Societies:

| | |
|---------|---|
| 1948-53 | John and Mary R. Markle Scholar in Medical Science |
| 1965 | University of Pennsylvania Alumni Award of Merit |
| 1967 | Lindbach Award for Distinguished Teaching |
| 1969 | Civilian Meritorious Service Award, Secretary of the Navy |
| 1969 | Military and NASA Commendations |
| 1969 | Military Oceanography Award, Secretary of the Navy |
| 1970 | Aerospace Medical Association Award |
| 1970 | Undersea Medical Society Award |
| 1972 | Distinguished Public Service Medal, Department of Defense |
| 1972 | Marine Technology Society Award for Ocean Science and Engineering |
| 1972 | Navy Certificate of Commendation for Advisory Service |
| 1973 | Underwater Society of America Award for Science |
| 1974 | New York Academy of Sciences Award for Research in Environmental Science |
| 1976 | Distinguished Public Service Award, United States Coast Guard |
| 1977 | Member, National Academy of Engineering |
| 1977 | Doctor of Science Honorary Degree, Northwestern University |
| 1977 | Fellow, College of Physicians of Philadelphia |
| 1978 | Distinguished Award for Individuals, Offshore Technology Conference |
| 1978 | Certificate of Commendation for Outstanding Service on Secretary of the Navy Oceanographic Advisory Committee |
| 1979 | Award in Environmental Science, Aerospace Medical Association |
| 1979 | Award for Undersea Research Training, Undersea Medical Society |
| 1980 | Association of Diving Contractors Award |

Service and Related Activities:

Service:

February 1944- U.S. Army Medical Corps. Major, detached service
November 1946 in underwater operations with Office of Strategic
Services.

Military Commendations:

1945 Legion of Merit, U.S. Army

1946 U.S. Army Commendation Ribbon, citation from Major
General Norman Kirk, M.C., Surgeon General, U.S.
Army

1945 Major General William J. Donovan, U.S.A. Director,
Office of Strategic Services

1945 Colonel Sylvester C. Missal, M.C., U.S.A. Chief
Surgeon, Office of Strategic Services

1946 Admiral J. F. Farley, Commandant, U.S. Coast Guard

1946 Colonel H. W. Doan, M.C., Executive Officer, Surgeon
General's Office

1945 Lt. Commander Derek A. Lee, R.N.V.R., Burma

1945 Commander H. G. A. Wooley, D.S.C., R.N. Director,
Maritime Unit, Office of Strategic Services

1947 Colonel George W. Read, Jr., U.S. Army Ground Forces
President, Board No. 2

1948 General Jacob L. Devers, U.S.A. Commanding General,
U.S. Army Ground Forces

1945 Lt. Colonel H. Q. A. Reeves, British Army

Memberships in Professional and Scientific Societies:

National Societies:

Aerospace Medical Association (Vice President - 1968;
Fellow - 1971)

American College of Clinical Pharmacology and
Chemotherapy (Charter Member)

The American Society for Pharmacology and
Experimental Therapeutics

The American Physiological Society

The American Society for Clinical Investigation

National Societies (Continued)

Association of American Medical Colleges
Explorers Club
International Academy of Astronautics
International Astronautic Federation
International Union of Physiological Sciences
The John Morgan Medical Research Society
Marine Technology Society
The Peripatetic Medical Society
Sigma XI
Undersea Medical Society (President & Founder)
Cosmos Club
Society for Mathematical Biology

Local Societies:

Delaware Valley Citizen's Council for Clean Air
Franklin Institute Committee on Sciences and
the Arts
Philadelphia County Medical Society
Philadelphia Maritime Museum
Philadelphia Physiological Society

Major National Committee Activities:

| | |
|----------------------|---|
| 1953-60 & 1962-71 | Committee on Naval Medical Research, National Research Council |
| 1953- Present | Committee on Undersea Warfare, National Research Council |
| 1953-56 | Chairman, Panel on Underwater Swimmers, Committee on Undersea Warfare, National Research Council |
| 1954-60 | Chairman, Panel on Shipboard and Submarine Medicine, Committee on Naval Medical Research, National Research Council |

Major National Committee Activities (Continued)

| | |
|--------------|--|
| 1954-61 | Advisory Panel on Medical Sciences, Office of Assistant Secretary of Defense, R. and E. |
| 1955-59 | Consultant, U.S. Army Chemical Corps. |
| 1957 | Consultant in Physiology and Pharmacology to Surgeon General, U.S. Navy |
| 1959-60 | Vice Chariman, Panel on Closed Ecological Systems. Bioastronautics Committee, National Research Council |
| 1959-61 | Consultant, Scientific Advisory Board, U.S. Air Force |
| 1960-62 | Chairman, Committee on Man in Space, Space Science Board, National Academy of Sciences |
| 1961-66 | Member, Committee on Hyperbaric Oxygenation, National Research Council |
| 1960-62 | Member, Space Science Board, National Academy of Sciences |
| 1962-Present | Consultant, Space Science Board, National Academy of Sciences |
| 1966-68 | Chairman, Committee on Manned Undersea Activity, Office of Naval Secretary for Research and Development |
| 1967 | Undersea Advisory Board, Philadelphia National Maritime Museum |
| 1967-70 | Member, President's Space Panel, PSAC |
| 1968-Present | Oceanographic Advisory Committee, Office of Assistant Secretary of the Navy for Research and Development |
| 1972-Present | Member, Committee on Underwater Physiology and Medicine, National Research Council, NAS-NAE Division of Medical Sciences |
| 1972-Present | Member, Panel on Oceanography and Marine Technology, National Research Council, National Academy of Engineering, Division of Earth Sciences |
| 1972-Present | Consultant to the Diving Physiology and Technology Panel. U.S. - Japan Cooperative Program in Natural Resources, U.S. Department of the Interior |
| 1972-Present | Biomedical Sciences Advisor, National Oceanic and Atmospheric Administration, Office of Marine Resources, U.S. Department of Commerce |
| 1973-Present | Member, The Marine Board, National Academy of Engineering |

Major National Committee Activities (Continued)

- | | |
|------|---|
| 1973 | Member, Smithsonian Advisory Board |
| 1976 | Chairman, Education Committee, Undersea Medical Society |

Fields of Research:

1. Mechanisms of regulation of acid-base and oxygen environment of central nervous system. Involves interrelated studies of chemical regulation of respiration, blood gas transport, brain circulation and brain metabolism.
2. Mechanisms of actions of narcotic, stimulant and tranquilizing drugs on respiratory center neurons. Acclimitization of respiratory control mechanisms to hypernormal levels of pCO_2 and CH . Modification by hyperthermia of drug actions on respiratory centers.
3. Physiological effects of oxygen at increased ambient pressure. Hyperbaric medicine. Aerospace medicine. Toxicity of oxygen, carbon dioxide and inert gases.
4. Diving physiology and undersea medicine.

Editorships:

- Editor - Underwater Physiology V. Proceedings of the Fifth Symposium. Federation of American Societies for Experimental Biology, Bethesda, Maryland, 1976.
- Editor - Underwater Physiology. Proceedings of the Fourth Symposium. Academic Press, New York and London, 1971.
- Editor - Underwater Physiology. Proceedings of the Third Symposium. Williams and Wilkins, Co., Baltimore, Maryland, 1967.
- Editor - Underwater Physiology. Proceedings of the Second Symposium. National Academy of Sciences, Washington, D.C., 1963. With L. Greenbaum.
- Editor - Hyperbaric Medicine. New York Academy of Sciences, New York, 1965. With J. Jacobson and G. Bond.
- Editorial Board - Space Life Sciences. D. Reidel, Publishing Co. Dordrecht-Holland, 1966.
- Editorial Board - Journal of Oceanology and Limnology, Omnipress, Haddonfield, New Jersey, 1966.
- Editorial Board - Marine Technology Society Journal, 1977.

Industrial Boards and Advisory Activities:

1. Environmental Systems Advisor, Hamilton Standard Division, United Aircraft Corporation, 1959-60.
2. Chairman, Life Systems Advisory Board, McDonnell-Douglas Aircraft Corporation, 1960-67.
3. Research Advisory Board, Mead Johnson Company, 1960-67.
4. Senior Life Sciences Advisor, Union Carbide Corporation, 1960-68.
5. Senior Life Sciences Advisor, Westinghouse Electric Corporation, 1972-74.
6. Advisor, Liquid Carbonic Corporation, 1972-73.
7. Board of Directors, Air Products and Chemicals Corporation, 1973 - to present.
8. Medical Director, Ocean Systems, Inc., 1975 - to present.

Patents:

1. No. 2,348,074 - Breathing Apparatus
2. No. 2,362,643 - Breathing Apparatus for Use Under Water
3. No. 2,418,473 - Hood for Oxygen Therapy
4. No. 2,456,130 - Breathing Apparatus
5. No. 2,586,670 - Selective Gas Absorber
6. No. 2,781,043 - Oxygen Admission Valve for Oxygen Rebreathing Apparatus
7. No. 2,871,854 - Breathing Apparatus
8. No. 3,794,021 - Dual Mode Mixed Gas Breathing Apparatus
9. No. 3,851,487 - Buoyant Underwater Structures

ARIZONA STATE UNIVERSITY

James W. Turnbow
Professor of Engineering

Degrees:

Ph. D. University of Texas, 1959
M.S.E.M. University of Texas, 1952
B.S.M.E. Texas Technological College, 1940

Academic Experience:

1971- Director Crash Injury Investigators School,
Arizona State University
1959-1960 Arizona State University, Professor
1948-59 University of Texas, Assistant Professor
1948 Texas Technological College, Student Instructor
1940-41 Oklahoma A. & M. College, Instructor

Industrial Experience:

5/44-9/47 North American Aviation, Design Engineer
7/41-4/44 U. S. Army, Captain, Ordnance Department

Consulting Experience:

1972- Aviation and Automotive Accident Investigation for various legal firms
1/72 Consultant to Sikorsky Aircraft, Stratford, Connecticut
9/60-6/69 Consultant to the Flight Safety Foundation, AvSER Div., Phoenix, Arizona
9/54-9/59 Balcones Research Center, University of Texas, Research Engineering

Awards, Scholarships, and Honor Societies:

Tau Beta Pi Honor ME Graduate, Texas Tech
Alpha Chi Honor Military Graduate, Texas Tech
Convair Excellence in Teaching Award, U. of Texas Sigma Xi Member

Membership in Scientific and Professional Societies:

Registered Professional Engineer, Texas and Arizona

Principal Areas of Research and Teaching Interest:

Dynamics, Vibration, Impact, Space Mechanics, Aviation and Automotive Safety

Principal Publications:

"Cushioning for Air Drop, Part I," (with other authors). Published for the Quartermaster Food and Container Institute for the Armed Forces, Chicago, Illinois, July 1955, 80 pp.

"Cushioning for Air Drop, Part II, Air Drop Cost Analysis," (with C. C. Steyer). Quartermaster Food and Container Inst. for the Armed Forces, Chicago, Ill., April 1956, 37 pp. Unscheduled presentations of portions of this work were presented by Dr. Turnbow at two meetings: (a) Aerial Delivery Research Contractors Coordination Meeting at the Midwest Research Inst., Kansas City, Mo., Jan., 1956, and (b) The Aerial Delivery Research Symposium at Fort Lee, Virginia, April 1956.

"Cushioning for Air Drop, Part III, Characteristics of Paper Honeycomb under Dynamic Loading," Quartermaster Research and Engineering Command, Natick, Massachusetts, August 1956, 9 pp.

"Cushioning for Air Drop, Part VII, Characteristics of Foamed Plastics under Dynamic Loading," Quartermaster Research and Engineering Command, Natick, Massachusetts, March 1957, 14 pp.

"High-Velocity Impact Cushioning, Part I, Drop-Test Facilities and Instrumentation," Quartermaster Research and Engineering Command, Natick, Massachusetts, August 26, 1957, 31 pp.

"High-Velocity Impact Cushioning, Part II, Energy-Absorbing Materials and Systems," Quartermaster Research and Engineering Command, Natick, Massachusetts, August 26, 1957, 41 pp.

"Properties of Materials at High Strain Rates, Part III, Material Properties and Wave Propagation," The Sandia Corporation, Albuquerque, New Mexico, January 5, 1959, 174 pp.

"High-Velocity Impact Cushioning, Part IV, The Effect of Moisture Content and Impact Velocity on Energy-Absorption Characteristics of Paper Honeycomb," Quartermaster Research and Engineering Command, Natick, Massachusetts, May 1, 1959, 40 pp.

"High-Velocity Impact Cushioning, Part V, Energy-Absorption Characteristics of Paper Honeycomb," Quartermaster Research and Engineering Command, Natick, Massachusetts, May 25, 1959, 106 pp.

"Application of Cushioning to Complex Structures," Aerial Delivery Impact Conference, Balcones Research Center, The U. of Texas, June 1959.

"The Energy-Dissipating Characteristics of Airbags," Quartermaster Research and Engr. Command, Natick, Mass., August 18, 1959, 52 pp.



Principal Publications: (continued)

- "Strain Rate Effects on the Stress-Strain Characteristics of Alum. and Copper," Midwestern Conf. on Fluid and Solid Mechanics, September 11, 1959, The University of Texas, Austin, Texas.
- "U.S. Army H-25 Helicopter Drop Test," U. S. Army TRECOM Contract DA-44-177-T6-624 (with Chance Vought Aircraft Corp.), December 15, 1960.
- "Army Aviation Safety," Final Report U.S. Army TRECOM Contract DA-44-177-T6-624 (with other authors), Dec. 30, 1960.
- "U.S. Army H-25 Helicopter Drop Test," 10/22060, TREC Tech. Report 60-76, AvCIR-2-TR-125, Aviation Crash Injury Research, Phoenix, Arizona, March 15, 1961.
- "A Dynamic Crash Test of an H-25 Helicopter," SAE Report 517A, Aviation Crash Injury Research, Phoenix, Arizona, April 1962, AvCIR 61-21.
- "Dynamic Crash Tests of Fixed-Wing and Rotary-Wing Aircraft as Related to Seat Design," Rothe, V.E. and Turnbow, J.W., AvCIR Technical Report 62-15, Aviation Crash Injury Research, Phoenix, Arizona, October 1962.
- "Military Troop Seat Design Criteria," Turnbow, J.W., Rothe, V.E., Bruggink, G.M. and Roegner, H.R., TRECOM Technical Report 62-79, U.S. Army Transportation Research Command, Fort Eustis, Virginia, November 1962.
- "Discussion of Postcrash Fire Problem," AvCIR Paper 62-30, Aviation Crash Injury Research, Phoenix, Arizona, Dec. 1962.
- "Crew Seat Design Criteria for Army Aircraft," Roegner, H.F. and Turnbow, J.W., TRECOM Technical Report 63-4, AvCIR 62-20, U.S. Army Transportation Research Command, Fort Eustis, Virginia, February 1963.
- "Dynamic Test of an Aircraft Litter Installation," Weinberg, L.W.T. and Turnbow, J.W., TRECOM Technical Report 63-3, AvCIR 62-63, U.S. Army Transportation Research Command, Fort Eustis, Virginia, March 1963.
- "Dynamic Test of a Commercial-Type Passenger Seat Installation in an H-21 Helicopter," June 1963, TRECOM Technical Report 63-24, AvCIR 62-25, U.S. Army Transportation Research Command, Fort Eustis, Virginia, June 1963.
- "Dynamic Test of an Experimental Troop Seat Installation in an H-21 Helicopter," Turnbow, J.W., Robertson, S.H., and Carroll, D.F., TRECOM Technical Report 63-7, U.S. Army Transportation Research Command, Fort Eustis, Va., Nov. 1963.
- "Theory, Development and Test of a Crash Fire-Inerting System for Reciprocating Engine Helicopters," Turnbow, J.W., Robertson, S.H., and Carroll, D.F., TRECOM Technical Report 63-49, U.S. Trans. Research Command, Ft. Eustis, Va., Dec. 1963.
- "A Review of Crashworthy Seat Design Principles," Turnbow, J.W. and Haley, J.L., Soc. of Autom. Engrs. Rep. #851A, New York, N.Y., April 1964.
- "Safety Engineering for Crash Injury Prev." Turnbow, J.W., Avery, J.A. and Haley, J.L., Soc. of Autom. Engrs. Paper, July 1964.
- "Survivability Seat Design Dynamic Test Program," (with L.W.T. Weinberg), USAAVLABS Tech. Rep. 65-43, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, 1965, 115 pp.
- "Crash Survival Eval. of the OH-4A Helicopter," (with others), AvSER M65-5, Aviation Saf. Engg. & Research, Phoenix, 1965, 36pp.
- "Crash Survival Eval. of the OH-4A Helicopter," (with others), AvSER M65-9, Aviation Saf. Engg. & Research, Phoenix, 6/8/65, 44pp.
- "Full Scale Dynamic Crash Test of a Small Observation Type Helicopter," Test No.'s 21 and 22, (with others), USAAVLABS Tech. Report 66-32, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, 1965, 39 pp.
- "Aircraft Fuel Tank Design Criteria," (with S.H. Robertson), USAAVLABS Technical Report 66-24, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, 1966, 105 pp.
- "Helmet Design Criteria for Improved Crash Survival," (with others) USAAVLABS Technical Report 65-44, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, 1966, 121 pp.
- "Impact Test Methods for Helmets, Supp. I to Helmet Design Criteria for Improved Crash Survival," USAAVLABS Tech. Report 65-44A, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, 1966, 18 pp.
- "Test Results-Hemispherical Specimens, Supp. II to Helmet Design Criteria for Improved Crash Survival," (with J.L. Haley, Jr.), USAAVLABS Technical Report 65-44B, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Va., 1966, 17 pp.
- "Impact Test Methods and Retention Harness Criteria for U.S. Army Aircrewman Protective Headgear," (with J.L. Haley, Jr.), USAAVLABS Technical Rep. 66-29, U.S. Army Aviation Materiel Lab., Ft. Eustis, Va., 1966, 45 pp.
- "Crash Survival Eval. OH-6 Helicopter," (with J.L. Haley, Jr.) AvSER M67-3, Phoenix, Aviation Saf. Engg. & Res., 1967, 48 pp.
- "Crashworthiness Study for Passenger Seat Design-Analysis & Testing of Aircraft Seats," (with others), AvSER 67-4, Aviation Safety Engineering and Research, Phoenix, Arizona, 1967, 42 pp.
- "Floor Accelerations and Passenger Injuries in Aircraft Accidents," (with J.L. Haley, Jr.) USAAVLABS TR 67-16, U.S. Army Aviation Materiel Laboratories, Ft. Eustis, Va., May 1967, 46 pp.
- "Crash Survival Design Guide," (with others) USAAVLABS Technical Report 67-22, U.S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, August 1967, 291 pp.
- "Crashworthiness of Aircrew Protective Armor," (with others) TR 68-57-CM, U.S. Army Natick Lab., Natick, MA, April 1968, 80 pp.
- "Total Reaction Force Due to an Aircraft Impact into a Rigid Barrier," (with J.L. Haley, Jr.) AvSER TR 68-3, Aviation Safety Engineering and Research, Phoenix, Arizona, April 1968, 17 pp.
- "An Evaluation of Armored Aircrew Crash Survival Seats," (with others) AvSER TR 68-4, Aviation Safety Engineering and Research, Phoenix, Arizona, May 1968, 81 pp.
- "Crashworthiness Study for Passenger Seat Design," (with others) NSR 33-026-0003, Nat'l Aero. & Space Adm., June 1968, 171 pp.
- "Tension and Damping Effects on Vibrating Strings," (with others) K002641, National Science Found., Feb. 1969, 230 pp.
- "The Basic Principles of Mechanics as Applied to Automotive Impact," Proceedings of UCLA Medical Seminar, June 16-27, 1969, 30 pp.
- "The Effects of Tension on Vibrating Strings," (with F.D. Norville) K002641, National Science Foundation, February 1970, 246 pp.
- "Preliminary Impact Speed and Angle Criteria for Design of a Nuclear Airplane Fission Product Containment Vessel," (with others), NASA Technical Memorandum TMX-2245, National Aeronautics and Space Admin., Washington, D.C., May 1971, 36 pp.
- "Response of a Seat-Passenger System to Impulsive Loading," (with J.A. Collins), Proceedings of Symposium on the Dynamic Response of Structures, Pergamon Press, 1972.

January, 1981

Name: PAUL H. WENDER, M.D.

Date & Place of Birth: May 12, 1934, New York City, New York
Citizenship: United States of America

Marital Status: Married, three children

Education:

| | |
|-----------|--|
| June 1955 | A.B., Harvard University |
| June 1959 | M.D., Columbia University |
| 1959-1960 | Internship, Barnes Hospital, St. Louis |
| 1960-1962 | Residency, Psychiatry, Massachusetts Mental Health Center, Boston, Mass. |
| 1962-1963 | Residency, Psychiatry, St. Elizabeths Hospital |
| 1964-1967 | Fellow in Child Psychiatry, part-time, The Johns Hopkins Hospital |
| 1965-1970 | Candidate, Washington Psychoanalytic Institute |

Board Certification: Psychiatry 1967
Child Psychiatry 1970

Brief Chronology of Employment:

| | |
|-----------|---|
| 1964-1966 | Special Fellowship, U.S. P.H.A., NIMH |
| 1967-1968 | Instructor in Child Psychiatry, Johns Hopkins Hosp |
| 1968-1973 | Assistant Professor of Psychiatry & Pediatrics The Johns Hopkins Hospital |
| 1967-1973 | Research Psychiatrist (Medical Officer) NIMH |
| 1973-date | Professor of Psychiatry, University of Utah College of Medicine, Salt Lake City, Utah |

Military Service: 1962-1964 Senior Ass't Surgeon, U.S.P.H.S.
(Research Associate Program, NIMH)

Societies:

American Academy of Child Psychiatry
American Psychiatric Association -- Fellow, 1979
Society for Psychiatric Research
American Psychopathological Association
Utah Psychiatric Association
American College of Neuropsychopharmacology

Honors: Phi Beta Kappa; Alpha Omega Alpha; Hofheimer Award, American Psychiatric Assoc.; President, Psychiatric Research Soc. 1978-79

Research Interests: Etiology of schizophrenia; genetics and behavior; minimal brain dysfunction in children and adults

Professional Committees:

1. American Psychiatric Association
 - a. Task Force on Definition of Psychiatrists and all Mental Illness, 1973-1975
 - b. Task Force on Ethics of Psychiatric Research, 1974 to present
 - c. Task Force on Nomenclature for Child Psychiatric Disorders, 1974 to present
2. Member, Study Section, Clinical Psychopharmacology, NIMH, February, 1977 to present

Editorial Consultant: The Journal Psychiatry (member)
Archives of General Psychiatry (reviewer)
Journal of Nervous & Mental Disease (reviewer)
Psychological Bulletin (reviewer)
Psychiatry Research (editorial board)

BIBLIOGRAPHY

- Wender, Paul H. Dementia praecox. The development of the concept. Am J Psychiatry 119:1143-1151, 1963.
- Feinberg, I., Koresko, R., Gottlieb, E., and Wender, P.H. Sleep electroencephalographic and eye-movement patterns in schizophrenic patients. Comprehensive Psychiatry 5:44-53, 1964.
- Wender, Paul H. Communicative unclarity: Some comments on the rhetoric of confusion. Psychiatry 30:332-349, 1967.
- Wender, Paul H. On necessary and sufficient conditions in psychiatric explanation. Arch Gen Psychiatry 16:41-47, 1967.
- Wender, Paul H., Pedersen, F. A longitudinal study of early social behavior and cognitive development. Am J Orthopsychiatry 37:691-696, 1967.
- Wender, P.H., Rosenthal, D., Kety, S.S. A psychiatric evaluation of the adoptive parents of schizophrenic patients. Proceedings of the IV World Congress of Psychiatry, Madrid, Sept. 1966. Excerpta Medica International Congress Series No. 150, Part 2:1103-1106, 1968.
- Wender, Paul H. Vicious and virtuous circles: The role of deviation amplifying feedback in the origin and perpetuation of behavior. Psychiatry 31:309-324, 1968.
- Orne, M.T., Wender, P.H. Anticipatory socialization for psychotherapy: Method and rationale. Am J Psychiatry 124:1202-1212, 1968.
- Pedersen, F.A., Wender, P.H., Waldrop, M. Early social correlates of cognitive functioning in six-year-old boys. Child Development 39:185-193, 1968.
- Kety, S.S., Rosenthal, D., Wender, P.H., Schulsinger, F. The types and prevalence of mental illness in the biological and adoptive families of adopted schizophrenics. In Rosenthal, D., Kety, S.S. (Eds.). The Transmission of Schizophrenia, Oxford, Pergamon Press, 1968, 413-428. (Republished: J Psychiatric Res. 6:345-362, 1968.
- Rosenthal, D., Wender, P.H., Kety, S.S., Schulsinger, F., Welner, J., Ostergaard, L. Schizophrenics' offspring reared in adoptive homes. In Rosenthal, D., Kety, S.S. (Eds.). The Transmission of Schizophrenia, Oxford, Pergamon Press, 1968, 377-392. (Republished: J Psychiatric Research 6:377-391, 1968.
- Wender, Paul H., Rosenthal, D., Kety, S.S. Psychiatric assessment of adoptive parents of schizophrenics. In Rosenthal, D., Kety, S.S. (Eds.). The Transmission of Schizophrenia, Oxford, Pergamon Press, 1968. (Republished: J Psychiatric Research 6:235-250, 1968.
- Wender, Paul H. Platelet serotonin level in children with "minimal brain dysfunction", Lancet II:1012, 1969.
- Wender, Paul H. The role of genetics in the etiology of the schizophrenias. Am J Orthopsychiatry 39:447-458, 1969.
- Feinberg, I., Wender, P.H., Koresko, R., Gottlieb, F., Piehuta, J. Differential effects of chlorpromazine and phenobarbital on EEG sleep patterns. J Psychiatric Research 7:101-109, 1969.
- Wender, Paul H., Rosenthal, D., Zahn, T.P., Kety, S.S. The psychiatric adjustment of the adopting parents of schizophrenics. Am J Psychiatry 127:1013-1018, 1971.

- Wender, Paul H. Minimal Brain Dysfunction in Children, New York, John Wiley & Sons, Inc., 1971.
- Wender, Paul H, Epstein, R.S., Kopin, I.J., Gordon, E.K. Urinary monoamine metabolites in children with minimal brain dysfunction. Am J Psychiatry 127:1411-1415, 1971.
- Kety, S.C., Rosenthal, D., Wender, P.H., Schulsinger, F. Mental illness in the biological and adoptive families of adopted schizophrenics. Am J Psychiatry 128:302-306, 1971.
- Rosenthal, D., Wender, P.H., Kety, S.S., Welner, S., Schulsinger, F. The adopted-away offspring of schizophrenics. Am J Psychiatry 128:307-311, 1971.
- Wender, Paul H. Adopted children and their families in the evaluation of nature-nurture interactions in the schizophrenic disorders. Ann Rev Med 23:355-372, 1972.
- Arnold, L.E., Wender, P.H., McCloskey, K., Snyder, S. Levoamphetamine and dextroamphetamine: Comparative efficacy in the hyperkinetic syndrome: Assessment by target symptoms. Arch Gen Psychiatry 27:816-822, 1972.
- Wender, Paul H. The minimal brain dysfunction syndrome in children: I. The syndrome and its relevance for psychiatry; II. A psychological and biochemical model for the syndrome. J Nerv Ment Disease 155:55-71, 1972.
- Wender, Paul H., Eisenberg L. Minimal brain dysfunction. Am Handbook of Psychiatry (second edition), Silvano Arieti, Editor-in-Chief, Basic Books, Inc., 130-146, 1974.
- Wender, Paul H. Minimal brain dysfunction in children. Diagnosis and management. Pediatric Clinics of North America 20:187-202, 1973.
- Wender, Paul H. The Hyperactive Child: A Handbook for Parents. Crown Publishers, N.Y., 1973.
- Wender, Paul H. Genetics and Schizophrenia. JAMA 223(12):1382-1383, 1973.
- Wender, Paul H. Some speculations concerning a possible biochemical basis of minimal brain dysfunction. Ann N.Y. Acad of Sciences 205:18-28, 1973.
- Buchsbaum, Monte, Wender, P.H. Average evoked responses in normal and minimally brain dysfunctioned children treated with amphetamines. Arch Gen Psychiatry 29:764-770, 1973.
- Wender, Paul H., Rosenthal, D., Kety, S.S., Schulsinger, F., Welner J. Social class and psychopathology in adoptees: An experimental method for separating the roles of genetic and experiential factors. Arch Gen Psychiatry 28:318-325, 1973.
- Wender, Paul H. How many hyperactive children have you missed? Medical Opinion 2:64-69, 1973.
- Coyle, Joseph T., Wender, P.H., Lipsky, Ann. Avoidance conditioning in different strains of rats: Neurochemical correlates. Psychopharmacologia (Berl.) 31:25-34, 1973.
- Greenhill, L.L., Rieder, R.O., Wender, P.H., Buchsbaum, M., Zahn, R. Lithium Carbonate in the treatment of hyperactive children. Arch Gen Psychiatry 28:636-640, 1973.

Wender, Paul H. The Case of MBD. Hastings Center Studies 2:94-102, 1974.

Wender, Paul H., Rosenthal, David, Kety, Seymour, et al. Crossfostering: A research strategy for clarifying the role of genetic and experiential factors in the etiology of schizophrenia. Arch Gen Psychiatry 30:121-128, 1974.

Paikin, Henning, Jacobsen, B., Schulsinger, F., Godtfredsen, K., Rosenthal, D., Wender, P., Kety, S. Characteristics of people who refused to participate in a social and psychopathological study. In Mednick, S.A., Schulsinger, F., Higgins, J., Bell, B. (Eds.), Genetics, Environment and Psychopathology. North-Holland Publishing Co., Amsterdam, 1974, 293-322. (Am.Elsevier Pub. Co., N.Y)

Rosenthal, D., Goldberg, I., Jacobsen, B., Wender, P., Kety, S., Schulsinger, F., Eldred, C. Migration, Heredity and Schizophrenia. Psychiatry 37:321-339, 1974.

Wender, Paul H. Some speculations concerning a possible biochemical basis of minimal brain dysfunction. Life Sciences 14:1605-1621, 1974.

Kety, S.S., Rosenthal, D., Wender, P., Schulsinger, F., Jacobsen, B. Mental illness in the biological and adoptive families of adopted individuals who have become schizophrenic: A preliminary report based upon psychiatric interviews. In Fieve, R., Brill, H., Rosenthal, D. (Eds.). Genetics and Psychopathology, Johns Hopkins Press, 1976, 147-165.

Rieder, Ronald O., Rosenthal, David, Wender, Paul H. The offspring of schizophrenics: Fetal and neonatal deaths. Arch Gen Psychiatry 32:200-211, 1975.

Zahn, Theodore P., Abate, Frank, Little, Betsy C., Wender, Paul H. Minimal brain dysfunction, stimulant drugs and autonomic nervous system activity. Arch Gen Psychiatry 32:381-387, 1975.

Rosenthal, David, Wender, Paul H., Kety, Seymour S, et al. Assessing degree of psychopathology from diagnostic statements. Can.Psychiatric Assoc J 20:35-46, 1975.

Wender, Paul H. The minimal brain dysfunction syndrome. Annual Rev Medicine: Selected Topics in the Clinical Sciences 26:45-62, 1975.

Rosenthal, David, Wender, P.H., Kety, S.S., Schulsinger, F., Welner, J., Rieder, R. Parent-child relationships and psychopathological disorder in the child. Arch Gen Psychiatry 32:466-476, 1975.

Wender, Paul H. Speculations concerning a possible biochemical basis of minimal brain dysfunction. In Gittelman-Klein, Rachel, (Ed.) International J of Mental Health 4(1-2) 1975.

Wender, Esther H., Palmer, Frederick B., Herbst, John J., Wender, Paul H. Behavioral characteristics of children with chronic nonspecific diarrhea. American Psychiatric Association meetings, Anaheim, California, May, 1975. Clinical Research 23:1975; Pediatric News, August, 1975; Am J Psychiatry 133(1):20-25, 1976.

Wender, Paul H., Kety, S., Rosenthal, D. Borderline schizophrenia, a 13-year adoption study blames heredity, not environment. Medical World News May 17:23-24, 1976.

Wender, Paul H. An hypothesis for a possible biochemical basis of minimal brain dysfunction. In Knights, Robert M., Bakker, D. (Eds.) The Neuropsychology of Learning Disorders, University Park Press, Baltimore, Maryland, 1976.

Wender, Paul H. Das Hyperaktive Kind. Otto Maier Verlag, Ravensburg, 1976.

Wender, Paul H. La disfunzione cerebrale minima nei bambini. Armando Armando Editore, Roma, 1976.

- Wood, David, Reimherr, Fred, Wender, Paul. Diagnosis and treatment of minimal brain dysfunction in adults. Arch Gen Psychiatry 33(12):1453-1461, 1976.
- Kety, S.S., Rosenthal, D., Wender, P.H., Schulsinger, F., Jacobsen, B. The biological and adoptive families of adopted individuals who became schizophrenic: prevalence of mental illness and other characteristics. In Wynne, L.D., Cromwell, R.L., Matthysse, S. (Eds.) The Nature of Schizophrenia, John Wiley and Sons, N.Y., 1977.
- Wender, Paul H. Speculations concerning a possible biochemical basis of minimal brain dysfunction. In Gittelman-Klein, Rachel (Ed.), Recent Advances in Child Psychopharmacology, Human Sciences Press, N.Y., 1975.
- Wender, Paul H. Speculations concerning a possible biochemical basis of minimal brain dysfunction. In Millichap, J. Gordon (Ed.), Learning Disabilities and Related Disorders. Year Book Medical Publishers, Inc., 1974.
- Mirdal, Gretty M., Rosenthal, David, Wender, Paul H., Schulsinger, Fini. Perinatal complications in offspring of psychotic parents. British J of Psychiatry 130:495-505, 1977.
- Wender, Paul H., Rosenthal, David, Rainer, John D., Greenhill, Laurence. Schizophrenics' Adopting parents. Arch Gen Psychiatry 34(7):777-788, 1977.
- Wender, Paul H. The contribution of the adoption studies to an understanding of the phenomenology and etiology of borderline schizophrenia. In Hartocollis, Peter (Ed.), Borderline Personality Disorders, Int. U. Press, N.Y., 1977, 255-273.
- Wender, Paul H. The scope and validity of the schizophrenic spectrum concept. In Rakoff, Vivian M., Stancer, Harvey C., Keward, Henry B. (Eds.). Psychiatric Diagnosis, Brunner, Mazel, N.Y., 1977.
- Wender, Esther H., Palmer, Frederick B., Herbst, John J., Wender, Paul H. Behavioral characteristics of children with chronic non-specific diarrhea. In Chess, Stella, Thomas, Alexander (Eds.), Annual Progress in Child Psychiatry and Child Development, Bruner-Mazel, N.Y., 1977, 455-470.
- Wender, Paul H. Minimal Brain Dysfunction: An Overview. In Lipton, Morris A., DiMascio, Alberto, Killam, Keith F. (Eds.), Psychopharmacology: A Generation of Progress, Raven Press, N.Y., 1978, 1429-1437.
- Haier, Richard J., Rosenthal, David, Wender, Paul H. MMPI assessment of psychopathology in the adopted-away offspring of schizophrenics. Arch Gen Psychiatry 35:171-175, 1978.
- Zahn, T.P., Little, B.C., Wender P.H. Pupillary and heart beat reactivity in children with minimal brain dysfunction. J of Abnormal Child Psychology 6(1):135-148, 1978.
- Wender, Paul H., Wender, Esther H. The Hyperactive Child and the Learning Disabled Child. Crown Publishers, N.Y., 1978.
- Kety, S.K., Rosenthal, D., Wender, P.H., Schulsinger, F., Jacobsen, B. The biologic and adoptive families of adopted individuals who became schizophrenic: Prevalence of mental illness and other characteristics. In Wynne, Lyman C., et al (Eds.), The Nature of Schizophrenia: New Approaches to Research and Treatment, John Wiley & Sons, N.Y., 1978, 25-37.
- Wender, Paul H. The concept of adult minimal brain dysfunction. In Bellak, Leopold (Ed.), Psychiatric Aspects of Minimal Brain Dysfunction in Adults, Grune & Stratton, Inc., N.Y., 1979, 1-15.

Schulsinger, F., Kety, S.S., Rosenthal, D., Wender, P.H. A family study of suicide. In Schou, M., Stromgren, E. (Eds.), Origin, Prevention and Treatment of Affective Disorders, Academic Press, London, N.Y., 1979, 278-287.

Wender, Paul H. Nurture and psychopathology: Evidence from adoption studies. In Barrett, James E., Rose, Robert M. and Klerman, Gerald L. (Eds.). Stress and Mental Disorder, Raven Press, New York, 1979, 251-264.

Reimherr, F.W., Wood, D.R., Wender, P.H. An open clinical trial of L-dopa and carbidopa in minimally brain dysfunctioned adults. Am J Psychiatry 137(1):73,75, 1980.

Wender, Paul H., Reimherr, Fred W., Wood, David R. Diagnosis and treatment of Attention Deficit Disorder (Minimal Brain Dysfunction in adults: A replication. Arch Gen Psychiatry, vol 38, April 1981, pp.449-456.

Wender, Paul H. Psychiatric genetics and the primary prevention of psychiatric disorders, Bibliotheca Psychiatrica, N. 160, Aspects of Psychiatric Prevention.

Wender, Paul H., Wender, Esther H. Das Hyperaktive Kind und Das Kind mit Lernstorungen: Otto Maier Verlag, Ravensburg, 1980.

Wender, Paul H., Klein, Donald F. The Promise of Biological Psychiatry. Psychology Today, February, 1981, 25-41.

Wender, Paul H., interview with Ann Kilbourn, Lifestyle writer for The Salt Lake Tribune, Life's Double Pleasure, Twins, January 25, 1981.

Wender, Paul H. Contributor to: Spitzer, R.L., Skodol, A.E., Gibbon, M. and Williams, J.B.W. DSM-III Case Book, Washington, D.C., American Psychiatric Association, 1981, "Fidgety", 79; "Space Cadet", 92; "Jumping Jim", 102.

PRESENTATIONS, ACADEMIC VISITING APPOINTMENTS, AND PROFESSIONAL MEETINGS

- May, 1972. Speaker at Conference on Behavior Control of the Institute of Society, Ethics and the Life Sciences, May, 1972.
- 1975 The Danish Adoption Studies and the Acute Schizophrenias. Paper read at American Psychiatric Association meetings, Anaheim, California.
- Schizophrenics' Adopting Parents: Psychiatric Status. Paper read at American Psychiatric Association meetings, Anaheim, California.
- Mar. 1976 The Contribution of the Adoption Studies to an Understanding of the Phenomenology and Etiology of the Borderline Schizophrenias. Paper read at the Borderline Conference, Menninger Foundation, Topeka, Kansas.

1977

- Jan. 21-22 Speaker, CIBA Symposium on Minimal Brain Dysfunction, Salt Lake City, Utah.
- Feb. 24-26 Speaker, Psychiatric Research Society meetings
- Mar. 21-23 Visiting Professor, Gorgus Hospital, Canal Zone, Panama.
- Apr. 13-16 Conference participant (invited) on MBD sponsored by CIBA Laboratories, Naples, Florida.
- May 6 Lecturer, APA, Toronto, Canada
- Nov. 30 -
Dec. 3 Visiting Professor, Department of Psychology, University of Alabama.

1978

- Mar. 2,3 Keynote Speaker, Symposium on Adult Minimal Brain Dysfunction sponsored by Leo Belik and CIBA Laboratories, Scottsdale, Arizona.
- Mar.9,10 Invited speaker, Nurture and Psychopathology, American Psychopathological Association (paper published but not read because of illness).
- Mar.21,22 Guest Speaker, Department of Psychiatry, Canal Zone Hospital, Panama City, Panama
- May 10 Invited Speaker, CME course presented by American Psychiatric Association, Atlanta, Georgia, Minimal Brain Dysfunction.
- Sept. 21-23 Conduct of Psychiatric Research, Psychiatric Research Society, San Francisco, California.
- Oct. 25 Invited address on "Minimal Brain Dysfunction", American Academy of Child Psychiatry, San Diego, California.
- Dec. 4 Guest Lecturer, Chicago U. Medical School, Lake Forest, Illinois.

1979

- Mar. 22,23 Invited Lecturer on MBD sponsored by the University of Oklahoma School of Medicine at Tulsa, Oklahoma.
- May 16 Invited Speaker, CME course on Psychopharmacology, American Psychiatric Association, Chicago, Illinois.
- Apr. 10,11 Visiting Professor, Department of Psychiatry, Rush Presbyterian Hospital, Chicago, Illinois.
- June 13-15 Visiting Professor, Department of Psychiatry, Cornell University School of Medicine, New York.
- Sept. 12,13 Guest Lecturer, Boston Childrens Hospital (with regard to search committee's request to deem my interest in Chairmanship, Baker Child Guidance Clinic).
- Oct. 12,13 Invitee lecturer at "Festschrift" for Dr. Seymour Kety, McLean Hospital; Boston, Massachusetts
- Nov. 1-3 Invitee to present paper on adolescent psychiatry, sponsored by the Hincks Mental Health Center, Toronto, Canada.
- Dec. 6 Guest Lecturer, Jerusalem Mental Health Clinic, Israel.
- Dec. 12-13 Guest Lecturer, International Forum of Preventive Mental Health, Athens, Greece.

1980

- Mar. 5, 6 Visiting Professor, Department of Psychiatry, Boston U. School Medicine.
- May 22,23 Invitee, NIMH Conference on Designs to Measure Long Term Effects of Intervention in "Hyperactivity".
- Nov. 22 Popular Lecture: Utah Association for Children with Learning Disabilities.
- Dec. 5 Invited so-speaker with Seymour Kety, M.D. Psychiatric Genetics: Studies of Adoptees and Their Families. Association for Research in Nervous and Mental Disease, New York, N.Y.

1981

- June 26- Invited speaker: IV World Congress of Biological Psychiatry.
July 7 Two papers: Adoption Studies of Schizophrenia
Studies of Attention Deficit Disorder in Adults