



OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

4 April 1967

MEMORANDUM FOR (See Distribution)

SUBJECT: Minutes of the 66th Joint Medical Research Conference

The following attended the Conference in Room 2A312, the Pentagon, 0900 hours, March 9, 1967.

Capt G. T. Anderson, MC, BuMed, D/N
 Lt Col Robert W. Bailey, MSC, USA Aeromedical Research Unit,
 Fort Rucker, Alabama
 M/Gen T. C. Bedwell, MC, ODASD(H&M)
 Lt Col Hamilton H. Blackshear, MC, Hq USAF (AFRSTA)
 Lt Col Julian B. Carrick Jr, JAGC, USAMRDC, OTSG, DA
 Lt Col Edmund L. Fountain, STMD/DASA
 Dr. Ashton Graybiel, U.S. Naval School of Aviation Medicine
 Pensacola, Florida
 Dr. Frank W. Hartman, OSG, USAF
 Dr. Glenn R. Hawkes, USAMRDC, OTSG, DA
 Col Rufus R. Hessberg, MC, Hq USAF, DCS/R&D
 Col Donald L. Howie, MC, USAMRDC, OTSG, DA
 Captain James R. Kingston, MC, ONR, D/N
 Cdr Ervin L. Lobpreis, MC, BuMed, D/N
 Dr. G. M. McDonnell, The Center for Health Sciences, UCLA, Chairman
 Col Henry S. Parker, MC, ODASD(H&M)
 Capt Joe P. Pollard, MC, BuMed, D/N
 Lt Col Roland H. Shamburek, OTSG, D/A
 Col Richard R. Taylor, MC, ODDR&E, OSD
 B/Gen Colin F. Vorder Bruegge, MC, USAMRDC, DA
 Maj Damom D. Wingfield, GS, ARO, OCRD, DA
 Col James B. Young, VC, USAMRDC, OTSG, DA

The Chairman called the meeting to order. The minutes of the 65th JMRC were approved.

IMMERSION FOOT STUDY IN VIETNAM - Capt Anderson

Military operations in the wet environment of Vietnam has resulted in a problem with immersion foot injury, e.g. last year there were 130 such injuries in one operation requiring medical attention. The injury consists of whitening and wrinkling of the skin and pain in the feet after two days of water exposure. Further exposure results in erythema on the weight-bearing surfaces and edema. Complete recovery occurs following proper foot care.

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In preliminary study at Camp Lejeune, preventive trials were made using a silicone grease (Dow-Corning) with 60 troops planned to be in water for five days and nights. Five of six controls were removed from the water because of immersion foot injury beginning on the third day. Of the 54 pretreated with external application of silicone grease on the feet, six developed immersion foot injury but all 54 completed the operation.

Field trials in Vietnam have shown:

(1) Operation Mississippi

	<u>Treated</u>	<u>Non-Treated</u>	<u>Total</u>
Number of Subjects	108	113	221
Evacuated Immersion Foot Injury	12	25 (+9*)=34	

* Would have been evacuated but not due to military operation.

(2) Operation Rio Blanco

	<u>Treated</u>	<u>Non-Treated</u>	<u>Total</u>
Number of Subjects	72	70	142
Evacuated Immersion Foot Injury	0	20	

These studies show that in a 7-10 military operation of wet foot exposure about 30% will be evacuated for immersion foot injury. Silicone grease (1 - 1½ oz applied once daily) is effective in prevention. The injury can also be prevented by drying the feet for 6-8 hours/day with the boots and socks off. This is impractical during military operations. Enemy troops do not have similar problems (barefooted), but S. Vietnamese who wear U.S. socks and boots do.

Until the Army began operations in the Delta area there wasn't much problem, but cases are now increasing. Army has procured a limited amount of ointment. Dow Corning is planning to sponsor "Foot Protective Ointment"

and submit the "Investigational New Drug" application to FDA. Cost of Item: Present quoted price \$2.70/tube for 40,000 tubes.

REVIEW OF JOINT ARMY/NAVY AEROMEDICAL RESEARCH PROGRAM ON ROTARY WING AND LOW PERFORMANCE AIRCRAFT

Lt Col Bailey stated that the Army Aeromedical Research Unit was established at Fort Rucker, July 6, 1962, for support of Army aviation and airborne operations, with a requirement to maintain liaison with related federal agencies and for cooperative studies. A combined effort was established with U.S. Naval School of Aviation Medicine, Pensacola. Joint projects were established with other elements of Army and with the Air Force at Edwards AFB. Primary working relationships are with Combat Development Command (Aviation), HumRRO(Rucker), the Aviation Board, the Aviation Board for Accidents and the Army Aviation School. The research program seeks rapid solutions to problems in hearing, air delivery of whole blood, HALO parachuting, thermal stress, air crew helmets and visors, survival equipment, other airborne activities and criteria for selection and retention of air crew and airborne personnel. Other examples of the type of problems are:

(1) Electrocardiograms during high altitude low opening parachuting have demonstrated sustained heart beat rates as high as 240 for four minutes.

(2) In the Chinook the five guns are mounted behind the operator so he receives maximum noise. Steady state noise from the motor amounts to 120 decibels and impulse noise from the weapons to 160 decibels.

(3) Helicopters fly through the exhaust of missiles they fire. The helicopters doors are open because of heat, resulting in missile exhausts in the cabin, and problems of both carbon monoxide and exhaust toxicity.

(4) Heat stress - The LOH cannot be flown with the doors off. It has no cooling capability. Cabin temperatures are in excess of 150°F.

(5) New fixed-rotary helicopters will introduce vestibular problems.

Dr. Ashton Graybiel reviewed the relationship between the U.S. Naval School of Aviation Medicine, Pensacola and the Army Aeromedical Research Unit, Fort Rucker. There are continuing informal relationships, two formal meetings per year for program discussion and consultation, and six cooperative studies.

During Navy pilot selection 35% pass and 65% fail. Twenty percent fail for medical reasons which are not well documented. About 40% fail on flight aptitude, mostly on paper tests. A test is being developed to grade candidates by performance under stress. During training 65% pass and 35% fail. The hope is to reduce the training failure rate. During

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operations fatal injury due to aircraft accidents is the major problem. It is not adequate to investigate a crash after it happens, but rather critical incidents must be studied. Some accidents are thought to be related to disorientation and vertigo.

Studies are being made on the force environment in all types of Army and Navy aircraft to identify critical periods which can then be simulated. A study is being done on the effect of angular acceleration on nystagmus, which degrades vision. Another study concerns the acceleration of the head in relationship to the thorax on impact. Fatalities from Army aviation accidents in Vietnam from Jan 61 - Jan 67 have also been studied. Eighty-three percent were in helicopters and about 50% occurred under hostile conditions. From this study criteria which is not presently available will be developed for seat restraints and other equipment.

Colonel Howie stated that MILCON is planned in the FY-69 program at Fort Rucker for the unit. He noted the C/S Army and Navy decision on responsibility for the helicopter and the need for additional AMedS personnel support of the unit.

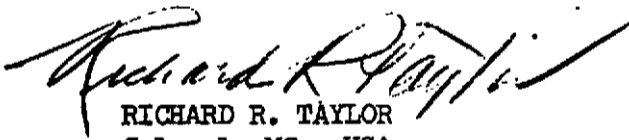
Conference agreement was reached that appropriate USAF representatives would visit and review the Fort Rucker effort. (May 1967, Army/Navy formal program review)

ANIMAL CARE REGULATIONS

Lt Col Young reviewed the final Animal Care Regulations published in the Federal Register. The impact on DOD will not be great. There will be (1) increased procurement cost of dogs and cats, but possibly more sources of better animals, (2) some effect on construction. The standards are lower than the present ILAR standards, (3) provisions for appropriate clauses must be in contracts, and (4) the DOD Instruction must be rewritten.

Recognition was given to Spec/6 Lawrence Joel, US Army, the first medical corpsman to receive the Congressional Medal of Honor for heroism in Vietnam.

The next meeting is scheduled for 0900 hours on May 11, 1967, in 2A312, The Pentagon.



RICHARD R. TAYLOR
Colonel, MC, USA
Chief, Biological & Med. Sci. Div
Ofc Asst Director (Chemical Technology)

Enclosure

DISTRIBUTION LIST

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 L/Col Robert W. Bailey, MSC, USA Aeromedical Res. Unit, Ft Rucker
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ANALYSIS OF ANIMAL WELFARE LAW, PL 89-544

	Must Obtain a License as Dealer From Sec. of Agriculture	Required to Register w/ Sec. of Agriculture	Must Purchase Dogs & Cats From Licensed Dealer	Must Make & Retain Records of Sale & Trans- portation of Dogs & Cats	Must Comply with Sec's Animal Care Standards	Must Permit Inspection of Animals & Records
Person Selling Monkeys, Guinea Pigs, Hamsters & Rabbits in Interstate Commerce						
Person Selling Dogs, Cats & Other Animals in Interstate Commerce	X			X	X	X
Person Selling Dogs, Cats & Other Animals in Intrastate Commerce						
Private Research Organ- ization Not Receiving Federal Funds & Not Transporting Dogs Or Cats in Interstate Commerce						
Private Research Organization Receiving Federal Funds or Trans- porting Dogs or Cats in Interstate Commerce		X	X	X	X	X
Government Agency Using Laboratory Animals			X		X	

Encl