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Trip Reports
July-Dec 52

File

UNITED STATES AIR FORCE
Air University
HEADQUARTERS
USAF SCHOOL OF AVIATION MEDICINE
Randolph Air Force Base
Randolph Field, Texas

USAFSAM B

19 August 1952
Date

SUBJECT: Trip Report

TO: **Lt Col John E Pickering**
USAF School of Aviation Medicine
Randolph Air Force Base
Randolph Field, Texas

1. Par 4 SO 179 this Hq (~~AF Form 211~~) has been written placing you on TDY for 6 days to El Paso, Tex, Albuquerque N.M. & Los Alamos, N.M., effective on or about 7 September 1952.

2. Your attention is invited to USAFSAM Regulation 15-6, dated 17 August 1949, which requires that you submit a report of your activities, at the completion of this trip.

3. A suspense date of 20 September 1952 has been set by this headquarters for the submission of this report.

BY COMMAND OF BRIGADIER GENERAL BENSON:

Michele C. Bozzelli
MICHELE C. BOZZELLI
2d. Lt., USAF
Assistant Adjutant

USAFSAM 5H (19 Aug 52) 1st Ind

Lt Col JOHN E. PICKERING, USAF SCHOOL OF AVIATION MEDICINE, RANDOLPH AIR FORCE BASE, RANDOLPH FIELD, TEXAS

TO: The Commandant, USAF School of Aviation Medicine, Randolph Air Force Base, Randolph Field, Texas

1. In compliance with USAF SAM Regulation 15-6 dated 17 August 1949, the following trip report is submitted.

2. The undersigned arrived at Los Alamos Scientific Laboratory, Los Alamos, New Mexico, 8 September, and spent the afternoon discussing with Drs. Shipman and Langham the possibility of two joint projects with the

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School of Aviation Medicine.

The first project discussed was concerned with studies on incapacitation of monkeys using gamma radiation from a source of very high specific activity where dose rates of the order of a 1,000 r per minute are to be used.

The second project of discussion was Phase III of our current Austin project. This portion of the project was proposed by Colonel Byrnes, Captain Bahn, and Dr. Cogan to complete background information on neutron and gamma ray threshholds in the development of opacities and/or cataracts, if any.

3. The Joint Panel on the Medical Aspects of Atomic Warfare officially met for the first time Tuesday, 9 September. Tuesday morning, afternoon, and night were spent in a facility visit of the Los Alamos Scientific Laboratory, and a program review.

The morning and afternoon sessions are explained by the attached abstracts of the various papers. Tuesday night the panel subdivided into 3 working groups.

Group I, of which the undersigned was a member, concerned itself with Program Guidance on (1) Detection, Measurement, and Evaluation of Radiation, (2) Protection of Personnel, and (3) Decontamination.

Group II, Determined Program Guidance on (1) Blast, (2) Burns, and (3) Psychological Studies.

Group III, Prepared Program Guidance on (1) Biological Effects of Radiation (2) Treatment of Radiation Injury, and (3) Methods for Protecting Personnel Against Radioactivity (pre-treatment, drugs, hormones, partial body shielding, and anoxia).

4. Wednesday morning was devoted again to the presentation of papers with panel participation and discussion. The afternoon session and the Thursday session were devoted to the final preparation and write-up of Program Guidance for the entire panel. Each of the 3 working groups presented their recommendations and a composite report was prepared. In general, a summary of each of the working groups is as follows:

Group I recommended the development of instruments capable of detecting airborn alpha particulates and beta particulates in order to assess airborne hazards.

Portable beta-gamma survey meters to quantify gamma radiation, but only indicating qualitative beta radiation were recommended, And urgently requested procurement and issue of the phosphate glass personnel dosimeter.

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Under Protection of Personnel, continued effort on new types of filters and gas absorbers for BW, CW, and RW. Continued testing of protective clothing development of prophylactic medication for individuals exposed to radiation. In addition, it was recommended, that information be organized and disseminated with regards to reducing radiation to innocuous levels through the use of (1) Barriers, i.e. buildings and trenches, (2) Distance - i.e. effectiveness of dispersal of personnel, (3) Evasive Action, i.e. examination of the time-intensity relationship of radiation following an atomic explosion, and (4) Partial Body Shielding.

The subgroup next considered Decontamination, and the general goal was the development of rapid methods for decontaminating personnel and materials in extreme environmental situations, as in artic, sub-artic, other cold weather areas, tropic, desert, and humid localities.

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The subcommittee on Blast, Burns, and Psychological studies recommended; with weapons of much higher KT equivalent, and their adaptability to underwater detonations, primary blast studies; direct blast injury to personnel from over-pressure should be studied. It was also decided that critical pressures to produce injuries under varying conditions have not been accurately determined, for the blast forms incident to atomic detonation.

The Burn group recommended studies be developed and evaluated for simplified techniques in first-aid, treatment and handling of first degree casualties whose injuries are complicated by ionizing radiation, etc. The development of large area burns with laboratory equipment should be a continued study, and an evaluation of treatment and effective methods for burn to include dextran for shock prevention, proteolytic enzymes for rapid removal of slough, military fabrics for thermal protection, and universal protective dressings should continue.

The Psychological Group recommended continuation of behavorial studies, and the indoctrination of troups at atomic weapons tests. This group further recommended a team of scientists to go to every disaster as a means of better studying disaster problems.

The 3rd subgroup of the Panel on Biological Effects of Radiation recommended as their immediate goal concern (1) Maximum single and repeated doses of radiation which may be tolerated by man with reasonable safety, (2) Hazardous doses which may cause incapacity for performance of diverse military missions with or without permanent damage or death. Determine critical dose to incapacitate within an increased matter of hours, (3) Casualty-producing doses which should lead to evacuation from contaminated areas whenever possible, (4) Toxicology of radioactive materials (decreased emphasis), (5) Effects of conservative doses on man, (6) The effects of radiation as modified by various complications, such as burns, trauma, infections, and environment, (7) Injury from radiation on the nervous system and the physiological concurrent factors, and (8) Effects of

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radiation on central nervous system and its function on mammals and man.

The subgroup on Development of Methods for Protecting Personnel Against Radioactivity recommended the testing of present methods of protecting personnel against radiation damage and the development of new methods.

John E. Pickering

8 Incls
(as stated above)
(Please return)

JOHN E. PICKERING
Lt Col, USAF
Head, Department of Radiobiology