

~~CONFIDENTIAL~~

1684 ~~SECRET~~

~~SECURITY INFORMATION~~

(Uncl) The Organizational Meeting of the ANP Medical Advisory Group

727115

A. PURPOSE

The primary purpose of this report is to record the minutes of the preliminary meeting of the ANP Medical Advisory Group.

B. FACTUAL DATA

1. The meeting was held at the Aero Medical Laboratory, Wright Air Development Center, Wright-Patterson AFB, Ohio 25-26 May 1953. Those present were

Civilian Consultants

- Dr. Shields Warren - Dept. of Pathology, School of Medicine, Harvard Univ., Cambridge, Mass.
- Dr. Simeon Cantril - Dept. of Radiology, Swedish Hosp, Seattle, Wash.
- Dr. Titus Evans - Radiobiology Research Lab., State Univ. of Iowa, Iowa City, Iowa

Contractor Representatives

- Dr. F. L. Paschal - Consolidated-Vultee Aircraft Corp., Ft. Worth, Tex.
- Dr. E. Buyniski - General Electric Co., Cincinnati, Ohio
- Mr. C. C. Gamertsfelder - " " " " " "

Military Personnel

- Col. M. J. Nielsen - Hq, ARDC
- Col. J. M. Talbot - Hq, ARDC
- Col. J. R. Hood - WADC
- L/Col. Boysen - Hq, AMC, Office of the Surgeon
- L/Col. Myers - " " " " " "
- L/Col. T. A. Redfield - Office of ANP - USAEC
- L/Col. B. D. Witwer - WADC
- Maj. J. A. Peterson - Hq, USAF, Office of the Surgeon General
- Maj. J. E. Tifton - " " " " " "
- Maj. G. E. Thoma - USAF, SAM
- Maj. E. M. Strieber - WADC
- Maj. G. F. Wurzbacher - WADC
- Capt. R. W. Ballard - WADC
- Capt. B. H. Collins - WADC
- 1/Lt F. R. Westfall - WADC

2. The conference opened with the welcoming address by Lt. Col. Clarence Cain, Chief of Operations of the Aero Medical Lab. Col. Cain stressed the need for

CCRP REVIEW FEB 16 1995
ADD DATE

1188250

REPOSITORY Oak Ridge Oper
 COLLECTION Records Bldg Area
 BOX No. A-86-6 Bldg. 2714-H
 FOLDER Ship # 89-02 Res. J
Doc. 1944-894

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

~~SECURITY INFORMATION~~

the extreme consideration of the human factor in aircraft particularly so in this type of aircraft.

3. Col. John R. Hood, Deputy Chief ANP Office and Mr. Joe Jones presented the overall present status of the ANP project and the most recent significant developments in the program.

a. Maj. Nadler of the ANP Office gave a brief of the GE-ANP.

b. Lt. Col. Gaskin, ANP Office described facilities at the Convair Corp. for structural and sky scatter testing and he talked of the proposed testing to determine the radiation spectrum in the crew compartment.

4. Lt. F. R. Westfall of the Power Plant Lab. gave a presentation of shielding, stating that at present, the uncertainty in the permissible radiation dose rate, in the ratio of gamma to neutron radiation that comprises the dose rate, and in the total permissible radiation dosage that a crew can be subjected to cause a major uncertainty in shield weight. Since the performance of the nuclear propelled aircraft is vitally affected by the weight, size, and shape of the shield, the establishment of biological tolerances is important.

5. Maj. J. H. Anderson presented a brief on the training necessary for this type aircraft. He stressed the importance of simulators training as opposed to actual flying in the nuclear powered aircraft. This, therefore, cuts down the amount of radiation that the crew would be subjected to. It is now generally accepted that simulator training is a highly efficient way of training aircrew personnel.

6. The biomedical phase of the ANP Program was presented by Capt. R. W. Ballard. He reviewed all of the radiobiology projects that the Aero Medical Lab. was following for the ANPP and to date there was no new and startling information that would radically change any exposure levels. He emphasized the need for more work on neutrons and the biological additivity of neutrons and gamma radiations. The two main projects referred to were the additivity program at Argonne National Lab. and the performance studies at the Naval Radiological Defense Lab.

7. Maj. George Thoma from the USAF, SAM described the work being done at the Primate Lab. with the University of Texas. He described the eight phases of the program and presented the results to date. The early results so far appear to show that even with small doses changes appear in the white blood count and even with the smallest doses mineral lens changes have appeared in the eyes of all the animals but as yet no cataracts have been observed. He also described the project at the M. D. Anderson Hospital. Here human patients are receiving whole body radiation with X-ray prior to treatment of the specific parts. These patients are subjected to psychological tests before and after radiation. Results are not complete yet but thus far they have found that 50r in a concentrated dose decreases performance. A complete report is being prepared by Major Thoma.

Minimal?
CP



8. Dr. Shields Warren described the findings on the Japanese bomb victims and also the results of the accidents at Los Alamos and Argonne and from these it was shown that small doses have a marked effect on the body.

1188251

~~CONFIDENTIAL~~ ~~OFFICIAL USE ONLY~~

9. Later in the evening of the first day the three civilian consultants, Col. Talbot and Capt. Ballard met and discussed the various phases then drew up the following recommendations for the experimental nuclear powered aircraft.

- a. On the basis of whole body exposure to mixed radiations 0.25 rem per hour is an acceptable rate.
- b. The length of time of a single mission here should not exceed ten hours.
- c. The total number of missions allowable for personnel flying this aircraft is ten or to an accumulated total of 25 rem. This takes into consideration the possibility for using these trained personnel for future missions in an emergency.
- d. The utmost consideration should be given to a unit shield.
- e. In operational design it is recommended that the level of 0.25 rem per hour be regarded as an upper limit for sustained operations. The exposure rate of 0.1 rem per hour would not prevent the crew from performing repeated missions.
- f. The division of the total dose here would be approx. 10% fast neutrons and 90% gamma. The RBE here is 10.

10. Organization of Group.

Col. J. M. Talbot started the discussion of the organization of the Group by stating that a rotating chairman would be ideal for this group. Then the three civilian consultants present were queried and they agreed. Col. John R. Hood brought up the point that five consultants would be the ideal size for a group of this sort. After further discussion, the following arrangements were agreed upon:

- a. Rotating Chairman.
- b. The Group will meet every six months.
- c. Minutes of the meetings will be kept by the ANP Medical Liaison Officer and distributed to each consultant for approval.
- d. Other experts when needed will be asked to attend these conferences.
- e. The five consultants named to this Group are:
 - Dr. Shields Warren
 - Dr. Simeon Cantril
 - Dr. Titus Evans
 - Dr. Andrew Dowdy (Chairman for fall 1953 meeting)
 - Dr. Robbey Evans
- f. All pertinent data and progress reports will be screened by the ANP Medical Liaison Officer and distributed to the members of the group between meetings.

~~CONFIDENTIAL~~

~~SECURITY INFORMATION~~

g. It will also be the responsibility of the medical liaison officer to arrange the meetings which includes the agenda and invitational orders for the civilian consultants and guests.

h. Dr. Andrew Dowdy will be the first chairman of the group and will preside at the next meeting which will be held either the last week of October 1953 or the first week in November 1953. This meeting will again be held at Wright Air Development Center.

11. Responsibility of the Medical Advisory Group.

a. This group will recommend radiation exposure levels for the crew and personnel involved in the ANP Program. They will revise these levels as new data and radiobiological evidence permits.

b. They will originate the tabulation of all up to date pertinent radiobiological data and keep it current. Most of this work will be accomplished by the ANP Medical Liaison Officer and then submitted to the Group for approval. Prior to this however, each group member should be polled for his own pertinent information.

c. This tabulation should be completed in one year, with the following long range objective. A table of various levels of radiation and the probable effects to crews - allowing the military to choose the risk they desire.

COORDINATION

Dr. Shields Warren

Dr. Simeon Cantril

Dr. Titus Evans

1188253

~~CONFIDENTIAL~~

~~OFFICIAL USE ONLY~~