DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D.C.

REPLY TO ATTN OF: AFCSG-11

SUBJECT: Trip Report

24 October 1960

TO: AFCSG-10

1. I departed Andrews AFB via scheduled MATS flight on 24 August 1960. I arrived at Rhein Main AB, Germany, on 25 August and departed there via air evac aircraft on 29 August. I departed London on 5 September via commercial aircraft and arrived in Brussels, Belgium, the same date. Departed Brussels on 6 September and arrived in Paris the same date. I departed Paris via scheduled MATS flight on 7 September and arrived in Washington, D. C. on 8 September.

2. The primary purpose of this trip was attendance of the Fifth European Congress of Aviation Medicine in London, England, Additional purposes were field contacts with the Surgeon's Office, Hq USAFE, and a representative USAFE base (Spangdahlem) and a discussion of European research problems with the European Office, ARDC, in Brussels, Belgium.

3. Key personnel contacted: Details of some of these contacts will be listed below. At Hq USAFE I talked briefly with various members of the Surgeon's Staff but the majority of the time was spent with General Twitchell (Surgeon), Colonel Duff (Deputy Surgeon), Colonel Wright (Chief of Professional Services), Lieutenant Colonel Lutz (Chief of Aerospace Medicine), and Lieutenant Colonel Reiner (Aerospace Medicine). At Spangdahlem, Major Julian Ward (Surgeon) was the primary contact and at Rhein Main, Major Robert Burwell (Surgeon). A list of delegates to the European Congress of Aviation Medicine is attached to this report. Many of these delegates were contacted during the meeting. At Brussels the primary contact was Major Clyde Kratochvil (USAF, MC). Major Delucchi, USAF, was also present during most of our discussions. General Flickinger was also present for a portion of this visit.

4. a. Hq USAFE.

(1) Colonel Fratis Duff gave me an excellent briefing of the mission of USAFE and a general outline of their problem areas. I was greatly impressed by the vast distances which this command covers, for one tends to think of the USAFE command as occupying a very circumscribed area. Several aviation medicine problems were discussed but the main topic of discussion was our request for the completion of the flying status forms by all flight surgeons. Colonel Duff stated that since the preparation of the report required flying strength figures to determine the 1:250 ratio, they had to request these figures as a one-time-report from Stat Services. USAFE Stat Services filed a

violation as our Headquarters had not given this report an RCS. General Twitchell and other members of his staff were emphatic in their statements that the criteria which were forwarded from this Headquarters were worthless to the field. They gave no actual guidelines at all and I am in firm agreement with this opinion. The opinion was expressed by many that this seemed to be the time when we had to make up our minds whether we were to chop with a clean ax or continue to swim around in muddy water on the flying status question. Several long discussions were held with General Twitchell and it became quite evident that he intends to "call a spade a spade" in his evaluation of his flight surgeons. It is his and our hope that other command surgeons will do likewise.

(2) A question was raised as to why aviation medicine residencies were left out of the residency letter which was forwarded from the SGO to all major commands. Rules for obtaining all other residencies are placed in the residency letter but aviation medicine has been consistently omitted. This situation should certainly be rectified at the earliest possible moment. They had a request from a Captain Joseph T. Murphy for a residency in aviation medicine expressing a desire to enter Harvard in 1961.

(3) Other serious questions and suggestions which were repeatedly encountered during the many discussions held on this trip were as follows: There is a strong feeling that the career aviation medicine people should have their assignments monitored by the Aerospace Medicine Division. It was also suggested various slots requiring board certified specialists in aviation medicine should be designated and then manned only by such specialists. The goals of an aerospace medicine career should be clearly defined as policy. All of these suggestions were already in the mill in the Flight Medicine Branch, Aerospace Medicine Division, and it was gratifying to hear that others in the field are thinking in a similar vain. We also discussed the desirability of establishing a mandatory refresher course at the School of Aviation Medicine for all aviation medicine personnel every two or three years. Everyone asked seemed highly in favor of this and such a proposal will be drafted for forwarded to the Aerospace Medical Center as soon as policy is established. It was the feeling of some that a refresher course should be given a few months prior to the board examinations in aviation medicine for our residents who are taking the board that year.

(4) The objectives of the Society of Air Force Flight Surgeons were discussed with the staff and all are highly enthusiastic. Several membership blanks had just been completed and I brought these back with me.

5. Spangdahlem AB Germany. General Twitchell and Colonel Duff were quite in agreement with my plan to visit a representative base and in the limited time which I had available they suggested that I visit only one, Spangdahlem. They provided a car and driver and a very interesting trip was made through the German countryside taking 4½ hours to reach Spangdahlem from Weisbaden. This base is located near the western border of Germany, very close to Luxembourg. It is in what might be called a remote area. Major Ward is the Director of Base Medical Services and I was most anxious to discuss his feelings concerning the job for he is a graduate of our aviation medicine residency program. Major Ward has been in Spangdahlem for almost a year and lives quite a distance from the base in a German house in a small village. This house leaves much to be desired by American standards but it is very comfortable. There are some problems posed by his long distance from the base. Major Ward feels that he has an excellent staff and I was impressed very favorably with his organization and utilization of his personnel. He has also managed to keep the facility in very excellent condition and is currently completing a laboratory modification which should add greatly to his capability in this area. He has excellent rapport with the wing commander, and maintains this by very active participation in the Aerospacecrew Effectiveness Program. He feels that he must personally spend a good deal of time in this area for it was the weakest one in the entire set-up. A very interesting suggestion has been forwarded through channels requesting that the Director of Base Medical Services be redesignated as a Wing Deputy Commander for Medical Services. A copy of this proposal is available in AFCSG-11.3. It is to be given a test at Spangdahlem.

6. Rhein Main AB, Germany.

a. A visit with Major Burwell, the newly arrived Director of Base Medical Services at Rhein Main, was indeed brief and of a passing-through nature. Major Burwell, too, is a recent graduate of our Aviation Medicine Residency Program. It was interesting to hear Colonel Myers (17th Air Force Surgeon) state that the base commander was greatly impressed with Major Burwell's attitude and progress in the extremely brief time that he had been present on the base. He, too, feels that the Aerospacecrew Effectiveness Program is the weakest part of his entire operation and he had had some preliminary discussions with the base commander regarding changes which might be made in this program. Major Burwell's executive officer is due to rotate to the Z.I. in January and he is most anxious to obtain Major John George, presently assigned to the School of Aviation Medicine, as a replacement.

b. The status of AFM 160-5 (Flight Surgeon's Manual) was discussed with Major Burwell and it was his opinion, based upon the status of the manual at the time he left the School of Aviation Medicine, that we could legitimately place a 90-day completion time on the manual. Such a deadline will be given the Aerospace Medical Center in a letter from this Headquarters.

7. London, England.

a. Travel from Rhein Main to London was made by air evac with two stops before the final stop at Northolt. A passenger on the air evac was a Major Farrell, Commander of the 351st Bomb Squadron, stationed at Pease AFB, New Hampshire, and now on a station in England. We discussed at length his need for more assistance from his local flight surgeon. He feels keenly the need of a flight surgeon's advice in his daily activities as squadron commander and says that the only time he sees his flight surgeon is when he goes to the flight surgeon's office. This matter will be investigated and emphasis again placed on the major role the flight surgeon must play in supporting the combat mission of the Air Force. At Northolt I was fortunate to find Colonel Love and Lt Colonel Wilkins at the terminal. They kindly provided me with transportation to London.

b. The European Congress was one of the best organized medical meetings it has ever been my pleasure to attend. If anything it was somewhat over-organized in that every minute of your time was scheduled. The meeting opened with a rather formal opening ceremony at the Royal Festival Hall on Monday the 29th of August. From that moment on there was a social event planned for every evening of our stay. Two of these were formal affairs.

c. The program was one of the most unique I have seen. A package was waiting at my hotel including tickets in plastic covers for each of the social events, abstracts of all the papers and the leather notebook (with my initials in gold) which contained the program. The subject of the congress was "Human Problems of Supersonic and Hypersonic Flight". The Scientific Sessions were held in the Royal College of Surgeon's Building in Lincolns Inn Fields. There was an exhibit area and then the large auditorium where the sessions were held. The translations were handled in an excellent manner and plastic earphones with a small receiver attached were issued at the door. You could dial your language (French or English) and even listen to the papers while in the exhibit hall. Luncheons (free) and the usual British pre-luncheon cocktails were served in the hall daily.

d. The detailed program and a copy of the abstracts are attached to this report. The majority of the papers and discussions centered around problems to be encountered in supersonic transport aircraft. Military aerospace medicine has much to offer our civilian colleagues in this critical area for we have all the experience. My paper was entitled "Dysbarism - Current Status and a case report". A copy is also attached to this report. (The proceedings of this congress are to be published as a volume.) I mentioned our plan to have a Dysbarism Symposium at AFIP sponsored by the Aerospace Medicine Division, SGO, in May 1961, and it was enthusiastically received. Numerous foreign delegates and former students of mine at SAM discussed dysbarism and other aerospace medical

problems with me on an informal basis. One other paper on the program was concerned with this subject and I had a long discussion with Commander I. H. Colley of the Royal Navy. They still use an altitude chamber dysbarism sensitivity test taking their pilots to 37 M for 1 hour on three occasions separated by one day. They have some interesting findings on weight, age and dysbarism susceptibility.

e. One day (Thursday, 1 September) was spent at the RAF Institute of Aviation Medicine at Farnborough. An excellent formal luncheon was served in a large tent and then we were free to visit numerous demonstrations in the various departments of the Institute. A detailed program of these demonstrations is attached. I spent the majority of my time in the physiology section discussing atelectasis with S/L Ernsting and pressure suits with S/L Whittingham.

f. The British version of the full pressure suit is a modification of their disproven jerkin, g-suit and mask combination. The suit is heavy and has a built in jerkin. It maintains $2\frac{1}{2}$ ps; and is vested with air. The occupant wears a conventional cloth flying helmet and small oxygen mask. There is a collapsible accordion like plastic hood both anterior and posterior to the pilot's head but attached to the suit at the neck. As cabin pressure is lost the plastic bubble hood closes around the pilot's head. The plastic was worn and no longer transparent. Tests have been made to determine stability in windblast, defogging characteristics or lifetime of the material. I felt it will be unsatisfactory on all counts.

g. Some 300 RAF crewmen have been trained in the jerkin and the g-suit by going to 60 M' in the chamber for $\frac{1}{2}$ to 1 minute. They are monitored by 1 lead of ECG, respiration, and blood pressure (mercury monometer and a crystal microphone pick-up). Only five trainees have failed -- 1 for bends, 2 gut expansion, 1 vasovagal syncope, 1 ruptured eardrum. The RAF also still runs altitude selection tests taking crews to 28 M' for 2 hours on two occasions.

h. Interest in the post jet flight respiratory disorder (atelectasis) was stimulated by an inquiry from the RAF in 1957. The symptoms are cough, difficult breathing, and chest pain and the x-ray shows patchy atelectosis. The vital capacity has been reduced as much as 50%. It has been found in 80% of Hunter pilots, 20-44% of Jovelin pilots, 17% of Swift pilots, 10% of Meteor pilots and 0% of Conberra pilots. Factors involved in etiology are the use of 100% O_2, G-suit, high-G flight profile, restraint harness, position on the seat, and individual variations such as smoking. It is felt that the terminal bronchioles are being occluded by the G-suit position while full of 100% O_2. The 100% O_2 in the alveoli bronchioles is absorbed and they collapse. I had asked the School of Aviation Medicine, USAF, to initiate a project to determine the incidence of this condition in our jet pilots and have assisted them in initiating this program. I have a file on this subject including a Russian report of the condition in their pilots.

i. Monday, 5 September, was spent at the Farnborough Air Show where the vertical take-off jet stole the show from the very impressive RAF jet squadrons. It is quite weird to see a jet take-off like a helicopter, buzz the field and then stop in mid-air and settle like a helicopter again.

8. I departed London the evening of the 5th for Brussels and was met by Major Kratochvil of the EOARDC. The following morning Major Neely and I discussed the research projects of that office with General Flickinger, Major Kratochvil and Major Delucchi.

9. Both Major Kratochvil and General Flickinger had asked that I visit the office. It was founded in 1952 and is the only agency which can deal with European researchers. It is outside NATO. The proposals are supposedly unsolicited and the office can and does reject proposals locally. They evaluate the proposal technically and for budget, decide who in USAF is interested and forward the proposal. AFOSR funds 90% of their contracts. SAM and WPAFB are not taking any and SAM isn't even answering their (EOARDC) letters concerning proposals. The contract monitors are in the Z.I., mainly Chinn and Savely. They fund about 12 million per year of which 5 million is new. They feel a keen need for authority to search for specific proposals in a needed area. It appears most all the contracts are very basic research with a great deal of neuro-physiology. There is a great deal of capability in European laboratories if we put it to work on obtaining needed answers. Many allied nation scientists told me in London that they felt they could contribute significant bits and pieces in our aerospace medicine research effort if they were given specific tasks. They cannot afford space programs of their own but would like to contribute. As we are short of research personnel I feel we could do a great deal for world scientific unity if we utilize NATO talent to the fullest by giving them specific tasks.

10. In summary this meeting had many excellent papers and offered an unprecedented opportunity to discuss aerospace medicine with numerous international figures in the field. It should be attended regularly by personnel of this office.

Charles A. Berry

CHARLES A. BERRY
Major, USAF MC

5 Atch
1. List of Delegates
2. Program (European Cong of Avn Med)
3. Cy of Abstracts
4. Paper
5. Programs of Demonstrations