

## The Origin of Space Medicine

by

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" When the history of the 20th century is written some fifty or more years from now, it seems quite certain that space medicine's contributions to the advancement of civilization during the latter half of this century will receive prominent mention in any such account. " If so the writer of such a history will, under existing circumstances, be at a loss as to how, when or where this new field of medicine came into being for there now exists no written record of this event. It is the purpose of this paper to provide this missing data.

While the advent of a new field of science is always a notable occasion, this is especially so in the case of space medicine due to the fact that among the various fields of military medicine currently being employed to support our military forces, space medicine unquestionably ranks number one in strategic importance. At the same time it occupies an eminent position in the general field of science in regard to its current and potential for future contributions to an understanding of nature's most closely guarded secrets. This latter will accrue from space medicine's key role in making it possible for man to travel in space which is not an end in itself but rather a means to an end whereby the outer reaches of the earth's atmosphere and the space beyond may be studied at first hand by scientists of all the various disciplines concerned with unraveling the mysteries of the universe.

In order that some of the difficulties surrounding the origin of space medicine may be understood it is necessary to refer to the situation as it existed beginning in 1946. At the end of World War II the U. S. Air Force School

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of Aviation Medicine lost essentially all of its research staff when those so engaged were released from the Service and returned to their civilian positions. The recruiting of a new research staff for the School was a slow and difficult process and it was not until about the end of 1948 that enough replacements were available to make it necessary for the various departmental programs to be reviewed and coordinated. In order to accomplish this the heads of the various research departments were instructed, early in January 1949, to prepare long range plans for their respective departments and submit them to the Commandant for coordination and approval.

Among others, there was a plan submitted by Professor Hubertus Strughold recommending that a new department be established at the School with the responsibility of studying the human problems of space flight. This plan had been evolved by Professor Strughold after consultation with a fellow staff member, Dr. Heinz Haber Ph.D. who was also interested in such an undertaking.

If Professor Strughold's proposal had been delayed 10 years, that is until today, it would be universally regarded as an obviously needed - in fact an urgently required - program. However, conditions were quite different in 1949 and the plan had to be formulated by Professor Strughold and evaluated by the School in the face of the following circumstances. At the time our military strength in general and our military research and development programs in particular were being sharply curtailed as an economy measure. For example the Air Force had let a research and development contract for the Atlas missile in 1946 but were forced to cancel it in 1947 due to lack of funds. Between 1947 and the date Dr. Strughold submitted his plan no other Air Force contracts for similar missiles had been let so that at first glance his proposal resembled a



suggestion that a cure be developed for a disease that did not exist.

In addition to this state of affairs external to the School, there were two internal problems that had to be considered. The first of these was the extremely limited assets available to the School at that time, which meant that only projects of the highest priority and of immediate concern should be authorized. The second problem had to do with the possible reaction that might occur if the School were to expend scarce man hours and funds on a matter which was familiar to the public only through the comic strips of the daily newspapers and the weekly comic magazines. Under those circumstances a press story questioning the wisdom of the proposed studies or one that made light of them could very well have triggered a public and official reaction of such proportions that the School's entire research program could have been placed in serious jeopardy.

After assessing the validity of these various possible objections to the proposed laboratory it was concluded that none of them were of overriding importance for the following reasons. From an engineering viewpoint it was known that a man carrying space vehicle could be designed and constructed and the tremendous military and scientific value of such a device was quite obvious to those qualified to judge such matters. Based on these considerations it seemed certain that such a vehicle would be built as soon as its worth was more generally recognized and the time factor involved was estimated to range somewhere between 10 and 20 years.

The question as to whether or not the proposed study was of immediate practical importance was decided in the affirmative based on an estimate that a lead time of 10 to 15 years would be required to work out the essential medical problems involved which dovetailed nicely with the time estimate of the availability of an operational space ship. In the interim, the accumulating medical data would have useful sequential application to the altitude problems which



would be created by the new jet and rocket propelled aircraft then being constructed or were in the planning stages.

That news stories concerning the new laboratory might be written in an ironic or satirical vein and thus bring the School into public and official disrepute with its consequences was never given very serious consideration based on previous personal experiences in such matters extending over a period of some 15 years. In dealing with the general press over that period of time its reporting of scientific matters had always been observed to be entirely objective and constructive in its attitude. Consequently it was felt that this same thing would apply in this instance and subsequent events proved that assumption to be correct.

By this time it should be quite evident that Professor Strughold's proposal was to be approved but before final action could be taken a name had to be selected for the new laboratory. This proved to be an unexpectedly difficult task since there were literally dozens of terms that were generally suitable but lacked the exact shade of meaning which would make them technically correct. Finally the term "space medicine" was recommended by Professor Strughold and was adopted. This term has stood the test of time and the basic term "space" has, since that time, been almost universally accepted by other scientific disciplines and the terms space travel, space probes, space suits and others have become a part of our every day, as well as our scientific language.

The matter of terminology having been decided upon, an official order was issued by the U.S. Air Force School of Aviation Medicine creating a Department of Space Medicine within the Research Division of the School. The effective date of this order was 9 February 1949. Initially the Commandant of the School (Brig. Gen. Harry G. Armstrong) assumed the added responsibility as Director of the new department in order to expedite its organization and to



permit its newly assigned staff members, Professor Strughold and Dr. Heinz Haber, to devote full time to getting a research program initiated. However, as soon as the new department was well established and functioning the Commandant relinquished this added duty and Professor Strughold was appointed as the first permanent Chief of the new laboratory in May of 1949.

Shortly thereafter two other members of the School's research staff also began working in this new laboratory and thus share in the honor of having pioneered in this new field of science. I refer to Professor Konrad Buettner, an environmental physicist and Dr. Fritz Haber, an aeronautical engineer.

The School of Aviation Medicine is to be commended for commemorating the 10th anniversary of the founding of the Department of Space Medicine, for bringing these four pioneers of this important new science together here today as honored guests and for having them present the major portion of this afternoon's program.

For my own part I should like to pay tribute to Professor Strughold, Dr. Heinz Haber, Professor Buettner and Dr. Fritz Haber for their foresightedness, imagination and courage in their pioneering efforts in, and their subsequent brilliant contributions to, the advancement of space medicine. For their efforts in this regard each of them is entitled to a profound feeling of personal satisfaction, the highest regard of those of us who are privileged to count them as a friend, and the gratitude of our nation whose interest they have so ably served.