

unnecessary duplication of efforts are either non-existent or inadequate. In our opinion, this recommendation by the GAO staff further indicates a lack of understanding of the PHS processes for reviewing research grant proposals and the controls built into such processes which not only serve to avoid unnecessary duplication of effort but also to disseminate research findings to the scientific community.

#### DIFFERENCES IN PURPOSE

As stated above, PHS disagrees with the report's assertion that both PHS and FAA are conducting or supporting these studies for the same purpose.

The FAA medical research program is an in-house research program conducted for the purpose of meeting specifically defined program needs associated with FAA missions. The Public Health Service extramural medical research program, which is supporting the Lovelace Foundation grant, is a nationwide program of basic medical research conducted by thousands of independent researchers whose projects must survive a highly competitive process of dual scientific review in order to be funded. The purpose of the Public Health Service extramural research program is to increase the store of scientific knowledge bearing on problems of human health.

Thus, there is a basic difference between the medical research missions of FAA and PHS, and therefore there is substantial difference between what each agency is trying to accomplish in the conduct of these research projects.

One major concern of FAA is flying safety. As the number of aging civilian pilots grows, FAA naturally becomes concerned with the question of when does a person, because of aging, become functionally incapable of safely operating an airplane. (The FAA also has a serious interest in reassessing its retirement policy in regard to FAA air traffic controllers.) At present, controllers are under the regular Civil Service retirement system, but FAA has reasons to believe that a more flexible retirement policy is needed. The FAA-GCRI project is specifically aimed at this problem. It will result in the development and maintenance of standards which can be widely used in evaluating the capability of older aviation personnel to carry out their duties properly and safely.

On the other hand, the Public Health Service is interested in aging as a health problem. It is a stage of life devolving from a series of processes and body changes of which comparatively little is known. The PHS, through the Aging Program of NICHD, is attempting to increase the store of scientific knowledge concerning the aging process in humans, and to apply this knowledge to improve health services and resources for all Americans. The aim of the PHS-supported Lovelace project is to learn more about the process of physiological aging, and its progress in relation to chronological age.

On page 2, the report states "PHS is also supporting a research project on the aging of pilots. This study is being performed by the Foundation and is interested also in developing methods of measuring differences between a pilot's functional age and his chronological age." Actually the PHS study is not concerned with the aging of pilots as such but with human aging in general. The grant applications submitted on HD-00518 do not refer to the study as one dealing exclusively with the aging of pilots.

In 1964, the Foundation's application stated "It might at first sight be thought that the best approach to the investigation of the effects of aging in this professional group would be to study their actual performance as pilots. However, since our primary interest is not to assess pilot performance, the study of physiologic aging of this professional group in the laboratory is more apparently advantageous."

In the "conclusion" of the report, it is implied that NIH and FAA are "interested in a solution to the same medical problems." This conclusion is incorrect. The program on Aging of NICHD-NIH is interested in supporting any and all research which will further the understanding of the basic processes of aging in normal humans. Both the Lovelace and the FAA effort may, however, contribute to two general goals; first, the discovery of fundamental scientific information about the course of aging in humans; and second, the development of a "physiological age rating" system which would permit improvements in retirement policies for pilots and other aviation personnel. The Public Health Service is interested in the second objective only as it may contribute to the first objective. This is evident from the Study Section's comments on Lovelace's 1964 application for a grant:

"The potential contribution of this program is great, primarily because it promises to provide a large mass of well-collected data changes in functions with age—data of a kind which are presently either spotty or non-existent.