

DOT/FAA/AM-01/1

Office of Aviation Medicine
Washington, D.C. 20591

Index to FAA Office of Aviation Medicine Reports: 1961 Through 2000

Introduction

William E. Collins
Michael E. Wayda

Civil Aeromedical Institute
Federal Aviation Administration
Oklahoma City, Oklahoma 73125

January 2001

Final Report

This document is available to the public
through the National Technical Information
Service, Springfield, Virginia 22161.



U.S. Department
of Transportation
**Federal Aviation
Administration**

NOTICE

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for the contents thereof.

Technical Report Documentation Page

1. Report No. DOT/FAA/AM-01/1	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Index to FAA Office of Aviation Medicine Reports: 1961 through 2000		5. Report Date January 2001	
		6. Performing Organization Code	
7. Author(s) Collins, W.E., and Wayda, M.E.		8. Performing Organization Report No.	
9. Performing Organization Name and Address FAA Civil Aeromedical Institute P.O. Box 25082 Oklahoma City, OK 73125		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No.	
12. Sponsoring Agency name and Address Office of Aviation Medicine Federal Aviation Administration 800 Independence Avenue, S.W. Washington, DC 20591		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplemental Notes National Technical Information Service order numbers are shown in the chronological listing after the report titles.			
16. Abstract An index to Federal Aviation Administration Office of Aviation Medicine Reports (1964-2000), CARI Reports (1961-1963), and Civil Aeromedical Institute Reports is presented for those engaged in aviation medicine and related activities. The index lists all FAA aviation medicine reports published from 1961 through 2000: chronologically, alphabetically by author, and alphabetically by subject. A foreword describes historical aspects of the Civil Aeromedical Institute's 40 years of service, describes the index's sections, and explains how to obtain copies of published Office of Aviation Medicine technical reports.			
17. Key Words Aviation Medicine, Research Reports, Office of Aviation Medicine, Civil Aeromedical Institute, History, Funding and Personnel Levels		18. Distribution Statement Document is available to the public through the National Technical Information Service, Springfield, Virginia 22161.	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 106	22. Price

A BRIEF HISTORY OF OAM RESEARCH FUNDING, STAFFING, AND TECHNICAL REPORT PRODUCTION

W.E. Collins, Ph.D. and Gale G. Dills

With the establishment of the Civil Aeromedical Research Institute (CARI) in 1960, research staffing, funding, and the production of technical reports by the Office of Aviation Medicine (OAM) were initially centered in CARI. Indeed, the first two years of research publications (1961-62) were termed CARI reports. The use of the OAM logo and the like change in the designation of those reports began in 1963. Research funding also was tied to CARI/CAMI during the 1960s; later, Washington Headquarters retained funds designated as contract dollars and issued and monitored contracts in such areas as air traffic controller (ATC) selection, aspects of air piracy research, ATC color vision, aspects of aircraft maintenance, and others over the years. The discrepancies between CARI/CAMI funding and overall Office of Aviation Medicine research funding is largely accounted for by the allocation and use of contract dollars from Washington Headquarters. CAMI has always been primarily a hands-on conductor of research and had relatively little or no annually contracted research until the 1990s. During that decade, an expansion of the vision for CAMI research and a concomitant increase in resources – both personnel and dollars – led to an enhanced approach to contracting and, for the first time in 1993, to awarding research grants in support of internal programmatic goals.

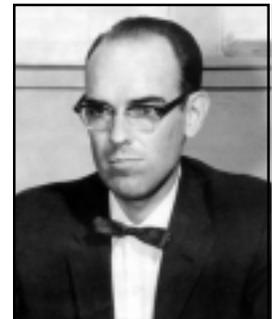
Nevertheless, the first two contracted studies by CARI/CAMI were initiated early in its history, at about the same time, and resulted in final reports in October and November 1964. One of these, not surprisingly, dealt with air traffic controllers (Investigation of the Training-Performance Criteria for Several Federal Aviation Agency Occupational Specialties by M. Clinton Miller III, Department of Preventive Medicine and Public Health, University of Oklahoma Medical Center); the other (Vestibular Investigations in Mammals by R.D. Burns, Ph.D., University of Oklahoma, University of Oklahoma Research Institute, June 1962-July 1964) had the added benefit of providing CARI/CAMI with a model RS-2 Stille-LKB rotating chair for vestibular stimulation. The Stille device was employed extensively for decades as a research tool and to demonstrate aspects of spatial disorientation; it later became the basis for commercially produced disorientation trainers, and, to date, is still operable and used as needed.

Figures 1 and 2 show the history of appropriations and authorized positions for the OAM and for CARI/CAMI, respectively. Because the Institute always received the major share of the appropriations, the time course of dollar support in both graphs is similar and, during the 1960s, was veridical.

A similar situation obtains for the position allocation data in both curves with the exception of 1965 and 1986-88. The former case represented a peculiar drop from 100 to 79 as part of the agency order that changed CARI to CAMI; the level reverted back to 100 the following year. Except for 1965 and the 1986-88 period, during which 3 positions were moved from CAMI to the Washington office, all the research positions were nominally located in Oklahoma City. The displacement of those 3 positions was effected by Federal Air Surgeon Frank Austin, M.D., who used them to support the Headquarters OAM staff that was monitoring contract research. The positions were returned to CAMI in 1990.

Aeromedical research positions moved up from 62 in 1962 to a 100-level ceiling beginning in 1963, shortly after Stanley R. Mohler, M.D., had become CARI Director. The ceiling of 100 had been set initially by Mr. Albert Thomas' Congressional appropriations committee and was never exceeded. In 1965, the level dropped to 79 as part of the order when CARI was reorganized as CAMI, but rose back to 100 in 1966 when positions at the defunct Georgetown Clinical Research Institute were transferred to CAMI. In 1974, the level dropped to 97 – allegedly on the basis of an error by the agency budget office at Washington Headquarters that was never corrected. Somewhat ironically, OAM research funding increased at about the same time due, in part, to agency support of the so-called “Rose Study” of air traffic controllers.

Overall OAM funding showed a modest linear increase from 1970-1978 and then leveled off for 5 years, but CAMI research dollars remained level over the same



Dr. S.R. Mohler
(c. 1962)

FAA Aviation Medical Research (1962-2000)

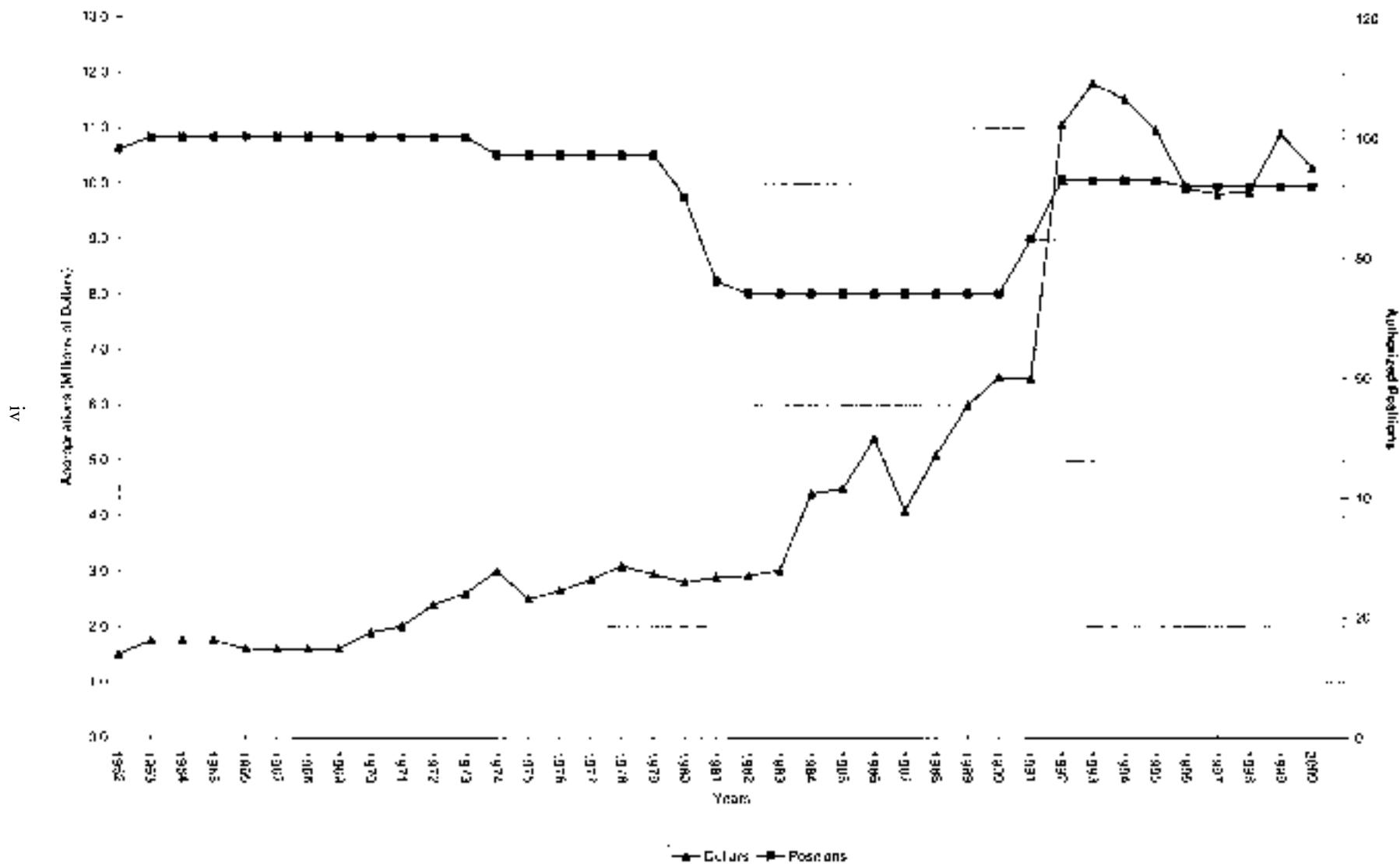


Figure 1. History of appropriations for the Office of Aviation Medicine: 1961–2000.

Civil Aeromedical Institute Research (1961-2000)

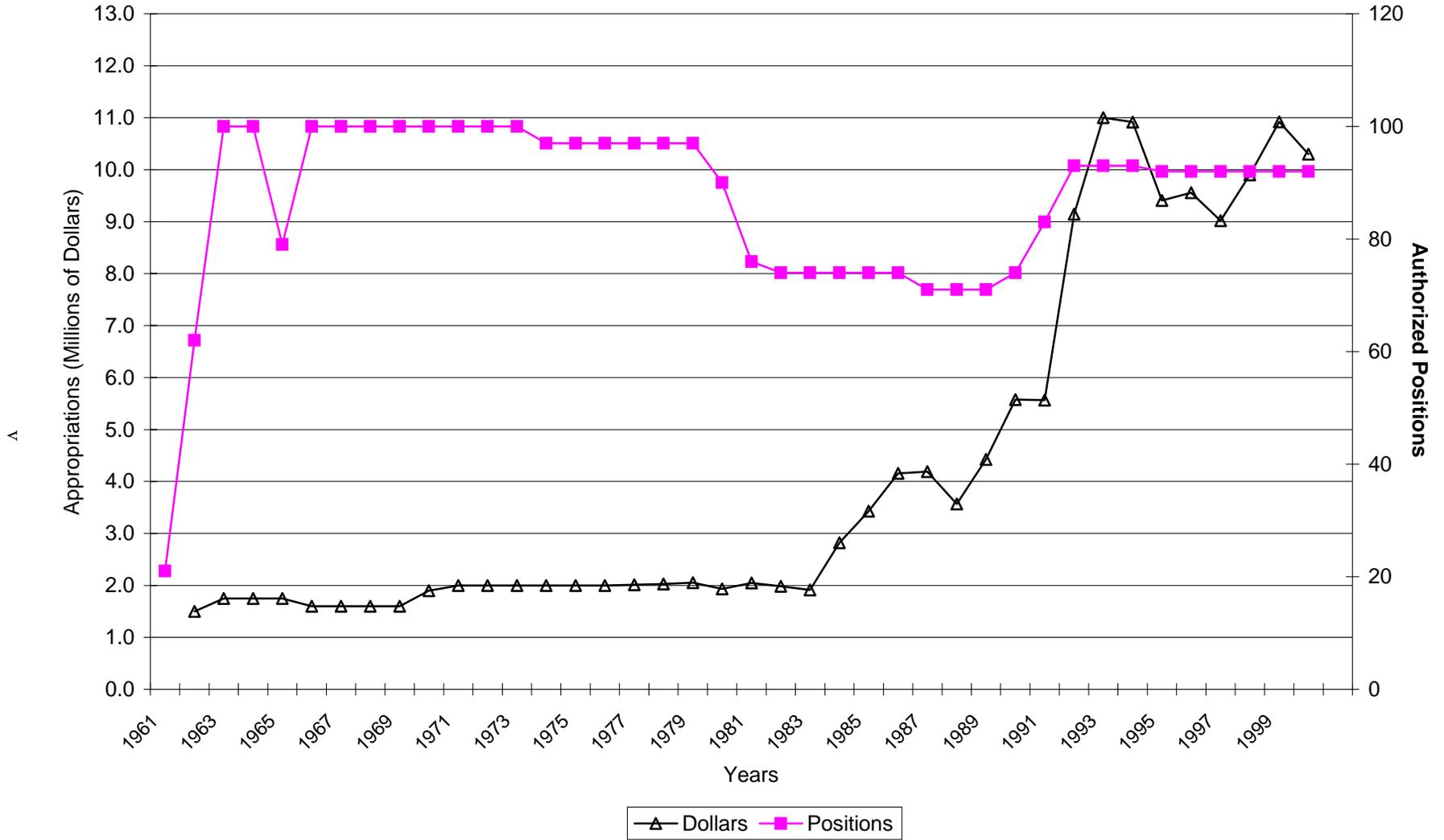


Figure 2. History of appropriations for the Civil Aeromedical Institute: 1961–2000.

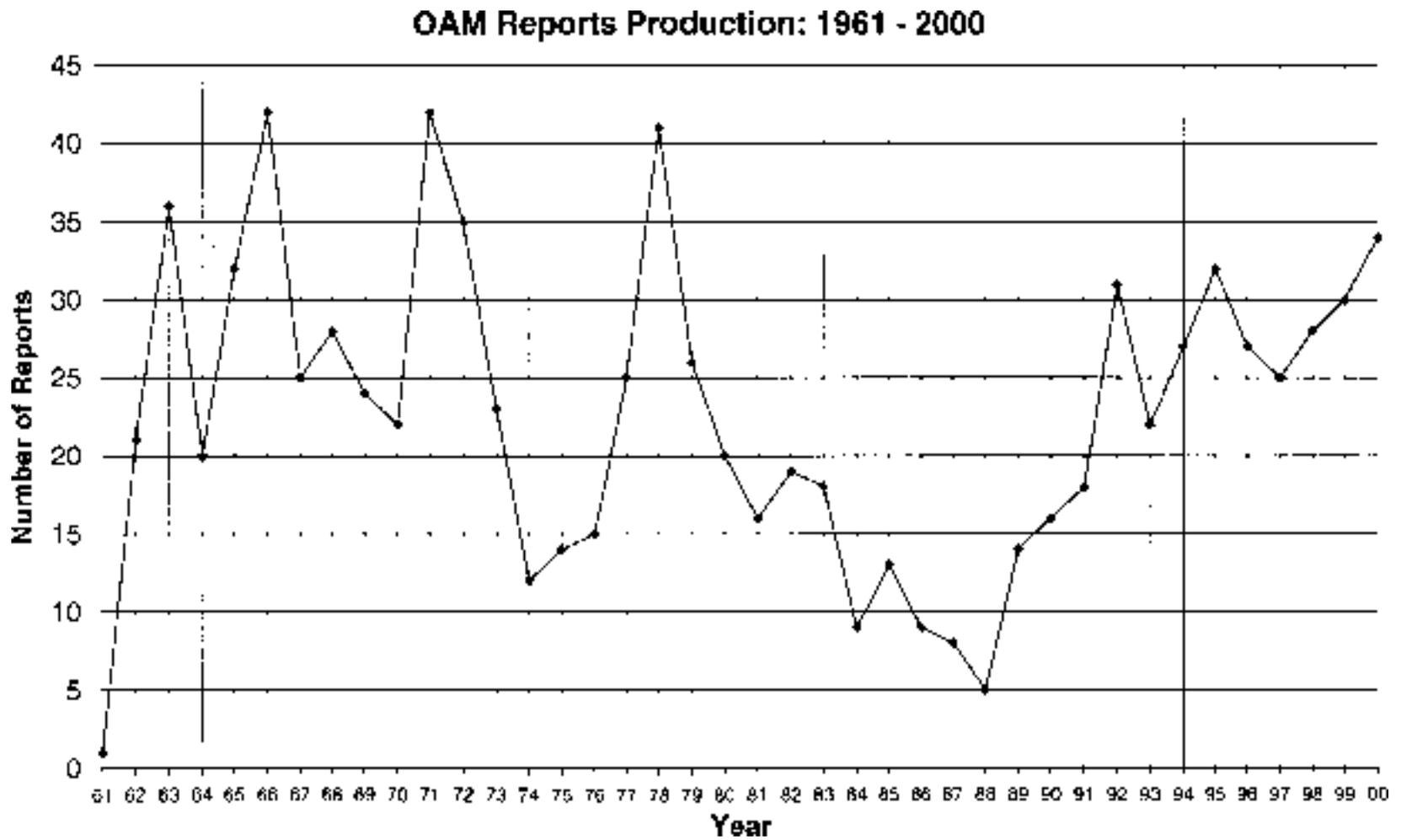


Figure 3. Office of Aviation Medicine Technical Reports: By Year, 1961–2000.

time period. During the 1978-83 period, the number of authorized positions fell on 3 occasions. The first (1980) was related to an “early out” program conducted by the agency and reduced the authorized number to 90 positions. Subsequent reductions occurred in 1981 (to 76 positions) and 1982, leveling off at 74 positions. Also, during this period, a change occurred in the allocation of positions. While previously (and subsequently) all positions were RE&D (i.e., Research, Engineering, and Development), during 1975-1983 from 58 to 77 of the positions were FE&D (Facilities, Equipment, and Development) slots; the remaining 16-20 positions were designated as RE&D. Those variations reflected Washington budget office decisions related to much larger FE&D and RE&D issues. Partly as a result of the increased emphases related to the controller strike, strike recovery, the Employee Attitude Survey, and a new look at selecting and training controllers (along with the diminishing amounts of research resources after CAMI personnel costs were deducted), some increase in OAM funding occurred from 1984-1986, a major part of which was assigned to the Institute.

J. Robert Dille, M.D., who had served as CAMI Director since 1965, retired at the end of 1987. Following several months of rotating acting CAMI managers, William E. Collins, Ph.D., was appointed deputy manager (the term “Director” was temporarily not used because agency officials had come to feel it conflicted with the titles of FAA regional and center directors – it was later restored) in 1988 and CAMI Director in 1989. During that time negotiations to return the 3 CAMI research positions that had been relocated to the Washington office in 1987 were successful; the positions were reallocated to CAMI in 1990. Although the Institute had 74 authorized research positions, by 1988 only 57 full-time permanent personnel were on board and CAMI’s research funding was not adequate for a larger base of personnel. Given the approximate 2-year lag in the normal budget process, an immediate concerted effort to negotiate an improvement in resources was needed at every level (Agency, Department, Office of Management and Budget (OMB), and the Congress). Those efforts were successfully undertaken and resulted

in significant increases in both positions and dollars. Positions jumped from 74 to 83 in 1991 and then to 93 in 1992. Funding went from less than \$4 million in 1987-88 to over \$5 million in 1990 to more than \$11 million in 1993.

It is perhaps of some interest that these staffing increases were almost topped during the 1993 budget process. At that time CAMI had successfully requested 5 more positions - uniquely the Agency was requesting no others - and had seen them retained during the first FAA-DOT-OMB pass through of the budget (although no new funding was being requested). The positions survived the final FAA cut but were dropped during the final DOT pass through by Admiral James B. Busey who had served as the FAA Administrator from 1989 - 1991 and had moved from there to a DOT position. The grounds reported for removing the 5 positions at that stage were that no new air traffic control or safety positions were being requested in the budget, and no funding for the 5 CAMI positions was in the budget. The OAM-CAMI position level stayed at 93.

Throughout the first three decades of CARI/CAMI research, budgets were submitted through the Office of the Federal (nee Civil) Air Surgeon, and funding was provided to that office and distributed to the Institute. Aviation Medicine was a research budget line. By 1989, however, as part of a response to industry/professional organization/advisory group recommendations, the agency initiated a “human factors” research emphasis that included the hiring of a scientific and technical advisor for human factors. The appointee, Clay Foushee, Ph.D., began to develop a human factors research plan and to work with the agency budget officials. The agency research budget was divided into chapters and the new human factors thrust was assigned to Chapter 8. There was considerable interaction in the budget meetings regarding the title for Chapter 8 – Dr. Foushee and some others preferred “Human Factors” as the title to subsume aviation medicine, aspects of research at the FAA Technical Center (particularly with respect to air traffic controllers), and Washington-based research contracts in various human factors areas. However,



Dr. J. Robert Dille
(c. 1963)



Dr. W.E. Collins
(c. 1965)

perseverance by aviation medicine in these budget meetings led finally to titling Chapter 8 as “Human Factors and Aviation Medicine” – an accomplishment largely attributable to the on-site work of William T. Shepherd, Ph.D., an OAM-based psychologist. The importance of maintaining the identity of aviation medicine research in this instance, and in a later instance regarding logos, transcends any purely nominal issues. Because the agency is largely geared to, and staffed in, regulatory, engineering, and development areas, the unique person-oriented research approach that typifies the OAM research programs needs to be imbedded in a similarly oriented office if it is to maintain its human-centered thrust.

The funding mechanisms subsequently changed. Dr. Foushee developed an office and a staff within the agency’s aviation research organization and by 1992 CAMI was being funded directly from the research budget office while the contract research being conducted from the office of Aviation Medicine was given separate funds. In 1995, the latter transfer of funds ceased and, while aviation medicine’s contract research from the Washington office continued with the small staff there, funding was drawn from the Office of Aviation Research (AAR) and not allocated to OAM. In 1997, a similar change was attempted for CAMI funding but a case was vigorously and successfully made to allocate immediately to CAMI each year’s funding for all “in-house” costs (i.e., everything except contracts and grants for research by outside organizations) and to follow-up during the first quarter of the year (beginning in FY-98) with CAMI’s contract research/grants funding. In 1996, the Congressional appropriation for all of FAA’s RE&D funding changed, without notice, from a “no-year appropriation” to a “3-year appropriation.”

CAMI’s research productivity is largely defined by its output of technical reports. Indeed, it is probably the best indicator of its published (or public) research results. Such a measure, while of singular importance, represents only part of the value derived from its research program. CAMI researchers also publish in scientific journals, make scientific presentations at

national and international meetings, give safety lectures, provide data and knowledge for educational purposes, and serve as agency, department, national, and international consultants in their areas of expertise. However, as is evident from Figure 3, productivity as measured by technical reports was highly variable irrespective of funding levels during the first two decades. The peak in 1978 is partly attributable to some extra efforts to complete projects before a 1979 “early out” program by the agency to reduce overall staffing levels. From that peak, however, two clear trends emerged. Productivity dropped steadily from 1978 to 1988 to a low of 5 reports; it then increased steadily to an average of about 28 per year during the later half of the 1990’s. It is perhaps of some interest that in 1995, AAR developed a logo and initiated an undertaking to use that logo on OAM reports - first in place of the OAM logo, later along with it. Pursuit of both alternatives was discontinued after several months of intermittent discussions to insure the integrity of the medical programs.

The position gains (to 93) were later tempered when the agency introduced a “buy out” program in 1994 (along with a required change in the ratio of employees to supervisors/managers – to reduce the size of the supervisory staff) as part of U.S. Vice President Gore’s goal to reduce the size of government. As a result, the agency’s overall research program was required to reduce its number of authorized positions and restrict filling the remaining positions by 7 positions per year for the following 3 years. CAMI was able to retain 92 authorized positions (an initial determination to set the level at 88, based on prior-year vacancies, was successfully changed), and the allowed employment level (staffing ceiling) settled at 89 in meeting these agency goals. Those levels were maintained through the year 2000.

Similarly, the peak funding levels achieved by CAMI in 1993 and 1994 were affected following the 1994 “buyout” by reductions in 1995 - 1997; a return to those peak levels began in 1998 and was sustained in years 1999 and 2000.

The data in this report were derived from analyses and resolution of budgetary documents and memoranda initiated at the Aeronautical Center, OAM, and CARI/CAMI.

HOW TO USE THE INDEX

The Index is organized in three sections:

1. **Chronological Index:** A cumulative list of all research reports from 1961 through 2000.
2. **Author Index:** An index of authors, in alphabetical order.
3. **Subject Index:** An index of subjects, listed in alphabetical order.

Some examples are:

00-19 Nakagawara, V.B., Wood, K.J., and Montgomery, R.W: Refractive surgery in aircrew members who fly for scheduled and non-scheduled civilian airlines.

Above: This is an entry from the **Chronological Index** of research reports, shown in cumulative sequence.

Bailey, L.L. 96-24, 98-24, 99-17, 99-24, 99-25, 99-27, 00-14, 00-17, 00-25, 00-28.

Left: This is an entry from the **Author Index**, which lists all of the research reports prepared by an author or co-author.

Accidents

... age of pilots, 77-10.
... agricultural aircraft, 66-27, 66-30, 72-15, 78-31, 80-3.
... alcohol involved, 66-29, 68-16, 78-31, 80-4, 92-24, 98-5, 00-21.
... analyses of injuries, 70-16, 71-3, 72-15, 81-10, 82-7.

Left: An example of entries in the **Subject Index**; refers to all reports that pertain to a specific topic.

REPORT NUMBERS

98-23 Broach, D. (Editor): Recovery of the FAA Air Traffic Control specialist workforce, 1981-1992. ADA355135

Above: The first numbers (98-23) refer to the year and chronological number of the report. This is an abbreviated portion of the official number given each report and is found in the upper left of the report's cover page. The full report number of "98-23" is DOT/FAA/AM-98/23. The "ADA355135" is the number appended to the report by the National Technical Information Service. Keep the number system in mind when ordering.

HOW TO ORDER

- You may purchase copies of OAM Reports from: National Technical Information Service
(Refer to the "ADA" or "N" numbers.) 5285 Port Royal Road
Springfield, VA 22161
Telephone (800) 553-6530
- The Federal Depository Library System: Some 1,400 U.S. libraries maintain a reference repository of official Government reports printed by the U.S. Government Printing Office. The reports are either in printed or microform for public use. These libraries provide reference services and interlibrary loans; however, they are not sales outlets.
- Abstracts are available on the Civil Aeromedical Institute's Internet site (see PUBLICATIONS) at:
<http://www.cami.jccbi.gov>
- A limited number of back issues are maintained by the Institute. Some requests may be filled by writing to:
FAA Civil Aeromedical Institute
Aeromedical Education Division, AAM-400
OAM Reports, P.O. Box 25082
Oklahoma City, OK 73125-5064

"Aviation Safety through the Development and Application of Aeromedical Knowledge."

Contents

Part I	
Chronological Index	1
Part II	
Author Index	49
Part III	
Subject Index	59

For information about CAMI programs, write:

Director

FAA Civil Aeromedical Institute, AAM-3

P.O. Box 25082

Oklahoma City, Oklahoma 73125-5064

