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16. Abstract <p>Airline medical departments have provided a system of preventive health maintenance for their crews that has economically effected rehabilitation of experienced crewmembers who otherwise would have lost their medical licenses and thereby their livelihood. In recognition of this fact, the FAA has proposed to designate full-time or consultant physicians of certain air carriers in order that they might examine and certify their own crewmembers. The impact of this proposal on the presently designated senior aviation medical examiners is considered. Computer data relating to the activity of these designees indicate that relatively few would be significantly involved. Those not serving as consultants to an airline would still be examining over 50 percent of the first-class certificate holders.</p>			
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SENIOR AVIATION MEDICAL EXAMINERS CONDUCTING FAA FIRST-CLASS MEDICAL EXAMINATIONS

I. Introduction.

The designated aviation medical examiner (AME) system of the Federal Aviation Administration had its origin in 1927 under Dr. Louis H. Bauer, the first Medical Director or Chief, Aeronautics Bureau, Department of Commerce. It is of historical interest that of the 144 physicians designated in 1927, 12 were still active at the 40th Anniversary of the program.¹

The medical examiners of commercial pilots have always been so designated. There have been periods when examiners of private and student pilots were not. After World War II, the physician shortage was so acute that any physician was allowed to examine for the FAA. Unfortunately, the term physician was defined by some states to include anyone in the healing arts and as a consequence, reports of examination were received from examiners with little or no formal medical training.

In 1960 the designated AME system was re-established to cover examiners of all civil airmen required by Federal Regulations to hold valid FAA medical certificates. Since 1966, many designated AMEs have also become involved in providing for the examination of FAA air traffic controllers.²

With the establishment of airline medical departments, a system of preventive health maintenance for crew personnel has developed over the years. Modern methods of program evaluation have indicated that these departments have been able to economically effect rehabilitation of highly skilled and experienced crewmembers that would have otherwise lost their only means of gainful employment. In recognition of the present capabilities of such airline medical departments, the FAA has proposed that air carriers medically examine and certify their own crews by means of full-time medical personnel or medical consultants. Those senior aviation medical examiners not so employed could continue

to examine first-class certificate holders other than those employed as air carrier crewmembers. Preparatory to this proposal, it was decided to determine the impact of such regulatory change upon the senior AMEs now designated.

In a previous study of October 1967,³ it was estimated that 17,750 of 623,534 active airmen were airline transport pilots requiring, by Federal Regulation, currently valid first-class medical certificates. A first-class medical certificate issued on the first day of the month would be valid for the remainder of that month plus six more months (or a maximum of seven months). In October 1967, only 42,656 of the 72,155 first-class certificates held by active airmen were less than seven months old. The 42,656 represented not only all active airline transport pilots but also some 24,900 others who chose to hold first-class FAA medical certificates. Of the 72,155, about 18,600 were over seven months but less than 13 months old and thereby valid for private and commercial purposes other than as airline transport pilots. Of the 72,155 first-class certificates, 10,919 were greater than 13 months but less than 25 months old (valid for student and private pilot purposes only).

TABLE 1.—Active FAA First-Class Medical Certificate Holders as of October 1, 1967

	Number	Percentage
First-class total.....	72,155	100
Less than 7 months old.....	42,656	59
Over 7, less than 13 months old...	18,580	26
Over 13, less than 25 months old..	10,919	15

II. Statement of Purpose.

Preliminary figures seemed to indicate that relatively few of the first-class certificate holders would be involved under the proposal to have air carriers oversee the medical examination and cer-

Sample Computer Printout

Dr. Doe, John	Less than 7 mo.	Greater than 7 mo. less than 13 mo.	Greater than 13 less than 25 mo.	Total
EAL	1	0	0	1
UAL	25	3	0	28
Other	24	4	11	39

tification of their own crews. However, it was anticipated that more detailed information might be desired by the industry and AME population—information that would better define certain senior AME-airline transport pilot inter-relationships.

III. Procedure.

In March 1968, the FAA computer tapes containing medical certification information were scanned to survey the currently certified pilot population and to determine which senior AMEs were examining first-class certificate holders. Individual senior AMEs were listed when they had performed 20 or more of the valid first-class examinations of record. All others were pooled for tabulation purposes. Under each senior AME's name, codes were listed to indicate the airlines which employed the pilots examined. Under each airline or employer code, the pilots were distributed to indicate how long their first-class medical certificates had been issued.

From the sample printout, it is seen that Dr. Doe has performed FAA examinations for first-class medical certificate holders of two airlines (Eastern and United) and that a maximum of 26 were for airline transport pilots. Three were possibly for other crewmembers (commercial pilots, engineers, navigators, etc.).

Should the two airlines certify their own crewmembers, as many as 29 of the 68 first-class certificate holders Dr. Doe examined (43%) would no longer seek certification from him.

The Aeromedical Education Branch of the FAA Civil Aeromedical Institute provided basic statistics as to the number of designated aviation medical examiners at the end of March 1968.

TABLE II.—Population of Designated Aviation Medical Examiners, March 1968

Category of Examiner	Senior (Class 1) Examiners	Class 2 and 3 Examiners	Total
Civil, USA.....	1,722	4,281	6,003
Civil, Foreign.....	206	8	214
Military.....	0	664	664
	1,928	4,953	6,881

IV. Results.

Of all active airmen as of March 1968, 644 senior AMEs had performed 20 or more examinations for first-class certificate holders. These 644 senior AMEs had collectively performed 65,782 or 87 percent of the 75,658 first-class examinations of record. They also performed 29,909 or 94 percent of the 31,830 examinations of first-class certificate holders who reported that they worked for an airline.

From Table III it can also be noted that while the present and proposed regulations require only certain airline crewmembers to hold a currently valid first-class medical certificate, many other individuals elect to hold first-class medical certificates. The 31,830 who work for the airlines represent only 42 percent of the total first-class population. Of the 31,830 working for airlines 25,088 held first-class certificates less than seven months old. This reflects the fact that not all first-class medical certificate holders working for airlines are required by regulation or company policy to maintain current first-class certificates. It also appears that nearly 50 percent of the pilots holding first-class certificates but not employed by airlines tend to renew their first-class certificates every six to seven months.

TABLE III.—First-Class Medical Certificates of Record, March 1968 By Activity of Examiner, By Currency of Certificate, and by Employer

*PEs Performed by Each Examiner	No. of Senior AMEs	Medical Certificates Issued Since Aug. 1967 (<7 months)			Total Med. Certificates of Record (<25 months)		
		Employer			Employer		
		Airline	Other	Total	Airline	Other	Total
20 or more	644	23,646	17,204	40,850 (89%)	29,909 (94%)	35,873	65,782 (87%)
Less than 20	1,284	1,442	3,846	5,288 (11%)	1,921	7,955	9,876 (13%)
TOTALS	1,928	25,088 (54%)	21,050 (46%)	46,138 (100%)	31,830 (42%)	43,828 (58%)	75,658 (100%)

*Physical Examination

Sixty-eight airlines are coded for computer purposes. These were ranked in several ways. For example, the top 10 airlines by number of airmen holding first-class medical certificates less than seven months old were as follows:

United Airlines.....	3850	Delta Airlines.....	1266
Trans World Airlines	3222	Northwest Airlines..	856
American Airlines...	2633	Braniff Airways.....	889
Eastern Airlines.....	2604	Continental Airlines	620
Pan American World Airways	2563	Western Airlines...	501

In tabulating the number of AMEs performing large numbers of first-class examinations for a particular airline, it was noted that for most airlines coded, four or fewer senior AMEs performed the majority of the examinations for the airline. For large airlines, this did not hold true:

Airline	AMEs performing more than 25 class 1 exams for employees of the airline	Maximum number of physical examinations by one AME
1. United.....	38	282
2. TWA.....	30	246
3. American.....	26	166
4. Pan American.....	23	155
5. Eastern.....	19	521
6. Delta.....	15	151
7. Northwest.....	5	378

In identifying senior AMEs who performed first-class examinations on large numbers of active airmen who held certificates less than seven months old, 108 AMEs had performed 25 or more of the examinations for employees of a single airline; 26 had performed 100 or more of the examinations for employees of a single airline. In identifying AMEs who had examined 200 or more first-class airmen (irrespective of the time the certificates had been held), 67 senior AMEs were noted. The maximum number certified by one examiner was 1710. As might be expected, the greatest number certified by an international AME occurred in Vietnam. 267 first-class examinations were on record.

V. Discussion.

There are many factors that determine why an airman seeks out a particular physician to conduct his medical examination for FAA certification. Among these are availability, convenience, cost and reputation of the examining physician. While the relative weights of these factors are unknown, it is recognized that definite selection takes place. Thirty-three percent of the designated senior AMEs examined 87 percent of the first-class certificate holders of record. The majority of the pilots of the smaller scheduled air carriers were examined by fewer than five physicians. While more examiners were involved with pilots of larger air carriers, even here relatively few examiners saw the majority of such pilots. One individual had examined 521 pilots from a single air carrier.

Should the air carriers commence to examine and certify their own crews, a few senior AMEs will be appreciably affected. It would be hoped that the air carriers would consider the value of such men in seeking out consultants to help administer their certification responsibilities.

In considering the senior AME system as a whole, there is ample evidence that the system should continue along its present course. Fifty-eight percent of the first-class certificate holders are not employees of the air carriers. There is also evidence that not all indicating employment with an air carrier are required either by regulation or company policy to hold a currently valid first-class medical certificate. One might argue that a senior AME system is therefore not needed to support the personal desires of these unidentified individuals. There are several good reasons to continue such a program. The class of medical certificate held has to come to have special meaning in the aviation industry. Employment policies, insurance considerations, etc., often involve evidence of medical qualification. Some individuals have come to use the first-class FAA examination as a focal point in establishing their personal preventive health program. Such side benefits are difficult to evaluate but should not be overlooked.

Some crewmembers such as engineers are, by Federal regulation, only required to hold a currently valid second-class medical certificate. Should the airlines oversee the examination and medical certification of all their crewmembers requiring such certification, the senior AMEs would no longer examine these airmen. Since this study was designed to study first-class certificate holders, no comparable information was obtained for holders of second-class medical certificates. The emphasis upon first-class certificate holders will be understood when it is realized that only the 1928 designated senior

AMEs can conduct examinations for these airmen whereas any of the 6881 designated AMEs can conduct second or third-class examinations. Therefore, any appreciable impact from the proposed regulatory changes would be expected to be most obvious among the senior AMEs.

Ancillary proposals have also been made concerning the cardiovascular evaluation and the frequency of examination of the first-class certificate holder and these considerations also served to focus attention upon the senior AME system.

IV. Conclusions.

Proposals have been made to modify FAA medical regulations to allow airlines to use full-time or consultant physicians designated by the Federal Air Surgeon to examine and certificate their own crewmembers. In considering the impact of such a proposal on industry and the senior AME population, a more detailed study of certain AME-airline pilot interrelationships was undertaken. From previous studies, it was known that relatively few of the first-class medical certificate holders were actually required by regulation to carry such certificates. It was therefore estimated that a real need for senior AMEs would continue to exist if such regulations were implemented. This has now been verified in that only 31,830 or 42 percent of the first-class certificate holders are employed by airlines. Should all 31,830 first-class certificate holders employed by airlines be certified by the designated airline physician, present senior AMEs would still be examining the majority of the first-class certificate holders. The identification of the senior AMEs with the most experience may be of use to industry as well as the FAA in the surveillance of the airman medical certification program.

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