

ALPA WHITE PAPER



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Increasing the Duration of Airline Pilot Medical Certificates: More Efficiency, Same Level of Safety



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Executive Summary

Air travel in the United States has become the safest form of mass transit in history. This remarkable achievement, which is even more incredible considering the complexity, heights, and speeds involved, is made possible through many years of continuous safety improvements. These enhancements are the result of regulators, management, and labor prioritizing safety and making informed, data-driven decisions on where and how to focus resources.

A well-qualified and highly trained airline pilot is the most important safety asset on every flight. A critical component of human performance safety is the pilot's fitness for duty. One important way in which pilots confirm their fitness is to regularly see aviation medical examiners for physical exams. International standards on the frequency of these exams have changed as a result of greater knowledge about age-related changes in health and accident risk. In this regard, most developed countries have now adopted standards that require airline pilots under the age of 60 to renew their medical certificates annually. The United States is one of just a few nations to still require airline pilots between the ages of 40 and 59 to take a medical exam twice a year. Based on the success of other countries that have adopted a 12-month interval between pilot medical exams, the FAA should also adopt that standard as a means of maintaining safety while improving efficiency.

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Chronology

In the United States, the duration of pilot medical certificates remained unchanged for decades until 1996. Airline captains were required to renew their medical authorization with an aviation medical examiner (AME) every six months regardless of age. First officers who served as copilots were allowed to hold a less stringent, second-class medical certificate, which requires a renewal every 12 months regardless of age. In 1996 the FAA reviewed the duration of exams and extended the interval for the third-class medical for pilots under age 40 from two to three years, reasoning that the change was justified due to the low risk of incapacitation of younger pilots.¹

In 2004, U.S. AMEs empaneled a group to investigate the possibility of further extending exam

intervals. In 2006, these aeromedical specialists presented six reports at the Aerospace Medical Association's (AsMA) 77th annual scientific meeting addressing the issue of the duration of routine medical examinations. A synopsis of the conclusions presented is as follows:

1. Routine medical exams and resting ECGs provide little added value in predicting coronary heart disease in asymptomatic persons.
2. Components of the routine exam that have predictive value are not identified.

¹ Revision of airman medical standards and certification procedures and duration of medical certificates: Summary of quantified costs and benefits. 61 Fed. Reg. No. 54 (final rule, March 19, 1996).

3. Screening for neurological disease has not proven useful in a predictive sense.

Among these presentations was a study by DeJohn, Silberman, and Larcher (the DeJohn study), physicians and researchers employed at the FAA Civil Aeromedical Institute (CAMI). They considered the ramifications of extending the duration of the first-class medical examination from 6 to 12 months for pilots younger than 40 and concluded that the interval might be extended without missing a significant amount of important pathology.²

As a result of this and related activity, the FAA published in April 2007 a Notice of Proposed Rulemaking (NPRM) in the *Federal Register* to further extend the duration of pilots' medical certificate intervals.³ AsMA supported the proposed extension, noting that the U.S. military

examined pilots on a 12-month interval "with no apparent added threat to flying safety."⁴

In 2008, the FAA further extended the interval for the third-class medical used by general aviation pilots from three years to five years. The agency also extended the duration of the first-class medical for operations requiring an ATP from 6 months to 12 months for those under age 40. The agency noted at the time that "extending the duration any further would put the United States out of compliance with international standards."⁵ No other changes directly affecting airline pilots were made.

In 2012, the International Civil Aviation Organization (ICAO) emphasized the need to make research-based decisions when setting policy, including the determination of exam duration. They concluded, in part,

² DeJohn, C. A., Silberman, W. S., Larcher, J. G. (2006) The periodicity of pilot first-class medical examinations. *Aviation, Space, and Environmental Medicine*, 77(3), 222.

³ Modification of certain medical standards and procedures and duration of certain medical certificates: Proposed rule. 72 Fed. Reg. No. 68 (proposed rule, April 10, 2007).

⁴ Aerospace Medical Association. (2007, May 7). [Letter to U.S. Department of Transportation, regarding docket number FAA-2007-27812].

⁵ Modification of certain medical standards and procedures and duration of certain medical certificates. 73 Fed. Reg. No. 143 (final rule, July 24, 2008).



“Despite the growth and acceptance of evidence-based practice throughout most fields of medicine, we still find ourselves routinely using the lowest level of evidence (expert opinion, unsupported by a systematic review) for regulatory aeromedical decisions . . . A cornerstone of a successful future for regulatory aviation medicine is consistent decision-making by Licensing Authorities [*sic*] using high-level evidence . . . The periodicity and content of periodic medical examinations should be adjusted to better reflect the medical demographics of applicants and the safety relevance of their medical conditions.”⁶

In Canada the duration of medical exams remained unchanged for decades, but in 2014 Transport Canada aligned with ICAO standards, extending exams from 6 to 12 months for both captains and first officers conducting two-pilot operations in the 40–59 age group.

Why ICAO Extended Duration for the 40–59 Age Group

In 2006, ICAO amended its standards in Annex 1 by increasing the medical certificate duration from 6 to 12 months for pilots aged 40–59 for airline and commercial flight crews operating with the redundancy of two pilots. Pertinent language in Annex 1 states that “a Medical Assessment . . . shall be valid from the date of the



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medical examination for a period of not greater than 12 months” for the ATP. Aeromedical experts familiar with the history of the change report that the decision to recommend an increase in the duration of the medical exam was based in part on contemporaneous research, but also relied heavily on ICAO’s expert opinion.

⁶ Excerpt from the ICAO Manual of Civil Aviation Medicine, Third Edition, 2012.

They reportedly reasoned that the lack of evidence of pilot incapacitation among the age group in question and the low accident risk in single-pilot operations justified an extension of the duration, particularly when the additional safety factor inherent in two-pilot operations was considered. ICAO’s rationale to extend the interval was not formally documented, but the change is correlated in time to CAMI’s 2006 report.

Six studies likely to have contributed to the decision are referenced in a 2004 position paper by the AsMA, which concludes that “pilot incapacitation does not pose a significant risk. In part, this is due to the fact that flight safety, in the event of pilot incapacitation, is typically assured by the presence of two qualified pilots.”

EASA member states adopted the ICAO standard and since 2011 have been in mandatory compliance with European Union Commission Regulation No. 1178/2011, which incorporates the duration extension, although some EASA countries had conformed to the ICAO recommendations earlier.

In response to ICAO’s 2006 standard, the United States filed a difference with ICAO, indicating that it would comply with the minimum standard but would remain more restrictive; no reason for this action was given.

Current Status

ALPA has researched the status of airline pilot medical certificate durations for this paper and has found that, with the exception of the United States, China, and Chile, a broad international consensus now exists that 12 months is the appropriate interval for first-class medical exams for all airline operations flown by two or more pilots under the age of 60. A European regulator recently wrote that “experience since [the] change from 6 months to 12 months shows, in this age group, that 12 months is adequate.”⁷ A review of the duration of the first-class medical in 46 countries, including Canada, and 32 EASA

⁷ Muff, S. Personal communication, June 1, 2015.

member states revealed that 43 countries have established a 12-month duration for airline pilots under age 60. See Appendix 1 for the list of countries surveyed.

Additional research of the first-class medical examination procedure reveals that, although minor differences exist between countries, the exam is substantially similar, and no evidence was found supporting minor procedural differences influencing the predictability of future disqualifying pathology.

U.S. airline pilots are certificated under first-class and second-class medical standards. All captains are required to have a first-class medical certificate. First officers must have at least a second-class medical certificate for domestic operations, and a first-class medical for flag or supplemental (international) operations requiring three or more pilots. Captains age 40–59 and first officers who have reached their 60th birthday must renew their medical certificate every six months. Refer to Appendix 2 from the *Code of Federal Regulations*⁸ for a summary of current U.S. regulations.

The Canadian standard requires a category-one medical certificate for all airline pilots regardless of the level of licensure (i.e., commercial or airline transport pilot license—ATPL). Except for single-pilot operations with passengers, in which case pilots must renew every six months, Transport Canada requires renewal every 12 months for all airline pilots under age 60 and requires a renewal every six months for all pilots who have reached age 60.⁹

⁸ FAA Medical certificates: Requirement and duration 49 C.F.R. § 61.23 (2013).

⁹ CAR 404.04, 404.10.



Table 1 below provides a comparative summary of current U.S. regulations, Canadian regulations, and ICAO standards.

The FAA does not place a nonmedical operating restriction on a first-class medical certificate. Consequently, the FAA does not limit a first-class medical authorization to two-pilot operations in the same manner that other regulators following the ICAO standard have. Some might view the 6-month duration as justified by arguing that granting a 12-month duration on a certificate without two pilots is less restrictive than the ICAO standard and, therefore, not as safe. However, this is not so, as *there are no circumstances in which a flight operation requiring an ATP under the Federal Aviation Regulations could be conducted with only a single-pilot crew.*

Prior CAMI Study of Certificate Duration

The DeJohn study examined 100 pilots younger than 40 whose medical histories over a three-year period were examined using the FAA's medical database. The study looked for medically significant pathology findings over a 36-month

Table 1: ATP/ATPL Medical Certificate Duration in Months for Two-Pilot Operations

PILOT AGE	FAA		Transport Canada	ICAO
	Pilot-in-Command	Second-in-Command	All	All
Younger than 40	12	12	12	12
40 to 59	6*	12	12	12
60 and Older	6	6	6	6

*Shorter duration than permitted by ICAO standard.

period in pilots who received first-class medicals on July 1, 1999. Results were grouped in 6-month intervals from 6 to 36 months. The proportion of medically significant pathology codes assigned in the different 6-month intervals was then compared. The study found no significant difference in the proportion of medically significant pathology codes between pilots who were reexamined at the 6-month interval and the 12-month interval after the initial exam.

Extending the Study

The FAA Federal Air Surgeon and the CAMI could be invaluable resources to help determine whether the current medical certification durations for airline pilots could be safely extended.

Expanding the Age Range for Annual Exams

Extending the duration from 6 months to 12 months for airline captains aged 40–59 appears to be the most obvious potential reform in this area, as it is already permitted by ICAO standards. Based on the experiences of many other nations around the world, including Canada, it seems apparent that an extension of the interval from 6 months to 12 months could be done without any safety detriment whatsoever.

Renewals of Greater Than 12 Months

Applying the DeJohn study methodology to analyze the under-40 age group could also be useful in determining whether the 12-month duration for pilot medicals could be safely extended. Access to de-identified data in the FAA's pilot medical certificate database should be sufficient to determine whether medically significant pathology codes appear in this age group beyond 12 months. Consideration should be given to extending the data in 6-month intervals.

Access to de-identified airman medical data is not protected under the Privacy Rule of the Health Insurance Portability and Accountability Act (HIPAA) and could be provided by FAA.

Conclusions

- Extending the first-class medical exam duration for pilots age 40–59 from 6 months to 12 months can be done in conformance with ICAO standards.
- An FAA study could be used to substantiate the feasibility of safely extending the 12-month renewal requirement to a longer duration for first-class and second-class medical certificates.
- Extending the duration of the first-class or second-class medical certificate beyond 12 months would be less stringent than ICAO standards; FAA could petition ICAO to amend affected standards as appropriate.

Recommendation

ALPA recommends that the FAA amend the Federal Aviation Regulations on airline pilot medical certificate durations to:

1. Extend the first-class medical certificate duration from 6 months to 12 months for individuals age 40–59, and
2. Determine whether the duration of the first- and second-class medical certificate could be safely extended beyond 12 months and, if so, under what circumstances.



Appendix 1

First-Class Medical Exam Duration for Two-Pilot Operations 40–59 Year Age Group in 46 Countries

12 MONTHS				
Australia	Denmark	India	Netherlands	Slovenia
Austria	Estonia	Ireland	New Zealand	South Africa
Belgium	Finland	Italy	Norway	South Korea
Brazil	France	Japan	Poland	Spain
Bulgaria	Germany	Latvia	Portugal	Sweden
Canada	Greece	Liechtenstein	Romania	Switzerland
Croatia	Hong Kong	Lithuania	Russia	United Kingdom
Cyprus	Hungary	Luxembourg	Singapore	
Czech Republic	Iceland	Malta	Slovakia	

6 MONTHS		
Chile	China	United States

Appendix 2

FAR §61.23 FAA Medical Certificates: Requirement and Duration (excerpt)

If you hold	And on the date of examination for your most recent medical certificate you were	And you are conducting an operation requiring	Then your medical certificate expires, for that operation, at the end of the last day of the
(1) A first-class medical certificate	(i) Under age 40	An airline transport pilot certificate for pilot-in-command privileges, or for second-in-command privileges in a flag or supplemental operation in part 121 requiring three or more pilots	12th month after the month of the date of examination shown on the medical certificate.
	(ii) Age 40 or older	An airline transport pilot certificate for pilot-in-command privileges, for second-in-command privileges in a flag or supplemental operation in part 121 requiring three or more pilots, or for a pilot flight crew member in part 121 operations who has reached his or her 60th birthday.	6th month after the month of the date of examination shown on the medical certificate.
(2) A second-class medical certificate	(i) Any age	An airline transport pilot certificate for second-in-command privileges (other than the operations specified in paragraph (d)(1) of this section)	12th month after the month of the date of examination shown on the medical certificate.

