

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 61

[Docket No. 23672; Amdt. No. 61-75]

Minimum Aeronautical Experience Requirements; Instrument Rating

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment changes the requirements for the issuance of an original or additional instrument rating added to an airman certificate. It permits the holder of at least a current private pilot certificate to apply for and be issued an instrument rating with less than the present minimum flight time required and thus encourages earlier training in, and development of, instrument flying skills. This amendment responds to recognized current training technology and supports the concept of training to prescribed standards for an instrument rating.

EFFECTIVE DATE: June 7, 1985.

FOR FURTHER INFORMATION CONTACT: Lauren D. Basham, Certification Branch (AFO-840), General Aviation and Commercial Division, Federal Aviation Administration, 800 Independence Avenue SW., Washington, D.C. 20591; telephone (202) 426-8196.

SUPPLEMENTARY INFORMATION:

Background

Part 61, Certification: Pilots and Flight Instructors, of the Federal Aviation Regulations (FAR) prescribes the requirements for issuing pilot and flight instructor certificates and ratings. Part 61 of the FAR also prescribes the conditions under which those certificates and ratings are necessary and the privileges and limitations of those certificates and ratings.

Part 61 of the FAR was revised by Amendment 61-60, effective November 1, 1973. The purpose of that amendment was to upgrade pilot training requirements to reflect the increased complexity of the modern aircraft and its operating environment.

In revised Part 61, the requirements were significantly upgraded to ensure that applicants for pilot certificates or for the addition of a rating to a pilot certificate receive training under the supervision of an authorized flight instructor in the "total operational training concept." Under this training concept, training to develop the aeronautical knowledge and flight skills necessary to qualify the applicant for all phases of pilot operations authorized by

the certificate or rating sought is required.

Amendment 61-60 retained, without significant change, the flight experience requirements for the instrument rating. More recently, Amendment 61-70, issued on January 4, 1982 (47 FR 3486; January 25, 1982), deleted the requirement that cross-country experience be gained in a specific category of aircraft and thus permits cross-country experience gained in any powered aircraft to be applied toward the experience requirements for an instrument rating. The above amendment does not diminish the current requirements for an instrument rating; however, because of the relatively high involvement rate of low-time, noninstrument-rated pilots in weather-related accidents, there is a growing concern about the adequacy of current instrument rating requirements which prohibit a pilot from getting an instrument rating before he/she has 200 flight hours.

The FAA is aware that many noninstrument-rated private pilots delay starting instrument training until they have accumulated 150 to 160 hours of flight time. An unfortunate consequence of this practice is that the instrument flight skills necessary to operate a complex aircraft within the variety of meteorological conditions that many of them encounter while operating in the National Airspace System are often not acquired. Additionally, these pilots do not continue their aeronautical education after receiving their private pilot certificate until they have accumulated the 150 to 160 hours. This may require 3-4 years of flying by the average private pilot.

Over the years, revision of minimum aeronautical experience requirements for the issuance of an instrument rating has been considered. Draft Release No. 63-6, issued February 19, 1963 (28 FR 1881; February 18, 1963), proposed a reduction in the total flight time for the private pilot applicant for an instrument rating. This proved to be a controversial issue with strong arguments on each side. After careful consideration of all the issues involved, the FAA concluded that adoption of the proposed change would be inappropriate and the proposed change was dropped.

For more than 40 years, a number of both fatal and nonfatal weather-related accidents have involved pilots with fewer than 200 hours of total flight time and little or no instrument training. National Transportation Safety Board reports covering various time periods for the last several years clearly reveal the negative role of adverse weather in aircraft accidents.

The FAA is unable to establish the overall extent to which pilots involved in weather-related accidents were not qualified for flight operations under instrument flight rules since the data needed are not available. However, it is clear that today's general aviation pilots operate a variety of sophisticated aircraft in a wide range of environmental weather conditions, with resulting increased demands on the pilot. Thus, instrument flight skills have become increasingly critical in the operation of these aircraft and the FAA is convinced that flight-hour requirements alone are no longer necessary as a safety criteria.

The FAA recently contracted with a major aeronautical educational institution to conduct a training experiment. The experiment utilized specific groups of students in an effort to examine the relation of pilot experience, as defined by total flight time, to the acquisition of instrument flight skills. These skills were demonstrated by performance on the instrument certification flight test. Further objectives of this experiment were to: (1) Identify and assess specific differences in the performance of instrument maneuvers by student pilots whose total flight times ranged from 100 to 200 hours; and (2) determine whether differences in total flight times affect the general process by which beginning or advanced instrument flight skills are learned.

This experiment was completed in early 1981. The conclusions it reached were, in general, that: (1) The amount of prior flight time had no effect on the acquisition and demonstration of instrument flight skills within the ranges of preinstrument flight experience examined in connection with the experiment; and (2) the reduction of the present 200-hour flight experience requirement, for the issuance of an instrument rating, to a more realistic level would encourage the earlier acquisition of instrument flying skills. In response to these conclusions, on May 25, 1983, the Director of Flight Operations issued Notice of Proposed Rulemaking No. 83-6 (48 FR 28104; June 20, 1983). The notice proposed to modify minimum flight-time requirements for the issuance of an instrument rating and thus encourage earlier training in, and development of, instrument flying skills.

Discussion of Comments

Interested persons were offered the opportunity to participate in preparing this amendment by Notice No. 83-6. Comments were received from industry organizations, flying schools, flight

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instructors, executive operators, and professional pilots. Due consideration has been given to all relevant comments received in response to the notice.

Many of the more than 200 comments received in response to the notice were from private pilots who would be affected by the proposed rule. The flight time reported by the noninstrument-rated private pilots who commented on the proposal ranged from 45 hours to 195 hours for an average pilot flight time of 135 total hours.

Two hundred thirty three (233) of the public comments received generally favor the proposal. Numerous specific comments are offered. Some of these object to particular elements contained in Notice No. 83-6. Others are unclear.

Sixty of the commenters concur without significant comment. Twenty-four commenters object to proposed § 61.65(e)(1) and offer arguments in support of their views. A number of these commenters base their arguments on the contention that persons with no more than 100 hours total flight experience would not have the "seasoning" and "maturity of judgment" believed critical to modern instrument flight rules (IFR) operations. One commenter points out that pilot judgment is not an intuitive process and is only developed through practice over a protracted period of time. Concern is also expressed that adoption of the proposal would merely bring about a change in the identity of the pilots involved in weather-related accidents and would, within a few years time, lead to a drastic increase in weather-related accidents by low-time, instrument-rated pilots. It is also contended that the mere ability to satisfactorily accomplish the maneuvers and procedures required for the instrument rating flight test specified in § 61.65(g) gives no assurance that a pilot would exhibit the same skills and judgment under the stress of actual IFR operations, or that the pilot would retain instrument flight skills, once acquired, for any length of time. Consequently, they argue that the present total flight time requirements provide an overall background of "seasoning" experience which should not be reduced.

The FAA has considered these views, some of which were influential in causing the FAA to withdraw similar proposals involving instrument rating flight experience requirements in recent years. The FAA, however, does not agree that concern over pilot error due to lack of seasoning outweighs the need to increase instrument competency in low-time pilots. Statistical research has clearly established this need. The FAA does agree that some minimum hours of flight experience are necessary to

ensure that an applicant for an instrument rating has developed a level of judgment necessary to function safely under IFR in the aviation system.

A review of more than 5,200 nonfatal weather-related accidents during the 11-year period from 1964 to 1974 revealed that 83 percent involved pilots with less than 100 hours of pilot experience. The reduction of the 200-hour minimum flight experience requirements will encourage earlier training to develop instrument skills which will enhance the safety of inexperienced pilots flying under unexpected, adverse weather conditions. The possibility for increases in safety that can be gained through instrument flight training is illustrated with the combined fatal and serious accident rates shown in the following table.

FATAL/SERIOUS ACCIDENT RATES

(IFR rated pilots compared to non-IFR rated pilots)

| Flight under instrument flight rules (IFR) conditions by— | | Flight under visual flight rules (VFR) conditions by— | |
|---|-----------------------------|---|-----------------------------|
| Non-IFR rated pilot | IFR rated pilot | Non-IFR rated pilot | IFR rated pilot |
| 1 accident in 1,459 hours. | 1 accident in 12,186 hours. | 1 accident in 61,900 hours. | 1 accident in 94,819 hours. |

SOURCE: Walton Graham, *A Study of General Aviation Safety*, Part II, Volume 1, prepared for Trans Urban East Organization, New York, by Questek, Inc. November 1981.

These statistics support measures such as this rule, which provide incentives for early instrument training.

In 1982, the FAA again contracted with the aeronautical educational institution mentioned above to conduct a second training experiment at its Atlantic City, New Jersey, research facility. This second experiment utilized students with flight experience levels similar to those of the students in the first experiment. However, the second experiment's students were drawn from an age group believed more representative of the broad spectrum of the general aviation pilot population. Additionally, more complex aircraft were used for this group's instrument training. The conclusions reached from this second experiment did not significantly differ from those drawn from the first experiment. While an increase in the error rate of the second student group was noted, all of these students satisfactorily completed the training program and received an instrument rating in the time allotted. The FAA, therefore, is convinced that both experiments equally demonstrate that the amount of prior flight time had a reduced effect on the acquisition and demonstration of instrument flying skills. Consequently, the required

number of hours for this rating is being reduced here.

With regard to the retention of instrument flying skills, the proficiency of general aviation pilots depends on the comprehensiveness with which their training addresses their needs and the amount of recurrent instrument flight practice accomplished. Today, the private pilot may acquire a depth of experience that equals that of the corporate or executive pilot. More research is needed, however, to systematically address the total continuation training needs for the different classes of general aviation pilots. A 1973 study, "Identifying and Determining Skill Degradations of Private and Commercial Pilots" (FAA-RD-73-91, Hollister, La Pointe, Oman and Tole—1973) came to no definite conclusions as to how these needs should be met. However, it noted that, on the average, subjects received higher scores on skills employed most often and lower scores on skills seldom practiced, such as stalls and simulated instrument flight.

The development and implementation of flight proficiency standards in pilot operations, procedures, and flight test maneuvers required for the instrument rating is inherent in the concept of training to prescribed standards. This training process is followed to ensure that applicants for an instrument rating are sufficiently skilled to operate an aircraft safely and efficiently under instrument flight rules and conditions in the National Airspace System before the instrument rating is issued. While there are currently no regulations which require specific types of continuation training, a number of less formal methods currently exist for encouraging general aviation pilots to continue their training, to maintain their skills, and to update their knowledge. Sections 61.57 and 61.58 specify limited currency requirements which routinely affect most general aviation pilots. Additionally, the FAA and various general aviation organizations encourage pilots to continue their training through numerous activities designed to upgrade pilot competency. This amendment will encourage private pilots to pursue an instrument rating at an earlier stage of their flight experience and is expected to result in:

(1) A higher level of safety and competency in coping with sophisticated aircraft equipment, navigation aids, and communications systems;

(2) The restructuring of flying courses under Parts 61 and 141 to provide supervised instrument flight rule

experience during the training curriculum; and

(3) The encouragement of continued training to meet both currency and higher certification levels.

The FAA is committed to continuous review, evaluation, and updating of its regulations. This final rule amends the regulations to take advantage of aviation-related modern technology, assessment of flying skills, and training to prescribed standards.

This final rule's reduction of the minimum hours of flight experience required before an original instrument rating is issued, or before an additional instrument rating is added to an airman certificate, appeared in Notice No. 83-6 as the proposed amendment to § 61.65(e)(1). As changed, it represents the FAA's present judgment as to the standards that should now be established. This amendment recognizes current training technology and supports the concept of training to prescribed standards in which the overall ability to perform a function (i.e., knowledge, proficiency, and judgment), meets the desired level of competency. This amendment will also upgrade the competency of pilots who seek to add an instrument rating to their pilot certificate and will allow pilots in the 125-hour-plus experience level greater use of their aircraft without reducing safety.

The majority of the commenters enthusiastically endorse the proposal and urge its immediate adoption. A number of commenters voice general agreement with reducing the flight hour experience requirements for an instrument rating from those presently required by § 61.65(e)(1) but object to the proposed experience requirements. The principal change in flight hour experience suggested is to reduce the pilot-in-command flight hour experience requirements of § 61.65(e)(1) from 75 hours (as proposed in Notice No. 83-6) to 50 hours. The Aircraft Owners and Pilots Association (AOPA), on behalf of its 265,000 members, supports this suggestion. They also contend that both student solo and private pilot pilot-in-command flight time should be credited towards this 50-hour requirement to provide a more realistic measure of flight experience for private pilot instrument rating applicants. Proposed § 61.65(e)(1) was intended to establish the minimum total flight time and minimum pilot-in-command flight experience believed necessary to serve as a basis for acquiring instrument flight skills. The FAA does not agree, however, that solo flight time, logged by the holder of a student pilot certificate, should be credited on an equal basis with pilot-in-command flight time logged

by the holder of a private pilot certificate. Except for the specific provisions of § 61.51(c)(1) involving a student pilot serving as pilot in command of an airship under the specific authorization of a certificated flight instructor, it has not been the intention of the FAA to allow the holder of a student pilot certificate to credit student solo time as pilot-in-command flight time for a certificate or rating under Part 61. A student pilot's flight operations must be authorized by a certificated flight instructor and, thus, the student pilot's flight decision-making authority is limited to controlled conditions. Thus, although a student is technically a pilot in command while in solo flight, the FAA has not allowed such time to be credited as pilot-in-command time for the purposes of this rule. A student pilot certificate holder has not yet demonstrated the minimum competency level of at least a private pilot certificate holder authorized to act without the supervision of a certificated flight instructor. On the other hand, a private pilot may, under § 61.51(c)(2), log as pilot-in-command time flight time during which he or she may be required to make safety of flight decisions as the person directly responsible for, and the final authority as to, the operation of an aircraft. Since pilot-in-command cross-country experience is an integral part of a pilot's overall training experience, the FAA intends that the cross-country flight experience used to qualify an applicant for an instrument rating be acquired during the conduct of flight operations during which the applicant holds a private pilot certificate or higher. As adopted, the rule specifies that the required pilot-in-command cross-country experience must be with other than a student pilot certificate. To reiterate, for the purposes of this Final Rule, a student cannot log pilot-in-command time.

The NPRM (Notice No. 83-6) proposed to require a total of 100 hours of pilot flight time, including 75 hours as pilot in command, of which 50 hours were to be cross-country in a powered aircraft. After further consideration, however, the FAA has determined that an appropriate level of experience should be obtained by requiring a total of 125 hours of flight experience, including 50 hours cross-country flight time as pilot in command.

Under the regulations, the minimum flight hour experience at which a private pilot certificate holder may obtain an instrument rating would be at least 90 hours of flight time and 110 hours of total flight experience (including training device time) under Part 61. Under Part 141, it would be 85 hours of flight time

and 100 hours of total flight experience. Considering the fact that the national average minimum flight time for pilots to acquire a private pilot certificate presently exceeds 66 hours (rather than the required 40 hours) due to the complexity of requirements, the *average* private pilot may be expected to have approximately 136 hours of total flight experience when certificated as an instrument pilot. Applicants who have a minimum of 125 hours of flight experience which includes at least 50 hours of cross-country flight time as pilot in command should have the judgment necessary to safely exercise the privileges of an instrument rating.

Some commenters offer suggestions which were not considered by the FAA in the development of the proposal. Some of these comments are both impracticable and beyond the scope of the notice. For example, one commenter suggests that an applicant for an instrument rating be required to have at least 5 hours of instrument flight instruction under actual instrument meteorological conditions to be eligible for the instrument rating. Still other comments are merely beyond the scope of the notice.

One comment, however, while beyond the scope of the notice, is worthy of discussion to eliminate apparent confusion by persons commenting on the proposal. This comment is that the FAA should give increased recognition to the use of approved simulators/training devices in connection with § 61.65 and the conduct of checks required of applicants for an instrument rating. It should be noted that of the 40 hours of simulated or actual instrument flight time required for an instrument rating under § 61.65(e)(2), 20 hours may be instrument instruction in a ground training device acceptable to the Administrator. Similarly, under Part 141, Appendix C(3), 15 hours may be instrument instruction in an authorized ground training device.

While the FAA agrees that existing airplane simulators and some ground trainers are adequate for determining pilot competency in certain required flight maneuvers, there is no basis for granting further approvals in connection with this amendment. The FAA is aware that various studies on transfer of training from ground training devices to actual aircraft have produced inconclusive results. Thus, the FAA has no basis for approving the use of a simulator or training device in either Part 61 or Part 141 beyond the scope of approvals currently authorized in these rules.

In this respect, it should be noted that § 61.65(c)(3), which outlines the practical test requirements for an instrument rating, requires that an applicant for an instrument rating be given instrument instruction in VOR, ADF, and ILS instrument approach procedures. However, because ADF and ILS instrument approach facilities are not readily available in some areas, the regulation provides for the use of airborne or ground training devices for the simulation of ILS and ADF instrument approach procedures during training. When taking the practical test, however, the instrument rating applicant must demonstrate each of these instrument approach procedures. In conducting the instrument flight test, at least one of these instrument approach procedures must be demonstrated in flight in an airplane or helicopter, as appropriate. The two remaining approaches may be demonstrated in a simulator or training device acceptable to the Administrator. Therefore, the inspector or examiner conducting the practical test may allow the applicant to perform the instrument approach procedure(s) not selected for actual flight demonstration in a flight simulator or ground training device that meets the requirements of § 141.41(a)(1). Thus, the FAA has given recognition to flight simulators and ground trainers to the degree practicable, where the Administrator has found that the applicant's competency can be determined in such a device as well as in an aircraft.

As stated in Notice No. 83-6, permitting eligibility for an instrument rating at a flight experience level which is lower than that required by the present rule will encourage new private pilots to continue their training for an instrument rating and will encourage low-time, certificated private pilots to enter training for the instrument rating. This view is supported by comments from industry. Today, private pilots as a group have access to, and considerable investment in, a number of complex aircraft. An instrument rating will permit these pilots to gain maximum utilization of these aircraft with a greater degree of safety. With instrument training, pilots learn to have greater respect for weather and more total awareness of personal limitations and the limitations of the aircraft operated. An instrument rating will provide pilots encountering unforecast deteriorating weather conditions with a safe alternative to "scud running." Even if flying an aircraft not fully equipped for instrument flight, instrument flying skills may permit the pilot to return to visual flight rules (VFR)

conditions and not experience a catastrophic loss of control in flight.

Some commenters note that § 61.65(e)(1), as currently stated or as proposed in Notice No. 83-6, does not provide a definition of the term "cross-country flight experience," and suggest that a definition is needed for clarification. The FAA does not intend that the scope of cross-country flight experience required for the issuance of an instrument rating should be significantly less than the cross-country flight experience required for a private or commercial pilot certificate applicant. Therefore, § 61.65(e)(1), as amended, specifies that the 50 hours of pilot-in-command, cross-country flight time required for an instrument rating be acquired during flights which contain a landing at a point more than 50 nautical miles from the original point of departure. This is consistent with cross-country flight experience requirements for applicants for private and commercial pilot certificates.

The FAA will, upon adoption of this rule, establish a monitoring system which will be specifically designed to measure the accident rate involving instrument pilots who have obtained their instrument rating under the provisions of this new rule. This accident rate will be compared with the accident rate of pilots who were certificated under the prior rule which required a minimum aeronautical experience of 200 hours. These two rates will be compared, on an annual basis for a period of 5 years, to ensure that the new minimum aeronautical experience requirements for an instrument rating do not pose a safety hazard. Should this comparison indicate that the rule as amended does adversely affect safety, action will be taken immediately to reassess this new rule and appropriate corrective measures will be initiated.

Regulatory Evaluation

The FAA has analyzed this amendment and determined that it will impose no additional costs, will relieve an undue economic burden, and will prevent the waste of aviation fuel without compromising the level of training or testing necessary to ensure safety. The total dollar extent of the cost savings depends on the number of original instrument ratings obtained per year by private pilots and the class of aircraft used to meet the flight experience requirements. For the class of aircraft typically used to meet such training requirements, the operating cost per flight-hour may range from \$30 to \$100 for fixed wing airplanes and \$100 to \$225 for helicopters. These costs multiplied by 100 hours, because of the

reduction in total flight time required of individuals seeking an instrument rating, could result in an immediate savings to individuals of \$2,250 to \$7,500 and \$7,500 to \$16,875 for a rating appropriate to fixed wing and rotary wing aircraft, respectively. These costs, however, are likely to be incurred after the instrument rating has been obtained because of the pilot's newly gained flexibility. In fact, while aircraft time that might have been acquired to expedite eligibility for the instrument rating will be avoided, the increased usefulness of the airman's pilot certificate may induce him or her to acquire more hours in a given period of time after obtaining the rating. Thus, while initial cost savings can accrue to any private pilot applicant for an instrument rating, the net savings cannot be said to be significant.

Savings could also accrue to any size small business or not-for-profit organization underwriting such an application. However, the obtaining of a private pilot's certificate and the acquisition of advanced flying skills are normally accomplished through the sole initiative of an individual undertaking the training. It is reasonable to expect that the number of such entities who would pay for private pilot training for their employees are not substantial.

As a result, the FAA finds that the amendment will not have a significant savings or cost impact on a substantial number of small entities; therefore, a regulatory flexibility analysis is not required by the Regulatory Flexibility Act of 1980.

Conclusion

Since this amendment reduces the number of hours of flight experience an airman must have to obtain an original or additional instrument rating added to an airman certificate and, therefore, will not impose any cost or other economic burden on the applicant, the FAA has determined that this amendment is not major under Executive Order 12291 or significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). Because the number of small entities expected to pay for private pilot training for their employees will not be substantial, I certify that under the criteria of the Regulatory Flexibility Act, this amendment will not have a significant economic impact on a substantial number of small entities. A copy of the regulatory evaluation for this amendment is contained in the regulatory docket. A copy of it may be obtained by contacting the person identified under "FOR FURTHER INFORMATION CONTACT."

List of Subjects in 14 CFR Part 61

Airmen, Aircraft pilots, Pilots, Students, Transportation, Air safety, Safety, Aviation safety, Air transportation, Aircraft, Airplanes, Helicopters, Rotorcraft, Compensation Education, Teachers.

The Amendment

Accordingly, Part 61 of the Federal Aviation Regulations (14 CFR Part 61) is amended, effective June 7, 1985, by revising § 61.65 (a)(1) and (e)(1) to read as follows:

PART 61—CERTIFICATION: PILOTS AND FLIGHT INSTRUCTORS

§ 61.65 Instrument rating requirements.

(a) * * *

(1) Hold at least a current private pilot certificate with an aircraft rating appropriate to the instrument rating sought;

* * * * *

(e) * * *

(1) A total of 125 hours of pilot flight time, of which 50 hours are as pilot in command in cross-country flight in a powered aircraft with other than a

student pilot certificate. Each cross-country flight must have a landing at a point more than 50 nautical miles from the original departure point.

* * * * *

(Secs. 313(a), 601, and 602 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1354(a), 1421, and 1422); and 49 U.S.C. 106(g) (Revised, Pub. L. 97-449; January 12, 1983))

Issued in Washington, D.C., on April 11, 1985.

Donald D. Engen, Administrator.

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