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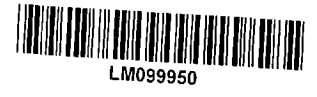
REPORT TO THE CONGRESS

UNITED STATES
GENERAL ACCOUNTING OFFICE

FEB 26 1976



BY THE COMPTROLLER GENERAL OF THE UNITED STATES



Improved Controls Needed Over Private Pilot Licensing

Federal Aviation Administration
Department of Transportation

The Federal Aviation Administration does not have an effective system for determining whether private pilot flight-tests and biennial flight reviews comply with agency standards.

Tests and reviews are conducted by pilot examiners and instructors who are not agency employees. To insure that private pilots are competent and safe, the agency needs to improve its controls over these flight-tests and reviews.

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Resources and Economic Development
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COMPTROLLER GENERAL OF THE UNITED STATES
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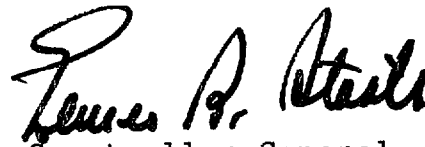
B-164497(1)

To the President of the Senate and the
Speaker of the House of Representatives

This report contains our recommendations to the
Secretary of Transportation for improving the licensing
of private pilots.

We made our review pursuant to the Budget and Accounting
Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing
Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director,
Office of Management and Budget, and to the Secretary of
Transportation.


Comptroller General
of the United States

C o n t e n t s

		<u>Page</u>
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Federal Aviation Administration responsibility for private pilot competency	1
	Initial pilot licensing	2
	Biennial flight review of licensed pilots	3
	Program administration	3
	Scope of review	3
2	IMPROVEMENTS NEEDED IN FAA CONTROL OVER PRIVATE PILOT FLIGHT TESTS	5
	FAA controls over flight tests	5
	Content of flight tests	7
	Tests under the old guide	7
	Tests under the new guide	9
	Old and new guide comparison	10
3	NEED TO RESTRUCTURE THE BIENNIAL FLIGHT REVIEW PROGRAM	11
	Evolution of the biennial flight review	11
	Noncompliance with flight review regulation	12
	Standards for conduct of flight review are not clear	13
4	CONCLUSIONS, AGENCY COMMENTS AND OUR EVALUATION, AND RECOMMENDATIONS	16
	Conclusions	16
	Agency comments and our evaluation	17
	Recommendations to the Secretary of Transportation	19

APPENDIX

I	Letter dated November 21, 1975, from the Assistant Secretary for Administration, Department of Transportation	20
II	Principal officials of the Department of Transportation responsible for administering activities discussed in this report	24

ABBREVIATIONS

FAA	Federal Aviation Administration
GAO	General Accounting Office
NTSB	National Transportation Safety Board

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

IMPROVED CONTROLS NEEDED OVER
PRIVATE PILOT LICENSING
Federal Aviation Administration
Department of Transportation

D I G E S T

Pilots have been a cause in over 80 percent of all general aviation accidents, and in the 5 years ended December 31, 1974, 2,948 people died and 3,538 were injured in accidents where private pilots were a cause.

The Federal Aviation Administration is responsible for insuring that pilot licenses are issued only to competent, safe pilots. To obtain a pilot's license, an applicant must pass a medical examination, a written examination of his aeronautical knowledge, and a flight test of his piloting ability. In November 1974 the agency began requiring biennial flight reviews of licensed pilots to insure that they remain competent.

Nearly all flight tests and reviews of private pilots are conducted by pilot examiners and instructors who are not agency employees. The agency does not have an effective system of determining whether the tests and reviews conducted by these examiners and instructors comply with its standards. GAO recommends that, to improve controls over flight-tests and biennial flight reviews, the Secretary of Transportation direct the Administrator of the Federal Aviation Administration to:

- Clarify its standards for the biennial flight reviews.
- Obtain information on who has completed biennial flight reviews so that the requirement can be enforced.
- Obtain information on the content of flight-tests and biennial reviews and the examiners' and instructors' appraisals of pilots' performances and also use the information as a basis for evaluating the quality of flight-tests and biennial reviews (See p. 19.)

The Federal Aviation Administration has two flight-test guides for examiners -- an old guide, which is being phased out, and a new guide, which is being phased in-- to use in testing applicants for pilot's licenses. Many examiners GAO talked with indicated that their flight-tests did not comply with the flight-test guide used.

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The old guide listed over 80 flight procedures which applicants were required to perform during the flight-test. Over 40 percent of the examiners GAO talked with indicated that none of their flight-tests fully complied with the old guide. Most examiners indicated that at least half of the flight-tests they conducted failed to comply with the old guide. Several critical maneuvers were among the items frequently omitted from the tests. (See p. 7.)

The new guide provides a wide range of procedures and maneuvers and allows the examiner to choose the ones he believes best for each applicant. The Federal Aviation Administration believed that the new guide would insure that pilot applicants were competent in basic airmanship and not merely trained to pass a stereotyped exam. Sixty percent of the examiners GAO talked with indicated that their testing practices would not change because of the new guide; they would not test any different procedures or maneuvers. Therefore, the new guidelines will not achieve the improved flight-tests the agency intended. (See p. 9.)

3 The biennial flight review was intended to provide insurance that licensed pilots remain competent to safely fly. Guidance on the conduct of flight reviews has been inadequate, and instructors and examiners conducting the reviews have widely varying opinions on what procedures, maneuvers, and other matters should be reviewed. (See p. 12.)

The Federal Aviation Administration ~~does not monitor~~ flight reviews or know which pilots have taken the required flight review; it is not making any appreciable effort to enforce the requirement. (See p. 12.)

The Department of Transportation agreed that guidelines were needed on the biennial flight review and said that it was taking steps to develop them. The Department said its procedures for enforcing the biennial flight review requirement were adequate and obtaining information on who had completed a biennial flight review would place an enormous burden on the Federal Aviation Administration and the industry. The Department also said that because the inclusion of particular flight-test procedures and maneuvers is left to the judgement of the pilot examiners, no major benefits would accrue from obtaining information on the content of flight tests. (See p. 18.)

See

The biennial flight review requirement is important and GAO believes that additional effort is warranted to enforce it. It is because the new flight-test guide allows for and relies on the judgement of examiners that GAO believes the Federal Aviation Administration should obtain specific information on the content of flight-tests.

CHAPTER 1

INTRODUCTION

The National Transportation Safety Board (NTSB), the agency responsible for investigating aviation accidents, has expressed concern about general aviation* safety for several years. In a report on general aviation accidents during 1966, NTSB pointed out that the pilot was a cause in 80 percent of all accidents. NTSB concluded that it was important to determine the reasons for the unfortunate errors of so many pilots and what could be done to prevent them.

NTSB's concern over accidents caused by pilots was reemphasized in its report covering general aviation accidents for 1967. In that report, NTSB pointed out that the pilot was a cause in 82 percent of the accidents. An NTSB report of general aviation accidents in 1974 identifies the pilot as a cause in 84 percent of the cases. In the 5 years ended December 31, 1974, private pilots were cited as a cause in general aviation accidents that killed 2,948 people and injured 3,538.

In 1974 NTSB said that an increasing number of general aviation accidents and related fatalities were the most critical problems facing aviation. It estimated that if trends continued, over 6,800 people would be killed in general aviation accidents during the 4 years ending in 1978.

The Department of Transportation has also expressed concern over the number of needless general aviation accidents and has made efforts to stop them. For example, a general aviation accident prevention program was established in 1970 to promote private pilot safety. A biennial flight review program was started in 1974 to insure that pilots remain competent to safely fly.

FEDERAL AVIATION ADMINISTRATION RESPONSIBILITY FOR PRIVATE PILOT COMPETENCY

The Federal Aviation Administration (FAA) is responsible for insuring the safe use of this Nation's airspace. Discharging this responsibility requires developing and

*Defined as all civil flying not classified as air carrier and includes personal flying, transportation of personnel and cargo by businesses in company-owned aircraft, and air taxi operations.

promulgating safety standards for the initial licensing of pilots and establishing requirements designed to insure their continued safety and competence.

✓ The Federal Aviation Act of 1958 (49 U.S.C. 1422) and the Department of Transportation Act (P.L. 89-670) authorized FAA to issue to airmen certificates specifying the capacity in which airmen may serve and made it unlawful ✓ (49 U.S.C. 1430) to operate without, or in violation of, such certificates.

Initial pilot licensing

Private pilots are the largest single segment of the active pilot population, comprised of persons holding one of four basic pilot licenses--student, private, commercial, and airline transport. FAA issued over 48,000 private pilot licenses in 1974 and estimates that there will be about 540,000 active private pilots by 1985.

To become an FAA-licensed private pilot, applicants must pass a medical examination, a written examination on aeronautical knowledge--such as familiarity with certain Federal Aviation Regulations, navigation, and recognition of critical weather situations--and a flight-test.*

FAA prepares and administers virtually all written examinations used to determine whether applicants have the required aeronautical knowledge. All FAA written tests are graded in FAA offices in Oklahoma City, Oklahoma. A grade of at least 70 percent in the written FAA examination is a prerequisite to taking a flight-test.

Applicants must receive formal training in the practical operation of an airplane under the supervision of an FAA-licensed flight instructor. Minimum flight experience requirements are set forth in Part 61 of the Federal Aviation Regulations. Generally, flight time must include at least 20 hours of flight instruction from a licensed flight instructor and at least 20 hours of solo flight.

Flight-tests are designed to require the applicant to demonstrate the ability to safely and competently operate an airplane in accordance with FAA's standards. FAA's role in the licensing process is generally limited to establishing flight-test standards. FAA conducts some flight-tests at

*Some FAA private pilot licenses are issued to military pilots or holders of pilot licenses issued by other countries without flight-tests.

the request of the pilot or in unusual circumstances, such as when a waiver of medical requirements is being considered. However, the vast majority of flight-tests (over 94 percent in 1973) are conducted by pilots with FAA flight instructor licenses who are designated pilot examiners. These examiners are also authorized to issue temporary private pilot licenses to applicants successfully completing the flight-test. Permanent licenses are issued later by FAA.

Biennial flight review of licensed pilots

FAA generally issues private pilot licenses which remain valid for the life of the pilot. However, even though the license may not expire, a pilot cannot legally be a "pilot in command" unless certain medical and flight experience requirements are met. Beginning in November 1974 a biennial flight review was required of all active pilots to demonstrate that they still have the knowledge and competency to safely fly. FAA delegated biennial flight reviews to licensed flight instructors and to designated examiners. Fees for flight tests and biennial flight reviews vary and are paid for by the applicants.

PROGRAM ADMINISTRATION

All three of FAA's basic organizational levels are involved in private pilot flight-testing and biennial flight reviews. The Flight Standards Service, a headquarters organizational component, develops policy, program standards, and guidelines; provides technical assistance to field offices; and participates with other FAA offices in developing Federal Aviation Regulations. FAA's 12 regional offices provide program and technical guidance and assistance to district offices and evaluate the district offices' activities. District offices conduct day-to-day activities, such as designating examiners and instructors, and reviewing examiners' and instructors' activities.

SCOPE OF REVIEW

Our review consisted of evaluating the effectiveness of the private pilot licensing flight-tests and biennial flight reviews conducted by designated examiners and flight instructors. It did not include review of flight-tests and written examinations conducted by FAA officials.

We talked with private pilots, flight instructors, and pilot examiners in four districts of FAA's Northwest Region (Seattle and Spokane, Washington; Eugene and Portland, Oregon). We interviewed FAA officials and reviewed records

available at the district offices, the regional office, the FAA Aeronautical Center, and FAA headquarters. Discussions with FAA officials in the Northwest Region and at FAA headquarters indicated that the practices and procedures followed in that region were representative of practices throughout FAA.

CHAPTER 2

IMPROVEMENTS NEEDED IN FAA CONTROL OVER PRIVATE PILOT FLIGHT-TESTS

FAA has delegated most of its private pilot flight-testing functions to flight instructors who have been designated as pilot examiners, but it has not established an effective system of determining whether flight-tests conducted by these examiners are in compliance with FAA flight-test standards. Examiners do not always comply with FAA flight-test standards, and FAA has issued licenses to applicants who were not required to demonstrate the ability to meet minimum FAA standards.

FAA adopted new private pilot flight-test standards in January 1973. The new standards were to improve the flight-tests by permitting variations from one test to the next and by providing a wider range of maneuvers and procedures which could be included. However, most examiners we talked with did not plan to appreciably change the maneuvers and procedures in their flight-tests, resulting in their flight-tests not being improved.

FAA CONTROLS OVER FLIGHT-TESTS

To receive an FAA private pilot license, most applicants must successfully complete a flight-test conducted by either an FAA inspector or one of the 1,500 instructors FAA designated as a pilot examiner. Flight-tests require an applicant to demonstrate the necessary skills to competently and safely fly an airplane. FAA establishes the standard for the maneuvers, procedures, and other matters to be covered in a flight-test and the standards that examiners are to use in judging an applicant's performance. These standards are published in Part 61 of the Federal Aviation Regulations and are further explained in official FAA Flight Test Guides.

According to FAA statistics, about 94 percent of the private pilot flight-tests are conducted by designated examiners. These examiners are required to submit a signed statement to FAA that the flight-tests comply with all pertinent FAA procedures and standards, but they are not required to disclose the specific content of the flight-tests or to provide a written critique of the applicant's performance.

FAA's primary efforts, with regard to flight-tests given by examiners, are directed at insuring that the examiner is a skilled pilot, has the required knowledge of pertinent FAA regulations, and understands what constitutes a satisfactory flight-test.

FAA renews pilot examiner designations each year. The renewal procedure calls for the examiner to demonstrate flying skills to an FAA inspector and to attend an FAA meeting where changes to Federal Aviation Regulations and flight-test problems are discussed. Although these procedures give FAA information about the examiners' personal knowledge and technical skill, they do not give them information about the adequacy of actual flight tests given by the examiners.

We visited four FAA district offices in its Northwest region to determine what procedures were used to obtain information about the actual flight tests being given by examiners.

Number of tests observed by
FAA inspectors in 1974

<u>Tests</u>	Ground-phase <u>tests</u>	Flying-phase <u>tests</u>
277	3 to 5	5
930	-	5 (note)
716	-	30
548	-	-

Note: Officials said that they could not recall whether the tests were for private pilots, commercial pilots, or instrument ratings.

Direct observation as a means of monitoring flight-tests given by designated examiners has some inherent limitations. The presence of the observer could affect the thoroughness of the test and also the examiner's decision on whether the applicant's performance was satisfactory. Another limiting factor is, according to FAA, that most flight-tests are conducted in two-seat airplanes with no space for an FAA observer.

There is no other FAA mechanism for monitoring flight-tests given by examiners. However, one district office chief said that his inspectors occasionally interviewed applicants or their flight instructors to determine what questions, maneuvers, and procedures were covered in the flight-test and that these interviews were not part of any systematic monitoring of examiner's flight-tests.

He said also that one examiner occasionally volunteered a checklist showing the items included in his flight-test. The checklist, which had been provided by the FAA district office, covered many procedures and maneuvers which could be included in a flight-test. It included information on the examiner's review of the applicant's preparation and training, the items tested to demonstrate the applicant's knowledge of operating limitations and FAA regulations, and the items tested to demonstrate the applicant's proficiency for cross-country flying. It also included information on whether each item was successfully completed and an evaluation of the pilot's competency and safety.

CONTENT OF FLIGHT-TESTS

At the time of our review, there were two FAA-approved flight-test guides in use. The old guide will be phased out by January 1977 and will be replaced by a new guide that went into effect in November 1973.

Tests under the old guide

We interviewed 50 examiners to find whether the flight-tests they conducted complied with the old guide. FAA regulations required examiners to test applicants on over 80 mandatory procedures and maneuvers, listed in the old guide, such as various types of takeoffs and landings, flight at minimum controllable speeds, cross-country flight and flight planning, and recovery from in-flight emergencies.

A questionnaire covering 30 of the mandatory test items, such as takeoff, landing, stall maneuvers, and emergency operation procedures, was either discussed with, or presented to, the examiners, and they were requested to indicate which items were included in flight-tests given to applicants for single-engine-land private pilot licenses. Mandatory items that were not listed in our questionnaire included fundamental items, such as starting the engine, taxiing, and normal takeoff and landing, which would be necessary to conduct a routine flight. The 50 examiners who completed the questionnaire conducted about 75 percent of the private pilot flight-tests given during 1974 in the four FAA districts included in our review.

The questionnaire replies showed that, of the 50 examiners, 21 never complied with FAA's old flight-test guide because one or more of the mandatory procedures and maneuvers were always omitted from the flight-tests they conducted. Also, most examiners omitted mandatory procedures

and maneuvers from 50 percent or more of the flight-tests. Only five examiners indicated that mandatory items listed in the questionnaire were always tested.

There was some degree of noncompliance with all but two of the mandatory items in the questionnaire. The more important items frequently omitted from the tests were crosswind, short-field and soft-field takeoff and landing maneuvers, and the ability to recognize and recover from several stall* conditions that could be encountered during flight. FAA reports show that nearly half of the general aviation accidents occur during takeoff and landing. Stall-type accidents have historically accounted for more fatal and serious injuries than any other type of general aviation accident. During 1973 stall-type accidents accounted for 35 percent of all fatal general aviation accidents.

We also presented our questionnaire to 138 recently licensed private pilots. Of the 94 pilots who responded, 55 indicated they were flight-tested under the old guide. Thirty-eight of the 55 pilots indicated their flight-tests failed to include critical takeoff, landing, and stall maneuvers, as follows:

- 21 pilots were not required to demonstrate the ability to make crosswind landing.
- 6 were not required to demonstrate the ability to make short-field landing.
- 11 were not required to demonstrate the ability to recognize and recover from an approach-to-landing stall with power.

The following table indicates the extent of non-compliance with various mandatory maneuvers and procedures covered by our questionnaire as indicated by the examiners and pilots we contacted.

*A loss of lift due to the breakdown of airflow over the wing.

<u>Mandatory maneuver or procedure</u>	<u>Percent of pilots not required to perform</u>	<u>Percent of examiners not always requiring performance</u>
Takeoff and departure stalls	5	4
Approach-to-landing stalls with power	20	28
Crosswind takeoff	40	48
Crosswind landing	38	48
Soft-field takeoff	24	24
Soft-field landing	25	28
Short-field takeoff	18	14
Short-field landing	11	12
Emergency operation of airplane equipment	67	62

Tests under the new guide

As of November 1, 1973, a new FAA flight-test guide became effective. This new guide was designed to insure that pilot examiners require applicants to demonstrate that they are competent in basic airmanship. FAA believed that under the old guide pilots could be trained and tested on a few practice maneuvers rather than in basic airmanship.

The mandatory items of the old guide were replaced by 10 general areas of testing, referred to as pilot operations, such as takeoffs and landings, emergency operations, and flight at critically slow airspeeds. The new guide requires applicants to answer a variety of questions and to do a variety of procedures and maneuvers selected by the examiner to demonstrate competency in each of the 10 pilot operations. Specific maneuvers and procedures are listed under each pilot operation, and the examiner selects those procedures and maneuvers he believes each applicant should be required to do. Generally, satisfactory performance of one procedure or maneuver under each pilot operation is sufficient to meet FAA's minimum requirements. For example, demonstration of the ability to perform an S turn across a road is one of five listed procedures or maneuvers that the examiner could require a pilot to perform to demonstrate his ability under the pilot operation "Flight Maneuvering by Reference to Ground Objects". However, an examiner may require an applicant to perform all listed procedures and maneuvers.

Of the 50 examiners we talked with, 30 said that their flight-test practices under the new guide were or would be identical to their practices under the old guide, requiring no additional procedures or maneuvers. Therefore, it appears that the objective of upgrading the pilot-licensing process by revising the guide may not be achieved.

Of the 94 pilots who responded to our questionnaire, 39 indicated that their flight-tests were made under the new guide. These pilots indicated that their flight-tests varied considerably in the critical area of takeoff and landing maneuvers. Of these 39 pilots, 16 indicated that their flight-tests failed to comply with the new guide because certain required takeoff and landing maneuvers were not tested. The new guide requires that, under the pilot operation "Takeoffs and Landings", an applicant demonstrate his ability to make normal and crosswind takeoffs or normal and crosswind landings. Of the 16 pilots, 15 indicated that they had not been tested on either a crosswind takeoff or landing. Two of these 15 pilots and 1 other pilot indicated that they were not adequately tested in the pilot operation "Maximum Performance Takeoffs and Landings". Under that pilot operation, an applicant is required to demonstrate the ability to satisfactorily perform at least one of the four following takeoff or landing maneuvers:

- Short-field takeoff
- Short-field landing
- Soft-field takeoff
- Soft-field landing

These three pilots indicated that they were not required to perform any of these maneuvers.

Old and new guide comparison

Flight-tests meeting only the minimum requirements of the new guide would be far less comprehensive than flight-tests required by the old guide. For example, although the old guide required applicants to demonstrate as many as six different types of landings, the new guide could be satisfied by demonstrating only two. Similarly, under the old guide, applicants were required to demonstrate the ability to recognize and recover from eight different stall conditions whereas under the new guide, applicants are not required to demonstrate the ability to recognize and recover from any stall condition.

CHAPTER 3

NEED TO RESTRUCTURE THE BIENNIAL FLIGHT REVIEW PROGRAM

FAA initiated a biennial flight review program in 1974, to insure that active pilots remain competent to safely exercise the privileges of their pilot licenses. Implementation of this biennial flight review program was delegated almost entirely to flight instructors and pilot examiners. FAA did not, however, provide specific standards for conducting the biennial flight reviews and is not actively monitoring the program.

We found that (1) persons conducting the reviews disagree on what constitutes an acceptable flight review, (2) FAA does not have any information on the procedures and maneuvers which have been included in the flight reviews, and (3) FAA does not have information on which pilots have complied with the requirements. Furthermore, FAA is not making an appreciable effort to insure that pilots do receive biennial flight reviews.

EVOLUTION OF THE BIENNIAL FLIGHT REVIEW

In December 1967, FAA proposed a change to Part 61 of the Federal Aviation Regulations which would have required periodic flight instruction or proficiency checks for certain pilots. In justifying the proposal, FAA said that many accidents could be ascribed to deterioration of basic airmanship and skill and to pilots' failure to keep abreast of new developments and operational procedures.

FAA withdrew the proposed change 13 months later. One of the principal reasons cited for withdrawing the change was that the supply and the availability of qualified flight instructors were insufficient to handle the proposed flight instruction and proficiency checks without undue delay. In 1970 we reported to the Secretary of Transportation on general aviation accidents (B-164497 (1), Apr. 3, 1970) and noted that FAA's finding of an insufficient number of flight instructors was based on inconclusive information. Also, we recommended that FAA be required to study the matter further and that the Secretary require the Administrator of FAA to have a comprehensive study made of general aviation accidents with a view to identifying the reasons for so many pilot errors and determining the necessary corrective measures.

On March 5, 1971, the Secretary of Transportation directed the Assistant Secretary for Safety and Consumer Affairs to study ways to reduce aviation accident rates. One problem area identified by the study was the need for a continuing check of pilot proficiency. The Assistant Secretary recommended that a pilot's competency and knowledge of safety regulations be reviewed every 2 years. FAA agreed that a biennial flight review was necessary to insure that all private pilots maintain their qualifications. In March 1972 FAA proposed a regulation requiring pilots to obtain a biennial flight review.

In January 1973 Part 61 of the Federal Aviation Regulations was revised to require biennial flight reviews. The regulation provides that after November 1, 1974, no person may act as pilot in command of an aircraft unless he has, within the preceding 24 months, accomplished a flight review given by an appropriately licensed instructor or other person designated by FAA. The biennial flight review is not considered to be a renewal of the pilot's license, and the license is not surrendered or canceled if a review is not completed. The pilot is in violation of the flight review regulation only if he pilots an aircraft; he needs only to obtain a flight review to exercise the full privileges of his license (assuming medical and other requirements have been met).

A flight review consists of a review of the current general operating and flight rules of Part 91 of the Federal Aviation Regulations and a flight review of the maneuvers and procedures which, in the discretion of the person giving the review, are necessary for the pilot to demonstrate that he can safely exercise the privileges of his pilot license. When the review is satisfactorily completed, an entry is to be made in the pilot's logbook and signed by the person giving the review.

NONCOMPLIANCE WITH FLIGHT REVIEW REGULATION

FAA is not making an appreciable effort to determine whether private pilots have complied with the flight review regulation. There is no requirement that either the person giving the review or the pilot receiving the review advise FAA that a review has been made. FAA does not have records on who has or who should have received a review. Compliance with the biennial flight review requirement can only be determined by checking with each of the 300,000 pilots and inspecting their logbooks to determine that the flight review has been satisfactorily accomplished.

Both FAA and NTSB have instructed field personnel to try to determine during accident and incident investigations* whether pilots involved in accidents had accomplished the required flight review. As of April 15, 1975, NTSB headquarters had received this information for 36 private pilot accidents. NTSB records showed that 5 of the 36 pilots had not complied with the flight review requirement.

According to FAA officials in the four district offices we visited, they try to determine whether the flight review regulation has been complied with during their investigation of other matters, such as aviation incidents, complaints, or violations of other FAA regulations. An official at one office told us that his office found two cases of noncompliance with the flight review regulation during incident investigations.

Many of the pilot instructors and examiners we talked with told us that they knew of specific instances where pilots were not complying with the flight review regulation. They said that they knew of about 300 cases where the pilots had been unable to rent airplanes because they had not complied with the regulation. Other instructors and examiners expressed the same opinion; however, they could not cite specific cases. Also, many of the instructors and examiners we checked with expressed the opinion that not all pilots were aware of the flight review regulation.

STANDARDS FOR CONDUCT OF FLIGHT REVIEW ARE NOT CLEAR

The biennial flight review affects all pilots, regardless of the license they hold; however, FAA did not establish separate standards for each type of license. The FAA order covering the flight review points out that there is no specific amount of time required for giving a flight review and that there are no specific requirements for particular items or maneuvers to be reviewed. The order also points out that the flight review is to determine overall piloting ability and that the time required for the review will vary from pilot to pilot.

We talked with 65 pilot instructors and examiners to determine whether there was agreement on what procedures,

*In general, an accident is an occurrence involving the operation of an aircraft in which someone dies or is seriously injured or in which the aircraft receives substantial damage. An incident is an occurrence, other than an accident, which affects or could affect the aircraft's safety of operation.

maneuvers, and other material should be covered in a flight review. We did not try to ascertain the specific procedures, maneuvers, and questions covered in actual flight reviews because actual reviews could vary from pilot to pilot. Instead, we determined the maneuvers, procedures, and questions that the various instructors and examiners would include in a flight review of a hypothetical private pilot who apparently needed a thorough review and was potentially an unsafe pilot.

We prepared a questionnaire covering 58 piloting procedures, maneuvers, and questions about FAA regulations and other matters that could be included in a flight review. Many of these procedures, maneuvers, and questions were required to be included in an FAA-approved flight-test for private pilot licensing. We discussed the questionnaire with the instructors and examiners and asked them to indicate which of the procedures, maneuvers, and questions they would include in a flight review they would give to a hypothetical pilot.

Our hypothetical pilot was described as a private pilot from the local area with a single-engine-land rating who had had his license for 4 years, flew for pleasure, had a total flight time of 250 hours, had not flown in the past 12 months, and had never owned an airplane. This description was developed on the basis of discussions with various FAA and NTSB officials, instructors, and examiners who agreed that the pilot described above would be in need of a thorough flight review.

The instructors and examiners did not agree that any one of the 58 procedures, maneuvers, and questions should be covered in a flight review for our hypothetical pilot. All instructors agreed that the pilot should (1) be questioned about basic visual flight rules and weather minimums, (2) be required to demonstrate how to use a radio for voice communication, and (3) demonstrate the ability to recover from takeoff and departure stalls.

Various takeoff and landing maneuvers were among the important items which many of the instructors and examiners said would not be included in their reviews. Of the 26 examiners we talked with, only 19 said they would require the pilot to demonstrate a soft-field takeoff and only 17 said they would require a soft-field landing. Nearly all of the instructors indicated that a soft-field takeoff and landing should be included in the review. Eight of the examiners and seven of the instructors said that the review

would not include a crosswind takeoff, and seven of the examiners and seven of the instructors said that the review would not include a crosswind landing.

The examiners and instructors said that various stall maneuvers would have been omitted from the flight reviews. For example, of the 39 instructors we talked with, 9 said that approach-to-landing stalls with power would not be reviewed, and 9 said that accelerated stalls would also not be reviewed. Only 3 of the 26 examiners said that approach-to-landing stalls with power would not be reviewed and 13 said that accelerated stalls would not be reviewed.

We also asked the instructors and examiners for estimates of their average time for a flight review and their average charge. The information provided to us showed a considerable variation in the average time required for a biennial flight review and the charge. For example, the average time for the oral portion of the review by instructors ranged from 18 minutes to 2-1/2 hours, with an average of 67 minutes. A similar range was found for the examiners; however, as a group, examiners estimated an average of 46 minutes for the oral portion of the review. The time estimated by examiners on the flying portion ranged from 40 minutes to 1-1/2 hours, with an average of about 1 hour. Instructors estimated an average of about 1 hour and 10 minutes for the flying portion of the review. In a few cases, the pilots conducting reviews said that they did not charge for their time. However, for those who indicated that they did, the charge ranged from \$6.75 to \$50.

CHAPTER 4

CONCLUSIONS, AGENCY COMMENTS AND OUR EVALUATION, AND RECOMMENDATIONS

CONCLUSIONS

FAA's present monitoring system provides little or no insurance that flight-tests conducted by designated examiners meet FAA standards. Pilot licenses have been issued to applicants even though they were not required to demonstrate that they could meet FAA flight-test standards.

The objective of the new flight-test standards, to improve flight tests, probably will not be met because many examiners plan to continue their old testing practices. Tests under the new standards will be essentially the same as tests under the old standards. *Relies on the judgment of the examiners.*

FAA has not adequately defined the content or performance standards of an acceptable biennial flight review, has not obtained information on the procedures, maneuvers and other matters covered in the review, and has not kept information on pilots' compliance with the flight review requirement.

See 14
FAA's control over flight-tests and reviews should include information on the content of the tests or reviews and some indication of the pilots' level of performance. This information could be obtained by requiring each examiner and instructor to complete an FAA-approved checklist showing those maneuvers and procedures included in the flight-test or flight review and the examiner's or instructor's appraisal of the pilot's performance. The checklist should list all maneuvers and procedures FAA considered appropriate for testing a pilot, with instructions to check the ones which were included in each test or review and to assess the pilot's performance.

The information FAA obtains from instructors and examiners should be validated, on a test basis, to insure its reliability. The content of the flight-test or review, as shown on the checklist, could be validated with the pilot, but evaluating the pilot's performance is a more difficult matter. Direct observation is not always possible and, when it is possible, it has the inherent weakness of possibly affecting the examiner's or instructor's judgment.

Retesting some pilots on the maneuvers and procedures in the original test or review, as shown on the checklist, would seem to be an effective means of validating the examiners' and instructors' evaluations. However, retesting

for reasons other than due cause, such as dangerous operation of an airplane, could not be enforced under existing legislation.

AGENCY COMMENTS AND OUR EVALUATION

In commenting on this report (see app. I), the Department of Transportation said that additional guidelines were needed to strengthen biennial flight reviews and that standardized guidelines have been developed in cooperation with the aviation industry. FAA will issue an advisory circular concerning them.

The Department said that its procedures were adequate for enforcing the requirement that pilots obtain biennial flight reviews. It contends that obtaining information on which pilots have and should have received biennial flight reviews would not be practicable because of the varied methods of complying with the requirement, such as substituting another type of certificate and obtaining military experience. The Department said also that the recordkeeping associated with such a procedure would place an enormous burden on FAA and the industry, which could not be justified, because the biennial flight review is only one of many regulatory requirements on pilots. The Department considers pilot logbook entries for all currency requirements, such as the biennial flight review, to be adequate for enforcement purposes since the logbooks must be made available for FAA inspection.

Although the Department believes that FAA's procedures for enforcing the biennial flight review requirement are adequate, our review showed that FAA is devoting little effort to its enforcement. Thus, many private pilots may not obtain the required reviews.

After an individual obtains a private pilot license, the one mandatory check of his competency is the biennial flight review. FAA instituted the biennial flight review requirement because of (1) the high accident rate among private pilots, and (2) the recognition by the aviation community that skills decrease with the lack of constant flight experience. Without an effective means of insuring compliance, however, the effectiveness of the requirement is undermined.

There are about 305,000 active private pilots, according to FAA, for which it maintains centralized computer records. We believe that information on pilots

who obtain biennial flight reviews could be added to the computer records with little effort on FAA's part. With such information available to FAA, follow-up action could be limited to pilots for whom FAA had no record of a current biennial flight review. An FAA reminder of the flight review requirements to these pilots, in our opinion, could greatly improve compliance with the requirement.

The Department did not agree that information on the content of flight tests and on examiners'/instructors' appraisals of pilot performance should be obtained. The Department said that the examiner or instructor is presently provided with flight test guidance which explains requirements and suggests contents and procedures, but or does not require particular procedures or maneuvers. The selection of test procedures or maneuvers, according to the Department, is left to the judgement of the examiner based on his knowledge of, and experience with, the individual pilot. The Department also said that FAA (1) requires examiners to certify that a pilot is competent to perform all required pilot operations and that applicants have been tested in all required areas, and (2) has, for some time, provided examiners with copies of flight instructor evaluation forms which FAA has used to monitor the quality of the examinations.

It is precisely because the new flight-test guide allows for and relies on the judgement of examiners that we believe it important for FAA to obtain specific information on the maneuvers and procedures tested on the flight-tests. FAA needs some information, even on a sample basis, to satisfy itself that regulatory requirements of private pilot flight-tests are being satisfied by the examiner.

The flight instructor evaluation form was designed for use by examiners and inspectors to help FAA evaluate and monitor flight instructor activities. Use of the form is optional. We obtained information about the use of the form from FAA officials at five district offices--four in the Northwest region and one in the Eastern region. In one district we were told it has not been used; another district had just started using the form; a third district recently stopped use of the form; the fourth office was using it to monitor examiners; while the remaining office was using it to evaluate instructors. If the use of this checklist at these five locations indicates use in other districts, we believe

it is not providing FAA enough information to monitor the quality of examinations.

RECOMMENDATIONS TO THE
SECRETARY OF TRANSPORTATION

We recommend that, to improve controls over flight-tests and biennial flight reviews, the Secretary of Transportation direct the Administrator of FAA to:

- Clarify its standards for the biennial flight reviews.
- Obtain information on who has completed biennial flight reviews so that the requirement can be better enforced.
- Obtain information on the content of flight-tests and biennial reviews and the examiners' and instructors' appraisals of pilots' performances and also use this information as a basis for evaluating the quality of flight-tests and biennial reviews.

Rec.



OFFICE OF THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

ASSISTANT SECRETARY
FOR ADMINISTRATION

November 21, 1975

Mr. Henry Eschwege
Director
Resources and Economic Development
Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

This is in response to your letter of September 25, 1975, requesting our comments on the General Accounting Office (GAO) draft report on controls needed over private pilot licensing. The GAO concludes that the Federal Aviation Administration (FAA) does not adequately monitor biennial flight reviews, does not know which pilots have taken the required review, and is not taking any significant enforcement action. GAO recommends to the Secretary specific actions which FAA should take to improve its controls over the flight tests and reviews.

The Department of Transportation agrees in part with the GAO recommendations. The Department agrees with the recommendation that additional guidelines are needed to strengthen the biennial flight reviews. FAA has been working with the aviation industry to develop industry guidelines for use by persons conducting the biennial reviews. Standardized guidelines were completed in October, and they are now under review and FAA will issue an advisory circular concerning their availability and content.

GAO recommends that FAA (1) obtain information on who has completed biennial flight reviews and (2) obtain information on the content of flight tests and reviews as well as the examiners' and instructors' appraisals of pilots' performance. FAA disagrees with these two recommendations. The first is impracticable and would place the enormous burden of recordkeeping on the agency and industry which could not be justified. As for the second, the Department does not visualize any significant benefit in obtaining information on the content of flight tests. (See GAO note, p. 23.)

I have enclosed two copies of the Department of Transportation's reply to the draft report which addresses each recommendation in detail.

Sincerely,


William S. Heffelfinger

Enclosure
(two copies)

DEPARTMENT OF TRANSPORTATION REPLY
TO
GAO DRAFT REPORT OF SEPTEMBER 25, 1975
ON
IMPROVED CONTROLS NEEDED OVER
PRIVATE PILOT LICENSING

SUMMARY OF GAO FINDINGS AND
RECOMMENDATIONS

The General Accounting Office (GAO) states that substantial numbers of pilot examiners did not comply fully with Federal Aviation Administration (FAA) guidance in testing applicants for pilot's licenses. The report states that many pilots were not tested on certain critical aircraft maneuvers and pilot abilities. The GAO further states that FAA does not adequately monitor biennial flight reviews, does not know which pilots have taken the required review, and is not taking any significant enforcement action. The GAO concludes that FAA guidance on biennial flight reviews has been inadequate, and the instructors and examiners conducting these reviews have widely varying opinions on what procedures, maneuvers, and other matters should be reviewed.

The GAO recommends that the Secretary of Transportation require FAA to (1) clarify standards for the biennial flight reviews, (2) obtain information on who has completed biennial flight reviews so that the requirement can be enforced, (3) obtain information on the content of flight tests and reviews as well as the examiners' and instructors' appraisals of pilots' performance, (See GAO note, p.23.)

DEPARTMENT OF TRANSPORTATION POSITION
ON
GAO RECOMMENDATIONS

1. We agree that additional guidelines are needed to strengthen the biennial flight reviews. FAA personnel have been working with representatives of the aviation industry to develop industry guidelines for use by persons conducting the biennial reviews. A consensus of ideas and concepts has been reached, and standardized guidelines were completed in October. They are now under review and the FAA will issue an advisory circular concerning their availability and content.

2. We do not agree that information regarding those individuals completing biennial flight reviews should be obtained for use in enforcement. This subject was thoroughly evaluated during the development of the biennial flight review. Due to the varied methods of compliance with the regulation, such as substituting another type of certificate or accepting military experience in lieu of tests, a requirement of this nature is not practical. It would be almost impossible for the FAA to gather and maintain recent experience records for the more than one million persons holding pilot certificates. Further, the enormous burden that such recordkeeping would place on the agency and industry cannot be justified since the biennial flight review is only one of many requirements specified by the regulations. Pilot logbook entries for all currency requirements are considered to be adequate for enforcement purposes since the logbooks must be presented for inspection upon demand.
3. We also disagree with GAO's recommendation that information on the content of flight tests and on examiners'/instructors' appraisals of pilot performance should be obtained. The examiner or instructor is presently provided with flight test guidance which explains regulatory requirements and suggests proper content and procedure. This guidance does not require the inclusion of particular procedures or maneuvers. These are left to the judgment of the examiner based upon his knowledge of, and experience with, the individual pilot. In view of this, we do not see any significant benefit in obtaining information on the content of flight tests which, in any event, would probably only reiterate our requirements.

Regarding examiners' appraisal of pilots' performance, the FAA currently requires them to certify that an applicant is competent to perform all required pilot operations. In addition, they must certify that applicants have been tested in all required areas.

The FAA has, for some time, provided examiners a Flight Instructor Evaluation form through which the FAA has remained acquainted with the activity level of schools, individual instructors and quality of instruction. This has been used to monitor the quality of both instruction and examination.

(See GAO note)


Acting Administrator

GAO note: Deleted comments refer to material discussed in our draft report but not included in this final report.

PRINCIPAL OFFICIALS OF
THE DEPARTMENT OF TRANSPORTATION
RESPONSIBLE FOR ADMINISTERING ACTIVITIES
DISCUSSED IN THIS REPORT

Tenure of office
From To

DEPARTMENT OF TRANSPORTATION

SECRETARY OF TRANSPORTATION:

William T. Coleman, Jr.	Mar. 1975	Present
John T. Barnum (acting)	Feb. 1975	Mar. 1975
Claude S. Brinegar	Feb. 1973	Feb. 1975
John A. Volpe	Jan. 1969	Feb. 1973
Alan S. Boyd	Jan. 1967	Dec. 1968

FEDERAL AVIATION ADMINISTRATION

ADMINISTRATOR:

John L. McLucas	Nov. 1975	Present
James E. Dow (acting)	Apr. 1975	Nov. 1975
Alexander P. Butterfield	Mar. 1973	Mar. 1975
John H. Shaffer	Mar. 1969	Mar. 1973
David D. Thomas (acting)	Aug. 1968	Mar. 1969
Gen. William F. McKee	July 1965	July 1968
Najeeb E. Halaby	Feb. 1961	July 1965

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