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REPORT TO THE CONGRESS

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BY THE COMPTROLLER GENERAL
OF THE UNITED STATES



Federal Aviation Administration's Airport Certification Program: Has It Resulted In Safe Airports?

Department of Transportation

Although the certification program has improved airport safety, the standards have been developed without benefit of detailed research and analysis of their effect (1) in improving safety or (2) on the costs to implement.

This lack of objective bases for the standards made it impossible for GAO to determine whether the airport certification program has resulted in an adequate level of safety.

Airports serving only commuter airlines should be included in the program. The Department of Transportation said it does not have legal authority to include them, but GAO believes it does have the authority.

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-164497(1)

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

This report discusses the Federal Aviation Administration's efforts to upgrade the safety of airports used by the traveling public. 3.

Our review was made 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.

A handwritten signature in black ink, appearing to read "Thomas A. Boardman".

Comptroller General
of the United States

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ABBREVIATIONS

CAB	Civil Aeronautics Board
FAA	Federal Aviation Administration
GAO	General Accounting Office

D I G E S T

A Federal Aviation Administration (FAA) certification program, intended to raise the standards of safety at major U.S. airports, has resulted in an upgrading of airport safety through such improvements as

- more and better firefighting and rescue equipment,
- less hazardous obstructions to aircraft, and
- more and better emergency plans. (See p. 4.)

However, GAO could not determine whether the safety level was adequate because FAA had no objective bases for establishing what the standards of safety at airports should be.

The program appears to have been put into practice in such a way as to avoid substantial economic and technical difficulties at airports while encouraging improvements in their safety features. GAO found that FAA:

- Developed proposed standards and then deleted or diluted seemingly important standards during the rulemaking process, all without the benefit of studies indicating the effect on safety. (See p. 7.)
- Did not adopt a standard for measuring runway slipperiness because a method for doing so had not been selected. (See p. 9.)
- Wrote the standards using generalities but without developing any criteria for their enforcement. (See p. 10.)

- Did not conduct on-site inspections of most airports prior to certification. Subsequent inspections disclosed the airports did not meet the standards. (See p. 10.)
- Awarded limited certificates to airports serving nonscheduled air carrier flights without requiring the airports to meet any safety standards. (See p. 11.)
- Granted numerous exemptions to the standards which have remained outstanding for extended periods of time, although correction had been promised. (See p. 13.)

Airports serving only commuter airlines were not included in the airport certification program, although some of these airports serve more flights and passengers than some certificated airports.

From a joint inspection by GAO and FAA of four airports serving only commuter airlines, GAO concluded that the airports did not meet the standards that would be required by FAA's airport safety regulations in such important respects as firefighting and rescue equipment and emergency plans. (See p. 20.)

FAA should:

- reevaluate the bases of its standards for airport safety and the effects of exemptions (see p. 15),
- adopt a standard for measuring runway friction (see p. 15),
- develop specific criteria to replace generalities used in the standards (see p. 15),
- develop standards for airports awarded limited certificates (see p. 15),

--inspect airports on site for compliance with standards prior to certification (see p. 15), and

--include in its certification program airports which serve commuter air carriers exclusively (see p. 21).

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1/2 The Department of Transportation said that (1) the bases of the standards would be reevaluated, giving attention particularly to those for which numerous exemptions have been requested, (2) the generalities would be replaced with more specific criteria, and (3) in the future, airports would be inspected prior to receiving operating certificates. (See p. 15.) 29

As to the need for measuring runway friction, the Department said further tests and studies are necessary before determining the best equipment and adopting a standard. In view of previous disagreements within FAA on this subject, GAO believes that only involvement personally by the Administrator will produce timely completion of the studies and adoption of a standard. (See p. 16.)

According to the Department, overall standards are not needed for airports awarded limited certificates. However, GAO believes that, to guard against the public using airports with marginal or inadequate safety features, specific criteria and program standards are needed. (See p. 16.)

GAO presented a sound argument, the Department said, for the inclusion of airports serving only commuter airlines in the certification program, but it considers that additional legislative authority is needed. GAO does not agree that such additional legislative authority is necessary. (See p. 20.)

CHAPTER 1

INTRODUCTION

The Federal Aviation Administration (FAA), under the Federal Aviation Act of 1958 (49 U.S.C. 1421), promotes flight safety of civil aircraft by prescribing minimum safety standards (Federal Aviation Regulations) for airmen and aircraft. In the case of airport operations, FAA's initial role was primarily one of determining the Nation's airport requirements, encouraging airport development, establishing advisory standards, and making available information on airport operations and utilization.

In March 1961, the President instructed FAA to develop national aviation goals. The task force assigned to develop these goals reported that FAA should develop and issue airport safety standards and use them to develop a national airport evaluation system to provide mandatory airport safety standards.

Because of an overall improvement in safety, however, in May 1962, FAA decided to withhold issuance of mandatory airport safety standards to see if the trend continued. In February 1966, FAA again considered establishing airport safety standards but decided that justification for such action was lacking.

In February 1970 we proposed that the Secretary of Transportation have FAA implement an airport safety inspection program. In June 1970 the Department of Transportation told us FAA would initiate such a program as part of its overall implementation of the Airport and Airway Development Act of 1970 (49 U.S.C. 1701), which had been passed in May 1970. Our findings were presented to the Congress in our report entitled "Airport Safety Inspection Program Needed to Improve Flight Safety of Civil Aircraft" (B-164497(1), Jan. 15, 1971).

The Airport and Airway Development Act amended the Federal Aviation Act of 1958 (49 U.S.C. 1421) and authorized FAA to establish minimum safety standards for the operation of airports and to award operating certificates to airports meeting these standards. The act prohibited the operation of an airport after, May 1972, without or in violation of the FAA operating certificate.

The act provided that the airports to be certificated were those serving air carriers having certificates of public convenience and necessity issued by the Civil Aeronautics Board (CAB). CAB issues these certificates to carriers that

are fit, willing and able to serve specific routes when such service is required by the public. After being awarded the certificate, the carrier cannot abandon the service, in whole or in part, unless CAB approves.

FAA delayed establishing minimum safety standards to accommodate the diverse views of the aviation community. Consequently, FAA requested and received from the Congress a 1-year extension to complete airport certifications. Thus, all airports serving CAB-certificated air carriers should have been certificated by May 21, 1973.

In June 1972, FAA amended the Federal Aviation Regulations to include a new section which established the rules and standards governing the certification program for the 496 airports serving CAB-certificated air carriers operating large aircraft (other than helicopters) on a regular schedule. In April 1973, the regulations were amended further to require certification for about 500 additional airports serving nonscheduled flights by CAB-certificated carriers.

The certification regulation applies only to airport operations which are controlled by the airport owner/operator. It does not cover air traffic control or other FAA-directed operations.

PROGRAM ADMINISTRATION

The Airport Certification Program, administered by FAA's Airports Service, is staffed by 6 headquarters and 29 regional personnel. FAA headquarters provides technical assistance and program guidance. The regional offices determine the airports' compliance with the regulations, issue operating certificates, and grant exemptions.

SCOPE OF REVIEW

Our review was directed toward evaluating the program's effectiveness in improving airport safety. We examined pertinent laws, regulations, documents, records, reports, and files relating to airport certification and discussed the matters pertinent to our review with FAA headquarters and regional office officials responsible for the program.

We conducted our review primarily at FAA headquarters in Washington, D.C., and at FAA's eastern region. We performed limited reviews in FAA's New England and southern regions to determine whether conditions noted in the eastern region were limited to that region and to inquire into program activities that were not often necessary in the eastern region. These three regions encompass 150 of the Nation's

496 originally certificated air carrier airports. Also, jointly with FAA, we inspected the facilities and operations at four airports not subject to the certification program.

CHAPTER 2

IMPROVEMENTS RESULTING FROM THE AIRPORT CERTIFICATION PROGRAM

Although off to a slow start, the airport certification program has improved safety at many airports. The most important achievements of the airport certification program have been in the the areas of upgrading firefighting and rescue equipment, reducing hazards caused by obstructions, and establishing and improving emergency plans. FAA told us that another important but less tangible improvement has been airport sponsors' heightened awareness of safety obligations.

UPGRADING FIREFIGHTING AND RESCUE EQUIPMENT

FAA's certification regulation prescribes the amount and type of firefighting and rescue equipment which must be available at an airport based on the length of aircraft used by air carriers. The regulation requires that airports (1) have prescribed quantities of firefighting materials on hand, (2) provide adequate shelter for emergency vehicles and show that they (a) can meet established response time and (b) have an acceptable communication and alert system, and (3) have appropriately clothed rescue personnel who are qualified to man equipment.

As of March 1975, 289 of the 496 initially certificated airports met the requirements for firefighting and rescue equipment. Although the other airports have been granted exemptions to the requirements, they have applied for Federal aid under FAA's Airport Development Aid Program to upgrade their equipment. Firefighting and rescue equipment is eligible for 82 percent Federal financing.

REDUCING HAZARDS CAUSED BY OBSTRUCTIONS

The certification regulation requires that each object identified as an obstruction within the area of the airport's control must be adequately lighted and marked. Initial inspections at the 48 certificated airports in FAA's eastern region disclosed that 10 of them had obstructions which required removal or breakway mounting, lighting, or marking. The airports were so notified at various times in 1973. As of December 12, 1974, eight of the airports reported that they had fully corrected the listed violations; FAA verified the corrections made by five of those airports. Another of the 10 airports promised that corrective action would be taken. Information was not available on the status of action at the remaining airport.

ESTABLISHING AND IMPROVING
COMPREHENSIVE EMERGENCY PLANS

The certification regulation requires that each airport have an emergency plan to minimize personal and property damage by insuring prompt response to all emergencies and other unusual conditions. This plan is required to be coordinated with law enforcement, firefighting and rescue agencies, medical facilities, principal tenants of the airport, and other interested parties. The airport also is required to demonstrate that airport personnel having duties and responsibilities under the plan are familiar with their assignments and that they are properly trained.

FAA inspections in the eastern region showed that 21 of the 48 airports did not have satisfactory plans. As of December 12, 1974, however, only four of these airports had not yet complied with this requirement. Of the 21 unsatisfactory plans, 18 did not include signed mutual aid agreements with firefighting, police, and medical authorities; the other 3 were otherwise incomplete.

In FAA's New England region, inspections made after airport certification was granted to the region's 18 airports revealed that emergency plans at 5 of the airports had not been distributed to airport personnel as required by FAA. Later inspections showed that four of the five airports had corrected this shortcoming.

CORRECTING OTHER SAFETY ITEMS

Some of the other substandard conditions frequently cited by FAA inspectors were:

- Faded or inappropriate runway and taxiway markings.
- Cracked or other substandard pavement conditions.
- Insufficient marking of ground vehicles and fuel tanks.
- Inadequate fuel area security.
- Failure to maintain adequate records of daily inspections and training given firefighting personnel.
- Incorrect lenses on threshold lights.

As of December 12, 1974, FAA followup inspections at fully certificated airports in the eastern region showed that many substandard conditions of the types found in

earlier inspections had been corrected. Of 113 substandard conditions requiring correction noted at 15 airports during the initial inspection, 25 conditions were later verified by FAA as having been corrected; 45 conditions were reported by airport officials as being corrected, but they were not verified by FAA; and 22 conditions were under promise of correction. The remaining 21 either no longer required action because of a regulation change or their status was not determinable.

CHAPTER 3

ARE AIRPORTS NOW SAFE?

Within a 3-year period, FAA was required by law to develop and establish minimum airport safety standards and to certificate about 1,000 airports. FAA made a good and necessary start toward a comprehensive airport safety program. However, FAA:

- Developed proposed standards and then deleted or diluted seemingly important standards during the rule-making process, all without the benefit of studies indicating the impact on safety.
- Had not adopted a standard for measuring runway slipperiness because a method for doing so had not been selected.
- Used generalities in the standards without developing any criteria for their enforcement.
- Did not physically inspect most airports prior to certification. Subsequent inspections disclosed the airports did not meet the standards.
- Awarded limited certificates to airports serving non-scheduled CAB-certificated carriers without requiring the airports to meet safety standards.
- Granted many airports exemptions to parts of the regulations, many of which were still outstanding in March 1975 although the airports had promised to take corrective action.

Because of the lack of research or other objective information on why the individual standards were established at their respective levels, we were not able to assess the adequacy of the standards or the effects of deviations from the standards.

BASIS FOR STANDARDS

During the rulemaking process, proposed certification standards developed by FAA were either deleted or diluted. Except for certain aspects of the airports' firefighting and rescue needs, FAA did not have the benefit of studies indicating the impact the proposed standards and the changes to them would have on airport safety and the cost of the standards' implementation.

After receiving authorization to certificate airports, FAA set up an internal task force to develop minimum safety standards. Standards contained in previously published FAA advisory circulars which had evolved over the years from both FAA in-house discussions and consultations with the aviation industry aided the task force.

In September 1970, after meeting twice with representatives of the airport industry, air carriers, and air crew members, FAA issued an advance notice of proposed rulemaking which explained the safety items being considered and solicited public comments. After considering the comments, FAA met again with the interested parties and issued the notice of proposed rulemaking. FAA considered the comments to the notice and, in June 1972, issued the final certification regulation. Following are examples of proposed standards that were either diluted or deleted from the adopted standards before they were issued--without the benefit of study on the effects of these changes.

Firefighting and rescue equipment

The proposed regulation would have required that air carrier landings and takeoffs be suspended when firefighting and rescue equipment was inoperable for 3 days. The final regulation, issued June 1972, allowed equipment to be inoperable for 10 days before operations were required to be discontinued.

FAA adopted this provision without studying the impact that inoperable equipment could have on safety.

Emergency lights

The proposed regulation would have required that an airport operator have conveniently available enough emergency lighting to install on a main runway in case the primary lighting system failed. Public comments on this proposed requirement showed concern about the cost of acquiring and maintaining the emergency equipment and the time needed to place it in operation. One comment was that the primary lights could be repaired as quickly as the emergency lights could set be up. Another comment was that aircraft could use an alternate airport while repairs were being made.

FAA deleted the requirement from the regulation because pilots and dispatchers would be notified of the problem through the use of Notices to Airmen.

STANDARD NEEDED ON RUNWAY SLIPPERINESS

FAA has not developed a regulation requiring that runway friction be measured because it has not selected a method for doing so.

In May 1973, after investigating a December 1972 accident in which a wet runway was a causal factor, the National Transportation Safety Board recommended that FAA expedite its research on developing an approved means of measuring runway slipperiness. From 1971 to 1973, 78 accidents or incidents occurred in which airplanes either overran or veered off slippery runways.

In the last 10 years there has been considerable interest in and study on measuring runway friction. Federal agencies such as FAA, the National Aeronautics and Space Administration, and the Air Force have participated in at least nine study reports. Several foreign countries have also developed techniques and devices for measuring runway friction.

FAA's proposed regulation for airport certification would have required airports serving turbojet aircraft to measure runway slipperiness characteristics and report their findings and evaluation to the air carriers using the airport. The proposal contained a condition, however, that such a standard would not be required until FAA approved a measuring device. The final regulation, issued June 1972, did not contain any reference to runway slipperiness.

FAA has recognized the importance of establishing a measuring technique for airports to use to determine whether runways are safe in inclement weather. However, FAA's Flight Standards Service and Airports Service could not agree on which of two proposed measuring devices should be used. To resolve this impasse, FAA established an internal committee in October 1973 to study the matter. This committee disbanded, however, without making a recommendation.

FAA personnel told us that the various foreign countries, Federal agencies, and groups within FAA favor different techniques--in some cases because they participated in developing the techniques. They also told us that one technique should be chosen so that it can be further evaluated and developed based on widespread day-to-day experience.

USE OF GENERALITIES IN THE STANDARDS

The certification regulation is often unspecific; it uses terms such as "sufficient," "adequate," and "appropriate" to describe mandatory safety standards. For example, safety standards require

- that the applicant be properly and adequately equipped,
- that a storm sewer system be sufficient to adequately handle the drainage of water,
- the airport to have available appropriately clothed and sufficiently qualified firefighting and rescue personnel,
- the airport to have adequate controls to protect property and persons during the handling and storing of hazardous articles, and
- that each object identified as an obstruction be adequately lighted and marked.

FAA has not provided quantified criteria to airports or to FAA field inspectors to determine, for example, when an airport has complied with a standard. Such determinations are left to the individual judgments of FAA field inspectors; this makes it unlikely that compliance can be effectively and uniformly enforced.

BASIS OF CERTIFICATIONS

Originally the certification regulations applied to the 496 airports regularly serving CAB-certificated air carriers operating large aircraft on a regular schedule.

Although FAA intended to physically inspect all 496 airports prior to certification, FAA officials estimate that about 75 percent of these airports were certificated by the May 1973 deadline solely on the basis of a review of their operating manuals. The operating manuals provide general information about each airport's facilities as well as its operating procedures. In the eastern and southern regions, none of the 132 airports were inspected prior to certification. On the other hand, in the New England region, each of the 18 airports were inspected prior to certification.

FAA officials said that although FAA's New England region was able to physically inspect all airports, time constraints and staff shortages in other regions compelled

reliance on the untested data in the airport operating manuals.

By August 1974 all airports had been physically inspected. The post-certification inspections in the eastern and New England regions showed that the airports in these regions did not always meet the certification standards.

The eastern region found substandard conditions at each of the 48 originally certificated airports. Although some of the substandard conditions noted in the inspections were caused by poor maintenance rather than failure to initially comply with the standards, other conditions indicated that the airport did not meet the standards when certified. For example, some of these substandard conditions existed because the airport operations manual did not clearly describe the conditions. Some conditions, such as insufficient fencing, should have been detected during FAA's review of the manuals. Other conditions, such as those resulting from poor maintenance, could have been uncovered only by a physical inspection.

In the New England region, where airports had been physically inspected prior to certification, FAA reinspections showed fewer deficiencies. Of the region's 18 airports, 4 were found to be without violations.

AIRPORTS CERTIFICATED WITHOUT MEETING SAFETY STANDARDS

In early 1973, FAA decided that, in addition to the 496 airports serving scheduled CAB carriers, 500 other airports should also be certificated pursuant to the law. These airports served CAB-certificated air carriers which operated small aircraft and/or did not have fixed schedules.

In April 1973, FAA's certification regulation was amended to give these airports 1-year provisional operating certificates pending submission of plans for achieving full compliance with the certification standards. After extending the expiration dates of the provisional certificates, FAA found that for many of these airports compliance with the standards was infeasible and impracticable. Therefore, in August 1974 the regulations were further amended to allow these airports to be certificated without meeting the requirements of a regular certificate. By December 1974 these

airports were to be awarded "limited certificates"^{1/} based on the FAA inspectors' evaluations of each airport's ability to properly and adequately conduct safe operations for the type of air carrier it would serve. FAA issued the limited certificates without requiring the airports to meet safety standards.

Some of the 500 airports to be issued limited certificates were used by air carriers on an infrequent or intermittent basis; others were not traditional airports but were landing areas near forest service fire towers, remote construction sites, and recreational sites. Because FAA considered issuing even limited certificates to these airports impractical, it again extended the expiration dates for provisional certificates in December 1974 and proposed to reduce the number of airports requiring limited certificates by changing the definition of an airport.

In March 1975, FAA redefined "airport" for airport certification purposes to mean a landing area used by a CAB-certificated air carrier offering service pursuant to a published schedule or used by such air carriers an average of one or more operations a day during any 3 consecutive months. FAA estimates that over 100 landing areas did not have to meet certification requirements because they were no longer airports according to the new definition.

By March 1975, 310 airports of the originally estimated 500 had received limited certificates and another 77 had received regular operating certificates.

Criteria for approval of limited certificates

An airport applies for a limited certificate by submitting an application showing the type and frequency of air carrier operations the airport serves or expects to serve. The application must include a description of landing areas, operations area, lighting and marking, obstruction lighting, firefighting and rescue equipment and service, wind direction indicators, and safety inspection procedures. The airport must also promise to properly maintain the facilities and equipment described on the application.

^{1/} The certificates are limited since they are issued to airports which do not serve scheduled flights of large aircraft operated by CAB-certificated carriers.

Limited certificates were to be awarded based on FAA's evaluation of each airport's overall safety. Because FAA did not provide its field offices with criteria for making these evaluations, certificates were awarded based on subjective evaluations by the FAA inspectors. The subjectivity of the evaluations led to variances from region to region and from airport to airport.

For example, in the New England region limited certificates were given to two airports that were very differently equipped to handle fires. One airport's firefighting equipment consisted of a firetruck having 500 gallons of water and foam and other firefighting material. The airport also had a mutual aid agreement for assistance from the local fire department. The other airport had only hand fire extinguishers and no assistance agreement with a local fire department. The nearest fire station was 6 miles away. Both of these airports were approved for occasional charter flights and could conceivably be used by the same type aircraft.

The regulation requires FAA to evaluate the adequacy of an airport's facilities and equipment to conduct safe operations for the anticipated kind of air carrier operations. We found, however, that all applications for limited certificates in the New England region only listed "occasional charter flights" for the anticipated kind and frequency of service, with no indication of the numbers of passengers or flights expected or of the type of aircraft to be used.

None of the 36 airports in the New England region applying for limited certificates have been refused. FAA officials believed that these airports did not have safety deficiencies serious enough to deny certification. According to these officials, the limited certification program has contributed to safer operations because the certificated airports have pledged not to let their operations regress in safety and because they are subject to annual inspections by FAA.

EXEMPTIONS TO CERTIFICATES

The 1958 act, as amended, prohibits the operation of airports that are not certified by FAA as meeting the minimum safety standards. However, it gives FAA authority to grant exemptions to individual requirements if FAA determines that closing an airport to air carrier operations is contrary to the public interest.

About half of the 496 airports initially receiving certificates for serving scheduled CAB-certificated carriers

meet all the standards prescribed by the regulations. These exemptions were primarily for the requirements for crash, firefighting, and rescue equipment; safety areas; public protection fencing; and wind direction indicators.

Of the 651 exemptions granted by May 1973, 298 had been terminated as of March 1975 because of appropriate upgrading. All the remaining exemptions were time limited and improvements were promised, except for these involving runway safety areas which are discussed below. For most exempted items, FAA requires the airport operators to provide, to the extent possible, substitute safety measures during the exemption period and to demonstrate their intent to upgrade conditions and to meet certification requirements.

Exemptions outstanding as of March 1975 included 54 for runway safety areas, i.e., cleared, drained, and graded areas surrounding the runways. The certification regulation as originally issued in June 1972 required airports to have runway safety areas of a specific size. Many airports were granted exemptions from this requirement and they did not plan to comply with the regulation.

FAA officials said that for a majority of these airports compliance with the original regulation would be difficult and would entail prohibitive costs. FAA, however, has no studies to support these conclusions or to show the possible adverse effects on safety by airports not complying with the regulation.

Nevertheless, on August 30, 1974, the regulation was amended to delete the specific criteria on the size of safety areas and to require only that runway safety areas meet the FAA criteria in effect at the time the runway was constructed. FAA's Airport Certification Branch officials said that many of the airports still having safety area exemptions already meet the amended standards but that they have not yet applied to have the exemption removed. Most of these airports are in the Alaskan region where weather conditions have prohibited airport inspection, which is required before an exemption can be removed.

CONCLUSIONS

Although the airport certification program has improved airport safety, the safety standards have been developed without benefit of detailed research and analysis of their effect in improving safety or their costs to implement. In some cases, the criteria used in the safety standards is so general that compliance with standards cannot be effectively and uniformly enforced.

The lack of objective bases for the standards made it impossible for us to determine whether the airport certification standards, if followed, would result in an adequate level of safety. We could not determine the importance of deviations from the standards because of the lack of studies showing why the standards were established at their respective levels.

The lack of physical inspection by FAA of airports' compliance with the safety standards before certification makes certification of airports less meaningful.

Although considerable research has been performed on measuring runway slipperiness, FAA has not adopted a standard because it has not selected a measurement technique.

Because of the lack of guidance or criteria for issuing limited certificates, many airports were certified based solely on FAA inspectors' subjective judgment of airport conditions, thus permitting airports with wide variance in safety features to be certified by FAA for safe operations.

FAA's implementation of the airport certification program appears to have been designed to avoid substantial economic and technical difficulties to the airport operators and FAA while encouraging improved airport safety features.

RECOMMENDATIONS TO THE SECRETARY OF TRANSPORTATION

We recommend that the Secretary of Transportation require FAA to:

- reevaluate the bases for its airport safety standards and the effects of exemptions to these standards,
- adopt a standard for measuring runway friction,
- develop specific criteria to replace the generalities used in the standards,
- develop standards for airports awarded limited certificates, and
- physically inspect airports for compliance with the safety standards before certification.

AGENCY COMMENTS AND OUR EVALUATION

In commenting on this report, the Department of Transportation said that the airport safety standards would be

reevaluated, in cooperation with the aviation industry, to determine appropriate amendments. FAA officials said this reevaluation will consider the bases of existing and proposed standards to determine if research is needed on the safety levels provided by the standards. The Department also said particular attention would be given to those parts of the regulation for which numerous exemptions have been requested.

The Department pointed out, however, that exemptions in the past resulted from a national effort to upgrade the safety level of airports and that none of the exemptions seriously compromised safety. It said the alternative to issuing exemptions would have involved suspending air carrier service until equipment, such as firefighting and rescue vehicles, could be acquired. The Department said that because basic safety conditions existed at the airports, suspension of service until equipment was obtained was not feasible.

The Department agreed that some of the certification standards were general and that more specific criteria and program guidance is desirable. FAA officials told us the regulations would be revised to provide additional guidance.

The Department said that, in the future, FAA would physically inspect all airports before granting operating certificates.

The Department acknowledged the need for standards for measuring runway friction but stated that, because of strong disagreements on what equipment is best, further tests and studies were necessary before such a standard could be adopted. Extensive studies were conducted on the two devices that were most seriously considered for measuring runway friction, but FAA believes this research was inadequate. Because of the disagreement within FAA on the merits of the two devices, it appears that only the personal involvement of the FAA Administrator will result in the timely completion of the additional studies and adoption of a standard.

The Department does not agree that overall standards are needed for airports awarded limited certificates. It said this category of airports is not widely used by U.S. revenue paying passengers, except in Alaska where limited certificates have been awarded to airports with regularly scheduled air carrier service which use aircraft of less than 12,500 pounds. After much study, the Department has concluded that the "individual standards" concept is the most reasonable and effective method of certification. As noted earlier in this report (see p. 12) this practice

resulted in nonuniform levels of safety at airports. To guard against the traveling public using airports with marginal or inadequate safety features, FAA personnel need specific criteria and program standards to award limited certificates.

CHAPTER 4

NEEDED EXPANSION OF THE AIRPORT CERTIFICATION PROGRAM

Only airports serving CAB-certificated air carriers are required by FAA to meet the safety standards of the airport certification program. However, many airports serving air carriers not certificated by CAB, such as commuter airlines, are used by large numbers of the traveling public. Some of these non-certificated airports have more air carrier activity than airports which are subject to the FAA airport certification program. Inspection of four non-certificated airports showed that their facilities and operations would not meet FAA certification safety standards.

HIGH ACTIVITY AIRPORTS NOT INCLUDED UNDER THE CERTIFICATION PROGRAM

Commuter air carriers are air taxi operators which operate at least five round trips a week between two or more points and publish flight schedules or transport mail. Because commuter air carriers are not CAB-certificated, they can use airports that are not subject to FAA's airport certification program.

Commuter air carriers, however, function as part of the day-to-day public air transport system and during calendar year 1973 carried almost 5.7 million passengers. In the third calendar quarter of 1973, commuter air carriers flew almost 700,000 passengers into or out of airports which did not hold FAA operating certificates.

Using CAB airport statistics, we identified 20 non-certificated airports heavily used by commuter air carriers and compared their passenger and flight data with air carrier activity at 20 low-volume FAA-certificated airports. As shown in the following table, these non-FAA certificated airports averaged almost twice the passenger traffic of the certificated airports and handled more than four times as many takeoffs and landings.

Comparison Of Passenger And Flight Data
For 20 High-Volume Noncertificated Airports
With 20 Low-Volume Certificated Airports
July 1 To September 30, 1973

<u>Noncertificated airports</u>			<u>Regular certificated airports</u>		
<u>Airport</u>	<u>Passengers</u>	<u>Arrivals and departures</u>	<u>Airport</u>	<u>Passengers</u>	<u>Arrivals and departures</u>
Mayaguez, P.R.	58,659	6,369	Adirondack, N.Y.	418	13
Vero Beach Municipal, Fla. (note a)	45,851	1,056	Devils Lake Municipal, N.D.	832	180
Key West International, Fla. (note a)	16,499	1,093	Caltsob County, Oreg.	1,964	230
Killeen Municipal, Tex.	19,875	2,408	Bomar Field, Tenn.	2,280	401
North Philadelphia, Pa.	18,214	1,556	Greenwood County, S.C. (note b)	2,288	513
Clear Lake Metroport, Tex.	18,400	3,627	W.W. Howes Municipal, S.D.	3,552	215
Atlantic City Municipal, N.J.	18,188	3,162	Greenwood Lefore, Miss.	4,493	614
Mercer County, N.J. (note a)	17,440	1,710	University-Oxford, Miss.	5,295	608
Salisbury-Wicomico County, Md.	16,436	1,753	Anderson County, S.C. (note b)	5,561	665
Johnstown-Cambria County, Pa. (note a)	13,565	2,090	Thief River Falls Public, Minn.	5,841	558
Isla De Vieques, P.R.	12,869	2,880	Palmdale-USAF-Plant 42, Calif.	6,893	614
Malcom McKinnon, Ga.	12,614	1,559	Worthington Municipal, Minn.	8,619	694
Kaanapali, Hawaii	12,541	3,934	Brookings Municipal, S.D.	12,672	662
Reading Municipal, Pa.	12,453	1,888	Yuma MCAS-Yuma International, Ariz.	14,199	731
Provincetown Municipal, Mass.	11,946	850	Mankato Municipal, Minn.	14,444	792
Altoona Blair County, Pa. (note a)	11,586	1,628	Nantucket Memorial, Mass.	18,736	374
Borinquen, P.R. (note a)	11,004	2,027	Barnstable Municipal, Mass.	18,806	402
Lancaster, Pa.	11,573	2,502	Dillant Hopkins, N.H.	19,124	923
Elkhart Municipal, Ind.	10,265	2,009	Moultrie-Thomasville, Ga.	19,635	1,018
Cape May County, N.J.	8,335	1,184	Morgantown Municipal, W. Va.	28,246	1,092
Average	17,916	2,266	Average	9,695	561

^aAs of March 1975, these airports have since been certificated--three regular certificates and three limited certificates.

^bAs of March 1975, these airports no longer serviced CAB-certificated carriers and elected to drop out of FAA's certification program.

NONCERTIFICATED AIRPORTS SHOW CONDITIONS
WHICH WOULD NOT MEET CERTIFICATION STANDARDS

In April and May 1974, along with FAA, we inspected four of the high-volume non-certificated airports shown above to determine whether their facilities and operations would meet FAA's airport certification standards.

Inspections of all four airports revealed some facilities, equipment, and procedures which would not meet certification requirements. None of the four airports met crash, firefighting, and rescue standards or the requirements for emergency plans.

Other facilities, equipment, and procedures which, based on the inspection, would not meet the certification requirements and the number of inspected airports where those conditions existed are shown below.

<u>Condition</u>	<u>Number of airports where conditon was noted</u>
One or more inoperable runway lights	4
One or more inoperable threshold lights	3
Inadequate public protection fencing	2
Inadequate self-inspection procedures	2
Hazard in runway safety area	2
Inadequate control over ground vehicles	2
Debris on runway pavement	2
Inadequate safety measures at fuel farms	2
Lack of procedures to prevent a bird hazard	2
Poor drainage on runways and/or taxiways	1
Hazardous rut in runway pavement	1

CONCLUSIONS

We believe that air travelers on commuter airlines are entitled to the same assurance of airport safety that is received by travelers on CAB-certificated airlines. FAA should provide this assurance where possible.

AGENCY COMMENTS AND OUR EVALUATION

The Department said we presented a sound argument for including in the certification program airports exclusively serving commuter air carriers. However, it believes specific legislative authority is needed; it said FAA would consider seeking such authority in its annual submission of proposed legislation. The Department noted that section 606 of the 1958 act gave it authority to inspect, classify, and rate air navigation facilities, including landing areas, and to issue certificates to such facilities. The Department said the Congress apparently did not consider this authority adequate for the type of airport certification program it envisioned because the Congress (1) amended the 1958 act in 1970 by adding sections 610 and 612 requiring airport operating certificates for all airports serving CAB-certificated air carriers and (2) later amended section 609 providing the Department with certification enforcement authority.

The 1958 act gave FAA authority to undertake an airport certification program which included airports serving only commuter air carriers. Since FAA had not undertaken such a program, the Congress, in the 1970 amendments, required FAA to certificate certain airports. These amendments in no way limited the Department's authority to conduct an airport certification program, pursuant to section 606 of the 1958 act.

RECOMMENDATION TO THE SECRETARY OF TRANSPORTATION

We recommend that the Secretary of Transportation require FAA to include in its airport certification program airports which exclusively serve commuter air carriers.



OFFICE OF THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

June 25, 1975

ASSISTANT SECRETARY
FOR ADMINISTRATION

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 dated May 6, 1975, requesting our comments on the General Accounting Office's (GAO) draft report on the airport certification program. GAO states that it believes the program is a good and necessary start toward a comprehensive safety program. Although the airport certification program has resulted in improvements in airport safety, the safety standards have been developed without the benefit of detailed research and analysis of their effect in improving safety or their cost to implement. GAO recommends that the Secretary of Transportation require the Federal Aviation Administrator to take specific actions which GAO believes will improve the program.

The Federal Aviation Administration (FAA) will take certain actions to improve the program, for example, they will conduct a comprehensive review and reevaluation of airport safety standards. FAA agrees that some of the standards in the first Federal regulation for airport safety were general in nature and that more guidance is desirable. Further, they will consider commuter air carrier airport certification in the preparation of their annual submission of proposed legislation.

I have enclosed two copies of the Department's reply, which provides the details of our position and actions FAA plans to take.

Sincerely,

A handwritten signature in black ink, appearing to read "William S. Heffelfinger".

William S. Heffelfinger

Enclosure
(Two copies)

DEPARTMENT OF TRANSPORTATION REPLY
TO
GAO DRAFT REPORT OF MAY 6, 1975
ON
AIRPORT CERTIFICATION PROGRAM:
HAS IT RESULTED IN SAFE AIRPORTS?

SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

The GAO states that the airport certification program has resulted in improvements in airport safety. However, in commenting on the adequacy of airport safety standards the GAO states that (1) development of the standards by the Federal Aviation Administration (FAA) was accomplished without the benefit of detailed research and analysis of their effect in improving safety or their implementation costs, (2) generalities were used in the standards without developing criteria for their application, and (3) a standard for measuring runway slipperiness recommended by the National Transportation Safety Board in 1973 had not been adopted due to the fact that a method for accomplishing this had not yet been selected. The GAO also cites deviations from safety standards such as (1) awarding limited certificates to airports serving nonscheduled air carriers without requiring them to meet prescribed safety standards, (2) granting numerous exemptions to standards which remain outstanding for extended periods without corrective actions being taken, (3) facilities/operations of some airports serving air carriers not certified by the Civil Aeronautics Board (CAB) (i.e., commuter airlines) did not meet agency safety standards, and (4) many airports certificated did not meet safety standards because of a lack of physical inspection prior to certification.

Accordingly, the GAO recommends that the Secretary require the FAA to (1) reevaluate the bases for its airport safety standards and the effects of exemptions to these standards, (2) adopt a standard for measuring runway friction, (3) develop specific criteria to replace the generalities used in the standards, (4) develop standards for airports awarded limited certificates, (5) in the future, physically inspect airports for compliance with safety standards prior to certification, and (6) include in its airport certification program, airports which exclusively serve commuter air carriers.

SUMMARY OF DEPARTMENT OF TRANSPORTATION POSITION
ON GAO RECOMMENDATIONS

1. We agree on the need for a comprehensive review and reevaluation of the airport safety standards and plan to initiate a coordinated FAA/industry study to determine regulation amendments deemed appropriate.

The study will include a reexamination/clarification of those standards that are of a general rather than a specific nature. In addition, policy guidance will be developed sufficiently stringent to preclude issuance of an unacceptably large number of exemptions in the future. As part of a continuing airport certification program review, we will give particular attention to those parts of the regulation which are the subject of numerous requests for exemptions.

While we acknowledge that there were a large number of exemptions issued during the initial phase of the certification program, the majority were associated with the acquisition of fire fighting/rescue vehicles, and none were of sufficient magnitude that would have seriously compromised airport safety, but rather resulted from a national effort to upgrade the safety levels of airports. The alternative to issuing exemptions would have involved suspension of air carrier service at affected airports, a rather unfeasible approach when one considers that, as a minimum, basic safety conditions existed at these airports. The prolonged time in exempted status was primarily in the area involving the fire/rescue vehicles. Over 450 vehicles had to be acquired involving more than \$22 million in Federal grant funds. This large/sudden demand for this equipment that was placed on a limited number of sources, complicated by material shortages and untimely strikes, resulted in lengthy delivery schedules.

2. While we acknowledge the need for standards for measuring runway friction, there is presently a strong difference of opinion in the aviation community of the United States as to which of the several items of equipment now being tested are best suited for this purpose. Some parts of the aviation industry believe that the state-of-the-art has not reached a point where one device is available with a capability of providing friction measurements suitable for all required applications. In the absence of a type of equipment that is mutually acceptable to government and industry, the need for measuring slipperiness characteristics of runways was not made a requirement in the initially issued regulation (FAR Part 139). In this regard, the International Civil Aviation Organization has recently deferred approving specific equipment for runway friction measuring purposes until the results of further studies that are now underway by member nations have been evaluated.

As recognized in the GAO report, the FAA, Air Force, and the National Aeronautics and Space Administration have conducted several joint studies related to types of equipment/aircraft and runway slipperiness. In addition, the Flight Standards Service of FAA has recently initiated an evaluation program of friction measuring devices involving the use

of 20 selected airports within the United States. Also, the FAA Airports Service has prepared an advisory circular to be published in the near future concerning the design, reconstruction and maintenance of skid-resistant pavements. The completion of these studies combined with further tests will hopefully put the FAA in a position where it can determine the best suited equipment for runway friction measurement.

3. We agree that some of the standards in the first Federal regulation for airport safety were general in nature, using such terms as sufficient, adequate, and appropriate. This was an attempt to balance the merits of specific or rigid standards against the need for flexibility because of the individuality, uniqueness, size, and varied operational requirements for the approximately 900 airports involved. The regulation while tempered by cost effectiveness considerations, was recognized as a first step in assuring airport safety with further upgrading to be accomplished as experience, economics, and necessity dictate. We agree that more guidance is desirable and the experience gained to date provides a basis for the development of more precise criteria and program guidelines.
4. The airports eligible for limited airport operating certificates are those which now serve, or anticipate serving, unscheduled or charter operations by CAB-certificated air carriers or those which receive scheduled or unscheduled service by these carriers using small aircraft (less than 12,500 pounds gross takeoff weight). Alaska is the only area where limited airport operating certificates have been issued to airports receiving regularly scheduled service with small aircraft. The majority of airports with limited Airport Operating Certificates are very small unattended landing facilities, or a small airport serving general aviation aircraft that receives occasional or infrequent charter flights by CAB-certificated air carriers. These charter flights also serve less than one percent of the revenue paying passengers in the United States.

The Operations Specifications required for an airport qualified for a limited certificate, define the physical characteristics of the landing area, approaches and facilities available, as well as specify the aircraft type and frequency of service associated with any CAB-certificated air carrier operation at that airport. The FAA, after review of this information, can find it contrary to public interest to require compliance with all applicable requirements of the regulation for a full certificate if the airport is otherwise properly and adequately equipped to conduct a safe operation for the kind of air carrier operation proposed. The Operations Specifications, when approved, establish the standards for that airport for initial certificate issuance and continued compliance. The certificate is no longer valid if the type and frequency of air carrier operations increases beyond that defined in the Operations Specifications, or

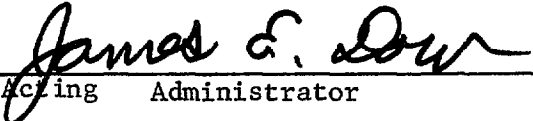
if the landing area or the facilities thereon fall below that in the approved specification. After much study, the FAA believes that this "individual standards" concept is the most reasonable and effective method to be employed for certification of this category of airports.

5. We agree with the GAO recommendation that airports be physically inspected for compliance with safety standards prior to certification, and in the future, not only will on-site inspections be conducted prior to issuance of a certificate, but we will also continue to periodically inspect all certificated airports to insure ongoing compliance with minimum standards.

With the May 21, 1973, deadline for certificating the airports, however, the initial certification was accomplished through what has been defined as a "sponsor participation method." This method involved the direct participation of the airport operator or sponsor in the certification process thus enhancing or elevating safety consciousness throughout the applicable airport industry. It was also the most cost effective method that could be reasonably employed from a program administration viewpoint. The method required each airport to include, as part of its application for an Airport Operating Certificate, specific descriptive information in sufficient clarity and detail to allow the FAA to determine compliance with the minimum standards for certification. The FAA then issued or denied the certificates based on a review of this information. A spot-check program was conducted by the agency to further enhance validity of the data provided and for standardization purposes. Prior to initial certification, approximately 25 percent of the airports certificated received on-site inspections. Frequently, airport sponsors were required to provide additional information or to eliminate the deficiencies on their airports before a certificate was issued. Many minor deficiencies were identified and corrected after subsequent on-site inspections by the FAA. None of these deficiencies were flagrant or major but were generally the result of many misinterpretations or lack of understanding of the regulation, or changes in the airport conditions since the submission of the descriptive information.

6. Regarding the certification of airports that exclusively serve commuter air carriers, the GAO presents a sound argument for the inclusion of those airports in the certification program. However, it is our view that to include these airports in the program would require further amendment of the Federal Aviation Act of 1958. Congress amended this Act in 1970 with the addition of Sections 610 and 612, thus requiring airport operating certificates for all airports serving air carriers certificated by the CAB. Later, Section 609 was also amended to provide certificate enforcement authority by the inclusion of airport operating certificates in that Section. This legislative action was

taken even though Section 606 of the Act already specified that the Secretary of Transportation is empowered to (1) inspect, classify and rate any air navigation facility, and (2) issue a certificate for any such navigation facility (landing areas are considered air navigation facilities). Apparently, the authority in Section 606 was not considered adequate for the type of Airport Certification Program desired or envisioned by Congress since, notwithstanding Section 606, Congress originated Section 610 and 612, plus amendment to 609. In view of the foregoing, the FAA will consider this commuter air carrier airport certification recommendation in the preparation of its annual submission of proposed legislation.


Acting Administrator

JUN 18 1975

PRINCIPAL OFFICIALS
RESPONSIBLE FOR ADMINISTRATION OF
ACTIVITIES DISCUSSED IN THIS REPORT

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
SECRETARY, DEPARTMENT OF TRANSPORTATION		
William T. Coleman, Jr.	Mar. 1975	Present
Claude S. Brinegar	Feb. 1973	Mar. 1975
John A. Volpe	Jan. 1969	Feb. 1973
ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION		
James E. Dow (acting)	Apr. 1975	Present
Alexander P. Butterfield	Mar. 1973	Apr. 1975
John H. Shaffer	Mar. 1969	Mar. 1973

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