

GAO

Report to the Chairman, Subcommittee
on Investigations and Oversight,
Committee on Public Works and
Transportation, House of
Representatives

June 1993

AVIATION SAFETY

Unresolved Issues Involving U.S.-Registered Aircraft



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United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-252714

June 18, 1993

The Honorable Robert A. Borski
Chairman, Subcommittee on
Investigations and Oversight
Committee on Public Works
and Transportation
House of Representatives

Dear Mr. Chairman:

By international agreement, the United States assumes responsibility for the oversight of all U.S.-registered aircraft, regardless of where they operate. In January 1992, you expressed concern that the Federal Aviation Administration (FAA) may not adequately monitor aircraft registered in the United States. Specifically, you asked us to address three distinct issues. First, does FAA fulfill its commitment under international agreement to inspect U.S.-registered aircraft operated overseas by foreign air carriers? Second, does FAA have a system to verify that foreign corporations owning U.S.-registered aircraft comply with the regulation that 60 percent of the aircraft's flight hours be conducted in the United States? Third, has FAA adjusted registration fees for all U.S.-registered aircraft in response to legislative requirements?

Results in Brief

We identified 517 U.S.-registered aircraft operated between October 1989 and April 1992 by foreign carriers exclusively outside the United States.¹ Also, during this period, domestic carriers leased and operated some of these aircraft. FAA did not inspect 168 of the 517 aircraft. For the remaining 359 aircraft, FAA performed inspections in nearly all cases while U.S. carriers operated them in the United States. FAA rarely inspected these same aircraft while foreign carriers operated them outside the United States. Moreover, FAA does not track leasing transactions and does not know where the aircraft are operated to perform inspections.

FAA does not have an effective system to verify whether the 423 foreign corporations that own U.S.-registered aircraft are logging 60 percent of

¹FAA officials told us that the number of aircraft claiming U.S. registration while operating outside the United States is higher than the number we identified from our sources. However, because of a lack of documentation, FAA could not provide information on the ownership, operation, or registration status of these aircraft. The types of U.S.-registered aircraft operated by foreign carriers range from large jet transports to small passenger planes.

their flight hours in the United States.² Between August 1989 and October 1991, FAA sent notices to 254 foreign corporations requesting confirmation of compliance with the 60-percent requirement and found that 89 were not in compliance. However, since October 1991, FAA has not sought such verification because it viewed this process as an administrative burden.

Under an Office of Management and Budget (OMB) circular, federal agencies should impose a fee to fully recover the cost of providing any service rendered. FAA does not currently recover the cost associated with processing an aircraft registration. FAA's current \$5 fee, in place since 1964, does not cover the cost of reviewing and processing a registration application. On the basis of cost data that FAA provided to us for 25 fiscal years (1968 to 1992), combined direct and indirect costs exceeded the total amount of fees collected for 18 of these years. In constant 1992 dollars, we estimate that since 1968 FAA has forgone about \$6.5 million in fees.³ The FAA Drug Enforcement Assistance Act of 1988 authorized FAA to increase registration fees when regulations implementing other aspects of the act were published. However, FAA has not issued the regulations, and officials could not estimate when the agency would do so.

Background

In 1944, representatives of 52 countries, including the United States, met in Chicago to create a framework for international cooperation in developing civil aviation. The representatives created the International Civil Aviation Organization (ICAO). Over the years, ICAO developed and adopted 18 technical annexes involving such varied fields as aeronautical communications, meteorology, airworthiness, air operations, environmental protection, and security. The annexes contain standards that member countries must meet and are intended to produce a degree of technical uniformity that enables international civil aviation to function in a safe, orderly, and efficient manner. ICAO standards represent the minimum that each country and carrier must meet. As of September 1992, ICAO had 173 member countries.

²For purposes of this report, a foreign corporation is any corporation in which foreign citizens hold more than one-quarter of the voting stock or more than one-third of the Board of Directors and management positions. An aircraft owned by a foreign corporation is eligible for U.S. registration if the corporation is lawfully qualified to do business in one or more states and if it certifies that the aircraft will be based and primarily used in the United States.

³FAA could not provide total (i.e., direct plus indirect) aircraft registration cost data for fiscal years 1964-67, 1970, 1972, 1980, or 1987. For each of the last 4 years, our estimate of revenues that FAA could have collected represents the average of the estimates from the preceding and following year. Furthermore, our estimates assume that no aircraft drop from the registry because of an increase in fees.

In 1977, the Congress amended the Federal Aviation Act and identified three categories of owners—U.S. citizens, resident aliens, and U.S.-based foreign corporations—that may register aircraft in the United States. Owners of U.S.-registered aircraft include large financial institutions, aircraft leasing companies, and foreign corporations organized and doing business under the laws of the United States or any state. U.S. citizens and resident aliens that own U.S.-registered aircraft may fly them wherever they can obtain operating authority. Under the amended act, FAA must ensure that U.S.-registered aircraft owned by foreign corporations are “based and primarily used” in the United States. FAA’s regulations define aircraft that are based and primarily used in the United States as those that accumulate at least 60 percent of their total flight hours in the United States every 6 months.

Frequently, owners will not operate aircraft themselves but will instead opt for a leasing arrangement with a domestic or foreign air carrier. If a foreign carrier leasing such an aircraft wishes to fly into the United States, the carrier must obtain authority from the Department of Transportation (DOT). To register an aircraft, an eligible owner submits an application, together with a statement of citizenship; the aircraft’s bill of sale; and a \$5 fee. Currently, about 293,000 aircraft are registered in the United States. Since 1968, the number of registrations processed annually has ranged from about 42,000 to over 100,000.⁴

FAA Performs Limited Inspections of Foreign-Operated, U.S.-Registered Aircraft Outside the United States

Under ICAO standards, the country of registration assumes primary responsibility for ensuring an aircraft’s airworthiness. However, ICAO does not specify the frequency with which a country should inspect aircraft. FAA has developed guidance to address this issue, charging inspectors with examining all U.S.-registered aircraft, regardless of where they operate. However, FAA’s guidance has not been precise, requiring only that inspectors “emphasize” the examination of foreign-operated, U.S.-registered aircraft.

As of April 1992, we identified 517 U.S.-registered aircraft operated outside the United States by 321 foreign carriers.⁵ None of these carriers, which were based in 70 countries, possessed DOT authority to fly aircraft into the

⁴Total aircraft registrations far exceed 293,000. However, many aircraft are taken off the U.S. registry each year. Also, many owners re-register aircraft. FAA counts each re-registration separately for bookkeeping and fee collection purposes.

⁵The types of aircraft range from large transport-category jets, such as Boeing 747 and 727, to smaller commuter and general aviation aircraft.

United States. Our analysis of FAA safety inspection records between October 1989 and April 1992 shows that FAA did not inspect 168 (32 percent) of the 517 aircraft.

FAA performed about 4,500 inspections on the remaining 359 aircraft and identified 347 problems that were, or had the potential to be, in noncompliance either with regulations or with other safe operating practices. FAA performed all but 15 of the 4,500 inspections when the aircraft was operated in the United States by a domestic carrier. Of the 4,500 inspections, about 1,150 (25 percent) involved limited checks while the aircraft was parked at the airport between flights. The remainder included such activities as observing in-flight operations, reviewing aircraft records, and investigating aircraft incidents (i.e., aborted takeoffs).

According to officials, FAA does not have the staff to inspect each foreign-operated, U.S.-registered aircraft individually at a multitude of locations outside the United States. FAA's approximately 2,500 inspectors already oversee more than 192,000 general aviation aircraft, 7,300 scheduled commercial aircraft, 10,500 nonscheduled commercial aircraft, 692,000 pilots, 4,700 repair stations, 650 pilot training schools, and 190 maintenance schools, primarily in the United States. FAA is attempting to augment its overseas safety staff to cope with a wide range of responsibilities, including inspections of foreign-operated, U.S.-registered aircraft. However, only 70 of its 2,500 inspectors, 33 of whom are posted overseas, are currently dedicated to international safety issues.

The Department of State is responsible for approving all overseas positions. Accordingly, FAA has obtained such approval for 25 additional overseas positions. However, according to an FAA official, the agency cannot inspect every foreign-operated, U.S.-registered aircraft, even at higher overseas staffing levels. Furthermore, according to the official, countries in which the aircraft operate also have a responsibility to inspect aircraft used to support their own transportation needs.

Challenges Posed by Leased Aircraft

The rapid growth in international leasing demands that FAA seek innovative ways to inspect U.S.-registered aircraft. Such aircraft change hands among U.S. and foreign carriers, frequently through leasing arrangements. Our assessment of historical data for 375 aircraft from the date of manufacture through April 14, 1992, showed that 201 (54 percent) had been leased at least once.⁶

⁶We could obtain historical data for only 375 of the 517 aircraft evaluated.

FAA has difficulty inspecting U.S.-registered aircraft operated by foreign carriers because it does not track their overseas operations. Although FAA requires a maintenance check on every aircraft transferring from foreign to U.S. registration, it does not require the check when a U.S.-registered aircraft transfers from foreign to U.S. operation. As a result, FAA cannot ensure that these aircraft have been properly maintained. (App. I describes FAA's inspection requirements and other concerns related to leased aircraft.)

FAA Does Not Keep Historical Records on Foreign Carriers With FAA-Approved Maintenance Programs

By regulation, each foreign carrier operating U.S.-registered aircraft must have a program to maintain its fleet in accordance with U.S. safety standards. We compared a list of Latin American and Caribbean carriers with FAA-approved maintenance programs as of December 1992 against a list of carriers from this region whose aircraft FAA did not inspect. Our comparison identified 52 carriers that did not appear on FAA's list. We asked FAA to determine whether the 52 carriers had approved maintenance programs.

According to FAA officials, they do not keep historical data showing whether FAA approved carriers' maintenance programs. As a result, the agency could not verify whether the 52 foreign carriers had such programs during the time in which they operated U.S.-registered aircraft. Keeping such records is key to ascertaining the quality of maintenance performed on the aircraft before it returns to U.S. operation. Sixty-nine of the 168 aircraft (41 percent) that FAA did not inspect between October 1989 and April 1992 were flown by carriers for which FAA could not provide historical information on maintenance programs. Moreover, we found that 19 of the 69 aircraft were operated by carriers from countries whose safety oversight, according to FAA assessments, did not meet minimum international standards.

For example, one foreign carrier operated a small U.S.-registered passenger aircraft for several months immediately preceding its April 1, 1991, crash in the Gulf of Mexico. The crash killed the pilot and all seven passengers aboard. Four months later, in August 1991, FAA found that the country in which the aircraft had operated did not meet international safety oversight standards. Officials from FAA and from the country where the accident occurred performed the investigation. According to the accident report, the carrier also did not have an FAA-approved maintenance program. Instead, the carrier had used a maintenance program established

for a different type of aircraft and had not complied with the periodic inspection requirements for that type of aircraft.

The report disclosed that (1) the carrier had “demonstrated a lack of control and poor judgment” in releasing the aircraft to service since it had not been maintained either to comply with FAA regulations or with an airworthiness directive to evaluate the structural integrity of the aircraft and (2) the carrier used noncertified mechanics to sign airworthiness releases for the aircraft. The report added that “the deficiencies found on this aircraft could easily arise on other U.S. registered aircraft in the fleet.”

FAA Does Not Verify Whether U.S.-Based Foreign Corporations Comply With a Key Registration Requirement

FAA imposed the requirement that aircraft owned by foreign corporations accumulate at least 60 percent of total flight hours in the United States every 6 months to ensure that they do not use the United States as a “flag of convenience.”⁷ However, FAA does not verify whether U.S.-based foreign corporations comply with this requirement. Rather, FAA’s Aircraft Registration Branch sends semiannual notices to foreign corporations seeking information on their operations. An FAA official told us that, for those who submit the information, they calculate whether 60 percent of the reported flight hours were in the United States.

The FAA official acknowledged that FAA does not verify whether the information provided is accurately reported. In essence, FAA permits foreign corporations to self-certify compliance with the flight-hour requirement. FAA does not retain signed statements or completed forms from foreign corporations that meet the established criterion. Moreover, because FAA does not verify compliance, it has no basis to (1) suspend or revoke the aircraft’s registration number or (2) withdraw the carrier’s authority to operate in the United States if it does not adhere to the requirement.

In addition, FAA does not have a system to follow up on foreign corporations that either do not return the notices or return them indicating that they did not meet the flight-hour requirement. The Aircraft Registration Branch refers these cases to the Assistant Chief Counsel for follow-up. According to the Assistant Chief Counsel, FAA established a program in August 1989 to notify corporations of their apparent noncompliance with the regulation. The notice asked corporations to

⁷A foreign corporation may be said to use the United States as a flag of convenience if it enjoys such benefits of U.S. registration as (1) higher aircraft resale value; (2) avoidance of airworthiness checks by foreign authorities; and (3) avoidance of foreign taxes, foreign certification fees, and foreign inspection fees while not operating the aircraft primarily in the United States.

return the aircraft registration certificate or to provide proof that the certificate was still valid. The Assistant Chief Counsel said that FAA discontinued the follow-up efforts in October 1991 because it became an administrative burden; a corporation could simply return its certificate and submit an application to re-register the aircraft.

On the basis of our analysis of a list of foreign corporations, we found that between August 1989 and October 1991 the Assistant Chief Counsel sent notices to 254 corporations. Of the 254 corporations, 133 responded that they complied with the requirement, 12 responded but decided to re-register aircraft, and 89 did not acknowledge compliance. (App. II shows how the corporations dealt with the notices.)

FAA Does Not Recover Aircraft Registration Costs

FAA is not fully recovering the cost of processing aircraft registration applications. FAA attempts to recover these costs by applying a user charge. User charges are fees assessed for the provision of government services.

OMB Circular A-25 prescribes requirements for imposing user charges. The general policy, effective since 1959, is that a reasonable charge should be imposed on each identifiable recipient for any government service for which a special benefit is derived, that provides business stability, or that ensures public confidence in the business activity of the beneficiary. The circular states that the charge be based on the total direct and indirect costs of providing the service, be reviewed annually, and be adjusted accordingly.

FAA has not raised the aircraft registration fee since 1964, when it was increased from \$4 to \$5 per aircraft. FAA assesses the fee only once for the life of the registration number assigned and does not require an annual renewal. In fiscal year 1992, FAA issued 44,168 certificates, yielding \$220,840 in revenues from registration fees. According to FAA's fiscal year 1992 user fee report, the cost of providing aircraft registration certificates was about \$22.50 per aircraft. If FAA had collected \$22.50 per aircraft, the revenues generated would have been nearly \$1 million, or about \$800,000 more than FAA collected.

Using constant 1992 dollars, we estimate that the net effect since 1968 of not increasing the fees to the level that covers costs is about \$6.5 million. (App. III shows the amount of revenues FAA collected between fiscal years 1968 and 1992 compared with the amounts of direct and indirect costs.)

Moreover, OMB recently estimated that FAA can receive \$151 million between fiscal years 1994 and 1997 through increased registration fees and annual renewals imposed on general aviation aircraft alone.⁸

Between 1964 and 1978, FAA had the authority to increase the registration fee. However, with the passage of the Airline Deregulation Act of 1978, the Congress barred FAA from introducing or increasing fees without prior approval. Nine years later, FAA proposed legislation to remove the restriction imposed by the Airline Deregulation Act. The Congress granted partial relief in the Airport and Airway Safety and Capacity Expansion Act of 1987. This act authorized the rate in effect in 1973 (\$5) to be adjusted by inflation. Despite this authority, FAA did not adjust the rate.

In October 1988, DOT's Office of Inspector General (OIG) issued a report on FAA's user charges for a variety of services, including aircraft registration and aircraft inspections. Regarding registration, the OIG report stated that FAA is not fully recovering the cost of providing special services to recipients and recommended that FAA compute the inflation adjustment for the existing fee to determine if the adjusted charge was adequate to recover all applicable costs. FAA officials agreed to determine and make any necessary inflation adjustment but have not yet adjusted the fees.

More recent legislation has further affected how FAA may structure aircraft registration fees. In November 1988, the Congress passed the FAA Drug Enforcement Assistance Act, which called for FAA to increase fees to a maximum of \$25 per aircraft to more easily finance the modernization of the registration system. As a result, FAA could more effectively assist federal law enforcement efforts to identify drug traffickers and their aircraft.⁹ However, FAA has not increased fees to respond to this need.

The act also required FAA to promulgate implementing regulations within 10 months. The fees could not be increased, however, until the regulations took effect. In March 1990, FAA issued a Notice of Proposed Rulemaking to respond to the act. In the notice, FAA acknowledged that it had not met the 10-month deadline.

According to an agency official, ongoing debates between FAA and drug enforcement agencies concerning the time frame for aircraft registration

⁸General aviation aircraft are typically smaller, noncommercial aircraft.

⁹We previously reported that FAA was making limited progress in modernizing its registration system and, consequently, was not providing sufficient support for drug interdiction efforts. See *FAA Registry Systems: Key Steps Need to Be Performed Before Modernization Proceeds* (GAO/IMTEC-91-29, Apr. 9, 1991).

renewals have delayed the regulations. Law enforcement representatives prefer annual renewals to enhance their ability to track aircraft potentially used in drug trafficking. However, because of the large number of aircraft registrations each year, FAA has proposed a 3-year renewal period. As of May 1993, an FAA official could not estimate when the regulations would become final.

Conclusions

International standards stipulate that the country of registration assumes primary responsibility for overseeing its aircraft. However, several factors affect FAA's ability to fulfill this requirement for all U.S.-registered aircraft. Since FAA (1) does not track the leasing of U.S.-registered aircraft among U.S. and foreign carriers and (2) has not developed clear guidance to its inspectors regarding the frequency of inspections of foreign-operated, U.S.-registered aircraft, it cannot plan and perform timely inspections of aircraft that return to U.S. operation after having been leased to a foreign carrier. Also, since (1) FAA cannot verify whether foreign carriers have FAA-approved maintenance programs for U.S.-registered aircraft and (2) some of these aircraft operate in countries that do not meet international standards, no assurance exists that U.S. passengers will be flying in safe aircraft after the aircraft return to U.S. operation.

FAA also has not developed an effective system to track and verify foreign corporations' compliance with a requirement that 60 percent of their U.S.-registered aircraft's flight hours be conducted in the United States. Although FAA established the 60-percent requirement to discourage foreign aircraft owners from using the U.S. aircraft registration system as a flag of convenience, owners are allowed to self-certify compliance with the requirement.

Finally, through regulations and legislation, FAA has had the opportunity to increase aircraft registration fees. However, FAA has not taken action to increase these fees since 1964. We estimate that, by not increasing fees to recover costs, FAA has forgone about \$6.5 million in additional revenue since 1968.

Recommendations

We recommend that the Secretary of Transportation direct the Administrator, FAA, to take the following steps:

- Require owners of U.S.-registered aircraft to notify FAA when they change from a foreign to a U.S. lessee and identify the parties involved, and

inspect these aircraft when they enter the United States, particularly if they are from countries that do not meet international safety standards.

- Develop a system to ensure that foreign corporations' U.S.-registered aircraft accumulate at least 60 percent of flight hours in the United States, institute procedures to prevent foreign corporations from re-registering aircraft when they do not comply, and take such enforcement action as suspending or revoking the aircraft's registration or withdrawing the carrier's authority to operate in the United States for those that do not comply.
- Accelerate implementation of the proposed rules for increasing aircraft registration fees.

Agency Comments and Our Evaluation

As requested, we did not obtain written agency comments on a draft of this report. We did, however, discuss the findings and recommendations with the Deputy Director, Flight Standards Service; Manager, Enforcement Litigation Branch; and other FAA officials responsible for aircraft inspection and registration. FAA officials noted that after U.S.-registered aircraft transfer from a foreign to a U.S. carrier, they are subject to routine inspections. Therefore, the officials did not believe that a need exists to inspect the aircraft at the time of transfer. However, no guarantee exists that FAA will inspect these aircraft. As our report indicates, FAA did not inspect 168 of 517 aircraft (32 percent) over a 2-1/2 year period.

Agency officials indicated that they could include inspection and other safety data related to foreign-operated, U.S.-registered aircraft in the Safety Performance Analysis Subsystem that FAA is developing. This system will analyze information in various FAA data bases that will identify, among other things, potential problem areas for inspection emphasis. We agree that FAA should include such information in the system. However, FAA does not expect to have a prototype system until at least 1995.

In addition, FAA pointed out that once an aircraft transfers to a U.S. carrier, it is added to the carrier's operations specifications. As mentioned above, however, no guarantee exists that FAA will subsequently inspect the aircraft under its routine inspection program.

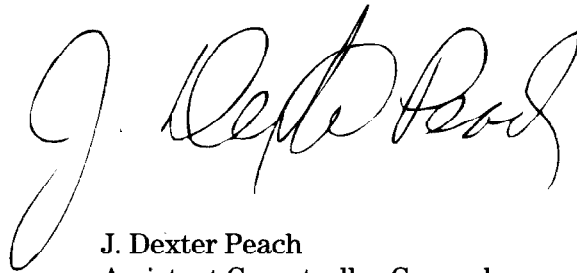
FAA officials asked if we would specify how the agency should ensure that foreign corporations comply with the 60-percent rule. We explained that FAA should determine the actions to take. Such actions could include reviewing aircraft flight logs on a sample basis.

Finally, agency officials asked us to clarify the criteria FAA should use to increase aircraft registration fees. We explained that the general criteria for assessing fees are spelled out in OMB Circular A-25 and that criteria specific to aircraft registration fees are contained in the FAA Drug Enforcement Assistance Act of 1988. We said that FAA should expeditiously issue regulations in response to this act.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the Secretary of Transportation, the Administrator of FAA, and the Director of OMB. We will make copies available to others upon request.

We conducted our review between March 1992 and March 1993 in accordance with generally accepted government auditing standards. Details of our objectives, scope, and methodology are contained in appendix IV. This work was performed under the direction of Kenneth M. Mead, Director, Transportation Issues, who can be reached at (202) 512-2834. Major contributors to this report are listed in appendix V.

Sincerely yours,

A handwritten signature in black ink, appearing to read "J. Dexter Peach". The signature is written in a cursive, flowing style with a large initial "J".

J. Dexter Peach
Assistant Comptroller General

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Abbreviations

DOT	Department of Transportation
FAA	Federal Aviation Administration
GAO	General Accounting Office
ICAO	International Civil Aviation Organization
NIAR	National Institute for Aviation Research
OIG	Office of Inspector General
OMB	Office of Management and Budget

Concerns Related to Aircraft Leasing

Over the last decade, air carriers have increasingly obtained aircraft through leasing arrangements. The percentage of leased aircraft in the U.S.-registered fleet has grown from approximately 12 percent in 1980 to 51 percent in 1990. The Aerospace Industries Association of America estimates that by the year 2000 leased aircraft will comprise about 75 percent of the world's fleet. The growth of leasing has led to a corresponding increase in the number of aircraft transfers among air carriers and leasing companies—both domestically and internationally.

In inspecting U.S.-registered aircraft, the Federal Aviation Administration (FAA) generally does not know if an aircraft is leased or carrier-owned. According to FAA officials, no difference exists in how leased and carrier-owned aircraft are maintained and repaired because FAA regulations hold the carrier—not the leasing company—responsible for the airworthiness of the aircraft. As a result, FAA neither distinguishes between leased and carrier-owned aircraft in its inspection data base nor targets leased aircraft for inspection.

When a foreign-operated, foreign-registered aircraft is transferred to a domestic carrier, an FAA inspector or FAA-designated airworthiness representative—who is an employee of the carrier—is required to conduct an in-depth “conformity check” to ensure that the aircraft meets FAA standards. According to FAA officials, the designated representative usually conducts the inspection and FAA reviews the documentation of the check—typically a 30-day process.¹ However, when a U.S.-registered aircraft is transferred from a foreign carrier to a U.S. carrier, FAA does not require a similar check. FAA may inspect the aircraft at a later date under its regular inspection program.

According to FAA and airline officials, accurate and complete records are essential to establish the maintenance and repair status of an aircraft being transferred from one carrier to another. However, the dramatic increase in the number of transfers has negatively affected the quality of such recordkeeping. If an aircraft has been leased to several different carriers over a period of time, the accuracy and completeness of those records sometimes deteriorates. As a result, FAA and designated airworthiness representatives have difficulty (1) verifying the maintenance and repairs that have been completed on the aircraft and (2) requiring corrective action. In addition, neither the lessor nor the lessee can effectively plan future maintenance schedules. According to FAA and

¹The Federal Aviation Act of 1958 authorizes FAA to delegate inspection duties to a designated airworthiness representative, as necessary, to verify compliance with federal safety standards.

industry officials, this problem is particularly true for U.S.-registered aircraft that have been operated by a foreign carrier for an extended period of time.

As the result of (1) concerns expressed by the airline and aircraft manufacturing industries and (2) its own increasing awareness of a potential safety problem, FAA began to develop regulations and an advisory circular in 1990 to establish minimum standards for maintenance and repair records. As of April 1993, FAA had not issued (1) an advisory circular or (2) a Notice of Proposed Rulemaking despite original issue date estimates of December 1991 and December 1992, respectively. According to FAA officials, both the proposed regulations and the advisory circular should be issued by the end of calendar year 1993. The chairman of an FAA advisory committee working group said that these projects will clarify maintenance recordkeeping requirements in such a way that both the safety and efficiency of aircraft transfers will be greatly enhanced. The new rules would establish minimum standards for the clarity and prioritization of maintenance records so that FAA and carriers can more accurately verify the maintenance history of an aircraft and effectively plan for the future maintenance and repair of that aircraft.

Emphasizing the need for FAA's current regulatory initiatives, several safety officials have cautioned that the effect of increased leasing on safety must be closely monitored. National Transportation Safety Board officials, for example, said that, although they have not found leasing to be a definitive factor in an accident to date, the practice must be monitored to ensure that leased aircraft are not maintained differently than the carrier-owned aircraft. These officials emphasized that the increasingly international nature of aircraft leasing poses a difficult challenge for FAA and foreign civil aviation authorities. Acknowledging that the international nature of aircraft leasing presents a significant challenge, FAA's Associate Administrator for Regulation and Certification said that FAA needs to work with carriers, leasing companies, and governments around the world "... to develop and promote a scheme which will address the shortcomings of the current regulatory structure and commercial practice." The Associate Administrator emphasized, however, that the need to do so arises not from an immediate safety need but from a need "to prevent a safety need from arising."

Disposition of Notices

Disposition	Number of corporations	Number of aircraft
Complied	133	226
Did not acknowledge compliance	89	111
Re-registered aircraft	12	13
Destroyed, sold, exported, or scrapped aircraft	38	45
Changed ownership status from foreign to U.S. corporation	16	16
Changed ownership status from corporation to individual	3	4
Cancelled or withdrew registration	8	8
Total	299^a	423

^aFAA sent notices of apparent noncompliance to 254 foreign corporations. The above schedule adds to 299 because a corporation may be counted in more than one disposition category. Also, the total number of aircraft does not include four for which FAA does not know the status.

Revenues Collected for Aircraft Registration Compared to Costs Incurred

Fiscal year	Number of registrations	Revenues collected	Costs incurred ^a	Difference
1968	64,731	\$ 1,230,627	\$ 905,742	\$ 324,885
1969	66,664	1,207,681	932,330	275,351
1970	66,096	1,135,670	958,506	177,164
1971	65,527	1,067,215	975,434	91,781
1972	70,494	1,094,627	1,050,842	43,785
1973	75,460	1,100,000	1,104,400	-4,400
1974	79,196	1,061,609	1,080,718	-19,109
1975	89,640	1,098,529	931,553	166,976
1976	100,523	1,158,099	1,197,474	-39,375
1977	89,100	960,129	894,841	65,288
1978	75,887	758,870	883,325	-124,455
1979	73,566	676,158	895,233	-219,075
1980	75,059	630,748	854,033	-223,285
1981	76,552	584,366	808,763	-224,397
1982	65,838	473,655	867,735	-394,080
1983	76,543	528,612	1,148,145	-619,533
1984	70,023	463,728	864,390	-400,662
1985	71,076	453,870	784,287	-330,417
1986	68,967	428,899	888,679	-459,780
1987	67,259	405,175	918,126	-512,915
1988	65,551	380,226	935,356	-555,130
1989	66,378	368,767	1,287,733	-918,966
1990	52,203	278,565	1,303,682	-1,025,117
1991	42,581	218,588	1,005,506	-786,918
1992	44,168	220,840	994,663	-773,823
Total	1,759,082	\$17,985,253	\$24,471,496	-\$6,486,243

^aOur estimate of the costs incurred is based on total cost data (direct plus indirect) associated with registering aircraft in each year. We converted FAA's annual cost data into constant 1992 dollars using the Gross Domestic Product (GDP) Implicit Price Deflator. FAA could not provide data for fiscal years 1964-67 or for fiscal years 1970, 1972, 1980, and 1987. For each of these last 4 years, our estimate of revenues that FAA could have collected represents the average of the estimates in the preceding and following year. Furthermore, our estimates assume that no aircraft drop from the registry due to an increase in fees.

Objectives, Scope, and Methodology

In January 1992, the Chairman, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, asked us to address three distinct issues. First, does FAA fulfill its commitment under international agreement to inspect U.S.-registered aircraft operated overseas by foreign carriers? Second, does FAA have a system to verify that foreign corporations owning U.S.-registered aircraft comply with the regulation that 60 percent of the aircraft's flight hours be conducted in the United States? Third, has FAA adjusted registration fees for all U.S.-registered aircraft in response to legislative requirements? Due to the sensitivities involved with foreign countries, we agreed with the Subcommittee not to name the countries or their carriers in our report.

To determine the number of U.S.-registered aircraft flown exclusively overseas by foreign carriers, we obtained computer-generated data from the National Institute for Aviation Research (NIAR) at Wichita State University in Wichita, Kansas. Until January 1993, NIAR contracted with FAA's Technical Center to provide to FAA daily information from nine private aviation data suppliers in the United States and abroad on the ownership and operation status of U.S.-registered aircraft. FAA suggested that we obtain information from NIAR because it is considered a leading clearinghouse of aviation data. NIAR provided us with a list of 601 U.S.-registered aircraft operated by foreign carriers at any point during the 2-1/2 years beginning October 1, 1989, and ending April 14, 1992. NIAR also provided information showing the complete history of 375 of these aircraft. Such data show the dates of sale and leasing transactions and the names of owners and operators since the aircraft's production. Due to incomplete records, NIAR could not provide complete historical information for all aircraft.

We also obtained data from the Boeing Corporation's market research division in Renton, Washington. Boeing provided us with information concerning 198 transport category foreign-operated, U.S.-registered aircraft contained in its data base as of December 31, 1989, 1990, and 1991, and March 31, 1992. We added this information to the data obtained from NIAR to develop a more comprehensive list of foreign-operated, U.S.-registered aircraft. Finally, we obtained data on one additional aircraft from information contained in an accident report prepared by a foreign civil aviation authority.

We provided Department of Transportation officials with our comprehensive list to determine if any of the carriers possessed authority to operate in the United States at any point between October 1, 1989, and

April 14, 1992. We deleted from our universe all aircraft operated by carriers possessing such authority and retained a list of U.S.-registered aircraft operated by carriers that had not obtained DOT authority for the period of time during which they flew their aircraft. The net result of this effort yielded a total of 517 foreign-operated, U.S.-registered aircraft operated entirely outside the United States at some point in time between October 1989 and April 1992.

We obtained FAA inspection results between October 1, 1989, and April 14, 1992, for the 517 aircraft from FAA's Program Reporting and Tracking Subsystem. Although this system has significant limitations, it is the only source available to obtain inspection information.

To determine who may register an aircraft in the United States, we reviewed pertinent laws and regulations for aircraft registration requirements. We also obtained documentation and interviewed FAA Aircraft Registration Branch officials in Oklahoma City, Oklahoma, concerning the (1) procedures involved in registering an aircraft with FAA, (2) reasons that aircraft owners seek U.S. registration, and (3) costs incurred and fees charged for aircraft registration. We also held discussions regarding FAA's past and current efforts to increase aircraft registration fees. Finally, we reviewed international aviation law and discussed it with FAA officials in Washington, D.C., and International Civil Aviation Organization officials in Montreal, Canada.

We conducted our review between March 1992 and March 1993 in accordance with generally accepted government auditing standards.

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