
Office of Inspector General

Audit Report

*Aviation Safety Under International
Code Share Agreements*

*Federal Aviation Administration
Office of the Secretary*

*Report Number: AV-1999-138
Date Issued: September 30, 1999*





Memorandum

U.S. Department of
Transportation
Office of the Secretary
of Transportation
Office of Inspector General

Subject: ACTION: Report on Aviation Safety Under
International Code Share Agreements;
AV-1999-138

Date: SEPTEMBER 30, 1999

From: Kenneth M. Mead
Inspector General

Reply to
Attn of: J-1

To: The Secretary
Federal Aviation Administrator

This report summarizes our review of Department of Transportation (DOT) roles and responsibilities for safety under international code sharing agreements. To complete this assessment, we reviewed procedures and practices used by the Office of Aviation and International Affairs, within the Office of the Secretary (OST) and the Office of Regulation and Certification, within the Federal Aviation Administration (FAA).

We are providing this report for your information and use. In preparing this report, we considered verbal comments provided by your staff during a briefing held September 17, 1999. An executive summary of the report follows this memorandum.

We appreciate the cooperation and assistance provided by your staff during the review. If you have any questions or need further information, please contact me, at 366-1959, or Alexis Stefani, Assistant Inspector General for Auditing at 366-1992.

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Attachment

EXECUTIVE SUMMARY

Aviation Safety Under International Code Share Agreements

*Federal Aviation Administration
Office of the Secretary*

Report No. AV-1999-138

September 30, 1999

Objectives and Methodology

The objectives of this audit were to (1) identify and analyze the Department of Transportation's (DOT) roles and responsibilities for safety under international code share agreements; and (2) determine if the manner in which these roles and responsibilities are discharged is adequate, from a safety point of view, for international code share flights ticketed in the name of a U.S. carrier. To perform this assessment, we reviewed procedures and practices in the Office of the Secretary (OST) and the Office of Regulation and Certification in the Federal Aviation Administration (FAA).

Background

Code sharing is a marketing arrangement in which one air carrier sells and issues tickets for the flight of another carrier as if it were operating the flight itself. Under an international code share agreement, a passenger flies as a ticketed passenger of a U.S. carrier, but the actual travel for all or a portion of the trip could be with a foreign carrier's aircraft and crew. In addition to enhancing international trade and commerce, air carriers may receive substantial profits from code share agreements and market the agreements as a "seamless," efficient way for passengers to engage in international travel in an increasingly global air service environment.

Code sharing is also an integral part of broader airline alliances in which U.S. and foreign carriers not only share flight designator codes, but also blend resources such as facilities, aircraft, capital, and personnel. The most integrated type of alliance is formed when airlines are granted immunity from the antitrust laws by

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DOT and the Department of Justice. According to OST, antitrust exemptions permit carriers to function in some important respects as though they were one firm by, for example, discussing and jointly deciding on fare and capacity levels for their flights.

DOT must decide whether to approve an international code share agreement or alliance using a broad standard of whether it would be in the “public interest”, considering such factors as reciprocal agreements between the United States and other nations, impact on competition, the financial strength of the foreign carrier, and safety.

As strong as the economic, competitive, and international commerce considerations are, the consumer, in addition to expecting seamless and efficient service, also has an expectation that all segments of the code share flight will be safe. For example, in discussing the growth of code sharing and alliances, Congressman James Oberstar, Ranking Democratic Member, House Committee on Transportation and Infrastructure, stated in an April 13, 1999 speech before the International Aviation Club, that he is:

...concerned that the United States economic policy may have gotten ahead of our safety policy. As relationships between domestic and foreign carriers have grown through code sharing, we need to take a look at whether safety has kept pace.

In May 1999, Congressman Oberstar introduced a bill proposing, among other things, that U.S. carriers conduct safety audits of their foreign code share partners as a condition of approval of a code share agreement. The bill also includes provisions for FAA to conduct reviews of carrier safety audit programs to ensure their quality and effectiveness.

At the instruction of Secretary Slater, an OST and FAA working group was formed to review departmental procedures for considering safety in the code share approval process and to make recommendations, if appropriate, for strengthening this process. The working group has formed three teams: one to evaluate and identify a process to provide OST with added assurance that a foreign carrier operating under a code share agreement is exercising acceptable safety and security standards; a second to review legal issues with respect to regulatory approval of code share agreements; and a third to determine what information and process should be used to better inform the public of code share issues.

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Results in Brief

Code sharing is profitable for air carriers and can provide passengers with more seamless and efficient service than they would otherwise receive. As a result, the number of approved international code share agreements has more than tripled in the last 5 years. Until recently, most international code share agreements were with well known, well established carriers with safety records similar to those of U.S. carriers. However, with the growth in code share and alliance agreements, U.S. carriers are now partnering with carriers from other regions of the world where aviation safety oversight and safety records are not as strong as those of the United States.

This report represents our initial observations on this rapidly changing area. We have identified the following key issues.

- Safety is not currently treated as a major factor in the code share approval process, and FAA has not taken an active role in the approval or oversight of international code share agreements.
- The Department of Defense (DOD) and six U.S. carriers recognized the safety implications of code sharing and took the lead to establish an agreement under which the carriers would perform safety assessments of their foreign code share partners.
- FAA can build on the DOD process and must now step up and take a leadership role in ensuring that safety is adequately considered as a condition of initial and continued approval for international code share agreements.

Code sharing has benefited global aviation from an economic and passenger service standpoint, by providing increased opportunities for economic growth and international commerce. The Department of Transportation has the opportunity, when it joins in with the DOD/U.S. carrier effort, to have a synergistic effect in improving global aviation safety and can enhance FAA's reviews of foreign civil aviation authorities, by obtaining additional insight into the safety of foreign carriers. Just as code share agreements and airline alliances changed international air travel and relationships between airlines, FAA must refine its oversight practices to meet changes in the industry.

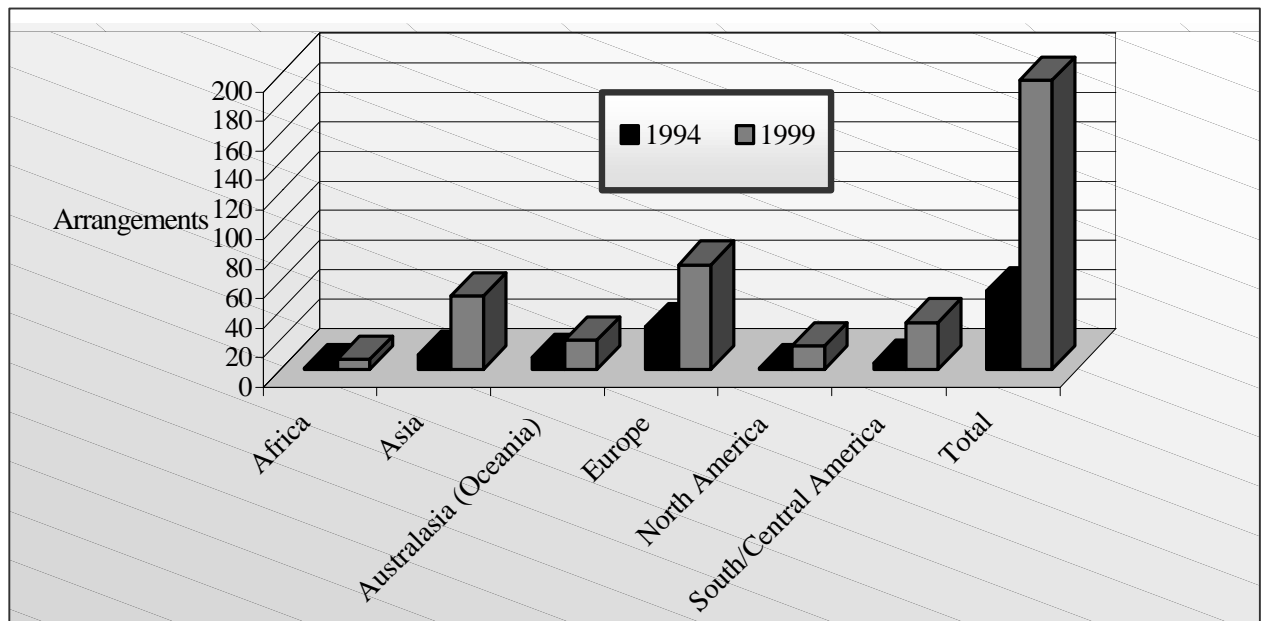
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Principal Findings

U.S. Carriers Are Extending Code Share Agreements Into Regions of the World Where Aviation Safety Records Are Not As Strong As Those of the United States

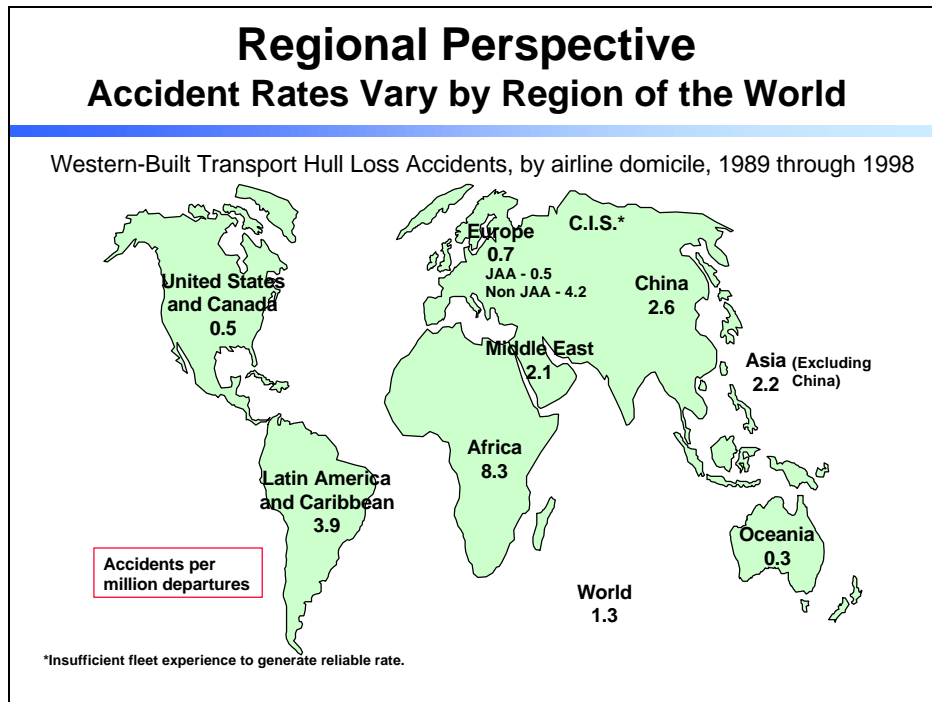
Code sharing is profitable for air carriers and can provide passengers with more seamless and efficient service than they would otherwise receive. As shown in the graph below, the number of approved international code share agreements has more than tripled in the last 5 years, increasing from 53 in 1994, to 196 in May 1999.

GROWTH IN U.S. - FOREIGN CODE SHARE AGREEMENTS BY WORLD REGION (1994 and 1999)



At one time, international code share agreements were primarily with carriers from Western Europe and other countries where carrier safety records were similar to those of U.S. carriers. However, the growth in code sharing has resulted in agreements and alliances with carriers from other regions of the world. For example, in 1994, there were 10 code share agreements between U.S. and Asian carriers. There are now 50 such agreements and, according to data prepared by the Boeing Company, accident rates in Asia are 4 times higher than in the United States.

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*Data prepared by the Boeing Company on western-built transport hull losses¹

This variability in safety records shows that economics and seamless travel ought not to be the sole consideration in approving and overseeing code share agreements. Thus far, the overall record of safety under code share agreements has been positive, but there are indications that, given the sheer growth in code shares and an increasingly global and complex aviation market, now is the right time to move proactively and make significant changes in the way FAA and OST exercise safety oversight when approving and renewing code share agreements.

For example, in 1996 OST approved a code share agreement with Korean Airlines. In the last 9 years, Korean Air had 11 accidents resulting in 228 passenger fatalities. In the same time period, its U.S. partner had six accidents with two fatalities. The U.S. carrier flies approximately four times more passenger miles than Korean Air, making this difference in accidents even more significant. In April 1999, the U.S. carrier suspended its code share agreement with Korean Air stating that the decision to suspend the code share was made in light of “. . . operational incidents, including the recent tragic loss of an MD-11 cargo aircraft in China.”

¹ Crashes in which the entire aircraft was destroyed.

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China Air, a code share partner between March 1997 and May 1999, has had 9 accidents in the past 9 years that resulted in 471 fatalities. Although China Air's U.S. partner has had 11 accidents in the same time period, these accidents resulted in 160 fatalities and the U.S. partner flew more than 8 times the passenger revenue miles per year as China Air. The U.S. carrier, on its own initiative, cancelled the code share agreement; however, OST and FAA have not taken action to suspend the air transportation or code share operations authority. Thai Airways, another code share partner has had 5 accidents, resulting in 215 fatalities. Its U.S. partner has had 3 accidents resulting in 26 fatalities, while flying more than 6 times more passenger revenue miles than Thai Airways. Thai Airways is still an active code share carrier.

While an accident alone does not mean a carrier is unsafe, accidents can be indicators of safety problems. Determining that foreign code share partners have safe operations is critical and should be addressed by both the Department of Transportation and U.S. carriers.

The Current Code Share Approval Process Does Not Adequately Address Safety Implications

We found that, in deciding whether or not to approve code share agreements and alliances, OST has focused on the economic and competitive aspects of the agreements and relies on FAA for safety advice. But we found that safety is not currently treated as a major factor in the code share approval process and FAA has not taken an active role in the approval or safety oversight of international code share agreements, either before or after approval.

FAA limits its input to advising OST about whether a foreign carrier's homeland, as distinguished from the air carrier involved, has procedures to exercise oversight of its carriers in compliance with international safety standards. FAA staff stated that if they become aware of adverse safety information about a foreign carrier, they will pass that on as well; however, they were able to provide only one example of this kind of advice, and the effort made to assess safety implications appears limited to nonexistent.

Our review found that the Department's *current* procedures require nothing of the U.S. or foreign carrier that will be parties to the agreement about the foreign carrier's safety. FAA performs no trend or other analysis, and makes no recommendation to OST, as to whether it is satisfied that there are no negative safety implications relative to the foreign carrier that will be involved in the code share agreement. However, in March 1999, OST withheld approval of a proposed

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code share agreement for Braathens Airlines, a Norwegian carrier, when FAA declined to provide any comments because the carrier did not have flight service to the U.S. which would give FAA first hand information about its operations.

To encourage OST to approve the pending application, the U.S. carrier that would be involved in the agreement submitted its safety assessment of Braathens to the Department for consideration. FAA, in an April 29, 1999 letter to OST, stated that it did not perform an independent assessment of the report, but noted that the audit closely followed the checklist used by FAA in assessing fitness of U.S. air carriers and that the U.S. carrier is very familiar with applying such reviews. FAA further stated that this kind of assessment of a foreign code share partner is beyond its authority, but FAA would support efforts to develop a comprehensive policy which relies on U.S. carriers to provide assurances of the foreign code share partners' safety performance.

The enabling legislation under which DOT approves or disapproves code share agreements explicitly directs that in determining what is in the public interest, "safety" should be assigned the highest priority.² In our view, the current process for approving code share agreements does not meet this expectation.

FAA Has Restricted Its Safety Oversight Role in Code Share Agreements Because of Resource Constraints and Perceived Limitations in Legal Authority

For its part, FAA points to essentially three factors to explain its limited role. First, FAA says it is without legal authority to make safety fitness determinations regarding individual foreign carriers. This view has merit. However, the legal situation is quite different when, as here, a U.S. carrier seeks U.S. approval to hold out to the public flights on a foreign aircraft as if they were U.S. flights and to ticket such flights in the name of a U.S. carrier. Furthermore, Federal law requires that "safety" be a paramount consideration in deciding whether to approve agreements like code shares.

Second, FAA correctly points out that it does make determinations about the civil aviation authority in the foreign carrier's homeland. This program identifies whether the carrier's homeland provides adequate aviation oversight of its carriers, and has improved international aviation safety by helping foreign civil aviation authorities improve their oversight. However, this is quite different from a judgment about the safety practices of an individual carrier. FAA is itself a civil

² Title 49 of the United States Code, section 40101(a)(1) requires that the Secretary consider safety as the highest priority in authorizing air transportation services.

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aviation authority that meets international standards, but that is materially different from a conclusion that all U.S. carriers therefore follow sound safety practices.

The third and most legitimate point FAA raises is that it has limited resources and already is resource-constrained in exercising oversight of U.S. aircraft and U.S. crew operations. Adding code share agreements to the workload would be an additional burden and raise expectations. We believe the answer to this is that U.S. carriers seeking approval for a code share agreement can reasonably be expected to perform most of the work and provide FAA assurances that the foreign carrier that will operate as a U.S. flight is compliant with applicable safety requirements. FAA's role would be to ensure that U.S. carriers have a credible process in place to provide such assurances.

Department of Defense and U.S. Carriers Established a Process for Enhancing Code Share Safety

In contrast to FAA's very limited involvement in assessing code share safety, the Department of Defense (DOD), six U.S. carriers³, and the Air Transport Association (ATA) recognized the safety implications of code sharing and took the lead to establish an agreement under which the six carriers (or third parties acting on their behalf) would perform safety assessments of their foreign code share partners.

The impetus for this initiative was that DOD spends about \$1.2 billion annually on air transport services and is required by law to satisfy itself that charter air carriers transporting military personnel are safe. Under code share agreements, a foreign carrier can qualify as a U.S. carrier for "Fly America Act"⁴ purposes and thus can transport U.S. military personnel. In order to get DOD's business, the carriers must also comply with the agreement.

OST and FAA Should Build On the DOD Process for Reviewing Safety in the Code Share Process

The DOD and air carriers' initiative is commendable and provides an excellent foundation on which FAA can and should build. FAA, as the U.S. civil regulatory authority responsible for aviation safety, and OST, which approves code share agreements, must now step up and take a leadership role in ensuring that safety is

³ The six carriers participating in the DOD/ATA effort are American, Continental, Delta, Northwest, Trans World, and United.

⁴ The Fly America Act requires Federal employees performing government financed foreign air travel to travel by U.S. flag air carriers.

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adequately considered as a condition of initial and continued approval for international code share agreements. Key elements of this role would include:

- Under guidelines established by OST, require that all U.S. carriers who are parties to a code share agreement perform safety assessments of their foreign code share partners as a condition of code share approval and continued use of code share. FAA should consider the results of these assessments in performing its review of foreign civil aviation authorities.
- Require that the U.S. carrier's assessment be provided to FAA, together with confirmation from the carrier's senior safety official that the safety assessment was satisfactory and that any safety deficiencies noted have been corrected.
- Develop oversight procedures for FAA to validate the U.S. carriers' safety assessment program through periodic reviews of the carriers' process and assessment results. FAA should also consider reserving the right to verify results, if necessary, through an on-site inspection of aircraft used in code share operations.
- Define which safety standards or mix of standards will be sufficient for the purpose of performing safety assessments. FAA will have to decide whether the general International Civil Aviation Organization (ICAO)/DOD standards should serve as the basis for the assessment or FAA and U.S. carriers' standards, which are more detailed. Standards that are very general may be so broad as to be of limited utility.
- FAA should coordinate closely with the Department of Defense to maximize the effective use of limited resources between the two agencies, avoid duplication, and establish protocols for the exchange of information about carrier safety assessments.
- Establish procedures for air carriers to share information to avoid unnecessary multiple assessments of carriers who are code sharing with more than one U.S. partner.
- Establish procedures for terminating or restricting the use of code share agreements when (1) the Department of Defense determines that adverse safety information warrants prohibiting U.S. military personnel from using a foreign carrier, (2) the U.S. air carrier terminates the agreement, or (3) FAA, on its own initiative, makes a similar determination regarding the transport of U.S. passengers.

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Management Comments and Office of Inspector General Response

On September 17, 1999, OST and FAA officials provided oral comments to our audit report. FAA officials expressed concerns with our conclusion that FAA's code share responsibilities should be significantly expanded. FAA officials stated that international agreements and resource constraints are factors that limit FAA's ability to assess the safety of foreign carriers. We modified our report to reflect these comments. However, in our opinion, FAA needs to be more actively involved in providing OST safety information on foreign carriers. This can be accomplished through U.S. air carrier or third party safety assessments of foreign carriers, with oversight by FAA to ensure the assessment process is credible and meets FAA requirements. The fact is, just as code share agreements changed international air travel, FAA too must adjust its oversight practices to meet changes in the industry.

OST and FAA officials stated that we did not address their planned public education efforts, which is one thing FAA can do that would, in their view, improve the code share process. FAA proposes to take steps to ensure the public is aware of how code sharing works, how consumers can find out if their flight is a code share, what the safety and security implications of code sharing are, and how FAA is limited in its oversight responsibilities for foreign carriers. We agree the traveling public needs to be educated about code sharing. However, this alone is not sufficient to address the safety implications of international code sharing agreements. FAA needs to take a leadership role in ensuring that safety is adequately considered as a condition of approving code share agreements.

FAA agreed that it could provide oversight of U.S. carriers' assessment programs, but stated this effort would need to be limited to areas such as determining whether the carriers used qualified personnel to conduct the safety assessments. FAA was concerned with our presentation of foreign carrier accident data. In their view, our presentation implies that foreign carriers that have had accidents are unsafe. FAA contends that accidents alone are not the sole factor in determining if a carrier is unsafe. We agree and modified our report to reflect these comments. However, accidents are indicators of potential safety problems and as safety experts, FAA should evaluate foreign carrier accident data as part of its safety advice to OST.

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I. INTRODUCTION

Background

U.S. carriers are increasingly entering into code sharing and alliance agreements with foreign carriers to expand their international service. Code sharing is a contractual or marketing arrangement, approved by the Department of Transportation (the Department/DOT), in which one air carrier sells and issues tickets for the flight of another air carrier as if it were operating the flight itself. Under an international code sharing agreement, a passenger flies as a ticketed passenger of a U.S. carrier, but the actual travel for all or a portion of the trip could be with a foreign carrier's aircraft and crew. *Air carriers expect and receive substantial profits from code sharing agreements and market the agreements as a "seamless," efficient way for passengers to engage in international travel. In turn, passengers have the right to expect that flights operated under code share agreements will be safe.*

Marketing and economic considerations: Code sharing is very profitable for air carriers. While the U.S. market is heavily saturated with 149 large U.S. carriers providing scheduled domestic service, foreign markets represent untapped marketing opportunities. International travel currently accounts for 21 percent of the total passenger revenues for major U.S. carriers.

The Air Transport Association (ATA), whose member airlines account for more than 95 percent of the passenger traffic by scheduled airlines, reported revenues of almost \$17 billion from international service in 1998. The incentive for U.S. carriers to acquire markets in various portions of the world has prompted the growth in international code sharing and has led to code share agreements with 79 different foreign carriers. Through code sharing, U.S. carriers can (1) overcome some of the international restrictions and economic constraints that could limit worldwide flight service; (2) obtain added traffic and revenues through access to new markets; and (3) offer improved service and convenience to international passengers.

Code sharing is also an integral part of broader airline alliances in which the carriers not only share flight designator codes, but blend resources such as facilities, aircraft, capital, or personnel. The most integrated type of alliance is formed when airlines are granted immunity from antitrust laws. When carriers apply for antitrust immunity, the Department of Transportation and Department of Justice review the application to gauge whether the agreement could lead to anti-competitive practices. Carriers in alliances with antitrust exemptions can discuss and jointly decide on fares and capacity levels for their flights. According to the Office of the Secretary (OST) International and Aviation Affairs staff, antitrust

exemptions permit carriers to function, in some important aspects, as if they were one firm.

DOT granted Northwest and KLM Royal Dutch Airlines antitrust immunity in 1993. Since 1993, five other alliances have been granted antitrust immunity,¹ and the number of code sharing agreements has more than tripled. Code sharing agreements² between United States and foreign carriers increased from 53 in 1994 to 196 in May 1999.

Safety considerations: With the increased globalization of travel and growth in code sharing agreements, safety issues are becoming increasingly important. The September 2, 1998 fatal crash of Swissair Flight 111, a U.S./foreign code share flight, highlighted the issue of safety in international code share agreements. Of the 215 passengers on board, 53 purchased their tickets from a U.S carrier. Although this crash focused the industry and Congress on the potential safety implications of these code share agreements, until recently, carriers had taken limited action to address these concerns.



The crash of Swissair Flight 111 in September 1998 with code share passengers aboard focused industry and government attention on code share safety issues.

In discussing the growth of code sharing and alliances, Congressman James Oberstar, Ranking Democratic Member, Committee on Transportation and Infrastructure, stated in an April 13, 1999 speech before the International Aviation Club, that:

The [September 1998] Swiss Air accident brought home, once again, that in a world of close alliances between domestic and foreign airlines, there is a blurring of the lines separating domestic safety regulation and international safety regulation. We need to reassess who is responsible for protecting the safety of the American travelling public.

In May 1999, Congressman Oberstar introduced a bill proposing that U.S. carriers be required to conduct safety audits of foreign air carriers as a condition of approval of code sharing agreements between carriers. The bill also includes provisions for the Federal Aviation Administration (FAA) to conduct reviews of

¹ These alliances include United/Lufthansa/Scandinavian, American/Canadian Airlines International, United/Air Canada, Delta/Swissair/Sabena/Austrian Airlines, and American/LanChile.

² Multiple agreements could exist between a U.S. carrier and a foreign partner. Agreements are categorized based on which partner operates the aircraft.

the carriers' safety audit programs to ensure their consistency, quality, and effectiveness. Additionally, at the instruction of Secretary Slater, OST and FAA formed a working group to review departmental procedures for considering safety in the code share approval process and to make recommendations, if appropriate, for strengthening this process. The working group has formed three teams: one to evaluate and identify a process to provide OST with added assurance that a foreign carrier operating under a code sharing agreement is exercising acceptable safety and security standards; a second to review legal issues with respect to regulatory approval of code share agreements; and a third to determine what information and process should be used to better inform the public of code share issues.

Objectives

The objectives of this audit were to (1) identify and analyze the Department of Transportation's (DOT) roles and responsibilities for safety under international code share agreements; and (2) determine if the manner in which these roles and responsibilities are discharged is adequate, from a safety point of view, for international code share flights ticketed in the name of a U.S. carrier. To perform this assessment, we reviewed procedures and practices used by the Office of Aviation and International Affairs in OST and the Office of Regulation and Certification in FAA. Our methodology and scope are summarized in Exhibit A and the key organizations or persons we contacted or visited during the audit are listed in Exhibit B.

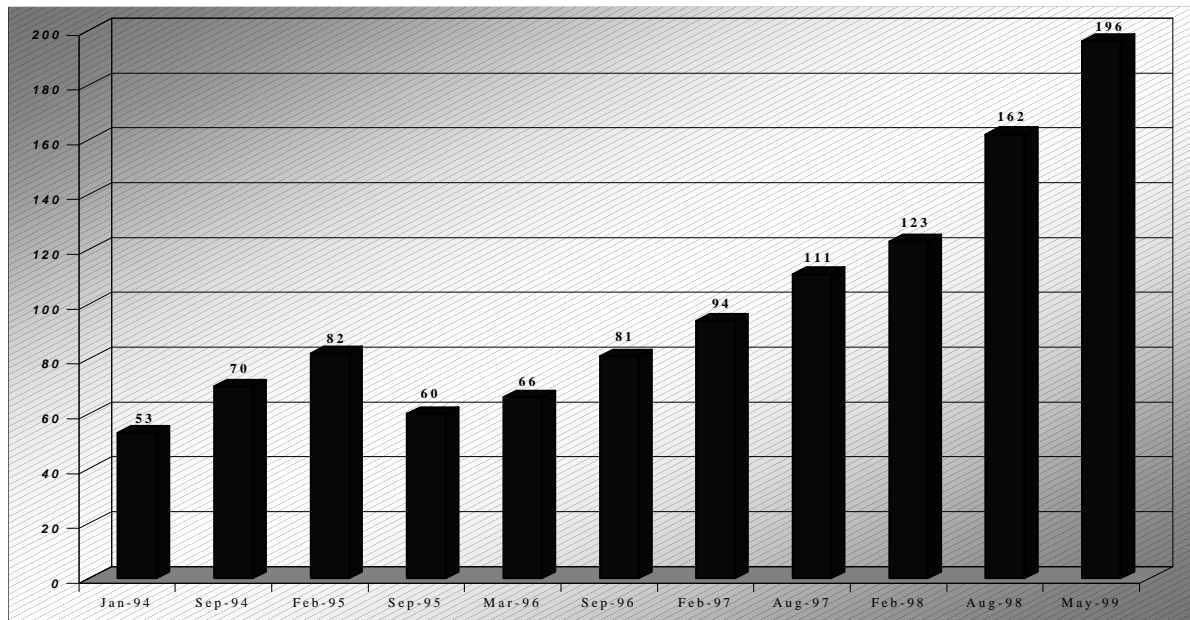
II. FINDING AND RECOMMENDATIONS

Today, international code sharing is rapidly increasing along with concerns regarding the safety of foreign code share operations. The issues and proposed solutions are complex and still evolving. This report represents our initial observations into this rapidly changing area. Just as code share agreements and airline alliances changed international air travel and relationships between airlines, OST and FAA must refine their oversight practices to meet changes in the industry.

U.S. Carriers Are Now Extending Code Share Agreements Into Regions of the World Where Aviation Safety Records Are Not As Strong As Those of the United States

Code sharing between U.S. and foreign carriers has more than tripled in the past 5 years, increasing from 53 U.S. and foreign agreements in 1994 to 196 such agreements in May 1999. In the 18 months between February 1998 and May 1999, there was an increase of 73 foreign code share agreements. The following chart shows the dramatic growth in the number of code share agreements between 1994 and 1999.

**U.S. and Foreign Air Carrier Code Share Agreements
1994-1999**



U.S. carriers initially entered into code share agreements with Western European air carriers with safety records similar to those of the United States. U.S. carriers are now extending their marketing arrangements into regions of the world where safety records are not as good as those of the United States. For example, in 1994, there were 10 code share agreements between U.S. and Asian carriers. There are now 50 such agreements and according to data prepared by the Boeing Company, accident rates in Asia are 4 times higher than in the United States. As shown in the table below, U.S. carriers are entering into code share agreements with foreign carriers in all parts of the world.

Growth in Code Share Agreements by World Region

	No. of Agreements 1994	No. of Agreements 1999	Increase
Africa	1	7	6
Asia	10	50	40
Australasia (Oceania)³	8	20	12
Europe⁴	29	71	42
North America⁵	1	16	15
South/Central America	4	32	28
Total	53	196	143

Safety Varies by Region of the World. Aviation safety records vary from one country or part of the world to another as well as from one carrier to another. According to FAA International Field Office staff, the United States has among the most stringent safety requirements in the world, which contribute to air carrier safety records that are among the best in the world. That is not the case in other parts of the world. In 1997, the National Civil Aviation Review Commission report concluded that:

There is significant variability in the accident rates among the regions of the world....accident rates in Eastern Europe, Russia, Asia, Latin America, and Africa are many times greater than the rates in the U.S., Western Europe, and Oceania.

Data prepared by the Boeing Company on western-built transport hull loss⁶ accidents between 1989 and 1998 confirms the variability among regions. As illustrated in the following chart, accident rates in the United States, Canada and

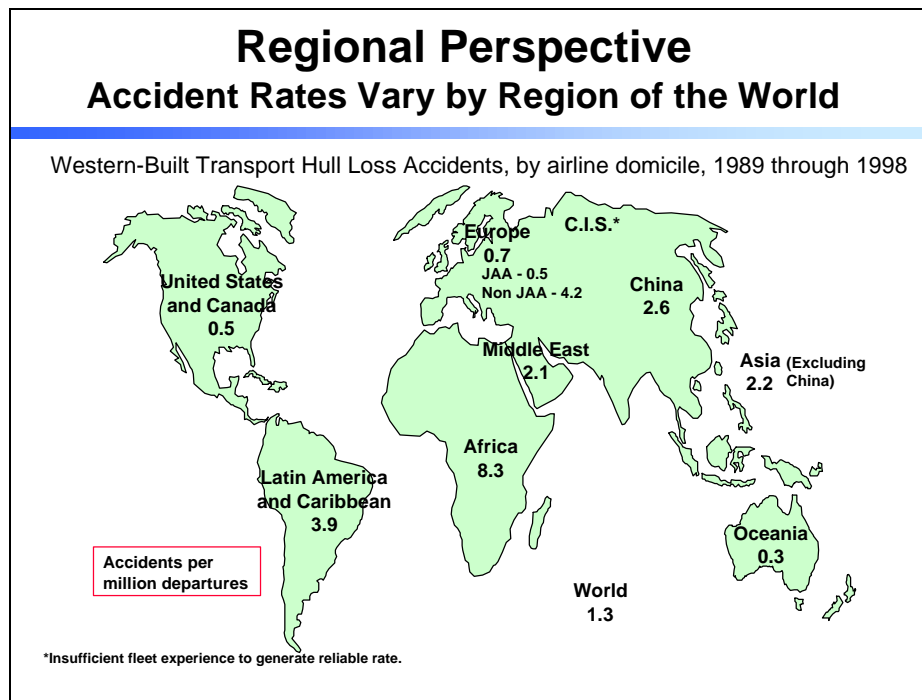
³ Australasia and Oceania are both terms used to describe the region which includes Australia, New Zealand, and the Pacific Islands

⁴ Includes Czech Republic, Hungary, Russia, and Poland.

⁵ Includes Canada and small Caribbean Island nations.

⁶ Crashes in which the entire aircraft was destroyed.

Western Europe are relatively low, while rates in Africa and Latin America and the Caribbean are significantly higher.



* Data prepared by the Boeing Company on western-built transport hull losses

This variability in safety records shows that economics and seamless travel should not be the sole consideration in approving and overseeing code share agreements. Thus far, the overall record of safety under code share agreements has been positive, but there are indications that, given the sheer growth in code shares and an increasingly global and complex aviation market, now is the right time to move proactively and make significant changes in the way FAA and OST exercise safety oversight when approving and renewing code share agreements.

For example, in 1996 OST approved a code share agreement with Korean Airlines. In the last 9 years, Korean Air had 11 accidents resulting in 228 passenger fatalities. In the same time period, its U.S. partner had six accidents with two fatalities. The U.S. carrier flies approximately four times more passenger miles than Korean Air, making this difference in accidents even more significant. In April 1999, the U.S. carrier suspended its code share agreement with Korean Air stating that the decision to suspend the code share was made in light of ". . . operational incidents, including the recent tragic loss of an MD-11 cargo aircraft in China."

China Air, a code share partner between March 1997 and May 1999, has had 9 accidents in the past 9 years that resulted in 471 fatalities. Although China Air's U.S. partner has had 11 accidents in the same time period, these accidents resulted

in 160 fatalities and the U.S. partner flew more than 8 times the passenger revenue miles per year as China Air. The U.S. carrier, on its own initiative, cancelled the code share agreement; however, OST and FAA have not taken action to suspend the air transportation or code share operations authority. Thai Airways, another code share partner, has had 5 accidents, resulting in 215 fatalities. Its U.S. partner has had 3 accidents resulting in 26 fatalities, while flying more than 6 times more passenger revenue miles than Thai Airways. Thai Airways is still an active code share carrier.

While an accident alone does not mean a carrier is unsafe, accidents can be indicators of safety problems. Determining that foreign code share partners have safe operations is critical and should be addressed by both the Department of Transportation and U.S. carriers. The Department authorizes code share service for U.S. carriers to sell tickets that show the U.S. carriers' name, which implies the U.S. carriers will operate the flight. The Department should ensure that passengers' expectations of safety are met on these flights. To achieve this higher level of safety will require significant changes in the way the Department approves code share agreements.

The Current Code Share Process Does Not Adequately Address Safety Implications

We found that, in deciding whether or not to approve code share agreements and alliances, OST has focused on the economic and competitive aspects of the agreements and relies on FAA for safety advice. But we found that safety is not currently treated as a major factor in the code share approval process and FAA has not taken an active role in the approval or safety oversight of international code share agreements, either before or after approval.

FAA limits its input to advising OST about whether a foreign carrier's homeland, as distinguished from the air carrier involved, has procedures to exercise oversight of its carriers in compliance with international safety standards. FAA staff stated that if they become aware of adverse safety information about a foreign carrier, they will pass that on as well; however, they were able to provide only one example of this kind of advice and the effort made to assess safety implications appears limited to nonexistent.

Our review found that the Department's *current* procedures require nothing of the U.S. or foreign carrier that will be parties to the agreement about the foreign carrier's safety. FAA performs no trend or other analysis relative to the foreign carrier and makes no recommendation to OST as to whether it is satisfied that there are no negative safety implications relative to the code share agreement. However, in March 1999, OST withheld approval of a proposed code share

agreement for Braathens Airlines (a Norwegian carrier) when FAA declined to provide any comments because the carrier did not have flight service to the U.S. which would give FAA first hand information about its operations.

To encourage OST to approve the pending application, the U.S. carrier that would be involved in the agreement submitted its safety assessment of Braathens to the Department for consideration. FAA, in an April 29, 1999 letter to OST, stated that it did not perform an independent assessment of the report, but noted that the audit closely followed the checklist used by FAA in assessing fitness of U.S. air carriers and that the U.S. carrier is very familiar with applying such reviews. FAA further stated that this kind of assessment of a foreign code share partner is beyond its authority, but FAA would support efforts to develop a comprehensive policy which relies on U.S. carriers to provide assurances of the foreign code share partners' safety performance.

The enabling legislation under which DOT approves or disapproves code share agreements explicitly directs that in determining what is in the public interest, "safety" should be assigned the highest priority.⁷ In our view, the current process for approving code share agreements does not meet this expectation. Furthermore, if the foreign carrier is already authorized to fly into the United States, OST does not request a safety determination from FAA. For example, OST did not request safety advice from FAA in its 1998 approval of a code share agreement for COPA Airlines, a Panamanian carrier, because COPA received authority to fly into the United States in 1985.

OST's Approval Process Primarily Focuses on a Public Interest Determination and Competition Issues. OST views code sharing as a means to enhance international trade and commerce and suggests that code sharing can benefit consumers by increasing international service options and enhancing competition between carriers. In approving code share agreements, OST reviews applications to determine whether: (1) the homeland of the foreign carrier permitted the United States equal access to their country; (2) carriers would be financially able to maintain their operations; and (3) new agreements would not substantially reduce or eliminate air carrier competition. For example, in OST's review of the application for Thai Airways to enter into a code share agreement, OST considered the following:

- the existence of a bilateral agreement between the United States and Thailand which permitted U.S. carrier service to Thailand;

⁷ Title 49 of the United States Code, section 40101(a)(1) requires that the Secretary consider safety as the highest priority in authorizing air transportation services.

- financial documentation to determine whether Thai Airways would be able to continue providing service once the agreement was approved; and
- comments from concerned parties such as other air carriers to ensure that the agreement would not give United Airlines unfair competitive advantages over other U.S. carriers.

For foreign carriers that do not already have authority to fly into the United States, OST also submits a request to FAA to obtain a recommendation on the carrier's safety status. Because Thai Airways received authority to fly into the United States in August 1980, OST did not request updated data for its October 1996 approval of the code share agreement.

This process does not comply with OST's statutory mandate for determining what is in the public interest. The statute⁸ emphasizes safety considerations as primary factors. It states:

...the Secretary of Transportation shall consider the following matters, among others, as being in the public interest and consistent with public convenience and necessity:

- (1) assigning and maintaining safety as the highest priority in air commerce.
- (2) before authorizing new air transportation services, evaluating the safety implications of those services.

FAA Has Restricted Its Safety Oversight Role in Code Share Agreements Because of Resource Constraints and Perceived Limitations in Legal Authority.

Although OST seeks FAA's advice, FAA does not provide information on the safety of individual foreign carriers. The agreement that the United States signed with the International Civil Aviation Organization (ICAO) requires that FAA accept the airworthiness and operating certificates of a foreign carrier's home country. FAA performs International Aviation Safety Assessments (IASAs) of foreign civil aviation authorities to ensure their compliance with international safety standards. When providing information to OST, FAA includes the results of these IASAs as part of its safety advice on code share approvals; however, these reviews do not include an evaluation of individual foreign carrier safety.

⁸ Title 49 of the United States Code, section 40101(a)(1) requires that the Secretary consider safety as the highest priority in authorizing air transportation services.

FAA points to essentially three factors to explain its limited role. First, FAA maintains that it is without legal authority to make safety fitness determinations of individual foreign carriers. This view has merit. However, the legal situation is quite different in international code share agreements because the U.S. carrier seeks U.S. approval to sell tickets on a foreign aircraft as if it were a U.S. flight and to show the name of the U.S. carrier on the ticket. Furthermore, Federal law requires that “safety” be a paramount consideration in deciding whether to approve agreements like code shares. As the Department’s safety expert, FAA should be more actively involved in providing OST safety information.

Second, FAA correctly points out that it does make determinations about the civil aviation authority in the foreign carrier’s homeland. This program identifies whether the carrier’s homeland provides adequate aviation oversight of its carriers, and has improved international aviation safety by helping foreign civil aviation authorities improve their oversight. However, this is quite different from a judgment about the safety practices of an individual carrier. FAA is itself a civil aviation authority that meets international standards, but that is materially different from a conclusion that all U.S. carriers therefore follow sound safety practices.

The third and most legitimate point FAA raises is that it has limited resources and already is resource-constrained in exercising oversight of U.S. aircraft and U.S. crew operations. Adding code share agreements to the workload would be an additional burden and raise expectations. We believe the answer to this is that U.S. carriers seeking approval for a code share agreement can reasonably be expected to perform most of the work and provide FAA assurances that the foreign carrier that will operate as a U.S. flight is compliant with applicable safety requirements. FAA’s role would be to ensure that U.S. carriers have a credible process in place to provide such assurances.

DOD and U.S. Carriers Established a Process for Enhancing Code Share Safety

DOD is one of the largest U.S. consumers of air carrier services, spending \$1.2 billion annually to transport military personnel to points around the world. DOD’s policy has been to use U.S. carriers for this service; however, the proliferation of code sharing has resulted in U.S. carriers proposing the use of foreign carriers to provide military transportation under DOD contracts. Because U.S. carriers issue the tickets under code share agreements, the Comptroller General determined that international code share flights meet Fly America Act requirements. As a result, U.S. carriers proposed foreign code share carriers to provide military transportation under DOD contracts.

By law, DOD is required to review the safety of charter air carriers that transport military personnel. DOD performs safety reviews of U.S. carriers prior to including them on a DOD list of authorized air transport providers. However, DOD lacked resources and authority to perform these reviews of the growing number of foreign carriers involved in transportation of military personnel. DOD needed alternative solutions to meet its congressional mandate to ensure safety of its personnel.

In January 1999, DOD formed a working group with American, Continental, Delta, Northwest, Trans World, and United Airlines to address code share safety with foreign carriers. Working with these six U.S. carriers, and later joined by the ATA, DOD finalized an agreement in August 1999, which establishes a program for U.S. air carriers to assess the safety of their code share partners.

OST and FAA Should Improve On the DOD Process for Reviewing Safety in the Code Share Process

OST and FAA will need to significantly improve their safety approval and oversight procedures. Key elements of these procedures would include:

- requiring U.S. carrier safety assessments of their foreign partners;
- monitoring and periodically reviewing the carriers' assessment programs;
- coordinating efforts with DOD for the exchange of information about carrier safety assessments; and
- determining appropriate safety standards carriers will use in conducting the safety assessments.

Code Share Safety Approval and Oversight Procedures Have Not Been Developed. OST and FAA have not established requirements that U.S. carriers complete safety assessments of their foreign partners as a condition of approval and continued operation of international code share agreements. In our opinion, the Department should require that existing, pending, and future code share partners be reviewed and that initial reviews of all carriers be performed on-site. The DOD/ATA agreement only requires performance-based assessments, not on-site reviews. In our view, these performance-based assessments are not specific enough to obtain a thorough understanding of the foreign carrier's operations without an on-site review. For example, the assessment factors include company history and sophistication, but do not specify what issues in a company's history would be indicators of potentially unsafe operations.

To add credibility to the carriers' reviews and strengthen the process, FAA must also ensure that U. S. carriers establish procedures requiring that assessments only

be performed by qualified staff. Equally important, the reviews must demonstrate that foreign carriers have implemented safety procedures in critical areas such as maintenance operations, aircraft airworthiness, crew qualifications, crew training, flight operations, en-route procedures, emergency response plans, security, and dangerous goods.

In addition, the Department should require that carriers provide copies of the safety assessments to FAA so it can review and assess whether carriers' reviews have been comprehensive enough for a safety determination. Further, to demonstrate their confidence in the safety of their proposed partner's operations and the quality of the safety assessments, senior U.S. carrier safety officials should confirm that the assessment results show that foreign code share carriers comply with agreed upon safety standards and practices. FAA could then consider the results of these assessments in performing its reviews of foreign civil aviation authorities.

Finally, the Department will need to establish procedures for terminating or restricting the use of code share agreements when (1) the Department of Defense determines that adverse safety information warrants prohibiting U.S. military personnel from using a foreign carrier or (2) FAA, on its own initiative, makes a similar determination regarding the transport of U.S. passengers.

FAA Validation of Carrier Assessment Program is Necessary to Add Credibility to Air Carrier Reviews. Because of the variation in international safety standards and processes carriers could use in performing safety assessments, FAA will need to monitor and periodically review the implementation of carriers' assessment programs to ensure the consistency, quality, and effectiveness of the review results. This will necessitate that FAA review the carriers' audit programs, guidelines for team qualifications, and documentation supporting the carriers' review conclusions. In addition, a sample of carriers' safety assessments, reviewed by FAA, would further confirm the carriers have applied sound procedures and standards in conducting the reviews. FAA should also consider reserving the right to verify the assessment results, if necessary, through an on-site inspection of aircraft used in code share operations. These steps would add credibility to what is otherwise a carrier's review of its business partner and give OST a greater level of assurance in accepting the results as a basis for approving code share agreements.

Coordination and Information Sharing Will be Necessary to Avoid Duplicating Efforts. Duplication of foreign carrier assessments is another issue that will need to be addressed by the Department. If foreign carriers code share with more than one U.S. carrier, a process needs to be worked out to avoid duplication of carrier efforts in performing safety assessments. For example, as of May 1999, Air China

had code share agreements with four U.S. carriers. All four carriers should not be required to perform safety assessments of Air China.

The Department could obtain immediate benefit from DOD's work if it were able to gain access to the safety assessment results. The DOD/ATA agreement allows DOD access to the assessment results only at the U.S. carriers' facilities. U.S. carriers expressed concerns over providing copies of assessments to Government officials because, under the Freedom of Information Act, the public has access to information in Federal files unless specific restrictions are created. If these issues were resolved, the Department could begin to use the carriers' safety assessments to make decisions on pending code share applications. In our opinion, it is important for DOT and DOD to closely coordinate efforts to maximize the effective use of limited resources between the two agencies, avoid duplication, and establish protocols for the exchange of information about carrier safety assessments.

FAA Should Evaluate the Safety Standards Carriers Will Use in Conducting Their Assessments. Under the DOD/ATA agreement, U.S. carriers will use ICAO and DOD standards to conduct safety assessments. According to aviation experts, these standards are not as stringent as FAA requirements for U.S. air carriers. FAA officials maintain that, under international agreements, foreign carriers can only be required to follow ICAO standards. However, U.S. carriers may be able to contractually require higher standards of their code share partners than could be regulated by a U.S. Government agency. For example, FAA requires that Traffic Alert and Collision Avoidance Systems (TCAS) be installed in passenger aircraft, but ICAO does not require TCAS. TCAS gives pilots early warning of other air traffic in their flight paths to prevent mid-air collisions. One U.S. carrier advised us that it requires its code share partners to meet its safety standards which are equivalent to FAA's Part 121 operating requirements for U.S. carriers and includes TCAS in its code share safety assessment checklist.

The issues and solutions pertaining to which safety standards are appropriate for foreign code share carriers to follow are complex. We plan to more closely examine the differences in safety standards used in the United States versus those used by U.S. code share partners in our next review. Therefore, we are not making any recommendations in this area at this time.

OST/FAA Code Share Team Needs to Quickly Finalize Recommendations for Improving the Code Share Process

OST and FAA are well aware of the need to address code share safety issues and have been working on developing new processes and procedures for code share approval and oversight. In May 1999, OST and FAA formed a code share team at

the Secretary's direction and in response to a letter from Congressman Oberstar. Secretary Slater established a 90-day deadline for the OST and FAA team to develop recommendations for a process that would ensure the availability of critical safety information before approval of code share operations. He emphasized the need to ensure that flights on foreign airline partners meet "effective safety standards."

The team has worked to develop a draft process for ensuring that OST authorizations of code sharing operations are supported by U.S. carrier validated determinations of the safety of foreign partners. The team is also considering security issues in its process. The approaches developed by the team address many of the issues discussed in this report, however the team continues to modify and rework the proposals. The team has not established a target date for finalizing its recommendations. Once the proposals are finished, they will need to be accepted by OST and FAA management. When accepted, a substantial amount of work and time will be necessary to develop policies and procedures to implement the team's recommendations. The Department needs to take steps to address safety in pending code share applications while this important work proceeds.

Interim Measures Can Be Implemented to Address Code Share Safety. Until an improved code share program is fully implemented, OST and FAA should use available safety data on foreign carriers and obtain information from DOD and the six carriers that have agreed to assess their code share partners. FAA should also consult foreign civil aviation authorities to obtain input on the safety status of potential code share carriers. This type of information could be collected and used to perform risk assessments, and provide safety assurances for proposed code share agreements until new permanent procedures are implemented.

RECOMMENDATIONS:

We recommend that the Office of the Secretary and FAA:

1. Develop and implement procedures requiring that all U.S. carriers perform safety assessments of foreign carriers as a condition of code share approval and continued authorization. These procedures should include requirements that carriers:
 - a) perform an initial on-site review of all existing, pending, and future code share partners;
 - b) establish review procedures, to be approved by FAA, that will address the content of the assessments and qualifications of staff conducting the assessments;

- c) develop assessment processes that include review and verification that foreign partners have implemented effective procedures in critical safety areas such as maintenance operations, airworthiness of aircraft, crew qualifications, crew training, flight operations, en-route procedures, emergency response plans, security, and dangerous goods;
 - d) provide copies of safety assessments to FAA for review and acceptance, and make available to FAA, when necessary, information supporting assessment results;
 - e) submit confirmations from senior safety officials that the assessment results were satisfactory and any deficiencies noted have been corrected; and
 - f) coordinate reviews to avoid multiple assessments of foreign carriers code sharing with more than one U.S. partner.
2. Coordinate closely with the Department of Defense to maximize the effective use of limited resources between the two agencies, avoid duplication, and establish protocols for the exchange of information about carrier safety assessments. FAA should also consider the safety assessment results in performing IASA reviews.
3. Establish procedures for terminating or restricting the use of code share agreements when (1) the Department of Defense determines that adverse safety information warrants prohibiting U.S. military personnel from using a foreign carrier (2) the U.S. carrier terminates the agreement, or (3) FAA, on its own initiative, makes a similar determination regarding the transport of U.S. passengers.

We also recommend that the FAA:

4. Develop oversight procedures for FAA to validate U.S. carriers' safety assessment programs. The validation should include:
- a) reviews of air carriers' audit procedures, assessment processes, and documentation supporting review conclusions to ensure the consistency, quality and effectiveness of the review results; and

- b) comprehensive audits of a sample of safety assessments to confirm that carriers have applied agreed upon standards and procedures in conducting the assessments.
 - c) procedures to, if necessary, perform an on-site inspection of aircraft used in code share operations.
5. Require that FAA staff perform risk assessments using available safety data on foreign carriers and review results of air carrier safety assessments, if made available, as part of its safety advice to OST on code share applications. This interim procedure should be used no more than 3 months, until the Department finalizes new code share procedures.

MANAGEMENT COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

On September 17, 1999, OST and FAA officials provided oral comments to our audit report. FAA officials expressed concerns with our conclusion that FAA's code share responsibilities should be significantly expanded. FAA officials stated that international agreements and resource constraints are factors that limit FAA's ability to assess the safety of foreign carriers. We modified our report to reflect these comments. However, in our opinion, FAA needs to be more actively involved in providing OST safety information on foreign carriers. This can be accomplished through U.S. air carrier or third party safety assessments of foreign carriers, with oversight by FAA to ensure the assessment process is credible and meets FAA requirements. The fact is, just as code share agreements changed international air travel, FAA too must adjust its oversight practices to meet changes in the industry.

OST and FAA officials stated that we did not address their planned public education efforts, which is one thing the FAA can do that would, in their view, improve the code share process. FAA proposes to take steps to ensure the public is aware of how code sharing works, how consumers can find out if their flight is a code share, what the safety and security implications of code sharing are, and how FAA is limited in its oversight responsibilities for foreign carriers. We agree the traveling public needs to be educated about code sharing. However, this alone is not sufficient to address the safety implications of international code sharing agreements. FAA needs to take a leadership role in ensuring that safety is adequately considered as a condition of approving code share agreements.

FAA agreed that it could provide oversight of U.S. carriers' assessment programs, but stated this effort would need to be limited to areas such as determining

whether the carriers used qualified personnel to conduct the safety assessments. FAA was concerned with our presentation of foreign carrier accident data. In their view, our presentation implies that foreign carriers that have had accidents are unsafe. FAA contends that accidents alone are not the sole factor in determining if a carrier is unsafe. We agree and modified our report to reflect these comments. However, accidents are indicators of potential safety problems and as safety experts, FAA should evaluate foreign carrier accident data as part of its safety advice to OST.

Audit Methodology and Scope

We performed our work at OST and FAA headquarters in Washington, D.C., and other selected locations between February and July 1999. Our work covered the time period from January 1990 to July 1999. We performed the audit in accordance with Government Auditing Standards prescribed by the Comptroller General of the United States and included such tests of procedures and records as we considered necessary.

We met with or interviewed appropriate officials and staff in FAA's Office of Regulation and Certification, DOT's Office of Aviation and International Affairs, and FAA's International Field Office in Miami, Florida. We also met with DOD officials responsible for the safety of military personnel on commercial carriers with DOD contracts; safety and marketing managers at U.S. carriers; and representatives of the ATA. Exhibit B contains a more detailed list of organizations and individuals contacted during the audit.

To gain an understanding of accident history and safety concerns related to foreign code share agreements we reviewed and analyzed data from Airclaims Limited and Boeing Corporation, and analyzed accident and safety reports. We reviewed relevant regulations at Title 14 Code of Federal Regulations:

- Part 121, Operating Requirements: Domestic, flag, and supplemental operations;
- Part 129, Operations: Foreign air carriers and foreign operations of U.S.-registered aircraft engaged in common carriage;
- Part 211, Applications for permits to foreign air carriers; and
- Part 212, Charter trips by foreign air carriers.

We also reviewed (1) code share application files and dockets; (2) annexes of the Chicago Convention on International Civil Aviation; and (3) IASA files for selected Latin American countries.

There has been no prior Office of Inspector General or General Accounting Office audit coverage of the safety implications of code share agreements.

Organizations Visited or Contacted

Industry

Air Transport Association
American Airlines
Boeing Company
Continental Airlines
Delta Airlines
Northwest Airlines
United Airlines

Aviation Consultants

Tony Broderick, Former FAA Associate Administrator for Regulation and Certification
Carol Carmody, Former U.S. Representative to the International Civil Aviation Organization
Gellman Research Associates
Clint Oster, Professor of Public and Environmental Affairs, Indiana University

Other Government

National Transportation Safety Board
U.S. Department of Defense
U.S. Department of State

FAA

Assistant Chief Counsel International Affairs and Legal Policy
Headquarters offices of Associate Administrator for Regulation and Certification
Miami International Field Office

OST

Assistant General Counsel for International Law
Headquarters offices of the Assistant Secretary for Aviation and International Affairs

Exhibit C

***U.S. Carriers and Their Foreign Code Share Partners
(As of May 31, 1999)***

U.S. Carrier	Foreign Code Share Partner																								
Alaska	Air China Qantas																								
Alaska & Horizon	Canadian International &/or regional airlines Canadian Airlines & regional airlines KLM																								
America West	Air China British Airways EVA																								
American Airlines/ American Eagle	<table border="0"> <tr> <td>Aero California</td> <td>Iberia</td> </tr> <tr> <td>Air Liberte, S.A.</td> <td>Japan Airlines</td> </tr> <tr> <td>Air Nostrum</td> <td>Kuwait Airways (Cargo Only)</td> </tr> <tr> <td>Air Pacific</td> <td>Philippine Airlines</td> </tr> <tr> <td>Asiana</td> <td>Polskie Linie Lotnicze LOT</td> </tr> <tr> <td>Aviaco</td> <td>Qantas</td> </tr> <tr> <td>British Midland</td> <td>Singapore Airlines</td> </tr> <tr> <td>Canadian International</td> <td>South African Airways</td> </tr> <tr> <td>Canadian Regional</td> <td>TACA Group</td> </tr> <tr> <td>China Eastern</td> <td>TAM</td> </tr> <tr> <td>Finnair Oy</td> <td>TAM – Mercosur</td> </tr> <tr> <td>Gulf Air</td> <td>TAM - Meridionais</td> </tr> </table>	Aero California	Iberia	Air Liberte, S.A.	Japan Airlines	Air Nostrum	Kuwait Airways (Cargo Only)	Air Pacific	Philippine Airlines	Asiana	Polskie Linie Lotnicze LOT	Aviaco	Qantas	British Midland	Singapore Airlines	Canadian International	South African Airways	Canadian Regional	TACA Group	China Eastern	TAM	Finnair Oy	TAM – Mercosur	Gulf Air	TAM - Meridionais
Aero California	Iberia																								
Air Liberte, S.A.	Japan Airlines																								
Air Nostrum	Kuwait Airways (Cargo Only)																								
Air Pacific	Philippine Airlines																								
Asiana	Polskie Linie Lotnicze LOT																								
Aviaco	Qantas																								
British Midland	Singapore Airlines																								
Canadian International	South African Airways																								
Canadian Regional	TACA Group																								
China Eastern	TAM																								
Finnair Oy	TAM – Mercosur																								
Gulf Air	TAM - Meridionais																								
Atlantic Coast d/b/a United Express	Lufthansa																								
Comair*	Sabena																								
Continental/ Continental Express	Air Aruba Air China Air France Alitalia British Midland COPA Czech Airlines EVA Virgin Atlantic VASP																								

Exhibit C

Delta	Aer Lingus Aeroflot Aeromexico (Aerovias de Mexico) Aerpostal Air France Air Jamaica Austrian Airlines Austrian/Tyrolean	China Southern Korean Airlines Malev Hungarian Sabena Swissair/Crossair Swissair Transbrasil Transportes Aereos Portugueses
Evergreen	Qantas (Cargo Only)	
Federal Express	Qantas (Cargo Only)	
Gemini*	Asiana Qantas (Cargo Only)	
Northwest	Air U.K. Ltd. Air China Air Exel Netherlands Ansett Australia Ltd. (Cargo Only) Asiana (Cargo Only) KLM	KLM/Braathens KLM/Eurowings Kenya Airways, Ltd. Korean Airlines (Cargo Only) Nippon Cargo (Cargo Only)
Reno Air*	Qantas Canadian Airlines International	
TWA	Air Europa Air New Zealand (Cargo Only) Royal Jordanian Royal Air Maroc Singapore Airlines	
United Airlines	Air Canada Air India Air New Zealand All Nippon ALM 1997 Airlines NV Ansett Australia Ansett New Zealand British Midland Cayman Airways Emirates Air	Kendall Lufthansa Mexicana National Airlines Chile, S.A. SAS Saudi Arabian Spanair (Cargo Only) Thai Airways Tranportes Aeromar Varig
US Airways	Deutsche BA	
UPS	Nippon Cargo (Cargo Only) Qantas (Cargo Only)	

*Carrier is not a member of the Air Transport Association (ATA)

Code share partnerships could have changed since our analysis in May 1999.

List of Major Contributors to This Report

The following Office of Inspector General staff contributed to this report.

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