

**GAO**

Report to the Chairman, Subcommittee  
on Aviation, Committee on  
Transportation and Infrastructure,  
House of Representatives

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July 1999

**AVIATION**

**Issues Associated With  
the Theft of Stock  
Used to Create Airline  
Tickets**



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**Resources, Community, and  
Economic Development Division**

B-280702

July 30, 1999

The Honorable John J. Duncan, Jr.  
Chairman, Subcommittee on Aviation  
Committee on Transportation and Infrastructure  
House of Representatives

Dear Mr. Chairman:

Travelers fly billions of miles each year, sometimes using tickets produced from stolen ticket stock—the paper upon which a ticket is imprinted.<sup>1</sup> In 1998, your Subcommittee heard widely divergent testimony about the extent to which ticket stock has been stolen and the implications associated with the use of stolen stock. For example, the Airlines Reporting Corporation (ARC)—the largest supplier of airline ticket stock worldwide and the primary supplier for U.S. travel agents—testified that the losses from stolen ticket stock are relatively minor, costing the multibillion-dollar airline industry only a few million dollars annually. Travel agency representatives disagreed, testifying that the thefts of ticket stock cost billions of dollars annually and result in the closure of travel agencies held liable for the losses. These representatives also testified that the use of tickets produced from stolen stock results in the loss of tax revenues to the federal government and raises concerns about who—terrorists and others, such as illegal aliens—may be using stolen ticket stock for travel. According to the travel agency representatives, the problem could be solved if airlines used an existing database to detect tickets produced from stolen ticket stock.

Given these divergent views, you asked us to examine the following questions: (1) What is the number and value of the airline ticket stock stolen annually? (2) What financial implications are associated with the use of stolen ticket stock? (3) What other issues are potentially associated with the use of stolen ticket stock? and (4) What technological interventions and other initiatives are available to detect the use of stolen ticket stock?

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<sup>1</sup>A typical airline ticket is composed of several parts—the airline auditor's record, an agent's record, several flight coupons (one for each segment of a traveler's journey), the passenger's receipt, and—if paid by credit card—a charge form. While some tickets are written out by hand (manually), most are generated using a computer. For manual tickets, the individual parts of the tickets are already bound together in the form of a ticket. In contrast, each piece of an automated ticket must be generated separately and then combined to form a ticket. As used in this report, each manual ticket and each piece of an automated ticket is called "ticket stock." Moreover, the term "stolen ticket stock" refers to stock that is known to be stolen as well as stock that has been reported lost or missing and therefore has possibly been stolen.

To determine the overall number and value of airline ticket stock reported stolen, we obtained information from the industrywide database on stolen and other fraudulent ticket stock maintained by Aeronautical Radio, Inc. (ARINC).<sup>2</sup> This database cannot be broken out by year and does not contain information about the value of reported stolen stock. Accordingly, we used ARC's status reports to determine the amount of ARC ticket stock that is stolen annually.<sup>3</sup> We also used information provided by ARC to estimate the value of its stolen ticket stock for 1997 and 1998—the years for which the most complete information is available. A detailed description of our scope and methodology appears in appendix I.

## Results in Brief

Definitive information on the amount and value of airline ticket stock stolen annually does not exist. However, from 1989 through 1998, worldwide suppliers of ticket stock reported 11.3 million pieces of stolen ticket stock to Aeronautical Radio, Inc. The Airlines Reporting Corporation reported the majority of these losses—8.2 million pieces. The Corporation, for a variety of reasons, tracks only 27 percent of the stock it reported and, based on this information, identified over 447,000 pieces of its stock that were stolen in 1997 and 1998. In the event that all of this stolen ticket stock is used, we estimate the potential value (loss) attributable to the Corporation's ticket stock could range between \$116 million to \$302 million, depending on the number of pieces of stock used to create each airline ticket.

The airlines bear the financial risk for most situations involving the theft of ticket stock. For the airlines, however, the losses are relatively small compared with their total annual revenue and their losses from other airline-related fraud, such as losses resulting from abuses of the airlines' frequent flyer programs. In contrast, the losses incurred by travel agencies that did not adequately safeguard the Airlines Reporting Corporation's ticket stock can result in serious financial hardships. If all of the Corporation's ticket stock stolen in 1997 and 1998 were used for travel, which is unlikely, we estimate that the airline and travel agency industries could lose about \$151 million each. In practice, however, travel agencies would likely incur significantly smaller losses because airlines frequently settle for far less than the amounts the travel agencies owe. U.S. tax officials believe that the financial consequences to the federal government

<sup>2</sup>Since 1989, ARINC—an airline-owned company in Annapolis, Maryland—has maintained a centralized database for listing stolen, lost, missing, and other fraudulent airline ticket stock worldwide. The database is called "TICKETS."

<sup>3</sup>ARC's ticket stock accounted for 72 percent of all the stolen stock reported to ARINC.

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from the use of stolen ticket stock are minor and of limited interest for auditing purposes compared with higher-risk tax issues, such as the depreciation of airline assets.

The traveling public does not appear to be at any greater risk from individuals who use tickets created from stolen ticket stock than they are from individuals who travel on legitimate tickets. In part, this is because the airline industry believes that unsuspecting passengers purchase and use the majority of tickets created from stolen ticket stock. Federal law enforcement and intelligence officials and airline officials were unaware of any individual who had traveled on stolen ticket stock to conduct terrorist activities. They also thought it unlikely that terrorists would knowingly use tickets created from stolen stock because (1) terrorists generally have the means to purchase false identification and legitimate tickets and (2) using tickets created from stolen stock increases their risk of detection. Although airline and immigration officials believe that illegal aliens are unknowingly sold tickets created from stolen stock, the extent of their travel by this means is not known.

The airline industry's centralized database on fraudulent ticket stock is the principal means for detecting the use of stolen stock. While this database is an effective tool, many airlines do not subscribe to it. Moreover, according to officials of participating airlines, the database is not routinely used, primarily because the time required to manually query it delays passenger processing. Some airlines are experimenting with other technologies, such as optical scanners, bar code readers, and magnetic strip readers, that may speed up the detection of stolen ticket stock. While there is currently no single solution to prevent the use of stolen ticket stock, the steady increase in electronic ticketing may eventually reduce ticket stock thefts. This is because, with paperless tickets, travel agencies and other ticket distributors will have less need to maintain large inventories of airline ticket stock.

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## Background

While the federal government is deeply involved in many aspects of air travel, it is not involved in the creation or distribution of airline tickets. Instead, such matters are left to the airline industry.

There are a variety of sources and types of airline ticket stock. For example, when airlines issue tickets directly to passengers, they use individualized ticket stock bearing their corporate name. However, the vast majority of U.S. travel agencies obtain their ticket stock from ARC—an

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airline-owned corporation created, among other things, to accredit U.S. agencies and to facilitate the distribution of airline ticket stock to the agencies. In 1998, there were 32,694 ARC-accredited retail travel agencies.

In 1998, ARC issued 1.1 billion pieces of ticket stock to U.S. travel agencies. The ticket stock is blank except for the inscription of a unique identifying number and has no value until it is made into a ticket. Over 90 percent of the ticket stock ARC issued in 1998 was in automated form. Travel agents imprint this stock by computer with data—such as flight dates, flight numbers, and fares—generated from the airlines' computer reservation systems. According to ARC, a typical ticket is composed of six to seven pieces of ticket stock—the airline auditor's record, an agent's record, several flight coupons (one for each segment of a traveler's journey), a charge form, and the passenger's receipt. When combined together, these pieces of stock form an airline ticket.<sup>4</sup> International suppliers, including the International Air Transport Association, issue similar ticket stock. Figure 1 illustrates ARC's automated ticket stock.

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<sup>4</sup>When a passenger receives a ticket created from ARC ticket stock, two pieces of ticket stock—the airline auditor's record and the travel agent's record—have already been removed. In addition, if the passenger paid by credit card, the piece of stock used to charge the customer's account would have been removed.

Figure 1: Example of ARC's Automated Ticket Stock



Source: Airlines Reporting Corporation.

## Number and Value of Stolen Ticket Stock

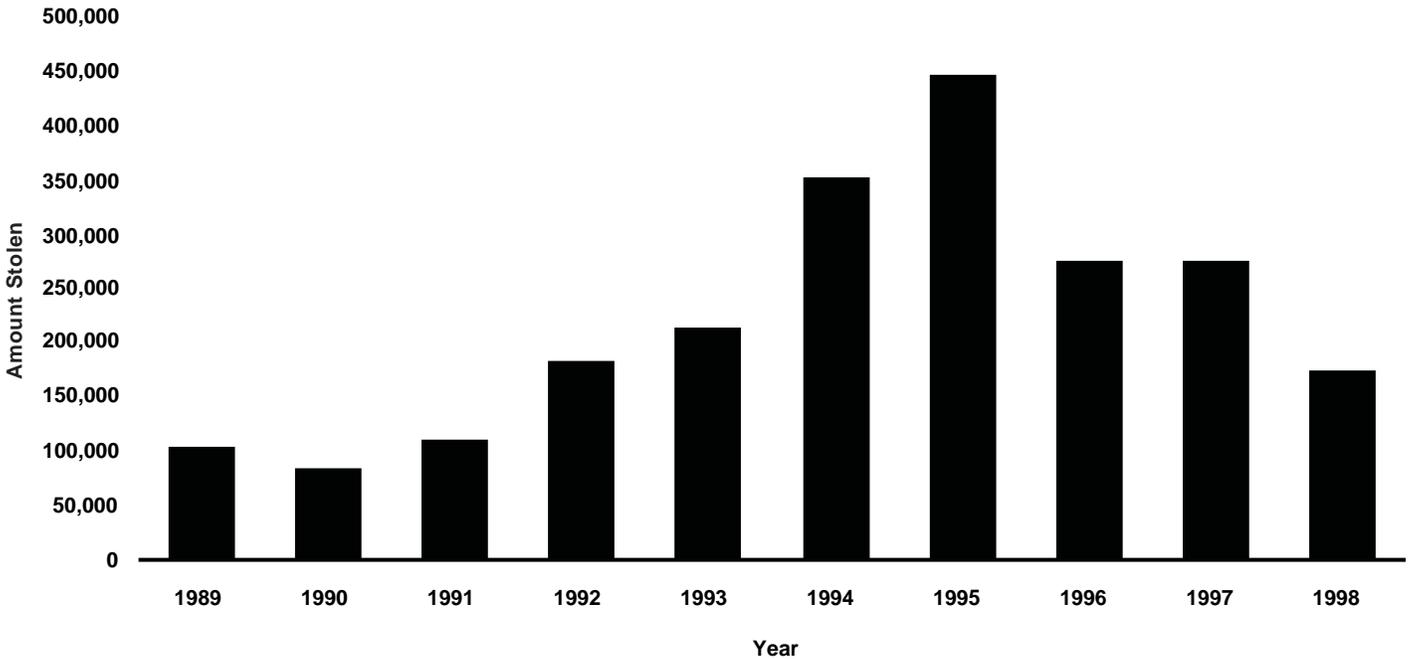
Definitive information on the amount and value of ticket stock stolen annually does not exist. However, from 1989 through 1998, subscribing airlines and other worldwide suppliers of ticket stock reported 11.3 million pieces of stolen ticket stock for inclusion in ARINC's database—an annual average of about 1.1 million.<sup>5</sup> ARC reported the majority of these losses—8.2 million pieces (72 percent). Although the amount of stolen ARC ticket stock is sizeable, it represents less than one-hundredth of 1 percent of the over 9.2 billion pieces of ticket stock that ARC issued to travel agencies during the period. International ticket stock suppliers, including the International Air Transport Association, were the second largest source of the reported losses. They reported 2.8 million pieces of stolen ticket stock (25 percent). Eleven U.S. airlines reported the remaining 350,000 pieces of stolen ticket stock (3 percent).

ARINC's database cannot be analyzed by year, and given the predominance of ARC ticket stock losses and the absence of other information sources,

<sup>5</sup>ARINC provides its ticket stock listing service to airlines and other ticket stock suppliers on a subscription basis.

we relied on the data supplied by ARC for annual information. However, ARC's database only tracks 27 percent of the stolen stock it reported to ARINC. During 1989 through 1998, ARC's annual status reports identified 2.2 million pieces of stolen ARC ticket stock—an annual average of about 220,000.<sup>6</sup> After peaking in 1995, as shown in figure 2, the amount of ARC ticket stock reported stolen has declined considerably. ARC attributes the decline to (1) the more stringent security rules that it established in April 1996, (2) its increased fraud prevention activities, (3) increased awareness by travel agency personnel of the problem, and related to this, (4) the agents' increased compliance with ARC's required security measures.

Figure 2: Amount of Stolen ARC Ticket Stock, 1989-98



Source: ARC's annual status reports on stolen ARC ticket stock.

<sup>6</sup>The 2.2 million pieces of stolen ticket stock identified in ARC's status reports reflects only 27 percent of the amount (8.2 million) of ticket stock that ARC reported to ARINC for the same period. However, as discussed in app. I, ARC's annual status reports are more reliable than ARINC's database in determining the amount of ARC stolen stock that could be used for travel.

In 1997 and 1998, about 97 airlines voluntarily reported to ARC that 8,330 tickets were created from stolen ARC ticket stock and used for travel on their airlines.<sup>7</sup> The tickets had a total face value of about \$10.5 million and an average value of about \$1,260.<sup>8</sup> Using this average, we estimate that the 447,000 pieces of ARC ticket stock identified as stolen in ARC's status reports for 1997 and 1998 could be valued at as much as \$302 million—\$186 million for the stock stolen in 1997 and \$116 million for 1998. The \$302 million represents the "worst-case" scenario and therefore is likely to overstate the potential loss from stolen ARC ticket stock. This is because, while travel agents normally use six to seven pieces of ticket stock to create an airline ticket, we assumed that individuals creating fraudulent tickets would, wherever possible, try to minimize the amount of stock used for each ticket so as to maximize the number of tickets they could create. For example, according to ARC, individuals creating tickets with stolen stock could use—for a direct, one-way trip—as few as two pieces of stock (one for the flight and one for the passenger's receipt) to create an airline ticket. As a result, rather than using six to seven pieces of ticket stock to create an airline ticket—as in the case of a typical ticket—we assumed that only two pieces would be needed and used.<sup>9</sup> Likewise, we assumed that all of the stolen ticket stock would be used. This is extremely unlikely because, during 1997 and 1998, officials from the four airlines we contacted said that their airlines had confiscated over 1,900 pieces of stolen ARC ticket stock before the stock could be used.<sup>10</sup>

## Financial Implications Associated With Use of Stolen Ticket Stock

The airlines bear the financial risk for most situations involving stolen ticket stock, but their losses are small relative to their total annual revenue and represent only a small portion of their total losses from all airline-related fraud. In contrast, losses incurred by travel agencies held liable for not adequately safeguarding ARC ticket stock can result in serious financial hardships. Of the 447,000 pieces of ticket stock stolen in 1997 and

<sup>7</sup>Airlines are under no obligation to provide ARC with information about the amount and value of stolen ARC ticket stock used on their airlines. Some airlines do not provide ARC with any information, while others provide incomplete information about their losses. In total, ARC estimates that airlines—for proprietary reasons—report about one-third of the stolen ARC ticket stock used annually.

<sup>8</sup>The airlines reported 5,158 pieces of stolen ARC ticket stock used in 1997 and 3,172 in 1998. The value of this ticket stock totaled about \$7.1 million in 1997 and about \$3.4 million in 1998—an average value of about \$1,373 and \$1,076, respectively.

<sup>9</sup>Potential losses drop significantly if additional pieces of ticket stock are used. For example, potential losses drop to about \$215 million if three pieces of stock are used for each ticket and to about \$116 million if seven are used.

<sup>10</sup>We also assumed that none of the stolen ticket stock would be lost, damaged, or destroyed before it could be used.

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1998, we estimate that the potential financial risk to the airlines and travel agencies would be about \$151 million each. In actual practice, however, travel agencies would likely incur significantly smaller losses because airlines frequently settle for far less than the amounts that travel agencies owe. U.S. tax officials believe that the financial consequences to the federal government from the use of stolen ticket stock are minor and of limited interest for auditing purposes compared with higher-risk tax issues, such as the depreciation of airline assets.

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### Airline Losses Are Small Compared With Their Annual Revenues and Their Losses From Other Types of Airline Fraud

Airlines incur the financial burden for stolen ticket stock under a wide range of scenarios. For example, the airlines are liable for losses resulting from the use of their own stolen ticket stock. From 1989 through 1998, 11 U.S. airlines reported the loss of 350,000 pieces of their own blank ticket stock to ARINC's database. The actual value of the airlines' losses is not known because the database does not include information on the value of used ticket stock.

In addition to losses from the use of their own stolen ticket stock, airlines bear the financial burden for much of the ARC stock that is reported stolen. For example, airlines bear the cost of crimes committed by travel agencies against the airline industry, including missing stock from terminated agencies and travel agency "bust-outs."<sup>11</sup> Bust-outs involve the fraudulent acquisition or retention of ARC ticket stock by a travel agency. For example, according to ARC officials, because it is relatively easy to obtain ARC's accreditation as a travel agency, some persons set up agencies solely to acquire and flee with ARC ticket stock. Moreover, according to ARC officials, travel agencies sometimes file for bankruptcy or otherwise discontinue their operations without paying for the tickets they have sold and without returning their remaining inventory of ARC ticket stock. In 1997 and 1998, ARC reported 33 travel agency terminations and bust-outs involving 150,000 pieces of ARC ticket stock. These losses represent about 34 percent of ARC's total ticket stock losses during this period.

In many cases, airlines also suffer losses from crimes perpetrated against travel agencies. For example, ARC holds travel agencies harmless for the use of ARC ticket stock that is stolen during an armed robbery. In 1997 and 1998, about 23,000 pieces of ARC ticket stock were stolen in 29 armed robberies of travel agencies. In addition, if the agency followed ARC's ticket

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<sup>11</sup>ARC can terminate an agency's accreditation for various reasons, including an agency's default on payments owed to airlines. In such cases, ARC inventories the terminated agency's ticket stock to identify any unaccounted for ticket stock.

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security procedures,<sup>12</sup> ARC holds travel agencies harmless for ticket stock that is (1) stolen in burglaries, daytime thefts, and other thefts or (2) reported missing. In 1997 and 1998, 232 travel agencies reported the loss of about 274,000 pieces of ARC ticket stock from these types of crimes. ARC determined that 81 of these agencies, which had reported a total of about 45,000 pieces of stolen ticket stock, had followed ARC's security procedures, and thus the airlines were responsible.

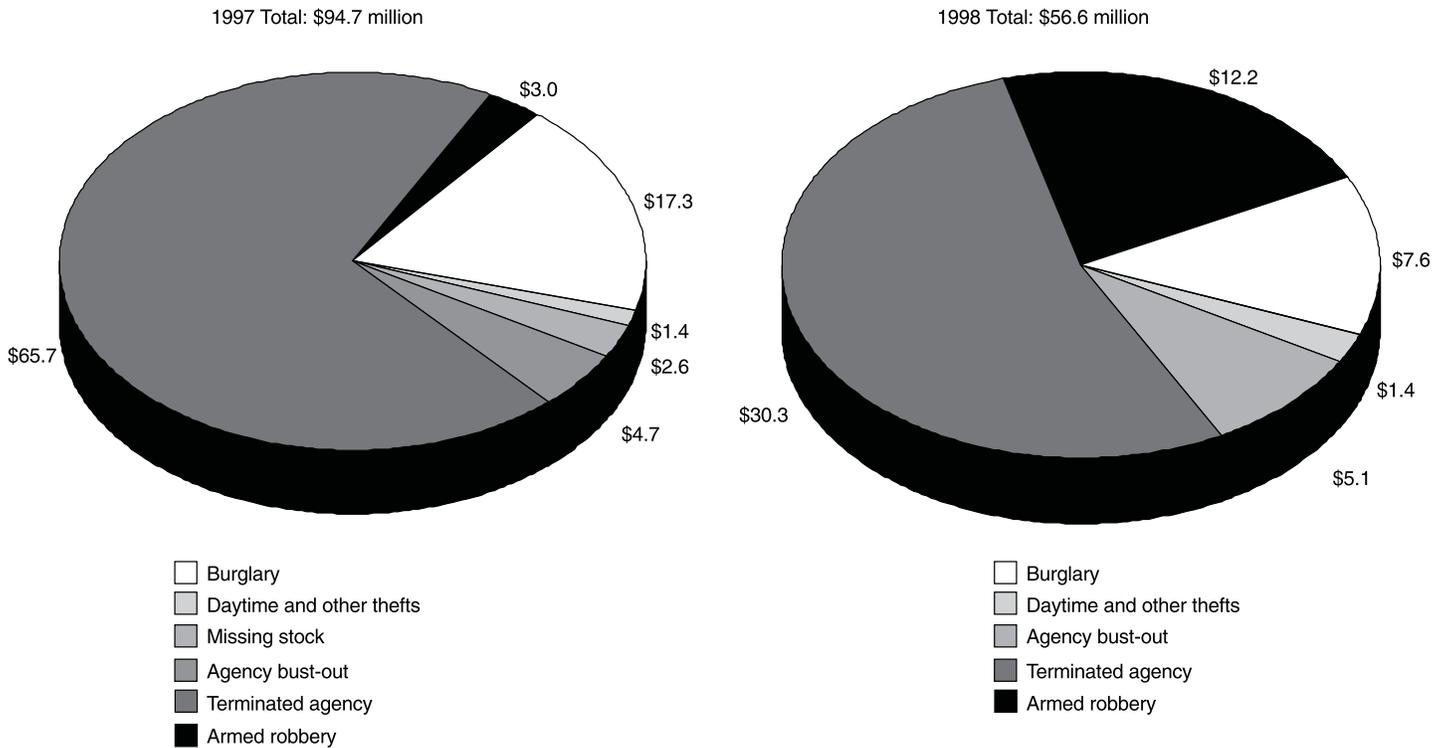
Taken together, the airlines are responsible for the use of 217,000 pieces of ARC ticket stock stolen in 1997 and 1998. In the unlikely event that all of this stock is used, we estimate that the airline industry could incur about \$151.3 million in losses—\$94.7 million for ticket stock losses in 1997 and \$56.6 million for losses in 1998.<sup>13</sup> Figure 3 summarizes, by year and type of incident, the airlines' potential losses resulting from this stolen ticket stock.

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<sup>12</sup>Travel agencies are required to limit their inventories of ARC ticket stock and to follow specific procedures for safeguarding the stock. ARC developed the requirements with the cooperation and agreement of the Association of Retail Travel Agents, the American Society of Travel Agents, the airlines, and selected travel agents.

<sup>13</sup>We used an average value of \$1,260 per ticket—the average value of stolen ARC ticket stock reported by the airlines to ARC as used in 1997 and 1998. We did not factor in airline tax write-offs, which reduce the airlines' losses. That issue is addressed later in this report.

**Figure 3: Airlines' Potential Losses From the Use of ARC Ticket Stock Stolen in 1997 and 1998, by Year and Type of Incident**



Source: GAO's analysis of ARC's annual status reports.

In addition to the losses for which they are responsible under ARC's policy, airlines frequently assume a large portion of a travel agency's financial liability. For example, according to representatives of 15 travel agencies held liable for ARC stock stolen in burglaries in 1997, their agencies were able to negotiate 33 settlements with 12 airlines.<sup>14</sup> Ten of the 12 airlines agreed to forgive 90 percent of the amount owed by the agencies in 21 of the 33 settlements. For 10 of the 12 other settlements, airlines agreed to forgive 67 percent to 85 percent of the total amount owed by the agencies.

<sup>14</sup>ARC's status report for 1997 identified 24 travel agencies that were burglarized and held liable for the use of stolen ticket stock. Representatives of three agencies told us that they were not held liable. We were able to contact representatives of 15 of the remaining 21 travel agencies. A detailed description of our methodology appears in app. I.

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The remaining two settlements were for 50 percent and 25 percent of the amounts owed. Many of the airlines also agreed to waive the travel agencies' liability for the future use of the remaining stolen ticket stock—a factor that is likely to increase the airlines' future losses.

While airline officials acknowledge that the losses from stolen ticket stock are considerable, they note that the airlines' losses are small relative to the billions of dollars that the airlines earn annually. Furthermore, according to surveys of the airline industry, the losses are minor compared with the airlines' total losses from other types of airline fraud. Specifically, according to a survey of 31 airlines in 1995, the losses from stolen ticket stock accounted for about 15 percent of all external fraud losses.<sup>15</sup> The largest source of fraud (28 percent) resulted from abuses of the airlines' frequent flyer programs. Another survey, conducted in 1996, identified tariff abuse as the primary source of airline-related fraud.<sup>16</sup> Other types of airline fraud included mail fraud; cargo theft; and internal airline fraud, such as expense account abuses and inventory fraud.

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## Travel Agency Losses Cause Serious Financial Hardship

ARC determined that travel agencies had not adequately protected ARC ticket stock in 151 of the 232 incidents involving travel agency burglaries, daytime thefts, other thefts, and situations involving missing ticket stock in 1997 and 1998. As a result, ARC deemed the agencies liable for the use of about 230,000 pieces of ARC ticket stock.<sup>17</sup> In the unlikely event that all of this ticket stock is used, we estimate that—absent settlement agreements—it could cost the travel agency industry as much as \$151.1 million—\$91.6 million for losses in 1997 and \$59.5 million for the

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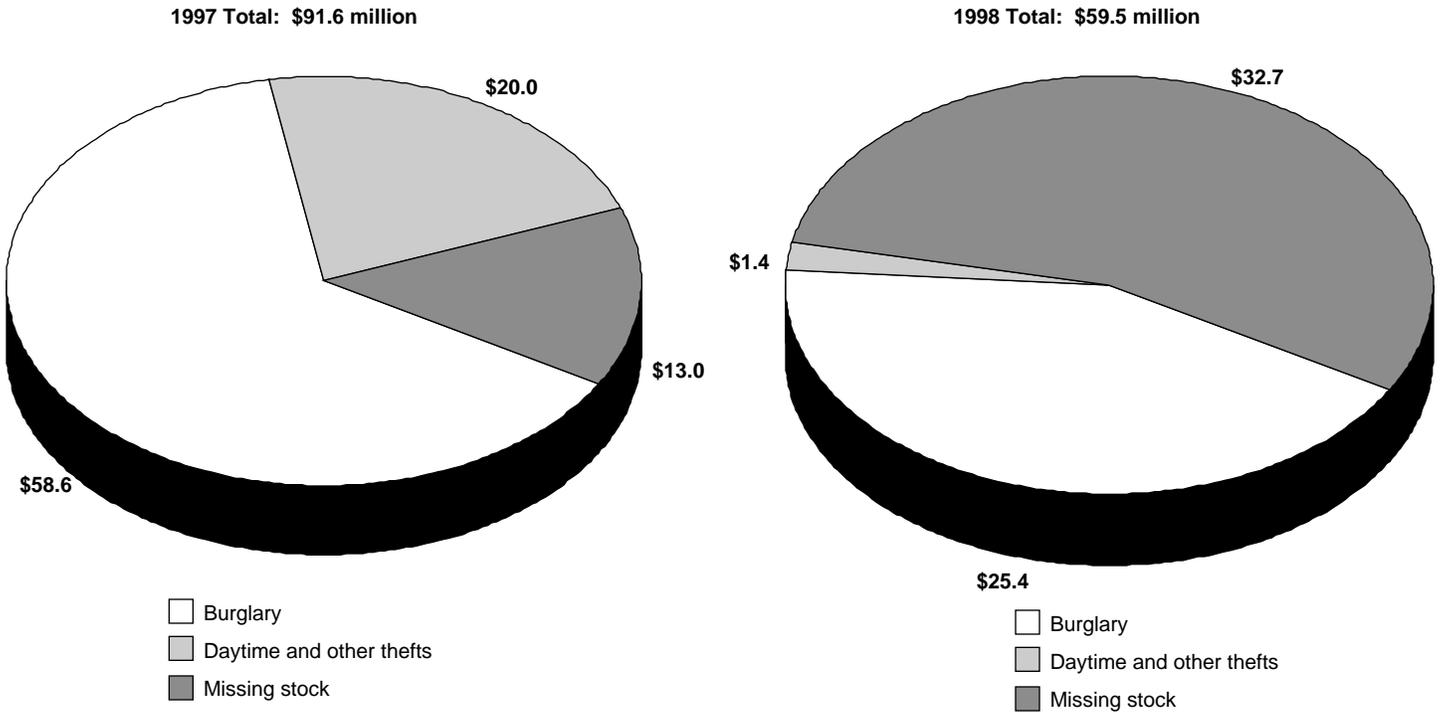
<sup>15</sup>Airline Fraud Survey, KPMG in association with the International Association of Airline Internal Auditors, 1996.

<sup>16</sup>1996 Fraud Loss Survey (International Air Transport Association, 1997). Tariff abuse involves a seller's use of various ticket pricing schemes. For example, because airlines give various commissions to travel agencies, depending on the traveler's destination and the location of the ticket sale, travel agency personnel sometimes imprint the ticket with false information to receive a higher commission payment.

<sup>17</sup>Travel agencies can dispute ARC's liability decisions with the Travel Agent Arbiter—a neutral, third party funded in equal parts by the travel agency and airline industries. Since 1992, the arbiter has reviewed 35 travel agency complaints in this area. According to the arbiter, most of the complaints dispute ARC's position that the agencies did not adequately safeguard ARC ticket stock. The arbiter upheld 15 of ARC's liability decisions and overturned 6. Thirteen of the 14 remaining complaints were either withdrawn or abandoned by the travel agencies. In the remaining complaint, ARC overturned its decision prior to the arbiter's ruling.

1998 losses.<sup>18</sup> Figure 4 summarizes, by year and type of incident, the travel agencies' potential losses resulting from the losses of ARC ticket stock in 1997 and 1998.

**Figure 4: Travel Agencies' Potential Losses From the Use of ARC Ticket Stock Stolen in 1997 and 1998, by Year and Type of Incident**



Source: GAO's analysis of ARC's annual status reports.

Potential losses of this magnitude create serious financial hardship for travel agencies even when airlines forgive the majority of the travel agencies' existing debt as well as the agencies' liability for the future use of outstanding stolen ARC stock. As of the end of December 1998, 33 of the

<sup>18</sup>As discussed earlier, we used an average value of \$1,260 per ticket—the average value of stolen ARC ticket stock the airlines reported to ARC as used in 1997 and 1998. We did not factor in tax write-offs, which would reduce the travel agencies' losses. Tax law allows a travel agent to deduct payments to an airline for the value of used stolen ticket stock not compensated by insurance proceeds and for related legal fees, as either a theft loss or as a business expense.

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232 travel agencies victimized by thefts or otherwise missing ARC ticket stock in 1997 and 1998 were no longer in business. Of those found liable for the loss, 24 of 151 were no longer in business, including 3 of the 15 travel agencies we contacted.<sup>19</sup> We could not determine the extent to which the theft of ARC ticket stock was a factor in the agencies' failure.<sup>20</sup> However, the owners of the three agencies told us that their actual and potential liability for the loss of ARC ticket stock was the primary factor in closing their businesses. These owners were held liable for the use of over 15,000 pieces of ticket stock stolen in burglaries in 1997, and they closed their businesses without attempting to negotiate lesser payments with the airlines. One of the three former owners owed 12 airlines between \$100,000 and \$500,000, and the other two each owed more than \$500,000 to numerous airlines.<sup>21</sup>

Representatives of 7 of the 12 remaining travel agencies told us that their airline debts could force them out of business. While some airlines settle for less than they are owed and waive liability for the future use of stolen ARC ticket stock, representatives of four of the seven agencies noted that other airlines refuse to (1) negotiate at all or (2) waive a travel agency's future liability for the use of stolen ARC ticket stock. As a result, travel agencies often owe thousands of dollars. For example, one travel agency we contacted owed nine airlines between \$100,000 and \$500,000. While the agency settled with seven of the nine airlines, paying them between \$10,000 and \$50,000, two airlines refused to settle for less than the total amount owed. Furthermore, only two of the seven airlines agreed to waive the agency's future liability. Consequently, the travel agency is liable for the future use of stolen ARC ticket stock on the other five airlines. According to the travel agency owner, a potentially huge financial burden continues that could eventually force the agency out of business.

While still in business at the end of March 1999, five agencies we contacted told us that they had incurred a variety of economic hardships, including having to sell or mortgage their assets, downsize their operations, lay off staff, and forgo their salaries to pay their airline debts. For example, one agency owner told us that she had sold her home and her car and used her retirement savings to pay \$50,000 to \$100,000 in settlements to seven

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<sup>19</sup>The majority of the 15 agencies reported gross annual incomes of between \$1 million and \$5 million. Thirteen of the 15 agencies lost between 1,000 and 6,500 pieces of ARC ticket stock in the burglaries, one agency lost 29,000 pieces, and the remaining agency lost less than 200 pieces of ARC ticket stock.

<sup>20</sup>While the thefts are likely to have contributed to the agencies' closures, 9 of the 81 agencies that were not held liable for thefts also closed their businesses during this period.

<sup>21</sup>One of the three owners paid \$3,000 to one airline. The other two owners did not make any payments because, in their view, there was no point in doing so since they could not afford to pay all of the airlines.

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airlines. Two of the other three airlines she owed, however, refused to settle and instead turned the debts over to collection agencies.<sup>22</sup> Many of the other travel agencies reported similar experiences. For example, while generally successful in negotiating greatly reduced payments, seven agencies that had been billed by the airlines reported that at least two airlines refused to negotiate reduced payments, and five agencies indicated that at least one airline refused to waive the agencies' future liability.<sup>23</sup> Moreover, all 14 agencies that had been billed by the airlines reported that the airlines turned their debts over to a collection agency. Similarly, 12 of the 14 agencies that had been billed for the use of stolen ARC ticket stock told us that at least one airline either temporarily or permanently terminated business with them—a factor that, depending on an airline's dominance in an agency's market, can greatly diminish an agency's financial viability. Seven of these 12 agencies in operation as of March 31, 1999, expressed serious concerns about the future viability of their businesses.

Representatives from 12 of the 14 travel agencies that had been billed by the airlines also expressed concern about the accuracy of the airlines' bills. This is because airlines typically bill travel agencies for the face amount shown on the ticket, regardless of whether (1) the fare is accurate or (2) the traveler actually completed the entire trip.<sup>24</sup> At our request, one airline compared its actual fares on the day each ticket was issued with the fares printed on 66 tickets that were created from stolen stock and used on the airline from July 1998 through September 1998. The fares shown on 61 of the 66 tickets were correct. The fares shown on the remaining five tickets were underpriced by \$19 to \$130. According to airline officials, the airlines do not adjust their bills to travel agencies to reflect overpriced tickets or portions of tickets that were not used. Such adjustments are not necessary, according to one airline official, because airlines routinely consider the possibility of overpriced and underused tickets in arriving at their settlement decisions with travel agencies.

Several efforts have been undertaken to increase travel agencies' awareness of the need for adequately securing ARC ticket stock to reduce

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<sup>22</sup>The remaining airline had billed the agency but, at the end of March 1999, had not yet initiated further action to collect the debt.

<sup>23</sup>As discussed, one of the 15 agencies had not yet been billed for the use of stolen ARC ticket stock. Six of the remaining 14 agencies were billed between \$100,000 and \$500,000, another 6 were billed more than \$500,000 (with one owing \$1.8 million), and the remaining 2 were billed between \$10,000 and \$50,000.

<sup>24</sup>Airline officials contend that the face value on tickets created from stolen stock is rarely overstated because individuals who print the tickets usually obtain a price quote from an airline's reservation system before creating the ticket.

the likelihood and impact of losses from thefts. For example, owing to the prevalence of travel agency burglaries in the Chicago area,<sup>25</sup> ARC initiated a crime prevention program for agents in and around Illinois. Specifically, between July 1998 and December 1998, ARC hired a retired law enforcement officer to assess the adequacy of the travel agencies' compliance with ARC's ticket security requirements and, where warranted, provide advice about needed improvements. In April 1998, ARC also began (1) sending travel agencies information about recent crimes, including photographic images of suspected thieves, and (2) increasing its interactions with local and federal law enforcement agencies. More recently, ARC has begun advocating that travel agencies reduce their exposure to crime by minimizing the amount of ticket stock they maintain on their premises. According to ARC, this can be accomplished by using less ticket stock when an agent creates an airline ticket.<sup>26</sup> For their part, the Association of Retail Travel Agents and the American Society of Travel Agents—both of which helped develop ARC's ticket security requirements—are encouraging travel agencies to adhere to ARC's requirements because doing so ensures that the agencies will not be held accountable for any losses.

### Internal Revenue Service Believes Tax Consequences Are Not Material Compared With Higher-Risk Issues

Federal tax law allows airlines, travel agencies, and other taxpayers to deduct (write-off) from their taxes a variety of losses, including losses from bad debt. This has resulted in concern within the travel agency community that airlines may not be properly accounting for (1) losses resulting from the use of stolen ticket stock—a form of bad debt, (2) revenues received from travel agency settlements, and (3) federal taxes due on the airline tickets. The Internal Revenue Service (IRS) is aware of these concerns. However, its knowledge of airline accounting practices,<sup>27</sup> including the airlines' treatment of bad debt, has led it to conclude that the tax consequences to the government are “not material” compared with higher-risk tax issues, such as the depreciation of airline assets. According to IRS, its specialist for the airline industry and others involved in airline audits are considering examining the issues during future airline audits.

<sup>25</sup>App. II shows the location of travel agency burglaries in 1997 and 1998.

<sup>26</sup>For example, according to ARC, agencies normally use ARC ticket stock to print passenger receipts. However, they need not do so because passengers can receive other documentation indicating that the ticket has been paid. The American Society of Travel Agents supports the idea of using less ticket stock to create airline tickets, particularly for passenger receipts, airline auditor's records, and agent records. However, domestically, such an action would need to be approved by the Air Transport Association and, internationally, by the International Air Transport Association.

<sup>27</sup>This knowledge has been acquired through the IRS Coordinated Examination Program, which involves over 1,000 of the largest corporations, including major U.S. airlines. These corporations are subject to continuous IRS audit.

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However, according to IRS, any decision to examine the issues will be made on a case-by-case basis and only after full consideration of each issue's relative importance compared with other airline tax issues.<sup>28</sup> Appendix III provides information about the airlines' tax accounting practices.

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## Other Issues Associated With the Use of Stolen Ticket Stock

The traveling public does not appear to be at any greater risk from terrorists or illegal aliens who could use tickets created from stolen ticket stock than they are from individuals who travel on legitimate tickets. In part, this is because the airline industry believes that unsuspecting passengers purchase and use the majority of these tickets. While efforts to combat ticket stock thefts have focused on identifying passengers who use stolen ticket stock, the airline industry believes that more effort is needed to target individuals responsible for stealing and distributing the ticket stock as a means to reduce the thefts.

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## No Known Use of Stolen Ticket Stock by Terrorists

According to federal law enforcement and intelligence officials from the Central Intelligence Agency, the Customs Service, the Immigration and Naturalization Service (INS), the National Security Agency, the Secret Service, the Federal Bureau of Investigation (FBI), and officials at four airlines, no individual they know of has traveled on tickets created from stolen ticket stock to conduct terrorist activities. The officials stressed that terrorists are unlikely to knowingly use tickets created from stolen stock because doing so is likely to increase their risk of detection. Moreover, they pointed out that organized terrorist groups have sufficient financial backing and access to falsified personal identification to purchase legitimate tickets. Officials from the Federal Aviation Administration agreed with this assessment. While no terrorists are known to have used stolen ticket stock for travel, the Customs Service identified a passenger with stolen stock in his possession. The individual was attempting to enter the United States through Miami and had links to two terrorist groups. Further investigation revealed that he had refunded, for cash, numerous stolen tickets in Europe.

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<sup>28</sup>IRS develops a specific audit plan for each airline to be audited. According to IRS, the plan is based on prior and potential tax issues, tax returns, financial statements, filings with the Security and Exchange Commission, and any other relevant information. According to IRS, it considers the materiality of each tax issue and assigns each a priority through a process called risk analysis. Given limited resources, only the highest-risk issues are selected for IRS' examination.

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## Illegal Aliens Have Used Stolen Ticket Stock, but the Extent of Their Travel by This Means Is Unknown

ARC and two of the four airlines we contacted suspect that illegal aliens often use tickets created from stolen ticket stock for travel. However, they could not provide definitive evidence that this is the case. Their view, according to airline industry officials, is supported by analyses of the usage of stolen ticket stock, including the prevalence of specific (1) types of surnames (Hispanic and Middle Eastern) and (2) combinations of origin and destination locations within the United States. For example, of the 8,330 tickets created with stolen ARC ticket stock that airlines reported to ARC as used in 1997 and 1998, about 54 percent (4,476 tickets) were for flights originating from one of three U.S. locations—Los Angeles, California; Phoenix, Arizona; or San Diego, California. Similarly, about 28 percent (2,342 tickets) were for flights destined for one of five U.S. locations—Los Angeles, California; Charlotte, North Carolina; Chicago, Illinois; Atlanta, Georgia; or the New York/New Jersey area. ARC and other industry officials believe that the illegal aliens are unknowingly sold tickets created from stolen stock as part of a package deal that includes fraudulent personal identification and the promise of a job.

Only INS can determine if an individual is an illegal alien. INS inspectors must interview the suspected passengers and scrutinize their identification to determine if they are in the country illegally. Likewise, only the airlines can definitively establish whether a ticket has been created from stolen ticket stock. As a result, while illegal aliens have used tickets created from stolen ticket stock, the extent of their travel by this means is not known because INS and the airlines have not routinely worked together to identify illegal aliens using stolen ticket stock.<sup>29</sup>

Consistent with its mission to prevent individuals from illegally entering the United States, INS does not typically scrutinize domestic travelers. Instead, INS concentrates its resources at U.S. ports of entry, such as the five destination locations discussed above. As a result, unless requested to intervene by an airline, INS would not normally come into contact with illegal aliens using stolen ticket stock for domestic travel. One exception was in February 1999 when INS inspectors apprehended 162 illegal aliens on three domestic flights at the Sky Harbor International Airport in Phoenix, Arizona. INS confiscated the illegal aliens' tickets and returned them to the airlines so that they could cancel the seat reservations. However, while one of the two airlines had the capacity to determine whether the tickets were produced from stolen ticket stock, it did not do

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<sup>29</sup>According to INS officials, while information on the use of stolen ticket stock by illegal aliens is useful in targeting the agency's detection initiatives, sufficient information is often not available from the airline industry. Moreover, even if more information were available, according to INS officials, INS does not consider the detection of stolen ticket stock a primary part of its mission.

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so. Instead, it—like the other airline—returned the tickets to INS, which, in turn, gave them to the illegal aliens before deporting them.<sup>30</sup> As a result, no one knows whether, or to what extent, the 162 illegal aliens were traveling domestically on stolen ticket stock.

Given the airlines' and INS' separate capabilities, airlines sometimes request INS' assistance in determining whether individuals they suspect of traveling on stolen ticket stock are illegal aliens. For example, in 1997, one airline determined that 22 percent of its passengers using tickets created from stolen stock were destined for, or passing through, the Minneapolis/St. Paul Airport. The airline requested INS' assistance, and between January and February 1998, INS responded to five flights involving passengers who the airline suspected were illegal aliens. Twelve passengers were detained, all of whom were using tickets created from stolen stock. INS found that 11 of the 12 passengers were illegal aliens. None of the passengers had a criminal history, so local law enforcement officials declined to prosecute them. Instead, the illegal aliens were turned over to INS for deportation.

While INS and the airline industry have not routinely worked together to identify illegal aliens using stolen ticket stock, cooperation in this area is increasing. For example, in 1996, INS initiated a program for detecting stolen ticket stock at the Miami International Airport in Florida and the John F. Kennedy International Airport in New York. While INS could not provide details on the program's success, an INS inspector told us that, in cooperation with airlines at the Miami International Airport, he had identified about 100 illegal aliens using tickets created from stolen stock between July 1996 and February 1998. Moreover, in April 1999, INS—with ARC's assistance—began training its inspectors in manual methods for detecting stolen ticket stock as an additional tool in interdicting illegal aliens. According to INS officials, INS is also interested in securing access to the airline industry's database on stolen and other fraudulent ticket stock and, as a result, intends to request the airline industry's cooperation in this area.

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## Law Enforcement Efforts to Combat the Theft of Ticket Stock

Efforts to combat the theft of ticket stock have focused on passengers who use tickets created from stolen stock. Recognizing that this is only part of the problem, airline and travel agency representatives told us that

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<sup>30</sup>INS' policy is that, unless there is evidence to indicate otherwise, tickets confiscated from apprehended aliens are the "personal property" of the aliens and must be returned. As discussed, airline sources believe that illegal aliens and others using tickets created with stolen stock are probably unaware that they are using tickets created from stolen ticket stock.

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additional efforts to identify and arrest those responsible for stealing and distributing the ticket stock would significantly reduce the supply of stolen ticket stock. Typically, the theft and distribution of stolen ticket stock involves federal crimes, such as the interstate transportation of stolen goods and mail and wire fraud, which fall under the purview of the FBI. While ARC believes it has made substantial progress in reducing ARC ticket stock thefts from travel agencies, according to ARC officials, additional FBI assistance is needed to achieve more dramatic results.

According to ARC, it has been unable to enlist sufficient investigative support from the FBI. FBI and U.S. Attorney's Office officials told us that the theft of airline ticket stock is a "property crime" that competes with higher-priority investigations, such as crimes involving narcotics, counterterrorism, and violent crimes. In addition, the U.S. Attorney's Office's typical threshold for prosecuting stolen property cases exceeds \$50,000. This threshold is difficult to establish for stolen airline ticket stock because it is considered valueless until used. Notwithstanding these difficulties, as of August 1998, the FBI had about 20 pending cases involving stolen airline ticket stock, 17 of which were classified as violations involving the interstate transportation of stolen property. Four of the 20 cases have since been closed for various reasons.<sup>31</sup> More recently, according to FBI officials, crimes involving stolen airline ticket stock have received increased FBI scrutiny. For example, the FBI said that, in December 1998, it held a training conference for its agents in Chicago and has been devoting additional resources to address these crimes.

The Miami-Dade Police Department has linked a criminal group to the theft of airline ticket stock. According to individuals involved in this case, the group is composed of the thieves who steal the stock; "fences" who buy and store the stock;<sup>32</sup> salespeople who sell the tickets; and individuals who print the tickets. The salespeople are located throughout the United States and solicit buyers for the tickets through unaccredited travel agencies, newspaper advertisements, and word-of-mouth. They transmit their sales by telephone or fax to the individuals who print the tickets. These individuals imprint the passenger's itinerary on the blank stock

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<sup>31</sup>One case was closed because of a pending investigation in another FBI field office; another was closed when all leads were exhausted; the third was closed because the last subject under investigation was sentenced; and the fourth was referred to local law enforcement authorities for prosecution. As of March 1999, the U.S. Attorney's Office had prosecuted five cases involving the theft of ticket stock from travel agencies.

<sup>32</sup>According to ARC officials, individuals operating as fences pay about 6 cents for each piece of blank ticket stock that they receive from the ticket stock thieves. Law enforcement officials believe that the fences operate primarily in Los Angeles, California.

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using home computers and send it to the applicable salesperson for delivery to the passenger. According to Miami-Dade police personnel, a salesperson normally calls the airline—about 1 to 4 days prior to the flight—to make the passenger’s reservation.

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## Technological Interventions and Other Initiatives to Detect the Use of Stolen Ticket Stock

While the ARINC database can be used to detect stolen ticket stock at airport check-ins, many airlines do not subscribe to the database. Moreover, according to the airline officials we contacted, their airlines do not routinely use the database because the time required to query it delays passenger processing. When used with ARINC’s database, other technologies—optical scanners, bar code readers, and magnetic strip readers—detect stolen ticket stock more quickly. The airline industry also has other detection initiatives under way. The steady increase in electronic ticketing, according to many airline officials, will reduce the need for airline ticket stock and thus may eventually reduce ticket stock thefts.

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## Technological Methods for Detecting Stolen Ticket Stock

ARINC maintains a centralized database, available since 1989, that the airline industry uses to report and detect fraudulent ticket stock. Access to the database (1) is limited to participating airlines and (2) varies depending on the type of subscription each airline purchases.<sup>33</sup> According to an ARINC official, the organization had 140 subscribers to its ticket stock listing and on-line detection services in 1998, including 26 airlines that had integrated ARINC’s database into their computer systems. On-line airline subscribers can query the database for stolen ticket stock by manually entering the ticket stock’s unique identification number. If the inputted number matches the number on ticket stock that has already been reported as stolen, the database indicates a match.

Officials of the four subscribing airlines we contacted stated that the ARINC database is generally effective in detecting the use of stolen ticket stock. In fact, most of the 1,900 pieces of stolen ticket stock that these airlines confiscated in 1997 and 1998 were identified using this database. Nevertheless, the officials cited several disadvantages that preclude routinely using the database. The primary drawback was the time required to query the database, which delays the processing of passengers. We observed the database in operation at two different airline ticket counters at Washington Reagan National Airport near Washington, D.C., and recorded a total query time per ticket of between 6 seconds to 10

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<sup>33</sup>Subscribing airlines can list the unique identifying number of fraudulent ticket stock in the centralized database. Airlines also can subscribe to one of four detection-related services that allow them to detect fraudulent ticket stock.

seconds.<sup>34</sup> While each search takes only seconds, according to one airline official, the cumulative time required to check every ticket on a flight—as has been recommended by some in the travel agency industry—makes the idea impractical because, in his view, flights would never leave on time. Moreover, airline ticket agents sometimes enter the number incorrectly, thereby producing a false result.<sup>35</sup> Conversely, airlines fear that they might detain a passenger using a legitimate ticket because suppliers, such as ARC, periodically re-use their stock control numbers. As a result, purchasers of legitimate tickets could find themselves with the same ticket number as stock that was previously reported stolen.<sup>36</sup> Finally, the database cannot be used to detect altered ticket stock, which, according to one major U.S. airline, represents a significant portion—40 percent—of the fraudulent ticket stock it unknowingly accepted in 1997.

Some airlines are experimenting with other types of technology that, in conjunction with the airlines' computer reservation systems and ARINC's centralized database, can help detect stolen ticket stock. For example, the four airlines we contacted had all tested or planned to test optical scanners, bar code readers, or magnetic strip readers that can quickly capture a wide range of passenger information without increasing passengers' check-in times.<sup>37</sup> The latest generation of these devices is capable of reading ticket information, including the ticket's identification number; credit cards; frequent flyer cards; and machine-readable passports, visas, and other passenger identification.

The scanner and reader devices address some of the problems associated with using ARINC's database. For example, the devices reduce the time needed to query the database because airline ticket agents need not manually enter each ticket's identification number. This eliminates keystroke errors and allows the number to be read and compared with the database with only one swipe of the ticket. In addition, the devices can be

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<sup>34</sup>It took between 4 seconds to 8 seconds for the airlines' ticket agents to manually input each ticket's identifying number into the computer and about 2 seconds for the database to respond to the inquiry. Both of the airlines had integrated ARINC's database into their computer systems. According to industry officials, it would have taken more time to query the database if, as in the case of many airlines, the airlines had not integrated their computer systems with ARINC's database.

<sup>35</sup>Mistakes in inputting ticket numbers against ARINC's database can cause erroneous results. For example, inputting the number of a legitimate ticket incorrectly could identify it as a ticket created from stolen ticket stock. Conversely, an inputting mistake can cause a ticket created from stolen ticket stock to be identified as a legitimate ticket.

<sup>36</sup>According to ARC, while its procedures for re-issuing stock control numbers specifically prohibit the reissuance of numbers that have been listed in ARINC's database, mistakes occasionally occur. This is because stock is printed in large blocks of consecutive numbers and, as a result, previously reported stock control numbers must be manually pulled out and destroyed, a very labor-intensive process.

<sup>37</sup>According to airline officials, this information is also useful in validating tickets and in tracking passenger revenues.

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programmed to determine whether the ticket stock has been altered. We observed demonstrations of two of these technologies. Each technology was capable of reading and displaying information from a variety of documents, including airline tickets. According to the manufacturers' representatives, when interfaced with the airlines' computer systems and ARINC's database, the devices can (1) read and compare airline ticket numbers with ARINC's database and (2) display the results of the search within 2 seconds.

Without other proven benefits, however, airline officials said that the use of scanner and reader devices solely to detect stolen ticket stock would be unduly expensive. Each of the devices costs between \$2,000 and \$3,000—a considerable amount when multiplied by all of the airlines' ticket counters. Moreover, airlines would still have to pay about \$14,000 annually to subscribe to ARINC's database on fraudulent ticket stock.

While these devices are being tested, we know of only one airline that is using them. This international airline initially used a device for reading passports and, in 1997, contracted with the manufacturer to develop an enhanced device capable of also reading ticket stock. In June 1998, the airline purchased 300 of the devices at a cost of about \$660,000 for use at its U.S. locations. According to officials of this airline, the device is about 99-percent accurate, and as a result, the airline paid for its investment through reduced losses from stolen ticket stock within the first 5 months of its use, even though the device was not introduced for this purpose.

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## Other Major Detection Initiatives

ARC and the four airlines we contacted analyze information about the use of stolen ticket stock to profile common characteristics and identify patterns for use in targeting their detection efforts. These analyses produce statistical profiles that the airline industry uses to set priorities for their detection efforts, including the targeting of specific geographic locations. Moreover, to enhance their detection initiatives, many airlines offer rewards to employees who detect and confiscate fraudulent ticket stock. In 1998, for example, the International Air Transport Association found that 14 of the 20 airlines it randomly surveyed had programs for rewarding employees who detect fraudulent tickets. The rewards included \$25 to \$50 for each ticket confiscated, first-class travel anywhere the airline flew, and 5 percent of the value of the confiscated ticket. The four airlines we contacted also reward employees who detect and confiscate fraudulent ticket stock.

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## Electronic Ticketing Seen as a Long-Term Solution

According to industry representatives, there is currently no single solution to prevent the theft of airline ticket stock. However, many officials commented that the steady increase in electronic ticketing may soon resolve the problem because, with paperless tickets, travel agencies and other ticket distributors will have less need to retain large inventories of airline ticket stock. According to ARC, reducing the amount of stock that a travel agency keeps on hand has two potential benefits. It reduces the agency's potential losses should a theft occur, and it lessens the agency's attractiveness as a target of crime. At the end of 1998, over 32 percent of all airline transactions reported by travel agencies to ARC were for electronic tickets, compared with 14 percent at the beginning of the year.

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## Agency Comments

We provided a draft of this report to the Departments of Transportation, Justice, and the Treasury for their review and comment. Collectively, these Departments have responsibility for the Federal Aviation Administration, the Federal Bureau of Investigation, the U.S. Attorney's Office, the Immigration and Naturalization Service, and the Internal Revenue Service. We also provided a draft of this report to the Airlines Reporting Corporation for its review and comment. The Departments of Transportation, the Treasury, and Justice (on behalf of the Federal Bureau of Investigation and the U.S. Attorney's Office) had no comments on the report. However, we met with officials from Justice's Immigration and Naturalization Service, including the Directors of the Service's Office of Carrier Affairs and Office of Investigations. While the Service generally agreed with relevant information in the draft report, it provided additional information and suggestions for improving the clarity and accuracy of the report. The Airlines Reporting Corporation also provided editorial and technical comments. Finally, we provided relevant sections of the report to the American Society of Travel Agents, the Association of Retail Travel Agents, the Aeronautical Radio, Inc., American Airlines, Continental Airlines, Northwest Airlines, and United Airlines. Each of these organizations also provided technical comments. We incorporated all comments, as appropriate.

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We performed our work from April 1998 through July 1999 in accordance with generally accepted government auditing standards. A detailed description of our scope and methodology appears in appendix I.

We are sending copies of this report to appropriate congressional committees; the Honorable Rodney E. Slater, Secretary of Transportation;

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the Honorable Jane F. Garvey, Administrator, Federal Aviation Administration; the Honorable Lawrence H. Summers, Secretary of the Treasury; the Honorable Charles Rossotti, Commissioner, Internal Revenue Service; the Honorable Janet F. Reno, Attorney General of the United States; the Honorable Louis J. Freeh, Director, Federal Bureau of Investigation; the Honorable Doris Meissner, Commissioner, Immigration and Naturalization Service; and the Honorable Jacob Lew, Director, Office of Management and Budget. Copies will also be made available to others upon request.

If you or your staff have any questions about this report, please contact me at (202) 512-2834. Appendix IV lists key contacts and contributors to this report.

Sincerely yours,

A handwritten signature in black ink that reads "John H. Anderson, Jr." The signature is written in a cursive, flowing style.

John H. Anderson, Jr.  
Director, Transportation Issues

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**Contents**

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**Abbreviations**

ARC	Airlines Reporting Corporation
ARINC	Aeronautical Radio, Inc.
FBI	Federal Bureau of Investigation
GAO	General Accounting Office
IRS	Internal Revenue Service
INS	Immigration and Naturalization Service

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# Objectives, Scope, and Methodology

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The Chairman of the Subcommittee on Aviation, House Committee on Transportation and Infrastructure, asked us to examine issues related to the theft of ticket stock used to create U.S. airline tickets.<sup>1</sup> In consultation with the Subcommittee, we agreed to address the following questions: (1) What is the number and value of airline ticket stock stolen annually? (2) What financial implications are associated with the use of stolen ticket stock? (3) What other issues are potentially associated with the use of stolen ticket stock? and (4) What technological interventions and other initiatives are available to detect the use of stolen ticket stock?

To determine the number and value of stolen airline ticket stock, we obtained information from Aeronautical Radio, Inc. (ARINC)—an airline-owned company in Annapolis, Maryland—that since 1989 has maintained a centralized, proprietary database of stolen, lost, missing, and other fraudulent airline ticket stock worldwide. ARINC provided an aggregate listing spanning 10 years, from 1989 through 1998.<sup>2</sup> We used this information to determine the total amount of ticket stock reported stolen to ARINC by the Airlines Reporting Corporation (ARC) (on behalf of ARC-accredited travel agencies) and other domestic and international suppliers of ticket stock over the 10-year period. We could not use ARINC's information to estimate the value of this ticket stock because ARINC's database does not contain information about the use and value of the ticket stock.

Given ARINC's data limitations, the predominance of ARC's ticket stock losses (ARC accounted for 72 percent of all stolen stock reported to ARINC), and the absence of other data sources, we compared the ARINC data with information in ARC's annual status reports over the 10-year period.<sup>3</sup> Because the amount of stolen ticket stock reflected in these reports totaled only 27 percent of the amount ARC reported to ARINC, we took additional steps to ensure the accuracy of selected ARC data. Specifically,

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<sup>1</sup>A typical ticket is composed of several parts—the airline auditor's record, an agent's record, several flight coupons (one for each segment of a traveler's journey), the passenger's receipt, and—if paid by credit card—a charge form. While some tickets are written out by hand (manually), most are generated using a computer. For manual tickets, the individual parts of the tickets are already bound together in the form of a ticket. In contrast, each piece of an automated ticket must be generated separately and, then, combined to form a ticket. As used in this report, each manual ticket and each piece of an automated ticket is called "ticket stock." Moreover, the term "stolen ticket stock" refers to stock that is known to be stolen as well as stock that has been reported lost or missing and therefore has possibly been stolen.

<sup>2</sup>Data in ARINC's database is continually entered and deleted. Thus, the information provided by ARINC for the 1989 to 1998 period reflects the information in the database as of December 31, 1998. ARINC's data cannot be broken out by year.

<sup>3</sup>ARC's annual status reports provide the only readily available information for identifying annual trends in the amount of ARC ticket stock reported stolen.

for 1997 and 1998—the only years we could use to estimate the ticket stock’s potential value—we examined all (294) of ARC’s Fraud Prevention Bulletins for 1997 and 1998 and compared our results with ARC’s annual status reports and, on an incident-by-incident basis, reconciled differences with ARC officials.<sup>4</sup>

Over 80 percent of the difference between ARINC and ARC’s data related to ARC’s treatment of stock associated with terminated travel agencies. As a precautionary measure, according to ARC officials, ARC reports to ARINC’s database, the unique identifying numbers of all unaccounted for ARC ticket stock previously provided to the agencies it has subsequently terminated even though some portion of this stock has probably been issued by these agencies. However, in compiling its status reports, ARC includes only the ticket stock that has been used or is likely to be used. For example, according to ARC officials, ARC’s status reports do not include unreported ticket stock of terminated agencies if the stock is over 5 years old and has not yet been used. Likewise, according to ARC officials, ARC reports to ARINC all subsequent adjustments to the initial amount of ticket stock reported stolen by the travel agencies but does not adjust its annual status reports. As reflected in this report, the amount of ARC ticket stock reported stolen in 1997 and 1998 represents the amounts agreed to by ARC and us through this reconciliation process.

To determine the value of airline ticket stock stolen annually, we used ARC’s Field Investigation and Fraud Prevention Department’s informal database of information provided voluntarily by the airlines about the number and value of stolen ARC ticket stock used for travel on their airlines.<sup>5</sup> ARC supplied us with a copy of its database, which contained 15,542 records (each record represented a ticket). After eliminating (1) duplicate records according to criteria supplied by ARC and (2) ARC’s incomplete listing of losses earlier than 1997, we had 8,330 records in our database. Using the average cost per ticket derived from these records, we computed the estimated value of the ARC ticket stock reported stolen in 1997 and 1998. While six to seven pieces of ticket stock are normally used to create a legitimate airline ticket, as discussed in the report, we assumed that only two pieces would be used. Likewise, contrary to industry experience, we assumed that all of the stolen ARC ticket stock eventually

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<sup>4</sup>ARC’s bulletins detail the circumstances related to the loss of ARC ticket stock and are used to alert ARINC and others about the loss.

<sup>5</sup>Some airlines do not provide ARC with any information on the value of stolen ARC ticket stock that is used on their airlines. Other airlines provide incomplete information about their losses. In total, ARC estimates that—for proprietary reasons—airlines report about one-third of the stolen ARC ticket stock used annually.

would be used for travel. Thus, our estimate provides a “worst-case” scenario and, consequently, is likely to overstate the potential loss from the use of stolen ARC ticket stock.

We performed a reliability assessment on the data elements we used from the ARINC and ARC databases and found that the data were reliable enough for our uses in this report. We performed limited reasonableness tests on the data, conducted extensive interviews with ARINC and ARC officials regarding the creation and control of the data, and reviewed information about their data quality factors.

To identify the financial implications associated with the use of stolen ARC ticket stock, we first determined the extent to which airlines and travel agencies were held liable for the use of the ARC ticket stock reported stolen in 1997 and 1998. Then, using the average cost per ticket that the airlines’ reported to ARC, we computed the potential losses for the airlines and travel agencies if all of the ARC ticket stock reported stolen in 1997 and 1998 were used for travel. We also collected information about the number, value, and impact of losses from stolen ARC ticket stock from American Airlines, Continental Airlines, Northwest Airlines, and United Airlines. These four airlines accounted for 37 percent of the revenue passenger miles flown by all U.S. airlines during the 12-month period ending March 1998 and 35 percent of the ticket stock reported stolen to ARINC by U.S. airlines as of December 31, 1998. Moreover, officials from these airlines expressed a willingness to cooperate in our review even though much of the information we obtained is considered proprietary and confidential by the airline industry. To evaluate the impact on travel agencies held liable for the theft of ARC ticket stock, we conducted a telephone survey of 24 agencies that ARC identified as being liable for ARC stock stolen in burglaries in 1997. Representatives of three of these travel agencies told us that they were not held liable for their ARC ticket stock losses so we deleted them from our survey. Between February 12, 1999, and February 22, 1999, we were able to contact 15 of the remaining 21 travel agencies, which agreed that they had been burglarized and held liable for the use of the ARC ticket stock stolen in 1997. We interviewed representatives of these 15 travel agencies to, among other things, verify the amount of ARC ticket stock stolen and to discuss the airlines’ billing practices for the stolen stock and the impact of the burglaries on their agencies. We also reviewed and discussed travel agency complaints filed with the Travel Agent Arbiter. Finally, we interviewed Internal Revenue Service (IRS) officials to identify the tax and reporting requirements for airline carriers and travel agencies that have experienced losses arising

from the use of stolen ticket stock and to determine the extent to which IRS has examined their compliance with tax requirements.

To identify other potential issues, we focused on possible safety concerns related to the use of stolen ticket stock by terrorists and illegal aliens. We interviewed federal law enforcement and intelligence agency officials from the Central Intelligence Agency, the Customs Service, the Immigration and Naturalization Service, the National Security Agency, the Secret Service, and the Federal Bureau of Investigation, as well as Federal Aviation Administration personnel and officials at four airlines to determine whether they knew of individuals traveling on tickets created from stolen ticket stock to conduct terrorist activities. To determine whether illegal aliens are using tickets created from stolen ticket stock, we interviewed officials from ARC, the Immigration and Naturalization Service, and officials at four airlines. We also interviewed officials from ARC, the Miami-Dade Florida Police Department, the Federal Bureau of Investigation, and the U.S. Attorney's Office about law enforcement efforts to combat the theft and distribution of stolen ticket stock.

To identify the technological interventions available to detect the use of stolen ticket stock, we also interviewed officials from ARINC, ARC, and officials at four airlines. We also observed ARINC's database in operation at two airline ticket counters at the Washington Reagan National Airport near Washington, D.C. In addition, representatives from two manufacturers of optical scanner and magnetic reader devices provided us with demonstrations of their products. We also discussed other initiatives to detect the use of stolen ticket stock and the use of electronic tickets as a means of reducing ticket stock thefts with ARC officials and officials at the four airlines.

We performed our work from April 1998 through July 1999 in accordance with generally accepted government auditing standards.

# Location of Travel Agency Burglaries of ARC Ticket Stock in 1997 and 1998

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The number of travel agencies reporting ARC ticket stock stolen in burglaries declined from 62 in 1997 to 44 in 1998. ARC attributes this decline to (1) the more stringent security rules it established in April 1996, (2) its increased fraud prevention activities, (3) the increased awareness by travel agency personnel of the problem, and related to this, (4) the agents' increased compliance with required measures for safeguarding ARC ticket stock. The locations of travel agency burglaries in 1997 and 1998 follow.

**Appendix II**  
**Location of Travel Agency Burglaries of**  
**ARC Ticket Stock in 1997 and 1998**

**Table II.1: Location and Number of Travel Agencies Reporting Burglaries, 1997-98**

State	Number of agencies reporting burglaries	
	1997	1998
Arizona	0	1
California	10	5
Colorado	4	1
District of Columbia	0	1
Florida	5	4
Georgia	3	2
Hawaii	0	2
Illinois	13	8
Indiana	1	0
Iowa	0	2
Kentucky	2	0
Michigan	1	1
Minnesota	1	2
Missouri	1	4
Montana	2	0
New Jersey	2	0
New Mexico	1	0
New York	1	1
North Carolina	1	0
Ohio	1	0
Oklahoma	0	2
Oregon	0	2
Pennsylvania	2	0
South Carolina	0	1
Tennessee	2	2
Texas	4	1
Utah	1	0
Wisconsin	4	2
<b>Total</b>	<b>62</b>	<b>44</b>

Source: GAO's analysis of ARC's annual status reports.

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# Information About the Airlines' Tax Accounting Practices

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According to IRS officials, for federal tax purposes, airlines normally report revenue when a passenger takes a flight.<sup>1</sup> That is, if a travel agency reported the sale of a \$1,100 airline ticket, the airline would normally account for the transaction in three separate book entries. Specifically, the airline would recognize the cash (\$1,100) from the sale along with two offsetting entries representing the airline's future liability to transport the passenger (\$1,000) and to pay the federal excise tax due IRS (\$100).<sup>2</sup> When the ticket is used, according to IRS, the airline reverses these entries by eliminating its \$1,000 liability and recognizing the \$1,000 as revenue. Likewise, when the airline pays the excise tax, it eliminates its \$100 liability to IRS.

Furthermore, according to IRS, when an airline accepts a ticket for travel that was not reported as sold by a travel agency—as in the case of a ticket printed on ARC ticket stock stolen from a travel agency—the airline recognizes the transaction as an “unreported sale” and, using the earlier example, sets up a \$1,100 account receivable to collect the funds from the travel agency. Since the travel has already occurred, according to IRS, the airline also recognizes \$1,000 in (expected) income and records the \$100 in federal excise tax due IRS.<sup>3</sup> If the airline succeeds in collecting the \$1,100 from the travel agency, the airline eliminates the \$1,100 receivable it collected and pays the federal excise tax due IRS. Conversely, if the travel agency fails to pay, the airline writes off—as permitted—the \$1,100 receivable as a bad debt, reduces its income by \$1,000, and eliminates the \$100 in excise tax that it could not collect.<sup>4</sup>

When an airline reaches a financial settlement with a travel agency, according to IRS, the settlement amount most likely would be treated as “liquidating damages” rather than “an amount paid for the taxable transportation of persons by air.”<sup>5</sup> While any airline income derived from settlements with travel agencies is fully taxable, according to IRS, excise tax is not due on settlements treated as liquidating damages.

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<sup>1</sup>Tax law allows airlines and other service providers to defer reporting their income until the service is provided. This practice is known as the “accrual” accounting method and is allowed under IRS Revenue Procedure 71-21.

<sup>2</sup>IRS estimates that federal excise taxes account for about 10 percent of an airline ticket's cost. For Oct. 1, 1998, to Sept. 30, 1999, the domestic passenger airline ticket tax is 8 percent of the passenger's fare plus \$2 for each segment of a passenger's domestic flight. Other federal taxes include commercial fuel taxes and international departure and arrival taxes.

<sup>3</sup>According to IRS, the excise tax is due even though the airline has not yet received the funds.

<sup>4</sup>If the airline has already paid the excise tax due, according to IRS, it can obtain a refund.

<sup>5</sup>26 U.S.C. 4261.

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**Appendix III  
Information About the Airlines' Tax  
Accounting Practices**

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Finally, according to IRS, if an airline purchases insurance to, among other things, cover losses from the use of stolen ticket stock, any insurance proceeds it receives normally would be accounted for as income and would be fully taxable. The same is true for any recoveries an airline receives from collection agencies.<sup>6</sup>

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<sup>6</sup>According to IRS, funds recovered by collection agencies also could be subject to excise tax if the tax has not been previously paid.

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# GAO Contacts and Staff Acknowledgements

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