

CY 2000 Screened Passengers Database

1.0 Introduction & Summary

SH&E has established a database of air passengers screened at 430 designated U.S. airports during calendar year 2000. The database was derived by SH&E principally from US DOT data sources, including the DOT Origin-Destination Passenger Survey, the DOT T-100 Database, and DOT Part 298 data. The database contains SH&E's estimates of all air passengers that were screened by airport and the airline on which the passenger traveled following the screening procedure. The database also identifies screened passengers for major segments of passenger travel, such as domestic O&D trips, international trips, and other passenger traffic categories.

In CY 2000, there were 530.4 million passengers screened at the 430 designated U.S. airports. Air passengers whose trips were entirely domestic travel accounted for approximately 81% of the total estimated screened passengers. Passengers whose trips involved international travel accounted for approximately 19% of the total screened passengers with some 14% of these passengers traveling outbound from the U.S. and 5% traveling inbound to the U.S., and connecting to another domestic or international flight.

The 530.4 million screened passengers represent approximately 75% of the total enplaned passengers at the same airports during 2000. The lower number of screened passengers as compared to total enplanements reflects the fact that most originating passengers are screened only once during their trip when connections are made to another flight – but there are important exceptions to this rule that are accounted for in the database, as explained below.

2.0 Data Sources

SH&E developed estimates of screened passengers at each airport from the following data bases

US DOT Origin-Destination Passenger Survey, as processed and adjusted by Database Products, Inc.

The DOT O&D Survey is a comprehensive database compiled and published by the U.S. DOT that provides detailed trip and flight itinerary information for passenger travel on U.S. airlines. The data is a 10% sample of all tickets that involve domestic and/or

international travel on scheduled flights of U.S. airlines that are required to participate in the survey and submit records to the DOT. The participating airlines include scheduled air carriers that are classified as Major, National or Large Regional Airlines. The reported data includes travel on airlines that are not required to participate in the O&D Survey, (e.g., small U.S. airlines and foreign carriers), to the extent that any portion of passenger trip itinerary involved a reporting U.S. carrier.

SH&E used the DOT O&D Survey database that is published by Database Products, Inc. Database Products has been a vendor for the DOT O&D Survey for many years, and makes adjustments to the “raw” DOT O&D Survey data to more accurately account for trips that are not captured by the reporting procedures of U.S. carriers. These adjustments relate principally to “local” origin-destination trips involving small regional and commuter airlines that are not covered by the O&D Survey, but which are included in the “on-flight” O&D traffic reports that the smaller carriers are required to report to the DOT (Part 298C data).

Database Products also applies validity tests and makes adjustments to the DOT O&D Survey data based on other apparent omissions and reporting inconsistencies.

The Database Products O&D Survey is well recognized as the most accurate source of Origin-Destination air passenger database, and is widely used by airlines, aviation consultants and other industry analysts as the most accurate data source.

US DOT T-100 Database.

In 2000, the T-100 data contained enplaned and on-board passenger data for all flight segments involving a U.S. airport, for all U.S. and foreign air carriers that operate large aircraft (i.e., aircraft with 56 –seat or more seats). The T-100 reports cover both domestic and international and scheduled and charter flights. The T-100 reports are a 100% sample of traffic and operations of the reporting carriers. The T-100 traffic data do not directly report passengers’ true origin and destination, but it provides a basis of deriving reasonable estimates of O&D passengers when used in conjunction with the O&D Survey.

US DOT Part 298C Data, Processed by Database Products Inc.

Smaller airlines (airlines that operate less the 60-seat aircraft) are required to report passenger traffic to the U.S. DOT on an “on-flight” O&D basis. These data are a 100% sample, and cover U.S. and foreign airlines, and scheduled and non-scheduled operations.

3.0 Methodology to Estimate Screened Passengers

1. Domestic Originating Passengers

A. Scheduled Service Passengers

All domestic originating passengers are screened at the originating airport, immediately before being allowed to board their flights. In nearly all cases, originating passengers who later connect to another domestic flight at another domestic airport are not screened at the connecting airport. Rather, they deplane at the connecting airport at a point that is “secure”, behind the screening locations. They then proceed to the gates of their next flight without having to go through another screening process. As such, the database assumes that all passengers whose trip is entirely domestic are screened only once at the originating airport.

In a very small number of instances, passengers may have to be re-screened at the connecting airport. These would be in instances where a passenger must transfer from an arriving flight in one terminal to a departing flight in another terminal where access requires that the passenger leave the “secure” area of the first terminal and go through a screening point for the terminal of departing flights. In general, these situations are very rare, usually involving an “interline” connection (i.e., connection between two separate airlines), and even then, the connection may be within a secure area and not involve re-screening. Domestic passengers with interline connections account for a very small percentage of domestic O&D passengers – estimated at less than 2% of total domestic trips.

The domestic originating passengers were derived from the DOT O&D Survey, as processed by Database Products. These data include the estimated local O&D passengers of commuter airlines that do not participate directly in the O&D Survey, but which report traffic on part 298 C 1T forms.

B. Domestic Charter Passengers

Domestic charter passengers were compiled from the US DOT T-100 database.

2. Outbound Passengers on International Trips

In most cases, outbound passengers on international trips are screened once – at their originating airport, but in some cases, passengers connecting to international flights at a “gateway” airport must be screened at a 2nd time at the gateway airport. The need for the

2nd screening is determined by the gate locations of the arriving domestic flight and departing international flight at the gateway airport. In estimating the screened passengers, the specific locations of airport terminals and connecting airlines were taken into consideration. The screened outbound international passengers were estimated as follows:

- A. **Passengers that originate their trip on a U.S. carrier flight directly from a U.S. gateway.** Example itineraries are: a passenger whose trip originates at JFK Airport and travels on a flight to London or any other foreign point. It would also include passengers that connect beyond the foreign gateway point (but have the U.S.-Foreign Gateway flight described above.) These passengers are screened one time at the U.S. gateway airport.
- B. **Passengers that originate on a domestic flight at a U.S. airport and connect to an international flight operated by a U.S. carrier at a gateway airport.** In most cases these passengers are screened only at their originating airport, since they normally arrive at gates at the gateway airport and transfer to departing international flights without the need for being re-screened at the gateway airport. This is because the points of arrivals and departures in “secure” areas.

Examples of passengers in this category are passengers originating at Orlando on Delta, and connecting to a Delta international flight at Atlanta that operates to London. In the case of Atlanta, (and several other U.S. gateways), all connecting passengers arrive at the airport and transfer to their international flights without leaving secure areas. Therefore, the passenger is screened once, at his or hers originating airport. Situations at gateway airports where this is not the case are described later.

- C. **Passengers that originate on a domestic flight at a U.S. airport and connect to an international flight operated by a foreign carrier at a gateway airport.** In most cases, the screening of these passengers is the same as described in Item B above. They are screened once at their originating airport.
- D. **International outbound connecting passengers that are re-screened at the Gateway airport.** It was determined that at 11 U.S. gateway airports, outbound international connecting passengers were re-screened at the gateway airport, depending on the combination of airlines and terminals used for connections. Within this category, five gateway airports accounted for approximately 95% of the passengers that were re-screened. These five airports were: LAX, SFO, JFK, ORD and MIA. The need to be re-screened was based on the terminal location of the inbound domestic flight and the terminal location of the outbound international flights. These situations were determined by a detailed analysis of gate/terminal locations of each carrier and the need to leave a “secure area” in

order to make connections between various combinations of flights. The detailed itinerary data from the DOT O&D Survey was used to identify passenger volumes and determine re-screened passengers.

E. **Outbound international passengers that originate at a gateway airport and board foreign carrier flights directly.** The T-100 database identifies total outbound passengers enplaned by foreign carrier at each gateway airport. The foreign carrier's gateway originating passengers were determined by subtracting the foreign airline's passengers that were connecting passengers (i.e., passengers that originated at other U.S. airports, or Item B above) from the carrier's total enplaned passengers. This was done on a route-by-route basis.

F. **International Charter passengers.** All U.S. and foreign carrier international charter passengers were identified from the T-100 database. All of these passengers are essentially originating at the gateway airport.

3. Inbound International passengers connecting to domestic flights.

All inbound passengers connecting to domestic flights are identifiable in the DOT O&D Survey (as they must use a U.S. carrier for the domestic segment) and all such passengers are screened at the gateway airport prior to boarding the domestic flight. Based on analysis of all major U.S. gateway airports, all arriving international passengers must go clear customs and then exit to an "unsecured" area of the airport. They then proceed to their domestic gate and are screened in the same way as a domestic originating passenger.

4.0 Validation Analyses and Adjustments

SH&E conducted a number of tests on the screened passenger data set to validate its reasonableness and accuracy, and to adjust the data as appropriate.

Comparison to Enplaned Passenger Data by Airport

One test was to compare the estimated screened passengers for each of the 430 airports with enplaned passengers reported for the same airport in the FAA's Air Carrier Activity Information System (ACAIS), which supports the FAA's Airport Improvement Program and includes domestic and international enplanements of all U.S. and foreign commercial operators.

For large connecting hub airports and international gateways, this comparison is used only as a general validation exercise, since, as described above, most of the connecting passengers are not re-screened at the connecting hub airport. As a consequence, screened passengers at these airports are significantly less than enplanements, as expected. But more importantly, the ratio of screened passengers to total enplanements correspond favorably to the known composition of “local” versus “connecting” passengers at these airports.

For medium-sized and smaller airports, essentially airports that rank below the top 100 airports in estimated screened passengers, the validation analysis was more significant, and used directly to make certain minor adjustments for these airports. As expected, the estimated screened passengers were closely related to the total reported enplanements at these airports. In most cases, estimated screened passengers were typically about 90% or more of enplaned passengers at the smaller airports. In a few instances, screened passengers exceeded reported enplanements by a small amount (usually less than 1%). In other cases, the estimated screened passengers were less than 90% of enplaned passengers. For these airports that ranked from 101 to 430, the estimated screened passengers were adjusted to reduce any airport where the original estimate exceeded 100%, to 100% of enplaned passengers. For airports where the original estimate of screened passengers was less than 90% of reported enplaned passengers, the estimate was raised to 95% of reported enplanements, or approximately the average of all small other airports (i.e., airports ranking 101 to 430).

The net effect of these adjustments was to add 830,000 screened passengers to the database, or an amount that was equal to 0.16% of the total screened passengers for all airports. Although this adjustment was very minor, it improves the accuracy of the estimates for the individual smaller airports.

Comparison of International Passengers to DOT T-100 Data

The CY 2000 screened passenger database has 68.3 million outbound scheduled service international passenger trips (i.e, excluding the count of passengers that are re-screened at the gateway airport.) For CY 2000, there were a total of 135.1 million outbound plus inbound passengers on international flights to and from the U.S., according to the U.S. DOT. (U.S. International Air Passenger and Freight Statistics, December 2000, U.S., Department of Transportation, Table 1. This statistic is based on US T-100 data.). Assuming international traffic was equally balanced outbound and inbound, then outbound international passengers on scheduled service according to the DOT publication was 67.6 million for CY 2000. This figure is 99.0% of the 68.3 million outbound international passenger trips in the screened passenger database.

Summary of the Database Validation Analysis

There is no other data source that directly reports the number of screened passengers in CY 2000 or any other year. Therefore, SH&E compiled a database that logically and carefully identifies the number of passengers screened, the airports at which they were screened and the carrier operating the flights that the passengers boarded after being screened. This was done by meticulous analysis, using the most accurate databases available.

The estimates of screened passengers reconcile well with various validation analyses and tests of reasonableness. More specifically, approximately 80% of the screened passengers are passengers on purely domestic trips. The database to determine these trips is the best and the most accurate available – DOT O&D Passenger Survey, processed by Database Products. As discussed above, small adjustments were made at the smaller airports in the study to more accurately reconcile with reported enplanements at each airport. The outbound scheduled international passenger trips in the database also reconcile very closely with the corresponding international traffic as determined by the U.S. DOT for the same year in an entirely independent study. The comparisons of screened passengers to total enplaned passengers at major connecting hubs and gateway airports also compare well to experienced distributions of O&D and connecting passengers at those airports.

In short, the CY 2000 Screened Passenger Database is considered to be accurate and to meet meaningful tests of reasonableness.