

## **MISSION STATEMENT**

The Department of Transportation (DOT) depends on the financial data reported on Form 41 to fulfill its strategic plan to monitor and study the movement of aircraft and passengers. Further, the DOT has adopted an agency-wide, coordinated effort together with the Office of the Secretary, the Federal Aviation Administration, the Bureau of Transportation Statistics (BTS), and Office of the Inspector General to advance consumer satisfaction.

BTS continually strives to improve the quality, reliability and accessibility of transportation-related information. BTS is also mindful to mitigate the paperwork burden imposed on the air transportation industry and the public: in part by advancing the precepts of the Clinger-Cohen Act and the Paperwork Reduction Act by re-engineering its data processing system.

## **A. SUPPORTING STATEMENT**

## 14 CFR Part 241 Origin and Destination Survey

### A. Justification

**1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.**

The Secretary of Transportation is required by 49 U.S.C. §329(b)(1) to collect and disseminate information on the origins and destinations of airline passengers.

**2. Indicate how, by whom, and for what purpose the information is to be used. Indicate the actual use the agency has made of the information received from the current collection.**

All large U.S. certificated air carriers which operate scheduled passenger service with at least one aircraft containing 60 seats or operates a domestic-to-international route must participate in the Passenger Origin-Destination Survey (Survey). U.S. carriers that are excluded from Survey reporting are all-cargo carriers, helicopter operators, charter carriers, small certificated air carriers and commuter air carriers. Generally, foreign carriers do not participate in the Survey; however, certain foreign carriers have been required to submit O&D data as a condition for granting them antitrust immunity for marketing/code-share agreements entered into with a U.S. air carrier. For example, the Department's grant of antitrust immunity to the United Air Lines/Lufthansa code-share agreement was conditioned, in part, on Lufthansa submitting Survey reports.

Air carriers must report data on one percent of the flight coupons involving large domestic markets, which are defined as major city pairs with directional origin-destination passengers in excess of approximately 35,000 annual passengers. To ensure data reliability, all other markets are sampled at 10 percent. The 10 percent sampling is also needed in the large international markets because these markets are only partially sampled, as most foreign air carriers do not submit the Survey to the Department. Data for transportation on a foreign air carrier are included in the Survey when a passenger interlines onto a U.S. carrier and the passage on the foreign carrier is part of the lifted ticket itinerary of the sampled ticket.

The following items are reported from the applicable flight coupons:

1. Year/Quarter
2. Origin Airport
3. Operating carrier on each flight stage
4. Ticketed carrier on each flight stage
5. Fare-basis code on each flight coupon

6. Points of stopover or connection
7. Destination Airport
8. Number of passengers
9. Total dollar value of ticket

The regulations regarding the “Total dollar value of ticket” instruct air carriers to report the “total” box on each passenger ticket and shall be the sum of the fare plus tax for the entire ticket. Generally, ancillary fees for such things as baggage, food, entertainment, etc. are written on “service tickets” rather than passenger tickets and the costs of “service tickets” are not included in Total dollar value of ticket.

While carriers are required to report data on one percent of the flight coupons involving large domestic markets, all carriers have requested and received waivers from BTS allowing them to sample at a straight 10-percent rate, regardless of market size.

Because of widespread code-sharing operations, the Survey requires the reporting air carrier to identify both the operating and marketing air carriers. Code sharing is where one carrier operates a service under the name and marketing code of another air carrier. Congress urged the DOT to analyze more thoroughly the effects of international code sharing on air transportation and on U.S. air carriers. In the United States, regional carrier service is growing as major carriers are handing over more service to their code-share partners. This trend increased after the events of September 11, 2001, as air traffic decreased and carriers downsized their aircraft in an effort to match supply with demand. Service to small communities can be affected by code sharing, creating a need for DOT to monitor the impact on the communities from code-share services.

Data from the Survey are used by the Department to fulfill its aviation mission as described below under separate captions. This ICR replaces OMB 2139-0001 which was submitted to OMB erroneously in 2013. All aspects of the Origin and Destination Survey remain the same as the original OMB control number 2139-0001.

#### Department of Transportation

##### *International Air Service Program*

The needs for Survey data are most critical in the Department’s administering of its international aviation policy and programs. Without this data, the United States’ negotiating position would be severely compromised. The Survey provides characteristics concerning those travelers flying on a U.S. carrier and those traveling on a foreign carrier that interlined with a U.S. carrier. Bilateral agreements are negotiated between the United States and Foreign countries. These agreements have many features including capacity controls, number of selected air carriers and identification of gateway cities. Code-share rights between U.S. and foreign air carriers are included in many agreements. The Survey is used as a spur for

new service by showing that there are sufficient numbers of passengers moving between the United States and a particular country to warrant direct or additional service. The Survey supports new gateway destinations by showing that feed traffic from domestic interior points to existing gateways may flow better over a different gateway or a new gateway point. The Survey is an important data source for evaluating pricing articles in bilateral agreements by providing insight into volume of revenue traffic moving on specific fares and the yield for the communities of interest. Yield is passenger revenue per revenue passenger-mile. The Survey can be used to justify an increase in service in international markets that have capacity control restrictions by showing that passengers are forced to take circuitous routings between the points in question.

### *Carrier and Airport Selection*

After a bilateral agreement is signed, the Department selects carrier and airport for all newly authorized services. The Survey is the primary tool for traffic forecasting and carrier or airport selections, because it displays the true origin and destination of passengers between the United States and the pertinent foreign country. This information is critical in assessing the potential for a particular carrier at a gateway point where domestic feed traffic is needed to make the international route a success. In reviewing an operating plan, the Department examines the carrier's revenue generation estimates by analyzing historic fare levels and projecting traffic patterns. Survey data are universally accepted as reliable; and are used as evidence in court and administrative proceedings with minimum of legal debate. The Department's regulations (14 CFR 302.24(g)(iv) identifies Survey data as "officially noticed" data in proceedings before the Department.

### *War Air Service Program*

In time of national emergency, the Survey is used to identify major and critical markets or minor markets, and to allocate U.S. air carrier resources.

### *Airport Programs*

The airport planning program has a continuous need for Survey data to determine the impact of true origin-destination traffic flows on airports and to identify trends for growth and development in specific markets. The Survey is used for airport planning analysis by enabling the Department to keep current with market developments, such as the impact on particular airports of air carrier "hub and spoke" operations, and the impact of new or de-emphasized hubs and related operational realignments. Some hub airports might not be able sustain service if they relied only on passengers originating at those facilities – as opposed to the much larger number of passengers flowing through such airports. The Survey is needed to ascertain where these flow passengers originated, where they are going, and the amount of revenue generated. The Department uses Survey data in its hub airport forecasting program. Reliable historic flow data are needed to accurately forecast passenger flows between city

pairs for each hub airport. Once again, the Survey is needed to obtain data that are reliable enough to use in forecasting many of the smaller city pairs.

#### *Aviation Policy and Plans Program*

Survey data are a source for analyzing passenger demand in modeling studies that support development of the National Air Space System Plan. The Survey is a basic data source for responding to Congressional Inquiries and can be used for assessing policy proposals designed to promote competition and the health of the industry, or enhance the strength and responsiveness of the air transportation system. Additionally, the Survey has been used in energy efficiency studies.

#### Department of Homeland Security

The Transportation Security Administration uses Survey data to assess the level of security personnel and equipment needed at the various airports. While the department's passenger enplanement data from Schedule T-100 has the number of passengers that departed from an airport; it does not give you the number of passengers originating their journey at that airport. Originating passengers must pass through security screening while the vast majority of connecting passengers have already passed through the screening area at their origin airport.

#### Department of Labor's Bureau of Labor Statistics

Survey data are used in the Consumer Price Index (CPI) calculations. Fare classifications data are used to establish the sample trips that are priced for airline fare components of the CPI.

#### Department of Commerce's Bureau of Economic Analysis and Census

Survey data are used in estimating the Gross National Product, providing analyses of International Trade Accounts and compiling the Input-Output Tables of the United States.

#### International Trade Administration's Office of Service Industries

Survey data are used to help improve access to foreign markets for U.S. industries.

#### Government Accountability Office

Congress often requests GAO to conduct special studies on air transportations. The Survey is one of three BTS data bases used by GAO.

#### Other Parties That Use Survey Data

Many state and local aeronautical agencies, airport commissions, aircraft manufacturers, and the air carriers all use Survey data.

**3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submissions of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.**

BTS has attempted to ensure that the form and format of the data collection are designed to minimize the burden of the reporting carriers. Carriers are enabled to electronically submit files to BTS, thus reducing their burden.

**4. Describe efforts to identify duplication. Show specifically why similar information already available cannot be used or modified for use for the purposes described in Item 2 above.**

BTS has studied the possible use of data from the air carrier reporting clearing house (ACRCH) as an alternative data source. The use of this data has the potential to reduce carriers' reporting burden. However, while ACRCH's record format includes all the information needed by DOT, most carriers do not fill in all the ACRCH data fields. Moreover, not all carriers participate in the clearing house.

BTS looked at other data sources namely, but found none that satisfied DOT needs. The International Passenger Data (IPD) collected by Homeland Security provides information on international traffic demand, but lacks pure domestic traffic data. Also, IPD does not include the price or total value of the ticket (fare plus taxes and user fees), the fare basis code (first class, business class or coach class) or the complete passenger itinerary with all participating carriers.

The Official Airline Guide Flight Schedules are extremely useful data, but flight schedules are different from actual passenger flow data. Flight schedules track the movements of aircraft. The Survey tracks the movements of passengers.

The United States Travel and Tourism Administration have conducted voluntary surveys on travel to Mexico and other international flights. These surveys suffered from poor participation response rates and poor coverage. Further, domestic operations and service to Canada are omitted from these surveys.

Various airport authorities and commissions have conducted surveys on operations at their respective airports. Once again this is often useful information, but due to the lack of universal coverage these surveys are a poor replacement for the DOT Survey.

**5. If the collection of information impacts small businesses or other small entities, describe efforts to minimize burden.**

The Department has exempted small certificated and commuter air carriers from the provisions of Survey reporting.

**6. Describe the consequence to the Federal Program or policy activities if the collection were not collected or conducted less frequently.**

Less frequent data collection would seriously erode DOT's ability to monitor the condition of the U.S. air transport industry. The timeliness and frequency of data collection are critical in evaluating trends as well as monitoring individual carrier operations. The filing frequencies were chosen after careful analysis that balanced the degree of reporting burden against DOT's need for current data to oversee the air transportation industry.

The Department must have quarterly reporting to meet critical program requirements for timely data on passenger itineraries and dollar amount of fares. For examples, quarterly reporting is especially critical in the international program area that is concerned with tracking changes in traffic flows due to seasonality, carrier route changes, and carrier preference. In assessing the U.S. position in international negotiations, current information is critical. Out-of-date data could compromise the U.S. position in sensitive negotiations. The dynamic nature of the air transportation industry requires that U.S. negotiators have the latest available information to protect U.S. interests.

If Survey data were not collected and processed by BTS, carriers would have to meet a myriad of reporting requirements that would be generated by the Department, or other Federal, state and local agencies for the many programs needs that now rely on Survey data.

**7. Explain any special circumstances that would cause an information collection to be conducted in a manner:**

- **requiring respondents to report information to the agency more often than quarterly;**
- **requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;**
- **requiring respondents to submit more than an original and two copies of any document;**
- **requiring respondents to retain records, other than health, government contracts, grant-in-aid, or tax records for more than 3 years;**

- **in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;**
- **requiring the use of statistical data classification that has not been reviewed and approved by OMB;**
- **that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or**
- **requiring respondents to submit proprietary trade secrets, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

There are no special circumstances that pertain to this data collection.

**8. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the Agency's notice, required by 5 CFR 1320.8(d) soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to the notice and describe actions taken by the agency in response to these comments.**

The 60-day notice was published on May 25, 2016 in 81 FR 33321. No comments were received.

The 30-day notice was published on August 15, 2016 in 81 FR 54190. No comments were received.

**9. Explain any decision to provide any payment or gift to respondents, other than re-enumeration of contractors or grantees.**

No payment or gift of any kind is being made to any respondents.

**10. Describe any assurances of confidentiality provided to respondents.**

International Survey data are restricted as set forth in 14 CFR section 241.19-7(d) of the Department's regulations. U.S. carriers' international data are restricted because comparable foreign data are not available. All requests for access to these data must be submitted in writing to the Department for approval and criteria established for the release of data must be met, including certification that international Survey data will only be used for internal



purposes and cannot be divulged to other parties.

**11. Are there any questions of a sensitive nature?**

There are no questions of a sensitive nature.

**12. Provide estimates of reporting burden.**

|                       |                 |
|-----------------------|-----------------|
| Number of Respondents | 48              |
| Frequency of Response | <u>4</u>        |
| Annual Responses      | 192             |
| Burden per Response   | <u>60</u> hours |
| Annual burden hours   | 11,520          |

**13. Provide an estimate of cost to the respondents. Do not include the cost of any hour burden shown in items 12 and 14. General estimates should not include purchase of equipment or services or portions thereof made prior to October, 1995.**

Most of the cost of this data collection is imbedded in the normal administrative costs normally incurred by the carriers, including personnel expenses and computer time. OAI estimates the annual air carrier computer costs total some \$8,000,000, or approximately \$266,000 per carrier per year.

**14. Provide estimates of annualized cost to the Federal Government.**

Federal Costs

|                                   |               |
|-----------------------------------|---------------|
| Overhead & Miscellaneous Expenses | \$125,000     |
| Manpower                          | 125,000       |
| ADP Resources                     | <u>75,000</u> |
| Total Government Cost             | \$325,000     |

**15. Explain the reasons for any program changes or adjustments in Items 13 or 14 of OMB 83-I.**

Due to aviation industry mergers and consolidations since 2011, the number of respondents and hours of burden have decreased.

**16. Is the information received published?**

The Survey is a recurrent report for each calendar quarter. The Survey is due within 45 days after the end of the quarter. Abbreviated summaries of the data are generally published 6 months after receipt of the carriers' submissions.

Also, Survey data are available on BTS' searchable web site at <http://www.transtats.bts.gov>.

**17. Is the agency seeking approval not to display the expiration date for OMB approval?**

We are not seeking approval to not display the OMB expiration date on the data.

**18. Explain each exception to the Paperwork Reduction Act certification statements.**

There are no exceptions.

**B. Collection of Information Employing Statistical Methods**

**1. Describe the potential respondent universe and sampling method used.**

Participation in the survey is mandatory for all large U.S. certificated air carriers operating scheduled passenger service. Carriers that are required to report include those which fly at least one aircraft with more than 60 seats, or operate at least one domestic-to-international route. Presently there are 48 air carriers submitting the Survey. The Department requires sampling of 1 percent for the largest domestic markets and a 10 percent sample for all other markets. All reporting carriers have voluntarily elected to submit a straight 10 percent sample. Carriers examine the flight coupons or their electronic records for flown trips for Survey reporting. The following coupons or flown trips are selected:

1. For single flight tickets, those with a serial number ending in zero.
2. All group tickets with 11 or more passengers without regard to the serial number. For group tickets with 10 or less passengers only those with a serial number ending in zero.

The selection of flight coupons ending with a zero provides a simple method for airlines to systematically achieve an unbiased sample of 10 percent of the records. Flight coupon or electronic record numbers are generally generated randomly, thus this system avoids the introduction of any systematic bias in the results.

**2. Description of procedures for the collecting information, including statistical methodology for stratification and sample selection, estimation procedures, degree of accuracy needed.**

Air carriers shall select a statistically valid sample of records (either flight coupons or electronic records for flown trips) for reporting purposes. The sample shall consist of 10 percent of lifted flight coupons for all large domestic markets listed in the "Instructions to Air Carriers for Collecting and Reporting Passenger Origin- Destination Survey Statistics."

Flight coupons are the source of the data to be collected, and the Survey data are taken from the first reportable flight coupon in a ticket lifted by one of the reporting air carriers. (In case of ticketless travel, carriers use their internal management control system for completed trips.) The complete passenger itinerary is recorded from that flight coupon as one entry. The recording of data from the flight coupon is a matter of transcribing the information just as indicated on the ticket. The detail record for each trip reveals the complete routing from the passenger's origin to destination, including in sequence from the origin point, each point of transfer or stopover (interline or intraline), the operating carrier, the ticketed carrier, and the fare-basis code for each flight-coupon stage of the itinerary, and the total dollar value for the entire ticket. The report to the Department is submitted by electronic means.

*Estimation and variance estimation procedures are as follows:*

Consider a quarterly O&D survey dataset. Let  $n_g$  denote the observed number of passengers in the  $g$ -th OD pair using the O&D survey and  $N_g$  the true number of passengers. Here  $g = 1, 2, \dots, G$ , where  $G$  is the number of possible OD pairs. Note that with the current sample design of the O&D survey,  $f_g = \frac{n_g}{N_g}$  could be zero, especially for smaller markets, in some quarters. Let  $y_{gi}$  denote the price paid by the  $i$ -th passenger in the sample and  $Y_{gi}$  the price paid by the  $i$ -th passenger in the quarter's population of passengers for the  $g$ -th OD pair. Then, an estimate of the average ticket price

$$\bar{Y}_g = \frac{1}{N_g} \sum^{N_g} Y_{gi}$$

is given by

$$\bar{y}_g = \frac{1}{n_g} \sum^{n_g} y_{gi}$$

It can be seen that

$$E(\bar{y}_g | n_g) = \bar{Y}_g$$

So, this estimator is conditionally unbiased. Also,

$$E(\bar{y}_g) = EE(\bar{y}_g | n_g) = \bar{Y}_g$$

and so the unconditional bias of this estimator is zero. The conditional variance of this estimator is

$$V(\bar{y}_g | n_g) = \left( \frac{1}{n_g} - \frac{1}{N_g} \right) S_g^2$$

where

$$S_g^2 = \frac{1}{N_g - 1} \sum_{i=1}^{N_g} (Y_{gi} - \bar{Y}_g)^2$$

The unconditional variance is obtained as follows:

$$V(\bar{y}_g) = EV(\bar{y}_g | n_g) + VE(\bar{y}_g | n_g)$$

The second term equals 0 and

$$V(\bar{y}_g) = EV(\bar{y}_g | n_g) = E \left( \frac{1}{n_g} \right) S_g^2 - \frac{1}{N_g} S_g^2$$

Since  $N_g$  is unknown, an unbiased estimator of the variance is

$$\frac{1}{n_g} \left( 1 - \frac{n}{N} \right) s_g^2 = (0.9) \frac{s_g^2}{n_g}$$

where

$$s_g^2 = \frac{1}{n_g - 1} \sum_{i=1}^{n_g} (y_{gi} - \bar{y}_g)^2$$

### **3. Describe the methods to maximize response rates, and describe how the Department deals with non-responses.**

The Department contacts delinquency carriers when a report is late filed. The contact may be a telephone call or an email transmission. If no response is forthcoming, then a warning letter is sent to the carrier requesting the data be submitted within the next five business days. If the reports are not received within the 5 day period, the matter is referred to the Assistant General Counsel for Aviation Enforcement and Proceedings. DOT has the authority to fine carriers for each day that Survey report is late without just cause. However, fines and penalties are generally used as a last resort. Overall, the airline industry has an outstanding record for complying with Survey reporting obligations. Occasionally, there may be a delayed response due to a carrier strike or bankruptcy. When a delayed response does occur, the Department will place a notice on the reporting status internet page to alert users that a carrier's data are not included because of the delay.

### **4. Describe any tests of procedures or methods undertaken.**

Carrier reports are electronically reviewed for conformance to instructions, traffic volumes and for various other relationships. Major problems discovered in this review or in later stages of processing are taken up with the carrier and resolved. Reported data are then subjected to a preliminary computerized pre-edit that detects input format problems. The pre-edit also automatically corrects certain obvious errors in the reported city/airport codes, such as the confusion of cities with the same name but in different states. In addition, the pre-edit consolidates the many detailed fare-basis codes reported into six broad categories: (1) Unrestricted First Class, (2) Restricted First Class, (3) Unrestricted Business Class, (4) Restricted Business Class, (5) Unrestricted Coach/Economy Class, and (6) Restricted Coach/Economy Class. In this consolidation, a fare-basis code that does not match in the ADP conversion matrix is automatically changed. Fare-basis codes reported on surface portions of itineraries are removed.

Next, the data are passed through other electronic edits. Each entry is tested to remove duplicates of the same ticket reported by different carriers. Surface-transportation portions at the beginning or end of ticket itineraries are removed. Airport and carrier codes on each flight-coupon stage of the itinerary are tested for validity against the Official Airline Guide electronic files. The carrier on each coupon-stage is tested to determine if it serves the airport of the flight-coupon origin and destination. If the carrier on the coupon does not serve both points, either directly or indirectly, and if the entire ticket has but one flight coupon, the carrier code is automatically changed to that of the reporting carrier when the latter serves both points. If not, the record is dropped. For itineraries with more than one flight coupon, incorrect carrier codes are changed to the code of the monopoly carrier; i.e., the only carrier serving both points. If no monopoly carrier exists, the code is changed to UK (unknown carrier). All records that have been changed by the computer are re-edited.

The computer edit also removes duplication of the same flight-coupon stages reported in juxtaposition in the itinerary, and drops itineraries that have no destination reported. Single-coupon itineraries where the origin and destination are the same are dropped. For itineraries where the carrier(s) do not serve the reported intermediate points, the city is suspected as being misreported and the record is dropped. All records that fail the editing tests (after computer corrections, if any) are dropped from the data. The passenger volume on dropped records is a fraction of one percent of the total number of sample passengers reported by each carrier.

To illustrate:

Edit for Alaska Airlines for 1<sup>st</sup> Quarter 2012

|                                  |    |
|----------------------------------|----|
| Tickets with invalid fare codes  | 0  |
| Tickets with invalid point codes | 66 |

|   |         |                        |
|---|---------|------------------------|
| Tickets with surface at start or end      | 0       |                        |
| Tickets with consecutive duplicate points | 4       |                        |
| Tickets with invalid carrier on coupon    | 2       |                        |
| Tickets with invalid output format        | 0       |                        |
| Tickets requiring modification            | 69      |                        |
| Percent of tickets requiring modification | 0.08    | where 1.00 = 1 percent |
|   |         |                        |
| Number of tickets in                      | 84,740  |                        |
| Number of passengers in                   | 182,806 |                        |
| Number of identical tickets combined      | 1       |                        |
| Number of tickets deleted                 | 0       |                        |
| Number of passengers deleted              | 0       |                        |
| Number of tickets out                     | 84,739  |                        |
| Number of passengers out                  | 182,806 |                        |
| Percent of tickets passing edit           | 100.00  |                        |
| Percent of passengers passing edit        | 100.00  |                        |
| Average coupons per ticket                | 2.15    |                        |
| Number of coupon records                  | 161,046 |                        |

As can be seen above, less than one tenth of one percent of the coupons surveyed were incorrect. City-pair passengers from the Survey are normalized for comparison to the carrier's T-100 traffic reports as a further check. Significant discrepancies are discussed with the relevant carrier for correction.

**5. Provide the name and telephone number of individuals consulted on the statistical aspects of the design and the name of the agency unit, contractor grantee, or other persons who will actually collect and/or analyze the information for the agency.**

Dr. Promod Chandhok is a statistician at the Bureau of Transportation Statistics, Office of the Assistant Secretary for Research and Technology, Department of Transportation. He can be reached at (202) 366-2158.

Mr. James Bouse is the contact person for the Survey. He can be reached at (202) 366-4876.