

Department of Transportation
Supporting Statement B - Collection of Information Employing Statistical Methods
OMB Control No. 2139-0014

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

As defined in Section 19–8 of the Department’s Economic Regulations (14 CFR § 241), the Origin and Destination (O&D) data samples revenue passenger trips moving in whole or in part on domestic and/or international scheduled air carrier services. The carriers that will report data, called Reporting Carriers, shall include all certificated air carriers conducting scheduled passenger services that sell passenger tickets (except helicopter carriers). Small certificated air carriers and commuter air carriers that do not participate in franchise code-share agreement would only report tickets sold on scheduled service flights conducted by the carrier. Carriers that participate in code-share agreements, or contracts with carriers to provide contract lift will not be required to report, unless they issue tickets for their own branded services. The reporting carriers are to collect and report data in accordance with the Instructions and supplemental O&D Directives that may be issued periodically.

As new carriers begin service that they sell, they will be required to file O&D data. These carriers will not be added to the reporting carrier list automatically, but will be added as soon as administratively possible. The other reporting carriers will then be notified with the updates to the reporting carrier list at least one month in advance.

The O&D data are collected from a passenger’s ticket. The data includes the passenger’s routing, i.e. origin to destination and all connecting points. The data sampling reported is based on the final, right-most digit of the standard ticket document number. Reporting carriers using a random numbering system with the right-most digit equal to “0” (zero), “2” (two), “7” (seven) or “9” nine would report the complete itinerary into the data submission. Group tickets with more than 10 passengers are to be reported regardless of ticket number. Any reporting carrier that does not assign a ticket number in which a final, right-most digit is not randomly assigned must develop an alternative method of creating a valid 40% sampling of data. The alternative method must be approved by the Office of Airline Information and Statistics Director 60 days before reporting data.

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

Reporting Carriers will examine each flight coupon received. Each passenger ticket contains at least one flight coupon, known as a flight coupon stage. Upon presentation of the first flight coupon to be flown from the itinerary at the boarding gate, a Reporting Event occurs. This event will notify the carrier that issued the ticket that a lift has occurred for transportation. Based on the reporting event and the sampling process, the issuing carrier becomes the reporting carrier and this carrier will report the ticket to the DOT.

The information reported will include each flight coupon. A flight coupon lists the year and month of travel, air carrier that will be operating the route, air carrier that issued (sold) the ticket to the passenger, marketing carrier(s) of other segments in the ticket (if applicable), total amount of the ticket including taxes and fees, external entity fees and taxes collected for the ticket, amount of time spent between the arrival at one airport and the departure from that same airport (dwell time) (if applicable) and the point of stopover/connecting point of the passenger on a “direct” or “through” flight where the flight number does not change, known as a via point (if applicable). On subsequent coupons, the travel flight year and month will be listed, if applicable, and this is to be reported. A unique record identification number will be included with the submitted ticket information. This number will allow for easier identification for correcting tickets with errors. Please see *Appendix C* for descriptions of each data element.

All tickets issued by a reporting carrier, regardless of market size, carrier size or size of aircraft the carrier operates are to be reported.

The following paragraphs are the statistical methodologies for the stratification and sample selection and the estimation procedures for collecting the data:

Estimation and variance estimation procedures are as follows:

Consider a monthly O&D dataset. Let n_g denote the observed number of passengers in the g -th OD pair using the O&D data 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 data set, $f_g = \frac{n_g}{N_g}$ could be zero, especially for smaller markets, in some months. 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 month’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:

$$\frac{1}{n_g} \left(1 - \frac{n}{N} \right) s_g^2 = (0.6) \frac{s_g^2}{n_g}$$

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 is by 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 the data 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 O&D data 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 subjected to many computerized edits. The first set of computerized edits are preliminary. These checks occur at the initial submission. Checks that occur at this stage are, (1) file format is verified (file is in .csv format) and (2) file name is correct (two letter airline code, reporting year and month, i.e. AA202507). Checks are also done to ensure that a transmittal letter has been submitted and the year and month of the letter is correct. If there are any issues at this stage, the Data Analyst will send the file back to the reporting carrier for correcting and re-submission.

At the next stage, the data analyst 'processes' the raw data input. Computerized edit checks occur at this stage to detect input format problems. Some of the checks performed by the system are, reporting year/month are not null, itinerary fares are not negative or null, reporting/operating/issuing carriers are not null, and the number of passengers is not null. Airport and carrier codes on each flight coupon stage of the itinerary are tested for validity against the Official Airline Guide electronic files and are IATA/DOT issued codes, the itinerary is not incomplete, surface-transportation portions at the beginning or end of ticket itineraries are removed, and the operating carrier on each flight coupon-stage is tested to determine if it serves the airport of the flight-coupon origin and destination. If the carrier does not service the airport, the record is placed on the "Deletions Report" for the Data Analyst to review. If the Data Analyst is not able to resolve the issue after research (i.e. contacting the carrier), the record not included in the final product. 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 Checks for Alaska Airlines for July 2025:

Tickets with invalid airport codes	10	
Tickets with surface at start or end	0	
Tickets with invalid carrier on flight coupon	23	
Tickets with invalid dwell times	5	
Percent of tickets requiring modification	0.004	(where 1.00 = 1 percent)
Number of tickets in	209,315	899,916
Number of passengers in	515,247	899,916
Number of tickets deleted	38	
Number of passengers deleted	38	
Number of tickets out	899,878	
Number of passengers out	899,878	
Percent of tickets passing edit	99.99	
Percent of passengers passing edit	99.99	
Average flight coupons per ticket	1.83	

As can be seen above, less than one hundredth of one percent of the flight coupons submitted were incorrect. City-pair passengers from the O&D data 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.

Each carrier is responsible for developing edit procedures and internal controls over its data entry and processing procedures so that valid and reliable data are captured in the O&D data inputs. Since the carriers have many different statistical systems, it is not practicable for the Department to prescribe specific controls in this area. Each carrier is responsible for developing the appropriate internal control procedures to ensure integrity and accuracy of the data.

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.

Mr. James Bouse is the contact person for the O&D data. He can be reached at OAI.OD40.Support@dot.gov.

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.

APPENDIX

APPENDIX A

The Origin and Destination (O&D) data collection began in September 2025 via electronic submissions. September 2025 data included July 2025, the first month of 40% data.

APPENDIX B

All U.S. Certificated Air Carriers, regardless of carrier size or size of aircraft, will be required to report to the O&D data collection. Carriers that will report data will be known as Reporting Carriers. All reporting carriers will appear on the Reporting Carriers List, which will be maintained by the Office of Airline Information.

Reporting Carriers will report revenue passenger tickets that they issue that meet the criteria to be included in the sample and have flown lift usage. Tickets issued by a reporting carrier will be known as *Category One* tickets. The reporting carrier will report the itinerary of their issued tickets at the moment they process the first lifted flight coupon, regardless of which carrier lifted the coupon or where the coupon falls in the sequence of all the coupons in the ticketed itinerary. The first lift is known as the reporting event. The tickets that will be reported are called reportable tickets. Reporting carriers will always examine the coupons that were issued by carriers that do not appear on the Reporting Carriers List to determine whether they have a duty to report that ticket.

Tickets issued by a carrier that is not a reporting carrier will be known as Category Two tickets. When examining coupons of tickets issued by carriers not on the Reporting Carriers List, reporting carriers will employ long ago established “first reporting carrier” rules as the criteria for deciding whether the tickets should be reported. The flight coupons identified above are to be examined to isolate the reportable flight coupons, i.e. coupons from which data are to be recorded. Flight coupon data are reported only by the first reporting carrier. Such carriers shall report the required data for the entire ticketed itinerary. If another reporting carrier has preceded an examining carrier on any stage in the trip itinerary, including any stage in a conjunction itinerary and any stage in a re-issued ticket (either before or after re-issue) that coupon is not reportable.

No adjustment is made in the O&D data for alterations or changes in the trip itinerary subsequent to the stage covered by the reportable coupon.

APPENDIX C

Data Elements to be collected:

Destination: An airport code or terminus in the ticket sequence of travel where a passenger deplanes from a flight. Qualifying airports or terminus will be specified periodically in accounting and reporting directives issued by the OAI. Airport, or terminus, codes are most commonly assigned by the International Air Transport Association (IATA) and occasionally by the International Civil Aviation Organization (ICAO) or the Federal Aviation Administration (FAA) depending on the jurisdiction of the airport. A common private industry source of these industry designator codes is 3rd party schedule products and OAI will use one of these products as a source where possible. Where none exists, OAI will furnish a code upon request.

Dwell Time: Period of time passenger spends on the ground after the previous flight segment has been completed and before departure of the next flight segment. In the 19.7, the origins and destinations are provided for each segment. It is not known, however, the amount of time that the passenger spends at each mid-point enroute to their destination. In 19.8, the reporting of dwell time will remove the expense and error associated with deciding when a passenger has reached a destination and when the passenger is simply waiting for a connecting flight to the intended destination. Reporting of this element will also enable better alignment with the T-100 monthly data. As the reporting carrier knows the flight dates and flight times of a ticket's itinerary, the DOT proposes that the reporting carriers report in one hour increments the number of hours elapsed between a passenger's arrival and the passenger's departure from an Airport. If the number of hours is greater than 24, use the value of '9999'.

Issuing Carrier: The IATA/DOT identifier of the airline carrier that issued the ticket.

Marketing Carrier: Under a code-share agreement, the IATA/DOT air carrier code that markets the seat on the aircraft, whether it operates the flight segment or not.

Operating Carrier: Under a code-share agreement, the air carrier whose aircraft and flight crew are used to perform a flight segment. IATA/DOT carrier codes are to be submitted. means the carrier that has operational control over the aircraft that is scheduled to depart from an airport. Operating carriers may be other than air carriers in the case of an intermodal segment sold as part of the ticket. In the case of an intermodal segment record hyphen hyphen (--) as the operating carrier.

Origin: An airport or terminus in the ticket sequence of travel where a passenger boards a flight stage. Qualifying airports or terminus will be specified periodically in accounting and reporting directives issued by the Office of Airline Information. Airport, or terminus, codes are most commonly assigned by the International Air Transport Association (IATA) and occasionally by the International Civil Aviation Organization (ICAO) or the Federal

Aviation Administration (FAA) depending on the jurisdiction of the airport. A common private industry source of these industry designator codes is 3rd party schedule products and OAI will use one of these products as a source where possible. Where none exists, OAI will furnish a code upon request.

Purchase Window Group: One of three groups indicating the advance purchase window of the ticket. "21AP" is less than or equal to 21 days prior to departure, "2290" is 22 to 90 days prior to departure, and "91UP" is 91 days or more prior to departure.

Reporting Carrier: The U.S. Certificated Air Carrier or Commuter Air Carrier that is required to report O&D under 14CFR241 19-8 and reported a given itinerary to the Department. Although some foreign carriers report O&D under 49 U.S.C. §§ 41308 and 41309 and may be found on the reporting carrier list for purposes of data processing, they are not considered a reporting carrier under 14CFR241 19-8.

Reporting Carrier List: A list maintained and published by the Office of Airline Information (OAI). Carriers report O&D data consistent with these regulations, but a carrier is not required to report until OAI adds the carrier to the Reporting Carriers List. Carriers must also determine the responsible reporting carrier for Category Two tickets using the first reporting carrier rule and should use the Reporting Carriers List to determine the responsible reporting carrier.

Reporting Month: Month in which a coupon in a ticket is used for air transportation for the first time.

Reporting Year: Year in which a coupon in a ticket is used for air transportation for the first time.

Record Identification Number: A unique Record identifier submitted by the Reporting Carrier.

Scheduled Flight Month: The scheduled month of each flight coupon stage in the itinerary.

Scheduled Flight Year: The scheduled flight year of each flight coupon stage in the itinerary.

Tax Amount: All aggregated taxes and fees imposed by the U.S., government entity, or a foreign government, such as, but not limited to, Federal excise taxes, flight segment taxes, U.S. passenger facility surcharges, September 11 security fees, U.S. or international departure and arrival charges, and immigration charges. Taxes and mandatory fees charged by other foreign authorities, such as passenger service charges and airport taxes, are also considered part of Tax Amount.

Total Amount: In 19.7, the data element of "Total Dollar Value of Ticket" represents the fare paid by the passenger plus taxes. Being one value, there is uncertainty as to the value of the fare itself and the value of the taxes. In 19.8, this data element will be re-named to the

industry standard term of “Total Amount”. This field will represent the gross total of funds collected on a ticket by the Issuing Carrier for the transportation of a passenger, inclusive of taxes and fees imposed by non-carrier entities or air carriers, and exclusive of ancillary fees not required to board the plane charged by the air carrier.

Total Amount includes charges required to board the aircraft (domestic and international) that are recognized as revenue at the time of purchase of the ticket and at the time of first lift of the ticket. Factors considered in determining what should be included in the Total Amount are as follows:

- (a) Where a charge assessed at the time of purchase of the ticket is associated with a choice, such as seat assignment, where the consumer must pay the fee or charge regardless of the choice made, the charge is considered part of the Total Amount.

The Total Amount does not include charges for optional services (services offered which the consumer may choose not to utilize and thus not incur the fee or charge) such as baggage fees, seat upgrade fees, or ticket change fees. When a fee is assessed and there is a no cost option, that fee is considered an ancillary fee. When a fee is assessed for a service that provides something distinct from the air travel product then that fee is considered an ancillary fee.

The term Total Amount should align with standard passenger ticket documents; however, for air carriers that do not follow such standards or have, or may have, created new fees that may not be included in the standard passenger ticket document and yet are required to be paid to board the aircraft, these must also be included in Total Amount.

Based on the criteria above, the following is a non-exhaustive list of carrier-imposed fees and charges that must be reported as part of the Total Amount of the ticket: fuel surcharges, carrier usage charges, carrier interface fees, check-in fees, electronic usage charges, peak/holiday travel fees, transaction processing charges, and credit card surcharge fees. When a customer is assessed a fee based on how the customer acquires a ticket to board the aircraft, a booking fee, the fee is included in the Total Amount. Being required to pay a fee or charge for electronic or phone booking where there is no fee for purchase at the counter must be reported in the Total Amount. Being charged a call center fee for booking by phone when the customer could have booked online at no charge is not an example of a booking fee that must be reported. Carriers must also include all taxes and fees imposed by the U.S. or a foreign government, such as, but not limited to, Federal excise taxes, flight segment taxes, U.S. passenger facility surcharges, September 11 security fees, U.S. or international departure and arrival charges, and immigration charges. Carriers must also include taxes and mandatory fees charged by other foreign authorities, such as passenger service charges and airport taxes.

Via Airport (point(s)): Points in which an aircraft lands and departs with the same flight number at a planned point of stopover. These flights are considered “direct” and “through flights”. These “via points” are in the carrier’s reservation systems, but have not been

included in the itineraries reported to DOT under 19.7. The focus on 19.7 has been on the “Origin” and “Destination” and not the intermediate points (unless a transfer occurred to a different flight number in the itinerary). Reporting all cities in the itinerary will better align the O&D data with the T-100 data, removing the effort and cost of market validation analysis. This will allow the T-100 to facilitate validation of O&D data submissions.

APPENDIX D

Glossary of Terms:

Airport: See Origin or Destination

As Sold: Carriers are to report ticket information as it appears on the ticket at the time the ticket was issued or reissued prior to first known flown lift usage. This does not mean to report obvious errors or inaccurate information. For example if a ticket is sold as NYC the reporting carrier is responsible for reporting the specific airport used in the New York area.

Bilateral agreement: Prior to an air carrier operating flights to another country, both countries must negotiate a treaty level agreement. This agreement is called a bilateral agreement.

Commuter Air Carrier: An air carrier that operates small aircraft which consists of 60 seats or fewer and/or performs scheduled passenger service of at least five round trip flights per week between two or more scheduled points.

Connecting point: An intermediate point in a sequence of travel at which the passenger deplanes from one flight and boards another flight, either on the same carrier or from the flight of one carrier to a flight of another carrier, for the continuation of the journey.

Coupon/Coupon Stages: See *Flight Coupon Stage*.

Data Analyst: The individual(s) in the Office of Airline Information responsible for processing the reported the O&D data.

Eligible Ticket: A ticket that meets the 40% sampling criteria where the right-most digit (excluding the check digit) is equal to “0” (zero), “2” (two), “7” (seven) or “9” (nine) of a primary ticket in the case of a conjunction ticket when following the standard sampling procedure. For ad-hoc procedures, an eligible ticket is any ticket that meets the approved sampling procedure selected.

Examining Carrier: A carrier that examines a ticket to determine if it is to be reported.

First Reporting Carrier Rule: Rule applied during the reporting event evaluation. The first reporting carrier in the sequence of travel for a Category Two ticket is designated as the carrier responsible for reporting the ticket.

Flight Coupon: means a defined origin and destination for a single stage of flight provided by a single Operating Carrier. Tickets are composed of one or more flight stages, also known as coupons or coupon stages.

Flight Coupon Stage: A defined origin and destination for a single stage of flight provided by a single operating carrier. Tickets are composed of one or more flight coupon stages (also known as coupons and coupon stages).

Flown Lift Usage: A record or indicator in the accounting system of the issuing carrier that represents a passenger ticket coupon that has been used by the passenger for travel on a flight.

Group Tickets: A single ticket issued to two or more passengers.

Intraline: An agreement that is not in place between air carriers to coordinate passengers with itineraries that encompass multiple airlines. Passengers traveling on intraline carriers have to check-in with the carrier of their next segment of travel when they land at their stopover point.

Interline: An agreement between air carriers to coordinate passengers with an itinerary that encompasses multiple airlines to not have the passengers check-in again or have to deal with their luggage again at the point of stopover.

International Ticket: A ticket that involves an international point and is submitted by a Reporting Carrier, or a ticket submitted under 49 U.S.C. §§ 41308 and 41309 for certain foreign air carriers granted antitrust immunity that includes a Reporting Carrier (or affiliate) operated leg in an itinerary. An international point is a point that resides outside of the 50 States. U.S. territories and possessions are considered International Points.

Office of Airline Information: The department in the US Department of Transportation, Office of the Secretary of Research and Technology (OST-R), Bureau of Transportation Statistics division responsible for collecting, processing and disseminating the O&D data.

Points of stopover: See *Via points*.

Re-issued Ticket: A ticket issued in exchange for all or part of the unused portion of a previously issued ticket. A re-issued ticket is also considered an exchanged ticket.

Reportable Ticket: The combination of flown flight usage, sampling process criteria, and the Category One and Category Two ticket evaluation determines if a ticket is reportable.

Reporting Event: The occurrence of a Reporting Carrier recognizing that a ticket has been flown and evaluating the ticket to determine if it should be reported to the O&D data.

Revenue passenger: See Title 14 Code of Federal Regulations Section § 241 Section 03 – Definitions for Purposes of this System of Accounts and Reports – Passenger, revenue.

Routing: The sequence of travel for each flight coupon stage including all intermediate points of routing, stopover, or connection (interline or intraline) in the movement of the passenger from the first airport in the sequence of travel to the last airport in the sequence of travel for the ticket.

Scheduled Service: Transport service operated on a Certificated Air Carrier or Commuter Air Carrier's routes pursuant to published flight schedules, including extra sections of scheduled flights.

Small Certificated Carrier: An air carrier holding a certificate issued under Section 41102 of the Statute that provides scheduled passenger air service within and between only the 50 States of the United States, District of Columbia, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands with small aircraft as defined in this section.

Ticket: A legal contract between an Issuing Carrier and a revenue passenger.

Yield: Passenger revenue per revenue passenger-mile.