FORECAST PROCESS
2024 TAF

Jan 2025

1. Introduction

The Terminal Area Forecast (TAF) contains historical and forecast data for enplanements, airport operations, Terminal Radar Approach Control (TRACON) operations, and based aircraft. The data cover FAA towered airports, FAA contract tower airports, TRACON facilities, and non-FAA airports. Data in the TAF are presented on a U.S. Government fiscal year basis (October through September).

The TAF is prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. In addition, state aviation authorities and other aviation planners use the TAF as a basis for planning airport improvements.

The airport activity data contained in the TAF consist of the following:

. ***Enplanements*** (sum of originating and connecting passengers) for air carriers and regionals;

. ***Itinerant operations*** for air carriers, commuters and air taxis, general aviation (GA), and military aircraft;

. ***Local operations*** for civil and military aircraft; and

. ***TRACON operations*** for aircraft operations under radar control.

2. Airport Types in TAF Forecasts

In the 2024 TAF, the forecasts incorporate the downturn and recovery from the COVID-19 pandemic to varying degrees based on airport type. Section 3 will discuss the impact of the COVID-19 pandemic on TAF forecasts. This section introduces the airports by group and explains whether COVID-19 recovery is incorporated in the forecasts:

. ***527 FAA and FAA contract tower airports*** – Forecasts reflect the impact on passenger enplanements, commercial operations, and general aviation operations. In FY2024, these airports accounted for 99.4 percent of total US passenger enplanements and 90.3 percent of total US commercial operations.

. ***10 Non-FAA airports with greater than 100,000 passenger enplanements in FY2024*** – Forecasts reflect the impact on passenger enplanements and commercial operations. In FY2024, these

airports accounted for 0.3 percent of total US passenger enplanements and 0.3 percent of total US commercial operations.

. ***Over 2000 Non-FAA airports with fewer than 100,000 passenger enplanements in FY2024*** – Forecasts do not account for impact on passenger enplanements, commercial operations, and general aviation operations. In FY2024, these airports accounted for 0.3 percent of total US passenger enplanements and 9.4 percent of total US commercial operations.

3. Forecast Method

The TAF assumes a demand driven forecast for aviation services based upon local and national economic conditions as well as conditions within the aviation industry. In other words, an airport's forecast is developed independent of the ability of the airport and air traffic control system to furnish the capacity required to meet demand. However, if the airport historically functions under constrained conditions, the FAA forecast may reflect those constraints since they are embedded in historical data. In statistical terms, the relationships between economic growth data and data representing growth in aviation activity reflect those constraints.

In FY2020, there was a major decrease in passenger enplanements and commercial operations as a result of the COVID-19 pandemic. For FAA facilities, there was a modest recovery with these parameters increasing at above historical average growth rates in FY2021, followed by tremendous growth in FY2022 and moderate recovery in FY2023. While domestic recovery had been leading the way in FY2021, international recovery picked up steam in FY2022 and FY2023. By the third quarter of CY2023, domestic passenger volume had reached 100% of the pre-COVID level while international passengers exceeded the pre-COVID level by appropriately 9%. By the end of FY2023, about half of the large and medium hub airports had recovered to the pre- COVID levels in terms of total enplanements and commercial operations. Full recovery from COVID was reached in FY2024 at FAA and Federal contract towers with passengers at 105.6% and commercial operations at 101.5% of pre-COVID levels. For the airports that are not back to the FY2019 levels by FY2024, special attention was spent on forecasting the near-term recovery going back to the FY2019 activity.

The forecasts of passenger enplanements and commercial operations at airports with more than 100,000 enplanements in FY2023 are based on a bottoms-up approach. The domestic enplanements are forecast by generating origin and destination (O&D) market demand forecasts using the DB1B (quarterly 10% sample) data to model passenger flow on a quarterly basis. The O&D passenger demand forecasts are based on regression analysis using fares, regional demographics, and metropolitan level economic factors as the independent variables. The O&D forecasts are then combined with DOT T-100 segment data to generate passenger forecasts by airport pair and segment pair. The segment pair passenger forecasts are assigned to aircraft equipment to produce segment pair operation forecasts. The quarterly segment pair forecasts are aggregated to produce annual airport forecasts.

Separate models are used to forecast international passenger enplanements and operations and cargo operations. The international passenger enplanements are forecast on a quarterly basis

using time series analysis and T-100 segment data. The segment pair passenger enplanement forecasts are used to generate segment pair operation forecasts. The cargo operation forecasts are also generated on a quarterly basis using time series analysis and T-100 segment data. The segment pair forecasts for international passenger enplanements and operations and cargo operations are aggregated to the market pair and airport level on an annual basis.

In 2020 TAF, the first TAF published since COVID-19, the near-term recovery forecasts to FY2019 activity were based on an analysis of the recovery from previous external shocks and real personal income projections. The previous external shocks include the September 11, 2001, Terrorist Attack and the 2008 Financial Crisis. The real personal income projections were also a significant factor since it incorporates the risks associated with the pandemic and its impacts on the economy. In the TAFs released from 2021 to 2024, the near-term recovery forecasts to FY2019 activity are heavily influenced by the most recent economic data and aviation data (such as TSA and airline schedule data) prior to the forecast publication date.

For FAA facilities with fewer than 100,000 enplanements in FY2023: A combination of time-series modelling, and trend analysis was used to develop the long-term forecast growth rates of enplanements and air carrier and air taxi operations at these facilities. Historic enplanement data from DOT T-100 data sets were used as inputs to time-series models to develop long-term forecast rates for air carrier and regional passenger forecasts for these facilities. Long-term forecast rates from time-series models for air carrier and air taxi operations were developed primarily using historic OPSNET data for these facilities. For airports that showed unusually high or low growth rates, additional analysis was conducted by comparing scheduled seat data and enplanement data by airport to determine the most suitable forecasting approach. In a handful of cases, the long-term forecast rates for passenger enplanements and commercial operations were 2023 TAF growth rates, as the overall trends remained unchanged. These forecasts were primarily driven by trend analysis.

The long term forecast rates of itinerant general aviation operations and local civil operations at FAA facilities are based primarily on time series analysis. The near-term recovery forecasts were based on recent trends. On average, the FY2020 decrease in these operations was significantly less than the decrease in passenger enplanements and commercial operations. By FY2022, many airports had reached or exceeded the FY2019 levels for itinerant general aviation operations and local civil operations, and most of the remaining ones have attained their 2019 levels by FY2024. Because military operations forecasts have national security implications, the Department of Defense (DOD) provides only limited information on future aviation activity. Hence, the TAF projects military activity at its present level except when FAA has specific knowledge of a change. For instance, DOD may announce a base closing or may shift an Air Force wing from one base to another.

For non-FAA facilities, historic operations in the TAF are from the Form 5010 data. These operations levels are held constant for the forecast unless otherwise specified by a local or regional FAA official.

4. Data Sources

The development of the TAF begins with an update of the latest historical enplanement, operation, and based aircraft statistics, using information derived from several sources. FAA's National Flight Data Center provides general airport information such as the airport name, location, and location identifier. Airport operations and TRACON (radar assisted) operations data for airports with FAA and Federal contract air traffic control services are reported by FAA air traffic and Federal contract tower staff. Operations at non-FAA airports are taken from FAA Form 5010 reports on aviation activity at the airport as estimated by FAA inspectors or information provided by airport managers, state aviation activity surveys, and other sources.

U.S. domestic and international (U.S. and foreign flag carriers) enplanements are derived from the Department of Transportation's (DOT's) T-100 database. Regional carrier enplanements are derived from DOT T-100 and 298-C data. In October 2002, DOT began collecting data for all airlines using the T-100 format. This change provides more detail on regional airlines, who previously reported on Form 298-C.

The origin and destination (O&D) data are based on the Airline Origin and Destination Survey (DB1B). This is a 10 percent sample of airline tickets from carriers reporting to the Office of Airline Information at the Bureau of Transportation Statistics.

Based aircraft data are collected by FAA inspectors, airport managers, and state aviation officials and reported on FAA Form 5010. These data show numbers of aircraft, mostly general aviation aircraft, permanently based at an airport.

5. TAF and FAA Aerospace Forecasts

Summary statistics presented in the TAF differ from the national totals contained in the FAA Aerospace Forecasts. Reasons for the differences are threefold. First, the TAF forecast methods consider airport and market specific trends. Second, the TAF and Aerospace Forecast measurements vary. For example, the TAF includes facilities not serviced by the FAA in its totals. These facilities make up a large share of total general aviation operations. In addition, the TAF includes enplanements at U.S. airports only, whereas the Aerospace Forecast includes enplanements on U.S. airlines at both U.S. and foreign airports. Finally, individual forecasts are not scaled to force aggregates to equal national totals.