

Glossary

-Revised April 21-

Forecast Terms

Air Cargo-freight and mail carried by aircraft (usually measured in tons)

Aircraft Operation-an aircraft take off or landing

Airline Hub-an airport used by an airline to facilitate transfers between flights; SFO is a hub for United Airlines which uses smaller turboprop and Regional Jet aircraft to feed traffic to its large domestic and international route system

Base Case Forecast-the primary forecast used for analysis in this study; the Base Case is the mid-range forecast between the High and Low Forecast

Belly Cargo-air cargo carried in the cargo hold of passenger aircraft as opposed to air cargo carried in an aircraft used exclusively for air cargo (these aircraft are also termed “freighters”).

Business Jet-a small private passenger jet, often used by businesses as an alternative to traveling on an airline

Connecting Passengers-air passengers who connect between flights at an airport and do not leave the airport terminals

Enplaned/Deplaned passengers-the number of passengers getting on and off airplanes

General Aviation-all flying other than that conducted by the airlines and military

Itinerant Operation- a flight that leaves an airport and travels to another airport (as opposed to a Local operation that takes off and lands at the same airport)

Load Factor-the percentage of aircraft seats that are filled, or with air cargo aircraft, the percentage of the carrying capacity used.

Local Origin/Destination Passengers-domestic or international air passengers that begin or end their trip in the Bay Area or surrounding region

Low Cost Carrier-traditionally an airline offering lower fares than its competitors (e.g., Southwest, Jet Blue, Virgin America)

Primary Bay Area Airport-refers to the Bay Area’s major commercial airports--Oakland, San Francisco, and San Jose

Secondary Bay Area Airport (also “Alternative” Airport)- refers to other general aviation and federal/military airports that were evaluated for potential airline service in the future

Unconstrained Demand-the number of passengers/flights that would use an airport in the future assuming there are no capacity constraints due to runways or terminals

Yield-used as a proxy for airline fares (revenues divided by passenger miles flown) in developing forecasts of future air passenger growth

Runway Capacity Terms

Capacity-the number of flights that an airport’s runways can reasonably handle under various weather combinations and aircraft fleet mixes (see Fleet Mix below)

Delay-the extra time taken for an aircraft to land or takeoff; it can be measured with computer models (estimated delays) or measured according to various FAA reporting definitions (e.g., when flights take off or land more than 15 minutes late compared to their scheduled times, or “Where Caused” Delays that more accurately attribute delays across the national airport system to the airport that caused the delay)

Fleet Mix-the types of aircraft using an airport (e.g., from very large/heavy passenger and cargo aircraft down to small general aviation aircraft)

IFR Weather-low ceiling and/or visibility which makes it necessary for aircraft to operate using instruments in the cockpit and under guidance from air traffic controllers; usually associated with lower runway capacity

Runway Configuration-the layout of an airport's runways (length, orientation (parallel, crossing), spacing between runways, etc); the configuration has a major affect on capacity

VFR Weather-good weather in which pilots see and avoid each other; generally associated with higher runway capacity

Air Traffic Control Technology Terms

Airspace-the space aircraft use for flight; includes enroute airspace (used by aircraft flying between two airports) and the terminal airspace around the airports(used for aircraft takeoffs and landings and transitioning between the enroute airspace); all aircraft operations in the national airspace are managed by the Federal Aviation Administration (FAA).

Center TRACON Automation System (CTAS)-software used by air traffic controllers to manage the sequence of arriving aircraft to reduce separation and maintain safety (see wake vortex below)

Cockpit Assisted Visual Separation (CAVS)- instrumentation in the cockpit that will allow pilots in the future to lose sight of the aircraft ahead while maintaining safe separation under reduced visibility, thus increasing airport capacity

Equippage-refers to the percentage of the airline fleet that has the necessary on board equipment to take advantage of future NexGen technologies (see next item)

NexGen-the FAA's next generation air traffic management system that uses satellites for precise navigation; this system will eventually replace ground-based radar and will significantly improve airspace and runway capacity.

Paired Approaches- at SFO, used by controllers in good weather to optimize airport capacity by having two aircraft land simultaneously on the airport's closely spaced parallel runways, thus creating a gap for departures on the crossing takeoff runways

Required Navigational Performance (RNP)-a set of performance requirements for equipment on an aircraft that together with RNAV (routes defined in the airspace by satellite generated positions) can be used to create new aircraft arrival and departure routes freeing up airspace for more operations; also helps with landing aircraft on closely spaced runways like SFO's.

Simultaneous Offset Instrument Approach (SOIA)-an instrument approach procedure developed at SFO to increase use of the two closely spaced arrival runways during reduced visibility, such as during foggy mornings

Wake Vortex-a powerful current of air generated by the wing tips of the leading aircraft that can pose control issues for an aircraft following the lead aircraft; separation standards are applied by air traffic controllers to avoid any safety problems; in the future, new technologies that can better predict the propagation of these air currents could be used to increase runway capacity

Demand Management Terms

Congestion Pricing-charging additional fees to use an airport during the most congested periods of the day; would reduce delays if flights are rescheduled to avoid the fee

Demand Management- the use of various strategies by an airport and/ or FAA to limit daily or peak period flights to the number of flights that can be efficiently handled by an airport's runways

Peak Smoothing-moving some flights from more congested times of the day to less congested times

Slot Controls-defines the number of takeoff or landings allowed at an airport; administered by the FAA for certain highly congested airports (e.g., Chicago, La Guardia)

Upgauging-refers to strategies that would increase the size of aircraft using an airport (i.e., the number of seats), allowing the airport to accommodate more passengers with fewer flights

Environmental Terms

Community Noise Equivalent Level (CNEL); the noise metric adopted by California for assessing community noise impacts around airports; 65 CNEL is the state standard. It represents the average noise (decibels) during a 24 hour period taking into account aircraft noise characteristics, arrival and departure routes, and number of flights in the day, evening and night time periods.

Criteria Pollutants-pollutants for which the US Environmental Protection Agency (EPA) has developed health-based standards; examples are ozone (formed by Hydrocarbons (HC) and Nitrogen Oxides (NO_x) in the presence of sunlight) and particulate matter (like soot from diesel exhaust).

GHGs-Greenhouse gases contribute to a warming of the earth's atmosphere; the primary Greenhouse gas analyzed in this study is CO₂ although numerous other chemicals also affect global warming.