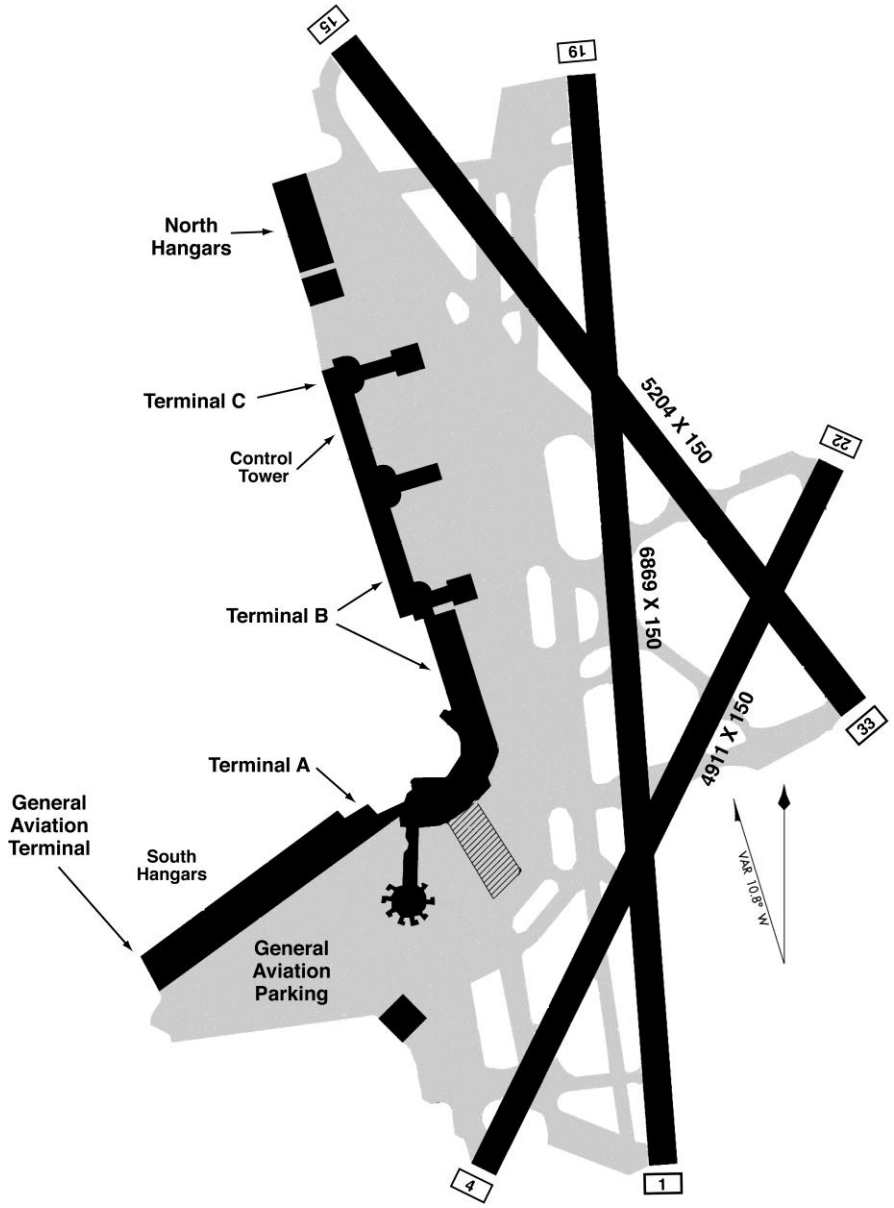
DCA RONALD REAGAN WASHINGTON NATIONAL



Airport capacity profile estimates were created using a standard set of performance characteristics and do not take into account non-runway constraints, unless otherwise noted. The capacity estimates developed for this report are not intended to replace the results of any detailed analysis that would precede an environmental, investment, or policy decision.

The list of Future Improvements and their expected effects on capacity does not imply FAA commitment to, or approval of, any item on the list.

DCA Ronald Reagan Washington National

Definition

- The capacity profile shows the hourly throughput that an airport is able to sustain during periods of high demand, represented as the range between the model-estimated capacity and the ATC facility reported rate (called rate). Each weather condition has a unique capacity rate range.
- The following charts compare actual hourly traffic with the estimated capacity curves for DCA. Some hourly traffic points fall outside the estimated capacity curves. There are many reasons why this may occur without affecting operational safety. For example, more aircraft may have been able to use Runway 15/33 than were assumed in the analysis. Also, actual weather may have been better for part of the hour than that recorded for the hour, allowing more efficient ATC procedures than were modeled.

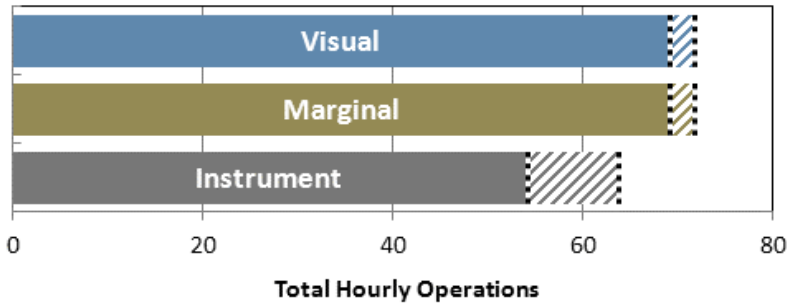
Future Improvements at DCA

- *Improved Runway Delivery Accuracy*: The combined effects of several new capabilities, including ADS-B Out, CDTI, and TBM in the terminal area, will improve the ability of controllers by 2020 to deliver aircraft to the runway with the desired separation from the preceding aircraft. This will reduce the average spacing between arrivals and boost arrival capacity.
- Additional information on these improvements may be found in this report under “Future Operation Assumptions."

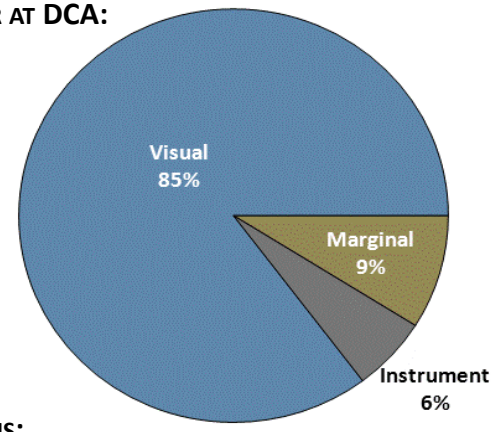
Data Sources

- Actual hourly DCA operations, weather and configuration data were obtained from the FAA ASPM database, and represent operational hours from 7am to 11pm local time for all of Fiscal Years 2009 and 2010. Actual configuration usage is determined by multiple operational factors, including weather conditions.
- Facility reported rates were provided by ATC personnel at DCA.
- Model-estimated rates are derived from operational information provided by ATC.

Current Operations Capacity Rate Range



Annual Weather at DCA:



Visual Conditions:

- Ceiling and visibility allow for visual approaches: at least 3000 feet ceiling and 4 miles visibility

Marginal Conditions:

- Ceiling and visibility below visual approach minima but better than Instrument conditions

Instrument Conditions:

- Ceiling and visibility below 1000 feet ceiling or 3 miles visibility

VISUAL

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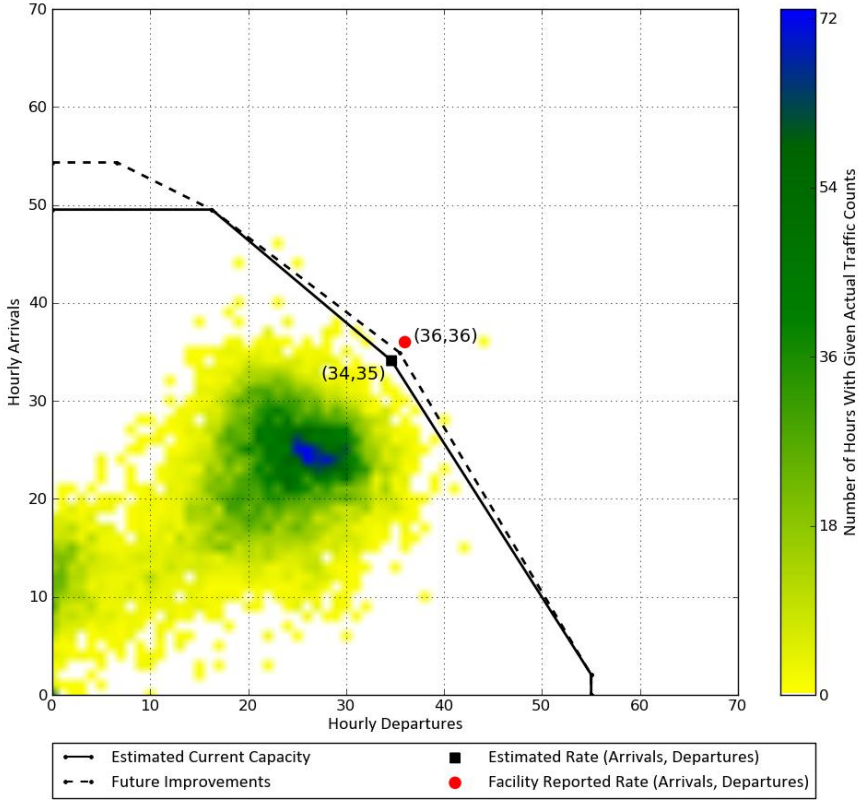
DCA Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	1, 33	1, 33	Visual Approaches with Circle-to-Land Approaches to Runway 33, Visual Separation	72	69
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	1, 33	1, 33		N/A	70

VISUAL WEATHER CONDITIONS



- The capacity rate range in Visual conditions is currently 69-72 operations per hour.
- DCA has two primary directional traffic flows. The airport operates in variations of this configuration approximately 63% of the time in Visual weather conditions (totaling 53% annually).
- Runway 33 is typically used by small and regional aircraft, however some large jets can use it.
- Arrivals to Runway 33 typically fly the approach to Runway 1, then circle to land on Runway 33.

MARGINAL

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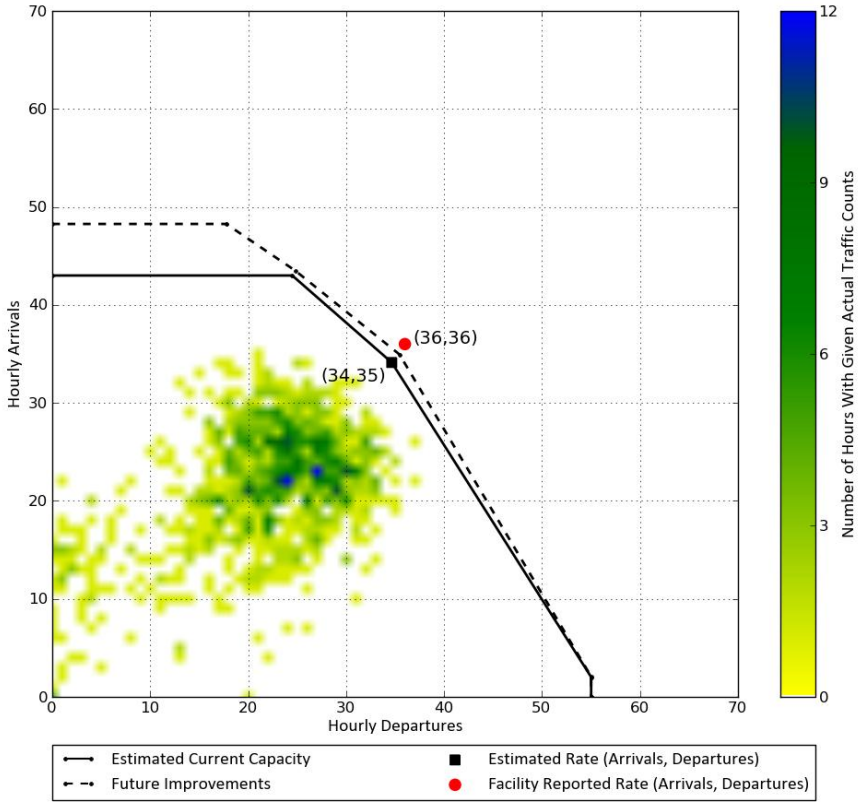
DCA Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	1, 33	1, 33	Instrument Approaches with Circle-to-Land Approaches to Runway 33, Visual Separation	72	69
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	1, 33	1, 33		N/A	70

MARGINAL WEATHER CONDITIONS



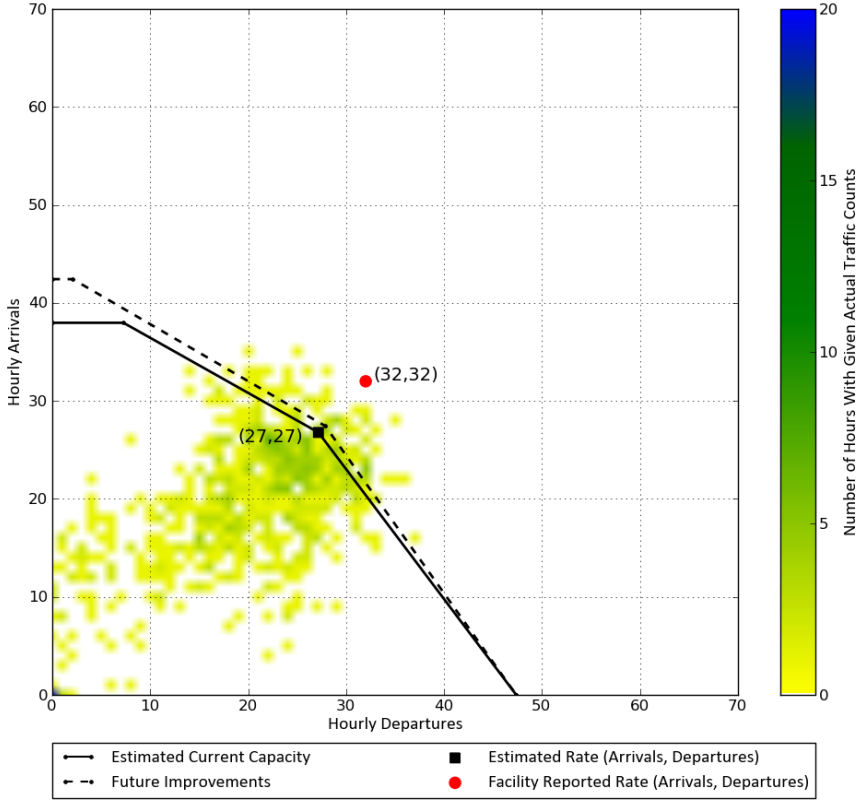
- The capacity rate range in Marginal conditions is currently 69-72 operations per hour.
- DCA has two primary directional traffic flows. The airport operates in variations of this configuration approximately 68% of the time in Marginal weather conditions (totaling 6% annually).
- Runway 33 is typically used by small and regional aircraft, however some large jets can use it.
- Arrivals to Runway 33 typically fly the approach to Runway 1, then circle to land on Runway 33.
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to Runway 1 at DCA.

INSTRUMENT

RONALD REAGAN WASHINGTON NATIONAL

DCA Scenario	Arrival Runways	Departure Runways	Procedures	Hourly Rate	
				ATC Facility Reported	Model-Estimated
CURRENT OPERATIONS	1	1	Instrument Approach, Radar Separation	64	54
FUTURE IMPROVEMENTS Improved Runway Delivery Accuracy	1	1		N/A	55

INSTRUMENT WEATHER CONDITIONS



- The capacity rate range in Instrument conditions is currently 54-64 operations per hour.
- DCA has two primary directional traffic flows. The airport operates in variations of this configuration approximately 83% of the time in Instrument weather conditions (totaling 5% annually).
- Reduced separation (2.5 NM) between arrivals is authorized for instrument approaches to Runway 1 at DCA.