Introduction and Overview

Purpose and Definition

The Federal Aviation Administration (FAA) has developed capacity benchmarks for 35 of the nation's busiest airports to understand the relationship between airline demand and airport runway capacity. They are useful for broad policy discussions and the development of long-term strategies.

Capacity benchmarks are defined as the maximum number of flights an airport can routinely handle in an hour, for the most commonly used runway configuration in each specified weather condition.

These benchmarks are estimates of a complex quantity that varies widely with weather, runway configuration, and the mix of aircraft types. Capacity benchmarks assume there are no constraints in the en route system or the airport terminal area.

Updating the Capacity Benchmarks

The first study of airport capacity benchmarks was published by the FAA in April 2001.[1] Changes in aviation since then, and a better understanding of potential uses of benchmark data, have led to this update to the 2001 benchmark report.

These updated benchmarks should not be compared to the original benchmarks to identify progress since 2001. Refinements to the methodology and different scenario definitions have produced more meaningful and internally consistent benchmark values, but may make comparisons to the original benchmarks misleading. These changes are explained below in the section titled "Differences from Previous Benchmark Report."

The general definition of the benchmarks, and the purpose for developing them, have not changed from the 2001 report.

The Capacity Benchmarks documented in this report were used as a part of the analytical support for the Future Airport Capacity Task (FACT) study, *Capacity Needs in the National Airspace System.*[2] FACT took a new approach to assessing our country's future needs for airport capacity in metropolitan areas. It looked at population trends, economic and societal shifts, and the changing dynamics of the airline industry. While the FACT took a broad look at future airport capacity, the Benchmark report is a more focused look at capacity at specific airports from an operational perspective.

Setting the Framework for Benchmarks

The benchmarks in this report are a relatively simple expression of a complex quantity, airport capacity. They serve primarily as a reference point on the state of selected U.S. airports at a specific time. They can be used to identify and compare specific characteristics of airports, for instance to determine which airports are most severely affected by adverse weather. The benchmarks also provide a context for public policy discussions, because they give a succinct report on the current and future state of capacity at major airports.

Benchmarks are useful data that can help frame discussions. However, they are not a substitute for the more detailed analysis that should precede major investment and policy decisions. In this sense they might be compared to a vital sign of human health, such as blood pressure. That simple indicator might be the starting point for a diagnosis, but more tests would be performed before recommending surgery. Similarly, capacity benchmarks help identify problem areas but are not, in themselves, an adequate basis for selecting remedies.

[1] *Airport Capacity Benchmark Report 2001*, Federal Aviation Administration.
[2] Available at *www.faa.gov/arp/publications/reports/index.cfm*.

This issue can be demonstrated by examining busy airports such as Hartsfield-Jackson Atlanta International Airport or Chicago O'Hare. At Atlanta, scheduled operations may exceed the benchmarks in optimum weather, and frequently do so in bad weather. A simple comparison of schedule to benchmarks might suggest that some action is needed to curtail the schedule. However, air traffic controllers, airlines, and the airport operator have indicated in discussions that they are relatively comfortable with the traffic schedule, and believe that it makes efficient use of the airport. Their judgment is based on long experience and a broad understanding of air transportation.

Some of the considerations behind this judgment are applicable to transfer hub airports in general (the concentration of traffic into schedule peaks to allow passengers to make convenient transfers between flights; the ability to catch up with traffic between peaks in the schedule; and the ability of hubbing carriers to cancel and consolidate some flights during poor weather conditions).

Other considerations are applicable to all busy airports, namely the premise that some amount of congestion and delay is not inconsistent with efficient and affordable air transportation.

It should be emphasized that the benchmarks are specific to the airport, and may not represent the actual capacity of the airport when other considerations are included such as airspace structure and congestion, weather patterns, and directional flight limitations.

At Chicago O'Hare, for example, the average arrival and departure rates will be less than the benchmark rate, which represents operations in good weather in the most favorable runway configuration. Wind conditions frequently force the use of other configurations with lower rates. The actual rate of arrivals and departures may also be affected by traffic flow control measures, such as mile-in-trail restrictions caused by en route weather or airspace constraints.

Methodology

The FAA and The MITRE Corporation have updated the capacity benchmarks for the 31 airports published in 2001 and developed capacity benchmarks for four additional airports (Cleveland, Fort Lauderdale-Hollywood, Chicago Midway, and Portland, Oregon), bringing the total to 35. These are the same 35 airports listed in the FAA's Operational Evolution Plan (OEP) version 5.0, released in December 2002.[3] This update reflects the future capacity gains associated with the new runways and technology improvements identified in OEP v5.0.

The benchmarks are the sum of takeoffs and landings per hour that are possible under the given conditions, if the demand is present. The benchmark capacity usually represents balanced operations, with equal numbers of arrivals and departures. However, if air traffic control (ATC) at the airport frequently reports an unbalanced rate, the benchmark value will reflect this. For example, the airport might be able to handle 40 arrivals per hour but as many as 60 departures per hour. Clearly, the airport cannot operate more departures than arrivals for an extended period: such rates describe the capability of the airport to accommodate operations, not necessarily actual hourly traffic.

These benchmarks are based on routine operations at the airports, and therefore they might be exceeded occasionally under favorable conditions. Conversely, lower rates would be expected under adverse conditions, such as a lower capacity runway configuration or very low ceiling and visibility, or if demand is significantly less than capacity.

[3] Available at www.faa.gov/programs/oep.

There are three benchmarks published for each airport, reflecting three different weather scenarios (Optimum, Marginal, and IFR[4]). The benchmark capacity is defined as the maximum number of aircraft that can be routinely and safely handled during each specified condition:

- **Optimum**: periods of unlimited ceiling and visibility, using visual approaches.
- **Marginal**: periods when the weather is not good enough for visual approaches, but is still better than instrument conditions.
- **IFR**: instrument conditions (ceiling less than 1000 feet or visibility less than 3 statute miles), when radar separation between aircraft is required.

The frequency of occurrence of these weather conditions at each airport was determined for this analysis using data from the FAA Aviation System Performance Metric [ASPM] database. The time period selected was from January 2000 to July 2002 (excluding 11-14 September 2001). Only data between 7 AM and 10 PM local time at each airport was used, to avoid periods of very low activity.

Weather data in ASPM is obtained directly from NOAA. Based on the ceiling and visibility data, and the visual approach minima for each airport, ASPM indicates whether visual or instrument approaches are conducted at the airport.

Each rate is based on the *most commonly used runway configuration* for that condition. For example, the most common configuration at New York LaGuardia Airport in Optimum weather is to use Runway 22 for arrivals and Runway 13 for departures.

The FAA confirmed capacity benchmark rates in three ways:

- Rates for each airport were provided by the ATC team at the airport, both control tower and terminal radar control (TRACON) personnel, based on their collective operational experience and a review of the ASPM data on reported rates.
- The rates provided by the air traffic teams were compared to historical traffic data for arrivals and departures (also from ASPM) to confirm that they represent the best performance of the airport.
- Rates were also calculated based on a set of standard performance characteristics, using the FAA's widely accepted airfield capacity computer model.
- In general, bad weather reduces the capacity of the airport but does not reduce the number of scheduled flights. Under good weather conditions (i.e., Optimum weather), delays at most airports are expected to be small and manageable. During bad weather, however, capacity is lower, resulting in more delay. The difference in the benchmarks for the different weather scenarios is one indicator of the potential effect of weather at a specific airport.

Human factors play a critical role in the benchmark rates reported by the air traffic facility. Benchmarks are strongly affected by how busy the airport is and how aggressively the management team sets target rates.

Assumptions

Version 5.0 of the OEP describes improvements to the National Airspace System (NAS) that will be tested, developed, and/or implemented in the period from 2003-2013. Future benchmarks were calculated for 2013 assuming that the technological and procedural improvements described in OEP v5.0 will be implemented at all eligible airports, and will provide the expected benefits. As such, the values presented should be considered as upper limits of the effect of the OEP improvements on benchmark capacity. Please note that the future benchmarks do not substitute for detailed benefit analyses performed for the individual programs.

[4] Conditions when Instrument Flight Rules (IFR) apply.

The improvements listed in OEP v5.0 included new runways at many of the 35 OEP airports. New benchmark capacities were calculated for each of these airports to show the effect of these planned runways. The benchmark capacities associated with the new runways assume that the airspace design, technology, and ATC procedures needed for full operational performance of the new runway have been implemented. These capabilities include but are not limited to the following:

- **Simultaneous Offset Instrument Approaches (SOIA)** refers to instrument approaches to a set of parallel runways less than 3000 feet apart, utilizing a straight-in precision approach to one and an offset approach to the other. With SOIA, the approach course separation meets parallel approach criteria even though the runway separation does not.
- **Precision Runway Monitor (PRM)** is a high update radar system that allows simultaneous instrument approaches to parallel runways as close as 3000 feet apart. PRM can also facilitate other approach procedures such as SOIA.
- **Standard Terminal Automation Replacement System (STARS)** enhancements provide a high-resolution color monitor with alert algorithms, similar to that provided by the PRM but without the high update rate. Such a monitor is required to conduct triple simultaneous instrument approaches when the runway centerlines are at least 4300 but less than 5000 feet apart, or the field elevation is at or above 1000 feet above Mean Sea Level (MSL).

OEP v5.0 also includes several technical and procedural improvements:

- **Traffic Management Advisor (TMA)** provides traffic flow managers with a metering plan that organizes traffic in en route airspace to increase the utilization of the airport's arrival capacity, and implements that plan by displaying specific aircraft schedule and delay information to en route controllers. When the controllers deliver the aircraft to the airport airspace boundary at the TMA scheduled times, the orderly flow of arrival traffic results in more efficient operations. When fully implemented, TMA will help an airport more consistently utilize its capacity.
- **Area navigation (RNAV)** capabilities on the aircraft, in conjunction with advanced TMA functions, are assumed to improve the accuracy with which arrivals are delivered to the runway. In other words, the actual separation between arrivals will be closer to the minimum required separation value.
- **CDTI[5]-Enhanced Flight Rules (CEFR)** allows suitably equipped aircraft to maintain visual separation from other aircraft and continue visual approaches even in Marginal weather conditions. For the purpose of this analysis, it was assumed that all aircraft at these 35 airports will be suitably equipped by 2013; actual equipage will probably be less.
- **Revised wake vortex separation standards for closely spaced parallel runways** would improve arrival and departure capacity when the runways are less than 2500 feet apart. Additional separation for wake turbulence would only be applied between operations on different runways when actually needed, such as for a Small aircraft on one runway trailing a Heavy aircraft on the other runway. Other aircraft would use non-vortex separation, such as 1.5 nautical miles (NM) diagonally between arrivals.
- **Airspace redesigns** may be needed at various airports to allow full operational use of the new runways. This analysis also assumed that the airspace redesign would be successful in eliminating most operational restrictions on arrivals and departures at these airports. Restrictions due to terrain or environmental concerns would not be affected.

The list of Planned Improvements and their expected effects on capacity at each airport does not imply FAA commitment to or approval of any item on the list.

[5] Cockpit Display of Traffic Information.

In general, the benchmarks do not consider any limitation on airport traffic flow that may be caused by non-runway constraints at the airport or elsewhere in the NAS. Such constraints may include:

- Taxiway and gate congestion, runway crossings, slot controls, construction activity.
- Terminal airspace, especially limited departure headings.
- Traffic flow restrictions caused by en route miles-in-trail restrictions, weather, or congestion problems at other airports.
- Seasonal limitations due to high temperatures that restrict aircraft climb rates.

These benchmark capacity values were calculated for the Capacity Benchmarking task and should not be used for other purposes, particularly if more detailed analyses have been performed for the airport or for the individual programs.

Differences from Previous Benchmark Report

The same general methodology is used for these updated benchmarks as was used to produce the April 2001 benchmark report. However, this methodology has been refined based on responses to the original set of benchmarks and to incorporate additional data now available. As a result, the benchmark values for many airports have changed from the original report. Some of the reasons for these differences are explained below. Because of these refinements to the methodology and different input data used, these updated benchmarks should not be compared to the 2001 benchmarks.

The 2001 benchmark report provided capacities for two weather conditions, Optimum and Reduced rate. “Reduced rate” was based on the runway configuration used most often during less than optimal conditions, which might have been Marginal conditions or IFR conditions, with different ATC procedures. Different airports specified different weather conditions for the “reduced rate” scenario, leading to inaccurate comparisons between airports. Having separate benchmarks for Marginal and IFR conditions should make such comparisons more meaningful.

The 2001 benchmark report also compared scheduled arrivals and departures to Optimum and Reduced rate conditions for a selected day of good and poor weather conditions. This single-day comparison, while a useful indicator of potential airport performance for that day, was originally provided to show the comparative effect of adverse weather at airports having different levels of capacity and demand. This report focuses exclusively on airport capacity and does not include comparative schedule data.

The most common runway configuration and the facility-reported arrival and departure rates are based on more than two years of data in the FAA ASPM database. This better data, together with changes in airport operations and runway configurations, led to modeling different runway configurations and revised facility-reported rates in some cases.

Airport fleet mix is an input parameter to the computer model used to calculate the benchmarks. The fleet mix used in this report is based on recent traffic data, and therefore reflects changes in scheduled operations at the benchmark airports.

The charts of actual traffic versus calculated capacity now include more than two years of ASPM data, and the data points are coded to show frequency of occurrence. This gives a better understanding of routine operations vs. exceptional events.

Observations Across All 35 Airports

Table 1 shows the capacity benchmarks for current operations at the 35 airports studied. These benchmarks are represented as a range between the value reported by the ATC facility, either the control tower or the TRACON, and the value calculated using the capacity model. The benchmarks are also depicted graphically in Figure 1, which plots the calculated benchmark values. The calculated values are used here for consistency with the future capacity values.

Table 1
Capacity Benchmarks for Today's Operations at 35 Airports
(Arrivals and Departures per Hour)

Airport		Optimum	Marginal	IFR
ATL	Atlanta Hartsfield-Jackson International	180-188	172-174	158-162
BOS	Boston Logan International	123-131	112-117	90-93
BWI	Baltimore-Washington International	106-120	80-93	60-71
CLE	Cleveland Hopkins	80-80	72-77	64-64
CLT	Charlotte/Douglas International	130-131	125-131	102-110
CVG	Cincinnati/Northern Kentucky International	120-125	120-124	102-120
DCA	Ronald Reagan Washington National	72-87	60-84	48-70
DEN	Denver International	210-219	186-202	159-162
DFW	Dallas/Fort Worth International	270-279	231-252	186-193
DTW	Detroit Metro Wayne County	184-189	168-173	136-145
EWR	Newark Liberty International	84-92	80-81	61-66
FLL	Fort Lauderdale-Hollywood International	60-62	60-61	52-56
HNL	Honolulu International	110-120	60-85	58-60
IAD	Washington Dulles International	135-135	114-120	105-113
IAH	Houston George Bush Intercontinental	120-143	120-141	108-112
JFK	New York John F. Kennedy International	75-87	75-87	64-67
LAS	Las Vegas McCarran International	102-113	77-82	70-70
LAX	Los Angeles International	137-148	126-132	117-124
LGA	New York LaGuardia	78-85	74-84	69-74
MCO	Orlando International	144-164	132-144	104-117
MDW	Chicago Midway	64-65	64-65	61-64
MEM	Memphis International	148-181	140-167	120-132
MIA	Miami International	116-121	104-118	92-96
MSP	Minneapolis-St Paul International	114-120	112-115	112-114
ORD	Chicago O'Hare International	190-200	190-200	136-144
PDX	Portland International	116-120	79-80	77-80
PHL	Philadelphia International	104-116	96-102	96-96
PHX	Phoenix Sky Harbor International	128-150	108-118	108-118
PIT	Greater Pittsburgh International	152-160	143-150	119-150
SAN	San Diego International - Lindbergh Field	56-58	56-58	48-50
SEA	Seattle-Tacoma International	80-84	74-76	57-60
SFO	San Francisco International	105-110	81-93	68-72
SLC	Salt Lake City International	130-131	110-120	110-113
STL	Lambert-St. Louis International	104-113	91-96	64-70
TPA	Tampa International	102-105	90-95	74-75

Airport capacity generally decreases in adverse weather conditions, which may include poor ceiling and visibility (requiring different ATC procedures), unfavorable winds (so the best runway configuration cannot be used), or heavy precipitation.

The extent of the reduction in benchmark capacity during operations in IFR conditions (as compared to the Optimum scenario) varies widely across the 35 airports, from almost no effect at Minneapolis-St. Paul, to a 47 percent reduction at Honolulu. These differences are due to different runway configurations and operational procedures in adverse weather at each airport.

Table 2 shows the percentage increase in the capacity benchmarks at these airports due to planned new runways and the technological and procedural improvements included in OEP v5.0. The effect of these improvements on the calculated benchmark values is shown in Figures 2 through 4 (Optimum, Marginal, and IFR scenarios respectively).

New runways planned for 12 airports provide significant capacity increases, but the amount of the increase varies from site to site. OEP v5.0 included new runways in the 2003-2013 period at Atlanta, Boston, Cincinnati, Cleveland, Denver, Houston, Miami, Minneapolis-St. Paul, Orlando, St. Louis, Seattle-Tacoma, and Washington Dulles. These planned new runways increased the benchmark capacities by 25 to 50 percent at most airports.

- A smaller increase in the benchmark capacity might occur where there are operational restrictions on the new runway. For example, the new runway at Minneapolis-St. Paul can only be used for operations to or from south of the airport. The new runway at Boston has no effect on the benchmarks because it will only be used when there are strong winds from the northwest, which is not a common occurrence.
- Additional airports such as Chicago O'Hare are planning new runways, but these runways were not included OEP v5.0 and thus were not considered in this analysis. In general, a proposed new runway is not included in the OEP unless the FAA has issued a Record of Decision (ROD) after a satisfactory environmental study. The environmental study for the new runways at O'Hare has not yet been completed.

Technology and procedural improvements also provide capacity increases. CEFR will increase the benchmark capacity in Marginal conditions. The revised wake vortex procedures will increase the benchmarks at airports with closely spaced parallel runways. Airspace redesign has the potential to allow large increases at some airports, but only if the redesign eliminates existing operational restrictions.

For those airports operating close to capacity, technological and procedural changes could have a significant impact in improving the capacity benchmark. In general, the greatest benefit is derived from adding a new runway.

Figure 1
Effect of Weather on Capacity Benchmarks – Today

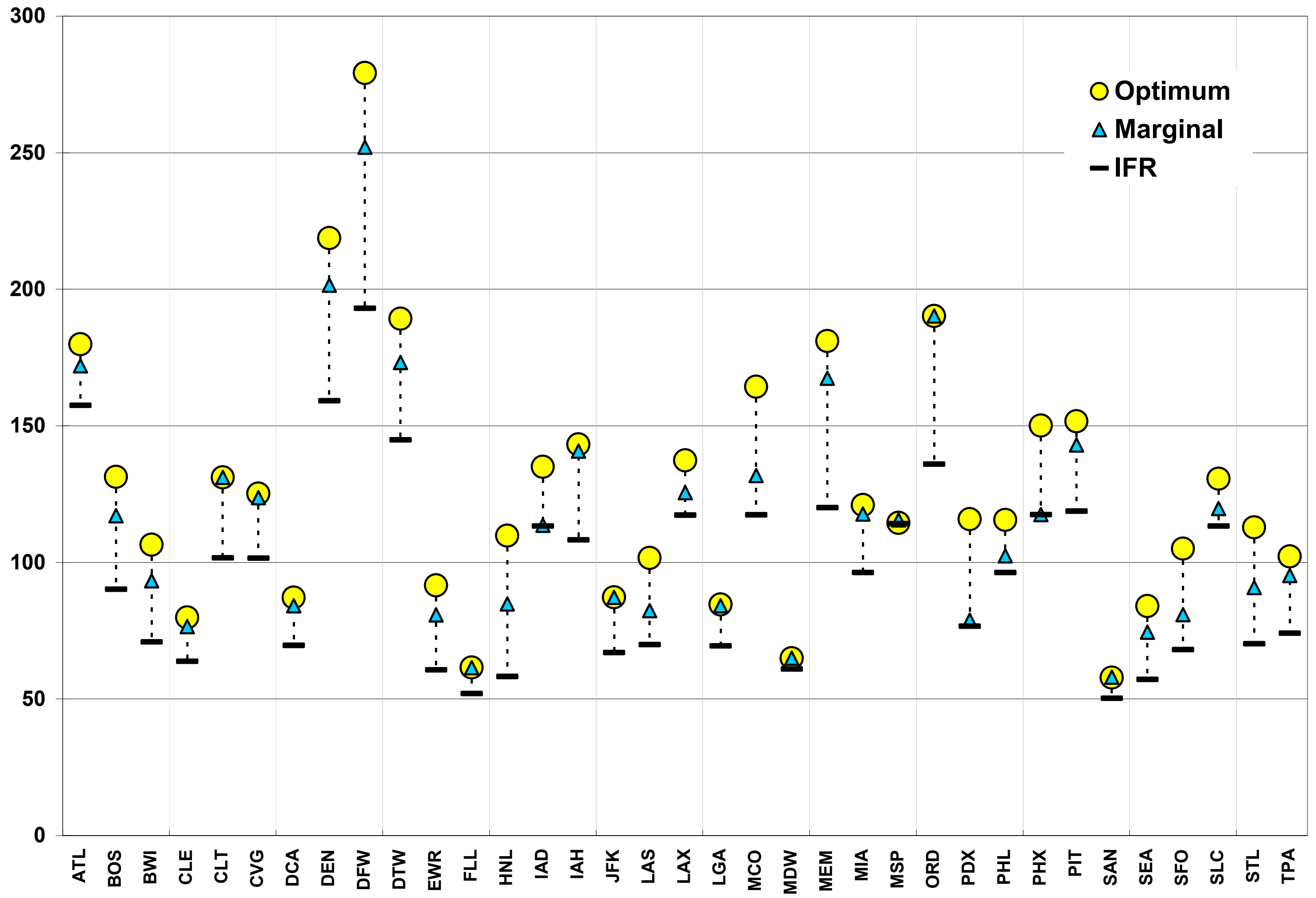


Table 2
Capacity Benchmark Summary

Airport	Capacity Improvement over Today (percent)					
	New Runway (if planned)			Planned Improvements (including new runway)		
	Optimum	Marginal	IFR	Optimum	Marginal	IFR
ATL	32	33	28	35	40	40
BOS	0	0	0	0	11	0
BWI	—	—	—	0	0	0
CLE	44	51	37	44	51	37
CLT	—	—	—	0	0	0
CVG	35	34	30	41	43	39
DCA	—	—	—	0	0	0
DEN	22	24	43	29	39	48
DFW	—	—	—	9	20	6
DTW	—	—	—	0	8	0
EWR	—	—	—	1	7	0
FLL	—	—	—	0	0	0
HNL	—	—	—	0	22	43
IAD	27	51	33	29	53	33
IAH	35	37	22	61	64	27
JFK	—	—	—	0	0	0
LAS	—	—	—	1	21	0
LAX	—	—	—	26	38	9
LGA	—	—	—	0	1	0
MCO	35	47	42	35	54	48
MDW	—	—	—	9	9	0
MEM	—	—	—	6	13	4
MIA	23	7	18	28	29	25
MSP	40	35	10	46	44	20
ORD	—	—	—	0	0	0
PDX	—	—	—	0	38	0
PHL	—	—	—	0	7	0
PHX	—	—	—	0	1	0
PIT	—	—	—	0	6	10
SAN	—	—	—	0	0	0
SEA	22	35	27	22	35	27
SFO	—	—	—	8	40	1
SLC	—	—	—	22	34	0
STL	34	54	63	41	71	68
TPA	—	—	—	0	7	0

Figure 2
Effect of New Runways and Planned Improvements on Capacity Benchmarks – Optimum Weather

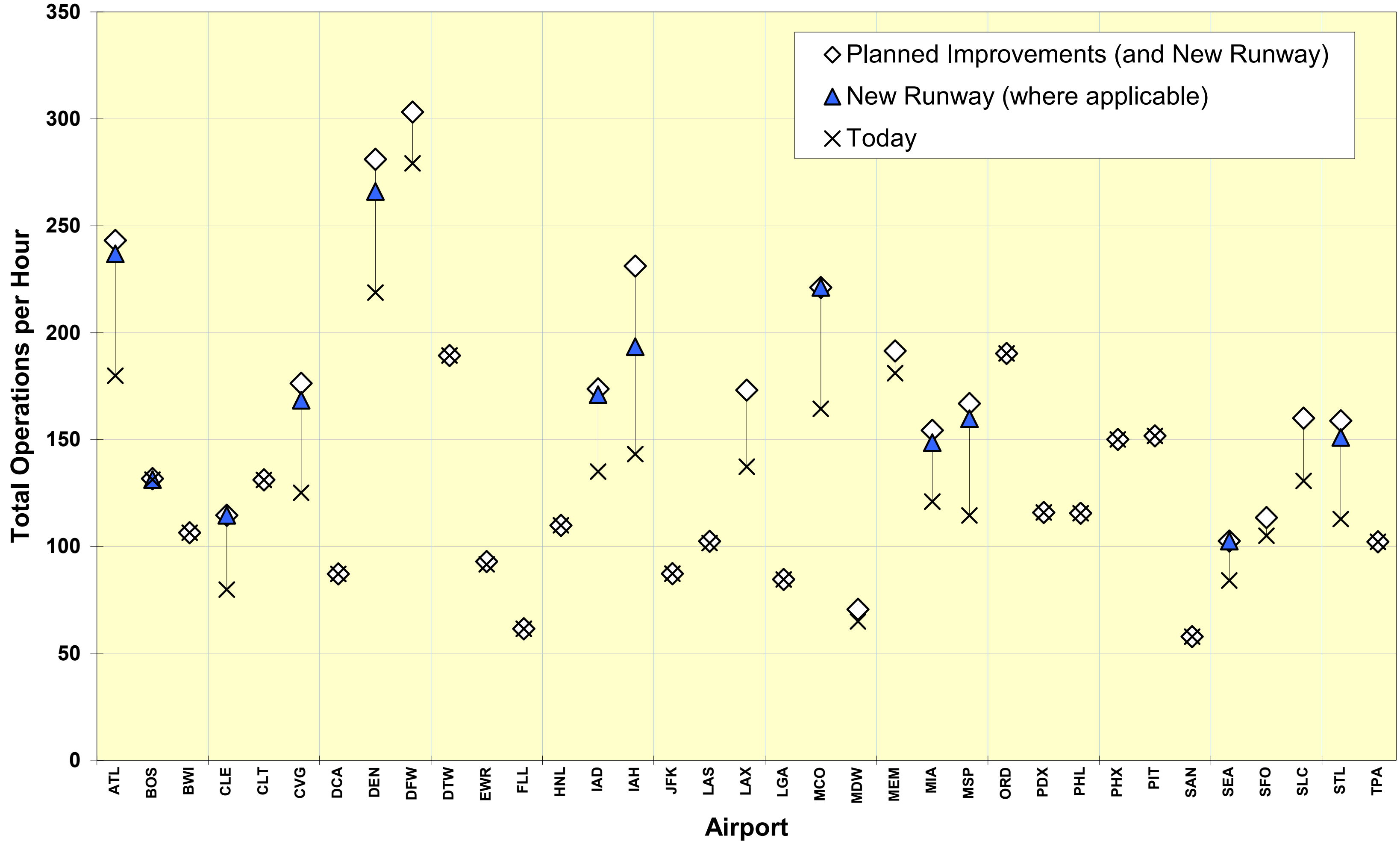


Figure 3
Effect of New Runways and Planned Improvements on Capacity Benchmarks – Marginal Weather

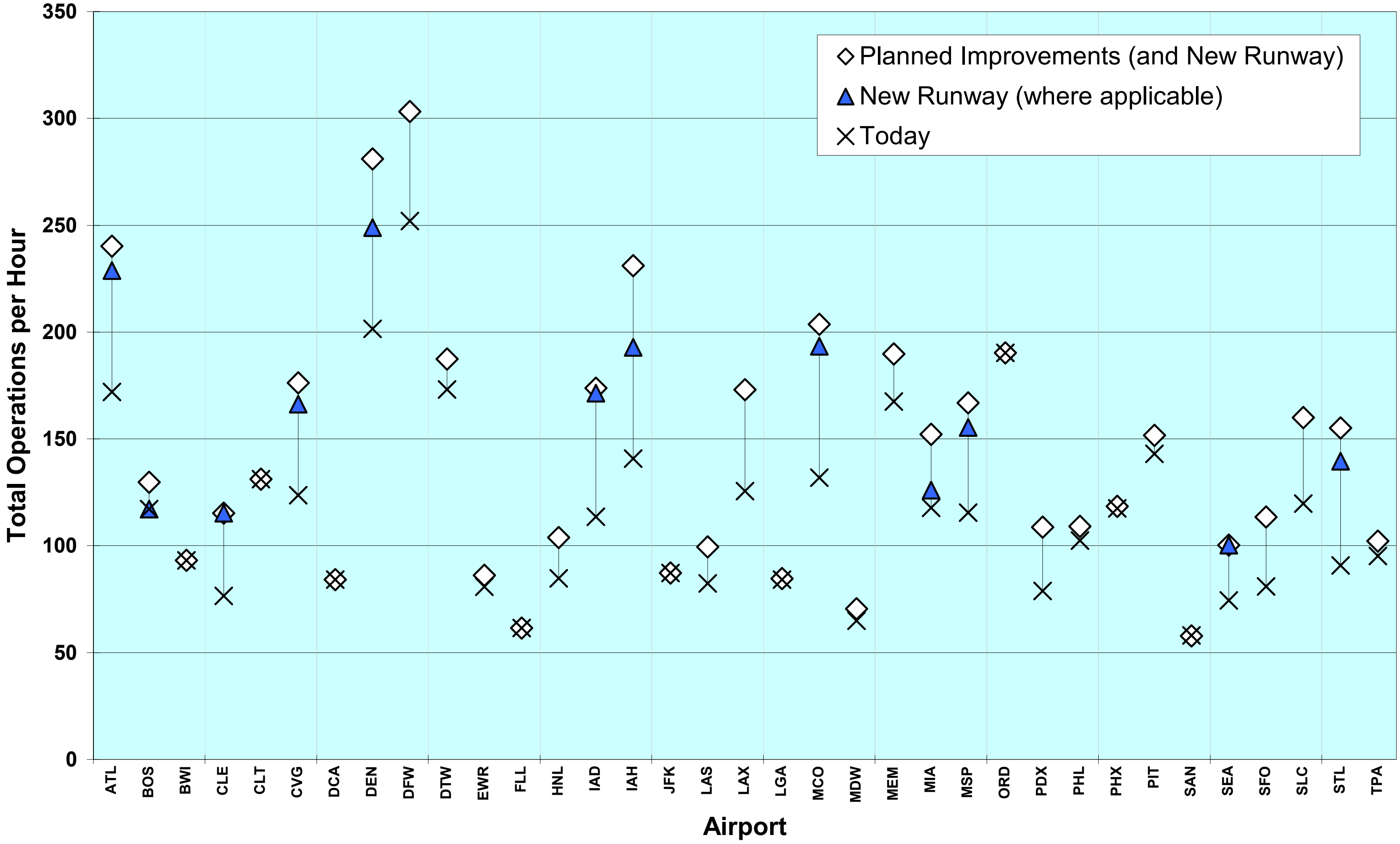
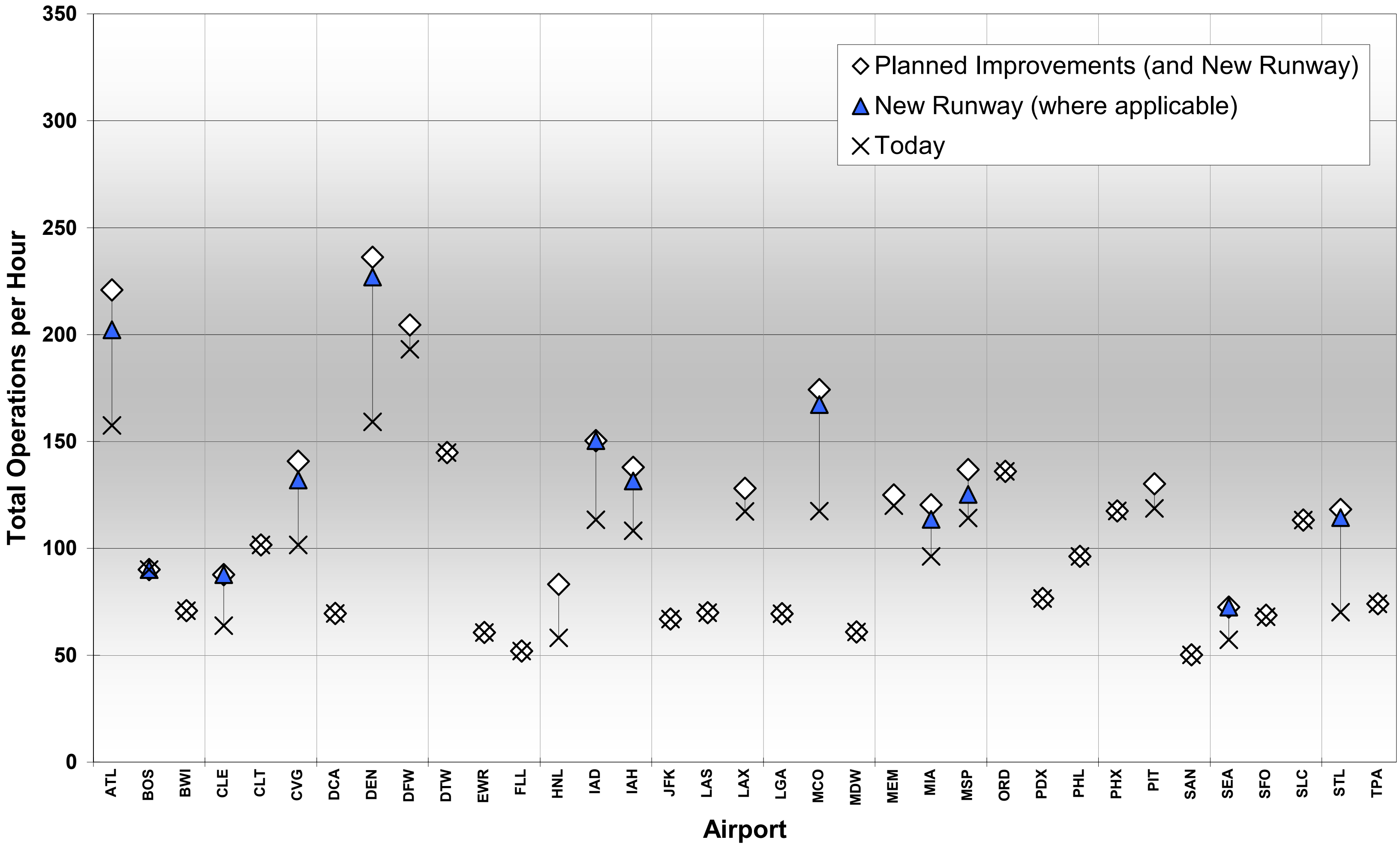


Figure 4
Effect of New Runways and Planned Improvements on Capacity Benchmarks – IFR Weather



Individual Airport Results

The following sections present the benchmark results for each of the 35 airports individually. The airports are presented in alphabetical order by the three-letter airport code, from ATL to TPA, as in the prior tables and figures.

Each section describes the runway configurations that were analyzed for each weather scenario, the air traffic control procedures used, and the effect of planned improvements at the airport. If construction of a new runway has been approved at the airport, the effect of the runway is discussed separately.

Airport capacity was calculated using the FAA's Airfield Capacity Model. This runway capacity is the calculated average number of arrivals and departures per hour, given continuous arrival and departure demand. An airport operating at capacity would experience significant levels of delay.

Capacity results for each weather condition are shown for each airport graphically. Calculated capacity is depicted as a line rather than as a single point, to show the tradeoff between arrival and departure operations at the airport. Typically, the number of arrivals per hour will decrease as the number of departures increases, for at least a section of the "capacity curve," since both arrivals and departures use the same runways (e.g., SAN). But in certain cases (e.g., ATL), arrivals are independent of departures so there is no tradeoff, and the "capacity curve" is a rectangle.

The capacity graphs show the calculated number of arrivals and departures per hour as well as the arrival and departure rate reported by the ATC facility. If the reported rate is, for example, 60 arrivals per hour and 30 departures per hour, it would be abbreviated as (60, 30).[6] The benchmark capacity is usually expressed as a range between the facility-reported rate and the corresponding point on the calculated capacity curve.

Actual traffic data is also shown on the capacity charts. This data represents operations at each airport from January 2000 through July 2002, between the hours of 7 a.m. and 10 p.m. local time (Source: ASPM). Each combination of arrivals and departures may have occurred multiple times during this period. On the following charts, four different symbols are used to depict how frequently these combinations occur, with each symbol used for roughly a quarter of the observed hours.

The ASPM data was also used to determine the runway configuration and weather condition information. However, information on runway configuration usage was not available in ASPM for all airports. The most common configuration was initially determined using ASPM data, where possible, but was confirmed through discussion with the ATC facility.

An airport layout diagram is included for each airport to better understand the various runway configurations that were analyzed. Planned runway construction is shown in these layouts by a different color. These diagrams were taken mainly from the 2001 and 2002 *Aviation Capacity Enhancement Plans*[7] published by the FAA; however, there may be differences between these pictures and the precise details of the runways, taxiways, and buildings at the airport.

Note: These benchmarks do not consider any limitation on airport traffic flow that may be caused by non-runway constraints at the airport or elsewhere in the NAS. Such constraints may include:

- Taxiway and gate congestion, runway crossings, slot controls, or construction activity.
- Terminal airspace, especially limited departure headings.
- Traffic flow restrictions caused by en route miles-in-trail restrictions, weather or congestion problems at other airports.

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[6] Normally in a graph, the value on the x-axis is presented first. Here, that would be the number of departures. The representation herein is thus the opposite of the conventional presentation.

[7] Available at www.faa.gov/ats/asc/.

Individual Airport Reports

City	Airport	Page
Atlanta	Hartsfield-Jackson Atlanta International	ATL-1
Baltimore	Baltimore-Washington International	BWI-1
Boston	Boston Logan International	BOS-1
Charlotte	Charlotte/Douglas International	CLT-1
Chicago	Chicago Midway International	MDW-1
Chicago	Chicago O'Hare International	ORD-1
Cincinnati	Cincinnati/Northern Kentucky International	CVG-1
Cleveland	Cleveland Hopkins International	CLE-1
Dallas - Fort Worth	Dallas/Fort Worth International	DFW-1
Denver	Denver International	DEN-1
Detroit	Detroit Metropolitan Wayne County	DTW-1
Fort Lauderdale - Hollywood	Fort Lauderdale-Hollywood International	FLL-1
Honolulu	Honolulu International	HNL-1
Houston	Houston George Bush Intercontinental	IAH-1
Las Vegas	Las Vegas McCarran International	LAS-1
Los Angeles	Los Angeles International	LAX-1
Memphis	Memphis International	MEM-1
Miami	Miami International	MIA-1
Minneapolis-St Paul	Minneapolis-St Paul International	MSP-1
New York	New York John F. Kennedy International	JFK-1
New York	New York LaGuardia	LGA-1
Newark	Newark Liberty International	EWR-1
Orlando	Orlando International	MCO-1
Philadelphia	Philadelphia International	PHL-1
Phoenix	Phoenix Sky Harbor International	PHX-1
Pittsburgh	Greater Pittsburgh International	PIT-1
Portland	Portland International	PDX-1
Saint Louis	Lambert-St. Louis International	STL-1
Salt Lake City	Salt Lake City International	SLC-1
San Diego	San Diego International - Lindbergh Field	SAN-1
San Francisco	San Francisco International	SFO-1
Seattle-Tacoma	Seattle-Tacoma International	SEA-1
Tampa	Tampa International	TPA-1
Washington, DC	Ronald Reagan Washington National	DCA-1
Washington, DC	Washington Dulles International	IAD-1