Aligning Technology, Procedures, Operations, Programs, and People to Grow Capacity

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Abstract—The Federal Aviation Administration forecasts that by 2015 more than 1 billion people each year will take to the skies in the United States, nearly a third more than today’s number. Central to the FAA’s efforts to prepare for the future is the Operational Evolution Plan (OEP), which seeks to increase the capacity and efficiency of the National Airspace System by focusing on relieving congestion at 35 key airports. Through the OEP, the FAA commits to implementing a set of credible initiatives that focus the agency and the aviation community on solutions for the next 10 years. The goal has been to increase the effective capacity of the NAS by approximately 30 percent by 2011, and the OEP is close to declaring success today. The plan is also the vital link between the present state of aviation and the vision of a totally transformed air transportation that is being developed by the multi-agency Joint Planning and Development Office.

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1. INTRODUCTION: THE STATE OF THE NATIONAL AIRSPACE SYSTEM

The FAA estimates that in 10 years time there will be as many as 1 billion travelers per year, roughly one-third more than today. Even now, pressure is building at many already congested airports and within U.S. airspace due to significant increases in air traffic volume. FAA Administrator Marion C. Blakey told Congress last May that overall passenger demand and commercial activity at FAA air traffic facilities were projected to return to pre-9/11 traffic levels by the end of 2005, reaching about 710 million passengers. Commercial operations at 17 of this country’s top 35 airports had already exceeded that level, with some airports like Salt Lake City and Fort Lauderdale showing high growth, about 11.5 percent and 6.6 percent over pre-9/11 levels respectively.

Operations are increasing in part because of a shift in the composition of the nation’s aircraft fleet. To keep pace with market demand for low fares while passenger volumes fell after 9/11, legacy airlines turned to smaller regional jets. These aircraft combine with business jets, the new very light jets (which are designed to carry about six passengers and will be used by air taxi services), and general aviation aircraft to form a newly diversified fleet mix, with more daily flights and a broad range of performance capabilities. This increases air traffic control complexity and can slow the system. In August 2005, for instance, a quarter of all flights in the United States arrived 15 or more minutes late.

There is great pressure for air traffic control services to keep pace with the fast changing industry and to control delay, but both the commercial airline industry and the FAA are facing financial difficulties. Fierce competition, especially between the legacy (e.g. American Airlines) and low-cost (e.g. JetBlue) carriers, makes it difficult for airlines to raise ticket prices or reduce cost by changing their volume of flights for fear of losing a foothold in tight markets. The ease with which consumers can find the lowest ticket prices through the Internet also plays a large role here.

The U.S. General Accountability Office reported to Congress in September 2005 that recent airline bankruptcies are symptoms of underlying structural issues:

“Because of certain structural characteristics, including its susceptibility to external shocks and historically weak financial performance, the airline industry is more prone to failure than many other types of businesses. Airlines have
high fixed costs and are subject to highly cyclical demand and intense competition. Compounding these other structural problems is the industry’s vulnerability to external shocks—such as terrorist attacks or war—that decrease demand and increase costs. The result is that the airline industry has had the worst financial performance of any major industry.3

Other external stressors include unanticipated increases in fuel costs, such as spikes that occurred in the wake of Hurricane Katrina. The Air Transport Association’s chief economist, John Heimlich, estimated that for every penny increase in the price of a gallon of jet fuel, U.S. airlines pay an additional $190 million in annual fuel costs.4 Airline fuel costs in 2005 are on track to be the highest on record. According to the Bureau of Transportation Statistics, the industry’s year-to-date fuel cost through August 2005 was $24.2 billion, for 16.2 billion gallons of fuel at a cost of approximately $1.50 per gallon. The total fuel cost for the industry in all of the previous year was $21.1 billion, for 18.5 billion gallons at an average cost per gallon of $1.14. “Simply put, today’s jet fuel prices are crushing, and could prove to be a knock-out blow for some,” said Heimlich.

The FAA has its own financial concerns. In May 2005, Administrator Blakey spoke to Congress of her concerns about a “troubling gap” between the revenue that comes in through the Aviation Trust Fund, the agency’s major revenue source, and what it costs to run the FAA.

“Low-cost carriers now are the most significant driver of industry pricing. Because over half of Trust Fund receipts come from the 7.5 percent excise tax on airline tickets, these lower fares decrease Trust Fund revenue – without any corresponding reduction in FAA workload.”5

The FAA is undergoing a major effort to maximize its financial resources. Said Blakey:

“We’re implementing a cost accounting structure that’s telling us exactly what it costs to perform and accomplish X, Y and Z. It’s hard to believe, but for far too long, the government has operated with the idea that public service doesn’t have a bottom line. With tight budgets now, we simply have got to know our costs. We can’t put a priority on something when we don’t know if we can afford it … and we can’t know the answer to that until we know what it costs.”6

Growing congestion in the airspace coupled with budget constraints require the FAA and its aviation customers to work in concert to develop new capacity enhancement strategies that are in the best business interests of both parties. These initiatives must be well coordinated and kept on schedule.

This is where the capacity-centric Operational Evolution Plan becomes critical.

Figure 1: The OEP Depicted

2. OEP DEFINED

The Operational Evolution Plan (OEP) started as a business planning activity that accelerated during the summer delays and cancellations of August 2000 that were primarily due to dramatic increases in the number of people flying and to particularly bad weather that summer. The agency needed a way to look across a broad and, at the time, often unconnected set of activities to identify those which could collectively reduce congestion and delay at the most trouble-prone airports. The intention was to identify the most valuable activities, and to support them with the necessary resources and agency accountability to ensure their completion. Importantly, these activities needed to be coordinated with the aviation community, so that the tools the agency sought to provide were assured for use. This collection of FAA commitments became the OEP.

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Table 1: The OEP 35 Airports
Atlanta Hartsfield International
Baltimore-Washington International
Boston Logan International
Charlotte/Douglas International
Chicago Midway
Chicago O’Hare International
Cincinnati-Northern Kentucky
Dallas-Fort Worth International
Denver International
Detroit Metro Wayne County
Fort Lauderdale-Hollywood International
George Bush Intercontinental
Greater Pittsburgh International
Honolulu International
Lambert St. Louis International
Las Vegas McCarran International
Los Angeles International
Memphis International
Miami International
Minneapolis-St Paul International
New York John F. Kennedy International
New York LaGuardia
Newark International
Orlando International
Philadelphia International
Phoenix Sky Harbor International
Portland International
Ronald Reagan National
Salt Lake City International
San Diego International Lindbergh
San Francisco International
Seattle -Tacoma International
Tampa International
Washington Dulles International

The OEP focuses on increasing capacity and efficiency and reducing congestion at 35 key airports, through which much of the nation’s air traffic flows. If delays are well-managed at these locations, there is an overall positive impact on the entire national airspace system [See Table 1]. The OEP has a rolling 10-year time horizon, so that the present version covers commitments to be implemented between 2006 and 2015.

The OEP consists of four quadrants that contain related capacity-enhancement solution sets [See Figure 1]. Three quadrants align with FAA Air Traffic Organization service units and the fourth with two other FAA lines of business, the Office of Airports and the Office of Regions and Center Operations. Each solution set describes capacity-enhancement activities that have firm implementation dates and a solid understanding of when benefits will be realized. A solution set may contain just the portion of a program that pertains to the OEP 35 airports, not the complete deployment. Each solution set is described in a “smart sheet,” which outlines upcoming activities, expected benefits, and future plans. The complete OEP is published at www.faa.gov/programs/oep.

The plan also separates the agency’s capacity commitments from those things the agency would like to do, those promising capacity- and efficiency-enhancement tools that are being tested and considered for possible future implementation. Activities without funding and/or commitments without clearly defined dates are monitored in the transition rings. Criteria have been developed to identify initiatives suitable for entry into a ring and to transition successful ring initiatives into the OEP core.

3. OEP COMMITMENTS

The OEP contains 15 solution sets in its core, which details programmatic commitments. There are 12 additional initiatives within the two transition rings.

The information in the section reflects the information contained in OEP Version 7.1, a mid-year update published in September 2005. OEP expects to publish Version 8 in February 2006, after this paper’s deadline; updates to this paper will be included in the presentation at this conference.

New and Extended Runways—Over the last six years, seven new OEP runways were opened at Phoenix, Detroit, Denver, Miami, Cleveland, Houston, and Orlando airports, providing those airports with the potential to accommodate about one million more annual operations (take-offs and landings). At the time this article was written, seven more runways and one runway extension were included in the OEP, all scheduled to open by the end of 2008. These runways are expected to provide those airports with the potential to accommodate 889,000 more annual operations in the system. Two other runways were also under consideration for OEP Version 8.

Airspace Redesign—Terminal airspace is a critical lynch pin in the efficient use of airport capacity. Congestion, complexity and limited departure points in the terminal area can result in restrictions, limiting airport departure throughput. Inefficient holding and arrival routes can limit airport arrival throughput. Terminal airspace redesign is focused on enhancing available resources to make transition to and from the airport more efficient. Terminal airspace redesign is also essential in the delivery of increased capacity associated with the implementation of new runways. Without airspace redesign, these new runways will not be able to deliver the proposed capacity changes. Studies have shown that 40 percent to 60 percent of projected capacity from new concrete will be lost without the necessary changes to terminal (and en route) airspace.
These changes include new fixes, routes and sector structure to allow aircraft to use the new runways.

Likewise, in en route airspace, complex traffic flows can cause bottlenecks and inefficiencies. Increased flexibility is needed to address volume, congestion and weather in this airspace. Initially, redesign efforts will focus on optimization of existing resources by splitting and restratifying sectors, potentially creating additional sectors. Later efforts will include larger scale redesign actions, including sectorization concepts that may adjust sector size to conform with preferred traffic flows and/or result in consolidation of some sectors. In the oceanic and offshore airspace, procedural and technological changes offer opportunities to realign airspace and flows. The OEP details a large number of airspace redesign projects that impact OEP airports. Information can be found in the airspace Smart Sheets and in the 10-year schedule posted at www.faa.gov/programs/oep.

Required Navigation Performance—Conventional navigation procedures are designed using ground-based navigation aids (navaids) for both en route operations and terminal operations. En route navaids project radials, akin to the spokes of a wheel, which form intersections with other navaids and establish the basis of our airway system. An instrument landing system for terminal operations projects a limited directional signal and a vertical path signal, enabling pilots to fly an approach with lateral and vertical guidance (glide slope) to a specific runway.

In contrast, Area Navigation (RNAV) is a system that allows navigation on any desired flight path rather than one defined by ground-based radials. An RNAV system can determine position by referencing the position of ground navaids, or through a self-contained inertial reference unit, or space-based systems such as GPS. RNAV uses navigation waypoints to define routes. RNAV procedures do not have the traditional navaid dependencies inherent with ground-based systems. This allows RNAV procedures to be developed along optimum paths. Ongoing development of navigation technology has resulted in a refinement of RNAV called Required Navigation Performance (RNP). RNP is performance-based and not dependent on a specific piece of equipment. It is a statement of navigation position accuracy necessary for operation within defined airspace. RNP is not new hardware for the cockpit or new navaids. It establishes highly refined parameters for aircraft airspace containment including:

- Navigation performance accuracy, within which the navigation system is expected to remain 95% of the time
- Airspace for continuity and integrity in addition to the 95% area

The combined areas will ensure aircraft containment 99.9% of the time. By refining navigation system performance and airspace containment to this level of certainty, maximum benefit can be derived from RNP. The accurate, repeatable path, integrity and continuity ensure procedures will be flown in the same manner by all aircraft. Controllers can then expect aircraft to be at a specific position with a high degree of confidence, thus maximizing safety and the efficient flow of aircraft through airspace. This improved containment will be used to refine obstacle evaluation when developing routes and procedures. Other benefits are:

- Reduced route separation resulting in increased airspace capacity and efficiency
- Improved obstacle clearance limits
- Lower landing weather minimums at non-precision approach airports
- Reduced pilot and controller workload
- More “fly direct to” capability and capacity

Weather Tools—The Integrated Terminal Weather System (ITWS) helps make air traffic flow more efficient in periods of hazardous weather. ITWS focuses on short-term weather changes that affect safety, capacity and efficiency in the terminal area. Without ITWS, air traffic personnel would rely on a number of terminal area sensors that collectively provide large amounts of weather data. Interpretation of this data would be performed manually, which is labor intensive, and inconsistencies in data from the various sensors could be confusing. ITWS uses highly sophisticated meteorological algorithms to integrate and analyze data from multiple FAA and National Weather Service sources, in order to produce current and near-term forecasts of weather conditions and hazards. ITWS provides traffic management coordinators, air traffic controllers and airlines with highly accurate, easily understood and immediately usable graphical weather information and hazard alerts on a single, integrated color display. With improved airport weather observations and predictions, traffic flow configurations can be proactively planned and coordinated among personnel at all of the involved air traffic control and airline operations facilities. The results are smoother reconfigurations, optimization of traffic flow, and reduced congestion at the airport.

The OEP plans for 11 more ITWS sites by 2010, and for upgrades of existing sites with the Terminal Convective Weather Forecasting enhancements, which increase ITWS predictions of precipitation growth and decay from 10 and 20 minutes to 30 and 60 minutes.

A number of other weather initiatives have passed through the OEP to implementation, including the Collaborative Convection Forecast Product (CCFP), which shows potential convective activity areas in the en route environment (as opposed to ITWS’ focus on terminal airspace). CCFP is used by the FAA and its customers, such as airlines and general aviation, for strategic planning. Because adverse weather has such a strong impact on air traffic operations, this information helps airports and airlines plan their schedules, thereby reducing potential delays for passengers.
traffic delays, OEP is committed to including future weather products as they mature to meet the OEP criteria.

**Decision Support Tools**—Traffic Management Advisor (TMA) is an automated decision support system that allows air traffic controllers to sequence arriving aircraft in a way that reduces airspace congestion and optimizes capacity. During times of peak airport arrivals, it becomes necessary to “pace” the arrivals to a manageable rate to ensure safety and efficiency are preserved, a process referred to as “metering.” The FAA requires aircraft to maintain a minimum following distance when landing at the airport, which is determined by the size of the aircraft (e.g. turboprop behind a large jet, one large jet behind another, etc.). TMA processes all arrival aircraft flight plans, weather data and local airport operating procedures and recommends the most efficient arrival sequence. The TMA system allows air traffic control procedures to progress from an aircraft-distance-based sequencing to a more efficient time-based sequencing. Without TMA, traffic management coordinators and controllers meter by requiring aircraft to maintain a separation distance called “miles-in-trail,” regardless of the type of aircraft, which is greater than minimum separation standards. TMA more precisely meters arriving aircraft by computing a specific time for each to “cross” a fixed point in the airport-landing route while maintaining the minimum safe distance between each type of aircraft, which is referred to as time-based metering (TBM). TMA’s optimized schedules allow for more aircraft to land during peak airport operations, with peak capacity increases of 3 to 5 percent over the pre-installation baseline. When TMA is used with TBM, landing rates and airport capacity during peak operations are projected to increase by a further 5 percent per site. The OEP contains four more TMA sites, and TBM expansions to 12 sites, with implementation completed by mid-2008.

The User Request Evaluation Tool (URET) assists controllers in the prediction of aircraft-aircraft and aircraft-airspace conflicts, which allows controllers to construct and assess alternatives. URET predicts conflicts up to 20 minutes in advance using flight plan, forecast winds, aircraft performance characteristics, and track data to derive expected aircraft trajectories. URET has a significant impact on fuel savings, because it makes it easier for controllers to respond to pilot requests for alternate routings, such as more fuel-efficient altitudes and wind-optimal routes. The conflict probe in URET allows air route traffic control centers to reduce safely the number of static altitude restrictions that are in place for coordination, reducing fuel consumption by requiring fewer altitude changes and allowing more efficient trajectories. Data show that URET has increased the number of amendments given to aircraft in the 10 URET centers, and Indianapolis center has reduced the number of restrictions because of URET. In June 2005, the URET program office estimated that FY05 savings to date for FAA customers was $123.9 million. The OEP commits to five more URET sites through mid-2006, at which point it will be in use at all 20 air route traffic control centers in the continental United States.

**Collaborative Decision-Making**—Rather than developing a new tool to combat a problem, the FAA is also looking for ways to work smarter around problems like bad weather. The OEP contains a set of initiatives that are a combined effort between the agency and its customers to develop a uniform method of looking at air traffic systems current constraints and to collaboratively make strategic decisions for managing traffic. The FAA’s Air Traffic Control System Command Center works with industry on advanced planning, through Web-based information-sharing systems and multiple daily conference calls, to implement pre-negotiated procedures that can keep traffic flowing smoothly around problem areas. The OEP contains an evolving set of procedures and planning technologies developed by the Command Center that help manage congestion.

**Changes to Separation Standards**—The OEP also contains procedural changes that also have an impact on the capacity of the national airspace system. One would allow the continued use of closely spaced parallel runways in inclement weather conditions, which are currently limited due to concerns about wake turbulence. Another would safely reduce the required separation of properly equipped aircraft in oceanic airspace, which has an impact on fuel savings and the airline’s cost per flight. (This is already in use in the Pacific oceanic arena.)

**Transition Rings**—The Prototypes and Pilot Projects ring includes initiatives that show promise for future capacity-enhancement uses but are currently in a field test or prototype development phase:

- Cockpit Display of Traffic Information (CDTI) Assisted Visual Separation (CAVS), which may present the opportunity to use CDTI as an extension of the pilot’s eyes, thus enabling visual approach operations to continue longer than is currently possible, and potentially in weather conditions which now require use of instrument approaches.

- Surface Traffic Management System (STMS), a decision support tool that provides information and advisories that helps FAA controllers, traffic managers, and users of the National Airspace System (NAS) collaboratively manage aircraft on the surface and in the terminal environment.

- System Wide Information Management (SWIM), which is intended to transition the NAS to network-centric operations by providing the infrastructure and associated policies and standards to enable NAS-wide information sharing.

- The Corridor Integrated Weather System (CIWS), a prototype decision support tool providing traffic flow
managers with comprehensive convective weather data for the next 0-2 hours, a tactical improvement over current 2-6 hour forecasting.

- Traffic Management Advisor-Multi-Center, an extension of the existing TMA, which provides a single coordinated spacing plan that maximizes the arrivals across multiple air traffic control facilities.
- Problem Analysis, Ranking and Resolution, the follow-on to URET which initially supplies a set of computer-generated flight plan maneuver options to assist the en route controller in aircraft-to-aircraft conflict resolution at the sector level. The next stage includes automated detection and generation of flight plan maneuvers to comply with flow initiatives and to avoid severe weather.
- The Safety, Policy, Procedures & Airspace transition ring contains programs with significant capacity benefits that are currently awaiting analysis for feasibility. They include:
  - Mid-term wake turbulence standards changes, which also affect closely space parallel runways.
  - Additional unfunded airspace redesign projects.
  - Data link, an important agency initiative whose implementation roadmap is under construction.
  - RNP Parallel Approach and Simultaneous Converging Instrument Approaches, which are additional types of RNP SAAAR procedures.

### 4. THE PEOPLE AND THE PROCESS

The OEP is more of a process than a plan. Through the OEP process, the FAA and major stakeholders decide the necessary steps for enhancing capacity, and make firm commitments on commissioning programs, systems and procedures that deliver the desired measurable results. The challenge for the OEP is to find ways to continue to develop NAS capacity in collaboration with an aviation community that is hard-pressed to invest in new avionics, test new systems, and commission new runways, and to do so when the agency’s own resources are limited.

To ensure integration of the OEP initiatives, senior FAA employees manage each element. The Airport Congestion quadrant position is filled by a senior manager from the field who represents both the FAA Airports and Regions and Centers directorates. The other quadrants are managed by Directors of Planning and Finance from their respective service units, who play key roles in investment decisions within the ATO. The Prototypes & Pilot Projects transition ring is manned by the ATO’s director of technical development, while the Safety, Policy, Procedures & Airspace transition ring is managed by a senior manager from the Office of Aviation Safety. A senior FAA executive is assigned to each solution set, responsible for results and accountable along with a cross-agency support team for the delivery of products and services detailed in the solution set. A working-level team composed of these individuals meets several times each month to coordinate information.

<table>
<thead>
<tr>
<th>Table 2: The OEP Executive Team</th>
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<tr>
<td>Bobby Sturgell, FAA Deputy Administrator</td>
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<tr>
<td>Russ Chew, ATO Chief Operating Officer</td>
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<tr>
<td>Nick Sabatini, FAA Associate Administrator for Regulation and Certification</td>
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<td>Woodie Woodward, FAA Associate Administrator for Airports</td>
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<td>Catherine Lang, FAA Deputy Associate Administrator for Airports</td>
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<td>Ruth Leverenz, FAA Assistant Administrator for Regions and Centers</td>
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<td>Ramesh Punwani, FAA Assistant Administrator for Financial Services/Chief Financial Officer</td>
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<tr>
<td>Eugene Juba, ATO Senior Vice President, Financial Services</td>
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<tr>
<td>Charlie Keegan, ATO Vice President, Operations Planning Services; Director, Joint Planning and Development Office</td>
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<tr>
<td>Rick Day, ATO Vice President, En Route and Oceanic Services</td>
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<tr>
<td>Bruce Johnson, ATO Vice President, Terminal Services</td>
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<td>Michael Cirillo, ATO Vice President, Systems Operations Services</td>
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<td>Steve Zaidman, ATO Vice President, Technical Operations Services</td>
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<td>Bill Davis, ATO Vice President, Safety Services</td>
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<td>Gisele Mohler, Manager, Operational Evolution Plan</td>
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<td>Carl McCullough, Department of Defense Liaison</td>
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<td>Doug Fralick, National Air Traffic Controllers Association (NATCA)</td>
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<td>Amr ElSawy, MITRE CAASD</td>
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<td>Agam Sinha, MITRE CAASD</td>
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The OEP is guided by a group of high-ranking executives, chaired by the FAA Deputy Administrator [See Table 2]. This Associates-Executive Team meets approximately twice each month to review the progress on OEP commitments. Decisions to reallocate resources or remove roadblocks can be made at the table.
By routinely updating the status of program schedules, the OEP keeps other agency lines of business and aviation community partners aware of how changes may affect them. This is perhaps most evident in the OEP-sponsored Runway Template Action Plan.

New runways provide some of the plan’s greatest capacity improvements, but their full benefit cannot be achieved without supporting procedures and airspace redesign. Prior to 2001, there were several instances where new runways were opened without the full capabilities that were expected to be provided by the agency. A 2001 memo from the FAA Deputy Administrator established commitment and accountability for critical new runway projects, stating: “Through the OEP, the FAA will ensure that all necessary facilities, equipment, procedures, airspace changes, and staffing are in place at the time a new runway is commissioned.”

In June 2001, a cross-organizational team was assembled to develop a comprehensive generic project schedule for building a new runway. The resulting schedule, customized for each location, defines “who does what and when” and supports regular meetings of project stakeholders, including FAA, airlines, and the airport sponsor. A customized RTAP may include as many as 300 tasks, each of which is detailed with: task description; accountable organization; status indicator; dates for start, finish, and duration; and interdependencies. RTAP information is shared at http://rtap.faa.gov.

Through the RTAP, OEP runways projects are linked to the FAA’s strategic Flight Plan, and to budget and work plan prioritization processes. The RTAP identifies a consistent and proper approach to building new runways so that those involved better understand the process – the right way to build a runway – leading to fewer surprises. The RTAP schedule supports advanced planning, coordination and budgeting, early identification of issues, and the development of mitigation strategies. There is clear communication of expectations and accountability for corporate commitments. Common goals align stakeholders as a single team. When one organization has an issue, horizontal integration teams have a proven track record of working together to get things back on track.

The result: Since the RTAP process was created four years ago, no runway commissioning date changes have been caused by FAA activities. The quantitative success of the six OEP runways that have opened since 2001 is shown on the following page. A total of eight new OEP runways are on track to be commissioned in the next four years.

**5. WHAT SUCCESS LOOKS LIKE**

The OEP’s objective is to add capacity enhancements that will accommodate an approximate 30 percent increase in airspace user demand over the rolling 10-year period. The metric is **effective capacity**, which is defined as the amount of traffic that may be handled at a fixed level of delay. The fixed level of delay selected for the purposes of the OEP Capacity Growth Chart is 14 minutes per flight, based on the average that existed when the OEP started in 2001.

The OEP is bringing real and substantial benefits. Even as air traffic has increased, OEP commitments and other positive actions such as airline schedule depeaking have been successful at keeping delays below year 2000 levels.

The OEP measures the cumulative impact of its initiatives. The OEP Capacity Growth Chart (see Figure 2) depicts the amount of effective capacity provided by the national airspace system, based on the cumulative modeled capacity gains from OEP solutions. Effective capacity is defined as the amount of traffic that may be handled at a fixed level of delay – in this case, 14 minutes per flight, which was chosen because it was the average that existed when the OEP started.
The OEP's goal is to increase effective capacity by approximately 30 percent. The programs it contains often require eight to 10 years between inception and operational readiness. Some have already begun to show benefits; the chart shows a significant increase in effective capacity in the near future. In FY2006, four new runways and their associated technology and airspace projects will come online at OEP airports, and as a result, the chart shows an increase to between 20 and 25 percent as that additional capacity becomes measurable (see 2007). The implementation of subsequent initiatives will move the line to its goal by 2009-2010.

The OEP has been adopted throughout the agency to measure the effectiveness of many key initiatives. For example, the FAA’s Air Traffic Organization gauges the National Airspace System’s airport efficiency rate by relying on data from the OEP’s target set of 35 airports. The OEP model is also used in measuring the performance of the FAA’s Flight Plan, its chief strategy document.

6. CONCLUSION

Going forward, OEP intends to identify additional programs that can contribute to an increase in the effective capacity of the NAS, including those that are still being matured. The collection of OEP-designated airports could also change over time. Much of the current congestion in the U.S. is concentrated in the Northeast. The June 2004 “Capacity Needs in the National Airspace System” report, also known as the Future Airport Capacity Task (FACT) report, detailed national demographic projections suggesting that the U.S. population will shift toward the South and Southwest, and so it follows that the need for increased capacity will be felt at airports in those regions. The FACT report revealed that 18 airports will need additional capacity by 2020; of these, 13 are not presently in the OEP. More detailed analysis is being conducted at these 13 non-OEP airports as part of the follow-on work to FACT and the results will determine if these airports should be added to the list of OEP-designated airports.

It is important to remember that while technology and procedures will make OEP’s capacity goal functionally possible, it is continued collaboration between government and the aviation community that will make it happen. OEP’s team will continue working through RTCA, which represents the aviation community, to realize the goal and objectives of the Plan. RTCA will continue to provide the team with customer feedback and requirements through its committee process and updates to the NAS Concept of Operations, which lays the foundation for a long-term plan on behalf of the aviation community.

As FAA Administrator Marion Blakely noted last year in Congressional testimony, “In making the hard drive toward becoming a results-oriented, performance-based organization, we’ve realized pretty quick that we needed to focus on the things that are important to air space system stakeholders. We’ve polled stakeholders, and we’ve gone on the record by stating clearly: If it’s not important to them, we don’t want to do it.” OEP has become the model of success in determining stakeholder requirements and developing collaboration and commitment to meeting those requirements.

Looking beyond the OEP’s 10-year horizon to 2025 and beyond, the FAA is working internally across domains and externally with other agencies through the Joint Planning and Development Office (JPDO) on the multi-agency Next Generation Air Transportation System (NGATS) Integrated National Plan.

Through the JPDO the FAA is developing new models for aviation stakeholders to work together to transform the system and achieve the goals identified in the NGATS plan. These will require agencies and program offices under them to adopt innovative ways to coordinate across agencies and lines of business. This will create better government practices for leveraging knowledge and resources.

The result for the FAA is a much tighter integration of plans and activities with greater overlap than when the agencies were pursuing similar activities separately. For the FAA the integration reaches from all of the service units of the Air Traffic Organization (ATO) to the Office of Aviation Safety and others.

The FAA has also provided other surety in the integration of its plans by having designated the JPDO director, a FAA senior executive, with dual responsibility as the ATO Vice President for Operations Planning. Not by happenstance that executive is also responsible for the Operational Evolution Plan.
At the forefront of the Integrated National Plan’s goals for the future air transportation system is the goal of increased capacity. It is a superset of OEP activities.

In the near future, all activities related to the nation’s air transportation system will need to be integrated and aligned to major strategies being executed by joint government and industry Integrated Product Teams (IPTs). That is to say, each element of modernization must contribute to the overall NGATS architecture and roadmap. The Integrated National Plan will not be an entity unto itself competing against other initiatives for funding; rather, it will be the primary focus of efforts, energy and talent.

The FAA has been a key contributor to that joint talent pool with significant representation on the JPDO Integrated Product Teams. As a matter of fact four of the eight JPDO IPT Leads are currently from FAA.

JPDO IPT activities will reach into existing agency programs for linkage to NGATS. This means that OEP activities, as well as other initiatives across the FAA, will be captured in IPT strategies and in the overall JPDO roadmap for 2025.

REFERENCES

OEP Web site: www.faa.gov/programs/oep

BIography

Gisele Mohler was appointed Manager of the Federal Aviation Administration’s Operational Evolution Plan in March 2004. The OEP Staff that she leads is a diverse team of professionals including engineers, pilots, air traffic controllers, technicians, scientists, and business, organizational and communication specialists. Ms. Mohler has been with the FAA for five years with previous assignments in the arrival/departure (terminal) area of air traffic systems development, where she helped transition that organization into one that is performance based. She is also a pilot and owns her own single engine aircraft. Prior to the FAA, she worked at the U.S. Census Bureau for eight years. Ms. Mohler has a Bachelor of Arts degree from the University of Maryland, a Master of Science in Business Administration from Johns Hopkins University, and Executive Development training from the Wharton School of Business, University of Pennsylvania.