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Managing THE Skies

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Leading with Courage

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Communicate. Educate. Advocate. *Promoting excellence in public service, the FAA Managers Association is recognized by the FAA to represent all levels of management through all lines of business. We are committed to increasing the accountability to our owners, improving service to our customers, and fostering a professional workplace for our employees in which they can excel and take pride. FAA Managers Association is a forum for managers, supervisors, administrative, and non-bargaining unit staff to effect change.*

Managing the Skies

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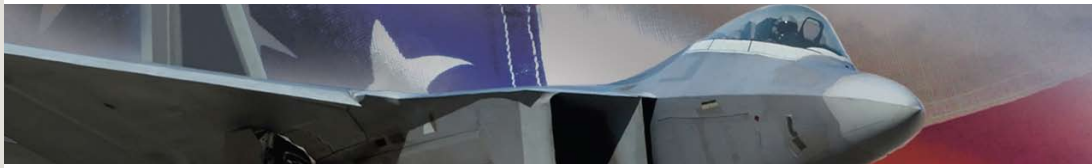


About the Cover: The cover concept was suggested by FAAMA Director of Communications Laurie Zugay and was executed by Sagetopia. The theme of this issue, Leading with Courage," speaks to the quality of mind that enables a person to face difficulty without fear. Additionally, FAAMA honors our courageous military personnel throughout the year and especially on November 11, a legal holiday in the US, in honor of veterans of the armed services.

Contents

Index to Advertisers

Leading with Courage

A message from the President

What is courage? It is easy to imagine courage these days, especially in a world so influenced by Hollywood where reality has been redefined and where risk is given only casual consideration. We all at times like to think of ourselves as being courageous, especially when we feel we are standing alone for some worthy cause or idea.

Perhaps that is because we all have our own notions of what courage means. To illustrate this point, there is a story about a man who once bragged that he had cut off the tail of a man-eating lion with his pocketknife. Asked why he hadn't cut off the lion's head, the man replied: "Someone had already done that."

Real World Courage

Outside of imagination and fantasy, there are real world examples of courage. In fact, nothing illustrates courage like a story of military heroism or a miraculous rescue. For example, when I first think of this kind of real courage, I conjure up images of Audie Murphy standing atop an abandoned, burning tank destroyer's .50 caliber machine gun fighting alone against an onslaught of attacking soldiers or American ace Eddie Rickenbacker dog fighting over France vying against Germany's most wicked opponents and knocking them off one-by-one.

> *"Courage is doing what you're afraid to do. There can be no courage unless you're scared."*
> – Eddie Rickenbacker, World War I flying ace

I also think of courage – combined with innovation, and decisiveness – when I call to mind the successful return of the ill-fated Apollo XIII mission. Of course, who can forget the valiant men and women who set aside their own personal safety for the sake of rescuing others during the September 11th attacks? And most recently, we saw courage and determination exhibited both by the miners and their liberators during the Chilean mine rescue in San Jose, Chile.

In this issue of *Managing the Skies*, we are focusing on the theme, "Leading with Courage," but not in the sense of war or danger or tragedy. Instead, we will talk about what it means to lead with courage in the workplace, where ordinary folks like you and me engage in learning and applying the art of leadership.

Developing Courage in the Workplace

Merriam-Webster defines courage as "the mental or moral strength to venture, persevere, and withstand danger, fear, or difficulty." There may be no better place to develop and refine our own courage than in the difficulties of the workplace, where politics, criticism, and exposure can induce as much fear and anxiety as you will face in any other area of your life.

Creativity and innovation require both courage and preparation. Kathleen Reardon in a January 2007 article "Courage as a Skill," which appeared in *Harvard Business Review*, wrote "...courage is rarely impulsive. Nor does it emerge from nowhere. In business, courage is really a special kind of calculated risk-taking. People who become good leaders have a greater than average willingness to make bold moves, but they strengthen their chances of success – and avoid career suicide – through careful deliberation and preparation."

Sometimes it takes courage to be the first to move or the first to speak up. At other times, an individual needs to be the one who will lead folks to try something different or blaze a new trail. Leaders who recognize these requirements are better able to expose their ideas to open examination and, in addition, are more willing to recognize and appreciate the courage of their employees when they speak up and innovate.

> *"Whatever you do, you need courage. Whatever course you decide upon, there is always someone to tell you that you are wrong. There are always difficulties arising that tempt you to believe your critics are right. To map out a course of action and follow it to an end requires some of the same courage that a soldier needs. Peace has its victories, but it takes brave men and women to win them."*
> – Ralph Waldo Emerson

"Good ideas are not adopted automatically. They must be driven into practice with courageous patience."

– ADMIRAL HYMAN RICKOVER, "FATHER OF THE NUCLEAR NAVY"

Lessons in Leading with Courage

I am reluctant to offer advice to anyone in this area because I realize that I, too, have my own lessons to learn about courage. Nevertheless, here are a few tips that may be useful:

Be Honest: Be honest, first with yourself, and then with others. Be willing to subject yourself to scrutiny. You can handle the truth. People will learn to trust your candor and you will be able to begin moving your organization forward.

Listen to the Critics: Regardless of whether the feedback comes in the form of praise or criticism, you may have something to learn.

Empower Others: Have faith and belief in your folks and do what it takes to set them up for success.

Share the Credit: There is always enough to go around. Besides, honest leaders know they accomplish nothing alone.

Responsibilities of Leadership

"The first responsibility of a leader is to define reality. The last is to say thank you. In between the leader is a servant."
– Max DePree, author of the book, "Leadership is an Art"

As of this writing, I have completed a full-term as your President and now am embarking on my second term. No matter what the future holds, I remain grateful for the opportunity to serve. Frequently, I tell folks that in spite of the long hours and sleep deprivation, FAAMA continues to give back to me much more than I give to it. This is one reason I have absolutely no reservation in asking my fellow managers to join and to get involved.

Rewards of FAAMA Leadership

Rich new experiences and challenging leadership opportunities are available at every turn. As long as you are not adverse to commitment and are willing to employ a little courage, you are going to find yourself developing and maturing like nowhere else. So get involved now.

Finally, I want to thank each of you who travelled west this year to our 30th Annual Gathering of Eagles. It was an incredible event and one that I hope produced lasting memories for all of you.

Thank you to Andy Taylor, 2010 Convention Chair; Hal Albert, Membership Education Chair; and Art Blank, Corporate Relations Representative, working together to organize the "Best FAAMA Gathering Ever!" And to the scores of folks working behind the scenes, I say, "Thank you from the bottom of my heart." Your combined efforts made believers out of all of us.

COMMUNICATE. EDUCATE. ADVOCATE.

David Conley, President
FAA Managers Association, Inc.

MANAGING THE SKIES AWARDS

2010

- Platinum Award, MarCom Creative Communicator Awards
- Platinum Award, Hermes Creative Awards, AMCP
- Silver Communicator Award of Distinction, IAVA

2009

- Platinum Spotlight Award Encore, LACP
- Spotlight Top 50 Communications Materials, LACP
- Platinum Award, MarCom Creative Communicator Awards
- Gold Award, Hermes Creative Awards, AMCP
- Silver Spotlight Award for Excellence, LACP
- Silver Communicator Award of Distinction, IAVA
- Bronze Award, Summit International Awards

2008

- Gold Award, MarCom Creative Communicator Awards
- Gold Award, Hermes Creative Awards, AMCP
- Silver Inspire Award for Excellence, LACP
- Inspire Top 50 Communications Materials, LACP
- Silver Spotlight Award for Excellence, LACP

2007

- Platinum Inspire Award for Excellence, LACP
- Gold Award, MarCom Creative Communicator Awards
- Gold Award, Hermes Creative Awards, AMCP
- Silver Spotlight Award for Excellence, LACP
- Top 50 Publications of 2006, LACP

2006

- Platinum Award, MarCom Creative Communicator Awards
- Gold Award of Excellence, 2006 Print Media Communicator Awards
- Silver Spotlight Award for Excellence, LACP
- Bronze Inspire Award for Excellence, LACP

2005

- Platinum Award, MarCom Creative Communicator Awards
- Silver Spotlight Award for Excellence, LACP

2004

- Top 100 Publicity Materials of 2004, LACP
- Silver Spotlight Award for Excellence, LACP

AMCP: Association of Marketing & Communication Professionals

IAVA: International Academy of Visual Arts

LACP: League of American Communication Professionals

Performance Data Analysis Reporting System (PDARS) – A Valuable Addition to FAA Managers' Toolsets

By Jeff Browder, Rich Gutterud, and John Schade, ATAC Corporation

Caroline Carey, Staff Manager at Houston Terminal Radar Approach Control (TRACON) had just emerged from a potentially difficult meeting with a major customer. She had explained the reason that a change had been made to the existing route for arrivals inbound from the northwest corner post into Houston's William P. Hobby airport.

The customer was concerned that the new route would result in excess fuel consumption. The arrival route was lengthened to join an existing route from another location. This allowed a more consistent feed to the final controller when the traffic warranted.

For safety reasons, it would be critical that pilots continue to fly the new lengthened route until cleared by the controller. Despite Ms. Carey's assurances that the changes would be largely transparent, the customer was unconvinced.

Using historical data from the Performance Data Analysis Reporting System (PDARS) and its graphical interface, GRADE™, she was able to show that aircraft were issued shortcuts on many occasions, and assured the customer that this practice would continue with the new route.

Reflecting on PDARS' applications, Ms. Carey commented, "It's reassuring to know that often we're able to use PDARS to demonstrate a point using hard data. Often, people have a picture in their minds of certain traffic complexities or volumes, and a session using PDARS with GRADE™ gives them the true picture of operations. From that point, we can engage in discussions about the data, instead of their perceptions, assumptions, or beliefs about the situation in question."

The Evolution of PDARS

How did PDARS come to be relied upon as FAA's preeminent performance data analysis tool? It all started as a joint FAA-NASA effort that was a key element of NASA's Aviation Safety Monitoring and Modeling (ASMM) project. After some initial planning and prototyping phases, the first live radar data tap was brought on line at the Southern California TRACON in 1999.

In the same year, NASA completed the first round of user needs analyses. In close collaboration with the bargaining unit representing the air traffic controllers, NASA conducted many interviews of potential PDARS users. The results of those interviews provided the framework to bring other facilities across the country on line in an expansion effort that lasted until 2007.

Since the beginning of the PDARS program, ATAC Corporation, located in Sunnyvale, California, has been the primary developer/integrator of PDARS. ATAC's role includes systems engineering, software development and deployment, system monitoring, operations, training, and user support.

As PDARS evolved, technologies to enhance data collection, reporting, and analysis were developed and integrated into the system. In recognition of these efforts, the PDARS Program received the NASA Administrator's Award for Turning Goals into Reality (TGIR) in 2003 just prior to full technology transfer to the FAA.

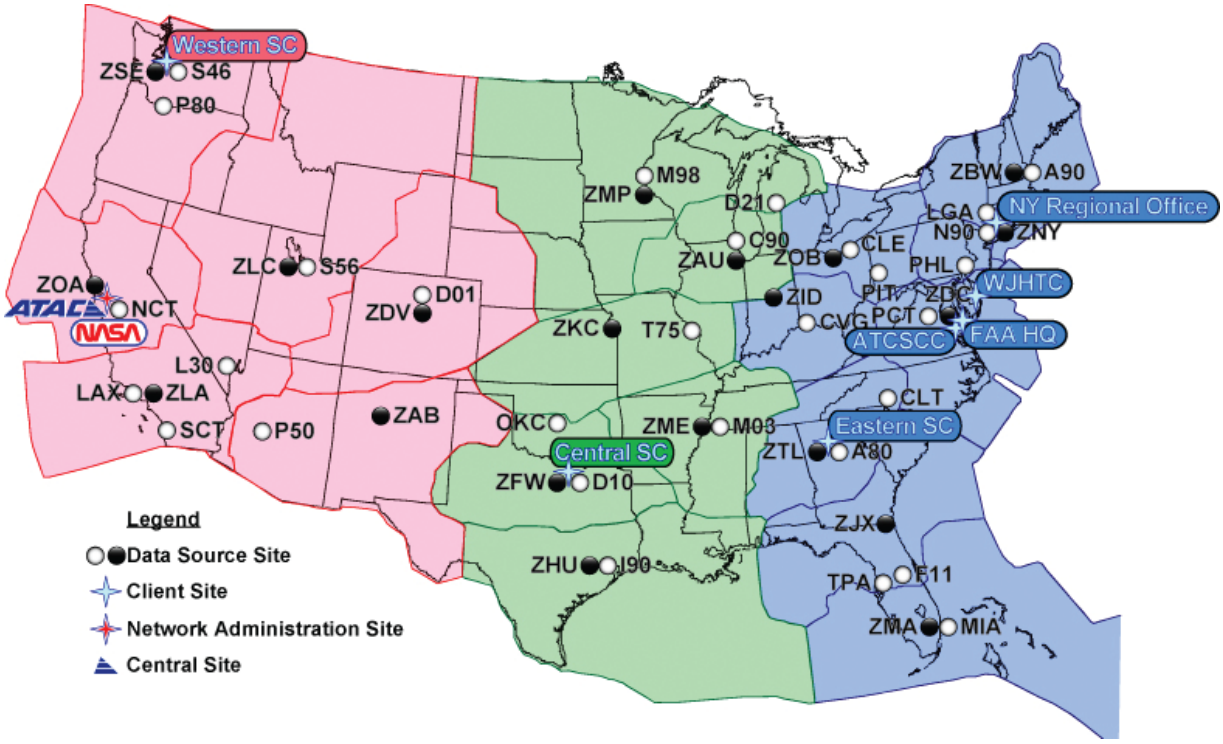
PDARS established its first connection to FAA Headquarters in 2006. Also during that period, PDARS was integrated with other data sources including the National Traffic Management Log, Traffic Flow Management data, and comprehensive weather information (convective activity, forecasts, etc.).

That meant the users at FAA Headquarters and the Air Traffic Control System Command Center in Herndon, Virginia, could be provided access to the central database from PDARS desktop applications on their local PDARS machines. Another step in broadening access to some of the PDARS resources was taken in the same year with the launch of the PDARS Enterprise Website (*http://pdars.tc.faa.gov*), which allowed FAA desktops password-enabled access to PDARS reports.A major new step forward is the incorporation of surface-movement-tracking Airport Surface Detection Equipment-X (ASDE-X) data into the PDARS dataset, which will allow for "gate-to-gate" performance measurement among the major airports throughout the National Airspace System (NAS).

By translating flight track and flight plan data and integrating that information with other relevant data sources into measures of facility performance, PDARS significantly augments the FAA's ability to adjust operational and safety

Sites Constituting the PDARS Network

The following map shows FAA facilities that are currently using PDARS hardware and software.

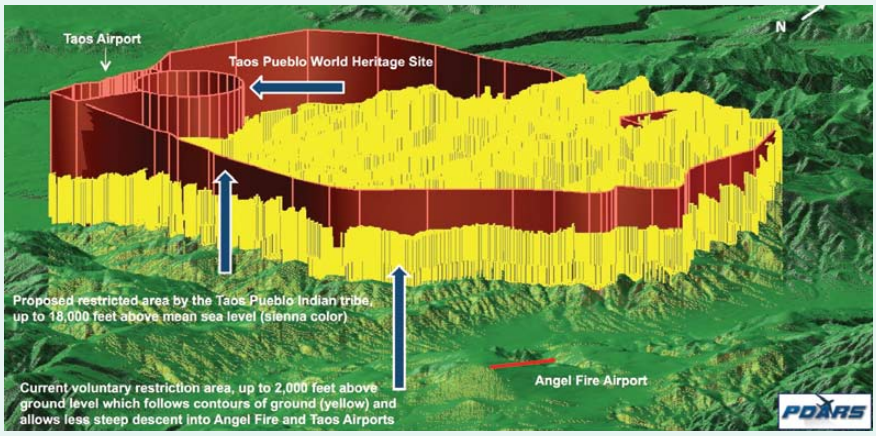


PDARS Sites Listing

Facility ID	Facility Name	Facility Location
A80	Atlanta TRACON	Peachtree City, GA
A90	Boston TRACON	Merrimack, NH
ATAC	Contractor/Central Site	Sunnyvale, CA
ATCSCC	ATC System Command Center	Herndon, VA
C90	Chicago TRACON	Elgin, IL
Central SC	Central Service Center	Ft. Worth, TX
CLE	Cleveland TRACON	Cleveland, OH
CLT	Charlotte TRACON	Charlotte, NC
CVG	Cincinnati TRACON	Erlanger, KY
D01	Denver TRACON	Denver, CO
D10	Dallas TRACON	DFW Airport, TX
D21	Detroit TRACON	Detroit, MI
Eastern SC	Eastern Service Center	College Park, GA
FAA HQ	FAA Headquarters	Washington, DC
I90	Houston TRACON	Houston, TX
L30	Las Vegas TRACON	Las Vegas, NV
LAX	Los Angeles International Airport	Los Angeles, CA
LGA	La Guardia Airport	Queens, NY
M98	Minneapolis TRACON	Minneapolis, MN
F11	Orlando TRACON	Orlando, FL
MEM	Memphis TRACON	Memphis, TN
MIA	Miami TRACON	Miami, FL
N90	New York TRACON	Westbury, NY
NASA	Network Administration Site	Moffett Field, CA
NCT	Northern California TRACON	Mather, CA
NY Regional Office	New York Regional Office	Jamaica, NY
OKC	Mike Monroney Aeronautical Center	Oklahoma City, OK
P50	Phoenix TRACON	Phoenix, AZ
P80	Portland TRACON	Portland, OR
PCT	Potomac TRACON	Warrentown, VA

Facility ID	Facility Name	Facility Location
PHL	Philadelphia TRACON	Philadelphia, PA
PIT	Pittsburgh TRACON	Coraopolis, PA
S46	Seattle TRACON	Burien, WA
S56	Salt Lake City TRACON	Salt Lake City, UT
SCT	Southern California TRACON	San Diego, CA
T75	Gateway TRACON	St. Charles, MO
TPA	Tampa TRACON	Tampa, FL
Western SC	Western Service Center	Renton, WA
WJHTC	William J Hughes Technical Center	Atlantic City, NJ
ZAB	Albuquerque ARTCC	Albuquerque, NM
ZAU	Chicago ARTCC	Aurora, IL
ZBW	Boston ARTCC	Nashua, NH
ZDC	Washington ARTCC	Leesburg, VA
ZDV	Denver ARTCC	Longmont, CO
ZFW	Ft. Worth ARTCC	Ft. Worth, TX
ZHU	Houston ARTCC	Houston, TX
ZID	Indianapolis ARTCC	Indianapolis, IN
ZJX	Jacksonville ARTCC	Hilliard, FL
ZKC	Kansas City ARTCC	Olathe, KS
ZLA	Los Angeles ARTCC	Palmdale, CA
ZLC	Salt Lake City ARTCC	Salt Lake, City UT
ZMA	Miami ARTCC	Miami, FL
ZME	Memphis ARTCC	Memphis, TN
ZMP	Minneapolis ARTCC	Farmington, MN
ZNY	New York ARTCC	Ronkonkoma, NY
ZOA	Oakland ARTCC	Fremont, CA
ZOB	Cleveland ARTCC	Oberlin, OH
ZSE	Seattle ARTCC	Auburn, WA
ZTL	Atlanta ARTCC	Hampton, GA

Pueblo de Taos, New Mexico



Located in the valley of a small tributary of the Rio Grande known as the Blue Lake Wilderness, Taos comprises a group of habitations and ceremonial centers which are representative of a culture largely derived from the traditions of the pre-historic Anasazi Indian tribes who settled near the present borders of Arizona, New Mexico, Utah, and Colorado. Pueblo de Taos is thought to have appeared before 1400 and is the best preserved of the pueblos north of the border defined by the Treaty of Guadalupe Hidalgo (1848).

American Indian Tribal lands (as depicted by the sienna color), located in Taos Pueblo and Blue Lake Wilderness, New Mexico, lie close to the Angel Fire Airport. This picture shows a proposed voluntary restriction area (2000 above ground level) around the mountainous terrain of the Taos Pueblo and Blue Lake Wilderness areas in New Mexico. PDARS enables the FAA to assess the impact of this proposed restriction area on traffic into and out of the Taos and Angel Fire airports.

The sienna color represents an area 18,000 feet above sea level (18,000' MSL) that had been proposed by the Taos Pueblo tribe as restricted airspace.

The yellow depicts the current voluntary restriction area of 2000 feet above ground level throughout the Blue Lake Wilderness (BLW) area.The yellow and sienna thus have the same lateral boundary, but different altitude structures.

The circular volume is a two nautical mile diameter circle centered on the Taos Pueblo World Heritage Site, a particularly sensitive area for the Tribe; the FAA's counter-proposal included giving higher restrictions (18,000' MSL) around that smaller area rather than the whole of the BLW.

Taos Airport (SKX) is on the other side of the mountain range from Angel Fire (AXX), just behind the circular area in this view. Thus, the high restriction requested was viewed as a safety hazard for arriving aircraft were they to be required to stay 5,000 feet above the mountains then quickly dive into the valley to land at those airports (which experience significant air traffic during ski season).

procedures and techniques. PDARS provides FAA facilities with the capability to both identify air traffic situations that can be changed or improved and quantify the consequences of operational adjustments from safety and efficiency perspectives.

PDARS Supplies Over 1,000 Daily Reports to the FAA

This powerful tool's functionality allows managers and specialists to review facility or NAS performance from several hours to as far back as 5-10 years in many locations. Performance indicators such as adherence to miles-in-trail restrictions can be reviewed, along with sector throughput, angles of intercept, runway occupancy times, and countless other applications for safety or operations. Today, PDARS provides the FAA with over 1,000 daily reports to aid in its performance analysis and decision-making, and is an indispensable fixture in 68 FAA facilities.

PDARS is instrumental in providing this key information to the FAA on a daily basis. For instance, until recently, controllers and frontline managers were required to tally whenever aircraft experienced airborne holding of 15 minutes or more. Furthermore, single instances of holding less than 15 minutes were not required to be reported, even though the cumulative holding during a flight might exceed that benchmark. Documenting holding events was necessary; however, it was also time-consuming and usually occurred during adverse conditions, which exacerbated the situation.

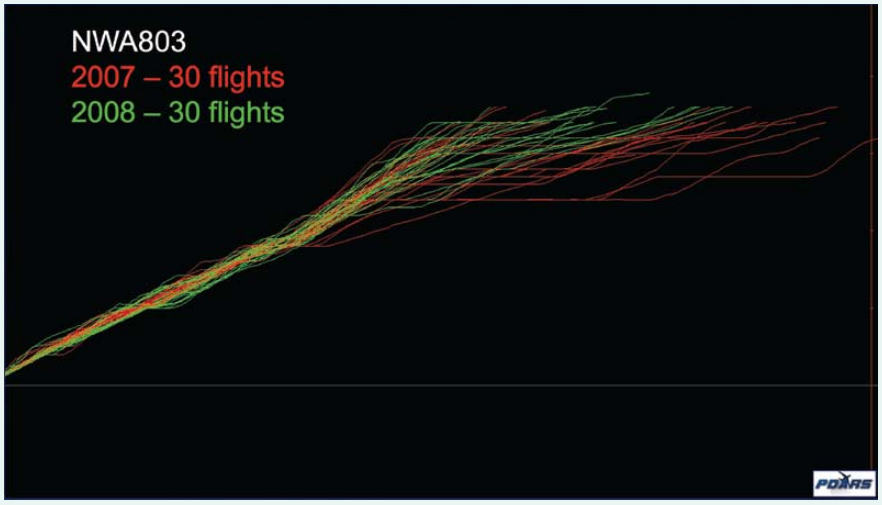
The information that was gathered had to be entered into a reporting system called OPSNET. Now, thanks to PDARS, airborne holding reports are automated; furthermore, the reports supply the FAA with information about cumulative holding experienced during the entire flight, amounting to a huge labor savings for the FAA.

What Can PDARS Do For You as a Manager?

Managers and other users of the system routinely share information about how they've customized PDARS to produce information needed to make better decisions in their domains. One of the best forums in which to share such knowledge has been the "PDARS User Conference" hosted each year by the PDARS Program Office, which resides in the Air Traffic Organization's (ATO) Performance Analysis and Strategy Directorate, headed by David Chin.

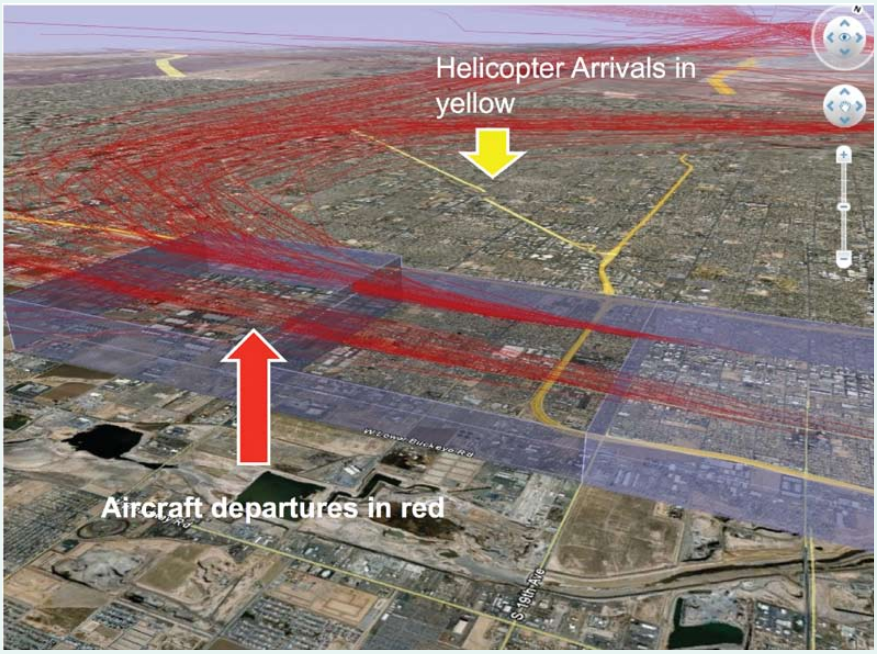
At these gatherings, PDARS users across facilities really get a feel for how

Composite Visualization of Daily Flight: Los Angeles Airport



Here is a depiction of the process used to set the baseline measurements and evaluate the success of the RIIVR II approach procedure into Los Angeles airport. As illustrated by the descent profiles of Northwest Airlines flight 803 in 2007 compared to 2008, the decreased level-off areas are easily discernible, demonstrating the success of this project.

Phoenix Airport Aircraft Departures and Helicopter Arrivals



Modeling depicting Phoenix Air Traffic Control Tower (PHX) airspace and the interaction of helicopter traffic with other PHX departures. Departure aircraft flight tracks from Phoenix Airport are depicted in red and the helicopter flight tracks are depicted in yellow from the northwest and north.

the system is being used by their peers, providing the framework for efficiency and safety gains across the system as PDARS users' insights and experiences are shared.

As an example, one presentation by Albuquerque's Air Route Traffic Control Center (ARTCC) at this year's conference demonstrated how PDARS' companion graphical display program, GRADE, can present compelling cases during public meetings to help both stakeholders and laypeople visualize air traffic scenarios.

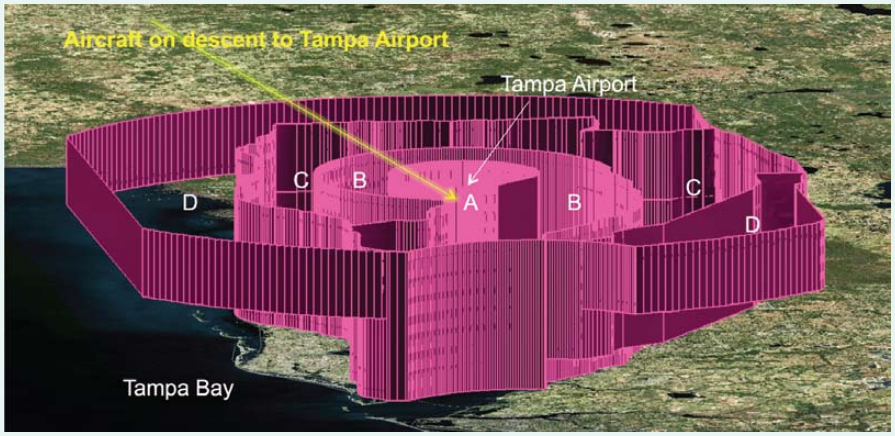
The Albuquerque area case involved sacred Native American land and projected noise from a local airport. FAA employees were able to demonstrate the near-acrobatic and potentially unsafe trajectories aircraft would have to fly to comply with proposed ordinances.

On a similar note, a presentation by personnel from the Southern California TRACON (SCT) Plans and Procedures Office described how, over the last decade, they have twice taken on the effort to redesign the Los Angeles Class B airspace. The first redesign effort took eight years from start to finish. The Class B redesign generated over 7,000 comments from aviation users and the local community. The vast majority of comments were negative, providing various reasons why the redesign should not happen.

The second effort to redesign the Los Angeles Class B airspace used a new approach. Instead of conducting the effort internally and occasionally meeting with the customers, the SCT redesign team this time went out with an "open philosophy."

The team would use PDARS and its visualization and reporting capabilities to proactively engage the Aircraft Owners and Pilots Association (AOPA) and the airlines to participate in all the design meetings and allow the FAA to put "on the table" exactly what they perceived as the issues of concern. In addition, customer inputs and recommendations were encouraged as part of the new process.

Tampa Airport Class B Airspace



Each circular-type area represents a different altitude of airspace around Tampa Airport:

A = Surface to 10,000 feet; B= 1,200 feet to 10,000 feet; C= 3,000 feet to 10,000 feet; D= 6,000 feet to 10,000 feet.

Aircraft on descent to Tampa Airport cannot descend below 6,000 feet in area D, nor below 3,000 feet in area C; nor below 1,200 feet in area B.

The results of the second redesign process were dramatically different. This time, through a new paradigm made possible by leveraging the capabilities of PDARS, the process from start to completion took two years and generated a total of 12 comments, all but one positive!

Fuel Savings Associated With Optimal Profile Descents (OPDs)

Other important PDARS efforts have involved demonstrating fuel savings associated with Optimal Profile Descents, or OPDs.

PDARS Used Successfully in Tampa Tower/TRACON

Managers continually cite the capability of PDARS reports and GRADE's 3D depictions to defuse arguments, or illustrate a case. Laurie Zugay, Air Traffic Manager at Tampa Tower/TRACON told ATAC how PDARS was recently and successfully used at Tampa. Controllers were briefed on the importance of advising Tampa arrivals when they were leaving and then re-entering the Tampa Class B airspace.

Initially, when the issue was discussed with the controllers, they did not believe aircraft were exiting and reentering the Class B airspace. Ms. Zugay further explains that after employees were shown the replay scenarios using GRADE, "It was really an eye-opener for everyone at the facility to see what was actually happening, by using the 3D GRADE representations."

PDARS "Go-Around" and Turn-to-Final (TTF) Reports

Other specific uses of PDARS developed for the ATO Office of Safety include the "Go-Around" reports for the 35 Operational Evolution Plan (OEP) Airports, and the Turn-to-Final (TTF) report, which was just recently released and previewed for ATO Chief Operating Officer Hank Krakowski. The TTF report provides an accounting of turns to the final approach course within 20 nautical miles of a runway, plus intercept points, angles, altitudes, locations, and speed. These reports are provided daily, weekly, monthly, quarterly, and yearly for facility and national use.

In addition, tailored reports can be developed for facilities. In one example, Southern California TRACON requested a daily Los Angeles airport inboard (innermost) runway usage report that was developed and made available on the PDARS Enterprise Website.

Moreover, PDARS is a versatile tool you as an FAA manager or specialist may use to review traffic, build trending reports, examine runway usage, build Temporary Flight Restrictions (TFRs), evaluate new tools (such as the Converging Runway Display Aid at Newark, NJ (EWR)), review or build proposed sector designs, and analyze rates of aircraft passing navigation "fixes."

Users can incorporate spacing tools, activate replay features, dissect unusual situations, integrate maps and charts into GRADE, review Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) routes (e.g., Q-routes and New York helicopter routes), and investigate accidents and incidents or noise complaints. In the Eastern Regional Office, the local zip code map was imported into GRADE, which allows immediate reference and comparison for noise complaints and location of callers.

"An Animation is Worth A Thousand Pictures"

The animation feature of GRADE is especially popular among managers. As one manager said, "If a picture is worth a thousand words, then an animation is worth a thousand pictures!" Stakeholder benefits are easily tallied and demonstrated using PDARS and GRADE.

In early spring of 2010, PDARS began providing Phoenix tower with aircraft ground tracking data processed from ASDE-X. Similar to the airborne flight tracking information collected by PDARS, the processed ground data also allow the facility user to animate the ground traffic to better comprehend the "big picture," and to calculate significant events related to each aircraft movement between ramp areas and specific runways.

In animating ASDE-X data for Phoenix tower, the facility observed that during

heavy arrival and departure periods, the existing procedure of routing traffic using only one taxiway, was resulting in a high number of "taxi stops," causing repeated powering up of aircraft to resume movement. During one such 41-minute period, 35 aircraft experienced 155 taxi stops, for a total hold time of 290 minutes.

Based on the PDARS animations, revised procedures are planned to utilize a second taxiway that should reduce conflicts and provide a more continuous flow of ground aircraft. A reduction in total hold time of 30 minutes (10 percent) will save the airlines approximately $500,000 per year based on their fuel costs conveyed to Phoenix tower.

What's Next for PDARS?

The major challenge for maintenance and operations of a complex system such as PDARS consists of delivering state-of-the-art performance data and analysis tools to an ever-expanding network of distributed user sites, while keeping costs under control to maximize value to the FAA. Planning is underway to eventually tackle these issues by transitioning to a Net-Centric Architecture, whereby PDARS tools and data can be delivered to existing FAA-authorized users' desktops, laptops, and mobile devices.

This system would allow for multiple participants to work together with diverse systems to achieve optimal benefit from available resources and information. An information-enabled enterprise system can maximize creation of value. The specific benefits of the new approach would be at least three-fold:

1. Significant cost savings would be achieved over extended years of operation due to the overall decrease in hardware and networking resources required to operate and maintain the system.
2. Access to the PDARS data and tools would be much more scalable and easier to provide to additional authorized users of the information.
3. This architecture would allow the FAA enterprise to leverage previous investments in PDARS performance measurement technology and the existing infrastructure (the FAA Telecommunications Infrastructure and FAA issued desktops, etc.) to deliver the same or greater capability of the current system.

Where Can You Find Out More?

By visiting *www.atac.com* or by contacting Jeff Browder at *jmb@atac.com*, Rich Gutterud at *rag@atac.com*, or John Schade at *jes@atac.com*.

Watch future issues of *Managing the Skies* for articles on the airspace design modeling and/or training simulator "I-SIM" and ATAC's airfield and airspace fast-time simulation model, "Simmod PRO!"