

Getting to PRM—Another Success Story



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It has probably been some time since you have heard or read anything about Precision Runway Monitored (PRM) approaches. That's about to change. The PRM Approach in PHL became operational on June 3, 2002, but getting to this point has not been easy. ALPA Safety representatives, management personnel from US Airways and other airlines, the Air Transport Association, RAA, FAA, NATCA, and a host of others have spent literally thousands of man hours on this issue.

PRM review

Just to refresh everyone's memory, the PRM approach system consists of high-update radar and high-resolution video monitors. This radar updates every second as opposed to the conventional radar systems that update every 4-8 seconds, thereby significantly improving the air traffic controllers' capability to monitor aircraft on final approach. In addition, PRM permits simultaneous independent ILS approaches to parallel runways with runway centerlines separated by 3,000 to 4,300 feet. At airports with these runway configurations, PRM increases the arrival capacity and reduces en route and arrival delays. Consequently, the PRM system has established a new separation standard between parallel runway centerlines. The FAA implemented ILS PRM approaches at the Minneapolis-St. Paul Airport in 1997, after extensive testing at the FAA Technical Center.

Although aircraft will be flying final approaches to parallel runways that are closer together, there are significant safety enhancements in a PRM environment. The one-second-

update feature of the PRM radar will give controllers significantly more time to respond to potential separation problems. Because the radar updates so quickly, the controller also sees a set of target trails that provide extremely accurate trend information, and also provides an aural alarm to the controllers in the event that separation is jeopardized. From a personnel standpoint, during PRM operations, there will be a separate controller monitoring each runway and a coordinator managing the overall situation. Therefore, you will have three controllers focused on ensuring separation on final approach.

PRM issues

In the latter months of 1999, after simulator training was complete for most of our pilots, US Airways was prepared to allow our pilots to begin accepting PRM approaches at MSP in anticipation of the commissioning of the PRM approach in PHL. In December 1999, the Central Air Safety chairman at that time, John Cox, and I attended a briefing on PRM approaches in Washington, DC. While we were encouraged by the safety improvements PRM brought, we both had several concerns:

1. The lack of a national PRM standard
2. The descending breakout maneuver
3. Procedures to ensure clear channel communication with the final controller
4. The use of TCAS in TA only
5. Pilot training standards for all PRM participants

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The next day, we met with US Airways Flight Operations personnel, where we expressed those concerns, and it was agreed to postpone the authorization of PRM approaches for US Airways pilots at MSP until the issues we had could be addressed.

The journey of resolution

It's always easy to find and express concerns. Resolving those concerns is another matter. After that December 1999 meeting, your ALPA Safety Committee immediately got involved with the process that would attempt to resolve each of the five concerns. John Cox (PHL), Roger Pierce (PHL), and I traveled to MSP in January to observe a PRM operation in the radar room. We began coordinating our efforts with the Engineering and Air Safety Department staff at ALPA headquarters in Herndon, VA. Regular meetings were held between ALPA Safety and US Airways management that were involved with the PHL PRM implementation. An industry group was formed, the Closely Spaced Parallel Approach Steering Committee, which was made up of representatives from several airlines (including US Airways), RAA, FAA, NATCA, NBAA, and ALPA. Roger Pierce was our representative on this steering committee.

In the meantime, other US Airways personnel worked diligently with the vendor and FAA on the installation of the PRM radar. Controllers were trained, and US Airways continued to keep our pilots trained to proficiency on PRM approach procedures.

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The issues get resolved

After more than two years of discussions, meetings, successes, and setbacks, I am happy to report that we have reached resolution to every one of our concerns.

1. **The National PRM Standard**—After PHL began its operation in June, it not only became the standard for all PRM approach facilities that come on line in the future, the MSP procedures were changed to reflect what was accomplished in PHL. The approach chart, the Attention All Users Page, the approach aids, and the use of TCAS will be the same no matter where you fly a PRM approach.
2. **The Descending Breakout Maneuver**—As pilots, we have all been concerned about this one. While it would have been nice to eliminate this maneuver completely, realistically it did not make sense if that was the only option left for a controller. However, we were able to make changes to the controller's handbook so that the descending breakout can only be used as a last resort, and cannot be used as a normal course of aircraft separation. To reinforce the mind-set that a descending breakout should be the last option considered, management and ALPA Safety have agreed that a descending breakout is one of the conditions that will automatically cause the PRM Event Review Committee (ERC) to convene. In the unlikely event of a descending breakout, the ERC will review the circumstances, determine whether appropriate procedures were followed, and recommend any necessary corrective action to be taken. Just as an aside, no PRM descending breakouts have been issued at MSP since the system was commissioned.
3. **Clear Channel Communications**—This turned out to be a fairly easy one to solve. The use of dual comms combined with the proper training in procedures for both the pilots and controllers will ensure complete and uninterrupted communication throughout a PRM operation.
4. **TCAS in RA**—The ALPA position on this was that switching the TCAS to TA only removed the last line of defense against a collision in the event of a system failure. The FAA's position on this was that leaving the TCAS in RA would result in nuisance RAs. Both US Airways management

and ALPA worked hard to convince the FAA to change their policy. In order to do that, the FAA agreed to perform a scientific study on the use of TCAS. Pilots from several airlines (including US Airways) traveled to the United Airlines training facility in DEN where they flew numerous PRM approaches in the simulator. After studying hundreds of PRM approaches, the results proved our view that leaving the TCAS in the RA position did not result in nuisance RAs and provided a much safer operation. As a result, you will also see a change in the MSP procedures soon.

5. Pilot Training Standards for all Participants—This proved to be one of the more difficult issues to get resolved. While PRM training at US Airways was the finest in the industry, there were no assurances that other airlines would invest the same amount of time to perform aircraft or simulator training for PRM approaches, especially the difficult descending breakout maneuver. After ALPA was granted an audience with representatives from the Air Transport Association (an unprecedented feat), the ATA Ops Council agreed to recommend to their membership that simulator training be conducted on PRM approaches. A similar agreement was worked out with the regional carriers through the RAA.

PRM implementation at PHL

The first ILS-PRM approach in PHL was flown on June 3. The paired PRM runways are runway 27L and runway 26. Initially, these approaches will be flown in VFR conditions, and over several months the minimum weather requirements will be reduced as pilots and controllers gain experience in the procedures.

The final step to making PRM a success will key on pilot participation in this program. It is difficult for controllers to “mix and match” participants and non-participants during a PRM session. Therefore, aircraft arriving during a PRM session that refuse to accept a PRM approach will most likely be placed into holding until they can be accommodated without disrupting the flow of PRM aircraft. **With all of our concerns having been resolved, your ALPA Central Air Safety Committee fully endorses the acceptance of PRM approaches.**

My sincere thank you to all of those who were involved in this process of bringing PRM to US Airways. This has been a true success story. Together we have raised the safety bar not only here at US Airways but for the entire airline industry.

Fly safe and thank you for making safety your number one priority.



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A Note of Thanks

Getting to the point of endorsing PRM approaches at US Airways could not have been possible without the help of a lot of people. The Engineering and Air Safety staff at ALPA headquarters in Herndon, especially Bob Striegel and Marty Coddington, provided us with much-needed technical expertise. Also at ALPA International, my thanks to Executive Air Safety Chairman John Cox (AAA) and Air Traffic Services Group Chairman Larry Newman (DAL), whose exceptional insight and guidance got us through the final stages of resolving the last-minute issues. As our representative on the CSPA Steering Committee, Roger Pierce (AAA) did an exceptional job keeping all the parties focused on the issues, leading the US Airways efforts with those at ALPA International and the FAA, and coordinating many of the activities surrounding the TCAS study on TA/RA. On behalf of the US Airways pilots, Roger spent many hours working on the PRM issues and traveling to Washington, Pittsburgh, and Philadelphia for countless meetings.

At US Airways, a tip of the hat to our Flight Training Department, especially Ron Schilling, our Director of Flight Training and Standards, for being a true leader in the industry on PRM training. Finally, I extend a special thanks to Pamela Hamilton, Manager of Air Traffic and Navigation Technology for US Airways. Pam was able to successfully navigate through the concerns of ALPA, FAA, the airlines, and the controllers (some concerns of which conflicted with each other), aided in reaching consensus among the parties, and tenaciously coordinated the efforts in PRM implementation at US Airways. Pam is a true professional to work with and is a great asset to all of the employees here at US Airways.