



Testimony of Gary Beck
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Safety and Security

Senate Committee on Commerce, Science and Transportation

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NextGen: A Review of Progress, Challenges, and Opportunities
For Improving Aviation Safety and Efficiency

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Chairwoman Cantwell, Ranking Member Ayotte, and members of the Subcommittee:

My name is Gary Beck and I am the vice president of Flight Operations for Alaska Airlines. It is my pleasure to testify today on behalf of Alaska Airlines on the safety, impact and efficacy of NextGen programs, specifically the Greener Skies initiative. In addition to my role at Alaska Airlines, I also serve as the co-chair of the NextGen Implementation Working Group focused on expanding the use of Performance-Based Navigation across the country, and I am on the subcommittee of the NextGen Advisory Committee. I submit today's testimony in my Alaska Airlines capacity.

I. Background on the Greener Skies Initiative

Greener Skies began in 2008 as a partnership between Alaska Airlines, The Boeing Company, and the Port of Seattle. Our goal was to improve the efficiency of flights landing at SeaTac airport, thereby reducing fuel usage, carbon emissions and noise pollution. Greener Skies is the evolution of a long-term initiative at Alaska to use Required Navigation Performance (RNP) technology to improve safety, enhance sustainability and decrease the environmental impact of our flight operations.

Alaska has long been a pioneer in integrating RNP technologies into our operations. Our work in this area can be traced back to the mid-1990s when we used RNP-guided flight paths to direct our aircraft operating out of the Juneau airport, a location known for its bad weather and mountainous terrain. The challenges posed by the Juneau environment spurred our entrance into this space, leading Alaska to invest early in innovative technologies that could help us more reliably and safely serve communities throughout the state of Alaska. In so doing, our corporate leaders took a risk in being the first major U.S. air carrier to invest in RNP, an unproven technology at that time. That risk was certainly worth taking, and because of that early work Alaska is further along than any other airline in using these technologies to benefit our customers and partners.

From its inception at the Juneau airport, we have taken RNP technologies to the next level with the Greener Skies initiative. In 2010 the FAA, with whom we have a long history of successful collaboration, declared our project in Seattle a NextGen initiative. The primary objective of the project was to study the feasibility of two instrument approach streams to parallel dependent runways (runways separated by 2,500 to 4,300 feet) with:

- one aircraft arriving on a straight-in flight approach,
- an adjacent aircraft arriving on a curved path to a parallel runway,
- and both considered "established" on the approach, with at least one of the aircraft using NextGen guidance technology.

Today, aircraft must be separated by 1,000 feet vertically or three nautical miles laterally until they are "established" on straight-in final segments to dependent parallel runways. One of the key goals of NextGen is to implement rule changes that allow aircraft to be established on both curved and straight-in paths, allowing for reduced separation between the aircraft of just 1.5

nautical miles diagonally. The key benefit of reduced separation is increased airspace efficiency. Thirteen airports in the National Airspace System (NAS) would benefit from this rule change.

The initial phase of the Greener Skies initiative was to develop and implement two Area Navigation (RNAV) arrivals and six RNP approaches. In navigational parlance, arrivals are published flight procedures that take the aircraft from its cruising altitude to a much lower altitude, typically a few thousand feet, in the airport vicinity. Approaches are procedures that take the aircraft from that position all the way to the runway. The primary benefit of the NextGen procedures is that they allow the aircraft to make a continuous descent rather than requiring it to level off intermittently. A helpful analogy is that NextGen arrivals are akin to the plane sliding down the banister rather than taking the stairs.

In the summer of 2013, after several years of exhaustive trials, training, safety assessments and FAA airspace negotiations, we were able to publish and implement the two arrival procedures outlined in phase one of Greener Skies (HAWKZ and MARNR). We overcame some initial challenges and at the end of August, with support of the FAA, all qualified and equipped aircraft and airlines arriving in Seattle from the north, south, and west began using the NextGen arrival procedures. This success continues today.

We are currently in phase two of Greener Skies, and our objective is to obtain a waiver to the Air Traffic Control Handbook that would allow the implementation of the “Established on RNP” procedure. This mechanism will allow for the reduced separation of 1.5 miles between approaching aircraft, and for those aircraft to approach on both straight-in and curved paths. This reduction in separation is a key factor in reaping the full benefits of the Greener Skies initiative.

II. Benefits of Greener Skies

We have seen significant positive impacts from the implementation of our two RNAV arrival procedures. For aircraft landing to the south, the HAWKZ procedure provides a 17-mile savings over previous landing procedures. That may not sound like much, but when considering that an estimated 30,000 aircraft fly this arrival path each year (from all airlines, not just Alaska), the fuel burn reduction quickly adds up. With an average of 44 gallons of fuel saved per flight, we can expect 1.3 million gallons of annual savings for aircraft arriving Seattle. Early modeling shows an expected reduction in CO₂ emissions equivalent to 4,100 automobiles. And when considering the growth in air traffic forecast for Seattle, the benefits will only increase.

Additionally, we have worked closely with the Port of Seattle to ensure the procedure designs do not affect the Port’s long-standing noise-abatement corridors. The flight procedures are optimized to concentrate flights over Puget Sound and compatible land uses, reducing the number of people who experience aircraft overflights. Greener Skies has allowed Alaska to continually find innovative ways to serve our customers, the communities in which we work and reduce our environmental impact.

III. Challenges

Our integration of NextGen programs has been a marked success. But despite these benefits, we face challenges in fully implementing NextGen and ensuring our initiatives have the greatest positive impact they can. We have experienced significant success implementing the two new arrival procedures as part of phase one of the Greener Skies initiative. But the second phase, which will deepen the impact of this program by optimizing our approach protocols in tandem with the arrival procedures, has encountered setbacks in its approval process. In short, the benefits we gain during the decent from cruising altitude to the beginning of our final approach are considerable; extending those benefits all the way to the runway is our next goal.

As an early adopter and champion of these initiatives, Alaska Airlines hopes we can count on Congressional support to advance three key issues:

- a. Approve the FAA rule change for “Established on RNP”*
The rule changes that follow from the “Established on RNP” waiver are crucial to NextGen implementation. Roadblocks exist in this space, in many cases understandably. But approval of the rule change is a necessary first step to ensure the beneficial impacts of NextGen.
- b. Publish and implement the amended RNP approach procedure*
Though the approach procedures were published in 2013, they are not fully used – with the notable exceptions of the Denver and Portland airports. These procedures must be amended and fully implemented. We currently foresee a minimum two-year delay from initial publication, which further stalls the benefits of NextGen. Additionally, continuity in the teams developing these procedures will reduce the time to implementation.
- c. Support an FAA post-implementation benefits analysis of the Greener Skies initiative*
It is important that we have verifiable data on the benefits and impact of the Greener Skies initiative. We have begun culling that data ourselves, but we ask the FAA to take a leadership role in developing a benefit analysis in order to validate the metrics we use to measure the impact of Greener Skies.

IV. Conclusion

The airline industry benefits greatly from NextGen policies and procedures, and Alaska Airlines has been a strong proponent of their implementation. Safety, environmental stewardship and customer satisfaction all follow from these initiatives. But we could be doing much more. Arrival procedures have seen dramatic improvement. But we have an opportunity to make further progress by integrating our approach procedures with those arrival protocols. We depend upon your support and our continued partnership with the FAA to ensure that NextGen and the Greener Skies initiative are as impactful at the national and local level as we know they can be.