

**FAA's NEXTGEN PROGRAM:
WHAT WENT WRONG
AND
HOW CONGRESS
CAN FIX IT**

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THE HISTORY: The FAA and taxpayers will spend \$20.6 billion to modernize the National Airspace through a Congressionally approved program known as NextGen.

Congress has mandated that the Federal Aviation Administration (FAA) modernize the U.S. National Airspace. In the *FAA Modernization and Reform Act of 2012*, Congress directed the FAA to spend billions of dollars on a variety of sophisticated new technology and procedures intended to yield long-term economic and environmental benefits to the country.

Unfortunately, few of the beneficial modernization, efficiency, and environmental goals of NextGen have been realized in the nearly two decades since it was originally funded. Recent investigative reports document the FAA's overly optimistic assumptions, poor management, missed deliverables, cost overruns, and double counting of projected benefits.^{1, 2} The FAA is using Congressionally appropriated funds for different goals than those Congress intended; specifically, broad modernization has been sacrificed for brute force methods using existing technology to land more planes per hour on existing runways at highly congested airports. This "NextGen Plan B" has disrupted the lives of hundreds of thousands of Americans who bear the costs of this unauthorized version of NextGen. The result? -- millions of complaints about concentrated noise and pollution, and eight lawsuits (with more on the horizon) against the FAA by communities around the country.

How did this happen? What went wrong and what can Congress do now to ensure the program's promises are achieved in a manner that justifies the enormous costs and yields net benefits to society?

WHAT WENT WRONG: Why the FAA is implementing NextGen "Plan B" in a manner inconsistent with Congress's original intent.

According to extensive research completed in 2016 by Mark Shull of Palo Alto, CA,³ the NextGen program as implemented is virtually unrecognizable from the version that Congress authorized and funded starting in 2000. During its first decade, the original NextGen program experienced chronic delays and budget overruns. The private airlines, which had invested time and money in NextGen, became impatient and successfully lobbied Congress to develop a "Plan B" (Shull, p. 4). The airline industry then assembled a team, under the auspices of the Radio

¹ [U.S. Department of Transportation Inspector General. \(2016\). *FAA Reforms Have Not Achieved Expected Cost, Efficiency, and Modernization Outcomes*. Report Requested by the Chairman of the House Committee on Transportation and Infrastructure and the Chairman and Ranking Member of the House Aviation Subcommittee. January 15, 2016. Project ID: AV2016015.](#)

² [U.S. General Accountability Office. \(2017\). *Air Traffic Control Modernization: Progress and Challenges in Implementing Nextgen*. Report to Congressional Requesters, August 31, 2017. GAO-17-450.](#)

³ [Shull, Mark. "FAA NextGen and the 2012 to 2015 "Optimization of Metroplex Airspace." January 30, 2016.](#)

Technical Commission for Aeronautics (RTCA), to redesign and restart NextGen. The RTCA team produced a plan redirecting the FAA to focus not on long-term airspace modernization, but rather on programs that could be implemented quickly using existing technologies that provided immediate benefits to the private airlines (Shull, p. 5). This new plan was later incorporated into the FAA Modernization and Reform Act of 2012, which established deadlines for the FAA to fast-track new procedures at 35 airports to help the airlines achieve their bottom-line goal of increasing airport landing rates. This was to be accomplished by reducing separation buffers (minimum distances) between aircraft. Without new technology, the FAA instead simplified everything to enable these closer and faster landing rates. These simplifications resulted in lower powered approaches and narrow approach corridors (often called sacrificial noise corridors) that have increased noise overall and dramatically in specific neighborhoods.

The 2012 FAA Modernization and Reform Act also established the RTCA NextGen Advisory Committee (NAC), a successor to the RTCA team, to provide direction and leadership for the 35 metroplex redesigns. The FAA has ceded to commercial airlines overwhelming control of the NAC, which is chaired by airline industry CEOs and dominated by industry stakeholders (Shull p. 11). The NAC has directed the FAA to focus on goals and methods that quite narrowly benefit the private airlines, specifically: (1) increasing throughput at airports by reducing separation between aircraft, (2) using channelized and repeatable arrival routes to mitigate safety risks that would otherwise be heightened by the reduced separations, (3) providing incentives (subsidies) for airlines to agree to fly the new metroplex procedures (*the same procedures the airlines requested*), and (4) allowing airlines to fly the new routes without investing in equipment that would allow flexible (curved) procedure designs in order to bypass noise sensitive residential areas.

As a result, FAA has implemented new procedures at multiple metroplexes around the country that permit airplanes to fly closer together -- often only 90 seconds apart -- and repeatedly traverse the same narrow flight corridors over American neighborhoods 24 hours a day, seven days a week. FAA flight path designers routinely reject historical flight paths that resulted from carefully negotiated noise abatement agreements simply because they are presumed to be less efficient. The new paths go directly over noise-sensitive areas, descend and level off sooner, and require "flying dirty" (flaps down, brakes screeching) to maintain the newly reduced distances between aircraft on arrival.⁴ All of this means an explosion of noise for people in each NextGen metroplex. Rather than work on meaningful ways to mitigate the noise impacts, the NAC prepared a 60-page white paper advising the FAA on how to respond to and manage the expected public outcry (Shull, p. 14).

⁴ Shull, Mark, "Why is NextGen So Noisy?" Jan. 30, 2016.

Another egregious action of the NAC was its role in interpreting the use of the Categorical Exclusion (CatEx) under the National Environmental Policy Act as set forth in the 2012 FAA Reauthorization Act. The Act provides that “performance-based navigation procedures” (essentially, flight procedures using GPS equipment) that would result in measurable reductions in fuel consumption, carbon dioxide emissions and noise on a “per flight basis” are presumed to have “no significant effect” on the environment and therefore qualify for a categorical exclusion under NEPA.⁵ This provision is known as “CatEx 2.”

The FAA again turned to its industry-controlled NAC for advice on the CatEx 2 provision (Shull, p. 18). FAA needed to show that measurable reductions of noise on a “per flight basis” would occur with its new procedures. The RTCA CatEx Task Group, chaired by two leading airline industry representatives, created a totally new policy for measuring noise impacts that was not based on noise on a “per flight basis,” as required by Congress, but on “average per flight” disassembling and a new metric they termed “net noise reduction.” The theory was that if routes became narrower and noise more concentrated, there would be a “net noise reduction” because fewer people would be impacted. *The degree of impact on those people was not taken into consideration.* Stated differently, if 10,000 people would be subjected to dramatically increased, all-day, life-disrupting noise levels from aircraft, while 11,000 people experienced trivial and imperceptible lessening of noise, there would nonetheless be a “net noise reduction” and FAA could claim “no significant impact” under NEPA.

In conclusion, as a result of the airline industry’s control of the FAA’s NextGen program, the airlines have successfully fast-tracked new procedures at many busy metroplex airports to increase throughput -- and their bottom line -- at the expense of hundreds of thousands of Americans on the ground. Meanwhile, the FAA has not even begun to develop, much less implement, many of the advanced NextGen technologies originally envisioned to benefit the country. Despite the projected \$20.6 billion dollar investment, airplanes still do not fly direct paths from point to point across the country, they still are not saving significant time or fuel, quiet descent procedures only occur at altitudes far too high to make any difference, and reduced separation minimums leave no margin for error. Despite the public outcry across the country, the FAA stubbornly maintains that its new flight paths and procedures result in “no significant impact” to American neighborhoods. Americans on the ground feel that they are being treated as collateral damage for airline profits.

WHAT NOW? The FAA should be held accountable for implementing NextGen consistent with Congressional intent and in a way that does not harm Americans.

⁵ [FAA Modernization and Reform Act of 2012, Sec. 213\(c\)\(2\), Public Law 112-95.](#)

The FAA must be held accountable for squandering billions of taxpayer dollars with little to show for it other than increasing the profits of private industry while causing suffering to hundreds of thousands of residents living under new high-frequency flight paths. It is incumbent upon Congress to reevaluate the FAA's implementation of NextGen. It needs to provide clear direction and more explicitly targeted funding to ensure that its \$20.6 billion investment will achieve the original goals set forth by Congress and will benefit rather than harm American taxpayers who are footing the bill.

Congress should incorporate the following guidance into the pending FAA Reauthorization:

1. Direct the FAA to comply with the original intent of NextGen as described in the FAA Modernization and Reform Act of 2012.
2. Direct the FAA to stop relying on an advisory group that is significantly controlled by the airline industry to determine critical policy decisions, and include meaningful community and noise group representation in any advisory groups.
3. Disallow use of the "net noise reduction" method for evaluating noise impacts.
4. Direct the FAA to
 - a. use actual (not modeled) noise data when making procedural and operational changes.
 - b. distribute the impacts of noise rather than concentrate all noise over the same American neighborhoods.
 - c. develop and implement updated noise thresholds consistent with international noise metrics and up-to-date noise research.
5. Direct the FAA to prohibit the use of high frequency, channelized arrival procedures and implement truly quiet final descent procedures.
6. Direct the FAA to implement new landing technologies, such as GPS based landing systems (e.g., Ground Based Augmentation Systems or GBAS) to enable distributed, steeper and quieter approaches at all metroplex airports, while maintaining the faster landing rates the airline industry demands.
7. Direct the FAA to prioritize the use of noise reducing paths near airports, rather than designing flight paths with no concern for noise impacts over existing and previously unaffected communities.
8. Amend the FAA's Mission Statement to include noise, health, and environmental impacts as co-equal priorities with efficiency and safety.