

NextGen's Missing Dimension: Institutional and Funding Reform
By Robert W. Poole, Jr.

I appreciate the opportunity to spend several days with you, and to address you this evening, on the subject of NextGen. I think we all agree that the 20th-century model of radar/voice radio/manual control of air traffic is broken and needs to be replaced. But my thesis tonight is that the governance and funding model is equally broken and in need of replacement. And further, that unless we reform ATC's governance and funding, we risk failure in implementing NextGen and realizing its full benefits.

I've been researching ATC issues for 30 years now, and I've been asked for advice from time to time by various Administrations including the Reagan White House during the 1981 PATCO strike, both Bush Administrations, and especially the Clinton Administration. During those 30 years, we've seen a lot of changes in ATC governance and funding, beginning with the creation of Airways Corporation of New Zealand in 1987, of Nav Canada in 1996, of CANSO in 1998, and the stand-up of our own Air Traffic Organization in 2003.

With minor variations, nearly every OECD country except us has adopted some form of commercialized air navigation service provider (ANSP), along the lines pioneered by Airways New Zealand. Commercialization was defined broadly in the international study by MBS Ottawa as "any organizational form that introduced business practices into a government organization, provided there was, at least, financial autonomy in its governance arrangements. The spectrum of commercialized ANSPs studied therefore included a government department with revenue from user fees and access to the capital markets, a government agency, six variations of government-owned corporations, a public-private partnership with 49% government ownership, and a nonprofit private corporation in which government is a voting member but not an owner."

The 10 ANSPs in that comprehensive study all shared a number of characteristics:

- Funding derived mostly or entirely from ATC user fees
- Independence from national government budgets and budgetary process
- Direct access to the bond market
- Directly accountable to their aviation customers
- Regulated for safety at arm's length by the national air safety regulator.

The MBS Ottawa study examined the performance of each ANSP, before and after commercialization, on a number of dimensions. (For comparison, it also measured the performance of our own FAA as an air traffic provider, both before and after creation of the ATO.) Overall, safety either remained the same or improved after commercialization. Service quality improved, and modernization was greatly improved. In most cases, costs were reduced, while financial stability was maintained. A very interesting finding was that "Providing more autonomy for the ANSP has tended to cause a reorientation from treating government as the primary client to responding to the needs of the aviation community." And there has also been a clarification of the government's role—in

providing oversight of safety and of ANSP charging practices, to protect the public interest.

These general findings, and the idea that they hold important lessons for our own ATO, are reinforced by the important 2007 book, *Managing the Skies*, by noted transportation researchers Clinton Oster and John Strong. They conclude this book by stating that “new technology alone is not enough to solve air navigation and air traffic control problems,” and they recommend that the United States draw on the experience of our counterpart nations with commercialization. So does an important 2008 Brookings Institution paper by Dorothy Robyn and Kevin Neels.

A Thought Experiment

Let me ask you to engage in a thought experiment. Let’s suppose that Congress enacted legislation to commercialize the ATO—i.e., to separate it from the FAA, give it a board of directors carefully balanced among aviation stakeholders, allow it to charge for its ATC services, and use the revenues for its capital and operating expenses, while having the FAA regulate it for safety at arm’s length. Now ask yourself how that would affect the ATO’s ability to implement NextGen. Let’s consider six key issues.

1. Facility Consolidation: An autonomous ATO would be able to make decisions about shutting down obsolete radars and VORs and about replacing 20 Centers and 171 TRACONS with whatever modest number of new facilities made technical and business sense. There might be heated debates at the board level, but there would be no congressional interference or second-guessing of those decisions. NextGen offers us a once-in-a-generation opportunity to develop truly state-of-the-art facilities, which would create a much better working environment as well as saving money.
2. Safety vs. Capacity Trade-offs: Much of what NextGen has to offer is increased airspace capacity, thanks to automation of routine procedures, reduced lateral and in-trail separations, higher landing rates, and many other changes. Nearly all such decisions have safety implications. When the FAA regulates airlines and aircraft manufacturers, it issues Federal Air Regulations that are subject to public comment and external review. Yet the relatively new FAA office that regulates ATC safety—AOV—does not do this. As Prof. Oster put it, if the ATO were a separate organization, “The same trade-offs between safety and capacity would remain and be just as technically difficult, but the regulatory tensions that are now internal to one organization would become external and between two different organizations.” That’s called *transparency*, and I think it could be crucial to public acceptance of and confidence in NextGen.
3. Procurement: NextGen is far more technically complex than the component replacements the FAA has been doing over the past 20 years. Under the autonomous, stakeholder-focused ATO model, the need for a solid business case for each NextGen element would be even stronger. Highly experienced engineers and program managers could be recruited from industry, compensated at market

rates, and held accountable for on-time, on-budget performance. And there would be no congressional micro-management.

4. Funding: A bondable revenue stream from a growing aviation user community would make it possible to finance major capital expenditures. That means items needed in large numbers (including avionics for equipping thousands of planes) could be purchased in large quantities, at mass-production prices. And timely capital projects would not be held up by federal budgetary constraints or congressional micro-management. The transformation of Washington National and Dulles airports, thanks to revenue bond funding, is a very dramatic example.
5. Faster Equipage: NextGen won't deliver its full benefits until all relevant aircraft are equipped. The current stakeholder advisory process, with ready appeal to Congress, takes its cues from those aircraft operators least able or willing to spend the money sooner rather than later—a kind of least common denominator dilemma. But an autonomous ATO has the potential of working out win-win deals among stakeholder groups, to achieve accelerated equipage.
6. Incentives for Less Congestion: When NextGen is fully implemented, its doubling or tripling of airspace capacity promises greatly reduced congestion despite continued growth in flight activity. But it's not clear how soon those congestion reductions will show up. In the interim, the shift to transaction-based user fees will provide incentives, at the margin, to upsize planes in congested airspace. In the United States today, a CRJ-200 pays one-third as much in aviation taxes as a 737-300, but under Nav Canada's weight-distance fee system, the CRJ pays about one-half as much as the 737.

Previous Recommendations

By now you may be thinking that this sounds nice in theory, but in the real world in which we live, this simply cannot happen. My first response to that is that these kinds of institutional and funding changes *have happened*, to date, in something like 40 countries. Every one of them had airlines that wanted to pay as little as possible, private pilots who didn't want to pay anything at all, air traffic controllers who are their usual rambunctious selves and feel threatened by change, and of course legislators who like to keep their hands on the reins, controlling both the purse-strings and in some cases operational and investment decisions. Yet commercialization has occurred, again and again.

Let me also remind you that the main outlines of these reforms did not occur to me in a vision one night. They have been the conclusions and recommendations of numerous national commissions, task forces and industry studies. All of the following recommended some form of ATC corporation funded by transaction-based user fees:

- The Air Transport Association's 1985 ATC corporation study;
- The Aviation Safety Commission in its 1988 report;
- The Transportation Research Board in its 1991 *Winds of Change* report;
- The Congressional Budget Office, as part of its 1992 report on how best to pay for transportation infrastructure;

- The Baliles Commission’s 1993 report on how to strengthen the airline industry;
- The National Performance Review, Vice President Gore’s White House think tank, in 1993;
- The Secretary of Transportation’s Executive Oversight Group, in its 1994 proposal for a US Air Traffic Services corporation (USATS);
- The National Civil Aviation Review Commission, chaired by Norm Mineta, in 1997.

I’ve given you this long list partly to remind you that we get more or less the same answer every time aviation policy experts look into the question. We definitely don’t need yet another commission on this subject! It’s also noteworthy that most of these efforts happened during Democratic administrations.

Why have all these recommendations accomplished so little? To be sure, we now have the ATO, which is an important start in the direction of serious institutional reform. But there has been no real change in funding, or in governance. Congress is still in the driver’s seat, as the de-facto customer that the FAA and the ATO have to satisfy. And some of the key stakeholders—especially general aviation and FAA employee unions—have been staunch defenders of the institutional and funding status quo. They may have their own gripes with the FAA as the ATC provider, but better the devil they know than the devil they don’t know.

How Might We Cut the Gordian Knot?

Needless to say, I’ve been pondering this question for a long time. As I’ve observed country after country embrace ATC commercialization, I’ve tried to figure out what are the similarities and differences between us and them. One important difference is that nearly all the countries that have commercialized ATC have parliamentary systems, where party discipline (rather than seniority) is a major factor in what legislation gets enacted. Another difference is that general aviation is nowhere else such a large player in the aviation system. And a third difference is that just about every nation on earth already charges fees to use their airspace—though those fees are not paid directly to the ANSP except where commercialization has occurred. On the other hand, controllers everywhere are hard to deal with. And politicians everywhere are reluctant to give up power over administrative agencies.

Canada seems to be an especially useful model, for several reasons. First, it’s geographically large, and it has several large urban areas and corridors of high traffic density, as well as much of the North Atlantic, the busiest oceanic airspace in the world. Second, it funded ATC by means of a ticket tax prior to Nav Canada (unlike most other countries that have commercialized, which already had user fees). Third, it has a sizeable general aviation community—not as large, proportionately, as ours, but larger than any other country except the United States. Fourth, it’s just across the border, and there is more cross-border air traffic than anywhere else in the world. Nav Canada is definitely the “least-foreign” model of ATC commercialization.

The most important factor in the reform effort that transformed the ATC division of Transport Canada into commercialized Nav Canada is that this was a *user-driven* reform. Basically, the airlines and business aviation got together and decided the status quo was unacceptable. They won over the controllers, who had not had a pay increase in six years, by offering them a real seat at the table. To be sure, the small plane pilots (equivalent to our AOPA) stood aside, after getting assurances that GA charges would be nominal. But this nearly united front of aviation stakeholders did their homework and persuaded Transport Canada that a self-funded, not-for-profit, stakeholder-governed Nav Canada would be better for Canada than continuing the status quo. And the combination of a unified industry coalition and Transport Canada then prevailed upon Parliament to enact the needed enabling legislation.

Something like this approach and this organizational model is about the only way I can conceive of a comparable reform being brought about in the United States. Despite all the task forces and commissions that I noted earlier, we've never had anything approaching a unified industry coalition promoting ATC governance and funding reform. In the late 1990s, even the airlines couldn't agree among themselves, with what we now call the legacy carriers battling fiercely with the emerging low-cost carriers over restructuring the ticket tax. Fortunately, at least that battle is behind us, and over the last few years, the legacies and LCCs have agreed that cost-based user fees should replace existing excise taxes. But there is still a huge gap between that modest agreement and the positions of business aviation (NBAA and NATA), general aviation (AOPA), and the ATO unions (e.g., NATCA).

Transformation of the ATO into a commercialized ANSP can only happen if we can make this into a truly win-win proposition for all the major players. That will require thinking outside the box, in ways that go beyond the previous efforts such as USATS and the Mineta Commission.

For a prime example of what not to do, consider the very costly and divisive campaign waged by the Air Transport Association on behalf of ATC user fees in 2007-2008—and the costly and divisive response by AOPA and NBAA. While ATA did have facts on its side about how much it costs the ATC system to serve business jets, their proposal to impose full costs on that segment of aviation produced such an extreme shifting of costs that it ended up alienating even the Regional Airline Association, whose costs would also have been dramatically increased by ATA's user fee formula. This was exactly the opposite of the kind of win-win approach that will be needed to build a stakeholder coalition for reform.

Instead of being based purely on allocated costs, every functioning ATC fee system in the world takes into account ability to pay, generally by using a weight factor in developing both the en-route and terminal-area charge. Economists, who generally prefer marginal-cost pricing, even have a theoretical rationale for deviating from that practice, in cases where total cost cannot be recovered if only marginal-cost pricing is used. Called Ramsey pricing, it charges more to those with greater ability or willingness to pay, which in aviation generally means those operating larger aircraft. Weight-distance ATC fees are a

pragmatic approximation of that, and they've been used worldwide and endorsed by ICAO for decades.

The case that needs to be made to regional airlines, air taxis, fractional operators, and business jet owners is that speedy implementation of NextGen offers them the best available future *and* that an autonomous but stakeholder-controlled ATO is the best way to obtain speedy and affordable implementation of NextGen. And an autonomous ATO must be paid directly by its customers. That keeps the funds out of the federal Treasury and therefore out of the hands of congressional authorizers and appropriators.

There are two keys to making this case credible to the operators of smaller planes—RAA, NBAA, and NATA. The first is an acceptable weight-distance user fee formula that only modestly affects their overall cost of flight operations—but which promises them increased airspace capacity and little or no congestion. The second is serious representation on the stakeholder board of directors, with board seats allocated in such a way that no segment of the industry can dominate others. In previous policy studies, I have suggested a board somewhat like Nav Canada's, but with a more complex balancing of interests—such as four airline seats representing legacy carriers, LCCs, cargo carriers, and regionals; two seats representing business aviation (one for corporate jets, the other for air taxis and fractionals); one for small private plane owners (who are not heavy ATC users but need to be inside the tent, not outside); and one for airports.

Mentioning the AOPA segment calls for further discussion. This is the stakeholder group with perhaps the greatest clout with Congress and the least-intensive use of ATC. Its Canadian counterpart ended up not being represented on Nav Canada's board, which is unfortunate (but was their choice at the time). What might it take to create a win-win situation for these private pilots? First, I think piston-powered planes should get a statutory exemption from transaction-based user fees; I like the Nav Canada approach of a modest annual "membership fee" on a sliding scale based on aircraft weight. Second, the services offered by Flight Service Stations (as long as such facilities exist) should be paid for out of FAA's safety budget and not charged for, again, as a matter of statute. Third, this segment would get a seat on the board, as I noted previously.

That's all I would include in statute, but my prediction is that the stakeholder board would quite possibly likely reach a decision on equipage that would provide financial assistance to small GA, encouraging large-scale production of a basic ADS-B In/Out box for such planes, to permit accelerated implementation of full ADS-B functionality and the cost savings from retirement of radars and VORs.

Would that package be enough? I don't know and you don't know, because nobody has even begun to have such discussions.

The other difficult stakeholder group is the controllers. On the assumption that air traffic will continue to grow in volume over the next 20 years, as we all expect, and that NextGen will at least double airspace capacity within that time period, we can look forward to doubled controller productivity even if the workforce remains at current

levels. So it should certainly be possible to give no-layoff guarantees to all existing controllers. And it should definitely be an ATO priority, in any case, to give controllers a meaningful role in NextGen implementation. Plus, as is the case with Nav Canada, a seat on the board of directors. (Controllers at Nav Canada have received over 50% more pay in the first 12 years of commercialization, and they have recently signed a new contract.)

As with the private pilots, I don't know if that would be enough to make this a win-win proposition for NATCA. But here again, nobody is having that conversation with them.

Getting from Here to There

My primary conclusion to all this is that only with a unified aviation community and White House backing could we have a reasonable chance of getting ATC reform like this through Congress.

I've offered a number of thoughts on how and why an aviation community consensus might be forged on this, as occurred in Canada. What about this becoming a White House priority? With all the other issues on its plate, reform of ATC governance and funding might seem to rank very low in priority. However, we've already heard Secretary LaHood say that implementing NextGen is one of DOT's top priorities. And we know that NextGen will produce important gains in energy efficiency and greenhouse gas reductions, which are key administration priorities. If someone can persuade the Secretary that ATC governance and funding reform would significantly increase the odds of implementing NextGen successfully, then such reform itself could become a priority.

And who could make that case? One possibility is our new FAA Administrator, Randy Babbitt. He was a member of the Baliles Commission that recommended a form of ATC commercialization. He's been a member of the FAA Management Advisory Council during the time the agency did its ATC cost allocation study and drafted its FY 2007 budget proposal calling for ATC user fees. And he served on the Advisory Committee for the landmark MBS Ottawa study of how ATC commercialization has performed in 10 other countries. So he certainly has the background knowledge to understand the case presented here.

An interesting straw in the wind is the appearance in the new Administration's 10 year budget of user fees largely replacing aviation excise taxes. That provision has attracted considerable attention from those opposed to user fees. I don't know how it got into the budget, but there is obviously someone on the Obama team who gets at least that part of the ATC reform case. I suspect it's OMB Director Orszag, who testified last year on ATC issues when he was director of the Congressional Budget Office.

As I said earlier, we don't need a new commission to debate the question yet again. Instead, we need a stakeholder task force, backed by the White House, and charged with figuring out *how*—not whether—to transform the ATO into an autonomous, stakeholder-controlled air navigation service provider.

Aircraft operators have some bargaining power here. The Administration has put user fees into its 10-year budget plan, replacing aviation excise taxes. The response by aircraft operators should be (as it was in Canada) “user pay means user say.” In other words, the aviation stakeholders need to be the ones thrashing out how those fees should be structured and how they will be used to run the new ATO and implement NextGen. Creating an ATC stakeholder task force should be the Administration’s next move on the user fee issue.

What I’ve suggested here is extremely ambitious. But I also think it’s do-able. This Administration was elected on a platform of change. And air traffic control one area that’s desperately in need of change—not just in technology and procedures but also in governance and funding.

Thank you very much.