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| |  |  | | --- | --- | | Image removed by sender. | ATC REFORM NEWS By Robert W. Poole, Jr.,  Searle Freedom Trust Transportation Fellow and Director of Transportation Policy,  REASON FOUNDATION | |  |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Issue 127** | **October 2015** | [**More News**](http://click.email.reason.org/?qs=a2ae3876ee083be0828ce53e70638f634d61d25299cf81475dfd64625c86033a5b9a69188d4c8a45) | [**reason.org**](http://click.email.reason.org/?qs=a2ae3876ee083be09090ad2af74b3e72db37e5991ec9a12a9586b98b7349cdc46e9b0f607e7b2e0f) | [**Bio**](http://click.email.reason.org/?qs=a2ae3876ee083be05e35c5f7b137a73f2e52de4a7a5d60361b6a92ff41cdf07abc6b8d9f083d8f4d) | |  |
| **In this issue:**   * [Inspector General slams FAA on PBN tools](#a) * [NextGen progress: hype vs. reality](#b) * [New challenges to ATC corporatization](#c) * [Controller shortage raises concerns](#d) * [Upcoming ATC Even](#e)t * [News Notes](#f) * [Quotable Quotes](#g)   **Inspector General Slams FAA on PBN Tools**  Despite many self-congratulatory FAA reports on its progress in implementing NextGen, the agency continues to under-perform, as documented by reports from the Government Accountability Office (GAO) and the DOT Office of the Inspector General (OIG). On August 20, 2015, OIG released a devastating critique on FAA implementation of key tools needed for performance-based navigation (PBN).  The report's title conveys its basic message: "FAA Has Not Effectively Deployed Controller Automation Tools that Optimize Benefits of Performance-Based Navigation." (AV-2015-081) Over 50% of U.S. airliners are equipped for PBN, but "use of these procedures remains low." That's because tools that enable controllers to space planes based on *time* rather than *distance*—a key NextGen principle—are either not in place or don't work reliably.  This is hardly a new problem. Back in 1996 FAA first deployed a NASA-developed tool for time-based spacing called Traffic Management Advisor (TMA). By 2008 TMA was operational in 19 of the 20 high-altitude Centers. But many controllers were reluctant to use it, because TMA produced unstable, unreliable times.  Given these problems, FAA upgraded TMA into its newer tool, Time-Based Flow Management (TBFM) and deployed it at all 20 Centers between 2010 and 2013 (and elements of TBFM were also deployed to 30 TRACONs and 37 control towers) only to be faced with problems similar to what had plagued TMA. Consequently, the OIG audit team found, "controllers' use of TBFM has been fragmented and inconsistent." But it gets worse. Full TBFM is nominally in use only in the high-altitude airspace controlled by the 20 Centers. But much of the payoff from PBN lies in the transition from high altitudes through descent and landing. But for controllers to do that, FAA needs to perfect an additional tool for TRACONs and towers called Terminal Spacing and Sequencing (TSS). The OIG report notes that two previous efforts to implement similar capabilities have failed—pFAST in 1999 and RPI, cancelled in 2013 after 11 years of development. Due to the absence of such tools, the highly touted Greener Skies effort in Seattle generates a small fraction of its potential benefits. OIG's report notes that "less than 1 percent of eligible aircraft arriving into Seattle-Tacoma International Airport are actually using an RNP approach." And even when everything is working well and controllers there are fully trained, only about 15% of flights will be able to make fuel-saving curved RNP approaches to Sea-Tac.  The OIG report is full of jaw-dropping observations. For example, "According to FAA program officials, the Agency only recently recognized the importance of consistently using TBFM to optimize PBN use. However, several previous FAA planning documents, such as the 2006 PBN Roadmap and the 2008 and 2009 NextGen Implementation Plans, as well as numerous government/industry reports, have noted the importance of using time-based automation in conjunction with PBN."  Given FAA budget problems, as well as the need for further development of TSS before time-based flow management can be implemented in terminal and airport airspace, FAA now expects to *begin* deploying TSS in 2019, but the OIG report opines that "Given the complexity and the Agency's past experience with automation tools, it is uncertain when TSS will be deployed."  I would be remiss if I failed to end this article without a brief look overseas. In the UK, NATS, the corporatized ANSP, has deployed at Heathrow a time-based arrivals spacing tool, TBS. Its initial use is during periods of high headwinds, when traditional distance-based separation spreads planes out so much as to significantly reduce the arrival rate (landings/hour). Since TBS became operational in May, headwind-related delays have been reduced 50%. The tool is so user-friendly that controllers have asked to use it all the time, not just during high headwinds. TBS was developed jointly by NATS and Lockheed Martin.  And just last month, Nav Canada announced a contract with Harris/Exelis under which the latter will adapt its Osyris Queue Management arrivals system for use at Calgary, Montreal, Toronto, and Vancouver airports. This time-based arrivals manager is already in use by other ANSPs for arrivals flow management in Dubai, Hong Kong, Norway, Portugal, Singapore, London Gatwick, and Zurich.  These developments suggest that time-based flow management is not beyond the capabilities of either ANSPs or aerospace firms. The problem seems to be embedded in the institutional setting and organizational culture of the FAA.  [» return to top](#top)  **NextGen Progress: Hype vs. Reality**  I receive monthly updates from FAA on its progress with NextGen—and there *is* progress, along with the kinds of problems that fill numerous GAO and OIG audit reports. But the stark contrast between some of the glowing reports I've read this year and the sobering realities documented by GAO and OIG have led me to ponder how such sharply divergent perspectives can co-exist.  An example of the rosy scenario is a long article that appeared in *Professional Pilot*'s May 2015 issue. The title was "NextGen Status Report: A Careful Look at All Phases of the Program during Mid-2015 Leads to an Optimistic Conclusion." The article seems to be based almost entirely on information posted on FAA's website, uncontaminated by anything published by GAO or OIG. It summarizes progress on eight separate technology programs and implies that most of NextGen will be completed by 2020. Included are milestone charts for ADS-B, DataComm, and several other technology areas. For example, the ADS-B chart shows four out of seven milestones as "completed"—but what this means is that FAA has published a guidance document, not that the feature (e.g., In-Trail Procedures) is in use (though the text acknowledges that ITP has only been *demonstrated* over the Atlantic and Pacific). The milestone table for DataComm goes only through the 2016 target date for 58 control towers to be equipped, while the text optimistically notes that equipping Centers is scheduled to begin in 2019 and be completed in 2021. Please note that Nav Canada has had en-route DataComm in operation nationwide since last year.  Another way of making things look more impressive than they are is FAA's recent tendency to re-label as NextGen projects to improve legacy systems begun long before NextGen was envisioned. That includes the much-delayed, over-budget ERAM replacement for the obsolete HOST system at the en-route Centers and the final stages of replacing TRACON equipment, now re-labeled TAMR, also horrendously late and vastly over budget. The much-lauded Metroplex initiative to redesign airspace and procedures in more than a dozen metro areas also predates NextGen (and was originally dubbed OAPM).  Internally, FAA is more straightforward about what it counts as NextGen. In a Feb. 28, 2015 presentation to the NextGen Advisory Committee (NAC), FAA Chief Financial Officer Mark House reviewed the agency's five-year Capital Investment Plan. It is broken down into four components, with the FY 2016 budget percentages for each:   |  |  | | --- | --- | | Subscription services (contractually fixed costs) | 22% | | Sustaining legacy systems and facilities (ERAM, TAMR, etc.) | 55% | | Completing current NextGen project commitments (DataComm, etc.) | 16% | | Possible additional NextGen projects | 7% |   Over the five-year period through FY 2020, legacy systems are projected to consume 53% of the capital improvement budget, while current and additional NextGen projects will account for just 26%. This is the result of budget limitations forcing triage on FAA's facilities and equipment planning.  Another way to present a rosy picture of success is to show results such as fuel savings based on the output of a computer model that assumes all new procedures are in place, all controllers trained and able/willing to use them, all planes properly equipped and pilots trained, etc. That is what we read about the first several Metroplex projects to be completed, such as Houston and North Texas (Dallas/Ft. Worth). After North Texas was declared operational last fall Administrator Michael Huerta was quoted in *Aviation Daily* and elsewhere saying that the changes there "could save airplanes 4.1 millions of gallons of jet fuel per year," and "one million fewer track miles per year" on arrivals and departures into the airports in question.  Similar statements were made about the Houston Metroplex, when it made its debut in May 2014. Unfortunately, the first-year reality was somewhat different. An internal FAA analysis in early 2015 compared matching time periods in June-July 2013 (prior to implementation) and June-July 2014 (post-implementation). It turned out that excess distance flown in landings was *higher* in 2014 than in 2013 in six out of eight landing configurations, and there were three times as many holds per day in 2014 than in 2013. Because weather was significantly different between the two time periods, a second analysis was carried out, using only days when there were visual meteorological conditions (VMC). Excess distance was still worse in 2014 for four out of eight landing configurations, and there were twice as many holds per day as in 2013. (Note that in its Aug. 20, 2015 report on TBFM, OIG reports that "Although MITRE analysts found [via modeling] that TBFM allows for more fuel-efficient flights, they also found it may be contributing to additional delays and did not include those costs in the benefit calculations.")  To be sure, those were early-days Houston Metroplex results, but they illustrate the contrast between theoretically maximum benefits (which might never be achieved) and the kind of real-world results typically documented in GAO and OIG audits.  So yes, NextGen is making slow progress, but glowing reports on the FAA website need to be taken with several large grains of salt.  [» return to top](#top)  **New Challenges to ATC Corporatization**  As we get closer to the introduction of Chairman Shuster's nonprofit ATC corporation legislation, opponents are coming up with new arguments against this proposed reform.  Delta, the only airline opposing reform, late last month released an op-ed by Steve Dickson, its Senior VP of flight operations, who has been very involved with RTCA's NextGen Advisory Committee (NAC), which has done yeoman work to help FAA make triage decisions about which elements of NextGen the FAA should focus on, given its funding problems. Dickson's argument boils down to this: NextGen is making progress, so don't rock the boat. Shifting to a new organizational structure "would not address the efficiency or performance of the air traffic control system," as if the track records of dozens of corporatized ANSPs didn't demonstrate just the opposite. In the end, he wrote, "separating the ATO from the FAA just doesn't make sense and would distract from real solutions that can substantially improve air travel."  After reading and summarizing for readers of this newsletter scores of GAO and DOT Inspector General Reports on FAA and NextGen over the past 15 years, I don't see how any knowledgeable person can judge the ATC status quo to be acceptable.  It's high time that critics of corporatization explain how maintaining the status quo would address the array of well-known problems on which there is an emerging consensus of informed opinion. As summarized by aviation expert Clinton Oster of Indiana University for the Transportation Research Board in June, they include the following:   1. Funding    1. Uncertainty of funding in a political environment    2. Lack of a capital budget    3. Structure of taxes used to fund the Airport and Airways Trust Fund 2. Micromanagement of FAA operations 3. Inadequate stakeholder engagement 4. FAA management and procurement processes 5. FAA's organizational culture 6. Federal workforce restrictions 7. Self-regulation 8. Strained relations between management and labor.   ([http://onlinepubs.trb.org/onlinepubs/sp/Cited\_Problems\_Concerns\_6.10.2015.pdf](http://click.email.reason.org/?qs=a2ae3876ee083be0b79517c784ec511caeb25b99c88092f60e69d5a2c92dcdfb03286521fa6b053b))  Another critic of an ATO corporation, but one who acknowledges significant problems with the status quo is Rep. Peter DeFazio (D, OR), the Ranking Member of the House Transportation & Infrastructure Committee. In comments at the 2015 Commercial Aviation Industry Summit on Sept. 28th, DeFazio set forth three fundamental problems that need fixing: dependence on annual appropriations (with funding squeezes, sequestration, government shutdowns, and short-term thinking), federal procurement rules ill-suited for upgrading or replacing high-tech systems, and the FAA's bureaucratic structure (problems 1, 4, and 5 on Oster's list).  But DeFazio's solution fails to address the other five problems, especially #7 (self-regulation), because he proposes to convert the entire FAA into a federal corporation, paid for by aviation user fees. By failing to separate the inherently governmental function of safety regulation from the inherently commercial function of operating a high-tech service business, an FAA corporation would fail to resolve the FAA's conflict of interest between service provision and safety regulation, which should be at arm's length. Moreover, keeping them together would preserve the ATO's status-quo-oriented, highly conservative organizational culture, which is a significant reason why it lags far behind commercialized ANSPs in modernization. ([http://reason.org/files/air\_traffic\_control\_organization\_innovation.pdf](http://click.email.reason.org/?qs=a2ae3876ee083be0f44d9cb7fb9934d139af7ec049643ab8fb516a532d27d66795690a63b9ffd658))  In addition, one of the main virtues of the nonprofit user co-op ATC corporation model is that it would be governed by a board of directors representing all key aviation stakeholders. But as *Eno Transportation Weekly* pointed out (Oct. 2, 2015), "putting stakeholders in charge of their own safety oversight obviously cannot happen, so the governance of a government-owned [FAA] corporation would have to be far different under the DeFazio proposal than under the Shuster model." Also, "the concept of making airlines and manufacturers pay for their own safety oversight through user fees requires a fundamental rethinking of the user fee concept."  Oster, who has co-authored the definitive book on the global experience with ATC corporatization (*Managing the Skies*, 2007) also provides a list of 10 concerns that any corporatization proposal must address:   * Different size and scale of the U.S. ATC system * Achieving financial self-sufficiency * Capital investment incentives * Equitable treatment of airspace users * Potential elimination of cross-subsidies * Labor and the right to strike * Inadequate political insulation * Corporate liability * Coordination with military, law enforcement, and emergency services * Safety and the profit motive.   Oster's 11-page TRB paper provides some thoughts on each of these, and I will be turning (or returning) to some of them in forthcoming issues.  [» return to top](#top)  **Controller Shortages Raise Concerns**  Controllers union NATCA issued a news release last week sounding an alarm about staffing shortages over the past three years. The number of certified professional controllers (CPCs) peaked at 11,753 in Sept. 2012 and has declined steadily since then to 10,859 near the end of August 2015. The total controller workforce, including CPCs in training at a new facility and Developmentals (on-the-job trainees) is a somewhat higher 13,906, but is likewise down from 15,236 in September 2012.  It is true that flight activity, as measured by ATC transactions at towers, TRACONs, and Centers, has still not recovered to the levels of 2000 (prior to 9/11). And one could hope that a more businesslike Air Traffic Organization would have experienced productivity gains over the last 15 years such that lower levels of air traffic could be handled safely with a smaller total workforce. But to paraphrase former Defense Secretary Donald Rumsfeld, you manage air traffic with the system you are given, not the system you wish you had. And for whatever bureaucratic reasons, the way the ATO allocates controllers ends up with shortages where we would least want to see them: in some of the system's busiest TRACONs. Here are some numbers from NATCA's materials:   |  |  |  |  | | --- | --- | --- | --- | | TRACON | CPCs Needed | CPCs Actual | Shortfall | | Atlanta | 101 | 74 | 27% | | Chicago | 100 | 70 | 30% | | DFW | 93 | 52 | 44% | | Houston | 94 | 73 | 35% | | New York | 226 | 147 | 35% |   Assuming the "needed" numbers are justified, how does a TRACON cope with such staffing shortfalls? They can opt not to staff all the positions (which could lead to flight delays), or they can (1) require controllers to work longer hours on position, (2) work extended shifts, or (3) work six-day weeks. These three options involve overtime pay, but they also increase the likelihood of performance declines due to fatigue. None of these are good solutions.  For the past several years, the ATO has been trying to dig itself out of the staffing hole created by the 2013 budget sequester, when the FAA stopped hiring for 10 months and closed its training academy for nearly a year. But despite hiring only 554 in 2013 (compared with 925 the previous year), in 2014 the agency hired only 1,112 (due to budget and Academy limits) and an estimated 1,200 in FY 2015, so it is not making up for the 2013 shortfall.  There are several things the ATO could do now, Congress permitting, to ease the strain, pending the larger reform of corporatization. Given the 25% wash-out rate at the Academy, it could scrap its current off-the-street hiring effort and recruit only former military controllers and graduates of Collegiate Training Institute ATC degree courses, who are more likely to succeed. Second, it could end pass/fail grading at the Academy in favor of serious grades based on mastery of the material. Third, it could assign Academy graduates to facilities commensurate with their test scores, to reduce the washout of Developmentals from facilities they cannot handle.  These are not my bright ideas. All have been recommended to FAA by outside experts in recent years—and all have been ignored. We are now face to face with the consequences.  [» return to top](#top)  **Upcoming ATC Event**  ATCA 60th Annual ATC Conference & Exhibition, Nov. 1-4, 2015, Gaylord National Resort, National Harbor, MD (Robert Poole speaking). Details at [www.atca.org/60annual](http://click.email.reason.org/?qs=a2ae3876ee083be0644dbcf4753d0b65dde3ec7afb21ef52c2437a7d308d52c093970471a1d06d35).  [» return to top](#top)  **News Notes**  Remote Tower Planned in Colorado. As the next phase of on ongoing state/federal project focused on the state's ski-resort towns, Colorado DOT and the FAA have announced plans for a remote tower to serve the Fort Collins-Loveland Municipal Airport. The Colorado Aviation Fund will cover the $5.9 million cost of the airfield equipment, which is far less than the estimated $27 million cost of a conventional tower. Controllers at Denver Center and Denver TRACON will manage traffic to and from the airport. If all goes well at this initial site, a similar remote tower will be pursued for the Durango Airport.  Burt Rutan Wins Wright Brothers Trophy. The National Aeronautic Association has announced that the 2015 winner of the Wright Brothers Memorial Trophy is aircraft designer Burt Rutan. Previously, he and his company, Scaled Composites, won the Ansari X-Prize for the successful flights of suborbital Spaceship 1. Since retiring from Scaled in 2011, Rutan has continued to design revolutionary aircraft, including thr forthcoming Stratolaunch.  FAA Managers Anticipate Corporatization. The potential corporatization of the ATO seems to be the major theme of the latest (Sept./Oct.) issue of *Managing the Skies*, the magazine of the FAA Managers' Association. The editorial discusses the impending House bill from Chairman Shuster and argues for a larger stakeholder board that would include FAAMA as a stakeholder. The issue includes a long article on the findings of the MITRE study on the positive results of separating ATC service provision from air safety regulation in six other countries. This is followed by two articles on Nav Canada.  Airservices Australia and Aireon Explore Space-Based ADS-B. Australia's ANSP has signed a memorandum of agreement to explore the feasibility of the company subscribing to the space-based ADS-B surveillance services to be offered by Aireon starting in 2018. Airservices manages air traffic over 11% of the world's airspace, much of it oceanic (where there is no radar surveillance). Within Australia today, ADS-B is required for all flights above 29,000 ft., and as of February 2017, all IFR flights must be ADS-B equipped.  Nav Canada CEO to Retire at Year-End. John Crichton, who helped create Nav Canada and has been CEO since its creation, has announced that he will retire at the end of 2015. He will be succeeded by Neil Wilson, currently Executive Vice President, Administration and General Counsel.  Boeing Report Shows Potential Greener Skies Savings. A June 2015 report from Boeing Company documents reductions in airline fuel burn and CO2 Emissions resulting from the Greener Skies program at Seattle-Tacoma International Airport. Greener Skies nominally added 27 new Performance Based Navigation (PBN) procedures, including new RNP curved approaches, and expanded the use of Optimized Profile Descents (OPDs). For example, an Alaska Airlines 737-800 that can actually use the new RNP curved approach saves 87 gallons of fuel and 1,858 lbs. of CO2 emissions versus the standard approach, saving about $200 per flight. Within three years, Alaska expects its entire fleet will be equipped with the avionics needed to fly RNP approaches. But unless far more RNP curved approaches are in place around the country, with controllers trained in their use, much of this investment could be in vain.  Locating GPS Jammers. A new report by three Exelis engineers explains their development of a system that can detect and locate GPS jammers. A location of interest (eg., an airport) can be equipped with sensors that report data to their Signal Sentry system, whose algorithms use software to geolocate the source of the jamming. Tests show that the system can detect and locate both stationary and moving jammers. Details at: [www.exelisinc.com/signalsentry](http://www.exelisinc.com/signalsentry).  RNP for Mexican Airports. Airbus ProSky has signed a contract with the ANSP of Mexico, SENEAM, to develop and deploy performance-based navigation procedures including RNP at the Guadalajara and Tijuana Airports. The contract includes design of the procedures and training of SENEAM controllers.  New CEO for UK's ANSP. The board of National Air Traffic Services (NATS) has announced the appointment of Martin Rolfe as the company's new CEO. Rolfe has been serving as interim CEO since May, following the retirement of Richard Deakin. Rolfe joined NATS in 2012 as Managing Director, Operations. Previously, he was Lockheed Martin's director of UK civil business.  FAA Reform Website. Our friends at the Eno Center for Transportation have created a website intended as a one-stop reference for ATC restructuring and other aspects of FAA reform. It includes pending legislation, government reports on ATC structure and funding, non-governmental reports on the same topics, and past legislative efforts on ATC reform. Go to: [https://enotrans.org/etl-material/federal-aviation-administration-faa-reform-reference-page](http://click.email.reason.org/?qs=a2ae3876ee083be0ec3c47613e91972eb777fe52179871114de68aca40e7e4be4a585475589362be)  [» return to top](#top)  **Quotable Quotes**  "Because congressional appropriations are highly uncertain, subject to political pressures, and almost always inadequate to meet long-term ATC modernization, FAA and the vendor community have to 'game the system.' Here's how the game is played. Every federal agency must compete for funds, as you all know. FAA must compete with other DOT programs for funding, *and* DOT has to make its case with other federal agencies as well. To appease OMB and Congress, FAA is forced to highlight benefits over costs and set unrealistic schedules. Contractors know that to win the business, they have to do the same thing. There are no bad guys here. Just a system that doesn't work for air traffic control, and hasn't for a very long time. You know, I'm not afraid to say that this 'gaming of the system' has actually set *back* NextGen. To move forward, this cycle *must* be broken. And this can *only* happen by removing ATC from federal procurement and oversight." —Allan McArtor, former FAA Administrator, speech at International Aviation Club, Washington, DC, Sept. 2, 2015  "This business of ours has evolved long past the time when government should be in it. Governments are not suited to run . . . dynamic, high-tech, 24-hour businesses. When they try, they mess up." —John Crichton, CEO, Nav Canada, quoted in Susan Carey, "Nav Canada Draws Interest in U.S.," *The Wall Street Journal*, Oct. 18, 2015  "Current governance restrictions and regulatory capabilities in many parts of the world are holding back the ability of air navigation service providers to respond to change. In turn, the coincidence, I suggest, that a lot of the most innovative thinking in airspace efficiency is driven by ANSPs that have been corporatized (and in some cases completely privatized), or at least given the autonomy to run their business." —Michael Gill, Exec. Director, Air Transport Action Group, "Showing Climate Leadership," *Airspace*, Quarter 3, 2015  "The shares in Airservices may be held by the Minister for Transport on behalf of the Commonwealth of Australia, but the employees are not civil servants and Airservices Australia does not use any federal funds—its operations are entirely funded by its users. It is an anachronism of history that a Senate committee continues to have this 'oversight' role, long after the organization was corporatized. . . . Moving away from government micromanagement and ownership in both Australia and the United States would eliminate the current roundabout of political interference that means management is accountable to political whimsy, rather than to the actual customers." —Andrew Charleton, "ANSP Ownership: Time for a Full Inquiry," *Aviation Intelligence Reporter*, October 2015  [» return to top](#top)  Reason Foundation  This email was sent to [david.richardson@wnco.com](mailto:david.richardson@wnco.com),  from Robert W. 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Hi Sharon,

Hope you had a good weekend.  When you have a moment, could you send me the Poole Report that was referenced at the our ATC Reform meeting last week.

Thanks,

Ginny