

Unshackle the FAA

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The relentless press coverage of “drones” is keeping the actions [and inaction] of the FAA related to UAS in the forefront of the print and electronic media to an extent that overshadows more significant underlying issues.

The first thing to recognize is that aviation and flight have never been safer. That fact needs to be applauded especially because it is the result of many years of hard work on the part of FAA both as airman/airframe regulator and air navigation system provider. This is even more commendable because it was achieved over a prolonged period of budget austerity.

All in all, a very good record such that “the problem” is not so much what has been done as what has not been done or what might have been done by an unshackled FAA.

In looking at the FAA “situation” one struggles to find the analog that would help an outsider to better understand the situation. Think of a newly married couple living in a bedroom of her father's house, or a newly released felon on parole, or a mime in a glass box. The idea being that FAA is under close scrutiny from all sides while also being constrained by the institutional structure that placed it in the Executive Branch of the US Federal Government, subordinate to the Transportation Department and, perhaps even more importantly, subordinate to the White House Office of Management and Budget [OMB] and finally to the whims of the Congress. This combination of external influences not only dictates the FAA budget but also sets the policy framework within which FAA must operate. It is this latter aspect – the policy framework – that is most vexing and, in the end, more troublesome than the financial strictures that come along with the various layers of oversight.

As a starting point recognize that FAA, with little leverage because of its diminished position as described above, is rarely, if ever, able to lay out a realistic program plan and matching budget because there are so many claimants and sensitivities to criticism within the Executive Branch. The senior FAA management must then, ironically, trumpet this package as “what is needed” to faithfully discharge their responsibilities. One result is the protracted acquisition process that results in increased cost and delayed benefits for

projects such as those bundled together as NextGen. Another is the perennial lack of funding for hiring across several of the critical skills like controller, inspector and technician. Somewhat more subtle but equally troublesome is the direction that is given to FAA by OMB and later in the Congressional dicta which are contained in the fully enacted Annual Budget [the Appropriation] as well as the aperiodic overarching Congressional Authorization. The latter documents include specific direction to FAA on a broad spectrum of matters ranging from site specific shall/shall nots to high level dicta with nationwide or system wide impact.

If you are FAA and on the receiving end of these processes, year in and year out, while simultaneously under criticism from many sides [including some of those that boxed you into the situation in the first place] you would certainly be entitled to be frustrated. Unfortunately, the reaction goes beyond frustration to the extent that in the FAA of today there is an institutional reluctance to do anything that will agitate any of their constituencies [e.g. General Aviation, environmentalists, Congress]. This manifests itself in policies that seek “voluntary” compliance rather than a mandate or rulemaking because they fear litigation or bad press or any kind of “blow back”, or resort to “one-off” approvals of proponent-generated standards embodied in safety cases submitted in support of exemption applications.

Neither of these solutions is really satisfactory because reliance exclusively on voluntary compliance results in sub-optimized, mixed equipage operating environments that are very costly to operate and which limit the level of efficiency and cost-savings that might result from unified approach.¹ And relying on one-off approvals creates an exclusive club of operators with privileged operating rights. Although exemptions may relieve the immediate pressure from more determined applicants, the ultimate result, too often, is that

¹ Truth be told, “win-win” regulatory situations are very rare. In virtually all cases, there will be winners and losers, and most often the improvements in safety or efficiency are not cost-free. Indeed, in most cases benefits and costs do not neatly align. By example, NextGen benefits in safety, capacity and efficiency are enjoyed primarily by consumers—the traveling public, shippers, the general public—whereas the costs, by necessity, are incurred by operators, airports and the ANSP. Only by accepting this reality, and together doing the hard work of addressing the fallout, can the entire community move needed NextGen initiatives forward to completion. Policy is the tool by which disconnects between benefits and costs can be reconciled in a way that addresses and resolves inequities among stakeholders and permits realization of needed improvements.

the due diligence or hard science necessary to support a universal standard and operating rule is indefinitely postponed.²

So much for “cursing the darkness”, as presented herein there is an urgent case to be made for an organizational renovation that will “unshackle” the FAA. The authors believe that there is a better way to organize [moves that are operationally, politically and fiscally achievable].

As a matter of priority the US should revisit the organizational model that moves the operation of the National Airspace System [NAS] out the Executive Branch budget and creates a self-financing Air Navigation System Provider [ANSP] entity with freedom to organize and control the airspace. What follows from that is an optimization of the air transportation system that is has more consistent funding, and rationalized staffing and infrastructure. At this time there are about 6 ANSP models from which to choose or “cherry pick” in selecting the US version. Given that choice, the following list of what has not been done that might be more easily addressed:

- a) A policy [decision and implementation] to shutdown thousands of terrestrial navigational facilities [i.e. VOR] and accelerated preventive maintenance on those and other unstaffed facility structures to be retained;
- b) Needs based hiring to backfill/overstaff critical skill positions [i.e. air traffic controller; electronics technician];
- c) A policy [decision and implementation] Shutdown of “primary” radar facilities both en route and terminal and accelerated upgrade of any to be retained;
- d) A policy [decision and accelerated implementation] to mandate carriage of avionics compatible with NAS automation advances with subsidy/penalty ;

² Across the board, NextGen implementation is raising unprecedented questions about what standards should be applied to assure a level of safety in the NAS equivalent or better that what is enjoyed today. Although operators and new vehicle proponents such as UAS manufacturers, and community standards setting organizations can do the work of testing and documenting availability, reliability, and compatibility, in today’s regulatory environment, the determination of “how safe is safe enough” and translating that essentially policy determination into a technical standard is an inherently government function. FAA could benefit from the technical support and advice of an Aviation Safety Council composed of high level technical experts, users and stakeholder organizations for a “gut check.” But in the end, levels of responsibility and an organizational construct for making timely decisions on safety standards is an absolute prerequisite to NextGen implementation.

- e) Resolution of the impasse surrounding the integration of more capable [large] remotely piloted vehicles into NAS, including market based approaches to access that would address the influx of large numbers of UAS into airspace already experiencing congestion;
- f) Aggressive consolidation of staffed facilities [i.e. ATCT & TRACON];
- g) Creation/deployment of unstaffed or virtual control towers vice current ATCT in lower activity locations;
- h) Creation of 4DT airspace for *Trajectory Based Operations*. TBO could transform the NAS in a way that would improve safety for everyone, increase efficiency and capacity, accommodate increasing levels of automation, and pave the way for safe integration of UAS into the NAS
- i) A safety assurance system based on private sector liability and insurance concepts that would incentivize speedy implementation of NTSB recommendations;
- j) Ubiquitous information sharing.

The organizational model for residual functions currently resident in AVS is not so obvious because those functions are viewed as “inherently governmental”. However, if we take a fresh approach whereby the ANSP and aircraft manufacturers/operators operate subject to market forces, including liability/insurance requirements, these could well be as, or even more, effective than government regulation alone for assuring safety. This new paradigm would be a three-tiered approach to safety that mimics what is now in place for automobiles:

- I. Private tort liability and insurance constructs in primary safety assurance and incentivizing role
- II. Government in an independent testing and informational role—that is, testing vehicles and systems in an extreme but controlled environments, accumulating data, and publishing results
- III. Government safety rules only for emerging issues that are universal, and/or egregious, and for which the private sector liability regime is proving ineffective

This private/public approach may prove safer than pure government regulation because:

- There is no presumption of safety (in a liability sense) that comes from meeting a government standard (which may not be tough enough or

may be out of date)—the manufacturer is held to a standard of care that is based on state of the art and commercial reasonableness

- Enforcement is based on the tort law system, which operates automatically, is not dependent on government financing for enforcement resources, and compensates the victim[s] of mishaps as well as punishing malefactors and deterring future malfeasance
- Customers/public are more vigilant because they know they need to be informed consumers about the safety they're buying and have the option of buying more safety if it's important to them.

Whether the air traffic system remains a government function, or is to a greater or lesser degree converted to private enterprise, air travelers and the general public will always demand that the government assure a reasonable level of safety in air transportation. But the traveling public understands on some basic level, that deciding what expectation of safety is reasonable is a balancing act between low fares and risk, and given the choice would probably opt for a reasonable level of safety and lower fares, over zero-risk at the expense of a gold plated safety assurance regime or one that is paralyzed by competing objectives.