"No Fooling! Let's Get Serious About Safety"

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Thank you, Mike [Gold]. And good morning, everyone.

For the last several years, we have been in the habit of scheduling our COMSTAC meetings twice a year, in May and October. This year, though, for a variety of reasons, we decided to try something new, and we moved things up a month. As a result, here we are, getting together for our Spring meeting on April 1, April Fools' Day, a day when people play practical jokes and harmless pranks on each other.

Over the years, there have actually been some very significant aerospace-related events that took place on April 1. For example, on April 1, 1945, Congress passed a supplemental appropriation for NACA to expand the nation's research on guided missiles, including the establishment of a rocket launch facility at Wallops Island, Virginia.

On April 1, 1954, President Eisenhower signed the order establishing the United States Air Force Academy. Until the Star Fleet Academy opens for business, USAFA is going to be a prime source for our nation's future air and space leaders. And I should note that we are honored to have two COMSTAC members who are graduates of that distinguished institution.

On April 1, 1960, Tiros-1, the very first weather satellite, was launched. And on April 1, 1967, the Department of Transportation began operations, with Alan S. Boyd as its first Secretary. It took another 17 years before commercial space was recognized as an official mode of transportation, but we got there eventually.

To start out our discussions today, I'd like to talk about four key issues that are facing us right now: AST resources; the potential use of hybrids and space flight support vehicles for space flight training purposes; the emergence of new, non-traditional, in-space operations by the private sector; and figuring out how to transition from the Learning Period to an appropriate, non-burdensome regulatory regime for commercial human space flight.

One of AST's biggest challenges right now is keeping pace with industry. As you know, we have seen a huge increase in the number of launches in the last few years. In FY12, we had a grand total of 3 licensed or permitted launches. In FY13 we had 18 – a six-fold increase. Last year, the level of activity continued to grow, with 19 licensed or permitted launches. At the same time, we now have 9 FAA-licensed spaceports, with ongoing discussions about new launch sites in Texas, Colorado, Florida, Georgia, Alabama, and Hawaii. In addition, the kinds of operations that are being proposed are becoming much more complex, with more and more missions requiring rendezvous and proximity operations, first stages that land on barges or return to the launch site, and proposals for satellite servicing, lunar bases, and asteroid mining. All of this has been taking place during a period with essentially flat budgets for AST, with no significant increases in budgets or staffing levels. If I were going to try and describe our current situation in a single word, I would say that it is "unsustainable." We are working hard and doing the best we can, but I don't think we can realistically keep up this level of activity indefinitely with our existing resources.

Fortunately, there is a glimmer of hope on the horizon. I'm pleased to report that the President has requested $18.114M for AST in FY16, which represents about a 9% increase over FY15, and

which would allow us to hire 25 new people. That would go a long way towards getting us back to where we need to be at this point. However, should Congress decide not to approve the requested increase for some reason, we will probably need to start prioritizing our license application evaluation and inspection work, and I think it is quite likely that there may be some schedule impact to upcoming operations as we go forward. So I would encourage you to incorporate that into your contingency planning scenarios.

The second issue I would like to discuss is the potential use of hybrids and space flight support vehicles for space flight training purposes. Last year Congressman Posey of Florida and Congressman McCarthy of California introduced H.R. 3038 -- the SOARS Act. It would allow hybrid systems and Space Support Vehicles (such as former military aircraft or other high-performance experimentally-certificated aircraft) to be used for training or other non-launch, space-related activities, under a license from AST, at FAA-licensed spaceports. Now I don't know whether that bill, or something like it, is going to be introduced in this session of Congress, but I think it is a very interesting piece of legislation, and the FAA was asked by Congress to provide technical assistance on it, so there appears to be at least some level of interest on the Hill.

I would just observe that there are currently 9 FAA-licensed spaceports, of which 5 have runways that would allow for horizontal operations. Three additional sites (Ellington, Front Range, and the Shuttle Landing Facility) are hoping to get their spaceport licenses this year. But right now, NO ONE is hosting commercial launches! Everyone is just waiting for the suborbital space tourism companies to start building and flying multiple tail numbers, so that each

spaceport can have their own vehicles operating there. But while we wait patiently for the suborbital launch tempo to pick up, there are a number of companies that would love to be able to offer non-launch, space-related training using hybrids or former military aircraft. Don't forget, NASA, the gold standard in human space flight, has their astronauts fly regularly in T-38 training aircraft because it provides excellent mental and physiological preparation for their space missions. But in the commercial world, companies are not allowed to offer comparable training experiences, because today, experimentally-certificated aircraft cannot be operated for compensation or hire.

However, should the SOARS Act or an equivalent piece of legislation be signed into law, those companies could start operations almost immediately at one of our existing, but currently underutilized, spaceports. That would mean jobs and economic activity, plus the safety benefits associated with increased training for flight crew and space flight participants. So it will be very interesting to see what Congress decides to do on this topic.

The third issue I would like to discuss involves the emergence of new, non-traditional, in-space operations by the private sector. Several companies are currently planning non-traditional operations in space, including commercial space stations, satellite servicing, lunar bases, and asteroid mining. Two of those companies have asked AST to perform a Payload Review, to get a sense for what the regulatory environment might look like for some of those missions. Although the operations themselves may be several years off, preliminary planning and fundraising efforts are already underway. As part of the Payload Review process, we talk to other government agencies like NASA, DoD, Commerce, and the State Department, and what

we heard from the State Department was that our current regulatory framework appears to be ill-equipped to ensuring that the United States can satisfy our obligations under the Outer Space Treaty, which requires that nations "authorize and continuously supervise" their non-governmental activities in space, including on the Moon and other celestial bodies. At present, no government agency has been tasked to authorize or continuously supervise those operations. Speaking for the FAA, we are willing to take on this responsibility. Of the other agencies we have talked to, including NASA, DoD, DOC, and FCC, no one else is interested in doing it. We just need a decision by the government as to who should have the job, and we can get on with it.

There are probably several different ways that we could choose to attack this problem, but one of simplest is based on COMSTAC's recent recommendation that AST be able to issue a "Mission License" to companies planning to operate a spacecraft in outer space, with the objective of avoiding collisions and minimizing the creation of orbital debris. A company could ask for one just for in-space activities, if, for example, they were planning to launch on a foreign launch vehicle. Or they could apply for a single license, covering launch, in-space operations, and reentry, all in one. I don't see any need for lots of burdensome in-space regulations to be issued. The Mission License would be focused on satisfying the requirement of the Outer Space Treaty, and that's about it. With SpaceX and Google, and OneWeb both planning constellations with hundreds, if not thousands of satellites, and with the proliferation of cubesats that we are starting to see, the urgency for the U.S. government to get its act together on this topic is becoming greater by the day.

The fourth and final issue I would like to talk about is the process of transitioning from the Learning Period to an appropriate, non-burdensome regulatory regime for commercial human space flight. As you know, the Learning Period is currently set to expire on October 1, but it sounds like some folks would like to extend it once again. My concern is that we appear to be just kicking the can down the road. I understand industry's concern about the potential for burdensome regulations. At the same time, AST has no plans for Human Space Flight regulations in the near term. We have published our Recommended Practices document, and have encouraged industry to develop consensus standards. But there is currently no incentive for industry to work on them. So here's an idea for a new approach: Government and industry can start working together now to set up a regulatory framework that industry can support. The goal would be to have a top-level, performance-based regulation that references industry consensus standards, modeled on the approach currently being used for Light Sport Aircraft. That would allow the industry to have a regulatory framework that makes sense, and would prevent an over-reaction and hastily crafted, inappropriate regulations in response to a high-profile accident in the future.

So those are some of the issues that I think we need to be addressing. I look forward to hearing your recommendations on these and other topics later on in the day.

One final request: As you know, we are conducting an experiment today, to see if we can fit two days worth of Working Group and Committee discussions into a single day. If it works, we've saved all of you some time. If not, we can always switch back to the previous approach. But please let Madi know what you think.

As I wrap up, I'd like to again take this opportunity to express my appreciation to all of the members of COMSTAC for your time, and your thoughtful recommendations. This is an exciting time for commercial space, and together, we can really make some good things happen. Thanks for all you do!