



2017 AIAA Key Issues: Aerospace & Defense Competitiveness and Security

The FAA Extension, Safety, and Security Act of 2016 is set to expire on 30 September 2017. The law's expiration threatens several projects vital to our nation's future as an aerospace leader, and Congress must provide long-term reauthorization with adequate funding in order to meet program requirements.

Recommendations:

1. Improve the efficiency, transparency, and timeliness of the aircraft certification process by removing the current overly prescriptive design requirements and replacing them with performance-based airworthiness standards.
2. Provide necessary funding to fully implement the Next Generation Air Transportation System that establishes a modern air traffic management system with the capability to expand and accommodate the growing traveling public.
3. Apply common effects-based community noise standards for supersonic civilian flight over land as is applied to subsonic flight.
4. Establish aircraft emissions regulations, with the FAA as the lead U.S. regulatory agency, that align with those of the International Civil Aviation Organization and the European Aviation Safety Agency. This will allow aircraft manufacturers to comply with one set of standards.

Issue Area: UAS Safety and Integration

Much more must be done to safely, efficiently, and fully integrate unmanned aircraft systems (UAS) into the National Airspace System. Research and policy discussions are already underway to allow beyond-line-of-sight operations, flights over people, access to higher altitudes, and platforms above 55 pounds. It has been projected that the expansion of UAS technology will create more than 100,000 jobs and generate more than \$82 billion to the economy in the first decade following integration into the airspace.

Recommendations:

1. Provide necessary funding for the development and integration of a UAS Traffic Management System.
2. Implement a "risk-based, technology neutral" regulatory framework – rely on a safety risk management process that assesses the entirety of a UAS operation instead of solely regulating a specific vehicle or system.

Issue Area: Commercial Space

The DOD's Joint Space Operations Center provides space situational awareness and conjunction analysis as a byproduct of its mission to protect national security assets in space; however, almost all of these analyses do not involve military spacecraft, but rather commercial. Transitioning these responsibilities to a new lead civil authority will free-up resources for military needs, enhance the safety of space operations, preserve the space environment for future users, and maximize commercial capabilities.

Recommendation: Identify the lead authority for civil space traffic management and authorize adequate resources and information access to develop and implement an overall space traffic management approach.

The level of activity for commercial space operators has grown significantly in recent years. To support this growth, while continuing to ensure public safety, it is essential that the FAA Office of Commercial Space Transportation has the resources that it needs to keep pace with industry's progress. Moreover, as emerging nontraditional commercial space activities increase in frequency and scope, it is imperative that the U.S. government define a process for authorizing and supervising these activities while fulfilling its obligations to the Outer Space Treaty of 1967, as well as identify a lead agency to execute this process. Delaying this task will result in a continued lack of stability, predictability, transparency, and efficiency, and will hinder the development of U.S. commercial space activities.

Recommendations:

1. Ensure the U.S. commercial space transportation industry is supported by a fully staffed and technically robust FAA Office of Commercial Space Transportation to assure expeditious review of permits and preclude delays that could otherwise harm U.S. industry competitiveness.
2. The FAA Office of Commercial Space Transportation should serve as the lead entity to support nontraditional commercial space activities, via an efficient and transparent registration-based regime leveraging the office's expertise and experience in successfully conducting payload reviews via the interagency process.

Issue Area: Promote Aerospace Exports

The U.S. Export-Import Bank is unable to approve transactions exceeding \$10 million because its Board of Directors lacks a quorum. Three of five board positions are currently vacant and this has significantly hampered the bank's operations, placing U.S. aerospace companies at a competitive disadvantage in the global market.

Recommendation: Either confirm all open board appointments or allow the bank's two board members to approve transactions in excess of \$10 million.

The foreign military sales (FMS) process is cumbersome and time-consuming, straining relationships between U.S. producers and their international customers and causing them to procure military equipment from other international producers. This negatively impacts the U.S. economy and jobs.

Recommendation: Reform (streamline and shorten timelines) the FMS process to, at a minimum, make it competitive with the services international customers experience with other producers. A goal should be to level the playing field across a broader range of markets.

Issue Area: Increase Priority of Supersonic/Hypersonic National Defense Capabilities

There are demonstrated international threats resulting from robust investment in research and development, including new ground test and computational capabilities, development of new products across a range of applications, and significant flight testing to validate designs and define remaining needs.

A 2016 report by the National Academies of Sciences, Engineering, and Medicine suggests that China and Russia are demonstrating dramatic strides in hypersonic technology, while the United States is in danger of falling behind the state of the art. Unless greater urgency and cohesiveness are injected into this crucial area of defense technology, the United States will become vulnerable to the threat from a new class of superior high-speed maneuvering weapons.

Recommendations:

1. Provide support for product development that directly counters current and expected threats.
2. Provide incentives for transitioning technologies from the labs to product applications.
3. Ensure the availability of federal research, development, test, and evaluation capabilities, including sustaining/modernizing existing ground test capabilities and providing new and improved test (ground and flight) and computational capabilities targeted at new technologies research and development.