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Presidential Special Report

Aerospace Industry Has Long Task List for Next President

Aviation Week & Space Technology Jun 30, 2008, p. 48

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No matter who wins the White House in November, John McCain or Barack Obama will probably be long gone or well into a second term before all the policy changes sought by the aerospace and defense industry could yield results.

They include such long-term commitments as an overhaul of the education system, changes to the tax code and an easing of regulations governing the export of high-tech parts and equipment—and more money for [NASA](#) research.

In this presidential election year, trade and professional associations, business leaders and state government officials are pressing both senators for answers about their plans for aerospace, commercial aviation, defense and space. Those diverse interest groups, and others, are also pushing ambitious agendas that range from seeking more money for teaching math and science to tax breaks for research and development (R&D).

One of the biggest industry concerns is the aging and shrinking U.S. aerospace workforce. In 1990, there were about 1.1 million aerospace workers. For the first quarter of 2008, that number stood at 651,700 and the average age was 45, according to the Aerospace Industries Assn. (AIA). One factor behind those worries is that the U.S. aerospace industry is not attracting enough skilled workers to replace the one in four eligible to retire starting this year. More alarming, due to consolidations and layoffs during the 1990s, aerospace is considered a less than desirable career path for graduating engineers (*AW&ST* Mar. 5, 2007, p. 44).

Now the AIA, the American Institute of Aeronautics and Astronautics (AIAA) and the Aerospace States Assn. (ASA) are all urging the next President to seek more funding for education at all levels to develop the engineers and scientists of tomorrow. Their strategy includes focusing on science, technology, engineering and math (STEM) skills in grade school and high school. Another goal is getting more college graduates interested in aerospace.

“There’s just not enough engineers and scientists out there” to fill the expected brain gap when the baby boomers start retiring in droves over the next decade, says George Muellner, AIAA’s new president. Recently retired as president of Advanced Systems for [Boeing’s](#) Integrated Defense Systems unit, Muellner says most of the shortfall is in engineering, “not just avionics and propulsion and all your traditional competencies, but also systems engineering.”

Industry, government and academia need to come together to reignite the excitement of the Mercury and Apollo space programs that first drew baby boomers to the industry, Muellner says. “Inspiring them to look [at aerospace] is a key issue,” he adds.

Industry groups have developed checklists of topics they want the next administration to deal with right away. At AIA, President and CEO Marion Blakey is pushing to modernize the U.S. export control system, known as the International Trade in Arms Regulations (ITAR); transform civil aviation by developing and deploying the Next-Generation (NextGen) satellite-based air traffic control system at the [FAA](#); invest in updating the defense acquisition process; and increase U.S. financial and policy support for both civil and commercial space projects.

NextGen, boosting investment in NASA, the looming aerospace workforce crisis and reforming high-tech export controls are also priorities with the AIAA and the ASA. The latter group comprises 35 lieutenant governors, or governor-appointed representatives, from states with a heavy aerospace presence.

So far, little is being said by either candidate about these issues. “Presidential campaigns are opportunities to talk about issues that have a real impact on our nation, and I just don’t see a lot of that happening,” says Vermont Lt. Gov. Brian Dubie, chairman of the ASA. “It’s disheartening,” he says, adding: “We should be talking about competitiveness, we should be talking about ITAR, we should be talking about the dollar and its effect on aerospace.”

Both Obama and McCain have targeted math and science in their campaign rhetoric. Obama wants to recruit graduates with math and science degrees as teachers and ensure that all children have access to a “strong science curriculum.” McCain wants to encourage programs that train retiring military personnel with technical backgrounds for science and math teaching.

Retired [Lockheed Martin](#) Chairman and CEO Norman Augustine believes that whether the next President is McCain or Obama, the issue of improved STEM education will be taken up. Augustine headed a National Academies committee that concluded in a 2005 study entitled “Rising Above the Gathering Storm,” America’s economic future depends on better science and math teaching in grades K-12.

“I’ve talked to both about the results of the Gathering Storm study. Both listened carefully and seemed to understand the issues,” Augustine told a recent AIA luncheon. “Senator Obama recently made some positive comments, I thought, on the topic. I’ve not heard anything that Senator McCain has said publicly, although privately he seems supportive.”

Funding for NASA—both space and aeronautical research—is a high priority with the aerospace and defense industry. The lieutenant governors’ group is urging the next President to increase investment in NASA’s aeronautics research, especially in the areas of energy and the environment. Cuts since 2003 have reduced fundamental space-related life and physical science research programs by 85%, and that has affected more than 1,700 scientists and nearly 3,000 students.

Nearly all of the recommendations boil down to one concern: Budget cuts and priority shifts during the last decade threaten the competitive edge held by the U.S.—the first nation to land men on the Moon. And that has wide-reaching implications that extend beyond science and technology to the economy and national security.

Illinois Lt. Gov. Pat Quinn, chairman of ASA’s policy committee, says modernizing export controls is the first item the next President should tackle in the aerospace and defense area. “Right now our U.S. export control system is still using policies dating back to the Cold War—well out of date,” he notes.

The U.S. restricts the export of defense items or munitions and dual-use technology—high-tech military equipment that could have a civilian application. Different aspects of the ITAR program are administered by the Commerce and State departments, leading to mistakes, confusion and backlogs for obtaining export licenses. The [State Dept.](#) regulates arms exports while the Commerce Dept. oversees dual-use items, which have both military and civilian applications.

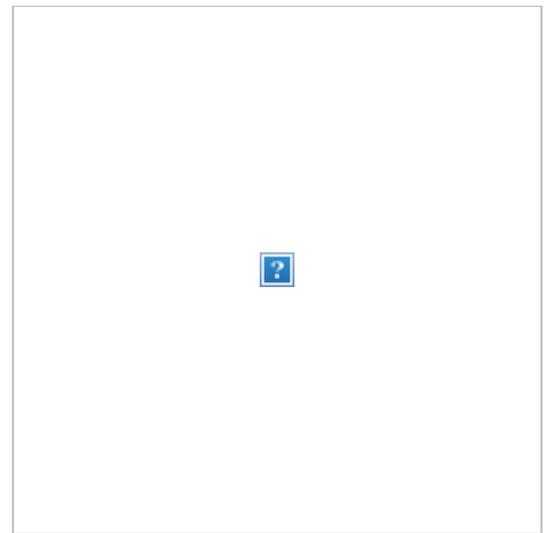
In 2007, the [Government Accountability Office](#) designated the U.S. export control system as a high-risk area that bears constant oversight.

At the State Dept., “the number of license applications has been growing 8-10% annually and is now already nearing 100,000 cases,” William Reinsch, a former State Dept. official who’s now president of the National Foreign Trade Council, told a Senate hearing on export licensing in April. “My fundamental conclusion from having observed the system from both inside and outside is that it does not function very well, despite efforts over the years to clarify and simplify the process,” he added.

The impact isn’t only in the physical realm, says Phil Hattis of Draper Laboratory in Cambridge, Mass. Because ITAR also limits the access of foreign-born nationals to sensitive material and information, “we can’t talk about ITAR-restricted technology in open forums where there are foreign students,” he says.

That issue circles back to worries about the workforce. While universities in China and India are graduating thousands more engineers than the U.S., many of those engineers cannot work in the U.S. on military or classified material—because they don’t have security clearance.

But there’s no guarantee Obama or McCain will take up the ITAR issue, or get it passed in Congress if they do. “I doubt a new administration will be willing to tackle that,” says Edward Litwak, a former State Dept. official who’s now a fellow at the Wilson Institute, a Washington think tank. He says the Clinton White House tried to make some changes in export law and got nowhere.



The aerospace industry says tomorrow's workforce needs training in math and science today. These elementary school students are participating in the Bringing Up Girls in Science after-school program at the University of North Texas in Denton. (Credit: MARK MORTENSON/UNIVERSITY OF NORTH TEXAS)

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