

AIAA – American Institute of Aeronautics and Astronautics

AERONAUTICS

- **Aerospace is the single largest contributor to a positive trade balance - \$60B in 2010 – but this number has been shrinking in recent years. Europe and Asia invest heavily in aeronautics research and development while U.S. investments are declining. How will you protect and enhance U.S. competitiveness in civil and military aeronautics research and development?**

We need a National Commitment – a long-term policy and plan to enhance U.S. competitiveness in scientific research and development. Our national infrastructure has been neglected for too long and there is going to be a cost to “catch up” with the gaps and repairs that must be addressed. It is the same with technology and science, technology, engineering and mathematics-related growth and development in our country – we are falling behind, and it is past time to correct this.

Our commitment to K-12 education, as well as beyond, must be to increase the “scientific literacy” and level of all students. I would encourage public-private partnerships to enhance the learning environment, as well as support new efforts at technology education and internships in high school and college level students.

The Jones Act is a law protecting U.S. companies that build ships to make sure that US ships are built by U.S. companies. Perhaps it is time to examine the need for something similar to this in the aerospace arena – especially when US DOD assets are part of the equation. A law requiring that 75 to 80 percent of all DOD assets (especially, aircraft) be produced by U.S. companies (with no more than 25 percent foreign ownership) might be a way to protect our industrial base and our workers. [U.S. Defense Manufacturing Protection Act]

Some examples of steps that could be taken:

1. Begin immediately to address the whole issue by creating a policy-making body that will begin to identify and address the issues... a Task Force for STEM - science and the future;
2. More STEM education at all levels of education in America;
3. Government and Business partnerships that would help to improve the recommendations of the Task Force;
4. Commitment to extend the school year from 180 to 200 days (minimum) – made possible by closing the U.S. Department of Education and leaving the funds in the individual states... a savings of nearly \$80 billion per year;
5. U.S. Defense Manufacturing Protection Act (as outlined above)

Dan Matthews for Congress, AIAA Questionnaire Responses

- **The European Union’s position on controlling emissions will drive America’s need for investment in aeronautics technologies to meet the stricter environmental requirements placed on U.S. passenger and cargo carriers that fly into Europe. The EU has a well-planned, well-funded aeronautics vision, roadmap, and supporting projects. How will you address this need for technology investment and strategy across NASA, FAA, and DOD?**

If elected, I would oppose unilateral carbon reduction schemes like the E.U.’s in favor of a global approach to emissions reduction? The United States and its companies – like Boeing, United Technologies, G.E. and others – are at the cutting edge of bio-fuel technology and other clean air efforts that far outreach Europe and the rest of the world. Carbon trading schemes are often a ruse for anti-competitive efforts and other agendas – aimed at crippling competitors. The devil is usually in the details of all agreements, treaties, etc. as exceptions, waivers and exclusions are usually included that invariably end up saddling the U.S. with most of the load. Foreign nations and foreign corporations end up benefitting from these “agreements” – while the U.S. and its people are left holding the bill. The Kyoto Protocol is a great example of this principle. Good idea, perhaps, but rotten implementation – and so it fails to be ratified in the U.S. Senate.

- **Air travel is projected to triple in the next 20 years. How will you meet the demands of air travel (including the integration of unmanned vehicles) in the face of an aging air traffic control system which is both capacity and capability limited?**

I would like to see funding for Research and Development – such as in NASA and the military – be renewed and increased as the benefits of technology eventually reaches the aviation industry – improving both safety and profits. But, I would like to see the majority of efforts to come from the private sector, rather than government. NASA and the military might offer contracts, but the innovation usually comes when their heavy hand is removed. Kelley Johnson and the Skunk Works is but one historic example of what happens when we remove government from the equation. Government – at every level – has demonstrated that the process and genius of discovery and innovation is most often thwarted when bureaucrats are involved.

Whether in bio-fuels, propulsion, metallurgy, composites, navigation, airport, aircrew and airspace enhancements or environmental protections – the aviation industry both creates and uses technology to serve its customers. Enhancing and updating technology in the air traffic control area is another area needing improvement. Limitations on unmanned aircraft/vehicles and the safety threat they pose should also be examined.

I would also like to see the United States – and the aviation industry – create or foster an aviation technology education program that could be introduced at universities and community colleges throughout the U.S. – even to fostering an “Ab initio-type” effort that would benefit our country as well as other countries, and the aviation / aerospace profession as well. The growing demand for pilots demands standards of excellence, training and safety in the aviation industry and will require a vision and commitment to that end.

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DEFENSE AND NATIONAL SECURITY

- **Considering the significant financial and workforce impacts expected to be felt by the aerospace and defense industry due to decreasing federal budgets, how do you plan to balance reduced resources with increased challenges to our national security from cyber threats, from the continued growth of China, and from other emerging areas of concern around the globe?**

Cyber security and the threat of technology transfer pose real challenges to policy makers and lawmakers as well. We must maintain a national commitment to protecting ourselves against all threats to our national security. A cyber attack could have as devastating consequences on our economic and national security as a nuclear attack – we cannot ignore or minimize the threat.

Our commitment to domestic, international and national security in this regard must be broad-based and proactive – anticipating threats from both nation-states and isolated, independent terrorist groups. We cannot know where the threat may come from or what the threat may even be – we are in an evolving environment. All of this necessitates a long-term and broad approach to monitoring and circumventing all potential threats... whatever the cost. Business and industry in cooperation with the federal government should be participants in guaranteeing our security through corporate security efforts.

INDUSTRIAL BASE

- **The aerospace and defense industrial base possesses distinctive capabilities and expertise required to address the unique and diverse missions and products demanded by both civil and military customers. For U.S. companies engaged in the global marketplace, they continue to be at a disadvantage due to adverse economic and intellectual exchange effects resulting from the current International Traffic in Arms Regulations (ITAR). What specific actions will you take to address this imbalance in competition?**

As we become more and more globalized, U.S. companies fight an uphill battle in competing with foreign companies in the marketplace – placing us in a darned-if-you-do / darned-if-you-don't dilemma. Technology invades all aspects of our lives, but it has gone global already and we must accept the fact that there is very little technology that isn't already in the hands of other nations – even our foes. A more centralized and focused clearinghouse for the issuance of exemptions would be a good step toward fostering our competitiveness. Currently, the Department of State authorizes special exemptions and the process is too cumbersome and slow. It must be enhanced.

RESEARCH AND INFRASTRUCTURE

- **How will you sustain and revitalize major domestic aerospace research capabilities, testing facilities, and related infrastructure across the government, in the commercial sector, and at universities?**

I believe that much of the energy and effort in R&D should take place in the private sector, since the involvement of government invariably escalates costs and inhibits innovation. Let the marketplace work, where the profit-motivation and incentives for innovation are rewarded. Public-private partnership almost always produce better results than government-based efforts. Tax and other incentives for business, industry and universities could help spur R&D efforts at every level.

Again, I would like to see funding for Research and Development – such as in NASA and the military – be renewed and increased as the benefits of technology eventually reaches the aviation industry – improving both safety and profits. But, I would like to see the majority of efforts to come from the private sector, rather than government. NASA and the military might offer contracts, but the innovation usually comes when their heavy hand is removed. Kelley Johnson and the Skunk Works is but one historic example of what happens when we remove government from the equation. Government – at every level – has demonstrated that the process and genius of discovery and innovation is most often thwarted when bureaucrats are involved.

A renewed commitment to domestic manufacturing is certainly in order – and I would here reference HR-5865, as an example of some steps that could be taken. “The American Manufacturing Competitiveness Act” (HR-5865), would establish the American Manufacturing Competitiveness Board within the Department of Commerce to advise the President on issues affecting manufacturing in the United States. The board would be required to perform a comprehensive analysis of the nation’s manufacturing sector and, using results from the analysis, **develop a strategy to improve the competitiveness of domestic manufacturing efforts.** Results from the analysis and strategy would be available to the President to comply with the bill’s requirement to publish a strategy in 2014 and again in 2018 to promote growth in the nation’s manufacturing sector.”

The board would consist of 15 members: five from the public sector appointed by the President, including two governors from different parties; and 10 people from the private sector appointed by the House and the Senate, with the Majority appointing three and the Minority appointing two from each chamber.

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In preparing the analysis, the board would be required to study, among other things:

- The current environment for manufacturing, including government policies—at the international, federal, state, tribal, and local levels—that affect the sector;
- Forecasts, both short- and long-term, for domestic and international trends in manufacturing;
- Actions by federal agencies that affect manufacturing; and
- Factors that affect the growth and stability of the sector such as workforce skills;
- Trade, energy, and monetary policies; research and development; and protections for intellectual property.

Using results from the analysis, the board would be required to **develop a strategy to improve the competitiveness of the nation's manufacturing sector**. The bill would require the strategy to include recommendations to eliminate or consolidate government programs, improve interaction between the government and the manufacturing sector, and amend any regulations that put the industry at a competitive disadvantage in international markets.

SPACE AND SPACE EXPLORATION

- **What should be the specific U.S. goals for human space access and spaceflight over the next 10 years?**

Do not stop exploring... let private companies do their part. Cooperation and joint efforts with allies might well lead to better results – taking us farther and more quickly than if we go it alone.

- **How can the government best motivate and utilize private investment and international collaboration to advance national space goals?**

Through tax incentives and even treaties to foster creativity and exploration.

- **How would you sustain our nation's cutting-edge capabilities edge in space while protecting assets from increasing adversarial and debris threats?**

Make a national long-term commitment to space exploration and technology with both short-term and long-term objectives. Maintain internal security as a standard that cannot be violated. Recognize the need to cooperate with business and industry in exploration and R&D, as well as technology security.

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WORKFORCE AND EDUCATION

- **The production of college STEM degrees is on the rise around the world, and costs of advanced STEM education here in the U.S. are growing. How will you incentivize students to pursue college STEM degrees, and keep the costs of an advanced STEM degree within reach of talented students?**

Part of the national commitment to technology and scientific research and development must be a commitment – in the form of specific programs – to identify and reward (encourage) talented young people in specific fields. From 7th and 8th grade on, programs, competitions and testing could be developed to identify and encourage young talents students. Scholarships, merit reward programs – where, for example, the top ten to fifteen percent of scholars receive tuition credits or breaks – would help to assist and draw in highly capable students for the future. Tuition tax credits and loan forgiveness programs could also be considered. This “investment in the future” is long overdue.

- **Space and aeronautics are inspiring to America’s students. What role should NASA play in primary and secondary STEM education, and how large should this role be?**

Though NASA and other governmental organizations could play a role, I would prefer to see business and industry take a more active role in identifying and rewarding our students. Tax credits and the like could play a part in providing incentive to business and industry – but the motivation to attracting good talent should be encouraged at all levels. Internships and guaranteed employment attached to scholarship enticement programs might be another avenue for both NASA and industry to attract and assist young talent.

- **Airplanes, spacecraft, and all America’s cutting-edge defense systems don’t just build themselves. They are built by people. What role should the government play in creating and sustaining the world’s most advanced aerospace and defense workforce?**

Repeating my previous response, above:

We need a National Commitment – a long-term policy and plan to enhance U.S. competitiveness in scientific research and development. Our national infrastructure has been neglected for too long and there is going to be a cost to “catch up” with the gaps and repairs that must be addressed. It is the same with technology and science, technology, engineering and mathematics-related growth and development in our country – we are falling behind, and it is past time to correct this.

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5. U.S. Defense Manufacturing Protection Act (as outlined above);
6. Consideration of a “Twelve plus one” School year – where the added year could be used for STEM training; tech schools for students going into trades (mechanics, etc.); and community service work, or as an additional year of college preparation for those “not quite there.” And, if you add another year for community service, perhaps an additional year might be useful in more fully preparing the next generation for the challenges of life, learning and the world. It is time we start thinking outside the box and be creative in better preparing the students of today for the world they will inherit and then build.

Thanks for the opportunity to respond to your inquiry. I look forward to a continued dialogue on these issues.

Sincerely,

Dan Matthews