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I. Introduction

The Commission on the Future of the United States Aerospace Industry was established by Section 1092 of the Floyd D. Spence National Defense Authorization Act for fiscal year 2001, Public Law 106-398. It was formed to study the future of the U.S. aerospace industry in the global economy, particularly in relationship to U.S. national security; and to assess the future importance of the domestic aerospace industry for the economic and national security of the United States. The Commission will issue a final report to the President and Congress on November 19, 2002. Periodic interim reports will also be issued.

A. Mission Statement

The Commission shall develop and recommend a series of public policy reforms that will permit the U.S. aerospace industry to create superior technology, excel in the global marketplace, profit from investments in human and financial capital, benefit from coordinated and integrated government decision-making, assure our national security, access modern infrastructure, and give the United States a capacity throughout the 21st Century to reach for the stars.

B. Congressional Mandate

The Commission was given a broad mandate to study:

- The adequacy of projected budgets of the federal departments and agencies for aerospace research and development and procurement;
- The adequacy of the current acquisition process of federal departments and agencies;
- The procedures for developing and fielding aerospace systems incorporating new technology in a timely fashion;
- The policies, procedures, and methods for the financing and payment of government contracts;
- Statutes and regulations governing international trade and the export of technology;
- Policies governing taxation, particularly with a view to assessing the impact of current tax laws and practices on the international competitiveness of the aerospace industry;
- Programs for the maintenance of the national space launch infrastructure; and
- Programs for the support of science and engineering education.

C. Commissioners

The Commission is composed of 12 members: six appointed by the President, two each by the House and Senate Majority Leaders, and one each by the House and Senate Minority Leaders. The Chairman is the Honorable Robert S. Walker, former Chairman, U.S. House of Representatives Committee on Science, and the Vice Chairman is the Honorable F. Whitten Peters, former Secretary of the Air Force.
The commissioners appointed by the White House are:

Dr. Buzz Aldrin  
President, Starcraft Enterprises, Sharespace, Starbooster & Starcycler

Mr. Edward M. Bolen  
President, General Aviation Manufacturers Association

The Honorable John W. Douglass  
President, CEO and General Manager, Aerospace Industries Association

Dr. Neil de Grasse Tyson  
Director, Hayden Planetarium

The Honorable Robert S. Walker  
Chairman, Wexler & Walker Public Policy Associates

Ms. Heidi R. Wood  
Executive Director, Morgan Stanley

The commissioners appointed by the Congress are:

Mr. R. Thomas Buffenbarger  
President, International Association of Machinists & Aerospace Workers

The Honorable Tillie K. Fowler  
Partner, Holland & Knight

The Honorable John J. Hamre  
President & Chief Executive Officer, Center for Strategic & International Studies

The Honorable F. Whitten Peters  
Partner, Williams & Connolly

The Honorable William Schneider  
President, International Planning Services, Inc.

Mr. Robert J. Stevens  
President and Chief Operating Officer, Lockheed Martin Corporation
II. Present Trends in Federal Aerospace Research and Development Budgets

Technological advances have driven aerospace progress since the first flight of the Wright brothers and Dr. Robert Goddard’s first rocket launch. It is clear to the Commission that investments in the research and development (R&D) of aerospace technology are absolutely crucial to continued U.S. aerospace progress and leadership.

A. Department of Defense

The Commission applauds the President’s proposed fiscal year (FY) 03 augmentations to Department of Defense (DoD) R&D investments. The increases proposed both this year and last year are especially important because they follow a period of significant decline. The Commission supports the DoD goal to increase science and technology investment to three percent of the overall budget, and encourages continued progress toward this goal in the FY03 budget. The encouraging trends in defense R&D are a base to be built upon, but challenges will face us in future budget years. In future reports, the Commission will assess potential industrial base issues.

B. Civil Aviation

Federal Aviation Administration (FAA) and National Aeronautics and Space Administration (NASA) R&D investments represent the fundamental long-term, high-risk, precompetitive technology development that individual suppliers of aviation and space systems need but cannot support under near-term pressures from financial markets. Technologies and systems in use today are the result of R&D investments made 20 or more years ago. The United States is just now beginning to see the effects of the R&D budget declines of the 1990s in our air traffic control system capabilities, the technological parity of foreign-built aircraft, and the aging facilities of our federal research laboratories.

In contrast, the research programs of the European Union (EU) are driven by a policy seeking world leadership for its civil aeronautics industry. The EU member states are also placing increased emphasis on integrating and coordinating national research programs.

As the President and Congress move ahead to address the nation’s future aerospace needs, new investments will be required. The Commission encourages the Congress to assess these needs in its deliberations on the FY03 budget, and encourages the Administration to consider them in preparing the FY04 budget.
III. Business Environment

A. Negotiate Resolution of Foreign Sales Credit and Extra-Territorial Income Exclusion Act of 2000 Dispute

1. Issue

On January 14, 2002, a World Trade Organization (WTO) appellate body issued a final ruling that a U.S. law, called the “FSC Repeal and Extra-territorial Income Exclusion Act of 2000” (ETI), is an illegal export subsidy and, thus, inconsistent with WTO rules. This legislation replaced the Foreign Sales Corporation (FSC) tax regime with the ETI regime in an effort to be WTO-compliant. If the United States does not act to come into compliance with the WTO rules, U.S. exporters could face sanctions totaling as much as $4-6 billion per year in the form of tariffs on the sale of U.S. goods.

2. Background/Findings

European Union (EU) countries rely heavily on a value-added tax for revenue. The tax is imposed on imports and rebated at the border for exports. EU countries also tend to tax their companies more leniently on overseas earnings than on domestic profits. In order to partly offset the differences in tax treatments between Europe and America, United States tax law allowed domestic companies to establish FSCs that provided a means to reduce taxes on a share of profits derived from exports. When the WTO determined that the FSC regime was inconsistent with WTO rules, because it was deemed an illegal export subsidy, the United States repealed FSC and enacted the ETI regime in November 2000.

The WTO has now ruled that the ETI regime is also an illegal export subsidy. The loss of the ETI regime would negatively impact the competitiveness of U.S. exporters doing business in Europe by creating another competitive discriminator. This would add to several other factors already benefiting our European competitors, including outdated U.S. export control laws, increasing demand for offsets, and European government subsidies of national companies. Loss of the ETI tax incentive could result in the loss of U.S. employment if companies moved jobs to offshore facilities that enjoy favorable treatment by foreign governments.

Interim Report #2, Recommendation 1

The U.S. Trade Representative should seek additional time for the United States and EU to develop a long-term resolution of this issue that maintains the level of tax relief for all industries.
B. Strengthen Research and Experimentation Tax Credits

1. Issue

For the aerospace industry, heavily dependent on advanced technology, the federal research and experimentation (R&E) tax credit has become ineffective. Lack of permanence and the small number of firms qualifying for the full 20 percent R&E tax credit have virtually eliminated the desired incentive for companies to invest in R&D.

2. Background/Findings

U.S. tax law currently provides an incentive for R&D spending with a credit equal to 20 percent of incremental R&D expenditures measured by reference to the taxpayer’s average R&D expenditures during the period 1984 through 1988. Very few aerospace companies qualify for the 20 percent R&E tax credit since the 1984-1988 base period was a high-water mark of military procurement and R&D spending. Since the base period, defense procurement (on a constant 2001 dollar basis) has declined by 57 percent. An Alternative Incremental Research Credit (AIRC) is available for companies that do not benefit from the regular R&E tax credit. The alternative rate is 2.65 percent to 3.75 percent of R&D expenditures exceeding one percent of gross receipts. These rates provide a small incentive but do not provide the full savings of the 20 percent regular credit.

The R&E tax credit is scheduled to expire in 2004. With the lengthy time frames of most R&D projects, the uncertainty of the credit’s availability dampens the incentive for private investment in new technology. Legislative proposals currently pending in Congress (H.R. 41 and S. 41) would make the R&E credit permanent and increase the alternative credit rates to between 3 percent and 5 percent. The U.S. R&E credit is the third lowest of nine countries surveyed by the Organization for Economic Cooperation and Development (OECD). Increasing the alternative tax credit rates and making the credit permanent would improve the industry’s financial capability and strengthen the country’s technological base.

Interim Report #2, Recommendation 2

2.a. In the near term, revise the U.S. tax code to:
- Make the R&E tax credit permanent, and
- Increase the alternative credit rates to achieve parity with the savings provided by the regular credit.

2.b. In the longer term, enact structural changes to the R&E credit, including changes in the baseline period, increases in the rates for the AIRC and other improvements that enhance its effectiveness in stimulating private sector investment in new technologies.
C. Establish Shared Savings for Cost Efficiencies and Rationalization

1. Issue

The DoD and NASA ultimately pay for process inefficiencies and for underutilized and excess capacity in the defense industry by paying higher costs for products and services. Until sufficient incentives are provided for contractors to undertake cost-saving initiatives, DoD and NASA will not realize the potential for reducing program costs and improving the quality and timeliness of products and services delivered.

2. Background/Findings

There is little incentive for contractors to undertake initiatives that will have long-term positive benefits on program performance and cost because the government is the predominant beneficiary of the savings. On cost-based contracts, DoD receives the majority of any savings resulting from cost efficiencies and rationalization. During contract negotiations, government contract officers remove all contractor savings benefit through renegotiation of the overhead rate. On fixed price contracts, DoD contractors may realize some of the savings on the instant contract, but those savings then reduce the negotiation base for future contracts – often meaning that the benefit does not outweigh the cost.

The costs of rationalization without reward are a disincentive to contractors to pursue rationalization. One means of motivating the contractor to take on the cost of productivity and rationalization improvements is to share a portion of the savings over some number of years. Current Acquisition Excellence initiatives sponsored by the Under Secretary of Defense for Acquisition, Technology and Logistics to move most contracts from a cost to a performance basis would provide more contractor incentive to fund cost savings and rationalization.

Interim Report #2, Recommendation 3

Implement a strategy that provides incentives for contractors to pursue cost efficiencies and further rationalization of inefficient operations. The exact mechanism for achieving shared savings is not as important as the need to ensure that there is such a mechanism. One such strategy under consideration by the DoD is summarized below:

- Rules for Shared Savings Strategy
  - Ensure net savings result in each year of a not-to-exceed five-year period by amortizing associated costs. Recognize the cost of capital associated with amortized costs.
  - Contractor receives up to 50 percent of the net savings as long as the government receives at least $2 in savings for every $1 it expends (after deducting the negotiated shared savings amount and the cost of capital), and the contractor implements planned efforts to generate the savings.
  - Duplicate rewards are precluded for the same effort.
• **Implementation.** Contractor submits to the government-contracting officer a plan for efforts to achieve cost efficiencies and further rationalization. The government contracting officer ensures proposed savings are the direct result of the proposed efforts, contractor adequately supports the proposal, audits the proposal, negotiates an advance agreement for shared savings, and obtains the agreement of the appropriate departments, agencies and offices.

• **Method for Sharing Savings**
  - Additional “plus up” to profit on cost-based contracts is negotiated at the business segment level.
  - Government agrees to share up to 50 percent of savings from new cost savings initiatives for up to five years.
IV. Defense/Dual-Use Exports

Export controls have been and should be an important component of America’s national security. The Commission believes, however, that export controls are increasingly counterproductive to our national security interests in their current form and method of implementation. Our export control system needs a thorough overhaul. In our judgment, export control reform is crucial to provide better security in the future and to insure the health and vitality of our aerospace industry. The Commission intends to make more sweeping recommendations in its final report. In the interim, we recommend the following steps be taken immediately.

A. Accelerate Implementation of the Defense Trade Security Initiative

1. Issue

The Defense Trade Security Initiative (DTSI) contains several important elements that can significantly improve the access of U.S. aerospace firms to the international market and strengthen defense-industrial collaboration within the alliance. The pace of implementation of several of these initiatives has slowed, including electronic licensing, the U.S. Munitions List (USML) review, bilateral negotiations with major allied nations to create exclusions from export licensing requirements, and a reduction in the barriers to Global Program/Project licenses.

2. Background/Findings

The Secretary of State promulgated the DTSI in May 2000. The DTSI contains 17 initiatives that can make a constructive contribution to defense trade process reform and liberalization and, hence, materially improve market opportunities for U.S. defense exporters. The implementation of the DTSI has slowed, thus limiting the pace of reform needed in defense trade policy and regulation. The implementation of electronic licensing can increase the speed of license processing, reduce costs, and improve compliance with export control regulations. The review of the USML can hasten the removal of items from the list that are needlessly burdening the compliance monitoring process and increasing cost to U.S. exporters by requiring the licensing of items that should not require export licenses.

The United States has begun negotiations with Australia and the United Kingdom (U.K.) to create a regulatory and compliance “template” to facilitate a wide range of exclusions from a requirement for export licensing. Although these negotiations began in earnest, they have stalled and need an impetus to reach an agreement. An effort to exploit residual authority under the Arms Export Control Act to facilitate issuing comprehensive licenses covering an entire defense industrial program or project has been burdened by needless regulatory barriers. These regulatory barriers have prevented the issuance of global program/project licenses, even though current efforts with the Joint Strike Fighter (F-35) may be productive.
Interim Report #2, Recommendation 4

Accelerate implementation of the DTSI as an important first step in a comprehensive reform of the nation’s arms transfer policy and regulatory process. Specifically, the following items should proceed as quickly as possible to:

- Implement electronic licensing with system interface compatibility;
- Review the USML;
- Remove regulatory barriers to use global program/project licenses; and
- Reinvigorate U.S. bilateral negotiations with Australia and the U.K. to establish International Traffic in Arms Regulations (ITAR) country exemptions.

B. Update Country Risk Surveys to Modernize Export Licensing Compliance Practices

1. Issue

Effective compliance with U.S. Munitions List export regulations depends on up-to-date knowledge of the willingness and ability of nations abroad to implement their obligations to prevent unauthorized use or retransfer of U.S. defense hardware and technology exports. In many cases, U.S. government surveys of individual country risk are years out of date.

2. Background/Findings

The U.S. government conducts country risk surveys to support the export licensing function. U.S. export licensing practices, license provisos, and similar restrictions imposed on U.S. exporters are dependent on an up-to-date and detailed understanding of the willingness and ability of recipient nations to comply with restrictions on the unauthorized use or retransfer of U.S.-origin defense exports. Unfortunately many of these surveys are several years out of date. The absence of up-to-date data causes export-licensing authorities to depend on data that may no longer reflect current conditions in many United States defense export markets. Moreover, up-to-date country risk surveys will provide a basis for government-to-government consultations to strengthen compliance among the community of nations with whom the U.S. shares modern defense hardware and technology.

Interim Report #2, Recommendation 5

Country risk surveys should be updated immediately to align compliance practices with contemporary conditions in U.S. defense export markets.
C. Modernize the Defense Export Loan Guarantee Program

1. Issue

In 1996, the Congress established the Defense Export Loan Guarantee (DELG) program in the DoD. The purpose of the statute was to create an export credit mechanism for U.S. defense exporters. This program shares most of the characteristics of the U.S. Export-Import Bank loan guarantee program for civil sector exports with an important exception – the defense loan guarantees are not subsidized with funds appropriated to the DoD. Because of statutory constraints and regulatory and administrative practices, this program has proven to be unattractive to potential foreign customers – only one small transaction has been executed in more than five years of operation. As a result, the United States is the only significant exporter of defense-related equipment without an official exports credit mechanism. The DELG program needs to be modernized to facilitate the financing of U.S. defense exports.

2. Background/Findings

The Congress has been concerned with the inability of the Department of Defense to use the DELG to serve U.S. national security objectives. The FY02 DoD Authorization Act requires DoD to prepare a report describing its limitations in using the provision for the purpose intended in the statute. This report is now in preparation, and is likely to be delivered to the Congress in April 2002. The report could constitute an evidentiary basis for an Administration legislative initiative to modernize the DELG.

Interim Report #2, Recommendation 6

The DELG should be modernized to permit the DoD to create an effective unsubsidized export credit organization to facilitate the financing of defense exports to U.S. allies and friendly nations abroad. Modernization of the DELG should remove dysfunctional statutory and regulatory constraints that frustrate implementation of the DELG statute. Among the pertinent changes that should be implemented through both a legislative initiative and policy changes are:

- Eliminate restrictions on the capitalization of exposure fees by users of the DELG;
- Permit users of the DELG with allocations of Foreign Military Financing (FMF) to use their FMF to finance the payment of DELG exposure fees and other costs associated with the DELG;
- Broaden the eligibility for the DELG financing based on a waiver by the Secretary of Defense. This should include the financing of allied participation in collaborative defense-industrial projects with the United States to minimize the disruption to crucial multi-year programs from out-of-phase national budgeting;
• Implement administrative practices (including use of the U.S. Export-Import Bank as an administrative agent in exchange for a user fee) to reduce the DELG’s administrative costs to the DoD and its users; and

• Modify administrative practices to facilitate the adding of nations to the list of eligible parties to the DELG program.
V. Air Transportation

A. Transform the U.S. Air Transportation System

1. Issue

Safe, secure and efficient air transportation is central to our nation’s growth and economic development. Our current air traffic system, however, will not be able to meet the Nation’s long-term needs. The suppressed capacity demand resulting from the September 11, 2001, terrorist attack and economic slowdown should not be misinterpreted as a reason to delay needed short-term and long-term improvements. We have an opportunity now to modernize the air transportation system and to increase its capacity, security and flexibility.

2. Background/Findings

Over the last century, aviation has become an integral part of the U.S. economy, a key catalyst for economic growth, and a profound influence on American quality of life. American citizens and businesses use air travel more than any country in the world. Aviation is responsible for more than $1 trillion in U.S. economic activity, employs nearly 11 million workers, and aviation products lead the development and use of advanced technologies. According to U.S. Government statistics, 31 percent of the value of international trade through the top 50 U.S. gateways was transported by air. Civil aviation integrates the United States into the world economy and promotes international exchange of people and ideas.

Our nation’s security also depends on aviation. Federal, state, and local law enforcement agencies depend on aviation assets to ensure public safety. The contributions of the DoD and North American Air Defense Command to the nation's protection are inextricably linked to the operations and data shared with the air traffic control system.

Prior to September 11, 2001, the nation’s air traffic control system was straining under progressively increasing demand and growing delays. The costs of those delays – both business and personal – were rapidly becoming unacceptable to the public, the true owners of America’s airspace. Recent studies documented the annual loss associated with flight delays at over $8 billion. The aftermath of the September 11 terrorist attack highlights the vital importance of a safe, secure, and freely moving air transportation system as well as the fragile financial condition of the nation’s air carriers.

There is no shortage of airspace – the skies are far larger than any highway and our current “capacity” of 6500 or so aircraft aloft use only a tiny fraction of existing airspace. The air carriers use only 12 percent of the more than 5000 public use airports in the United States. In fact, just 64 airports carry 85 percent of all air carrier traffic.
Today, we are not capable of fully exploiting the potential of this public asset. Our current air traffic system relies on, and is limited by, procedures and systems that have not substantially changed since the 1960s – imprecise radar tracking, voice radio communications, limited weather knowledge, severe visibility handicaps, lack of dynamic data sharing, and human monitoring throughout every flight with constant hand-offs between controllers.

This is why we need to advance our air traffic control systems and related infrastructure. This report evaluates the current Federal Aviation Administration (FAA) capacity enhancement plans, and the challenges associated with implementing them.

The FAA’s Operational Evolution Plan (OEP) is an organized collection of over 100 programs addressing capacity problems. The goal of the OEP is to increase the capacity of the National Airspace System by approximately 30 percent by the year 2010. This is equivalent to about 700-800 more flights in the air at a given time during normal operating hours.

Air traffic demand, however, is expected to grow by at least 30 percent by 2010. Expanded operations, innovative services, and efficient travel would benefit the entire nation and should be encouraged – not limited by a lack of sufficient infrastructure. So while we must continue aggressively with the OEP, greater capability and flexibility is clearly needed.

The OEP concept calls for incorporating additional technologies and capabilities as they emerge. Since these critical improvements are as yet unknown, no budget provision has been made for them. According to the FAA, “we are short now and we will be for the next eight years.”

Moreover, OEP capacity improvements rely heavily on the voluntary purchase and installation of an estimated $11 billion in new equipment by the airlines. Given the economic realities airlines are facing today, this is a highly problematic assumption.

Since the events of September 11, the FAA has understandably focused on immediate actions required to meet security challenges. Some of the OEP activities have therefore been adjusted. Meanwhile, demand for air traffic services and airspace has already begun to recover.

Building, or even expanding, a single runway at a major airport can take one to two decades to complete, even if the local community favors its construction. Coordinating the upgrade of ground, airborne and space systems for improved operations is a hugely
complex job that relies upon consensus and voluntary agreements between government and private operators and also requires planning lead times of many years.

d. Finding #4: All present and future air transportation system concepts place a heavy reliance on a robust, secure, and flexible communication, navigation and surveillance capability.

The deployment of such a capability will rely on ground-, air-, and space-based components and avionics in the aircraft. The system and the users will not achieve the benefits of the new technologies and capabilities unless they are deployed together. This will require the synchronization of both public and private investments.

e. Finding #5: The nation needs a clear air transportation policy with an objective to move air traffic capacity substantially ahead of anticipated demands while enhancing public safety and homeland security.

The aviation transportation system must not be allowed to constrain the nation’s economic productivity and growth and should continue to improve the quality of life for every citizen. The Commission believes that the nation needs strong leadership, guided by a new national aviation policy, to provide what America demands of, and deserves from, aviation. The effective operation, innovative use, and strategic development of air transportation must become a clear national priority.

Interim Report #2, Recommendation 7

7.a. The Administration should immediately create a multi-agency task force with the leadership to develop and implement an integrated plan to transform our air transportation system.

An integrated plan is needed to define a new system architecture for the nation’s air transportation system with procedures based on precision knowledge, automated systems, and instantaneous communications throughout the network. Capacity, safety, and security will all be improved with increasing precision and information sharing. The technologies needed to provide this capability are either available today or feasible to develop in the near future. However, we need a national focus and the will to move ahead.

The many government organizations with aviation interests should immediately be brought together under strong administration leadership to collaborate on the design strategy for a revolution in air transportation capacity, safety, and security.

7.b. The Administration and Congress should fully fund air traffic control modernization efforts in fiscal year 2003 and beyond, and prioritize FAA and NASA research and development efforts that are the critical building blocks for the future.
Air transportation is so important to the nation that the Administration and the Congress need to make air traffic infrastructure modernization a top priority. The FAA OEP needs to be fully funded, and FAA and NASA need significant increases in R&D to start developing a new air transportation system for the nation. R&D investments should include a focus on security, high bandwidth communications, precision navigation and surveillance, ground and airborne control automation, advanced weather sensing, small aircraft transportation technologies, and noise and emissions reduction. In addition, new mechanisms and incentives need to be developed to accelerate the application of existing and new technologies and concepts into the marketplace.

For the fiscal year 2004 budget, the Administration and Congress should work together to fund a new R&D initiative to develop a new 21st Century air transportation system for the nation.

VI. Summary

This report is the second in a series of interim reports aimed at identifying issues the Commission believes are critical to the future of the U.S. aerospace industry and require immediate attention by the Administration and/or the Congress. The first report was issued on December 18, 2001, and focused on the need for the federal government to budget and fund aerospace activities as a sector. It is anticipated that the Commission will release other interim reports leading up to the release of its final report on November 19, 2002.

To support development of its findings and recommendations, the Commission has conducted two public meetings – on November 27, 2001, and February 12, 2002 – and has four more public meetings scheduled for this year: May 14th, August 22nd, September 17th, and October 23rd. The public is encouraged to attend these meetings, as well as to provide inputs directly to the Commission via its website at: www.aerospacecommission.gov or Mr. Paul F. Piscopo, Staff Director, Commission on the Future of the U.S. Aerospace Industry, Crystal Gateway 1, Suite 940, 1235 Jefferson Davis Highway, Arlington, Virginia 22202, via phone (703-602-1515), fax (703-602-1532), or e-mail (aerospace.commission@osd.pentagon.mil).