

**TESTIMONY OF
OWEN E. HERRNSTADT, DIRECTOR OF TRADE AND GLOBALIZATION
INTERNATIONAL ASSOCIATION OF MACHINISTS AND AEROSPACE WORKERS
BEFORE THE
U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION'S HEARING: "CHINA'S EMERGENT
MILITARY AEROSPACE AND COMMERCIAL AVIATION CAPABILITIES"
May 20, 2010
WASHINGTON, D.C.**

EXECUTIVE SUMMARY

I. China's aerospace industry is growing with assistance from Western aerospace companies

It should come as no surprise that China intends to develop its own large commercial aircraft to compete with Boeing and Airbus. Few countries are as capable and as aggressive as China in building their own aerospace industry. For many years, China has relied on transfers of production and technology from Western aerospace companies to develop its industry. At times, it seems as if U.S. aerospace companies are only too willing to lend their assistance by outsourcing work in order to obtain market access and/or cheap labor costs that is often achieved by China's failure to adopt and enforce international labor standards.

Commercial aerospace companies and their suppliers have procured parts and components from China valued at billions of U.S. dollars. Work for Boeing includes various programs. Airbus is operating an assembly facility for the A320 and just announced additional work involving wings. Other aerospace companies are involved in China, including jet engine manufacturers. Still other companies are involved in joint ventures in China, producing lightweight planes. In addition, various aviation companies have agreed to perform maintenance work in China.

The outsourcing of aerospace and related work to China poses a threat to U.S. aerospace workers and the U.S. industrial base in four different but related ways: First, jobs that may be associated with the transfer of technology and production are lost; second, the skills that accompany the transfers are lost leading to a further decline in our industrial base; third, additional jobs could be lost in the future as China utilizes the transfer from the U.S. to create and strengthen its own aerospace companies that will compete directly with U.S. companies; and fourth, the technology and production that would have led to more U.S. jobs through the development of innovative products is lost.

II. China as a global leader in aerospace?

Will the U.S. aerospace industry remain the strongest in the world? As other countries implement industrial policies based, in part, on outsourcing from the U.S., this question becomes more urgent. Efforts by countries like China to implement industrial policies leading to the development of a strong and viable commercial aircraft industry should give policy makers serious concern.

Some skeptics dismiss alarms over China's growing aerospace capacity. For them, China does not have the skilled workforce, technology, and capacity to produce products of a quality to compete with the U.S. Skeptics made the same argument years ago with respect to Japan, only to see the "made in Japan" label become sought after by consumers who believed it represented high quality, technologically advanced goods. And 40 years ago, the notion that Europe would be home to one of the top two commercial aerospace companies in the world would have been hard to believe. Nevertheless, the skeptics remain, even though China has already met a significant test with the assembly of the A320. As an Airbus official commented, "This A320 assembled in China unquestionably demonstrated the same quality and performance as those assembled and delivered in Hamburg or Toulouse."

III. Policy Recommendations

Policy makers should focus on ways to minimize the growing threat of China's aerospace industry on U.S. workers and our industrial base. They can start with creating a framework that collects accurate information regarding the precise number of U.S. jobs that are lost due to China's growing aerospace industry. Their analysis should concentrate on jobs that have been and will be lost through U.S. industry outsourcing and transfers of technology and production. Policy makers should also insist that bilateral and multilateral discussions make the elimination of offsets a priority. In addition, they must insist that China play by all trade rules, including, respecting international labor standards and implementing proper currency valuation.

Specific policy proposals for achieving these tasks include:

- ***Implement mechanisms to determine with precision the employment impact of transfers of technology and production on the domestic workforce.***
- ***Establish an effective system to track all parts used by domestic aerospace and aviation companies.***
- ***Mandate fully transparent and uniform domestic content requirements.***
- ***Review China's aerospace industry for a possible trade complaint.***
- ***Raise China's use of transfers of technology and production in bilateral and multilateral dialogues.***

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I. Introduction

The International Association of Machinists and Aerospace Workers (IAM) represents several hundred thousand workers in North America in a variety of industries, including manufacturing, electronics, wood working, defense, transportation, and of course aerospace. IAM members work for both prime and sub-tier contractors, producing, assembling, servicing, and maintaining a wide variety of products directly and indirectly related to the aerospace industry. Our members have helped build some of the world's largest and most successful aerospace companies in the world, including, Boeing, Lockheed, Pratt & Whitney, and General Electric.

Given our unique position in this industry and our prevailing concern with respect to China's continuing development of its own aerospace industry, we are honored to once again appear before you.¹

II. Importance of U.S. Aerospace Jobs to our Nation's Economy

It is no secret that U.S. workers and their communities are in a crisis. Over 8 million jobs have been lost since December 2007 and the unemployment rate hovers at around ten percent. According to the Economic Policy Institute, "[F]ifteen million people are officially unemployed while another 11 million are involuntarily working part-time or have dropped out of the labor force".² Employment in critical industries like aerospace has declined by over 40 percent over the past 20 years. The decision by domestic aerospace companies to offshore work to other countries has contributed to these job losses. The loss of aerospace jobs is especially significant in today's economy. After all, these are the leading edge, high-skilled, high paying jobs that we depend on to create a sustainable future for our nation.

III. China and Aerospace

As we have testified before, China is one of the few countries that understands the great benefits that aerospace can offer a national economy. Moreover, few countries are as capable and as assertive as China in building an aerospace industry through the transfer of technology and production from Western aerospace companies. At times, it seems as if U.S. companies are only too willing to outsource work to China in order to obtain market access and/or cheap labor costs that are achieved through China's failure to adopt and enforce international labor standards.

Transfers of production and technology from U.S. aerospace and related companies cost U.S. aerospace jobs and lead to a further decline in our aerospace industrial base in at least four different but related ways: First, jobs that may be associated with the transfer of technology and

¹ This testimony largely incorporates testimony that was delivered to the Commission in July 2008. Where appropriate, updated information has been provided.

² Ross Eisenbrey, "The real deficit crisis: Jobs", EPI, 5/13/2010.

production are lost; second, the skills that accompany the transfers are lost leading to a further decline in our industrial base; third, future jobs are lost as China (and other countries) utilizes the transfer from the U.S. to create and strengthen their own aerospace companies that compete directly with U.S. companies; and fourth, the technology and production that would have led to more U.S. jobs through the development of innovative products is lost.

While China continues to utilize every tool available to establish a strong aerospace industry, the U.S. still fails to embrace a comprehensive and strategic policy to ensure the long-term health of its own aerospace industrial base.

Far from embracing any sort of effective industrial policy when it comes to aerospace, the U.S. government continues to relegate policy development in this area to private parties. One activity that dominates the aerospace industry and that is sorely in need of regulation is the transfer of technology and production previously mentioned, also known as offsets.³

Offsets occur when one country demands a transfer of technology and/or production in return for a sale. These types of “direct” offset deals are explained in the following excerpt from the Federal Aviation Administration’s Report, *Assessment of FAA’s Risk-Based System For Overseeing Aircraft Manufacturers’ Suppliers*:

“Major manufacturers develop agreements with foreign suppliers to produce major segments of their aircraft in exchange for large aircraft orders from the country’s carriers. These agreements can amount to billions of dollars in sales for the manufacturer. For example, in order for Boeing to sell Boeing 747s to Air China, at least part of the final product (no matter how small) must be manufactured or assembled in China.”⁴

This Commission has noted in its past reports the extensive use of offsets by China with respect to aerospace, “...Chinese firms have used their leverage to extract offsets — agreements to transfer some of the aircraft production along with related expertise and technology — as part of the deals...China nurtures its domestic aviation and aerospace industry by exploiting the international competition already in the industry.”⁵

One U.S. government report summarized China’s potential in this fashion:

“China is likely to be the largest customer — and possibly an emerging competitor — of the U.S. aerospace industry in the future. China’s aerospace manufacturing base is enormous. U.S. companies (and European companies to a lesser extent) have successfully partnered with Chinese companies that provide components or parts for a number of commercial aerospace programs. However, China also is seeking to become a world-class prime commercial aerospace manufacturing industrial base, both through indigenous development programs and joint ventures with non-Chinese companies.”⁶

China’s aviation industry is rapidly growing and poses a considerable threat to current producers and suppliers of large and regional commercial aircraft. China’s aviation industry “consists of

³ For further discussion on offsets, see, Owen Herrnstadt, “Outsourcing and the lack of a comprehensive U.S. policy: What do other countries know that we don’t?”, EPI, April 2008.

⁴ Report Number: AV-2008-026; issued February 26, 2008, at p.2.

⁵ U.S.-China Review Commission 2005, 30.

⁶ U.S. Department of Commerce 2005, xii. International Trade Administration, “The U.S. Jet Transport Industry: (“U.S. Department of Commerce 2005b”).

more than 200 enterprises that produce and manufacture products such as aircraft, turboprop engines, aircraft components and subsystems, helicopters, industrial gas turbines, and various electromechanical products.”⁷ China’s huge industrial capacity has been noted by other observers as well. For example, one research group notes that in China there are six companies devoted to “airframe assembly,” eight “engine” companies, 28 entities involved with “components,” and 20 “research institutes.”⁸ The two leading aircraft companies in China (China Aviation Industry Corporation I [AVIC I] and Aviation Industry Corporation II [AVIC II]) “and their subsidiaries have about 491,000 employees.”⁹ China’s subsequent efforts following its announcement that it would enter the large commercial aircraft industry should come as no surprise, given the comprehensive industrial policy it has implemented with respect to aerospace.¹⁰

How did China develop such a huge capacity for aerospace production? While there are many different and related methods China uses, one significant method utilizes the transfer of technology and production from Western aerospace companies.¹¹ As one expert said, “China is one of the most aggressive countries in pursuing offsets agreements and, with its market potential and minimal labor standards, it has substantial leverage in negotiating these agreements.”¹² And as another told the *Wall Street Journal*, “they’re interested in having total access to technology....”¹³

One of China’s initial aerospace joint ventures took place with McDonnell Douglas in 1985 in a program that produced several aircraft.¹⁴ Another joint venture, also with McDonnell Douglas,

⁷ U.S. Department of Commerce 2005b, 58.

⁸ See GlobalSecurity.org. The U.S. Department of Commerce reports that AVIC I and AVIC II “hold 134 large- and medium-sized industrial enterprises, including 31 research institutes and 20 specialized companies and institutions engaged in foreign trade, material supply, science technology, and product development” (U.S. Department of Commerce 2005b, 58). See also Peder Anderson, “China’s Growing Market for Large Civil Aircraft,” Office of Industries Working Paper, U.S. International Trade Commission, 2/2008, at p.10. This enormous capacity in aerospace appears to be consistent with China’s booming economy: “China’s current level of investment in new factories is unprecedented and will deliver an even greater supply shock to global industry in the next five years, producing even greater losses in U.S. manufacturing jobs.” (AFL-CIO 2004).

⁹ U.S. Department of Commerce 2005b, 58; Citing NTI Research Library (<http://www.nti.org/db/china/avic1.htm>); it also notes that “these conglomerates are widely diversified across multiple manufacturing sectors.”

¹⁰ “Beijing building up its aircraft industry,” *International Herald Tribune*, 5/11/2008.

¹¹ The IAM has decried the use of offsets for many years. As it has stated on many occasions, offsets mandating the transfer of technology and/or production in return for market access are increasing at an alarming rate. Offsets have resulted in a growing, global competition, as well as overcapacity, which in turn have resulted in the loss of U.S. jobs directly and indirectly. The IAM also argues that offsets lead to threats to national security, as illustrated by the China National Aero-Technology Import and Export Corporation issue of the mid-1990’s involving technology transfer and military equipment (see U.S. GAO 1996).

¹² Faux, Jeff. Testimony Before the Commission on the Future of the Aerospace Industry, 5/14/2002.

¹³ “China’s Price for Market Entry, Give Us Your Technology, Too,” February 26, 2004. It should be noted that this quote was not directly in reference to the aerospace industry. As also explained in the article, “China officially agreed to phase out many tariffs and technology-transfer requirements as part of its entry in December 2001 to the World Trade Organization. But China didn’t sign a key piece of the WTO agreement that would have prohibited its top planning agency from making such demands, and government negotiators have continued to ask foreign companies to transfer technology to local partners or to set up research centers to train local engineers.” The article further explains, “Trade experts say China isn’t alone among developing countries in pushing for foreign technology, but the size of its new markets give Chinese negotiators enormous leverage.” The article also provides a warning: “Japan demanded similar transfers in the 1960’s and 1970’s when it was rebuilding industries after World War II. The exchanges helped forge the economic and political alliance between the U.S. and Japan, but later haunted some U.S. companies when Japanese rivals went on to outpace their American partners in electronics and other industries.”

¹⁴ See, Peder Anderson, “China’s Growing Market for Large Civil Aircraft,” Office of Industries Working Paper, U.S. International Trade Commission, 2/2008, at p.7.

took place a few years later between the Company and the China National Aero-Technology Import and Export Corporation Group (CATIC) and the Aviation Industries Corporation of China (AVIC) with respect to the “Trunkliner” program. The program was the subject of a Government report which identified, “apparent lapses in the process, including the transfer of a commercial machine tool technology to a Chinese firm by McDonnell Douglas which was apparently diverted to a Chinese plant that manufactures military aircraft and cruise missile components.”¹⁵

China’s aerospace companies entered into a joint venture with Embraer in 2002 to produce a regional jet (the ERJ-145). China has also undertaken the development and production of another regional jet, the ARJ21. It should be noted that, “[T]he four Chinese factories that were involved in the MD-90 Trunkliner program—the Shanghai Industrial Corp., Xi’an Aircraft Co., Chengdu Aircraft Co., and Shenyang Aircraft Co.—are now partnered on the ARJ21 program.”¹⁶ Sales of the ARJ21 include a contract with GE Commercial Aviation Services for 25 planes.¹⁷

China is also engaged in a joint venture between Shenyang Aircraft Corporation (SAC) and Cessna to produce a lightweight, sport plane.¹⁸ With an estimated annual demand of 1,000-1,200, the plane will be produced, manufactured and assembled in China, disassembled then reassembled in the U.S. for customer delivery.¹⁹ Cessna, reportedly, will be “responsible for designing, airworthiness approval, marketing, and after-sale services.”²⁰

In May 2008, China announced that it had “established a homegrown company to make passenger jumbo jets. . .to become less dependent on Boeing and Airbus.”²¹ The China Commercial Aircraft Company was formed with a capitalization of \$2.72 billion, with almost one-third “coming from the state-owned Assets Supervision and Administration Commission. . .the municipal government of Shanghai, where the ARJ21 regional jet is being developed, and two state aircraft makers, China Aviation Industry Corp. I, or AVIC I, and AVIC II, will have a 25 percent share. . .”²²

Last year, in April, a design proposal for the plane, named the C919, had been completed.²³ Its first test flight is scheduled for 2014 with the first delivery by 2016.²⁴ The *People’s Daily* reported that China would be “capable of producing 150 domestically-made jumbo planes each year, with overall output reaching 3,000 planes.”²⁵ Although Western companies are seeking to become suppliers to the program, even if they are successful, questions remain regarding how much of those contracts will be supported by production outside of China.²⁶ According to an official of China’s aerospace industry, “the manufacture of domestically-made jumbo jets will

¹⁵ See, U.S. GAO 1996.

¹⁶ Peder Anderson, “China’s Growing Market for Large Civil Aircraft,” Office of Industries Working Paper, U.S. International Trade Commission, 2/2008, at p.10.

¹⁷ Chris Oliver, MarketWatch, “China’s commercial aviation dreams face headwinds”, 9/11/2009.

¹⁸ Sino-U.S. co-developed sport plane delivered”, Xinhua, 10/2/2009.

¹⁹ Id.

²⁰ Id.

²¹ “China launches jumbo jet company,” AP, 5/11/2008.

²² “Beijing building up its aircraft industry,” *International Herald Tribune*, 5/11/2008.

²³ “Chinese jumbo jet company hopes to follow Boeing and Airbus”, *Peoples Daily*, 4/30/2009, <http://english.people.com.cn/90001/90776/90881/6649078.html>.

²⁴ Id.

²⁵ Id.

²⁶ “GE, Rockwell Aim to Supply Plane Guaranteed to Sell in China, Bloomberg, 2/1/2010; see also, “AVIC, Goodrich to set up JV in China”, *Global Times*, 8/13/2009.

surely prioritize purchasing domestically-made parts, boosting related industries”.²⁷

Of particular concern is the huge involvement of Western aerospace companies in China, an involvement these companies acknowledge. According to its website in 2008, “Boeing procurement from China is significantly greater than other aviation companies.”²⁸ According to company summaries in 2008:

- Since the 1980’s, Boeing has purchased more than \$1 billion in aviation hardware and services from China.
- There are 4,500 Boeing airplanes with parts and assemblies built by China are flying throughout the world today.
- Boeing and Boeing supplier partners have active supplier contracts with China’s aviation industry valued at well over \$2.5 billion.²⁹

A detailed listing of Boeing’s extensive procurement activities, production work, and supplier involvement in China also appeared on its website in 2008.³⁰ At that time, the company reported that it had not only created joint ventures in China and procured components and parts from China’s companies, but also “...encourages our global supplier network to engage in China.”³¹

Boeing’s joint venture with Hexcel and China’s AVIC I for composite structures poses particular concerns. The joint venture was one of the initial company’s to receive Validated End User (VEU) status in a new program offered by the U.S. Department of Commerce. The program “eased restrictions on the export of politically delicate technologies to China.”³² Both the Wisconsin Project on Nuclear Arms Control and the IAM protested the VEU program, particularly with respect to this joint venture.

Boeing is, of course, just one of many aerospace companies investing in China’s aerospace industry; another is Boeing’s chief rival, Airbus: “[O]ver half of the Airbus worldwide fleet has components produced in China...[T]he total annual value of Airbus’ procurement in China reached over \$100 million last year and is expected to touch \$200 million in 2010 and \$450 million in 2015.”³³ As quoted a few years ago in *The Australian*, then Airbus Chief Executive, Noel Forgeard, explained the company’s philosophy with respect to China: “Airbus is not only selling aircraft in China but is also committed to the long-term development of China’s aviation industry.”³⁴ Airbus lists several programs with China on its website. It also states on its website that it “has several major technology transfer programmes underway...”³⁵

In 2007 Airbus announced that it would establish an assembly facility in China for the A320: “The FAL [final assembly line] in Tianjin will be based on the latest state-of-the-art Airbus

²⁷ “Chinese jumbo jet company hopes to follow Boeing and Airbus”, see fn. 19.

²⁸ “The Boeing Company and China, <http://www.boeing.com/companyoffices/aboutus/boechina.html>; extracted 6/27/2008; This information no longer appears to be available on the company’s website, at least in English.

²⁹ Id.

³⁰ Id.; see also “Offsets.”

³¹ Id.

³² “Eased Rules on Tech Sales to China Questioned,” *New York Times*, 1/2/2008.

³³ Id.; Although, Airbus states on its website that it “expects to be spending around \$120 million of its procurement budget in China,” by 2010.

³⁴ “Airbus Enlists China,” June 14, 2004.

³⁵ http://www.airbus.com/en/worldwide/airbus_in_china.html.

single-aisle final assembly line in Hamburg, Germany. The aircraft will be assembled and delivered in China to the same standards as those assembled and delivered in Europe.”³⁶

The significance of such a development cannot be overstated: “the memorandum of understanding between China’s National Development and Reform Commission and Airbus... meant that China was likely to become only the third country assembling Airbus aircraft, after France and Germany.”³⁷

The first A320 assembled in China flew several months ago. Airbus will be increasing its supplier work in China for the A320 aircraft with wing manufacture. According to the *China Daily*, “[T]he A320 wing is the largest and most complicated Airbus aircraft component a Chinese company has ever made.”³⁸

As previously mentioned, Brazil’s aerospace industry is also teaming up with China. “In order to supply its domestic market while continuing to learn how to assemble a modern, complete aircraft to Western standards, two AVIC-II companies teamed with Embraer... in 2002 for co-production of their regional jet (ERJ-145) in Harbin.”³⁹

Eurocopter, a subsidiary of EADS, is also involved with China’s aerospace industry. “France’s Eurocopter and Singapore Technologies Aerospace have signed with Hafei Aviation, a listed arm of one of China’s top military contractors, to make helicopters for domestic civil use.”⁴⁰

China is also adding to its work performing maintenance for various airlines, including U.S. based United Airlines (UAL). After completing a five year contract with UAL concerning its B777 fleet, a new five year contract was signed this spring with AMECO Beijing for “United’s entire fleet of 52 Boeing 777s and 24 B747s”.⁴¹

China’s aerospace industry has expanded to space. In 2003 China first sent a man into orbit. In October, 2007, “China launched its first lunar probe” in “a step closer to fulfilling its ambitions of one day reaching the moon... The probe is expected to orbit the moon for the next year, providing satellite images and other information as China prepares to launch a space vehicle to the moon by 2012 and then send an astronaut by 2020.”⁴² In addition, “China has started developing the Long March 6 carrier rockets for its space programs... China aims to set up a simple space lab in 2011 and a manned space station in 2020.”⁴³

IV. China as a Global Leader?

Will the U.S. aerospace industry remain the strongest in the world? As other countries implement industrial policies based on outsourcing and offsets, the question becomes more urgent. Moves by countries like China to implement industrial policies leading to the development of a strong and viable commercial aircraft industry should give policy makers

³⁶ “Joint Venture Contract Signed for the A320 Family Final Assembly Line in Tianjin,” June 28, 2007.

³⁷ “China Orders 150 Airbus Jets,” *New York Times*, December 5, 2005, referring to a report in “the official China Daily newspaper.”

³⁸ “A320 to get local wings next year,” *China Daily*, 9/23/2009.

³⁹ Andersen 2008.

⁴⁰ Reuters, CNN.com, “China Makes Links With Eurocopter,” November 21, 2003; *Financial Times*, “China Plans to Challenge Boeing With New Airliner,” March 20, 2007.

⁴¹ *China Daily*, 3/31/2010.

⁴² “China Sends Its First Probe for the Moon Into Space,” *New York Times*, 10/25/2007.

⁴³ Xinhua, 9/6/2009.

serious concern. “The Chinese government clearly believes it does have what it takes to build aircraft on a commercial scale...”⁴⁴

China’s aerospace industry is poised to contribute to growing global competition, particularly with respect to suppliers: “Given China’s massive orders for LCA [large commercial aircraft] and ever-growing technological competence...they will likely be a factor in future competitions as suppliers to international LCA programs”.⁴⁵

Some skeptics dismiss alarms over China’s growing aerospace capacity. For them, China does not have the skilled workforce, technology, and ability to produce products of a quality to compete with the U.S. Skeptics made the same argument years ago with respect to Japan, only to see the “made in Japan” label become sought after by consumers who believed it represented high quality, technologically advanced goods. And 40 years ago, the notion that Europe would be home to one of the top two commercial aerospace companies in the world would have been hard to believe. Nevertheless, the skeptics remain, even though China has already met a significant test with the assembly of the A320. As an Airbus official commented, “This A320 assembled in China unquestionably demonstrated the same quality and performance as those assembled and delivered in Hamburg or Toulouse.”⁴⁶

V. Policy Recommendations

Policy makers should focus on ways to minimize the growing negative impact of China’s aerospace industry on U.S. workers and our industrial base. They can start with creating a framework that collects accurate information regarding the precise number of U.S. jobs that are lost due to China’s growing aerospace industry. Their analysis should concentrate on jobs that have been and will be lost through U.S. industry outsourcing and transfers of technology and production. Policy makers should also insist that bilateral and multilateral discussions make the elimination of offsets a priority. In addition, they can insist that China play by all trade rules, including, respecting international labor standards and implementing proper currency valuation.

Specific policy proposals for achieving these tasks include:

- ***Implement mechanisms for determining with precision the employment impact of outsourcing and transfers of technology and production on the domestic workforce.*** The federal government should adopt, develop, and implement employment impact statements that would be completed prior to approval of assistance to U.S. companies for their exports. For example, if a U.S. company seeks export assistance for a product made in the U.S., the government should determine how many domestic jobs could be maintained or created by the sale. Questions regarding whether a transfer of technology or production is involved with the exported item would be a key factor in completing the statement.
- ***Establish an effective system to track all parts used by domestic aerospace and aviation companies.*** Given that aerospace parts and components are increasingly being produced in China, troubling questions remain concerning how parts are tracked and reported. Procedures for determining quickly where a part, (regardless of its size or complexity) is produced is absolutely critical, especially in the event of an accident or malfunction.

⁴⁴ “China: Beijing forges ahead with building its own industry,” FT.com, 6/18/2007, quoting, Peter KN Lok.

⁴⁵ Andersen, p.14.

⁴⁶ “First made-in-China Airbus makes maiden flight,” Reuters, 5/18/2009.

- ***Mandate fully transparent and uniform domestic content requirements.*** While only direct costs such as production, manufacture, maintenance, assembly, and raw materials should be considered as domestic content, indirect costs such as the value of research and development, advertising expenses and intellectual property rights, which can be used to inflate domestic content, are included by some public institutions in determining domestic content. Domestic content definitions throughout the government should be closely reviewed to ensure that they are limited to a common sense understanding that truly relates to domestic employment.

In addition, critical questions should be considered, including: Do government entities involved in procurement or export support actually know if components or subcomponents are produced in China (or for that matter any other non-U.S. country) for any of the exports they support or government goods that are procured? Are these parts “substantially transformed” into domestic content by their inclusion into more complex components? What kind of verification system is in place to make sure information supplied is accurate?

- ***Review China’s aerospace industry for a possible trade complaint.*** While transparency issues pose hurdles for such a complaint, the U.S. government should review China’s aerospace industry for a possible action based on subsidies. Although not yet public, the recent WTO decision with respect to European subsidies may provide further basis for such a claim.
- ***Raise transfers of technology and production in bilateral and multilateral dialogues.*** China continues to use its leverage between Western aerospace companies to receive transferred technology and production. Forums like the U.S.-China Strategic and Economic Dialogue should be utilized to eliminate this practice. This topic should also be included in transatlantic dialogues with Europe.