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before the
U.S.-China Economic and Security Review Commission
January 13, 2005
Seattle, Washington

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 ship building and ship repair, electronics, woodworking, defense and transportation, and of course aerospace. The IAM represents more aerospace and related workers than any other union in the world. 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 -- Boeing, Lockheed Martin, Pratt & Whitney, and General Electric. As we stated in comments before this Commission over three years ago, "[G]iven our membership in the aerospace industry, the IAM has a vested interest in ensuring the competitiveness of the U.S. aerospace industry and in preserving the jobs of our members in this highly competitive industry. We are also mindful that healthy and vibrant aerospace employment in the U.S. contributes to our nation's economic security as well as our defense."[1]

Given our unique position in the U.S. aerospace industry and our deep concerns with respect to the development of China's aerospace industry, we are honored to appear before you today.

In order to fully understand the threat that China's aerospace industry poses, it is essential to begin with a summary of the current state of U.S. aerospace employment. After a brief review of the U.S. industry, the rapid development of the aerospace industry in China is discussed and, of course, its growing impact on the U.S. aerospace industry and its workforce. The last section of this testimony includes a summary of long overdue reforms that we urge U.S. policy makers to adopt in order to mitigate the threat that China currently poses for the U.S. aerospace industry and U.S. workers.

[1] "Comments of the International Association of Machinists and Aerospace Workers before the U.S.-China Security Review Commission," August 2, 2001 (hereinafter referred to as "IAM Comments").

II. U.S. Aerospace Employment is in Crisis

The importance of the U.S. aerospace industry to our nation's economic and physical security cannot be questioned. The industry is directly responsible for the employment of hundreds of thousands of individuals. Indirectly, it is responsible for the employment of several hundred thousand more workers. Many U.S. communities have flourished because of the industry and various regions of our country have grown economically dependent on this essential industry. The Final Report of the Commission on the Future of the United States Aerospace Industry ("Aerospace Commission") states that the industry "contributes over 15 percent to our Gross Domestic Product and supports over 15 million high quality American jobs."[2] U.S. aerospace is also attributed as a major source of "[T]echnical innovation with substantial spillovers to other industrial and commercial sectors … [H]igh-wage employment, which spreads the benefits of rising productivity throughout the U.S. economy …."[3] The Aerospace Commission also noted the industry's contribution to the nation's "economic growth, quality of life, and scientific achievements…."[4]

The health of U.S. aerospace employment also has an affect on our nation's security.[5] As outsourcing, co-production, and other similar activities grow in the defense aerospace industry, U.S. aerospace employment shrinks. In addition to the direct impact on employment, U.S. dependence on other countries for aerospace defense products presents at least two other issues: first, dependence on other countries for the manufacture, development, or assembly for our defense products is as unacceptable as it is unwise, especially in a post-September 11, 2001 world. What happens when our allies become our enemies? What happens when supply chains become disrupted by unpredictable events? Second, as skilled workers in the defense industry lose their jobs, the deskilling of America's defense workforce continues at a dramatic rate. If and when we as a country need to rebuild our defense industry, skilled workers vital for the success of such an industry will not be available.

Despite the importance of the aerospace industry, since we last testified before this Commission, the deterioration of U.S. aerospace employment has continued at a dramatic rate. Over 600,000 jobs have been lost in the total U.S. aerospace industry since 1990.[6] Several hundred thousand more workers have lost their jobs in related industries. Sadly, the fact of these enormous job losses comes as no surprise to the IAM, nor should it to U.S. policy makers. Nearly twenty years ago, in *Jobs on the Wing*, authors Randy Barber and Rob Scott predicted that "up to 469,000" jobs in the aerospace and related industries "could be eliminated in 2013 because of offset policies and increased foreign

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[2] "Final Report of the Commission on the Future of the United States Aerospace Industry," November 2002 (hereinafter referred to as "Aerospace Commission") p. 1-2.

[3] Testimony of Jeff Faux, Economic Policy Institute, before the Aerospace Commission (hereinafter referred to as "Faux"), May 14, 2002.

[4] See, "Aerospace Commission," p. 1-2.

[5] Ibid.

[6] Aerospace Commission, p. 8-12; See also, Aerospace Industries Association, "Total Aerospace Products and Parts Plus Search, Detection, and Navigation Instruments."

competition."[7] In a more recent study, Scott predicted by 2013 the industry would suffer a loss of over twenty-five percent "of the total jobs in aircraft production in 1995."[8] These gloomy predictions are apparently reinforced by U.S. government reports. According to the Department of Labor, the "Outlook" for employment in the U.S. aerospace industry is not rosy: between 2002-2012 aerospace employment in the U.S. will "decrease by 18 percent."[9]

The future health of the industry depends on its ability to attract new workers. The crisis in employment and the prediction that the crisis will deepen does not bode well for attracting new workers. In its Final Report, the Aerospace Commission summarized this concern:

> The U.S. aerospace sector, once the employer of choice for the "best and brightest" technically trained workers, now finds it presents a negative image to potential employees. Surveys indicate a feeling of disillusionment about the aerospace industry among its personnel, whether they are production/technical workers, scientists or engineers. The majority of newly dislocated workers say they will not return to aerospace. In a recent survey of nearly 500 U.S. aerospace engineers, managers, production workers, and technical specialists, 80 percent of respondents said they would not recommend aerospace careers to their children.[10]

III. U.S. Crisis Fueled by Lack of Comprehensive Policy

U.S. policy makers' continued failure to develop, adopt and implement a comprehensive policy to promote U.S. aerospace employment fuels the current crisis. Indeed, the Aerospace Commission finding that "U.S. policy towards domestic aerospace employment must reaffirm the goal of stabilizing and increasing the number of good and decent jobs in the industry" has yet to be embraced.[11]

The negative impact of the lack of a comprehensive policy in aerospace is exacerbated by the fact that other countries have acknowledged and embraced the critical importance of industrial policy -- especially in aerospace. After all, what were once fledgling aerospace industries are now U.S. competitors.[12] As succinctly stated by the Aerospace Commission, "…foreign nations clearly recognize the potential benefits from aerospace and are attempting to wrest global leadership away from us."[13]

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[7] Randy Barber and Robert E. Scott, *Jobs in the Wing: Trading Away the Future of the U.S. Aerospace Industry*, Economic Policy Institute, Washington, DC, 1985, p. 2.

[8] Scott, "The Effects of Offsets, Outsourcing and Foreign Competition on Output and Employment in the U.S. Aerospace Industry," presented to the National Research Council Symposium on *Trends and Challenges in Aerospace Offsets*, Jan. 14, 1998.

[9] The 2004-05 Career Guide to Industries, Aerospace Product and Parts Manufacturing, U.S. Department of Labor, NAICS 3364 (last modified 2/27/04).

[10] Final Report of the Commission on the Future of the U.S. Aerospace Industry, 8-5, Dec. 2002; citing Lean Aerospace Research Agenda and Lean Aerospace Initiative, p. 11.

[11] Aerospace Commission, p. 8-12.

[12] E.g., European Aeronautic Defense and Space Company/Airbus.

[13] Aerospace Commission, p. 1-2.

A country that truly understands the importance of adopting a comprehensive aerospace policy is China. In our testimony in 2001, the IAM singled out China for developing an effective industrial policy in an effort to develop its own "aerospace industry." In that testimony, we recounted the IAM's "Mission to China" in 1998 to observe the development of the aerospace industry in that country. As we noted, the U.S. International Trade Commission (USITC) had already found with respect to China, "…the nation's aviation sector intends to pursue a principal role in commercial aircraft manufacturing."[14]

During our 1998 visit to China to tour aerospace facilities, IAM participants reported the enormous aerospace capacity that existed in China.[15] China's huge industrial capacity has been noted by other observers as well. [16]

How did China develop such a huge capacity for aerospace? While there are obviously many different and related methods China utilizes, one significant method used is by extracting production and technology from other countries through "offsets", one of several forms of outsourcing.[17]

"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."[18] As explained by one business person in referring to China, "[T]hey're interested in having total access to technology…."[19]

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[14] See, IAM Comments citing U.S. International Trade Commission, *The Changing Structure of the Global Large Civil Aircraft Industry and Market: Implications for the Competitiveness of the U.S. Industry*, Investigation No. 332-384, Nov. 1998 (hereinafter referred to as Investigation No. 332-384), at 5-1, citing Leslie Symons, "The Rise and Fall of Soviet Influence on the Chinese Aircraft Industry and Air Transport," Chapter 16, in *Transport and Economic Development - Soviet Union and Eastern Europe*, (Berlin: Osteuropa-Institut 1987), p. 450.

[15] See IAM Comments.

[16] 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, Section 301 Trade Petition, 3/16/04. GlobalSecurity.org, http://www.globalsecurity.org/military/world/China/Avic.html. no. 67 Jiaodaokou Naka Jie, extracted Sept. 9, 2004.

[17] The IAM has decried the use of offsets for many years. As we have stated on many occasions, offsets mandating the transfer of technology and/or production in return for market access, is increasing at an alarming rate. Offsets have resulted in a growing, global competition as well as overcapacity, which in turn has resulted in the loss of U.S. jobs directly and indirectly.
Of course, offsets also lead to threats to our national security as emphasized 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. General Accounting Office Report to Congressional Reporters, *Export Controls, Sensitive Machine Tool Exports to China*, Nov. 1996.)

[18] Faux.

[19] The Wall Street Journal, "China's Price for Market Entry, Give Us Your Technology, Too," Feb. 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

Notably, while offsets are used by U.S. aerospace concerns to gain market access, its success is questionable. After all, U.S. exports to China are relatively limited. U.S. aerospace exports to China constituted slightly more than 5 percent of total aerospace exports.[20] As some have concluded, the small percentage of exports to China "indicates that the benefits from offsets have been limited, while the costs in terms of job losses and lost technologies are significant."[21]

China's aerospace industry serves as a supplier for premier aerospace companies like Boeing. "Currently, more than 3,400 Boeing airplanes -- nearly one third of the Boeing world fleet -- include major parts and assemblies built by China."[22]

Boeing acknowledges the importance of China's aerospace industry. The following comments by the President of Boeing China, David Wang, indicate the nature of its relationship with China:

- As China's premier aerospace partner, we have a sincere desire to share knowledge with our Chinese partners …[23]

- Boeing's cooperation with China's aviation industry has achieve remarkable accomplishments … Today, China's aviation manufacturing companies are playing key roles in Boeing's global supplier network … Boeing's industrial partnership with China is real and current …[24]

The China Boeing website lists work performed in China in some detail. Included in the information provided by the company is an entity named "BHA Aero Composites Co., Ltd.," which is described as "a joint venture between Boeing, Hexcel, and AVIC I for secondary composite structures and interior parts."[25] Boeing recently announced that it would also rely on China to provide parts for the new 7E7 program:

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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 1960s and 1970s 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."

[20] *Top Twenty U.S. Aerospace Export Manufacturers*, Aerospace Industries Association, 2004, citing, U.S. Department of Commerce, Bureau of Census as its source.

[21] Faux.

[22] Boeing Press Release: "Boeing Takes Delivery of Shenyang Aircraft Corp.'s First 737 Horizontal Tail Center Section," 11/25/04; see also "Boeing Press Release: Chinese to Partner on Boeing Airplanes, 7E7 Dreamliner," 6/10/04

[23] "Boeing News Release: Boeing Provides Important Support to Civil Aviation University of China," 9/01/03.

[24] "News Release: Boeing and China's Industrial Cooperation Reaches New Milestone," 10/14/03.

[25] Boeing China website, extracted 09/09/04.

> Two state-owned Chinese manufacturers will provide parts and assembly for Boeing jets, including its next generation 7E7 Dreamliner, the plane maker said yesterday. The Boeing co-signed a memorandum of understanding in Beijing with China Aviation Industry Corp. I and China Aviation Industry Corp. II for a deal that The Boeing Co. said was valued at several hundred million dollars.[26]

Boeing is, of course, just one of many aerospace companies investing in China's aerospace industry, including Boeing's chief rival, Airbus. Airbus Chief Executive Noel Forgeard explained his 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."[27] As previously noted, China is working with Airbus in many different endeavors, including a recent report that parts of the A380 will also be produced in China: "European aircraft maker Airbus has subcontracted a state-owned Chinese manufacturer to make parts for its super-jumbo A380 plane, in a deal worth about $170 million. China Aviation Corp. I (AVIC I) will make panels for A380 nose-landing gear… China's Shenyang Aircraft Corp., affiliated with AVIC I, would also be subcontracted to make A330/A340 forward-cargo door projects… Five Chinese companies are now making parts for Airbus."[28] Other reports indicate that--

> Airbus will increase its annual subcontracting commitments in China—largely for aircraft doors, wing sections and landing gear parts—from the current 30 million euros to 60 million euros in 2007 and 120 million euros by 2010...The company was also discussing the possibility of setting up an "Airbus China" operation which would assemble planes in the country.[29]

Brazil's aerospace industry is also teaming up with China. "Empresa Brasileira de Aeronautica, SA, the world's fourth-largest commercial aircraft maker, plans to develop new regional jets with China Aviation Industry Corp. II…." [30]

Eurocopter, a subsidy 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."[31]

China's aerospace industry is not, however, complacent with is current programs. There are reports that "China is likely to start developing its own large aircraft rather than rely solely on foreign giants Boeing and Airbus …."[32]

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[26] Seattle Post Intellegencer, "Chinese Companies to Make 7E7 Parts," 6/11/01.
[27] The Australian: Airbus Enlists China, 6/14/04, extracted 09/09/04.
[28] Ibid.
[29] "EADS chief outlines ambitious plans for China market", Beijing (AFP), 12/7/04; extracted from http://news.yahoo.com, 12/7/04
[30] Bloomberg.com, "Embraer, AVIC II to Develop New Regional Jetliners," 12/16/03, extracted 09/09/04.
[31] Reuters, CNN.com, "China Makes Links with Eurocopter," Nov. 21, 2003.
[32] USAToday.com, "China Studies Building its Own Large Aircraft," 03/15/04, extracted 09/09/04.

There are also reports that "China is developing a new stealthy fighter jet aircraft and many of the design concepts and components have already been created…. This new aircraft is the first Eastern rival to the West's F/A-22 Raptor and F-35 Joint Strike Fighter to be put into development…."[33]

China aerospace may also be expanding to space itself. In an article headlined "The Next Space Race: China Heads to the Stars," *The New York Times* raises the "possibility" of a space race with China noting:

> The Chinese plan to send more astronauts into space next year, to launch a Moon probe within three years, and are aiming to land an unmanned vehicle on the Moon by 2010…."[34]

IV. China's Unfair Advantage Regarding Labor

China has the dubious advantage of a workforce that does not enjoy fundamental human rights. Failure to permit labor to enjoy freedom of association through the formation of legitimate trade unions and to engage in meaningful collective bargaining, is a market distorting mechanism that artificially holds down wages. There is certainly no dispute that wages in China are low, even compared with those from developing countries. A recently reported study calculated that "[T]he cost of Chinese factory labor is a paltry 64 cents an hour."[35] While aerospace workers in China are presumably on the higher end of the wage scale, they indisputably receive only a fraction of pay that U.S. aerospace industry workers receive and "although reliable data on comparable labor costs in China are not available, we can be confident that aerospace wages in China are below Mexican levels, and far below those in the U.S."[36]

According to the AFL-CIO, China's lower wage rates in turn, directly results in the loss of thousands of manufacturing jobs in the U.S. As the AFL-CIO's Section 301 trade petition to the United States Trade Representative argued: [37]

> By lowering wages by between 47 and 85 percent, China's labor repression also diverts millions of manufacturing jobs from countries where labor rights are not so comprehensively denied, increasing unemployment and poverty among workers in developed and developing countries. Highly conservative methodology show that China's labor repression displaces approximately 727,000 manufacturing jobs in the United States, and perhaps many more.[38]

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[33] Janes -- "China Reveals New Stealth Fighter Project," 12/11/02, extracted 09/09/04.
[34] *The New York Times*, 1/22/04.
[35] "Just How Cheap is Chinese Labor," BusinessWeekOnline, 12/13/04.
[36] Faux.
[37] Submitted to the U.S. Trade Representative's office, 3/16/04. The petition was subsequently rejected.
[38] AFL-CIO 301 Petition submitted 3/16/04.

Examples of China's refusal to honor internationally recognized labor standards are abundant and are described in a variety of international reports. For example, the U.S. Department of State Country Reports on Human Rights Practices concerning China annually describes numerous human rights violations, including violations of international labor standards.[39] Violations of human rights are described in other reports as well, such as those issued by Human Rights Watch and the International Confederation of Free Trade Unions.

As China's aerospace industry further develops, its lower cost basis, derived in part from a workforce that cannot legally form its own labor unions let alone engage in meaningful collective bargaining, represents a further detriment to U.S. workers.

V. Proposals to Restore the U.S. Aerospace Industry and U.S. Aerospace Employment

In order for the U.S. aerospace industry to remain competitive against a growing threat from China, the following proposals should be given serious consideration by U.S. policy makers:

1. Acknowledge the growing threat of offsets as well as other forms of outsourcing and implement an effective response for mitigating their negative impact

The issue of offsets and other forms of outsourcing are significant and pose a major threat to the U.S. aerospace industry and its workers.[40] The U.S. cannot delay any further in formulating an effective response to this market distorting mechanism. Among other things, efforts to move quickly to reinvigorate bilateral and multilateral negotiations that will lead to the elimination of the use of offsets by signatories to various trade agreements and trade organizations must be made. Such agreements should be aggressively enforced. In addition, as suggested before, a permanent commission "consisting of representatives of industry, government, labor, and academia" should be established "to develop a comprehensive policy to address the numerous issues related to offsets and outsourcing."[41]

2. Adopt the implementation of Economic Impact Statements

As has been said before, "taxpayers should know whether their hard-earned dollars are going to support good jobs at home or are going to create jobs in other countries."[42] Unfortunately, information gathered by the U.S. government pertaining to the number of aerospace and aerospace related jobs that are moved to other

[39] See U.S. State Department, Country Reports.

[40] While some claim that offsets actually create jobs, their conclusions are speculative at best. On the other hand, the workers whose jobs have actually been transferred to other countries know all too well what offsets mean for them -- the loss of a good and decent job here at home.

[41] See Dissent of Commissioner R. Thomas Buffenbarger, Aerospace Commission, ("Dissent") Nov. 2002.

[42] See, Dissent.

countries by companies who receive contracts, awards, or forms of support funded by U.S. taxpayers is lacking. The U.S. government should adopt effective methods for gathering this information so that it knows the true employment impact of its decisions. Information gathered should be examined prior to making any decision regarding funding and should be accessible to the public. Information should also be analyzed to determine employment impact in the short, medium, and long-term. For example, if a government funded transaction involves a transfer of technology and/or production, an analysis should be conducted regarding the transaction's ultimate impact on U.S. employment.

3. Assure that internationally recognized labor standards, particularly those reflected by the International Labor Organization's Conventions, are incorporated and effectively enforced throughout the industry.

The adoption of internationally recognized labor standards are not only moral issues, they are also economic issues and are directly related to the issue of "fairness." U.S. aerospace workers should not have to compete with workers in other countries where basic human rights are neither recognized nor respected. Without effective mechanisms to incorporate these internationally recognized labor standards, countries like China threaten to drive wages and benefits in the United States down as our workforce competes in a labor market with workers in Xian, Shanghai, and elsewhere. U.S. industry should take pride in leading a world aerospace industy that recognizes and enforces these fundamental human rights.

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While these proposals address the U.S. aerospace industry as a whole, they are particularly significant when referring to China. After all, as explained in this testimony, China has in part developed its aerospace industry through the use of offsets and other forms of outsourcing which poses a significant threat to U.S. aerospace employment. As also stated in this testimony (as well as in numerous other documents), China's lack of recognition for internationally recognized labor standards as well as other fundamental human rights has also given it an unfair advantage in world competition. As China's aerospace industry develops, this unfair competition will be exacerbated in a tightening global market resulting in an increasingly negative impact on the U.S. aerospace workforce.

VI. China Aerospace Industry – A Future Global Leader?

Will China's aerospace industry remain behind the U.S. aerospace industry? China is implementing an industrial policy that is poised to contribute to growing global competition. As discussed in this testimony, China has the capacity, skilled workforce, and, of course, the "will" to make this a reality.

At the outset, we explained the contributions of the aerospace industry to our country-- jobs, products, skills, and innovations--which serve as the basis for our nation's

economic and physical security. It is not surprising then that China seeks the same benefits from developing its own aerospace industry. However, while U.S. policy makers are seemingly reticent to leave the future of the industry to aerospace corporations and the tightening global market, China is aggressively implementing a comprehensive industrial policy aimed at securing its position as a strong and vibrant aerospace producer.

We are well aware that some skeptics dismiss our alarms over the growing threat from China. For them, China does not have the skilled workforce, technology and related ability to produce "quality" products to compete with the U.S. Of course, this same response was made years ago with respect to Japan. That response was proven to be incorrect as "Made in Japan" became a sought after label by some consumers who believed it represented high quality, technologically advanced goods. And, lest we forget, forty years ago, the notion that Europe would house one of the top two commercial aerospace companies in the world would have been hard to believe. No one finds it to be hard to believe now, however -- least of all the U.S. aerospace industry.

Will China follow Europe's rise in this vital industry? The answer to this question will have a serious impact on our nation's aerospace workers, and, of course, our nation's economic and physical security.