

Issues of Importance
to U.S. Civil Aviation
and Civil Aircraft Manufacturers

***MAINTAINING A STRONG
FEDERAL AVIATION ADMINISTRATION***

***THE FAA'S IMPORTANT ROLE
IN AIRCRAFT SAFETY
AND THE DEVELOPMENT OF U.S. CIVIL AERONAUTICS***

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.

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INTRODUCTION

The civil aircraft industry has been a consistent "economic winner" for the United States, contributing positive trade balances year after year. In 1988, the U.S. enjoyed an aerospace trade balance of \$17.9 billion. Over 70 percent of that surplus can be attributed to the worldwide success of U.S. civil aircraft, engines and parts.

Aside from its trade contributions, the civil aircraft industry contributes to the nation through technology spinoff and a wide range of industrial technological capability. It provides jobs for over 330,000 workers - approximately one-quarter of aerospace employment.

The commercial transport sector has been the strength of U.S. civil aircraft manufacturing in recent years. A record backlog and strong passenger growth projections indicate that will continue. Increased shipments of piston rotorcraft in 1988 and an anticipated 1989 upturn in unit sales of turbine helicopters - plus strong sales of business jets and single engine piston aircraft by general aviation manufacturers - are other promising signs for the civil sector. This positive picture helps offset the less optimistic prospect for the aerospace defense sector. Until recently, U.S. military orders provided the impetus for growth in the industry's workload; however, civil orders now drive backlog growth.

Civil aircraft industry prospects *are* good. But it would be a mistake for the United States to assume that the industry's market position is indefinitely assured. Foreign competition is strong and growing. Other countries recognize the important role aerospace plays in developing a nation's industrial and technological capabilities. Aerospace, including civil aircraft manufacture, contributes enormously to national economic well-being through technology spinoffs and a diffusion of technological capability to other industrial sectors. This awareness - combined with the pressures of financing new aircraft and engine projects and of competing for sales in a growing market that is now largely outside the United States - has fostered a global industry of many highly capable players.

Civil aviation trade issues - particularly foreign government support of manufacturers - have received considerable attention in recent years. In a number of instances, the fact that civil aircraft manufacturers abroad receive direct government support influences the United States' business position. But matters relating to U.S. policy and its implementation also have a strong influence on U.S. civil aviation and U.S. civil aircraft manufacturers.

This paper is one in a series on civil aviation issues. The series is published in an effort to look beyond present success and assure that a world-class U.S. civil aircraft industry remains on the leading edge.

MAINTAINING A STRONG FEDERAL AVIATION ADMINISTRATION: THE FAA'S IMPORTANT ROLE IN AIRCRAFT SAFETY AND THE DEVELOPMENT OF U.S. CIVIL AERONAUTICS

SUMMARY

The Federal Aviation Administration (FAA) is one important part of a triad that includes aircraft manufacturers and the airlines, and is responsible for safe, efficient air travel. The FAA's certification system, regulatory standards and airworthiness directive approach to correcting problems have gained worldwide acceptance. Its roles of ensuring safety and promoting the use of U.S. aircraft have been complementary and compatible.

Today the FAA faces a different, more dynamic environment than it did when it was established 30 years ago. The type and nature of services required from FAA continually change, yet the FAA has budget constraints that often prevent it from responding rapidly. Changes in the international civil aircraft market in recent years include the advent of multinational aircraft production, strong competition for aircraft markets, and even competing certification standards as foreign countries' standards have gained credibility and standing worldwide. At the same time, the FAA's reputation as a technical agency has suffered where the politics of safety issues have tended to supersede decisions based on technical considerations.

While the FAA and others concur in the need to attract and keep the most qualified technical personnel, budget pressures make it difficult to provide the necessary financial incentives. An FAA pay increase program has been designed to address this issue for controllers, safety inspectors and technicians who service and maintain air traffic control equipment. It may be a model for incentives for other employees. The Aircraft Certification Regulatory Program, for example, has experienced difficulty in recruiting and training aerospace engineers, manufacturing inspectors and flight test pilots. The matter of continuing education for certification staff has also been recognized as beneficial but has not yet been fully addressed.

Important aspects of the FAA's role today include support in establishing or updating certification agreements with other countries, and providing technical assistance for the development of airworthiness capability in these countries. This aspect of the FAA's mandate is vital to U.S. manufacturers seeking business. Today,

U.S. production often involves either multi-country production of U.S.-designed equipment or participation in multinational consortia with other countries. In such instances, key components, subsystems, or even entire products are manufactured overseas. The United States has benefitted tremendously from these arrangements - its civil aircraft exports have grown far more than imports of these products from other countries. Joint production arrangements are facilitated by bilateral agreements that have existed for years between the United States, Canada and European countries. As air travel increases in the Pacific Rim and countries there develop their own civil aircraft industries, market access in that area of the globe often depends upon production sharing. However, the United States may not have up-to-date bilateral certification agreements with these countries. Developing industrial nations may not even have well-developed government airworthiness authorities.

Working with the European nations in airworthiness standards harmonization is also a critical FAA activity. The existence of a highly competitive European industry, and the greater economic integration of Europe, has led to elimination of competing European national standards and the development of Joint Airworthiness Requirements (JARs). The United States is currently working with Europe to achieve common performance-based design standards across countries. A serious concern is that the United States does not have full input to the European deliberations on the setting of standards. Without it, there is a possibility that the JARs could supplant the FARs as the internationally-accepted regulations governing civil aviation, posing market problems for U.S. manufacturers.

The agency's technical independence has already been eroded by the politicization in the United States of aviation/safety issues. Various administrations, through the Office of the Secretary of Transportation, have become involved in setting rulemaking priorities, allocating FAA resources and decision-making. Congress has engaged in aircraft design by making technical decisions through the political-legislative process. Manufacturers have absorbed the greater economic risks of decisions based on unsubstantiated arguments. Ulti-

mately these costs, which can be out of proportion to the potential for increased safety, are paid for by the public. The usurpation in some instances of FAA's role in setting airworthiness requirements means that accountability for air safety has been diffused. This has weakened the agency's standing in the international aviation community.

CONCLUSIONS

- Current FAA plans for incentive pay programs are important steps forward in attracting the best qualified personnel. Budget constraints and inflexibility should not be permitted to undermine the agency's ability to attract top-flight talent and to constantly upgrade existing staff.
- As new markets open up in the Pacific Rim countries and elsewhere, the FAA will play a key role in updating bilateral airworthiness agreements, and providing technical assistance to foreign country airworthiness organizations. These activities support U.S. manufacturers involved in supplier relationships or joint ventures with non-U.S. companies.
- An inherent requirement in FAA's worldwide regulatory role is sensitivity to national sovereignty concerns and the capabilities of foreign airworthiness authorities. The recent FAA rule change permitting service and maintenance of U.S. fleet aircraft abroad is consistent with the changing nature of the market and helps meet the growing demand for maintenance of U.S.-registered aircraft worldwide.
- The FAA's efforts to obtain commonality in aircraft certification requirements, particularly with the European Joint Airworthiness Requirements (JARs), are necessary to prevent duplication of effort and increased costs. At the same time, it is important to insure that the JAR requirements do not supplant the U.S. Federal Aviation Regulations (FARs). This could have a negative impact on U.S. technology and FAA regulatory leadership.
- The United States cannot afford to lose the important advantage provided by the FAA's preeminence as a standard setting organization. If foreign countries see FAA rulings as politically influenced, the agency's decisions are no longer

automatically accepted as being rooted in technical excellence. Occasionally, FAA standards are not being accepted by foreign authorities. The agency is no longer seen as the final U.S. authority on aircraft safety.

RECOMMENDATIONS

- Support the FAA's current plan for incentive pay programs. Such a plan will only be useful where net additional funds are appropriated to pay for it.
- Expand the use of private and company designees (designated engineering representatives, designated engineering organizations, designated manufacturing inspection representatives, and designated airworthiness representatives) to fulfill FAA services and provide additional resources without significant cost to the agency or the federal budget.
- Try new approaches to FAA staff training including:
 - an extensive exchange or rotation program through which FAA staff can spend time working with other government agencies (such as NASA or DOD), research laboratories or private companies as a means of increasing technical knowledge.
 - FAA staff visits to manufacturers and participation in manufacturer training sessions to acquire familiarity with new technologies and processes.
- Give strong priority to working with the European countries who are developing Joint Airworthiness Requirements to insure their commonality with U.S. standards, and the continued integrity of U.S. Federal Airworthiness Regulations.
- Maintain a strong FAA commitment to updating bilateral airworthiness agreements with foreign countries and providing technical airworthiness assistance.
- Restore the FAA's independence as a technical decision-making organization - free from political influence - so that it can be seen once again as the final U.S. authority on aircraft safety.

**MAINTAINING A STRONG FEDERAL AVIATION ADMINISTRATION:
THE FAA'S IMPORTANT ROLE IN AIRCRAFT SAFETY
AND THE DEVELOPMENT OF U.S. CIVIL AERONAUTICS**

The Federal Aviation Administration which, for over 50 years, has set standards governing the design, production, airworthiness, operation and maintenance of aircraft - and ensured compliance - is one important part of a triad responsible for safe and efficient air travel. Aircraft manufacturers, and the airlines who operate and maintain the aircraft in the service of passengers, share that role with the government agency that regulates them. The success of this three-way relationship over the years is evident in the outstanding safety record of air travel.*

The FAA's regulatory activities have been an important factor in the worldwide preeminence of U.S. civil aeronautics. Its certification system, regulatory standards and airworthiness directive approach to correcting problems have gained worldwide acceptance. The work of the FAA has in no small measure contributed to the acceptability and success of American aircraft products around the globe. The FAA's mandate, under the Federal Aviation Act of 1958, includes "regulation of air commerce in such a manner as to best promote its development and safety," and "the promotion and encouragement and development of civil aeronautics." The agency's roles of ensuring safety and of promoting U.S. civil aviation have been complementary and compatible.

Today, 30 years after the passage of the Federal Aviation Act, U.S. manufacturers and the FAA - which regulates both manufacturers and their airline customers - face a very different environment. The civil aircraft market has undergone considerable change and restructuring, one aspect of which is rapid change in technology. Manufacturers are developing advanced-technology civil aircraft incorporating new approaches to propulsion, structures and flight management systems. They are introducing new manufacturing techniques for greater efficiency and cost savings. This places heavy demands upon the FAA for technical expertise - demands which can be difficult for a budget-constrained organization to

meet. The FAA has frequently acknowledged problems attracting and retaining qualified technical personnel.

Thirty - even 20 - years ago, commercial transports, which constitute the largest share of civil aircraft, were produced almost entirely in the United States. These U.S. aircraft consisted largely of U.S. systems and components. Today, the United States has strong competition from other countries and companies from many nations pursue the same aircraft sales opportunities. Now, too, U.S. production often involves either multi-country production of U.S.-designed equipment or participation in multinational consortia with manufacturers in other countries. In this environment, opportunities for U.S. sales abroad depend upon FAA-negotiated bilateral airworthiness agreements or technical assistance programs with foreign countries. The ability to acquire necessary product approvals or technical assistance on a timely basis is important to U.S. producers and frequently involves the approval of products produced overseas - and the acceptance of a foreign country's airworthiness certification.

Foreign airworthiness standards have, in fact, gained credibility and standing worldwide and potentially could supplant FAA standards in some areas.* This could result in considerable cost for U.S. manufacturers in terms of critical systems and components being redesigned to meet other than FAA standards. The FAA's worldwide reputation as a technical agency has suffered in recent years, its independence as an agency making technically-based decisions in the public interest has diminished. The politics of safety-related issues have superseded decisions on technical merits and attracted involvement in rulemaking by the Office of the Secretary of Transportation. In addition, various constituencies have influenced Congress to go beyond its role of setting policy and providing guidance to take a hand in technical decisions - in effect, to regulate by legislation. These

* Despite vocal public concerns for safety since deregulation in 1978, that record has generally improved in recent years in view of the significant increase in number of hours and miles flown and of aircraft departures.

* The FAA is currently working to develop common regulations with European nations who have developed the Joint Airworthiness Requirements (JARs) as a set of regulations acceptable among themselves.

developments have preempted the FAA's role and its power and independence to do its job guided solely by technical factors.

U.S. civil aircraft manufacturers operate in a dynamic environment where the type and nature of services required from FAA continually change. It is in the interest of manufacturers and their airline customers - and of the flying public whose first concern is safe, affordable and efficient air transport - that the FAA remain the preeminent technical agency for civil aviation.

FAA Personnel Resources

Studies by the FAA and others have agreed on the need to assure that compensation for technical personnel working in regulatory standards and compliance, including aircraft certification, promotes recruitment and retention of the most qualified individuals. Additional staff training has been identified as another critical requirement.

In a management study, the FAA noted problems in the certification area, which most directly impacts manufacturers: "The Aircraft Certification Regulatory Program is experiencing increasing difficulty in recruiting and training well-qualified aerospace engineers, manufacturing inspectors and flight test pilots. . . . The current pay structure is not competitive with the aerospace industry, making it difficult to recruit and retain highly qualified personnel."^{1,2} The National Research Council's (NRC) 1980 review of aircraft certification practices recognized FAA's difficulties in attracting qualified personnel.³ A report by the U.S. Congress' Office of Technology Assessment also supported the need for additional resources in the aircraft certification area: "OTA finds that, in the long term, FAA will need greater expertise on its own staff in areas of new aviation technology to provide oversight comparable to today's."⁴

The FAA is initiating a 5-year incentive pay program to attract technicians, flight standards personnel and air traffic controllers. This program provides additional pay of up to 20 percent of base pay at hard-to-staff facilities. About 2,000 employees would receive additional allowances.⁵ The program is an important step in addressing the issue of qualified personnel and could serve as a model for aircraft certification employees. It should be noted that an incentive compensation plan would only be useful where net additional funds were appropriated to pay for it.

Additional training and continuing education for FAA certification staff could also be highly beneficial, as noted by FAA and the NRC. Staff must keep up with the latest level of technology embodied in civil aerospace products. Engineers and others need to become better informed about industry technology developments, changes in engineering practice and design aids, certification data systems, and so forth, in order to anticipate changes in both technology and processes that companies will employ in future certification programs. These include an increasing use of computer design aids, composite materials, electronic systems, microprocessors and software, among others. One concept which deserves exploration is an exchange or rotation program where FAA technical staff can spend time working with other government agencies (NASA or DOD), research laboratories or private companies as a means of enhancing technological knowledge.⁶ (While FAA employees may participate in government exchange programs, this practice is not widespread for aircraft certification technical staff.)

Another means to achieve some of the beneficial effects of an industry/FAA exchange program would be to provide the staff and travel resources necessary for certification office or technical personnel to conduct periodic visits to manufacturers. Typically, FAA staff visit a manufacturer only when it is related directly to a certification project or problem. One solution could be FAA staff attendance at manufacturer training sessions on a space available basis.

Designees - A Partial Solution to Budget Constraints - Allowing expanded use of designees to fulfill FAA services could draw upon industry expertise and add technical depth to the agency. Designees are private individuals or companies appointed by FAA to perform specified duties in its stead but under its authority. Designated engineering representatives (DERs) - who perform duties related to data approval and other components of certification programs - could ease the FAA's workload. Even if additional DER input were restricted only to U.S. domestic manufacturing programs, it would considerably relieve the FAA staff and, for example, allow it to expand international activities. Allowing U.S. companies, which qualify as designated engineering organizations (DEOs), to perform some functions that are now accomplished by FAA employees may be another means to remedy constraints on FAA resources.

DERs can provide a significant resource advantage to the FAA since the federal government can maintain a direct role in transport certification without having to pay DER salaries. In general, the federal government cannot be immediately responsive to dramatic changes in the workload of its employees while market demand can increase the supply of DERs.⁷ The FAA has a plan to implement an enhanced designee program; in addition to DERs, it would cover Designated Engineering Organizations (DEOs), Designated Manufacturing Inspection Representatives (DMIRs), and Designated Airworthiness Representatives (DARs).⁸ Properly designed and executed, such a program could allow industry to assume more duties without any compromise of safety and with costs paid for by private industry.

The FAA - And The Needs of A Global Industry

In today's highly competitive international market environment - with a heavy emphasis on multinational aircraft programs - the FAA's role has taken on new dimensions for the U.S. civil aircraft industry: helping maintain the preeminence of U.S. civil aeronautics, and facilitating the industry's participation in the global marketplace.

International arrangements in which U.S. manufacturers are involved include production of the CFM-56 engine developed jointly by General Electric and SNECMA of France, the Boeing 767 which has risk sharing partners in Italy and Japan among other countries, the McDonnell Douglas MD-11 transport which involves partners in sixteen other countries, the International Aeroengines V-2500 consortium which includes Pratt & Whitney, Rolls Royce and other European and Japanese companies, and licensed production of the McDonnell Douglas MD-80 aircraft in the People's Republic of China. While in each of these cases the product may be eligible to hold a U.S. airworthiness certificate, key components or entire products are manufactured overseas. In all cases, except license production of the MD-80 in China, existing bilateral arrangements between the United States and foreign country airworthiness authorities were used to maintain the certification integrity of the product. In the case of the license production of the MD-80, the FAA has conducted a technical assistance program to help organize a civil airworthiness authority in China.

The world civil aircraft industry as a whole has experienced a tremendous increase in trade as a result of internationalization and the United States has benefitted

considerably - its civil aircraft exports have grown far more than its imports. In 1988, the U.S. civil aircraft industry recorded a positive trade balance of \$14.3 billion. (See Figures, pages 12-13.)

Whether the U.S. industry can equal or exceed such a performance in the future depends on the maintenance of free trade policies worldwide and an ability to maintain technological leadership in their products. In any event, U.S. industry will have to continue to enter into business endeavors with foreign companies both to spread financial risks and to gain access to export markets.*

With the considerable foreign competition for U.S. manufacturers - and with numerous companies pursuing the same sales opportunities - the ability to acquire product approvals or technical assistance on a timely basis has become extremely important to U.S. producers. The FAA recognizes that it is operating in a different environment today. "Design and production sharing," the FAA concludes, "is rapidly emerging in the civil aeronautical product manufacturing industry on an international scale, growing beyond the simple 'foreign suppliers' activities envisaged by the modern Bilateral Airworthiness Agreements of 1972 vintage toward the development of the more complex 'transnational confederation' contending with the realities of an integrated world economy."⁹

The internationally-oriented activities of the FAA include:

- Negotiating bilateral airworthiness agreements with other countries;
- Monitoring performance of foreign authorities under bilateral airworthiness agreements;
- Developing special arrangements with foreign airworthiness authorities to deal with international joint ventures and coproduction arrangements between foreign and U.S. manufacturers;
- Maintaining maximum practical commonality in international aircraft certification standards;

* The effects of foreign government subsidies for commercial aircraft programs could still negatively affect U.S. exports as well as undermine the position of the U.S. industry at home.

- Approving aircraft imported under FAR 21.29; and
- Issuing export airworthiness approval.¹⁰

The FAA is involved in the approval process for aircraft and components imported into the United States, whether foreign-built aircraft or components purchased from abroad by a U.S. company for installation into aircraft manufactured in this country. In either case, this involves FAA acceptance of a foreign country's airworthiness authority certification under a Bilateral Airworthiness Agreement; such agreements govern international trade in aircraft and components by defining the responsibilities and types of approvals acceptable to signatory countries. Under bilateral agreements, FAA approval also is acceptable for the export of U.S. products to nearly every part of the world. In fact, most countries do not have their own regulations for the design and production of aircraft; rather, FAA's have become preeminent in this regard. A number of European countries, however, have begun development of Joint Airworthiness Requirements (JARs). Standardization of these with FAA regulations is an emerging issue and an extremely important requirement for industry (see page 10).

Historically, the civil aircraft manufacturing industry in the free world has been located in the United States, Canada and Western Europe. The FAA has existing bilateral airworthiness agreements with these countries and well-developed relations with their airworthiness authorities. However, U.S. relations are not as well developed with some newly industrialized economies such as those in the Pacific Rim and elsewhere that are rapidly entering aerospace manufacturing. Air transportation services are growing rapidly in these countries; as these nations become sizable customers for aircraft sales - commercial transports as well as light aircraft and helicopters - they also seek to obtain a share of production. Often the level of overseas production is a key issue among sales offers from competing manufacturers. However, because they have not had a large historical role in aircraft manufacturing, developing industrial countries generally do not have up-to-date bilateral arrangements with the United States to provide for the certification of design and production of aircraft or components, or they may not have well-developed government airworthiness organizations. These are difficulties for U.S. manufacturers seeking to do business in these countries. The means to provide production inspection systems which satisfy FAA requirements may not exist.

Sikorsky Helicopter and Bell Helicopter each faced this situation when they were in competition for license production of a helicopter model in an Asian country. The country in question does not have an existing bilateral airworthiness agreement with the United States. There was no established procedure to permit production surveillance in order that the helicopters produced could be sold with a U.S. certificate of airworthiness. The FAA also indicated that the provision of direct oversight of the U.S. production certification would be an undue burden given the FAA's available resources. As a result, the program did not go forward.

The issue of FAA oversight was a paramount consideration in plans for the license production of the MD-80 in the People's Republic of China. The license production of the MD-80 in China is being accomplished along with an FAA technical assistance program to help organize a civil airworthiness authority in that country. This type of assistance by the FAA assures that acceptable oversight is available for foreign companies that supply U.S. companies, are involved in joint ventures with U.S. companies, or export aircraft to the United States.

A commitment to updating bilateral airworthiness agreements and providing technical assistance to foreign country airworthiness organizations is clearly compatible with FAA's role of ensuring safety while encouraging U.S. civil aviation.

International Regulatory Relations - Foreign Repair Stations Issue - Inherent in the nature of FAA's regulatory relations around the world is the need to exercise sensitivity where national sovereignty and pride are concerned. If foreign governments conclude the United States is discriminating against the efficacy of foreign airworthiness rules and capabilities, these governments may reciprocate. The FAA perceived this to be the case in the instance of limitations on U.S. carriers' ability to obtain maintenance and repair services at foreign repair stations; this was despite certification of the foreign repair stations by the FAA and despite the fact that U.S. airlines and manufacturers' maintenance bases have historically provided maintenance to foreign-registered aircraft. In 1988, the FAA revised its ruling to remove restrictions on the use of overseas repair stations by U.S. carriers. Legislation has since been introduced in Congress to severely restrict or ban foreign repair station use. If the rule is reversed, trade could be reduced. Foreign governments may retaliate as this action could be inter-

preted as a violation of the General Agreement on Tariffs and Trade (GATT).

The FAA rule change was a positive step reflecting an awareness of the global nature of the market and the need to meet a growing demand for the maintenance of U.S.-registered aircraft worldwide. Rule reversal and the imposition of mirror image provisions by the United States' trading partners, which currently do not place limitations on repair of foreign aircraft by U.S. facilities, could cause serious damage to the U.S. civil manufacturing industry. It could effectively restrict the ability of U.S. manufacturers to market their products and support services abroad.

Maintaining U.S. Preeminence in Aircraft Certification

Because U.S. manufactured aircraft have historically dominated the airline fleets of the free world, FAA's certification system, regulatory standards and airworthiness directive approach to correcting problems have gained worldwide acceptance.

An important aspect of the FAA's international activities is the coordination of regulatory standards with foreign country airworthiness activities. At present, Great Britain and the USSR are the only countries outside the United States which maintain complete certification regulations.¹¹ Other countries apply additional special conditions as they deem appropriate. However, 12 European countries have developed a Joint Airworthiness Requirement (JAR) for transport category aircraft.* A JAR 23 for light aircraft is being developed. There also may be JARs for helicopters but no formal agreement to proceed has yet been established.¹²

Common performance-based design standards across countries prevent needless duplications of effort in obtaining aircraft certification. For example, nine European countries allow U.S.-certificated aircraft on their registers without modification but the United Kingdom does not, causing additional expense for U.S. manufacturers.¹³ As the Europeans eliminate their own certification differences, the resulting JARs are finding greater acceptance in the rest of the free world. While there are

some differences between JARs and FARs in actual tests, the major differences are in interpretation of the requirements: some JAR requirements and interpretations are more stringent than the FARs. For a number of reasons, there is a possibility that JAR requirements could supplant the FARs as the internationally-accepted aircraft design regulations. Since U.S. manufacturers have less influence on the development of JAR requirements than on the FARs, there is concern in the industry about the potential impact on U.S. technology and FAA regulatory leadership. The risks may be heightened by Europe's plan to accomplish greater economic integration in 1992 and thereafter. JAR standards could supplant the FARs as the preeminent certification standards because of the number of countries involved in the JAR effort. The FAA must continue to work to obtain commonality in aircraft certification requirements, but it will have to dedicate the personnel and other resources necessary to work with the JAR countries and to have an input to the JARs, as may be appropriate. FAA recognized this obligation in a recent report.¹⁴

FAA preeminence as a standard setting organization is an important competitive advantage which the United States cannot afford to lose. Unfortunately, it has been diminished by an erosion of FAA's technical independence.

Pre-empting FAA - Regulation by Micromanagement

In recent years, there has been growing public awareness of health and safety issues and pressure for action to meet a range of concerns. Where aviation safety is concerned, Congress and several Administrations have responded by politicizing the process of rulemaking. Congress has gone beyond its role of setting policy and providing guidance and oversight. The Secretary of Transportation whose role, as envisioned by Congress, is coordination of national transportation policies, has become involved in setting of rulemaking priorities, allocation of FAA resources, setting comment periods and effective dates, and decision-making. In so doing, FAA's authority has been undermined and decision-making based on technical facts has been replaced by decision-making based on arguments that may not be substantiated.

While FAA has set performance standards that permit industry to be innovative in meeting the standards, increasingly, Congress has engaged in aircraft design by

* European countries involved in Joint Airworthiness Requirements are: Austria, Belgium, Denmark, Finland, France, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom, West Germany.

making technical decisions through the political-legislative process. For example, rulings on cabin interior materials have been made despite the unavailability from manufacturers of materials that meet the stated requirements, and a lack of comparability among materials safety tests. And while the installation of Traffic Alert and Collision Avoidance Systems (TCAS) is an important step in world aircraft fleet modernization and safety, unrealistic deadlines were imposed - deadlines from which it now appears necessary to retreat. Manufacturers have had to absorb the greater economic risk of these decisions as well as costs out of all proportion to the increase in safety - and which must eventually be passed along to the flying public. Moreover, actions that are premature and inconsistent may reduce safety margins rather than improve safety. A far preferable approach would be for the FAA, manufacturers and the airlines to work in a more cooperative manner in evaluating the pros and cons of technical issues in the process of taking corrective action. However, the executive order standards for assessing the societal benefits and costs of regulatory changes are more and more being preempted by legislative and other political pressures.

In this environment, accountability for air safety has been diffused. The FAA - which has set standards world-wide for several decades - has been weakened. A strong technology-based organization has lost prestige as decisions have been taken out of its hands and made on political grounds alone. Foreign countries now see FAA rulings as heavily influenced by politics and this has meant that the agency's decisions are no longer automatically accepted as rooted in technical excellence. An FAA certificate no longer has the prestige it once had. Today, every country wants to do its own certification. This costs U.S. companies enormous time and money and contributes to a further weakening of the standards that the FAA has set.

If U.S. civil aviation is to remain preeminent, a major component is a strong, respected regulatory authority. The FAA must be able to attract highly qualified personnel, and maintain the network of technical alliances sufficient to meet the demands for its service worldwide. And it must be restored to its role as the final U.S. authority on aircraft safety.

FOOTNOTES

¹ Office of Airworthiness, Federal Aviation Administration, *Aircraft Certification Regulatory Program Management Efficiency Study*, (Washington, D. C.: September 1987), p. 52.

² *Ibid.*, p. 118; and, Aviation Safety Commission, Vol. II: *Staff Background Papers*, (Washington, D.C.: April 1988), p. 96.

³ National Research Council, National Academy of Sciences, *Improving Aircraft Safety: FAA Certification of Commercial Passenger Aircraft*, (Washington, D.C.: 1980), p. 24.

⁴ Office of Technology Assessment, Congress of the United States, *Safe Skies for Tomorrow: Aviation Safety in a Competitive Environment*, (Washington, D.C.: July 1988), p. 176.

⁵ Air Traffic Control Association, *ATCA Bulletin 88-12*, (Washington, D.C.: December 1988), p. 5.

⁶ National Research Council, *Improving Aircraft Safety*, p. 28.

⁷ Wolfe and Newhyer, *Aviation Industry Regulation*, p. 126.

⁸ FAA, *Project SMART*, p. 119.

⁹ Office of Airworthiness, Federal Aviation Administration, *Export/Import Airworthiness Certification of Civil Aeronautical Products* (FAA-P-8110-1), (Washington, D.C.: March 1, 1982), pp. 27-29.

¹⁰ *Ibid.*, pp. 7-10.

¹¹ McDonnell Douglas Corporation, McDonnell Douglas Aircraft Corporation, Presentation to National Research Council Committee Studying FAA Safety Procedures, 1980 (Slide 80-6EN-21472).

¹² Alan Postlethwaite, *Flight International*, December 10, 1988, p. 11.

¹³ *Ibid.*

¹⁴ FAA, *Project SMART*, p. 9 and 96.

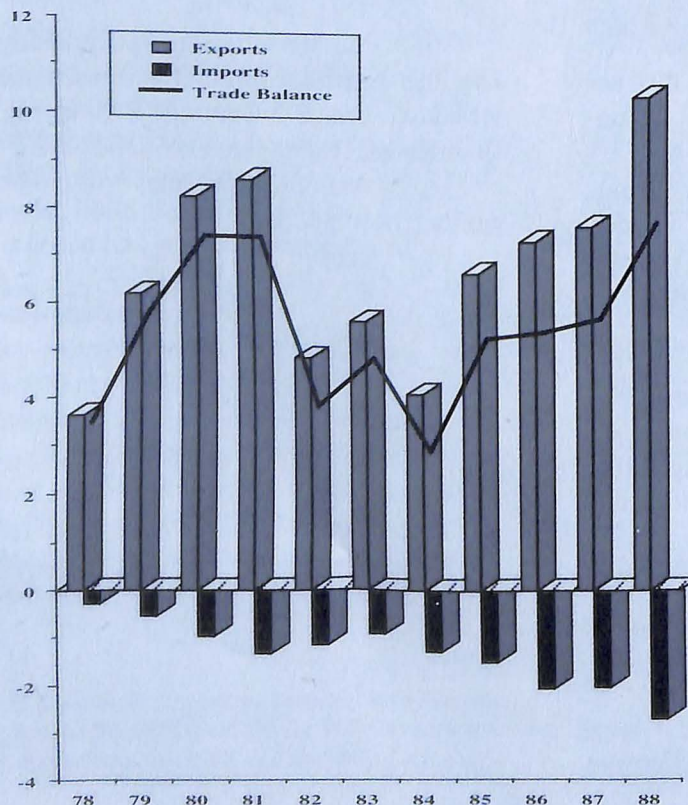
THE TRADE BENEFITS OF INTERNATIONAL COOPERATION IN AEROSPACE

The level of investment necessary to design, develop and produce aircraft, especially large transports - and their propulsion systems - often exceeds the net worth of a civil aircraft or engine manufacturer. The tremendous investment requirement has led companies from different countries to share financial risk in joint ventures and coproduction arrangements. Subcontracting arrangements that cross national borders are also common.

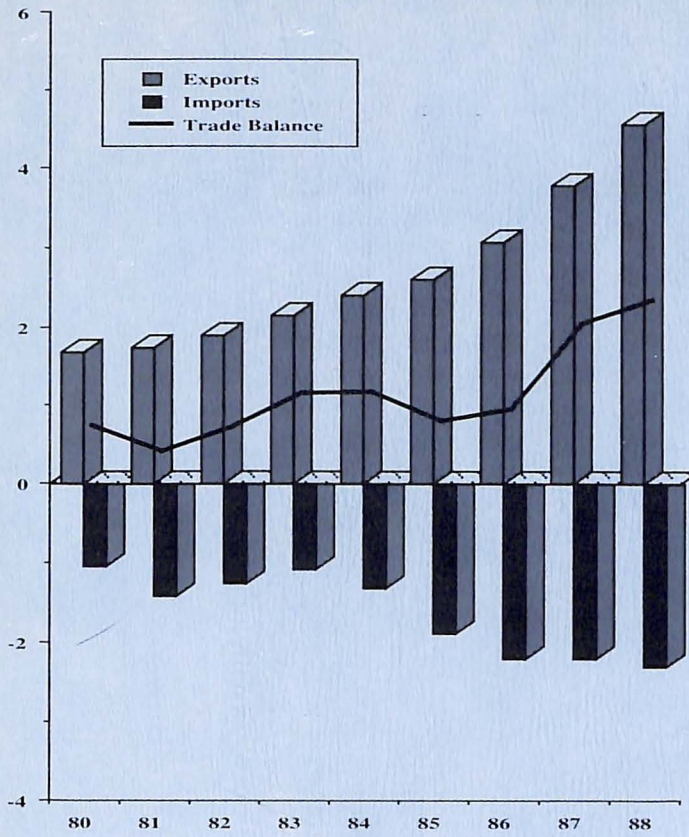
There are market reasons as well for cooperative international manufacturing agreements. In the commercial transport sector, the larger share of the market is now outside the United States. Therefore, sales abroad become extremely important in order to achieve the fairly significant unit sales necessary to sustain profitable operations. When a U.S. manufacturer cannot penetrate foreign markets without meeting local economic requirements, there are clear economic incentives to conduct certain production activities overseas. Part of the transformation of the civil aircraft and engine industry has thus been "demand led," with overseas buyers imposing purchase conditions. Offsets, coproduction arrangements and license production are now common practices in worldwide sales of commercial aircraft.

Ultimately, international cooperation has provided U.S. producers with business they might not otherwise have had, in view of the development of strong competitors in this sector. The benefits are clear from the data on exports and imports of complete civil aircraft for the 1978 to 1988 period and where exports surpassed imports by \$7.6 billion in 1988 (see Figures). In the case of aircraft engines and parts, the trade balance increased from \$661 million in 1980 to \$2.3 billion in 1988. For aircraft equipment, the trade data also show increases in exports and imports. The trade balance increased from \$3.1 billion in 1980 to \$3.9 billion in 1987. In 1988, aircraft equipment exports reached \$5.4 billion, but a substantial increase in aircraft equipment imports (to \$2.6 billion) led to a decline in the trade balance to \$2.8 billion.

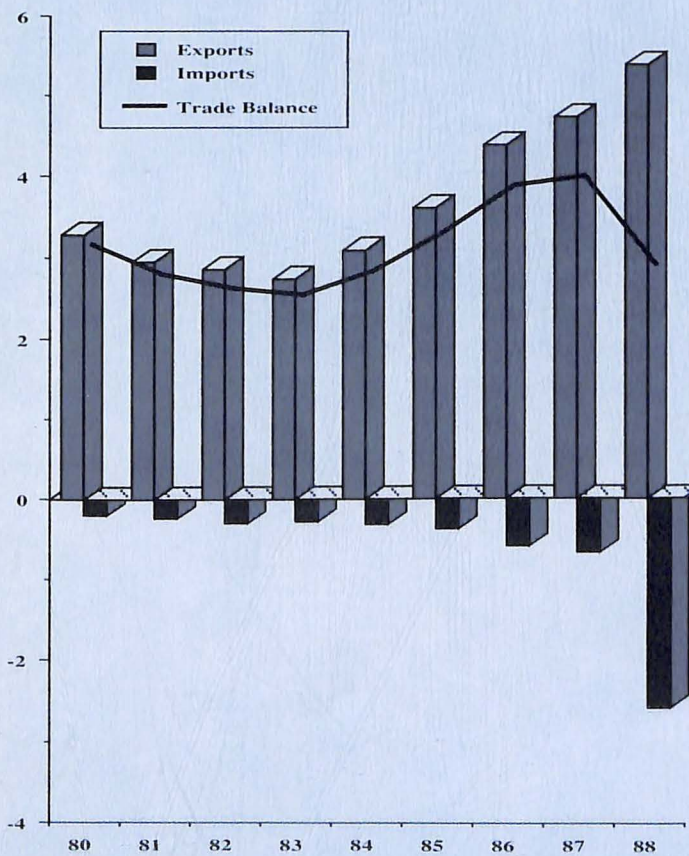
The changing nature of the market in which U.S. industry operates was documented in an AIA report, *The U.S. Aerospace Industry and the Trend Toward Internationalization*, March 1988.



**Trade in Civil Aircraft
(\$ Billions)**



Trade in Civil Aircraft
Engines & Parts
(\$ Billions)



Trade in Civil Aircraft
Equipment
(\$ Billions)

