

# 1983

---

AEROSPACE  
INDUSTRIES  
ASSOCIATION

---

## ANNUAL REPORT

---



## AIA OFFICERS

ROBERT S. AMES, *Chairman of the Board*  
HARRY H. WETZEL, *Vice Chairman of the Board*  
KARL G. HARR, Jr., *President*  
SAMUEL L. WRIGHT, *Vice President/Secretary*  
GEORGE F. COPSEY, *Treasurer*

## VICE PRESIDENTS

LLOYD R. KUHN, *Legislative Affairs*  
JOHN F. LOOSBROCK, *Public Affairs*  
C. RONALD LOWRY, *Research & Technology*  
FRANZ O. OHLSON, Jr., *Procurement & Finance*  
ALLEN H. SKAGGS, *Civil Aviation*  
EMERY PETER SMITH, *International*

## EXECUTIVE COMMITTEE

ROBERT S. AMES, *Textron Inc*  
HARRY H. WETZEL, *The Garrett Corporation*  
KARL G. HARR, Jr., *Aerospace Industries Association*  
ROY A. ANDERSON, *Lockheed Corporation*  
JOHN W. DIXON, *E-Systems, Inc.*  
THOMAS V. JONES, *Northrop Corporation*  
ROBERT L. KIRK, *LTV Aerospace and Defense Company*  
GEORGE E. SOLOMON, *TRW Inc*

## BOARD OF GOVERNORS

WILLIAM C. PURPLE  
*Executive Vice President, Allied Corporation*

GORDON M. TUTTLE  
*Vice Chairman, Avco Corporation*

T. A. WILSON  
*Chairman & Chief Executive Officer, The Boeing Company*

GUY C. SHAFER  
*Senior Vice President, Operations, Colt Industries Inc*

JOHN W. DIXON  
*Chairman of the Board, E-Systems, Inc.*

HARRY H. WETZEL  
*Chairman & Chief Executive Officer, The Garrett Corporation*

DAVID S. LEWIS  
*Chairman & Chief Executive Officer, General Dynamics Corporation*

EDWARD E. HOOD, JR.  
*Vice Chairman, General Electric Company*

LEIGH CARTER  
*Executive Vice President, The BF Goodrich Company*

ROBERT W. CLARK  
*President and Chief Executive Officer, Goodyear Aerospace Corporation*

JOSEPH G. GAVIN, JR.  
*President & Chief Operating Officer, Grumman Corporation*

H. A. SCHOWENGERDT  
*Group Business Director, Hercules Incorporated*

WARDE F. WHEATON  
*Vice President & Group Executive, Honeywell Inc*

ALLEN E. PUCKETT  
*Chairman & Chief Executive Officer, Hughes Aircraft Company*

VINCENT N. COOK  
*Vice President, IBM Corporation, & President, Federal Systems Division*

ROY A. ANDERSON  
*Chairman & Chief Executive Officer, Lockheed Corporation*

ROBERT L. KIRK  
*President & Chief Executive Officer, LTV Aerospace and Defense Company*

CALEB B. HURTT  
*President, Martin Marietta Aerospace*

S. N. McDONNELL  
*Chairman & Chief Executive Officer, McDonnell Douglas Corporation*

U. E. GARRISON  
*President, Morton Thiokol, Inc., Aerospace Group*

THOMAS V. JONES  
*Chairman & Chief Executive Officer, Northrop Corporation*

D. BRAINERD HOLMES  
*President, Raytheon Company*

JAMES VOLLMER  
*Group Vice President, RCA Corporation*

DONALD R. BEALL  
*President & Chief Operating Officer, Rockwell International Corporation*

HARRY W. TODD  
*Chairman, President & Chief Executive Officer, Rohr Industries, Inc*

WILLIAM F. SCHMIED  
*President and Chief Operating Officer, The Singer Company*

ROBERT S. AMES  
*Executive Vice President, Aerospace, Textron Inc*

GEORGE E. SOLOMON  
*Executive Vice President, TRW Inc*

ROBERT J. CARLSON  
*President, United Technologies Corporation*

J. RICHARD BULLOCK  
*President and CEO, Wyman-Gordon Company*

KARL G. HARR, JR.  
*President, Aerospace Industries Association*

---

# CONTENTS

---



---

INTRODUCTION	2
AEROSPACE OPERATIONS SERVICE	4
AEROSPACE PROCUREMENT SERVICE	12
AEROSPACE RESEARCH CENTER	18
AEROSPACE TECHNICAL COUNCIL	21
INTERNATIONAL SERVICE	29
OFFICE OF LEGISLATIVE COUNSEL	33
OFFICE OF PUBLIC AFFAIRS	34
TRAFFIC & TRANSPORTATION SERVICE	36

---

# AEROSPACE OPERATIONS SERVICE

---



The Aerospace Operations Service represents the functional and management areas reflected in the charters of the Manufacturing, Quality Assurance and Product Support Committees, their working committees, subcommittees, liaison panels and Manufacturing Technology Advisory Groups (MTAGs). Prime areas of interest and activity include advanced manufacturing technology; improvement of production processes and management toward greater productivity; advanced quality assurance technology and management systems; logistics planning and technology; spare parts acquisition and management, post-delivery product support and services, and technical publications and training.

During 1983, the committees and their working elements were involved in numerous projects and tasks of interest to the association membership and its customers (the Department of Defense, the National Aeronautics and Space Administration, the Federal Aviation Administration and other government agencies) and maintained active interface and liaison with management officials in both government and industry. Three new working committees, authorized by the Board of Governors in November 1982—Logistics Operations, Manpower Personnel and Training, and Field Support—began operations during the year; they joined the Spare Parts and Service Publications Working Committees in addressing more broadly industry and government interests and problems in logistics management and functional areas. Among the service's activities in 1983 were:

## **Productivity Enhancement**

Four productivity workshops and seminars were developed and conducted by Manufacturing Committee elements during 1983. One, held in conjunction with the American Productivity Center of Houston, Texas, provided aerospace/defense industry input for the White House Conference on Productivity subsequently held in Washington, D.C. in September. The product of this study and report was later submitted to the White House Conference for inclusion in its recommendations to the President and report to the Congress, to be submitted by January and May 1984, respectively, under Public Law 97-367.

The integral characteristic of quality assurance as part of all productivity-enhancing efforts also was stressed in manufacturing and quality assurance conferences and seminars conducted during 1983, with the theme that closer integration of engineering, pro-



R. K. (DICK) MAY  
Bell Helicopter Textron  
Chairman 1983/84  
Manufacturing Committee



GORDON K. URQUHART  
Boeing Aerospace Company  
Chairman 1982/83  
Manufacturing Committee



WALTER L. HURD JR.  
Lockheed Corporation  
Chairman 1983  
Quality Assurance Committee



WALTER R. GEIB  
The Singer Company  
Chairman 1983  
Product Support Committee



MATTHEW M. HODNETT  
Lockheed-Georgia Company  
Chairman 1983  
Spare Parts Committee



E. C. HAMILTON JR.  
Hughes Aircraft Company  
Chairman 1983  
Logistics Operations  
Committee



ROBERT I. SELIN  
Hughes Aircraft Company  
Chairman 1983  
Manpower Personnel &  
Training Committee



F. J. GRIFFITHS  
Hughes Aircraft Company  
Chairman 1983  
Field Support Committee



A. J. MORIN  
General Electric Company  
Chairman 1983  
Service Publications  
Committee

duction and quality functions are "musts" for greater productivity. Improving interfunctional disciplines will be a continuing theme in 1984.

### Quality Assurance System Requirement

Based upon recommendations of AIA/CODSIA correspondence and a number of meetings over several years, DoD Acquisition Management officials concurred that the basic quality systems requirements should continue under MIL-Q-9858A, Quality System Requirements, in U.S. DoD contracts, while AQAP-1, Allied Quality Assurance Publications, should continue to apply under NATO contracts only. The DoD earlier had advocated a combined document applicable to both U.S. DoD and NATO contracts. However, industry viewed this as a complex, cost-escalating change that would be detrimental and that neither U.S. nor NATO industry members desired.

Subsequently, at the request of the DoD, a survey of AIA/CODSIA membership was accomplished which indicated that revisions of MIL-Q-9858A appeared unnecessary. This was reported to the DoD Quality Assurance Council. However, AIA planned continuing appraisal of the total spectrum of contractual quality requirements as covered in MIL-Q-9858A and ancillary documents. Such an assessment project

was initiated by the DoD Quality Council; industry findings/recommendations will be coordinated with the Council.

### **Aerospace Manufacturing Standards**

In meeting its responsibility to review and revise, or to originate national aerospace manufacturing and related standards (NAS) for voluntary use by AIA members and the aerospace industry, Manufacturing Committee work groups updated some 35 of them during 1983. Included were NAS 907, Drills, High Speed Steel; NAS 937, Drills, Double Margin Stepped; and NAS 978, Numerically Controlled Drilling, Boring, Milling and Tapping Machines, plus 31 packaging standard revisions, which were published in December. Most of these revisions involved a year or more of effort on the part of voluntary task groups identified by members in respective areas of expertise.

### **Manufacturing Technology**

The Manufacturing Committee actively supported the DoD/Tri-Services Manufacturing Technology program approved by the Congress late in 1983 and funded at \$201 million for FY 1984. A larger portion of these funds was placed in the Research, Development, Test & Evaluation category, rather than in procurement funds as in the past, which will restrict flexibility in their use and application by the services.

AIA also coordinated with DoD in its Industrial Modernization Incentives Program (IMIP) development. AIA member companies initiated a number of proposals to participate through their respective contract administration channels. A requirement was included in the FY 84 budget for DoD to review approved IMIP projects with Congressional committees concerned, a requirement less stringent than a proposed restriction on this program (to two contracts-per-service in FY 84) earlier sought by the House Appropriations Committee. AIA successfully supported elimination of the restriction, since the IMIP is a useful mechanism toward industrial modernization.

### **Quality Improvement Projects**

A number of quality improvement projects were initiated by DoD elements (the military services and Defense Logistics Agency/DCAS) and NASA during 1983. AIA responded directly or through CODSIA. For example, the Air Force Systems Command (AFSC) requested industry review and comment on 43 suggested action areas as potentials for improving quality. After a comprehensive review, AIA/CODSIA responded that the nature of a number of the proposals would impinge upon the management prerogatives of contractors and could lead to higher costs with little effect upon AFSC's intended goal. Some proposals that had merit were so assessed. The AFSC final report recognized and complimented this input.

Support was provided to the DoD/Defense Logistics Agency's Bottom Line II Conference, held at Fort McNair, D.C. in June. Several hundred senior industry executives attended. In his keynote address, the Deputy Secretary of Defense stressed the requirement for attention to quality in all stages of weapon system, subsystem and component design, development and production, together with the need to reduce scrap, rework and repair costs. Several DoD and industry leader panels discussed current work

management and positive practices/experience in various areas directly relating to industrial and operational defense readiness.

In conjunction with NASA and Air Force Space Systems Division, AIA co-sponsored in June (with NSIA) a second Mission Assurance Conference in Los Angeles, California, from which evolved a number of joint AIA/NSIA quality projects to be worked on during 1984.

AIA's Quality Assurance Committee conducted its annual Industry/Government Conference at Williamsburg, Virginia in September. It highlighted the inherent relationship of quality and productivity. A number of presentations were made by industry and government executives supporting this theme. Quality assurance work/projects underway at year-end also reflected this theme.

### **Spare Parts Acquisition Studies**

AIA members continued a series of meetings and review activities internally, with other CODSIA members, and with DoD and Air Force officials, toward improving the spare parts acquisition process. Included was a meeting with the Principal Deputy Under Secretary of Defense for Research and Engineering and other acquisition management officials at which AIA recommendations for DAR Supplement No. 6 pertaining to the DoD Replenishment Parts Breakout Program were discussed. It was noted that this supplement's language tends to equate unlimited rights data with procurement data.

In a separate activity, industry presented to a special Air Force Management Analysis Group views and alternative approaches with regard to establishing specific time limits on proprietary data, providing firm fixed prices for initial provisioned spares, and requiring breakout plans from each competitor as a part of the competitive source selection process. AIA also participated in a CODSIA project which provided recommendations to the Deputy Secretary of Defense outlining how DoD and industry can jointly implement and/or improve the DoD's spare parts acquisitions policy program. AIA/CODSIA suggested that reasonable cost trade-off judgment must be exercised to assure that remedial actions taken under these initiatives do not result in higher costs than savings made.

### **Work Measurement**

Military Specification 1567, Work Measurement, was published by DoD in March 1983 after a series of correspondence exchanges and meetings among AIA/CODSIA representatives and officials of Headquarters, Air Force Systems Command (AFSC), a Joint Logistics Commanders' panel on the subject, and the DoD/OUSTR&E Director of Industrial Productivity (Acquisition Management). In all of these communications, industry pointed to a number of potentially adverse cost-driver provisions and requirements in the specification drafts. Many remained in the published document, however.

DoD representatives responded that a number of the points contended by industry and contained in the standard — such as more stringent work standard levels, lack of tailoring provisions, applicability to fixed-price contracts, adequacy of work measurement sys-

tems on-line – would be alleviated through planned publication of an Implementation Guide. At year-end, the guide was still in the coordination process within DoD, with pressures for tight application being applied by certain Pentagon elements and AFSC/AFCMD. In correspondence with DoD and Headquarters AFSC, industry was promised the opportunity to review and comment on the guide when DoD's draft coordination is completed. Efforts to resolve these issues will continue.

#### **Logistics Requirements for Development Programs**

At the request of the Air Force Acquisition Logistics Center, an AIA group reviewed and provided recommendations/comments on five study projects. These studies covered the spectrum from logistics support analysis to logistics source selection requirements and the acquisition of support equipment. In addition, a number of studies were completed dealing with such diverse subjects as planning for depot maintenance through the identification of needs for logistics guidance in RFPs. In connection with the latter study, AIA members also assisted in preparation of an Air Force videotape stressing the importance of supportability in equipment design, with its message directed primarily at the design community.

#### **Contractor Engineering Technical Services**

In 1983, AIA members renewed efforts seeking revision of DoD Directive 1130.2, which prescribes policies and criteria for managing, programming and administering contractor engineering and technical services (CETS) personnel. Although previous coordination efforts were focused on eliminating a time constraint for the utilization of CETS personnel, this recommendation was rescinded before the issuance of the directive. In the latest review effort, recommendations were submitted calling again for the elimination of the time restriction as well as more comprehensive definition of the types of service to be provided by the contractors. The favorable reaction to the review, together with discussions with the Army, Navy and Air Force on implementing regulations, enhanced communication between the user and the provider of these services. The results included a general improvement in the overall administration, program effectiveness and better utilization of contractor personnel. As a result of some of these AIA activities, the Navy revised its regulations to provide for improved shipboard living conditions for contractor personnel.

#### **Computer Based Training**

During 1983 an AIA group was involved in considerable activity in the field of Computer Based Training (CBT) and in the support of Air Force maintenance training equipment projects. This included participation in a mini-symposium with the Tri-Services Instructional Application Delivery Systems (TRIADS) group. This effort facilitated the establishment of a working relationship that is expected to result in increased industry comprehension of the military services' needs and directions in the CBT area.

#### **USAF Acquisition/Management Course**

The Air Force Institute of Technology (AFIT), following up a similar 1982 venture, again invited AIA to



provide a series of guest lecturers with service publication backgrounds to participate in a 1983 professional education program entitled Air Force Acquisition and Management Course. The 1982 program included AIA industry lecturers speaking on *Industry's Role in the Development of Technical Orders*. According to AFIT school officials, the AIA lectures were well received by all students and were a contributing factor in the successful initiation of the new educational program. Two-week courses were conducted during April, May, June, July and August for Air Force personnel, both military and civilian.

#### **Automated Publications Symposium**

New technologies and equipment/software continue to emerge at a rapid pace. Tremendous strides have been made in graphics capture and processing, electrographic quality, laser and optical fiber technology applications, network communications, electronic printing systems, color graphics, etc. The common goal of improved productivity and cost reduction continues to stimulate suppliers to the development of new equipments and services.

This phenomenal expansion of graphic art and publishing motivated several AIA service publication groups to join in sponsoring another in a series of automated publications symposia, which have been held on a biennial basis. The latest symposium was held during September 1983 in San Diego, California; its theme was *Automating Technical Information From Design to Support*. The program was comprised of presentations by representatives from hardware/ software suppliers, aerospace manufacturers, government agencies and airlines. Among the areas covered were: Input Systems, Computer-Aided Authoring, Composition and Mastering, Phototypesetting Equipment and Printing, Delivery Systems and Memories and Displays. An international audience of more than 300 attended. It is anticipated that these symposium discussions will provide a better understanding of how automated technical publishing systems can facilitate the integrated information management systems of the future.

#### **World Airline Suppliers' Guide**

AIA members provided recommendations directed toward clarifying the special responsibilities of airframe and engine manufacturers for preparation of initial provisioning data, approval of quantities recommended as spares and the provision of removal rate data in the Air Transport Association's *World Airline Suppliers' Guide*. Also recommended was the elimination in this guide of redundant details and extracts from ATA Spec 200, which already provides a proven method of reducing the costs and workloads associated with satisfying the airlines' minimum needs for procurement of spare parts. Over the years, AIA member companies have assisted their counterparts in ATA in the refinement of this publication, which is designed to help the supplier understand his responsibilities and to establish for airline customers a single policy against which all airlines can operate.

#### **DoD Maintenance Training**

In response to and in support of an OASD report on individual maintenance skill training in the Department of Defense, an AIA group developed a "point-

paper". The OASD report was directed toward finding ways to improve military training and to provide these findings as recommendations to the military services for implementation. The AIA point paper, presented during visits to OASD, Army, Navy and Air Force officials in March, contained additional recommendations for improving the increased use of contract manpower to provide maintenance training, to develop training curricula, to procure training equipment and to facilitate greater use of maintenance simulators. The AIA paper was received with interest and resulted in plans for additional meetings with government representatives on ways to collaborate in the implementation of these recommendations.

### **ILS Acquisition Management Directive**

At the invitation of OASD (MRA&L), AIA reviewed and provided comments on a new revision to DoD Directive 5000.39, which pertains to the acquisition and management of Integrated Logistic Support (ILS) for systems and equipment. The principal changes being proposed for this revision would adjust ILS policies to be compatible with the new Acquisition Policies (DoDD 5000.1 and DoDI 5000.2), strengthen emphasis on system readiness for life cycle objective of acquisition programs, and establish a requirement for life cycle management of weapon system ILS, including planning for post production support. While concurring with the linking of the ILS program to the achievement of the system readiness objective, the AIA recommendations also suggested consideration of certain ILS issues for inclusion in the directive. AIA felt there should be more direct recognition for consideration of depot-level support (both component and end item) in the acquisition process; in other words, cost of repair and maintenance influences everything from design to the total number of systems procured. Additionally, decisions concerning contractor and organic support must be made during the acquisition process. Here again, the source of support directly influences design, complexity of repair and maintenance, and requirements for training, publications, drawings and spare parts. Favorable consideration of these AIA recommendations by OASD (MRA&L) should facilitate the practical implementation of this directive.

### **Diminishing Manufacturing Services**

AIA has been participating in a Tri-Association (AIA/EIA/NSIA) work group dealing with Diminishing Manufacturing Services and Material Shortages (DMSMS). The DMSMS is a complex problem that affects all levels of suppliers and users, industry and DoD alike. In furtherance of this work, the industry group developed and presented to the DoD Task Group for DMSMS a number of issues with recommendations which, when taken together, would assist in solving the DMSMS problem. One of the more significant issues concerned the implementation of Post Production Support Plans in systems/equipment that is approaching or already in the post production support mode. The industry study concluded that most DMSMS problems ultimately must be solved on a programmatic basis and that they require timely access to decision-makers with the authority and resources to implement their decisions. For in-production

systems/equipment, it is relatively easy to locate the appropriate production management, but in the absence of DMSMS contingency budgets, implementing resources may not be available for timely solutions to DMSMS problems. Therefore, it was recommended that post production support plans with identifiable program managers and out-year budgets will offer excellent vehicles for controlling DMSMS for major or special purpose systems/equipments. Items for which a programmatic approach is inappropriate could be assigned to single-service management on some sort of commodity basis or to a special activity created for this purpose in a single agency.

---

# AEROSPACE PROCUREMENT SERVICE

---



The Aerospace Procurement Service supports the business management activities of member companies in the fields of accounting and financial management, contract administration, procurement law, industrial relations, industrial security, materiel management, patents, proprietary information and small and minority business. The Procurement and Finance Council and the Industrial Relations, Industrial Security, Materiel Management and Patent Committees, each composed of senior executives of member companies, provide experts to initiate actions seeking to improve business relationships or to resolve problems of mutual concern to government and industry. The Service was engaged in these major 1983 activities:

## **Defense Contract Financing**

AIA worked in three principal areas related to defense contract financing: flexible progress payments; a proposed revision to OMB Circular A-125, Prompt Payment; and a recommendation of the Grace Commission on progress payments.

With regard to flexible progress payments, use of the Department of Defense's "Cash I" Model to determine the progress payment rate of a contractor surfaced several areas needing improvement or correction. During the year AIA worked closely with DoD on a revised "Cash II", which was in use by year-end.

The Office of Management and Budget—apparently in an effort to introduce commercial financing methods into government contract financing—proposed significant revisions to its Circular A-125. The revised A-125 would have had a severe impact upon government contract financing, which includes progress payments. Contract financing would be available on an optional basis in procurements. However, a potential contractor requesting contract financing would have the time value of money added to his bid in determining the low bidder. Additionally, a winning contractor receiving contract financing would have to provide a specific consideration to the government for the time value of money received in such payments. Finally, the government payment period normally would be 30 days and a contractor desiring an earlier payment cycle would have to provide a specific consideration for same. AIA took strong exception to the proposed revision and several CEOs of AIA member companies became directly involved in the matter. The OMB discussed the proposed A-125 with AIA and at year's end it appeared that several significant and beneficial changes would be made.



ROBERT D. FEATHERSTONE  
General Electric Co

Chairman  
Procurement and Finance  
Council



GEORGE W. FINCH  
McDonnell Douglas Corp.

Chairman  
Patent Committee



MORGAN MCGILVRAY  
Lockheed Corporation

Chairman  
Materiel Management  
Committee



BERWYN N. FRAGNER  
TRW Inc

Chairman  
Industrial Relations  
Committee



JOHN T. HORN  
United Technologies

Chairman  
Industrial Security  
Committee

The Grace Commission recommendation that DoD progress payment rates be rolled back from the current rates of 90 and 95 percent to 80 and 85 percent for large and small businesses, respectively, was based upon an erroneous conclusion that the rates had been raised by DoD solely on the basis of higher interest rates. Both DoD and AIA took strong exception to the recommendation and sought corrections; they indicated that current interest rates did not warrant the rollback and that the alleged savings to the government were spurious. The interim report was issued and corrected to some extent with regard to the figures. However, the recommendation remained unchanged. AIA continues to urge that the recommendation be rejected by the President. In connection with this matter, DoD has indicated that no change will be made in DoD's current standard progress payment rates.

#### Federal Patent Policy

Encouraged by the enactment of Public Law 96-517, which authorizes small businesses, universities and not-for-profit organizations to retain title to inventions made under federally-funded research and development contracts, AIA continued to press for legislation to extend that authorization to all contractors. Toward year's end, Senator Dole—with co-sponsors Senators Laxalt and DiConcini—introduced legislation (S.2171) that would authorize such retention by all contractors. AIA will support the bill and its enactment into law.

The Federal Acquisition Regulation (FAR), as issued in September 1983, did not contain provisions dealing with patent or technical data rights. The draft FAR contained a Part 27 dealing with these subjects.

to which AIA took strong exception. The federal agencies, unable to resolve the differences in the handling of patents and data rights, finally agreed to withdraw Part 27 from the FAR before it was issued. At year-end, the agencies were working to develop a Part 27 acceptable to both government and industry. The possibility of having a Part 27 covering patent rights appears feasible, but coverage for technical data rights acceptable to all agencies and industry seemed remote.

### **Air Travel Compensation Act**

AIA continued to work for enactment of legislation that would appropriately protect the traveling public as well as those engaged in commercial air transportation. Working in concert with the Air Transport Association, AIA developed proposed legislation identified as the Air Travel Compensation Act (ATCA), which would provide for prompt compensation of the damaged public: to the extent that financial responsibility requirements established by the Secretary of Transportation would not satisfy such liability, the government would act as an indemnitor to cover such excess damages. When public claims are satisfied, those concerned with the operation of commercial air transportation would determine an appropriate sharing of the damages. Legislation embodying the ATCA concept (H.R. 4479) was introduced in the 98th Congress.

### **Indemnification**

For a number of years, AIA has been concerned over the risks assumed by its member companies, particularly in the field of defense procurement, as to losses that might arise from a catastrophic occurrence which would exceed available financial protection or coverage in the commercial insurance market. The association has urged the government, particularly the Department of Defense, to make available on a more reasonable basis the provisions of Public Law 85-804. It is AIA's position that, to the extent a government contractor cannot obtain sufficient insurance in the commercial market or provide financial responsibility, the government should stand ready to act as an indemnitor for damages in excess of such coverage. At year-end, a task force of the Procurement and Finance Council was developing a position paper on this matter, seeking to have the Department of Defense make a broader and appropriate use of Public Law 85-804. With regard to that law, AIA notes that the National Aeronautics and Space Administration has extended its provisions to users of the Space Transportation System.

### **Tax Matters**

In recent years, AIA has sought enactment of appropriate legislation authorizing the use of the Completed Contract Method of Tax Accounting. AIA presented statements and testified before Congress on this subject, which was enacted in the Tax Equity and Fiscal Responsibility Act of 1982. AIA also submitted comments on proposed regulations implementing CCM legislation. At year-end, the CCM regulations had not yet issued.

Another area of tax matters in which AIA has been concerned is the provision of the Economic Recovery Tax Act of 1981 (ERTA) that would provide a tax

incentive for taxpayers' incremental research and development. The draft regulations implementing the law place too narrow an interpretation on the IR&D that would be eligible for the tax credit. AIA continued to press for broader provisions under which all IR&D will be eligible for the tax credit. AIA also continued to urge that—because the aerospace industry has a history of high level research and development expenditures—some incentive should be provided for maintaining such efforts. The regulations on R&D tax incentives were not issued by the end of 1983.

#### Technical Data

As a collateral issue to the problem associated with the acquisition of spares by DoD, which surfaced during 1983, the Air Force obtained a deviation from the DAR and implemented a clause under which the contractor surrenders rights to proprietary data within a period of time after the initial delivery of an end item that would require replenishment spares. AIA wrote to the Secretary of Defense urging reconsideration of the deviation and withdrawal of the clause.

#### Competition in Federal Procurement

Both legislative and executive branches of the government developed initiatives on competition in 1983. A Senate proposed bill (S. 388), Competition in Contracting Act, would reduce from 17 to six circumstances under which civilian and defense contracts may be issued without soliciting competitive bids. It would also lower the threshold for cost or pricing data from \$500,000 to \$100,000. A House bill (H.R. 2545) would allow 10 exceptions to the requirement to seek competitive bids and leave in place the \$500,000 floor for certified cost or price data. The Executive Branch, through OFPP, developed a proposed Policy Letter 83-xx, which also established restrictions on non-competitive procurements. AIA provided comments on all these actions and will continue to monitor progress.

#### Socio-Economic Requirements

In the area of socio-economic requirements, government reporting required of member companies continues to increase, impacting both costs and administrative burdens. AIA member companies continue to try to streamline the reporting system by working on regulations that are affected by Public Law 95-507, by the Memorandum of Understanding promulgated by the Minority Business Development Agency, and by government reporting forms, such as the SBA form 745, the SF 294, SF 295, and others.

Labor surplus reporting requirements, to be statutorily required by the proposed Senate bill S. 1730 will increase costs to AIA prime contractors. Because the time lag that exists in Department of Labor output of labor surplus area information makes such information virtually useless to contractors, the entire effort of labor surplus reporting appears fruitless.

AIA continued to support the Procurement Automated Source System (PASS) of the Small Business Administration (SBA). AIA members sought to strengthen PASS, indicating that it should contain size certification that could be used by prime contractors. This would allow companies seeking a source to be assured that a company listed in PASS is, in fact, a small business.

## **Materials**

The Office of Strategic Resources (OSR) has been a focal point for issues relating to solving problems of critical materials, strategic stockpile, barter bills and the National Study on Critical Materials for the Aerospace Industry. The Department of Commerce attempted to down-grade OSR and AIA has taken exception.

Congress sought to move control of the national defense stockpile from the Federal Emergency Management Agency (FEMA) and the General Services Administration (GSA) to the Department of Defense. Although this move has some merit, it appeared to be outweighed by overall national needs and AIA opposed the move. AIA continued to work for a better-managed stockpile removed from political pressures. AIA companies believe that the control of the stockpile should not be scattered between FEMA and GSA with decision inputs from the National Security Council and the Departments of Defense, Interior, State, and Treasury. This fragmented effort loses managerial efficiency.

## **Facilities and Property**

Due largely to a report by the House Committee on Government Operations, a Government Defense Property Council has been formed within DoD. The Council meets regularly in a systematic review of property concerns, most of which are based on property or materiel provided to contractors for execution of government contracts. AIA maintains liaison with the Council.

A Property Accounting Standard issued by the Financial Management Division of DoD was streamlined to some extent due to AIA activity. Seeking to balance the standard, AIA sought a working relationship of the appropriate DoD disciplines to provide a more even-handed approach. There is concern that, improperly implemented, the standard may lead to additional cost without improved government control of industrial equipment provided to contractors.

Working with the Defense Automated Resources Organization, AIA is exploring the possibility of expanding the concept of electronic screening of industrial plant equipment. This could speed the screening process and ultimately lower the cost of screening.

## **Foreign Procurement**

AIA continued efforts to have the government recognize the additional risk of foreign military sales and at year-end was discussing the issue with the Department of Defense. A subject being explored was streamlining DAR requirements for doing business abroad, felt by many to result in additional costs, therefore making a U.S.-manufactured item less competitive in foreign markets. Meetings with representatives of the DoD Foreign Acquisition Office and the Defense Security Assistance Agency appear to have produced positive results for AIA member companies.

## **Personal Compensation**

DoD's efforts to control costs include a revision of DAR 15-205.6 concerning the allowability of personal compensation. Industry feels that the revision represents an intrusion into the prerogatives of contractors' compensation policies. AIA has communicated with DoD, presenting contractors' concerns with the issue of Total Compensation vs. Individual



Items of Compensation and urging withdrawal and reconsideration of the cost principle. A group of industry CEOs met with DoD and presented their views on this matter. Responsive to a DoD request, AIA, through CODSIA, is preparing an in-depth analysis of the cost principle, identifying problems caused by it. DoD directed the DAR Council to reconsider the cost principle in the light of CODSIA's comments, and also directed the services, in the interim, to administer the clause so as to avoid irrevocable inequities.

#### **Hazardous Materials Information System**

The Hazardous Materials Information System (HMIS) was established by DoD to provide a data base for hazardous materials through Material Safety Data Sheet exchanges. The data entry phase for participating member companies was approximately one-third completed at year-end, with the data-base containing over 22,000 Material Safety Data Sheets. DoD/DLA is preparing a HMIS Users Guide with AIA's full participation and assistance. DLA initiated a first-phase study contract for converting the HMIS from mag-tape/ microfiche to real-time. At year-end, AIA was working with DLA and the contractor to assure that the industry's interests and suggestions are considered.

#### **Computer Security**

The AIA/DoD combined task group suggested sweeping changes be made to the Industrial Security Manual, ISM Section XIII, Computer Security. Most of the group's recommendations will be included in a revision to be published early in 1984.

#### **Electronic Emanations**

TEMPEST, a means of suppressing electronic emanations from contractor facilities and equipment, can be extremely costly and wasteful of limited resources if not warranted by a definite threat of interception. Some contractors have had TEMPEST requirements imposed somewhat arbitrarily by military departments on minimally classified contracts. Through its Security Technology Subcommittee, AIA was proceeding at year-end to define the extent of such costs related to contract value and seeking from DoD a specific threat definition for each contract with TEMPEST requirements.

#### **Video Display Terminals**

Occupational health effects of Video Display Terminal (VDT) operations continued to be controversial even though most studies of claimed effects of VDT operation, such as eye cataracts, miscarriages, back pains and headaches, have been inconclusive. VDT related health claims could become a major point of contention between management and employees in the future. In order to keep management informed on this subject, AIA initiated a study of the cause and effect relationship between VDT operation and occupational health in the aerospace industry.

#### **Operational Security**

Unlike other security programs, Operational Security (OPSEC) attempts to control events rather than things, i.e. paper, hardware, etc. Through CODSIA, AIA was successful in reducing OPSEC requirements being placed on contractors by individual military departments. OSD Policy has issued a directive that clarifies the application of, and establishes the requirement for, reimbursement of contractor costs of OPSEC.

---

# AEROSPACE RESEARCH CENTER

---



The Aerospace Research Center is engaged in research, analyses and studies designed to bring perspective to the issues, problems and policies that affect the industry and the nation. Its studies contribute to a broader understanding of the complex economic, social and political issues that bear on the nation's technological and economic status.

During 1983, the Center published three major reports: one on meeting technology and manpower needs through the industry/university interface, another on aerospace exports, and a third focusing on the helicopter industry. The Center worked on development of several other major studies, including such topics as competition in the general aviation industry, technical collaboration, and defense price indexes. Through the first six months of the year, the staff continued to chart Administration and Congressional action, as well as AIA initiatives and followup, on major issues identified in the association's 1980 Issue Statements. At the same time, it assisted in development of a major association position paper on trade and R&D policy that will provide directions for association efforts during 1984. Assistance was provided to a number of data-gathering and analysis efforts in support of various *ad hoc* association projects. Support of a Treasury Department study resulted in publication of the Treasury report, *Offset/Coproduction Requirements in Aerospace and Electronics Trade*.

## **Industry/University Interface**

During 1983, the Center, in cooperation with the Aerospace Technical Council, published *Meeting Technology and Manpower Needs Through the Industry/University Interface – An Aerospace Industry Perspective*. Four basic concerns were highlighted: (1) the relationship of R&D to economic growth and international trade competitiveness; (2) the demand for engineers to meet defense and civilian needs; (3) the state of today's engineering education; and (4) changes in the government/university/industry relationship. A survey of AIA membership conducted for the study revealed that, in 1981, 33 member companies provided universities with nearly \$118 million of funding, about 70 percent of it in support of engineering/applied science programs.

## **Aerospace Exports**

A Center report looked at the export issue in light of the current world trading environment and the U.S. trade position, noting the downtrend in U.S. competi-

tiveness and the key role of high technology industry in improving that situation. An examination of the structure of aerospace trade points up the industry's substantial trade surpluses and the major role civil aircraft sales have played in effecting that contribution to the U.S. trade balance. The report includes results of a study by Chase Econometrics/Interactive Data Corporation on the effect of a \$1 billion increase in aircraft-related exports, including follow-on and spare parts sales, over a period from 1982 to 1990. Results are presented in terms of GNP increase, employment, and government receipts and expenditures.

### **Helicopter Industry**

A Center study, *The U.S. Helicopter Industry, Its Development, World Market and Foreign Competition*, concluded that the U.S. helicopter producers are in danger of being eased out of first place in world markets by European competition. In 1982, for the first time, total delivery of turbine-powered helicopters by foreign manufacturers exceeded those of U.S. producers. Reasons for this trend in market share are both technological and trade-related. While the U.S. industry is maintaining its historical technical advantage over foreign producers in military helicopter production, foreign commercial helicopters appear to be technologically close to parity with U.S. models. Considering that civil use aircraft accounted for 82 percent of the U.S. industry's unit shipments in 1981, it is critical that the U.S. take steps to regain its lead.

### **General Aviation**

As a follow-on to the helicopter industry study and a still-earlier report on foreign competition in the commercial jet transport sector, a study on the effects of foreign competition on private, business/corporate and light transport manufacturers neared completion at year-end. The Research Center and the Aerospace Technical Council were developing the report in cooperation with the General Aviation Manufacturers Association. An outside contractor was preparing a final draft for submission to AIA; publication was expected in the first quarter of 1984.

### **Inflation, Indexes and Aerospace**

At year-end, a study looking at discrepancies between the indexes used to measure inflation in the defense sector and the actual experience of the aerospace defense sector had been completed and was in review. Inevitably, the use of inaccurate and misleading price indexes will lead to disruptions of defense procurements—disruptions detrimental to both the industry and the nation's defense posture. An analysis of the predictability of some important aerospace prices was conducted by the Center to see if some structure could be identified which might be used to better forecast input prices. This preliminary technical study, along with an analysis of the issues, could be the basis for further analysis.

### **Technical Collaboration**

*Technical Collaboration Within Industry* is the topic of a joint project of the Research Center, Technical Council and Procurement and Finance Council under way at year-end. Objectives of the study are to identify major opportunities and constraints in technical collaboration for the U.S. in general and the aero-

space industry in particular, and to identify alternative business structures that could serve as vehicles for collaboration. Some candidate technologies for collaboration relating to the ongoing ATC study *Aerospace Technology for the '90s* were being examined at year-end. Tentative judgments concerning the effects of antitrust implications will be made.

### Space Commercialization

The Center embarked upon a study that views from the industry perspective existing and potential barriers to the commercialization of space. Where possible, alternatives to existing practice will be identified. Industry opinion will be elicited on the relative importance of barriers and the viability of possible alternatives.

### Economic Data Service

The Economic Data Service (EDS), the statistical branch of the Research Center, collects and provides data on various aspects of the aerospace industry and its relationship to the national economy.

The major publication of EDS is *Aerospace Facts and Figures*, the 31st edition of which was published in 1983. The book presented current and historical data on aircraft production, missile and space programs, air transportation, helicopter usage, research and development, foreign trade, employment, and finance, plus tables comparing total industry activity to the Gross National Product and the federal budget. New in 1983 was information on the Standard Industrial Classification (SIC) codes applicable to the aerospace industry, plus a compilation of various price deflators useful in assessing real changes in the industry, apart from the effects of inflation. Other additions included expanded coverage of Eximbank funding, airline financial and traffic data, space program descriptions and budgeting, and civil and military aircraft specifications.

Released simultaneously with the statistical yearbook was a new companion leaflet entitled *Statistical Highlights of the Aerospace Industry*, which contains summary data and selected detail drawn from *Facts and Figures*. The brochure is a handy reference for data on the aerospace industry.

Data collected through EDS surveys or obtained from other information sources were published in 26 statistical series which continued to provide periodic updates on general industry indicators, employment, production, foreign trade, and DoD and NASA activity. The number of recipients of these statistics continued to increase with the expansion of the statistical mailing list to include analysts throughout the U.S. as well as in foreign countries.

Another function of EDS continued in 1983 is the operation of a statistical information service that provides quantitative research for in-house speeches, testimony, and issues statements, and responds to outside queries from government, industry, the press, independent consultants and academic researchers.

---

# AEROSPACE TECHNICAL COUNCIL

---



The Aerospace Technical Council, the industry's senior technical body, is chartered to focus on the realities, complexities and uncertainties relating to high technology systems development. It acts to detect changes in a fast-paced environment and to communicate the industry perspective to key policy levels. Its responsibilities cover the research, engineering, development, test and safety aspects of aircraft, missiles and space vehicles. The Council directs the activities of two divisions, which manage 13 committees and oversee a large number of working level technical project groups. Major Technical Council activities of 1983 included:

## **Aerospace Technology For The 1990s**

The decline in competitiveness of U.S. aerospace products in the international marketplace was the genesis of the Aerospace Technical Council's *Strategy for the '80s* study, which also considered how to reverse the onerous trend. It recommended a three-pronged, major AIA effort. The first recommendation was to draft and propose a comprehensive national industrial R&D policy; at year-end, this policy paper had been developed as part of a broader Board of Governors effort. The second recommendation was to study whether and how collaborative R&D might be advantageous to aerospace companies; that study was well underway in the Aerospace Research Center, steered by an AIA multi-council advisory group. The third thrust was to identify those technologies which would give the U.S. aerospace industry a worldwide competitive product edge in the decade of the '90s, if adequately nourished during the balance of the '80s—in other words, to identify the highest leverage, most versatile technologies offering the highest payoff if a bolder, longer term national R&D strategy is initiated.

The Aerospace Technical Council completed its analysis and the *Aerospace Technology for the 1990s* report was delivered to the Board of Governors at its November meeting. Release of the publication was scheduled for early 1984. It is to be an adjunct to the overall AIA Trade and R&D Policy program, which seeks a new policy climate whereby the U.S. can regain leadership in technology and world trade.

## **NASA's Aeronautical R&T Budget**

AIA continued to support a strong aeronautical research and technology program by pressing for budget increases in NASA's aeronautical R&T budget. While the 1984 appropriation may be adequate, it



LLOYD K. LAUDERDALE  
E-Systems, Inc.

Chairman  
Aerospace Technical Council



LAWRENCE M. MEAD, JR.  
Grumman Corporation

Chairman  
Technical Specifications  
Division



JAMES N. KREBS  
General Electric Company

Chairman  
Aviation Division



STAFFORD E. BEACH, JR.  
Avco Corporation

Chairman  
Technical Management  
Committee



RICHARD L. GREETAN  
Northrop Corporation

Chairman  
International  
Standardization  
Advisory Group



ROBERT R. LYNN  
Textron Bell

Chairman  
Rotorcraft Advisory Group



ALFRED PETERSON  
The Boeing Company

Chairman  
Aerospace Sector  
Committee



RAYMOND L. TRIBELHORN  
United Technologies

Chairman  
Materials & Structures  
Committee



HEBER J. BADGER  
The Boeing Company

Chairman  
Transport Airworthiness  
Requirements Committee



DAVID R. KVEREK  
Martin Marietta Corp.

Chairman  
National Aerospace  
Standards Committee



GEORGE W. EVANS  
Aerofjet General Corp.

Chairman  
Electronic Systems  
Committee



JOSEPH F. GRASS III  
The Boeing Company

Chairman  
Rotorcraft Airworthiness  
Requirements Committee



THOMAS A. MARTIN  
RCA Corporation

Chairman  
Embedded Computer  
Software Committee



DONALD W. BAHR  
General Electric Company

Chairman  
Aircraft Engine Emissions  
Committee



ROBERT E. REEDY  
Lockheed Corporation

Chairman  
Civil Aviation Advisory  
Group



KENNETH L. GEBHART  
The Boeing Company

Chairman  
Flight Test &  
Operations Committee



WILLIAM G. CORNELL  
General Electric Company

Chairman  
Airplane Noise Control  
Committee



ALBERT W. OBERG  
United Technologies

Chairman  
Propulsion Committee



RONALD G. SCHLEGEL  
United Technologies

Chairman  
Helicopter Noise  
Control Committee

does not represent the significant increase necessary to meet long term U.S. goals of strategic and economic security. Representative Glickman is pressing for significant increases in the scope of NASA's aeronautical R&T. Although AIA did not participate in the early hearings, a panel representative of the aircraft manufacturers did testify. AIA will continue to support this effort for the FY 1985 budget and beyond.

The Office of Science and Technology Policy has indicated support of a strengthened NASA aeronautical program, beyond that indicated in the 1982 OSTP study on aeronautical research and technology policy.

### Joint Efforts

The Aerospace Technical Council contributed significantly to projects involving the Aerospace Research Center (ARC) and other councils of AIA.

In May, in cooperation with ARC, a report was published entitled *Meeting Technology and Manpower Needs Through the Industry/University Interface – An Aerospace Industry Perspective* (see Aerospace Research Center).

As an outgrowth of the AIA *Strategy for the '80s* initiative, the Council was working with ARC and the Procurement and Finance Council on a study entitled *Technical Collaboration Within Industry: Opportunities vs. Constraints*.

The Aerospace Technical Council and the International Council, working through the Multi-Association Policy Advisory Group (MAPAG), continued to provide aerospace industry comments on the DoD Militarily Critical Technologies List (MCTL). Most of the industry comments were adopted for inclusion in the latest edition of the list, published in October. MAPAG continued to concentrate its efforts on working with cognizant executive department and Congressional staffs to assure proper implementation of the MCTL.

### Grace Commission

The President's Private Sector Survey on Cost Control (Grace Commission) was initiated in June 1982 to review and make recommendations on executive or legislative action to increase efficiency and reduce costs; identify areas to enhance managerial accountability and operating improvements; and identify areas where further study can be justified by potential savings. Some task groups completed their efforts and submitted reports by year-end; in several other cases, the reports are to be updated and revised as necessary. The Financial Asset Management Task Group's report identified potential savings of \$79 billion over a period of years.

Analyses of the Commission's recommendations were performed by both the Aerospace Technical Council and the Aerospace Procurement Service. Although many of the recommendations – such as elimination of unnecessary tiering and prevention of overspecification – are supportive of positions advocated by AIA, others were not acceptable – for example, a recommendation to roll back the standard progress payment rate (see Aerospace Procurement Service). Selected recommendations, such as streamlining source selection, incentivizing contractors to challenge requirements, and rewarding tailoring of specifications after contract award will be actively supported and pursued with OSD representatives.

## **DoD Briefings**

The Defense Materiel Standards and Specification Board requested an informal interface with industry to consider issues of mutual concern. The Technical Management Committee prepared a CODSIA-coordinated briefing to address four major reforms vital to reducing cost in the acquisition process: (1) specify what, not how-to; (2) preclude premature application of specifications; (3) require tailoring of specifications, and (4) prevent the tiering of specifications. Presented to numerous defense groups at DoD's request, the briefing was well received and its recommendations were included in a Defense Systems Management College study to determine ways to reduce the cost of acquisition. In addition, industry-suggested reforms are basic to DoD's efforts to implement Acquisition Improvement Program Recommendation 14, Eliminate Non-Cost Effective Contract Requirements. At year-end, OSD was coordinating a letter to the services to direct implementation of the four reforms. The Technical Management Committee was included in plans to provide a tutorial briefing to service implementers of the proposed program.

## **Draft RFPs**

AIA endorsed the Air Force Systems Command's efforts to improve procedures for issuing and implementing the draft RFP process. AFSC's proposed implementing document was considered of sufficient value, and germane to effecting and improving the acquisition process, that AIA recommended its basic thrust be included in the Defense Acquisition Regulation to achieve DoD-wide implementation.

## **Independent Testing**

The DoD Authorization Act of 1984 established an independent Director of Operational Test and Evaluation reporting directly to the Secretary of Defense. Operational testing can only proceed upon approval of the Director of OTE and a final decision on production can only be made after the director has submitted a report. Thus, another "gate" in the acquisition process has been institutionalized. Corollary to this added management process is industry's long standing concern with over-involvement of the government in testing. These topics will need increased attention in 1984.

## **Aerospace Standardization**

Progress was made on several specific objectives related to implementation of the AIA Board of Governors policy resolution on standardization. That resolution called on AIA, as industry spokesman, to take the lead in maintaining and enhancing the effectiveness of industry standardization efforts, to promote U.S. leadership internationally and to promote a coordinated approach nationally.

The focus in 1983 was on improving communications and visibility on standardization issues within the AIA membership. A survey of member companies was conducted to identify the scope of industry involvement in aerospace standardization efforts. That survey identified 250 committees of interest in 25 organizations with over 2000 industry participants. This information is being compiled into a roster and matrix to provide a data base for industry management efforts.



Each AIA member company identified a Corporate Standardization Interface (CSI) representative to act as a single point of contact and liaison between the association and the broad network of standardization experts within the company, to assure that industry policy decisions are disseminated and implemented.

Other specific progress areas included industry interface with government on standardization issues, and industry-to-industry coordination between the U.S. and Europe on standards. In related AIA activities, the National Aerospace Standards program produced a total of 161 new and revised standards. The National Aerospace Standards Committee formed a task group to identify industry standardization needs that have not been addressed.

Internationally, the working of the key aerospace committee, TC 20 of the International Organization of Standardization (ISO), completed its 26th plenary meeting, at which a number of management and policy questions were successfully addressed. Results show that, since assuming the secretariat of this group in 1976, AIA has largely achieved its objectives of improving the U.S. presence in international standardization and streamlining the management of that operation.

Standardization program goals for 1984 will focus on coordination and planning, targeting priority industry objectives, developing a cohesive strategy and a plan for achieving such objectives, and identifying adequate resources to insure success.

### Standards Coordination

Recognizing the significance of AECMA—the association of European aerospace manufacturers—as a major influence in international standardization and a strong contender for recognition as *de facto* standards, AIA moved toward more concrete trans-Atlantic industry-to-industry cooperation on standardization. A June meeting of representatives of U.S. and European industry proposed a more structured liaison aimed at harmonization of future standards. Potential benefits include avoiding technical barriers to trade, facilitating communication for joint programs, and enhanced influence in ISO and NATO. AIA's Aerospace Technical Council and AECMA's board approved the proposal. At year-end, SAE's Aerospace Council was considering its involvement, taking into account AIA's policy guidance.

A 1981 AIA/Air Force study effort to test the application of an Air Transport Association (ATA) provisioning specification (ATA Spec 200) for the support of military aircraft subsequently resulted in an international program to achieve harmonization (standardization) between existing military and commercial specifications for provisioning. Nine NATO nations, including the United States, joined in this effort, which is being handled in Europe by AECMA. In 1983, an AECMA Supply Working Group, which includes AIA avionics manufacturers as well as the U.S. Air Force, was looking at the initial provisioning data elements based on those of ATA Spec 200 with the objective of standardizing the military and commercial elements so that the aerospace industry could satisfy the requirements of all users from one data base. Reduction of logistics costs and the availability of a new

provisioning standard to be used with new aircraft introduced in the 1990s is anticipated.

### **Helicopter Engine Ratings**

An AIA group comprised of representatives of turbine engine and helicopter manufacturers evolved more realistic emergency power ratings for use in multi-engine helicopters when operating under one-engine-inoperative (OEI) conditions. It was felt that the demonstration requirements for the current 2½-minute OEI rating severely limits the engine power level available, hence the allowable gross weight of the rotorcraft, and that the present 30-minute OEI rating is not sufficiently long to be fully useful in service. The group's efforts resulted in a recommendation to the FAA for a 30-second OEI rating, a two-minute OEI rating (both limited use ratings), and an unlimited en route OEI rating. These proposed ratings will increase the earning potential of Category A helicopters by as much as 25 percent. The new engine ratings and proposed regulatory changes were presented to helicopter operators and the Federal Aviation Administration for their consideration and comment. The concept will also be presented to civil aviation authorities of Canada, the United Kingdom and Europe.

### **Aircraft Cabin Safety**

At year-end, an AIA project group was reviewing the whole area of cabin fire safety by examining incidents where fire has occurred in airline operations and developing fire scenarios in which passenger and crew safety may be enhanced by material improvements, fire detection and suppression systems, and airplane equipment and/or procedures. These studies are used in the evaluation and recommendations to current FAA and NASA large-scale fire test programs. An FAA/NASA/AIA meeting at the FAA Technical Center reviewed current government and industry programs with a view toward coordinating these efforts.

A second AIA effort evaluated – from the manufacturers' viewpoint – the concept of a fire-blocking layer to improve the fire resistance of the urethane foam seat cushion. Tests conducted by member companies and the FAA indicated that this approach will provide a significant improvement in evacuation time in the event of a cabin fire.

FAA published two notices of proposed rulemaking (NPRM) requiring the fire-blocking layer concept and floor proximity escape path marking for emergency evacuation on current and new transport airplanes. A third NPRM will require the installation of smoke detection systems and other fire protection measures in lavatories and galleys. The subject of cabin safety received considerable attention by Congressional committees and AIA views were provided to the House Science & Technology Subcommittee on Transportation, Aviation and Materials and to the House Public Works and Transportation Subcommittee on Investigations and Oversight.

### **Airport/Airways Improvement Program**

When the Airport and Airways Improvement Act of 1982 was passed in the Congress, it contained authorization for adequate funding derived from the Airport and Airways Trust Fund to carry out the major im-

provements to the National Airspace System as well as providing assistance to airports and communities desiring air transportation. During 1983, the Administration submitted a budget request which was substantially less than that authorized by the Congress, and subsequently, Congress appropriated an amount which came to approximately half that authorized in the original legislation. While the FAA stated that this will not seriously impact plans to implement the National Airspace System Program, it appears that significant damage could be done to these programs in the not too distant future if more funds are not made available.

AIA joined with other elements of the aviation community in Washington to obtain a higher level of funding for coming years. This increased funding was supported in the House, the Senate and by Secretary of Transportation Dole. As an alternative to the lack of funding, there is a bill in Congress to reduce taxes that contribute to the Airport and Airways Trust Fund, in order to avoid the accumulation of surplus in the Trust Fund. Failing to obtain the higher appropriations, AIA will join with the aviation community to support the tax reduction.

### **Military Turbine Engines**

AIA engine manufacturers have expressed concern over the divergent approaches of the military services to engine specifications and engine development and qualification programs. Differences occur in specification format and requirements and in development program milestone definitions and test schedules, which preclude a singular approach to engine development programs to meet the needs and requirements of all services. AIA believes that uniformity in turbine engine development and turbine engine specifications is essential to the efficiency and effectiveness of the aircraft engine industry. The current trend of divergence among the military services must be reversed if costs are to be controlled and engine development improved.

An AIA "white paper" developed in 1983 presented industry recommendations for standardization of the engine development process. The paper provides industry views regarding specification content, program milestone definitions, test schedules, long range planning, program funding and contract incentives, which will improve the development process without degradation of the end product and will result in the engine reaching its full potential in a shorter time.

### **Takeoff and Landing Performance**

With the encouragement of the Federal Aviation Administration (FAA), AIA organized a task group to examine a range of issues related to takeoff and landing performance of transport category airplanes. Participating in this joint aviation industry task group, in addition to AIA, were representatives of the Air Transport Association, National Air Carrier Association, Flight Safety Foundation and the Air Line Pilots Association.

The industry task group reviewed the issues and recommendations provided during the public conference on takeoff performance held in November 1981. Industry agreement was reached on such issues as application of time delays for rejected takeoffs, wet

runway takeoff procedures, anti-skid system requirements, runway configuration and maintenance, and landing distance requirements. The joint industry group resolved a number of long-standing issues, providing FAA a solid basis for subsequent regulatory action or issuance of advisory material.

### **Aircraft Structures**

AIA structures specialists participated in a series of workshops with the Air Force, providing advice and guidance in the areas of damage tolerance and durability for metallic and composite primary structures, toward development of a MIL-PRIME Specification for Aircraft Structures. The resulting MIL-PRIME document will replace a number of existing aircraft structures specifications and will define requirements for design, performance, development, quality assurance and verification necessary to achieve needed structural integrity in one tailorable specification. It will also bring structural integrity requirements up to date, since many of the specifications being replaced have not been revised in a number of years.

### **Aircraft Windshield Plasticizer**

Following announcement by Union Carbide, sole supplier of a polyvinyl interlayer in shatterproof aircraft windshields for the past 25 years, that it would cease manufacturing the materials, the aircraft industry was forced to find an alternate and obtain FAA certification. AIA initiated a project to locate and test possible alternate materials. Laboratory tests, completed in November 1982, of an alternate manufactured by Monsanto, demonstrated properties equal to or greater than the Union Carbide plasticizer. To demonstrate its long term performance prior to committing to full scale production, flight service evaluation was initiated in January 1983. By year-end, 24 windshields had been installed on Boeing 727/737 aircraft of six airlines, and the high time windshield had accrued close to 2,000 flight hours without failure. FAA certification is expected in 1984.

### **Integrated Digital Electric Airplane**

The NASA-Lewis sponsored research program, Integrated Digital Electric Airplane (IDEA), comprises parallel studies of "all electric" transport aircraft having much higher power demands than current applications. New power formats, such as unregulated AC, are being explored. Study contracts for a 400 volt, 20 KHz electric power system were awarded. AIA is monitoring the program, anticipating that the results will be incorporated into development of a new standard.

### **Microelectronics**

AIA compiled its annual *Minimum List of Microcircuits for Document Support/Standardization*. Prepared for the Defense Electronics Supply Center, the list represents AIA recommendations of microcircuits that should be made standard for new military electronic equipment designs.

---

# INTERNATIONAL SERVICE

---



STEPHEN SOHN  
United Technologies

Chairman  
International Council

The International Service is the AIA staff arm that functions with the International Council to provide guidance, coordination and policy recommendations on international issues affecting the commercial and military interests of the industry.

The year 1983 was marked by a growing catalog of contentious international issues, including renewal of the charter of the Export-Import Bank, funding for the Bank, expiration of the Export Administration Act, differences over export controls, and the continuing debate concerning technology transfer. The long-term outlook for trade policy is troubling, due to a lack of a clear sense of direction in the U.S. aggravated by conflicting views among government departments and between elements of the government and the private sector.

## Organizational Changes

AIA recommended two changes in the structure of the federal government: a senior position in the Department of Commerce (already in place), and the formation of a Technical Advisory Committee on Transportation. The latter, under consideration at year-end, is intended to reflect recognition of the significant contributions made to the national economy by aerospace industry exports.

## Technical Advisory Committee on Transportation

Timing for the establishment of the new Technical Advisory Committee (TAC) on Transportation was uncertain at year-end. The legal basis for its creation is the Export Administration Act, which expired at the end of September 1983, but which was extended by Congress only until the end of February 1984. It is up to lawyers in the Department of Commerce to determine whether this extension permits formation of the TAC or whether the TAC must await the passage of a new act.

The Department, nevertheless, remains committed to the concept of a TAC. DoC envisages the TAC as the forum for the determination of items on the control lists to be negotiated in the informal Coordinating Committee on Export Controls (COCOM), for assistance during the actual COCOM negotiations, and for determination of the foreign availability of items and technologies listed on the Militarily Critical Technologies List (MCTL). COCOM is important as a forum for arranging multilateral controls, rather than unilateral controls that could constrain U.S. exports to the benefit of foreign competitors.

## Strategic Planning Task Group

The International Council established a Strategic Planning Task Group to look beyond the day-to-day

problems to the issues likely to arise in a two-to-five year time frame. The Committee prepared and distributed to member companies a report in which two of the primary recommendations are: establishment of a projects group to develop and promote actions that need to be taken so that privately-owned U.S. aerospace companies can compete equitably against state-owned or state-supported foreign firms; and initiation of a project to explain why and under what circumstances the international flow of technology is in the national interest.

### **Export Financing**

The Congress renewed the charter of the Export-Import Bank for another two years, with virtually all the changes sought by AIA. The new charter stresses that the primary objective of the Bank is to be competitive with foreign entities in financing, as opposed to merely self-sustaining in its operations. The terms of Bank officers are staggered four-year terms; an advisory board is reestablished; and mixed credit financing is supported.

If the charter represents an improvement for the Bank, the agreed funding level does not. The figure of \$3.8 billion is a carryover from the Administration's standing level, despite Congressional and industry arguments in favor of a higher figure. In its own presentations on the Bank, AIA supported Senator John Heinz's figure of \$7.5 billion. One troublesome aspect of the lower figure is that it does not position the Bank to respond to any increased demands for aerospace or other products as the world economy improves. However, the surplus left in the Bank at the end of 1983 because of the world recession negated efforts to attain the higher figure.

AIA launched a program to provide competitive financing for military sales. Explorations were conducted with bankers and leasing agents. A financing program might involve the establishment of a military equivalent to the Private Export Funding Corporation; a co-financing or parallel-financing arrangement with commercial banks; and some sort of risk sharing co-financing program involving manufacturers, commercial banks and the Department of Defense.

### **Technology Transfer**

A matter troublesome to the industry is the dilemma spawned by U.S. government efforts to stem the transfer of high technology to countries in the Soviet orbit. Over recent years, government efforts to grapple with the issue have led to such an expansion of controls that technology transfer has come to cover not just East-West trade but West-West trade as well.

The Department of Defense effort to develop a list of militarily critical technologies has attracted most of the attention in the past, but U.S. industry has shifted its focus, feeling that the emphasis should be placed on the regulations to be drafted by the government for implementing controls. The Multi-Association Policy Advisory Group (MAPAG) concluded that it should focus on some areas for the future: efforts to declassify the MCTL, support for a stronger COCOM to provide multilateral controls, development of information on the foreign availability of items on U.S. government control lists, and the need for continuing dialogue with federal offices and other organizations, such as Defense Policy Advisory Committee on Trade

(DPACT), the Defense Science Board (DSB), and industry groups and associations that address technology issues. Central to the shape of export controls will be the ingredients of any new Export Administration Act, on which AIA has presented its views.

On another front, the Department of Defense continued to redraft its Interim Policy Directive on Technology Transfer, 2040.XX, following considerable industry criticism. AIA made its objections known to DoD; the DPACT and the DSB also criticized the directive.

#### **Cooperative Programs**

The Department of Defense released two documents that address international armaments cooperation: a June report of the Defense Science Board entitled *Industry-to-Industry Armaments Cooperation*, and an August report of the Department of Defense Task Group on *International Coproduction/Industrial Participation Agreements* (the Denoon Study).

The Defense Science Board report focused on industry-to-industry armaments collaboration between the U.S. and NATO. A second phase of the task group's activities will focus on Japan. The report used the government's stated policy for increased industry-to-industry arms cooperation as a starting point, making clear, however, that the policy assumes implicitly that a conscious trade-off has been made between a strengthened alliance resulting from technology sharing and increased competition for U.S. industry resulting from this. The report also concluded that there are several fundamental prerequisites for an increase in industrial cooperation: increased high-quality investments by our European allies in key military-oriented technologies; a practical resolution of the technology transfer issue; and a sound business basis on both sides of the Atlantic for cooperative projects, which means sorting out complementary roles for governments and industries, improving DoD's international acquisition policies and practices, and reaching a better understanding with NATO concerning third-country sales. The report underscored the importance of R&D to the strength of the nation and to alleviating industry concerns about increased industrial collaboration. The report concluded that only "strong specific government policy decisions and actions and involvement of industry can reverse" the many trends and impediments that could inhibit future collaboration.

AIA continues to cooperate with the Department of Defense in arranging seminars and symposia with friendly countries to explore the possibilities for cooperative programs. At the request of DoD, AIA arranged an aerospace and electronic conference with Canada and assisted with a seminar in Spain.

#### **NATO Industrial Advisory Group**

The U.S. delegation to the NATO Industrial Advisory Group emphasized the need to enhance the U.S. role in NIAG and to increase the effectiveness of the organization itself. The delegation felt that U.S. interests would be well served with a knowledgeable U.S. vice chairman to NIAG, a position not previously held by an American representative. The election of the U.S. vice chairman had not been completed at year-end, but a candidate was chosen and the concept endorsed by other national delegations.

Other efforts at improving NIAG's effectiveness involved intensifying liaison between NIAG representatives and groups under the Committee of National Armaments Directors. At the September NIAG meeting in Ottawa, Canada, note was taken of the decisions of the NATO Naval Armaments Group and the NATO Air Force Armaments Group to give NIAG access to bi-annual and annual status reports. At the same meeting, the NIAG asked the chairman of the U.S. delegation to prepare a paper on his recommendations to tighten the link between funding and participation in NIAG projects. The November meeting of NIAG heard a presentation by the U.S. Defense Science Board on its report *Industry-to-Industry Armaments Cooperation*.

#### **Export Administration Act**

The Export Administration Act of 1979, which normally provides the legal basis for the U.S. government to carry out export controls, expired on September 30. The inability of the legislative branch to agree on an acceptable replacement forced the Administration to rely on the President's emergency economic powers to continue export controls. Just before the closure of the 1983 session, Congress extended the 1979 act until the end of February 1984. The new Congress will tackle resolution of differences between the Senate and House versions.

AIA made its views known through Congressional testimony and through the Emergency Committee for American Trade (ECAT). Among AIA objectives were improvement in the export licensing process by reducing the workload through creation of a comprehensive license for U.S. companies to include subsidiaries abroad; a general license for COCOM countries; and a balance on the exercise of export controls for reasons of national security, foreign policy and short-supply on the one hand, and the need to promote exports to reduce the foreign trade deficit, increase U.S. productivity and create additional jobs on the other hand. AIA also pushed for contract sanctity and careful weeding of the extensive Militarily Critical Technologies List (MCTL) to reduce it to only critical technology items, determined to a great extent by the foreign availability of technology and goods.

#### **Foreign Corrupt Practices Act**

While the Senate passed a version of the Foreign Corrupt Practices Act that would ease the burdens facing American industry in trying to comply with the uncertainties of the Act, the House failed to pass such legislation. For some time, the bill has been hung up in a subcommittee of the House Committee on Energy and Commerce. At year-end, there existed a written promise that the legislation will be released by the subcommittee within 60 days after the House Foreign Affairs Committee acts. This still does not insure passage in 1984 of improved foreign corrupt practices legislation, but it does remove a major obstacle to further legislative debate.



---

---

# OFFICE OF LEGISLATIVE COUNSEL

---



The Office of Legislative Counsel is responsible for communicating to AIA members the status of legislative matters directly affecting the industry, while at the same time transmitting industry's views to members of Congress.

In 1983, AIA coordinated and participated in a number of industry coalitions, dealing with such issues as Independent Research and Development (IR&D) and Bid and Proposal (B&P) costs, cost principles for political advocacy by government contractors, and revisions to the defense procurement system. On behalf of the association, the Legislative Office worked with AIA staff and member companies to prepare testimony on the geopolitics of strategic and critical materials, the competitive position of the U.S. aerospace industry in the world market and the future direction of the U.S. space program. In addition, letters or position papers were submitted for the record of Congressional hearings on NASA's aeronautical research and technology (R&T) program, the reauthorization and amendment of the Export Administration Act and the Export-Import Bank's charter, Buy American waivers for Department of Defense purchase of products incorporating foreign-made specialty metals, threshold levels for the submission of certified cost and pricing data, the Federal Aviation Administration's service difficulty reporting system and fire safety standards, airport and airway funding and the proposed imposition of new penalties for the submission of false claims.

---

# OFFICE OF PUBLIC AFFAIRS

---



The Office of Public Affairs is responsible for informing the public of the goals and accomplishments of the aerospace industry in support of national security, space research, technological leadership, civil aviation, commerce, international trade and other matters. In fulfilling these responsibilities, the Office maintains liaison with and provides support for the Public Affairs Council, composed of public affairs executives of AIA member companies, and provides support as required for the public affairs activities of member companies' Washington offices. The Office also maintains liaison with public affairs offices of government agencies and trade associations that have responsibilities in aviation and space matters.

## Publications

AIA's principal public affairs outlet, the quarterly publication *Aerospace*, continued to cover diverse subjects concerning industry activity and the activities of government agencies involved in aerospace matters. Among major articles published in 1983 were the annual aerospace industry review and forecast; a NASA 25th anniversary commemorative issue that detailed NASA's plans and programs for the next quarter century; and a special report on the defense budget and the long term defense program bylined by Secretary of Defense Caspar W. Weinberger. *Aerospace* also featured signed articles by NASA Deputy Administrator Dr. Hans Mark on advanced lunar exploration; by Dr. Allen E. Puckett, Chairman and CEO, Hughes Aircraft Company, on Independent Research and Development; and by Senator Larry Pressler on the need for new directions in U.S. space policy.

Continued as public affairs projects were the internal publications *AIA Quarterly Digest*, the *AIA Annual Report* and *Key Speeches*, a reprint service calling attention to speeches of particular interest made by government officials or industry executives. *Key Speeches* published in 1983 included *Prevailing with Pride*, a commentary on U.S. national security strategy by Thomas C. Reed, Special Assistant to President Reagan; *Meeting the Trade Crisis*, by Representative Dan Rostenkowski, Chairman, House Committee on Ways and Means; and *A Perspective on Spare Parts Pricing*, by General James P. Mullins, USAF, Commander, Air Force Logistics Command.

The Office of Public Affairs also published and distributed the *1982/83 Directory of Helicopter Operators* and the *1983 Directory of VTOL Aircraft*.



SAM PETOK  
Rockwell International  
Chairman  
Public Affairs Council

Editorial assistance was provided to the Aerospace Research Center for the 1983/84 edition of *Aerospace Facts and Figures*, the economic reference book of the aerospace industry. It was published under a long-standing agreement with *Aviation Week and Space Technology*, which handles promotion and commercial distribution.

The Office also provided editorial assistance to the Aerospace Technical Council and the Aerospace Research Center in preparation of the *Aerospace Industries Association Position Paper on Trade and R&D Policy* and a companion publication, *Aerospace Technology for the 1990s*.

### Special Projects

The Office arranged and coordinated two meetings of the AIA Public Affairs Council, the spring meeting in Washington, D.C. and the fall meeting in Monterey, California.

The Office also hosted on a regular basis a series of meetings with Washington representatives of AIA member companies to discuss industry public affairs activities and problems and, at some of the meetings, to introduce key government public affairs officials and media executives.

A December luncheon sponsored by the Mid-East Region of the Aviation Space Writers Association featured AIA President Harr and his annual industry review and forecast. The luncheon drew some 200 attendees, including more than 100 Washington editors and correspondents, and resulted in substantial press coverage.

# TRAFFIC AND TRANSPORTATION SERVICE



The Traffic and Transportation Service is a guidance and coordinating point for the transportation management segment of the aerospace industry. As such, it serves as a medium for exchange of views on government regulation of transportation. The service provides staff representation before government agencies concerned with transportation issues. Providing specific direction for these representations is the responsibility of the Traffic and Transportation Committee, aided by task groups created to study specific problems and develop programs for committee consideration. During 1983, these programs led to participation in proceedings before the Interstate Commerce Commission, the U.S. Customs Service, the Materials Transportation Bureau of the Department of Transportation and various carrier organizations. Member interests in modification of duty-free entry and Customs requirements in the Defense Acquisition Regulation (DAR) resulted in an active interface with the DoD on such matters.

## Task Group Activities

The Export/Import Task Group recommended actions through the Industry Sector Advisory Committee structure and to U.S. Customs Bureau with respect to the duty free entry of aircraft parts as contemplated by the Civil Aircraft Agreement. Concerned with U.S. Customs implementation of the agreement, the task group provided practical positions related to international aerospace trade and customs procedures to assure the formulation of entry regulations to carry out the intent of the agreement with a minimum of regulatory restraint. In addition, based on Task Group recommendations, AIA submitted statements to U.S. Customs on proposed procedural changes regarding drawback, penalty procedures and form revisions relating to entry documentation.

The Automation Task Group, established to provide information on software programs and systems available for application in the area of traffic and transportation management, conducted a seminar covering fleet maintenance scheduling, transportation audit report and payment systems, freight audit and tracing systems and retrieval of tariff information through electronic data interchange.

The DoD/NASA Task Group continued to interface with government agencies regarding policy changes or new policies with an impact on transportation services. It performed the initial review and drafted



DONALD F. GINLEY  
Rohr Industries, Inc.

Chairman  
Traffic & Transportation  
Committee

comments on government procurement regulations affecting the transportation sector.

The DoT/Hazardous Material and Waste Task Group maintained surveillance on domestic and international carrier proposals for entry documentation related to the air and surface movement of hazardous materials. Additionally, this task force was responsible for the review of Department of Transportation and Environmental Protection Agency rulemaking notices concerned with the transportation of hazardous materials and waste; it also had responsibility for the preparation of position papers.

The Rates and Classification Subcommittee, a permanent subcommittee of the Traffic and Transportation Committee, is responsible for maintaining surveillance of carrier rate and rule changes considered detrimental to aerospace interests. The subcommittee is primarily concerned with Interstate Commerce Commission rulemaking proceedings involving surface transportation, including the movement of personal property and electronic materials. If AIA action is warranted, this subcommittee assembles the necessary facts and data to permit appropriate representation. In the wake of major transportation legislation enacted in 1980 and 1981, the Interstate Commerce Commission conducted a series of rulemaking proceedings concerning operating authority and performance, carrier liability and freight classification. These proceedings were under review by the Traffic and Transportation Committee throughout 1983.

**AIA KEY TELEPHONE NUMBERS**  
(Area Code 202)

President	429-4611
Vice President/Secretary	429-4620
Treasurer	429-4631
Aerospace Operations Service	429-4621
Aerospace Procurement Service	429-4625
Aerospace Research Center	429-4683
Aerospace Technical Council	429-4685
Civil Aviation	429-4626
International Service	429-4644
Office of Legislative Counsel	429-4669
Office of Public Affairs	429-4656
Traffic and Transportation Service	429-4652
General Counsel	861-7810
Information	429-4600

---



---

AEROSPACE INDUSTRIES ASSOCIATION  
OF AMERICA, INC.

1725 De Sales Street, N.W., Washington, D.C. 20036

---



## MEMBERS

Abex Corporation  
Aerogjet-General Corporation  
Aeronca, Inc.  
Allied Corporation  
Aluminum Company of America  
Avco Corporation  
The Boeing Company  
Colt Industries Inc.  
    Chandler Evans Inc.  
    Menasco Inc.  
Criton Corporation  
E-Systems, Inc.  
FMC Corporation  
    Ordnance Division  
The Garrett Corporation  
Gates Learjet Corporation  
General Dynamics Corporation  
General Electric Company  
The BF Goodrich Company  
Goodyear Aerospace Corporation  
Grumman Corporation  
Hercules Incorporated  
Honeywell Inc.  
Hughes Aircraft Company  
IBM Corporation  
    Federal Systems Division  
ITT Defense Space Group  
    ITT Aerospace/Optical Division  
    ITT Avionics Division  
    ITT Defense Communications Division  
    ITT Federal Electric Corporation  
    ITT Gilfillan  
Lear Siegler, Inc.  
Lockheed Corporation  
LTV Aerospace and Defense Company  
The Marquardt Company  
Martin Marietta Aerospace  
McDonnell Douglas Corporation  
Morton Thiokol, Inc.  
Northrop Corporation  
Parker Hannifin Corporation  
Pneumo Corporation  
    Cleveland Pneumatic Company  
    National Water Lift Company  
Raytheon Company  
RCA Corporation  
Rockwell International Corporation  
Rohr Industries, Inc.  
The Singer Company  
Sperry Corporation  
Sundstrand Corporation  
Teledyne CAE  
Textron Inc.  
    Bell Aerospace Textron  
    Bell Helicopter Textron  
    HR Textron Inc.  
TRW Inc.  
United Technologies Corporation  
Western Gear Corporation  
Westinghouse Electric Corporation  
    Energy & Advanced Technology Group  
Wyman-Gordon Company

## AFFILIATES

Associated Aerospace Activities, Inc.  
Aviquipo, Inc.  
British Aerospace Inc.  
Commerce Overseas Corporation  
Eastern Aircraft Corporation  
National Credit Office, Inc.  
U.S. Aviation Underwriters, Inc.



---

AEROSPACE INDUSTRIES ASSOCIATION  
OF AMERICA, INC.

1725 De Sales Street, N.W., Washington, D.C. 20036

---



