



1975  
annual  
report

AEROSPACE INDUSTRIES ASSOCIATION

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## CONTENTS

2	Message to the Membership
4	Aerospace Operations Service
8	Aerospace Procurement Service
13	Aerospace Research Center
15	Aerospace Technical Council
21	International Service
23	Office of Public Affairs
25	Traffic Service
27	Organizational Chart





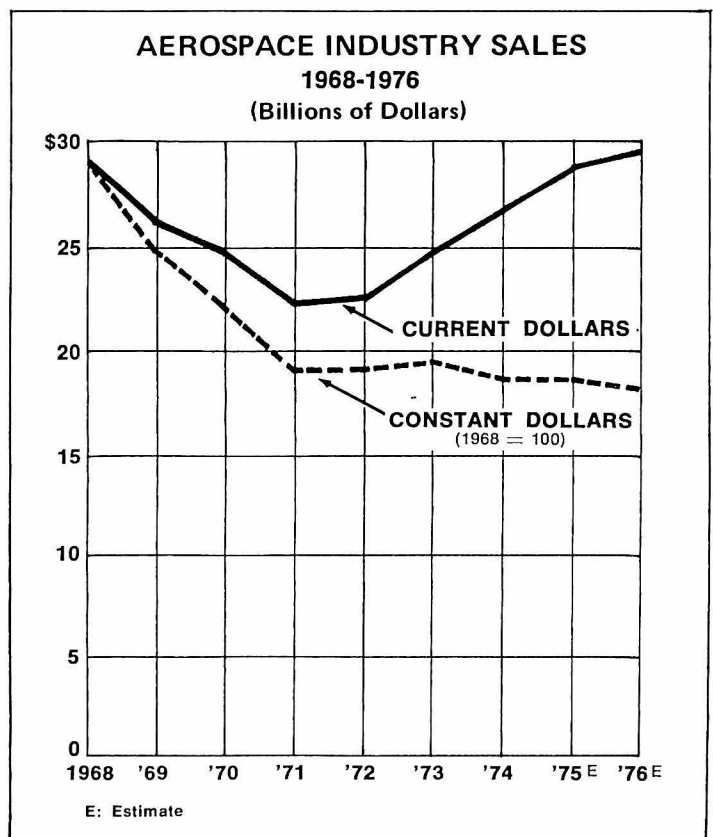
# Message to the Membership



KARL G. HARR, JR.

Sales of the aerospace industry, the prime measurement of industrial economic health, continued their growth in 1975, reaching approximately \$28.4 billion, nearly reaching the record \$29 billion level achieved in 1968. Further, sales in 1976 are expected to increase to \$29.2 billion.

However, as the Association publicly stated at yearend, the effect of inflation has substantially eroded the apparent progress reflected in sales statistics. Measured against constant 1968 dollars, 1975 sales were actually \$10 billion less than seven years ago.



Other 1975 economic highlights include the following:

- Exports achieved a new high of \$7.8 billion, an increase of \$700 million over 1974. Civil shipments (deliveries) accounted for approximately \$5.6 billion of the total, a solid indication of the continued world-wide acceptance of our commercial output.
- Backlog on hand increased nearly \$1 billion during the year to a total of \$36.4 billion.
- Employment, based on statistics compiled by the Bureau of Labor Statistics and reports from AIA member companies, continued to decline. Employment declined to 929,000 compared with 973,000 in 1974. Estimated employment in 1976 is expected to decline further to 900,000 workers.
- Industry net profits as a percentage of sales (after taxes) decreased to 2.9 percent compared with 3.0 percent in 1974. The Federal Trade Commission, meanwhile, reported an estimated net profit for all manufacturing corporations of 4.5 percent.
- By major categories, sales in 1975 amounted to \$15.8 billion for aircraft and related equipment, \$5 billion for missiles, \$3.2 billion for space equipment, and \$4.4 billion for non-aerospace products produced in aerospace plants.

Among the most important matters addressed by the industry were the preservation of cost recovery by government contractors of an equitable portion of its independent technical efforts (Independent Research and Development and Bid and Proposal activities); the effects of standards promulgated by the Cost Accounting Standards Board; numerous aspects of foreign military sales; improvements in the major weapons system acquisition process; solutions to the industry's capital formation problems; and reversal of the continued erosion of the nation's technological base.

During the year AIA's president testified before Congressional committees and/or submitted statements of industry positions on subjects of direct interest to the industry.

These included:

- Testimony on research and development aspects of the authorization legislation for the National Aeronautics and Space Administration before the House Subcommittee on Aviation and Transportation Research and Development; additional testimony was furnished to the subcommittee later in the year.
- Testimony on Renegotiation Act amendments before the House Banking, Currency and Housing Subcommittee on General Oversight and Renegotiation.
- Testimony before the Senate Aeronautical and Space Sciences Committee on aircraft fuel efficiency programs.

Further, various Councils and Services assisted several officers of AIA member companies in the preparation of Congressional testimony.

These included:

- Testimony before the House Banking, Currency and Housing Subcommittee on Economic Stabilization and before the Senate Banking, Housing and Urban Affairs Subcommittee on Production and Stabilization expressing in-

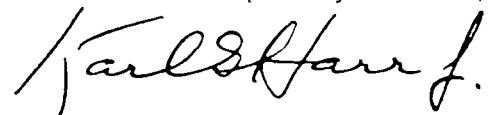
dustry's concern with respect to Cost Accounting Standard 409.

- Testimony by three aerospace industry officials, representing AIA, the Electronic Industries Association and the National Security Industrial Association, on Independent Research and Development and Bid and Proposal (IR&D/B&P) costs before the Joint Economic Subcommittee on Priorities and Economy in Government, and the Senate Armed Services Subcommittee on Research and Development.

A structural change in the Association was approved by the Executive Committee of the Board of Governors which decided that the interests of the industry no longer required a special, product-oriented element—the Transport Aircraft Council—and the Aerospace Technical Council was assigned responsibility for continuance of appropriate activities.

The Association staff, with the assistance of key personnel in member companies, maintained a high level of activity in various areas of importance to the industry. Following sections of this Annual Report cover the highlights of these activities.

Respectfully submitted,



KARL G. HARR, JR.  
*President*



# Aerospace Operations Service

*The Aerospace Operations Service is concerned with the management fields of manufacturing, quality assurance, subcontract and materiel management, and post-delivery product support. Its six committees are augmented by subcommittees, ad hoc groups of specialists, and project task panels of industry experts. They handle tasks related to new and revised government policies, regulations, statutes and procedures, and initiate projects—by industry or government request—to improve industry performance.*

Significant activities of the Service in 1975 included:

### **Computer Aided Manufacturing (CAM)**

Interest continued very high in the application of the computer to the manufacturing process and its impact on productivity as evidenced by studies within the General Accounting Office, DOD's Manufacturing Technology programs, universities and not-for-profit organizations, and supporting industry sectors.

Four separate studies were initiated and completed on CAM-related areas directly applicable to aerospace: Automated Warehousing, Micro/Mini Computer utilization within Aerospace Manufacturing, Design/Manufacturing Interface, and Evaluation of Manufacturing Process/Methods Analysis by Computer Simulation. Plans have been completed and work initiated on the continuation of two of these and five other studies have been started.

### **Review and Comment on Government Documents**

A significant effort was applied to the review of proposed new and revised specifications, military standards, and regulations as well as follow-up on requesting changes on issued documents that are objectionable. They include: work measurement standards, production management, nonconforming material, packaging and shipping, priorities for natural gas, quality program requirements, nondestructive inspection requirements, proposed ASPR revision regarding government surveillance of prime contractor management of critical subcontracts, and welder performance qualification.

### **NAS 900 Series Machinery and Equipment Specifications**

Effort continues on the revision and development of new specifications for machines, equipment, and standard tools. Final coordination has been completed for new specifications on Induction Tube Brazing Equipment, and



LOUIS D. HILL  
*Northrop Corporation*  
 Chairman, Spare Parts Committee



DANA M. COUND  
*Rockwell International Corporation*  
 Chairman, Quality Assurance Committee



W. PAUL FRECH, SR.  
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 Chairman, Service Publications Committee



OTTO F. JANSSEN, JR.  
*The Garrett Corporation*  
 Chairman, Product Support Committee



MICHAEL E. BARCHI  
*Hughes Aircraft Company*  
 Chairman, Materiel Management Committee

Machine Plasma Arc Welding Equipment and Computer Numerical Control. Liaison is maintained with other trade associations and standards groups in the development and revision of these specifications.

### **Laser Cutting of Aluminum Alloys**

The Manufacturing Committee initiated a project on evaluation of laser cutting of aluminum alloys, with participation by Materials and Structures Committee, assessing physical properties of test specimens prepared by laser cutting as compared with milled and blanked specimens. After reviewing the favorable test results of the first phase, Air Force Materials Laboratory has now funded a program in higher powered lasers to develop optimized cutting speeds and to prepare additional specimens for testing by AIA member companies.

### **Quality Resources Study**

An annual revision of AIA's continuing survey of quality costs was conducted, which serves as a quality management tool and a reference for various company management functions concerned with quality costs and staffing. Training and guidance was provided member companies to assure that the survey questions would be uniformly interpreted. Resultant data provided valid comparisons with prior years and identified changes and trends in the costs of quality assurance.

### **Socio-Economic Aspects of Subcontracting**

Work continued with the Small Business Administration, Department of Commerce, DOD, National Minority Purchasing Council, NASA, and Bureau of Indian Affairs to effectively utilize the capabilities of small and minority business in subcontracting. Position papers have been drafted on mandatory set-asides, Commission on Government Procurement Recommendations A-47 and A-48, voluntary subcontract program, and make-or-buy.

### **Shortages and Energy**

After the impact of shortages on the economy in 1975, follow-up is being maintained with DOD and other government departments and agencies on both in-house and outside studies of the future availability of materials and early warning of impending shortages. Conservation of energy is being highlighted in working with DOD and the Department of Commerce SavEnergy program.

### **Integrated Logistics Support**

Early in 1975, AIA members spearheaded a continuing tri-association (AIA/EIA/NSIA) effort to revise succeeding drafts of a proposed Navy handbook regarding logistic support analysis requirements for aeronautical systems and equipment.

The purpose of this handbook will be to improve the integrated logistics support discipline by providing a procedural baseline from which logistic support design constraints and an analysis of the design to determine the expected life cycle costs and systems effectiveness of the

weapon system/equipment can be developed and provided to the operating forces.

Recommendations submitted to the Navy pinpointed incompatibilities with current DOD policy and standards and existing Navy procedural instructions and proposed various changes in the context of the document which would improve its implementation by the logistics community, both Navy and industry. Subsequently, this draft document was withdrawn by the Navy for further rewrite.

### **Contractor Support of Future Army Aircraft Systems**

At the invitation of the Army, an industry study plan was completed on the subject of a prime manufacturer providing the entire wholesale (or depot level) supply and maintenance support during the first two years after an aircraft system has been introduced into the Army inventory and its engineering design activity has stabilized.

This plan, which was presented to Army officials during May 1975, would use the integrated logistics support structure and resource requirements established during engineering development phases. It would provide for supply support for all levels of maintenance, except depot level maintenance of Government Furnished Property; provide for depot level maintenance support of all Contractor Furnished Property; set forth procedures for transition to Army support and identify government facilities and services required at each operating site.

This plan can be expanded as needed to cover each event that can be controlled by cost, schedule and performance evaluation milestone dates agreed to by the contractor and the Army. This plan is being evaluated by the Army Aviation Systems Command. Additional liaison activities with the Army are anticipated during 1976 to define further the Army logistics policy relative to Army aircraft support on a contractual basis.

### **Air Transport Association Liaison**

Joint review efforts directed toward achieving more efficient implementation of airline requirements for manufacturers' product support, supply information, data processing and technical data publications have been accomplished by AIA members on a continuing basis with their counterparts in the Air Transport Association.

Many of these efforts have become international in scope through the participation of other trade groups, such as the SBAC (Society of British Aerospace Companies) the French GIFAS (Groupement des Industries Francaises Aeronautiques et Spatiales), the AEA (Association of European Airlines) and most recently the German BDLI (Bundesverband der Deutschen Luft-und Raumfahrtindustrie).

Earlier, AIA recommendations were presented to ATA for the clarification and revision of reference information in the ATA World Airline Suppliers' Guide concerning the purchase order process between the airlines and their suppliers. Although this Guide is not a contractual document, it is considered a major reference baseline by the airlines, both domestic and international, and by the manufacturers/suppliers.

Favorable consideration of the AIA recommendations in the next edition of the Guide, scheduled for release during May 1976, has been indicated. It is anticipated that the subsequent implementation of this purchase order information can result in substantial decreases in the use of costly emergency spare parts ordering procedures to supplement normal inventory replenishment with cost reductions for both supplier and airline.

Further refinement of the requirements for order processing and invoicing techniques for the ATA supply/data processing specification was completed with the incorporation of a new specification chapter on "Supply Data Telecommunications Airline/Supplier."

This chapter describes an On-Line Order Processing and Inquiry System which enables participating airlines to make instantaneous inquiries via telecommunications to participating manufacturers' data base for prices and stock availability. This system also provides a means to enter purchase orders and determine delivery status of existing purchase orders and allows manufacturers/suppliers to acknowledge or take exception to purchase orders placed.

Although this system's initial costs are high, it should soon pay for itself in the further simplification and standardization of order administration transactions between the airline and the supplier.

In separate review studies directed toward improving the ATA specification for manufacturers' technical data, industry recommendations were submitted to ATA proposing revisions in the policy and basic format requirements of structural repair manuals and the separation of aircraft recovery information from airplane maintenance manuals. These changes would group all data concerning airplane structural repair in the prime manufacturer's repair manual thus overcoming the problems involved with the varying responsibilities assigned to associated manufacturers who are, in some instances, subcontractors or vendors. For the latter, ATA approval of aircraft recovery information in a separate document rather than in maintenance manuals has been indicated. Instructions for this requirement will be included in the next revision of the ATA specification.

Another joint study effort concerned an updating of the ATA specification for ground equipment technical data. This specification establishes the minimum standards for the presentation of technical data related to the equipment for maintenance, service, loading and movement of the aircraft, its engines, components and accessory systems, as well as other equipment related to airline operations.

The revisions incorporated are designed to provide more consistency between illustrations and text and will clarify the intent of certain requirements, making them more compatible with present practices and needs for ground equipment technical data.

### **World Airlines Technical Operations Glossary —Sixth Edition**

AIA continued its joint efforts with the Association Europeene des Constructeurs de Materiel Aerospacial (AECMA), the Air Transport Association (ATA) and the International Air Transport Association (IATA) in preparing

an updated revision of the World Airlines Technical Operations Glossary.

The purpose of this glossary is to provide common definitions of terms on a world-wide inter-industry communications basis which are relevant to the airlines maintenance and engineering functional organizations, including their interfaces with the manufacturers' engineering and product support functional organizations. Based upon operating experiences gained since the release of the original edition in 1970, a number of improvements were incorporated in the sixth edition of this Glossary, which is scheduled for world-wide distribution in 1976.

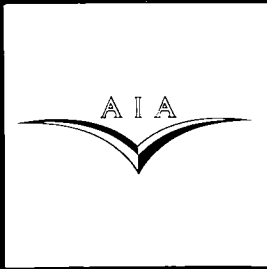
#### **Consolidation of Provisioning Documentation**

Participation in a Council of Defense and Space Industries Association (CODSIA) project with the Department of

Defense, initiated at the beginning of 1972, was continued during 1975. The goal of this joint effort is to develop standard documentation for the selection and ordering of spare parts while, at the same time, consolidating and reducing the proliferation of various provisioning documents and specifications used by the military services. Industry recommendations were provided to DOD for revisions to the latest drafts of two DOD uniform provisioning procedures standards to eliminate inconsistencies with existing DOD policies.

These military standards prescribe the format and preparation instructions for provisioning documentation and the terms and conditions governing the provisioning of end items and the contractor's responsibility relevant to these items. Corrected versions of these standards are currently being applied to new weapon systems.





# Aerospace Procurement Service

*The Aerospace Procurement Service supports the business management activities of member companies, in the fields of accounting, finance, contract administration, procurement law, patents, proprietary information, industrial relations and industrial security. One council and three committees of senior company executives provide experts to initiate actions seeking to improve business relationships with and resolve problems of mutual concern to government and industry and to present the views of the aerospace industry on government actions impacting on the supported and related activities.*

During 1975, the Service continued efforts to obtain equitable and practical government procurement policies, practices and procedures affecting the business management activities of the aerospace industry.

The year was marked by concentrated efforts in the fields of Cost Accounting Standards, Independent Research and Development (IR&D) and Bid and Proposal (B&P) cost recovery, Occupational Safety and Health Act (OSHA) implementation, Federal Patent Policy and Reliability Improvement Warranties.

## **Independent Research and Development and Bid and Proposal**

Industry efforts and activities in connection with the equitable recovery of independent research and development (IR&D) and bid and proposal (B&P) costs continued at a high level during 1975, particularly through the Tri-Association Ad Hoc Committee on IR&D, chaired by Thomas J. Murrin, Westinghouse.

After publication of the General Accounting Office Report, "Contractors' Independent Research & Development Program, Issues & Alternatives," dated June 5, 1975, and after a number of delays, joint hearings were held during September by the U.S. Senate Subcommittee on Research and Development of the Committee on Armed Services (Senator Thomas J. McIntyre, New Hampshire, Chairman), and by the Subcommittee on Priorities and Economy in Government of the Joint Economic Committee (Senator William Proxmire, Wisconsin, Chairman).

Representatives of the Tri-Association Ad Hoc Committee on IR&D presented testimony at these hearings.

The Tri-Association formal statements reflected industry's views of and opposition to, overly-rigid governmental control which would defeat the basic purposes of IR&D, i.e., to permit industry to develop and maintain strong competitive technological capabilities which, in turn, provide the nation a strong and healthy national industrial security base.

The Tri-Association's representatives also participated in informal "give and take" with the subcommittee members on the advantageous aspects of IR&D/B&P aimed toward acquainting the Congressional committees with industry views on the subject. The majority of witnesses, including those of the General Accounting Office, Department of Defense, National Aeronautics and Space Administration, Energy Research and Development Administration, a panel of the Defense Science Board and the Office of Federal Procurement Policy, substantially agreed with industry views. Subsequent to the hearings, industry comments were also filed on statements made by the minority witnesses.

An interesting development during the hearings on IR&D/B&P was the decision by ERDA to broaden the IR&D policy of the former Atomic Energy Commission, (AEC), under which IR&D costs were allowed only if the effort was related to an AEC contract. This policy change recognizes the benefits of IR&D to government agency programs.

AIA and the other associations in the Tri-Association effort continue to pursue an educational and action program in this key area.

The Senate Appropriations Committee Report on the DOD 1976 appropriations bill placed a new IR&D/B&P reporting requirement on DOD. It read in part:

"The Committee directs that, starting with the submission of the fiscal year 1977 budget the DOD include an estimate of IR&D/B&P for the budget year as an information exhibit in the research, development, test and evaluation justification material. Quarterly reports are to be made against the yearly plan to the Committees on Appropriations."

Deferred IR&D costs continued to be the topic of meetings and discussions with the ASPR Committee. Although several meetings were held during 1975, this matter was not resolved. However, it now appears that a solution to this problem will be reached in 1976.

Several studies and active projects were underway at year's end within Department of Defense, Air Force, Cost Accounting Standards Board, Energy Research and Development Administration, regarding IR&D/D&P. The Office of Federal Procurement Policy was engaged in developing a government-wide IR&D/B&P policy, in the form of an Office of Management and Budget Circular.

### Value Engineering

Working through the Council of Defense and Space Industry Associations (CODSIA) and at the invitation of the DOD, comprehensive guidelines and suggested contract clauses were developed to implement Value Engineering in defense subcontracts. CODSIA's view and suggestion were well received by DOD. CODSIA also transmitted detailed comments to the General Services Administration (GSA) on proposed coverage of Value Engineering which in the Federal Procurement Regulation (FPR) was almost identical to the existing ASPR. The FPR on this subject had not been published at year's end.

### Warranties

The Department of Defense is pursuing a new concept entitled Reliability Improvement Warranty (RIW), the objective of which is to encourage design and design changes in items to increase Mean Time Between Failure (MTBF) and reduce Turn Around Time (TAT) for overhaul and maintenance, thereby enhancing operational utilization and lowering life cycle.

The concept calls for long term fixed-price arrangements where engineering changes are introduced at no cost to the government and the contractor agrees to repair or replace items which fail, based on specified MTBF and TAT values.

Industry's principal concerns are the bias in policy statements toward fixed-price contracting before adequate experience is available to permit reasonable predictions and the many penalty provisions in structuring contracts. CODSIA expressed these concerns and made recommendations to the Office of the Secretary of Defense to improve implementation of the concept. The latter recog-

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Rockwell International Corporation  
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STANLEY M. LITTLE, JR.  
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Chairman, Industrial Relations  
Committee



nized the problems, and CODSIA is working with a Tri-Service Group toward resolving the issues while pursuing mutual objectives.

Office of Federal Procurement Policy (OFPP) which, while responsible to the Congress, would have cognizance of all Federal procurement policies. A principal purpose of the OFPP was to bring uniformity, where feasible, to the federal procurement process.

During 1975, the OFPP undertook to promulgate an OMB Circular dealing with major acquisitions. Industry's views on the proposed Circular were presented by S. N. McDonnell to the OFPP at public hearings.

The OFPP also developed proposed legislation which would consolidate the Federal Procurement Statutes. This important matter is pending, and at the year's end, AIA was preparing to testify on such proposed legislation.

Late in 1975, the OFPP issued its first Procurement Regulation which would establish a Federal Procurement Regulation System. Industry comments on the proposed OFPR are being developed.

### **DOD Profit Study**

The Department of Defense initiated a study in 1975 of defense contractor profitability which has become known as "DOD Profit Study '76." At the direction of the Board of Governors, AIA did not formally participate in this study or its requirements for company data. AIA, however, will continue to follow developments in order to provide available information to member companies and to assure that the study results are properly presented and reasonably interpreted.

### **Proprietary Information**

Continuing concerns of industry have been the allocation of rights between the government and a contractor as to technical data generated in the performance of a government contract as well as the appropriate protection of proprietary information or data of a contractor used in the performance of such contracts.

Because of the absence of a uniform federal policy on this subject, AIA has undertaken the development of a proposed Federal Policy on Proprietary Information and Technical Data. The proposed policy will be completed during 1976 and presented to concerned federal agencies.

Interpretations of the scope of the Freedom of Information Act (FOIA) by federal agencies and the courts gave rise to significant problems in the protection of proprietary information submitted by a company to the government. Those developments were closely monitored and member companies were advised.

### **Patents**

A major problem in the government/industry interface for many years has been the allocation of rights to inventions made in the performance of research and development work under government contracts and any patents that

may mature, as well as the appropriate recognition of a contractor's rights in privately developed patents.

This problem was complicated by the diverse patent policies expressed by the Administration and the Congress on various occasions. During 1975, the necessity for a uniform Federal Patent Policy on this subject became apparent. AIA developed, and expressed in the form of draft legislation, a proposed Federal Patent Policy that would equitably allocate the rights to inventions made during research and development work under a government contract and any patents on such inventions.

The proposed policy would also properly protect and observe rights in a contractor's privately developed and owned patents necessary for the reproduction of end items developed and furnished under government contracts.

AIA's concept was presented to the Office of Federal Procurement Policy (OFPP) with a recommendation that it be included in efforts of the OFPP to consolidate the Federal Procurement Statutes. Additionally, AIA's proposed Federal Patent Policy was presented to the Energy Research and Development Administration (ERDA) during public hearings held by that agency on its statutory patent policies.

At the close of the year, the OFPP had not yet responded to AIA's request and the results of the ERDA hearings had not yet been published.

The DOD issued late in 1975 a complete revision of ASPR coverage on patent rights. AIA is working with CODSIA in the preparation and presentation of comments on the revised ASPR.

### **Cost Accounting Standards**

The promulgation of standards by the Cost Accounting Standards Board under Public Law 91-379 continues to require the application of significant Association efforts.

Eleven standards had been promulgated by the end of 1975 and were in effect, two had been published in the Federal Register for comment, and a dozen standards proposals were in various stages of development or study.

AIA, among others, was active in opposing the promulgation of Cost Accounting Standard 409—Depreciation of Tangible Capital Assets—and in obtaining a Congressional review of the Standard before appropriate subcommittees of the Senate and House.

During such hearings senior member company and Association officers testified as to the probable adverse impact of the Depreciation Standard on capital investments. Although the Standard was not withdrawn or revised, the Cost Accounting Standards Board is promulgating two other Standards—Inflation Accounting and Cost of Capital. These may offset some of the adverse effects of the Depreciation Standard.

The Cost Accounting Standards Board held its first Evaluation Conference in June. More than 300 people attended which demonstrated the widespread interest in the subject. AIA submitted written comments for the record, and also participated through CODSIA in the conduct of an industry survey as to the economic impact of Cost

Accounting Standards. The results of this survey were presented orally and in writing at the Conference.

The Chairman of the Cost Accounting Standards Board, in the Board's 1975 Report to the Congress, stated that the Board has undertaken a review and analysis of the matters discussed at the Conference to determine any items warranting action. AIA has prepared a Summary Analysis Report of the Evaluation Conference for the use of its members and other interested parties.

The Board published in 1975 for comment a proposed Standard on "Allocation of Business Unit General and Administrative Expenses to Cost Objectives." If promulgated in its present form the Standard would require the G&A expenses be allocated using a cost input or similar method. Companies required to change from a cost of sales or similar output method could experience an indefinite deferment of recovery of costs. AIA is supporting CODSIA efforts to convince the Board that this Standard should not be promulgated in its present form.

### **Impact of Inflation on Contracts**

Efforts continued during 1975 to alleviate the impact of inflation on government contracts, principally those with the Department of Defense. Although some relief was achieved in certain areas, i.e., the flow-through of unpredictable cost increases due to inflation and the appropriate exercise of option, other suggested areas such as adjusting incentive targets and fees are still under consideration by the DOD.

A significant effort to obtain an increase in the progress payment rate was not effectuated when a request for approval for such an increase made by the DOD to the Office of Management and Budget (OMB) was withdrawn. However, the concept of tying the progress payment rate to the cost of money bears further consideration and this will be explored during 1976.

### **Product Liability**

There have been significant advancements in AIA's efforts in 1975 seeking to provide appropriate protection to all parties concerned with damages resulting from an accident in either domestic or foreign air transportation. AIA developed proposed legislation which was presented and favorably received by cognizant committees in both the Senate and House. Although the introduction of legislation embodying AIA's proposed concept was not effectuated during 1975, such action is anticipated in 1976. In addition, the Air Transport Association (ATA) has appointed a committee of senior airline executives to work with AIA.

### **Industrial Relations and Security**

Department of Labor's Office of Federal Contract Compliance issued proposed rules for identifying persons who continue to suffer the present effects of past discrimination based on race, religion, sex or national origin, in eliminating the discrimination and in awarding back pay. AIA

submitted a statement recommending that the proposed rules be withdrawn or, in the alternative, be suspended pending the issuance of an acceptable economic impact statement.

### **OSHA Standards**

The Occupational Safety and Health Administration (OSHA) published a proposed health standard for occupational exposure to noise. AIA submitted a statement and testified at an OSHA public hearing on the proposed noise standard, supporting a 90 decibel exposure limit, the averaging of the noise exposure over a weeklong period, and the use of personal protective equipment rather than costly engineering and administrative controls.

AIA submitted a statement to OSHA on the criteria for a recommended standard for an identification system for occupationally hazardous materials, supporting the basic premise of informing employees of actual or potential hazards of chemicals in an effort to minimize risk.

AIA stated that no identification systems should be issued unless it is practical, can be readily implemented by all employers, is understandable to employees, can be uniformly and equitably enforced by OSHA, and is consistent with the precautionary labeling requirements of other regulation agencies.

AIA testified on the proposed health standards for six toxic substances used as industrial solvents (ketones). OSHA issued a proposed health standard for occupational exposure to beryllium. AIA pointed out that during the past 20 years AIA member companies have been among the major users of beryllium metal. Usage has been principally in the fabrication of structural parts under close industrial hygiene controls.

While member companies were accumulating experience in working under the present health controls, they have also developed practical methods of providing for the protection of the worker. AIA's concern is that the proposed health standard will force the use of impractical and expensive methods which will in no way improve the protection of the worker.

AIA is presently accumulating data to prepare statements on the three proposed health standards covering trichloroethylene, ammonia and eleven toxic substances.

### **Industrial Security Proposals**

Working with CODSIA, AIA presented recommendations on thirteen proposed changes to the DOD Industrial Security Manual.

Close liaison was continued with the senior policy and administration officials of the Defense Industrial Security Program. Views were exchanged on the application and interpretations of requirements of both the Defense Industrial Security Program and the Industrial Facilities Protection Program.



### **Cogswell Awards**

Twenty-nine facilities of member companies were among the 54 winners of the 1975 James S. Cogswell Industrial Security Awards for superior performance in carrying out security obligations on classified defense contracts. The 54 winners were selected from about 12,000 industrial firms having DOD facility clearances to perform classified contracts.

### **Renegotiation**

Early in 1975, it appeared that the Congress would make Renegotiation Act proceedings much more stringent than it had been in the prior 25 years of the Act. AIA filed a statement with the Joint Committee on Internal Revenue Taxation and testified before the Subcommittee on Oversight and Renegotiation of the House Banking and Currency Committee.

Most AIA recommendations were incorporated in a report of the Joint Committee but very few appeared in the report of the House Committee. The most onerous provisions of the version which will probably go to the full House

from Committee in 1976 are:

- A requirement for division and product line renegotiation;
- The specification of an accounting method which would require substantial revision or separate books in most companies;
- A requirement for payment of interest on excessive profits from the renegotiated year rather than from the Board's determination;
- Placement of the burden of proof upon the contractor in the event of judicial appeal. Congress in 1975 extended the Act in its present form until September 30, 1976, to provide time for more deliberation on the issues. AIA preparations continue for hearings in the Senate.

The Renegotiation Board proposed extensive revisions to the Agency's reporting forms and instructions, which would have required much more detailed data based on unclear explanations. AIA participated in two hearings on this matter under the Federal Reports Act before the Office of Management and Budget. At year's end, it appears that most of AIA's recommendations have been accommodated.



# Aerospace Research Center

*The Aerospace Research Center provides a special focal point and expertise within the Association through which the aerospace industry can comprehensively examine current and emerging issues of major importance. It conducts research, analyses and advanced studies designed to bring perspective and understanding to the issues, problems and policies which affect the aerospace industry and, due to its broad involvement in our society, affect the nation itself.*

*The Aerospace Research Center brings to bear the judgment, knowledge and depth of experience available within the industry, as well as the expertise of others prominent in the government, academic and other professional communities.*

Beginning with a special analysis of the Federal Budget for Fiscal Year 1976, the Aerospace Research Center in 1975 continued to provide staff support for several AIA activities. The output of the Center included published reports, background material, participation in national workshops, Congressional testimony and speeches given by the Association's president. In addition, the Center was responsible for drafts of policy statements and research support on areas such as the Domestic International Sales Corporation (DISC) and proposed standards from the Cost Accounting Standards Board. The Center staff contributed to the Tri-Association effort on government competition with industry.

Investigation began on the question of U.S. military exports and resulted in a published analysis of the economic dimensions of both orders and deliveries of U.S. military goods and services to foreign nations. The Center also drafted a primer on the topic which includes both a legislative history of appropriate statutes regarding U.S. military exports and an explanation of the multiple regulations which govern this special type of export business.

An extensive investigation of the problem of capital formation in the U.S. aerospace industry was undertaken. The study, which will be completed and published in 1976, assesses the recent history of capital formation in the industry and recommends possible action to combat the problem.

Foreign competition in the area of transport aircraft was examined during the past year. The published report entitled *The Challenge of Foreign Competition in the Transport Aircraft Market* explores economic subsidies and other advantages enjoyed by foreign manufacturers of transport aircraft and the potential impact these might have on the U.S. position in international markets over the near term.

Work was completed on a study regarding the characteristics of commercial aviation transport as a form of in-

tercity passenger transportation. A draft of the study, *Attributes of Commercial Aviation Transport*, is undergoing final review.

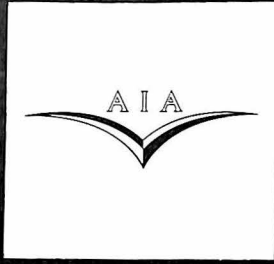
Through the Center's Economic Data Services, *Aerospace Facts and Figures* was published, as were the Semi-Annual Employment Surveys and the Annual Year-End Review and Forecast. EDS, in addition, continued to publish and disseminate data on imports, exports, production, and other statistical series of interest to the industry. In support of other AIA services, EDS compiled information by way of questionnaires on several subjects, the most important of which was in support of the Association efforts on Cost Accounting Standards.

The Center continued its work on both technology

transfer and research and development intensity in the aerospace industry. Draft reports on these studies have been completed; final review of the drafts and possible publication will be initiated during 1976.

Workshops on a national transportation policy conducted by the Department of State were attended by the president of AIA and ARC staff during 1975. The staff of the Center also participated in workshops on barriers to industrial innovation sponsored by the National Science Foundation and the American Society of Association Executives.

Review and cataloging of the Association's library was completed during 1975. The project will now become an ongoing effort.



# Aerospace Technical Council

*The Aerospace Technical Council is the industry's top level technical advisory body through which broad technical and management problems affecting both government and industry are reviewed and solutions are sought.*

The Council in 1975 continued to bring the industry viewpoint and perspective before senior technical management officials in the government for appropriate consideration as policy is being formulated. Primary attention was focused on system acquisition policy matters, particularly implementation of the recommendations of the Procurement Commission. This involved support of the Congressional hearings early in the year and the subsequent development of an OMB Circular by the Office of Federal Procurement Policy. The industry position on the draft Circular placed heavy emphasis on the need for making policy work at the contractual level and the omission in the Circular of explicit policy declarations governing contractual relations between the government and the contractor. The omissions pointed out were particularly with regard to having the procurement officials specify "what" not "how" the contractor is to produce, as well as the avoidance of program discontinuity. The need for cost realism was equally emphasized.

At year's end public hearings by OFPP were held on the final draft of the OMB Circular. The Council will be assessing the effect of this Circular on the military services and agencies as it is implemented during 1976.

The Council also addressed the issues raised in a study of weapons systems management by DOD's Acquisition Advisory Group which recommends some potentially significant changes by decentralizing and delegating program decisions to the military services while providing increased personal attention by the Deputy Secretary of Defense in the areas of policy and major decisions. Studies by some of the services cover the same ground.

Other systems acquisition elements that were reviewed with government counterparts included the impact of "buy-ins" on competitive procurement, and application of the four step source selection process.

## **RFP Improvement**

Considerable Council effort over the past year was de-



voted toward the objective of improving Requests for Proposals (RFP's). The dichotomy of favorable top level policy but continuing RFP's with requirements which unnecessarily constrain the contractor's response has prompted an acceleration of Association actions to achieve better RFP's.

In addition to the RFP check list developed early in the year, a new "umbrella" project was established to oversee all new trends as they impact RFP's as well as the many separate committee project activities which contribute to improving the Statement of Work and other requirements of the RFP. As an early action an evaluation of current RFP's, after source selection, will be made in the light of the current policy. Findings will be reported to top level policy makers.

### **Engineering and Configuration Management**

Several projects in 1975 were involved with proposed revisions to requirements documents in the area of Engineering and Configuration Management. One involved the format and content of the basic program peculiar system specification, and another the requirements for major program technical reviews and audits.

AIA joined with other CODSIA members in pointing out that these documents are typical of many which are imposed at the contractual level which result in design constraints and unnecessary program costs which are inconsistent with DOD's top level acquisition policies which emphasize design-to-cost trade-offs, hardware demonstrations, and phased contracting commensurate with the progressive resolution of risks and unknown factors.

AIA comments urged that in revising such documents, the DOD take the opportunity to demonstrate that the basic concepts of the Office of the Secretary of Defense are more than words in a high level policy document. They recommended that firm technical requirements not be specified below the system level at the beginning of Advanced Development nor below the subsystem level at the beginning of Full Scale Development. Other recommendations urged that initial product requirements be limited to mandatory performance requirements and design constraints, and that design reviews be limited in scope and frequency and be scheduled to support major program decisions.

### **Application of Military Specifications & Standards**

Unnecessary costs attributable to improper application of military specifications and standards in the system acquisition process continue to be of major concern and were the central issue of much cooperative DOD and industry effort in 1975.

The Council was involved in several aspects of this problem area. It supported the Defense Science Board study which concluded that implementation of specifications and standards is a major problem. It has also initiated a project under which a position paper on the tailoring of requirements is being developed. This project is addressing the three aspects of tailoring; i.e., by the government prior to contract, by the contractor in his response to the

RFP, and by the contractor as a contractual requirement during the full scale development phase.

Several position papers submitted to the DOD during the year emphasized that the design-to-cost concept in today's acquisition environment demands that there be flexibility to trade off many of the design objectives in the development process, and that the period during full scale development offers the major opportunity for tailoring the requirements of specification and standards.

### **Implementing Design-to-Cost**

An AIA study completed in 1973 concluded that the design-to-cost concept would not have a significant impact on defense business unless positive action was taken to ensure its effective implementation at all levels of the DOD and industry. Since that time the Council has worked with OSD staff in the development of sound design-to-cost policy, and with the Joint Logistics Commanders in the development of effective implementation procedures.

In early 1975, DOD published its Directive 5000.28 which expressed design-to-cost policies found to be generally well received within the industry. In May, the Council made suggestions for revising the Joint Design-to-Cost Guide to make its implementing procedures more compatible with the policies of the new Directive. In September the problems of implementation in current DOD programs were addressed candidly in a panel discussion with OSD representatives. Later, the Council reviewed a proposed revision to the guide and was disappointed to find that it contained little specific guidance to the military services for effective contractual application of design-to-cost principles. It was also found to contain practices which would be unacceptable to industry.

### **Weapon System Software**

Software for computer systems which are an integral part of weapon systems became the focus of increased management attention within the DOD. This increased attention was justified on the basis that embedded computer systems represent current annual expenditures of more than \$2 billion, with more than 70 percent of that amount dedicated to software, and because software unreliability had become a major problem in operational readiness and performance of weapon systems.

The Council contributed to DOD studies which concluded that a major factor contributing to weapon system problems is the lack of discipline and engineering rigor applied to weapon system software acquisition.

Accordingly, the DOD and military services are planning corrective action to be implemented in the near future. A statement of principles has been developed which will be documented in a new DOD Directive. These will be implemented by a Guide. AIA has contributed to the concept that software should be treated as a configuration item and that the acquisition principles applicable for hardware should be applied to software. Further effort is anticipated in support of the evolving Directive and Guide.



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**W. K. BAUERMEISTER**  
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## **Engineering Disciplines and Requirements**

The serious concern of the military services for reducing the operational and support costs associated with weapon systems continues to be evident in numerous new and revised specifications and standards dealing with requirements for reliability, maintainability, and other engineering disciplines.

Industry review of these documents continues to stress the need for requirements which provide for flexibility in the engineering trade-off process and compatibility with design-to-cost requirements. A project was initiated to prepare a position and recommendations on the most appropriate and effective way for the government to specify contractual requirements for the engineering factors to assure the desired emphasis at minimal cost to the program.

## **Management Systems and Data Requirements**

In its follow-up on industry positions previously submitted to the DOD, the Council continued to advocate more recognition of and reliance upon the contractor's management systems and data for satisfying the government's need for management information. This follow-up has revealed that progress has been slow but encouraging during the year. An OMB Circular and a DOD Directive are emerging to implement the Procurement Commission recommendation of 1973, which addressed this subject area.

Legislation proposed during the year would have required the Services to procure development data for major system designs in a form suitable for manufacture by any other company. Such legislation also would have further jeopardized the contractor's rights to protect proprietary data. A Council project provided background information for the Congress and the DOD which helped forestall such requirements.

A successful Council project which was completed in 1975 involved the basic DOD specification for drawing requirements, MIL-D-1000. A DOD revision proposed in 1974 met many serious industry objections. An industry group, chaired by a Council representative, worked in close coordination with DOD representatives throughout 1975 to produce a revision which found mutual acceptance. This version will avoid significant costs associated with the earlier proposal.

## **Contractor Management System Evaluation Program**

Serious attention was given to the Air Force and Navy programs which have recently been developed and are being implemented to evaluate contractor management systems by the use of Management System Indicators (MSI's).

An attempt was made to assess the industry reaction to the MSI approach and to determine whether there existed a need to protest the approach. Results of surveys have shown that though a serious potential impact is recognized, a consensus for immediate protest did not yet exist

at the end of the year. Further assessment will be made as implementation of the MSI approach evolves.

## **Civil Aviation**

Civil aviation activities of the AIA were at a high level during 1975. The ATC organization was modified to provide an Aviation Division which grouped all civil aviation activities related to development, operations, regulatory and environmental functions.

Data were assembled, analyzed and formulated to provide the basis for two reports by the Aerospace Research Center. The first, *The Challenge of Foreign Competition in the Transport Aircraft Market* was published in 1975; the second, concerning attributes of commercial aviation transportation, has been submitted to the Board of Governor's Executive Committee for approval.

In response to requests by Congressional Subcommittees, AIA positions were developed for hearings on National Aeronautics and Space Administration R&D programs, NASA RDT&E Facilities requirement, NASA Fuel Efficient Airplane Program and Federal Aviation Administration R&D Programs. In addition the Association worked with NASA in the development of the program to produce the report, "Outlook for Aeronautics 1985-2000" and the initial development of the proposal for the "Aviation Safety Reporting System" which will supplant the ongoing FAA "No Fault Reporting System."

## **Operations Review Program**

Inaugurating the initial phase of its Operations Review Program, the Federal Aviation Administration issued an invitation to the aviation community to submit proposals for addition or revision of its operating rules. Although the Council did not initiate any proposals, it reviewed and commented on many of the 900 proposals which have potential effect on the design, manufacture and performance of transport aircraft and rotorcraft, or on a member company's own flight operations. Council representatives made significant contributions to the FAA-sponsored Operations Review Conference in December 1975. FAA will issue regulatory proposals to update the operating rules during 1976.

## **Airworthiness Standards**

The second phase of the Federal Aviation Administration Biennial Airworthiness Review Program was inaugurated during the year with the publication for review and comment of more than 700 proposed rule changes and additions covering airframe, flight, powerplant equipment and systems.

The industry's views were also presented to the FAA on such subjects as rapid decompression effects, smoke and toxic gas emission from interior compartment materials, ground proximity warning equipment, runway friction and instrument flight rules for rotorcraft operations. At year's end there was growing industry concern regarding potential cost impacts resulting from later stages of this effort.

## **Environmental Considerations**

A major commitment of resources by member companies was required in 1975 to assure that realistic requirements are developed from proposals by the Environmental Protection Agency and FAA. Extensive preparations were made for hearings to be held early in 1976 on EPA exhaust emission requirements to be effective in 1979. As now proposed, these requirements would impose severe economic and operational penalties on airlines as well as a significant increase in fuel consumption. A case is being made to hold these requirements in abeyance pending the completion and evaluation of ongoing development programs.

The FAA has currently proposed changes to the Noise Requirements of the Federal Aviation Regulations which would seriously hamper the orderly development of air transportation by, in effect, barring the growth version of a transport aircraft. These growth versions have traditionally provided the high efficiencies needed for a viable air transport system. The Council is developing counter-proposals which would provide for equitable treatment of derivative versions of transports and to better align FAA and international requirements.

## **Propulsion System Data Requirements and Regulations**

Positions and recommendations were developed for the numerous proposals for propulsion system regulation originating from the 1974 Biennial Airworthiness Review. The AIA has continued to be the primary source of information on liquid rocket propellants for the Air Force Rocket Propulsion Laboratory and the Chemical Propulsion Information Agency. In addition, specification review was provided for NASA. A major effort in regard to military requirements has been the development of a rationale to guide the military services towards consolidation, unification and simplification of performance, design, development and test requirements for aircraft engines. This program should be brought to fruition in 1976.

## **U.S. Metric Conversion**

At the end of 1975 President Ford signed legislation which established a U.S. Metric Board to assist in the planning and coordination of the ongoing change to the metric system. While there is no compulsory aspect to the legislation, the pace of conversion can be expected to accelerate. As more and more suppliers are faced with metric orders from large customers, and as metric parts and components eventually become predominant and less costly than their inch counterparts, metric will become a business reality, not merely an either/or proposition.

The Council has chosen to use the unique mechanism of the American National Metric Council to coordinate aerospace planning, interface with other industries, and have ready access to the U.S. Metric Board. Under the auspices of the AIA the Aerospace Sector Committee was formed and held its organizational meeting in November.

All segments of the industry are represented including the FAA, DOD, the airlines, suppliers, and engineering and professional societies. The planning of this Sector Committee appears to be well advanced and appropriate for the current phase of metric conversion.

## **DOD/Industry Metrication**

In anticipation of metric legislation but primarily to foster NATO standardization, the Department of Defense issued its policy on metrication in June. Starting in 1976, all reports must use metric units and consideration must be given to the appropriateness of metric design for all new programs. The Council has been alerting DOD policy makers to the practical realities of metrication, particularly the need to recognize that it will be years before high technology industries can economically produce systems that are totally metric; in the interim the cost effective approach is a hybrid design.

Another prerequisite to cost effective metrication is the availability of metric aerospace hardware standards. The Council has recognized the need for a cooperative industry/DOD effort to avoid duplication and utilize limited resources effectively.

A joint AIA/SAE (Society of Automotive Engineers) task group identified a cadre of some 263 metric aerospace standards basic to any metric design. These standards tasks were apportioned, based upon prior responsibility for specific product classes, resulting in the AIA being responsible for 112, SAE 95 and DOD 56. During 1976 the AIA will develop 12 standards with the balance of the 112 tentatively planned for completion by the end of 1980. The SAE and DOD have initiated their tasks as well. This "before the fact" standardization can result in numerous benefits for the participating organizations including improved communication, material and energy conservation, reduced inventories and costs, and improved technology, quality, and reliability. The experience and cost associated with development of the initial 12 standards will be analyzed to determine the most effective approach for processing the remainder.

## **International Standardization**

With increased attention focused on standards and standardization within NATO, GATT world trade conferences and as part of licensed or offset production of aerospace equipment both here and abroad, international standards are becoming a significant consideration in aerospace. Conversion to metric measure is also focusing attention on the large body of foreign and international standards, most of which are metric. AIA participation on the international standardization committee for Aircraft and Space Vehicles (ISO/TC-20) has increased significantly and in 1975 the leadership of AIA participants at international meetings resulted not only in increased acceptance of U.S. technical positions but also in acceptance of the U.S. approach to aerospace standardization.

A key issue was resolved when the international aerospace community agreed with U.S. aerospace that two threaded fastener systems are necessary—one for com-



mercial grade fasteners and another for aerospace quality products. The aerospace thread form is to be the metric version of the "J" thread which U.S. aerospace developed and proved over many years in its original inch version.

When the secretariat of ISO/TC-20 became available in late 1975, the Council recommended that the Board of Governors make a commitment of AIA support so that the U.S. could seek this pivotal administrative role. This has been accomplished and the AIA will be in a position to be more directly involved in all aspects of international standardization that affect aerospace.

Another indicator of the trend toward the cooperative development of international aerospace standards is increased coordination between the AIA and the Society of British Aerospace Companies and the Air Industries Association of Canada. This activity is particularly beneficial to U.S. aerospace as the other countries are well into conversion to metric measure.

### **National Aerospace Standards**

National Aerospace Standards (NAS) comprise a series of more than 1,300 voluntary, industry-established standards defining mechanical and electrical hardware, structural fasteners, large numerically controlled machine tools, cargo pallets and containers, and airport planning. During 1975, nine new standards were published, along with revisions to 40 existing standards.

### **Electronic Systems**

The 73 Electronic Design Practice Standards of MIL-STD-454, developed by a tri-service-AIA-EIA working group, are accepted by 12 components of the military services, EIA and AIA as the Design Baseline Standards for military equipment.

The working group revised 37 of these standards during 1975 and has scheduled revision of the remaining 36 during 1976. This two-year revision cycle is necessitated by the rapid change of technology. Keeping these standards current broadens their use and thus increases the dollar savings from their repetitive use. The use of these 73 Standards during 1975 is estimated to have saved over \$25 million in design cost which would have required use of more than 500 uncoordinated standards which they superceded. New design practice standards under development include environmental test limits and corrosion control.

AIA assisted another USAF-Navy-Army working group in revising four key general specifications for electronic equipment for aircraft, missiles, spacecraft and related test equipment.

More than 10 years of controversy over Electrical Characteristics Standards (MIL-STD-704) were resolved in 1975 through the use of a newly formed Navy-USAF-Army-AIA-SAE-RTCA working group. The same group has been requested to develop further refinement of this standard during 1976.

### **Mircorcircuits**

AIA has advised the military services of concern regard-

ing the 2½- to 3½-year lag between the actual use of microcircuit devices and a formal fully qualified and specified device. This coupled with microcircuit technology leapfrogging itself to produce a new generation of devices nearly every two years, results in a large number of piece part types with low quantities, requiring costly specification and qualification by each user.

To cope with these problems the military has proposed to utilize more of its limited resources for documentation and qualification of new microcircuit devices entering major system design. This could provide better control of large scale integrated microcircuits (LSI) including microprocessors and memory type microcircuits, during the period of highest potential procurement and prior to entrance of the next generation of these devices into system design. The motivation for this resource reallocation is improved availability, device cost, quality, life cycle cost, and reliability.

AIA is monitoring closely the military interest in standard modules and Form Fit Function Standard black boxes and systems for future application.

### **Material and Process Specifications**

Industry review of government material and process specifications provides government agencies preparing these documents with current user experience and advice, and results in acceptable, usable documents of minimum cost.

Specification reviews in 1975 covered such materials and process items as aluminum, steel and titanium alloys; coatings, elastomers and resins; and manufacturing processes covering adhesive bonding, soldering, welding and heat treatment of metals. A review of published documents reveals a high degree of acceptance of the industry recommendation.

Council representatives are cooperating with the Materials Panel of the Defense Materiel Specifications and Standards Board and the National Materials Advisory Board of the National Research Council to improve the development of materials and process specification and utilize industry resources and documents.

### **Structural Design Criteria**

Council representatives have been working with representatives of the Air Force to develop acceptable structural design criteria requirements that will provide improved structural integrity and service life at a minimum cost impact. Industry specialists in structures and fracture mechanics have met with Air Force structures specialists to review specifications covering structural integrity, durability and testing.

### **Organization Change**

During the year, the Airworthiness Requirements Division was re-designated the Aviation Division to reflect its broader responsibilities. The Civil Aviation Advisory Group was formed and is a part of the Aviation Division.



# International Service

*The International Service is a guidance and coordination point for the exporting segment of the aerospace industry. Operating through the International Committee, its primary activity is serving as a medium for the exchange of views between industry and government agencies, to assist in creating, within the national interest, the optimum environment for increasing aerospace exports.*



ROBERT J. CLARK  
Northrop Corporation  
Chairman, International Committee

For the third year in a row, aerospace exports rose appreciably, even out-distancing Department of Commerce estimates. In 1975 aerospace exports totaled \$7.8 billion, with civil aerospace exports (including transport aircraft, helicopters, aircraft engines, general aviation aircraft and aircraft parts and accessories) amounting to \$5.6 billion; military aerospace exports (including aircraft, missiles, engines, avionics and all types of military aviation support equipment) totaled \$2.2 billion. This record aerospace export achievement proved to be a vital factor in the nation's economy, especially during a period of economic stress.

While all major international developments in 1975 had a decided influence on all types of aerospace exports, the experiences of 1975 verified that there is no greater and more decisive influence on U.S. civil and military aerospace export programs than the policies, regulations and attitudes of the federal government, including both the Executive Branch and the Congress.

### **Foreign Military Sales (FMS)**

The export of military aerospace products, closely controlled by the Departments of State and Defense and to an increasing degree by Congress, continued to be one of the most universally misunderstood issues in the nation during 1975. Thus it was a major concern of the International Committee during the year.

Legislation proposed by Senator Hubert H. Humphrey introduced a new concept of export control of military products by placing the ultimate responsibility in the Legislative Branch. Industry and other critics believed its passage would significantly reduce the nation's ability to utilize exports as a supporting instrument of economic and foreign policy. This legislation, involving more extensive Congressional control over aerospace exports, was being debated at the end of the year.

The International Committee proposed and the Board of Governors approved activation of an *ad hoc* committee to review FMS policies and procedures.

### **Domestic International Sales Corporation**

Recognizing the importance of DISC to the industry, the AIA Board of Governors formed an *ad hoc* committee to support the retention of DISC. During 1975, AIA member companies and Association staff worked closely with "The Special Committee for U.S. Exports" in an effort to preserve the DISC tax provisions, designed by Congress to increase U.S. exports. The tax bill passed by Congress before the Christmas recess contained no reference to DISC, so the tax deferral treatment remained at year-end. The Senate Finance Committee will start consideration of a detailed tax bill in March, 1976. Industry holds that the retention of DISC is important to preserving jobs in the U.S. as well as serving as a significant incentive for U.S. aerospace exports.

### **International Traffic in Arms Regulations**

Potentially one of the most adverse actions leveled at U.S. industry concerning military export programs in 1975 was the proposed changes to the International Traffic in Arms Regulations which are administered by the Office of Munitions Control, Department of State. Recognizing the extensive negative impact on U.S.-manufactured military aerospace exports, AIA requested an extension of time to respond effectively to the proposed changes affecting payment of fees and commissions previous to application for export licenses for technical data and hardware and approval of manufacturing licenses and technical assistance agreements. U.S. industry would be placed at a decided competitive disadvantage if these proposals are adopted because foreign aerospace manufacturers are not obligated to disclose their contractual arrangements.

AIA also supported Senate Resolution 265 which instructs the President's Special Trade Representative to negotiate a code of international business practices at the GATT negotiations. AIA emphasized that such a code should preclude unilateral actions such as the proposed changes to ITAR. The Senate had taken no action at the end of 1975 and further appeals on industry's behalf may be necessary as this appears to be the logical method of dealing with an old and very serious international problem.

### **Export Financing**

At the end of 1975, AIA learned that the Office of Man-

agement and Budget had proposed cuts on the order of a billion dollars in the FY 1977 loan authorization level of the Export-Import Bank of the U.S. Cuts of this magnitude would prohibit Eximbank export financing of U.S. manufactured commercial transport aircraft and would eliminate loans to foreign nations having a per capita income of more than \$3,000.

AIA appealed to the Director of the Office of Management and Budget to preserve the full capacity and efficiency of Eximbank. Supporting data indicated that from 1970 to the end of 1975, \$11 billion worth of transport aircraft manufactured in the U.S. were for the export market, a substantial portion of which was supported by the Eximbank. These exports provided employment for 104,000 persons in 1975.

Because the loss of Eximbank financing would have an extensive negative economic effect on the U.S. aerospace industry in the increasingly competitive world marketplace, AIA will continue to vigorously support the Eximbank.

### **International Trade Negotiations**

During 1975, preparation for the GATT negotiations continued as aerospace members of the Industry Sector Advisory Committee met periodically with Commerce Department and Special Trade Representative officials. Supported by the International Committee and Association staff, this group of selected aerospace trade experts developed the Industry Sector Advisory Report.

In response to public notice issued by the Secretary of the International Trade Commission, AIA in 1975 presented the position of the aerospace industry on the economic impact of granting proposed concessions to be considered in the forthcoming international negotiations.

### **Cooperation with Organized Labor in the Aerospace Industry**

Seeing the need for improvement of relations between organized labor and the U.S. aerospace manufacturing industry on international trade matters affecting the nation's economy, the International Committee moved toward a more open dialogue with labor in development of industry-wide, consolidated positions on specific issues. An important part of the International Committee 1975 fall meeting was the opportunity afforded IAM officials to present their views on significant international trade issues.



## Office of Public Affairs

*The mission of the Office of Public Affairs is to inform the public about the goals and accomplishments of the aerospace industry in support of national security, space exploration, technological leadership, civil aviation, commerce, international trade and other national goals.*



**RICHARD J. DAVIS**  
*McDonnell Douglas Corporation  
Chairman, Public Affairs Council*

The Office of Public Affairs in 1975 continued to focus its primary efforts on the accomplishments of the aerospace industry as the primary generator of high technology, as well as providing information on such economic factors as inflation and the problems of capital formation affecting the industry. There was a substantial level of media inquiries during the year on matters related to the industry.

Following are some of the major efforts:

### **Publications**

*Aerospace Magazine:* This quarterly publication covered diverse subjects concerning the industry. Early in the year feature articles included a salute to women in aerospace as part of the International Women's Year proclaimed by the United Nations; a round-up on remotely piloted vehicles; a preview of the Apollo-Soyuz mission; a review of aerospace industry efforts in providing new technical approaches to ground transportation systems; and a report on the new generation of military aircraft in production, test and design.

Other subjects included an article by Senator Frank E. Moss on efforts by industry and government to develop new technology and fuels to reduce the nation's reliance on petroleum; the benefits of increased jobs and exports brought about by the Domestic International Sales Corporation (DISC) legislation; a look-to-the-future article, authored by Princeton Professor Gerard K. O'Neill, on the establishment of space communities; a summary of future air traffic systems written by Congressman Dale Milford, Chairman of the House Subcommittee on Aviation and Transportation Research and Development, and a review on accomplishments, challenges and opportunities in commercial air transportation.

*Aerospace Perspectives:* This publication, issued periodically, continued to be an inexpensive yet effective means of presenting a single subject of importance to the industry. Issues have been widely quoted or reprinted in full.



Subjects in 1975 included aerospace exports, emphasizing their importance to national security and the economy; the contributions of small business to the aerospace industry; the vital role of investment capital in creating new jobs and keeping industry viable; an outlook of the U.S. future in space; and the role of the helicopter in law enforcement.

*General Media:* Five short "editorial" type articles were disseminated to the general media during 1975, covering the pollution of aircraft engine emissions compared to other sources; the helicopter's mission as a rescue vehicle; airports and their economic benefits; a review of DOD spending and its relation to national priorities; and a "pie" chart graphic showing the various percentage shares of the major elements of the federal budget.

*Directory of Helicopter Operators:* The 1975 edition of this publication lists the 5,222 helicopters in use by commercial operators, companies, executive operators and civil government agencies in the U.S., Canada and Puerto Rico. The next edition of the Directory of Helicopters will be published in 1976. Other helicopter related publications included the annual VTOL Aircraft Designation Chart; Directory of Helicopter Awards, 1944-1975, and the Federation Aeronautique Internationale Directory of Helicopter Records.

*Aerospace Facts and Figures, 1975/1976* was published, again under the commercial promotion, sales and distribution agreement with *Aviation Week and Space Technology*, a McGraw-Hill publication. A similar agreement has been made for the 1976/1977 edition.

*Advertising Program:* A modest advertising program was initiated in 1975 explaining industry accomplishments and posture on problems. Six advertisements were published covering the importance of aerospace to the economy; the contributions of its exports; declining expenditures for research and development; the problems involved in the shortage of capital investment; the pay-off on earth of space exploration programs; and the benefits and advantages of commercial air travel.

### **Education Services**

Efforts continue to aid those actively involved in aerospace education at all curriculum levels. This section of the Public Affairs staff handles educational correspondence; conducts surveys through the Public Affairs Council as to company interests and involvement in aerospace, career, and economic education; communicates and cooperates with both aerospace and non-aerospace organizations involved in or providing educational services, and continues to analyze the potential educational resources of AIA staff

and member companies.

The service played a substantial role, in cooperation with the National Aeronautics Association, the Air Transport Association and the General Aviation Manufacturers Association in founding and continuing such major education programs as the following:

1. *The Journal of Aerospace Education*, a professional monthly (September through May) magazine devoted to the promotion of aviation and space education at all levels of learning, at the end of 1975 was being mailed to some 5,000 individuals.

2. *The Directory of Aerospace Education* is a complete resource guide to materials and assistance for aviation and space education. One hundred thousand copies of the *Directory* were reprinted by the Federal Aviation Administration for free distribution to individuals and institutions.

3. *The National Council for Aerospace Education* serves as a national forum for the field providing the means, whereby representatives of the major organizations in the field can review activities and developments and identify areas for future enhancement. The 1975 meetings were the first time these organizations had come together to discuss joint efforts.

4. Planning was initiated for the American Society for Aerospace Education to be created in 1976. It will be the organizational banner under which earlier projects will continue and new projects be initiated. Members of the National Council for Aerospace Education unanimously endorsed the Society concept at their November, 1975, meeting in Washington, D.C.

### **Activities of President Harr**

Mr. Harr attended and participated in numerous AIA Council and Committee meetings, briefing them on the major current projects of the Association.

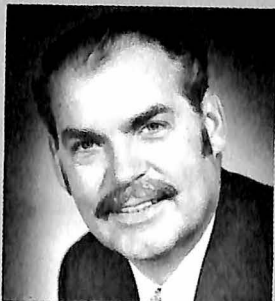
In addition, Mr. Harr made several public speeches before such audiences as the Board of Governors meeting of the Electronic Industries Association; the semi-annual meeting of the Air Industries Association of Canada in Ottawa, Canada; the Sixth Annual National Conference, National Investor Relations Institute; the Elfun Society, General Electric Company; and the Year-End Review and Forecast, presented before the Mid-East Region of the Aviation/Space Writers Association. This latter speech has become a highly productive effort in presenting industry views before an audience of more than sixty working press representatives.

A number of news releases were distributed during 1975 reporting upon testimony presented to the Congress by President Harr and member company executives.



# Traffic Service

*Traffic Service is responsible for obtaining for the aerospace industry economical and efficient transportation facilities and service. Within its area of activity the Service represents the Association before transportation regulatory agencies, boards, associations of carriers and the courts.*



W. J. SMITH  
Rockwell International Corporation  
Chairman, Traffic Committee

The decision of a U.S. District Court in Fort Worth, Texas, in April highlighted a year of productive activity by AIA's Traffic Service in representing the interests of its members before courts and regulatory agencies in proceedings concerned with the freight rates and services of commercial carriers.

AIA intervention in the Fort Worth case was undertaken to forestall attempts by motor carriers to assess, with support from staff personnel of the Interstate Commerce Commission, unreasonably high freight rates on all parts and components going into the manufacture of aircraft, regardless of the stage of manufacture of such parts or their common usage for purposes other than as aircraft parts. The court's findings favored the position supported by AIA and held the the higher rates were unlawful.

In addition to the foregoing case, Traffic Service in 1975 represented AIA in 19 additional proceedings before federal transportation regulatory agencies and carrier rate bureaus. At issue were the freight rates on numerous articles moving in support of aerospace manufacturing programs plus the practices and procedures of carriers which adversely affect the ability of AIA members to obtain commercial transportation at optimum levels of economy and service. Identifiable savings in the amount of \$2,228,218 resulted from the handling of such cases by Traffic Service during 1975.

### **Traffic Committee Projects**

The Traffic Committee is composed of the traffic, transportation and distribution managers of AIA member companies. Throughout the year the Committee coordinated the interests of its members so as to permit Traffic Service to undertake participation in the litigation discussed above. The Committee also undertook numerous projects which contributed to the effectiveness of the aerospace industry in accomplishing overall goals and objectives.

To facilitate its activity in connection with such projects, the Committee established several *ad hoc* task forces with

initial responsibility to establish goals and objectives with respect to given problems. The task forces thereafter designed action programs and carried them forward so as to attain their specific goals and objectives. The following are representative programs which were undertaken by the Traffic Committee and its task forces during 1975:

- *Air Cargo Development:* In coordination with personnel of the Civil Aeronautics Board and the National Industrial Traffic League the task force identified practices and procedures of the carriers and the CAB which impede the development of a viable air cargo service.
- *Travel and Personnel Movements:* A task force made an analysis of the experience of members in connection with the standard baggage liability levels of airlines and the practices of carriers with respect to the settlement of claims for loss or damage to baggage.
- Data thus obtained were transmitted to the CAB for the record in Docket 27859.
- *Export/Import:* A task force compiled, edited and published changes to the AIA publication "An Introduction to Export/Import Procedures." It also identified the problems of members in connection with the exportation and importation of supplies and drafted a "white paper" which detailed the effect on AIA members of the practices and procedures of U.S. Customs in assessing penalties. This is an on-going project and actions seeking relief from such practices will be continued.
- *Household Goods:* On a continuing basis a task force reviewed the docket proposals of household goods tariff bureaus to determine their impact on members and thereafter recommended Committee action and subsequent litigation as required.
- *Department of Defense and NASA Requirements:* A task force maintained a continuing interface with DOD and NASA traffic and transportation offices for

the purpose of reviewing proposed and existing requirements of those agencies with respect to policies affecting the movement of materiel under government contracts. The task force was actively involved in connection with the DOD requirements governing the transmission of classified material.

- *Department of Transportation Requirements:* Throughout the year a task force reviewed all notices of rulemaking governing the requirements and regulations of DOT affecting the transportation of hazardous materials. AIA participation in several such rulemaking proceedings was on the basis of position papers prepared by the task force.
- *Tariff Construction:* A task force coordinated the interests of members and prepared position papers necessary for AIA participation in proceedings concerning the tariff publications of air and surface carriers.
- *Liability and Claims:* A task force identified problems of members with respect to the handling of loss and damage of air cargo claims by air carriers. Thereafter the task force accomplished coordination with the carriers and the CAB in an effort to eliminate such problems.
- *Energy:* The energy task force is responsible for keeping members apprised of all energy developments, including actions of regulatory agencies, which impact on members' ability to obtain adequate transportation service from common or private carriers.
- *Transportability:* Task force projects undertaken in this area during 1975 include coordination with federal and state highway officials and highway heavy haulers in efforts to obtain uniform permit requirements so as to facilitate the highway movement of oversize aerospace shipments. The task force also coordinated the interests of members and drafted AIA position papers in response to requests for comment from DOD and NASA on proposed transportability regulations of those agencies.

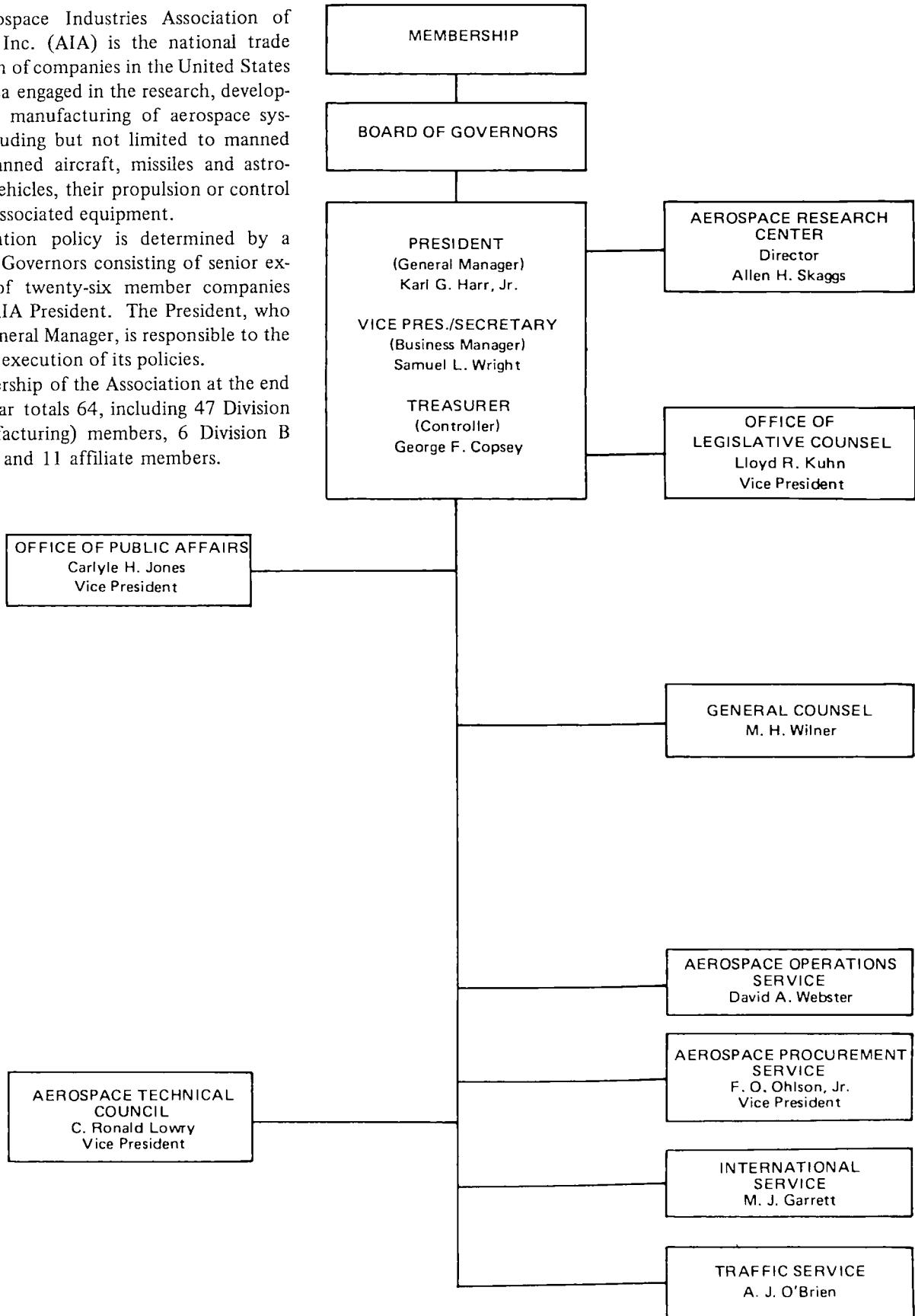
# ORGANIZATIONAL CHART

(January 1, 1976)

The Aerospace Industries Association of America, Inc. (AIA) is the national trade association of companies in the United States of America engaged in the research, development and manufacturing of aerospace systems, including but not limited to manned and unmanned aircraft, missiles and astronomical vehicles, their propulsion or control units, or associated equipment.

Association policy is determined by a Board of Governors consisting of senior executives of twenty-six member companies and the AIA President. The President, who is also General Manager, is responsible to the Board for execution of its policies.

Membership of the Association at the end of the year totals 64, including 47 Division A (manufacturing) members, 6 Division B members, and 11 affiliate members.



# AIA MEMBERSHIP

## MANUFACTURING MEMBERS

ABEX CORPORATION  
AEROJET-GENERAL CORPORATION  
AERONCA, INC.  
AERONUTRONIC FORD CORPORATION  
AVCO CORPORATION  
THE BENDIX CORPORATION  
THE BOEING COMPANY  
CCI CORPORATION  
    The Marquardt Company  
CHANDLER EVANS INC.  
    Control Systems Division of Colt Industries Inc.  
E-SYSTEMS, INC.  
THE GARRETT CORPORATION  
GATES LEARJET CORPORATION  
GENERAL DYNAMICS CORPORATION  
GENERAL ELECTRIC COMPANY  
    Aircraft Engine Group  
GENERAL MOTORS CORPORATION  
    Detroit Diesel Allison Division  
THE B. F. GOODRICH COMPANY  
    Engineered Systems Co.  
GOODYEAR AEROSPACE CORPORATION  
HEATH TECNA CORPORATION  
HERCULES INCORPORATED  
HONEYWELL INC.  
HUGHES AIRCRAFT COMPANY  
IBM CORPORATION  
    Federal Systems Division  
ITT AEROSPACE, ELECTRONICS, COMPONENTS  
    AND ENERGY GROUP  
    ITT Aerospace/Optical Division  
    ITT Avionics Division  
    ITT Defense Communications Division  
KAISER AEROSPACE AND ELECTRONICS  
    CORPORATION  
LEAR SIEGLER, INC.  
LOCKHEED AIRCRAFT CORPORATION  
MARTIN MARIETTA AEROSPACE  
McDONNELL DOUGLAS CORPORATION  
MENASCO MANUFACTURING COMPANY  
NORTHROP CORPORATION  
PNEUMO CORPORATION  
RAYTHEON COMPANY  
RCA CORPORATION  
ROCKWELL INTERNATIONAL CORPORATION  
ROHR INDUSTRIES, INC.  
THE SINGER COMPANY  
SPERRY RAND CORPORATION  
SUNDSTRAND CORPORATION

TELEDYNE CAE  
TELEDYNE RYAN AERONAUTICAL  
TEXTRON, INC.  
    Bell Aerospace Textron  
    Bell Helicopter Textron  
    Hydraulic Research  
THIOKOL CORPORATION  
TRW INC.  
UNITED TECHNOLOGIES CORPORATION  
VOUGHT CORPORATION  
WESTERN GEAR CORPORATION  
WESTINGHOUSE ELECTRIC CORPORATION  
    Public Systems Company

## DIVISION B MEMBERS

AVIQUIPO, INC.  
FRANK B. HALL AND COMPANY  
    Parker Aviation Division  
BRUKNER, CLAYTON J.  
CONDON, CYRILL HYDE  
FALES, HERBERT G.

## HONORARY LIFE MEMBER

LOENING, GROVER

## DIVISION OF AFFILIATE MEMBERS

AIR CARRIER SERVICE CORP.  
ASSOCIATED AEROSPACE ACTIVITIES, INC.  
AVIATION WEEK & SPACE TECHNOLOGY  
BRITISH AIRCRAFT CORP. (U.S.A.), INC.  
COMMERCE OVERSEAS CORPORATION  
COOPERS & LYBRAND  
EASTERN AIRCRAFT CORP.  
NATIONAL CREDIT OFFICE, INC.  
TEXACO, INC.  
TRANSAERO, INC.  
U.S. AVIATION UNDERWRITERS, INC.



**AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.**

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