

# 1986

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AEROSPACE  
INDUSTRIES  
ASSOCIATION

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## ANNUAL REPORT

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# AIA OFFICERS AND BOARD

## Calendar Year 1986

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\* Resigned following acquisition of Hughes Aircraft Co  
\*\* Succeeded by Raymond A. Hay, November 22, 1986

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*President, Aerospace Industries Association*

# A STATEMENT OF POLICY

The aerospace industry shall continually foster the advancement of those aeronautical, astronautical and related sciences, arts, technologies and industries which shall be consistent with and contribute to the public and private welfare of local communities, this nation, and the international community of which this nation is a part.

Specifically, the continuing goal of the industry shall be: to fulfill its responsibility for the development and improvement of those deterrent and defense capabilities deemed by the government to be requisite for our continued national security; to promote those technological achievements necessary to assure the peaceful conquest of space for the benefit of all mankind; to foster the advancement of economic commercial and private air transport; and to press for and contribute to significant improvements in those scientific, management and manufacturing skills and techniques that will benefit the social, cultural and economic well being of the nation. In pursuing this goal, the industry shall maintain a commitment to high standards of excellence, integrity and reliability.

Fulfillment of these responsibilities imposes requirements on this industry for far-ranging and innovative contributions in science and technology. To this end, the industry shall relentlessly explore those horizons of science most likely to hold the key to future advances, and shall vigorously and efficiently improve the foundations of this nation's industrial creativity, productivity, technology and facilities.

Attainment of such goals requires the most effective possible use of all of the resources of a pioneering and progressive industry, directed by experienced, flexible and imaginative management, and incorporating:

- The highest levels of scientific investigation
- Technological facilities adequate to provide continuity in advanced research, development and production
- Coordinated teams of managers, scientists, technicians and skilled labor
- Economic stability to assure the fullest contributions by each element to national security, prosperity and progress
- Adherence to high quality and reliability in services provided and products delivered
- Commitment to truth, accuracy, fairness and compliance with law in all matters and in all communications with the public, customers, suppliers and employees.

The aerospace industry pledges the fullest application of its resources and abilities to the task of accomplishing these goals.



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# CONTENTS

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INTRODUCTION	4
AEROSPACE OPERATIONS SERVICE	6
AEROSPACE PROCUREMENT SERVICE	16
AEROSPACE RESEARCH CENTER	24
AEROSPACE TECHNICAL COUNCIL	26
HUMAN RESOURCES COUNCIL	34
INTERNATIONAL SERVICE	37
OFFICE OF CIVIL AVIATION	41
OFFICE OF LEGISLATIVE COUNSEL	42
OFFICE OF PUBLIC AFFAIRS	43
TRAFFIC & TRANSPORTATION SERVICE	46

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# INTRODUCTION

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The Aerospace Industries Association of America, Inc. (AIA) is the national trade association that represents U.S. companies engaged in research, development and manufacture of such aerospace systems as aircraft, missiles, spacecraft and space launch vehicles, and propulsion, guidance, control and accessory systems for the flight vehicles. A secondary area of industry effort, grouped under the heading "related products," embraces a variety of airborne and ground-based equipment essential to the operation of the flight vehicles, plus a broad range of non-aerospace products generally derived from the industry's aerospace technological expertise but intended for applications other than flight.

The industry AIA represents is one of the nation's largest. Its sales in 1986 amounted to \$103.5 billion, including \$86.3 billion in aerospace products and services and \$17.2 billion in related products. Export sales totaled a record \$19 billion and the industry made an important contribution to the U.S. economy with a positive international trade balance of \$10.9 billion.

Orders received during 1986 totaled \$105.6 billion; they brought the backlog at year-end to \$138.4 billion, a figure roughly \$7 billion higher than the backlog at the end of the previous year. Industry employment at year-end 1986 was 1,359,000; the labor force was expected to remain at approximately that level through 1987.

AIA functions on national and international levels, representing its membership in a wide range of technological and other relationships with government agencies and the public. To facilitate its work at the national level, AIA is a member of the Council of Defense and Space Industry Associations (CODSIA), a coordination medium of eight industry associations with mutual interests related to federal government procurement policies. In international activities, AIA cooperates as practical with trade associations in other countries, individually and through the International Coordinating Council of Aerospace Industry Associations (ICCAIA), an informal body of the free world's national aerospace associations. AIA also serves as secretariat for TC 20, the aircraft/space group of the International Organization for Standardization (ISO).

AIA's policies are determined by a Board of Governors composed of 30 senior executives of member companies plus the AIA president, who is the association's senior professional employee and who also serves as its general manager. A key element is the Executive Committee — made up of members elected

## EXECUTIVE COMMITTEE 1986



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Rockwell International  
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Vice Chairman of the Board



KARL G. HARR, JR.  
Aerospace Industries  
Association  
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General Electric Company



CALEB B. HURTT  
Martin Marietta Aerospace



WILLIAM C. PURPLE  
Allied-Signal Inc.



PAUL G. SCHLOEMER  
Parker Hannifin Corporation

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from the Board of Governors—which exercises the power of the Board between Board meetings.

AIA's primary services to its membership are conducted by 10 Councils, Services and Offices whose heads report to the AIA president. Within this structure, AIA's professional staff coordinates and supports the work of an array of committees, sub-committees, task groups, *ad hoc* groups and project groups made up of key specialists from AIA member companies.

In 1986, the association concentrated much of its activity on matters related to defense procurement reform; government trade policies affecting the competitive position of U.S. industry in international aerospace markets; and technology advancement toward development of a range of superior aerospace products that could simultaneously effect a major upgrading of U.S. defense/space capabilities and a significant improvement in the U.S. international trade posture.

Year-end 1986 marked a change of leadership for AIA as Karl G. Harr, Jr., stepped down from office after serving as president and general manager of the association for more than 23 years. He was succeeded by Don Fuqua, a 12-term Florida Congressman who had been chairman of the House Committee on Science and Technology from 1979 until his retirement at the end of 1986, and chairman of the Subcommittee on Space Science and Applications for more than a decade.

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# AEROSPACE OPERATIONS SERVICE

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

During 1986, the committees and their working elements maintained active interface and liaison with government and industry management officials and were involved in numerous projects and tasks of interest to the association membership and to the Department of Defense, the National Aeronautics and Space Administration, the Federal Aviation Administration, other government agencies and commercial organizations. Among the service's activities in 1986 were:

## **Manufacturing Conferences**

The Manufacturing Committee held its annual industry-government conference in April, featuring the theme "Manufacturing Excellence Through Innovation and Quality". The program included a number of prominent industry and government speakers who addressed such subjects as Innovative Manufacturing/Electronics; Successes and Failures of Computer Integrated Manufacturing (CIM) Implementation; Business System Integration with CIM; Industrial Modernization Incentives Program (IMIP) Integrated and Focused Factory; Advanced Manufacturing Issues in Aerospace; NASA Productivity and Quality Initiatives; AMC Lessons Learned/Design to Manufacturing; and Navy Initiatives — Schedule/Quality/Cost.

The Computer Aided Manufacturing MTAG of the Manufacturing Committee sponsored an Artificial Intelligence (AI) Workshop in September to brief aerospace management personnel regarding AI, its status in industry, benefits, management of applications and effective use. Manufacturing operations managers, technology specialists, information systems managers and others in attendance learned how AI could be used to improve quality, reduce operating costs, enhance schedules and sharpen a company's competitive edge. Papers were presented on such subjects as Bridging the Gap Between Research and Application; Expert Systems in Finance and Manu-



ERNEST A. CENTER  
Rockwell International  
Corporation

Chairman, 1986  
Manufacturing Committee



THOMAS C. McDERMOTT  
Rockwell International  
Corporation

Chairman, 1986  
Manufacturing Committee



RICHARD M. DRAKE  
Westinghouse Electric  
Corporation

Chairman, 1986  
Product Support Committee



JOHN D. KELSCH  
LTV Aerospace and Defense  
Company

Chairman, 1986  
Spare Parts Committee



WILBUR J. RADCLIFFE  
Martin Marietta Aerospace

Chairman, 1986  
Logistics Operations  
Committee



RICHARD A. LAUZON  
General Electric Company

Chairman, 1986  
Manpower, Personnel and  
Training Committee



GEORGE F. TOMLINSON  
Grumman Aerospace  
Corporation

Chairman, 1986  
Field Support Committee



THOMAS F. BLAINE  
McDonnell Douglas  
Corporation

Chairman, 1986  
Service Publications  
Committee

facturing; Recent Successes in Manufacturing Expert Systems Implementation; and A Case Study of the High Class Software System. One of the workshop highlights was a "hands on" hardware/software exhibit of AI applications by more than a dozen top suppliers in the field. Attendees were able to sit at terminals and work with menu driven expert systems to get a feel for the topics presented in the technical sessions.

### Manufacturing Committee Reports

Among Manufacturing Committee project reports completed, published and circulated to member companies during 1986 were *Future Manufacturing in Aerospace* (MC 84.17); *Design and Manufacturing Interface* (MC 85.3); *Artificial Intelligence in Manufacturing Operations, Phase I* (MC 85.1); and *State of the Art Equipment Capabilities* (MC 84.7).

New projects and surveys approved by the Manufacturing Executive Committee and initiated during 1986 for completion in 1987 included *Computer Assisted Planning* (MC 86.2); *Flexible Manufacturing System for Machining* (MC 86.4); *Productivity—Organizational and DoD Requirements* (MC 86.5); *Work Instruction Formats* (MC 86.6); *Strategies for Determining Cost Benefits Resulting From New Manufacturing Technologies* (MC 86.8); *Manufacturing Role in Total Quality Improvements in Aerospace* (MC 86.9); *Industrial Modernization Incentive Pro-*



gram—Aerospace Industry Position (MC 86.11); Packaging & Handling Engineering Seminar (MC 86.13); and Materials Handling Survey (MC 86.15). Final reports will be distributed through Manufacturing Committee members.

### **Contractor Operations Review Conference**

Held in March, the Contractor Operations Review (COR) conference was arranged to stimulate feedback from Air Force Contract Management Division (AFCMD) personnel to industry regarding findings and conclusions of the first "round" of CORs and provide a forum for industry attendees to exchange ideas for improvement in those areas where CORs have revealed the existence of problems of a general nature. The conference was jointly sponsored by AIA, the National Security Industrial Association and AFCMD.

The keynote address was given by AFCMD Commander Major General Bernard Weiss, who described the benefits and adverse impacts of COR. General Weiss indicated that the frequency of future CORs can be affected by performance of individual contractors; he placed strong emphasis on follow-up work with the AFPR, said that there would be joint CORs on critical subcontractors/vendors starting in the fall of 1986, and stated that all should move to have internal audit programs with teeth.

AFCMD staff members gave reports on the findings in each discipline reviewed during COR. A report was presented by AFCMD on the COR questionnaire distributed to prime contractors in December 1985. AFCMD staff identified certain contractors as having good systems in areas where many other firms showed need for improvement; the former made presentations on their systems. It was the general feeling that the conference benefited both government and industry attendees.

### **Quality Conference**

The Quality Assurance Committee, in conjunction with the National Security Industrial Association's Quality and Reliability Assurance Committee, held its annual industry-government conference in late September. Keynote speaker David Packard, chairman of the President's Blue Ribbon Commission on Defense Management, discussed the conclusions and recommendations of that commission. The conference featured three panels addressing the theme "Quest for Excellence". The Department of Defense and the military services were strongly represented on the panels, in addition to industry representation from pertinent functional areas. The conference enjoyed the largest participation in its 11-year history with some 200 attendees, including 60 government representatives.

### **Quality Resources Study**

The 1985 AIA Quality Resources Study published in June 1986 presents an overview of the aerospace industry's allocation and use of quality resources. This edition of the annual study contains 68 quality cost measurements and manpower ratios. Data is presented at the total industry level and by manufacturing type (airframe, engines and accessories, electronics, missiles and space and rocket engines). Distributed on a limited basis to participating mem-

ber companies only, the study provides companies a means to identify areas and activities within their organization that are responsible for quality resource consumption. Companies participating in the study can determine how their use of quality resources compares with that of industry as a whole and similar manufacturing groups. Special survey results are occasionally included in the study. The 1985 edition examines Quality Improvement Program (QIP) measures used by members.

### **Nonconforming Material**

In order to encourage the Department of Defense and the military services to standardize on a common specification for the disposition of nonconforming material and cost effective corrective action management systems, AIA and the National Security Industrial Association (NSIA) developed such a specification and submitted it to the Air Force for consideration. Several industry recommendations were incorporated into a draft of proposed Revision C to MIL-STD-1520, which was circulated for industry review.

A second draft of the proposed revision issued for review largely ignored industry's previous comments. In a joint AIA/NSIA letter, the Air Force was advised of industry's concerns. The gist of the industry position was that the draft was not consonant with the DoD Acquisition Streamlining Initiative or DoD policies on avoiding detailed "how to" specification requirements. The draft also incorporated several micromanagement requirements that would result in unnecessary expenditure of government and industry resources. The letter requested that revision to the standard be held in abeyance until a joint DoD/AIA/NSIA working group meeting was held to address the issues in detail.

Such meetings were held in January and March 1986, resulting in the issuance of a third draft of the proposed revision. That draft again either largely ignored or materially altered industry comments. In a second AIA/NSIA letter, industry reiterated its concerns and protested Air Force actions. However, the revision was published without change on June 27, 1986. Action was initiated in late September by QAC/QRAC to draft a letter to various DoD agency streamlining advocates to request their assistance in taking industry concerns forward in order to achieve effective resolution. AIA/NSIA remain committed to streamlining and standardizing MIL-STD-1520 across DoD components.

### **Incentive Based Corrective Action**

The Defense Logistics Agency (DLA) initiated a policy requiring that consideration be given to the government for acceptance of minor product variations under Material Review Board (MRB) action. The policy, which in industry's view constitutes an improper interpretation of the DAR/FAR and associated quality assurance specifications, had not at year-end been generally implemented. An initial test program was instituted with five selected companies within DCASMA Hartford in August 1985 and subsequently expanded to DCASMA Cleveland. AIA sent letters to Deputy Secretary of Defense Taft and Deputy Assistant Secretary (Product Support) John

Mittino in December 1985 and January 1986, respectively, requesting that the policy be suspended pending a DoD determination as to whether experience warrants alteration in MRB procedures.

The DoD Quality Assurance Council (DoD-QAC) met in February to consider total implementation of the DLA policy. It was agreed that DoD-QAC would make recommendations regarding total implementation to the DoD Council on Integrity and Management Improvement (DCIMI). However, the DCIMI briefing was never held. It was decided not to expand the program but to continue the test with the selected companies in DCASMA Hartford only.

Meanwhile, the Air Force decided to institute tests of Incentive Based Corrective Action (IBCA) at Lockheed-Georgia and Pratt & Whitney. Following analysis of test program data, the Air Force plans to issue a policy regarding nonconforming material, the reduction of MRB actions and modification of MRB procedures. The Army also instituted an IBCA test program at Boeing Vertol.

IBCA was initially developed by DLA as a method to significantly reduce the number of MRB actions by contractors. The government believes that over the years contractors have been abusing the MRB system by using it excessively rather than taking proper corrective action to improve manufacturing processes to reduce nonconformances. In a briefing to DoD, the AIA-QAC took the position that the mechanism already exists to reduce MRB actions and control nonconformances through imposition of MIL-STD-1520.

Industry concerns regarding the onerous nature of IBCA is causing DoD to rethink its merit as in instrument to reduce MRB actions. On March 26, AIA received an answer from Secretary Taft to its letter stating concerns with IBCA. Taft acknowledged that members of his staff and AIA—through the Quality Assurance Committee—are working toward establishing a broad based program that will be the basis for quality improvement.

#### **Blueprint For Tomorrow**

In July, members of the Manufacturing Committee participated in a joint Air Force Aeronautical Systems Division/Industry Workshop to update the Blueprint for Tomorrow study undertaken in 1983. The study is an assessment of the aerospace defense industrial base with a primary focus on the effectiveness of industrial production in meeting DoD peacetime program cost and schedule goals while also maintaining the reserve potential and responsiveness necessary under emergency military conditions. Seven panels analyzed the strengths and weaknesses of the industrial base in relation to a wide range of variables, including current and future peacetime trends, surge and mobilization conditions, technical innovations and the changing acquisition environment.

#### **Work Measurement**

In February, AIA sponsored a joint Air Force Systems Command/Industry conference on work measurement that drew 142 participants representing 42 companies, the military and academia. Presentations were made providing the AFSC perspective on work measurement as well as that of academia. Five industry panels detailed how work measurement is used at

various companies in the areas of full scale development; performance evaluation; cost estimating; methods improvement; and planning, scheduling and budgeting. It was the consensus of industry participants that cost effective application of MIL-STD-1567A is being overlooked in the eagerness of the Air Force to get work measurement under contract. In addition, there was industry concern over varying interpretations of the requirements among different divisions of AFSC and a heavy emphasis on 1567A documentation requirements as opposed to performance improvement.

In 1985, Senator Grassley introduced an amendment to the Fiscal Year 1986 Defense Authorization bill to require contractors to maintain work measurement systems and to make the data from these systems available to the government. Representative Barbara Boxer introduced identical provisions in the House. The bills were enacted without hearings and became Section 917 of P.L. 99-145. Subsequently, Senator Levin introduced S. 1783 to delay implementation of the work measurement provisions. AIA supported the delay, citing the existence of MIL-STD-1576A. However, no action was ever taken on this bill.

During 1986, AIA sought to have Section 917 repealed. AIA testified before the Senate Armed Services Subcommittee on Defense Acquisition Policy and the House Armed Services Acquisition and Procurement Policy Panel, urging the repeal of the work measurement provisions. AIA was concerned about individual company estimates of the cost of implementing the law that ranged from \$6 million to \$125 million, with one company estimating start up costs, including those of its subcontractors, at \$500 million. Grassley and Boxer conceded that they would support language to refine their legislation but continued to oppose industry's repeal efforts.

The Senate supported Senator Quayle's amendment to the FY 1987 DoD Authorization bill to repeal Section 917. The House Armed Services Committee supported a repeal provision introduced by Congressman Courter, but the measure did not survive on the House floor. Consequently the issue went to conference, where a compromise was reached.

While AIA continues to believe that the work measurement requirement is unnecessary, the compromise measure is significantly better than the prior law. It does not require a contractor to maintain additional data, or to maintain data in a form different than that already used. Furthermore, it applies only to major programs. Finally, the contractor is only required to make records available upon request.

In September, AFSC issued proposed Change Notice 2 to MIL-STD-1567A, along with a Work Measurement Performance Report Data Item Description, for industry review and comment. AIA led the CODSIA review activity. The CODSIA response voiced strong objection to the change notice and the Data Item Description, which proposes to incorporate as part of 1567A a number of the requirements of Section 917 of P.L. 99-145 which AIA opposed. At year-end, AIA was awaiting Air Force reaction.

### **Computer Aided Logistic Support**

The overall objective of the Computer Aided Logis-

tic Support (CALs) concept is to integrate and improve design, manufacturing and logistic functions through the efficient application of computer technology. This will require transitioning from the current paper-intensive weapon system support process to a largely automated and integrated mode of operation in digital form by 1990. A tri-association (NSIA, AIA, and EIA) group led by NSIA was invited by OASD (A&L) to participate with DoD and the military services in developing compatible information system architectures that can be rapidly implemented without incurring excessive costs. In 1986, the overall industry efforts were centered in an Industry Steering Group of tri-association members supported by four task groups covering the areas of Integration of Reliability and Maintainability Into the Design Process, Industry Incentives, Digital Transfer of Information and Inventory of CALs Activities. As the need arises, it is planned to establish subgroups to pursue any specific objectives that surface within the four task groups.

At an October Industry Steering Group meeting, it was suggested that the best way to institutionalize industry's efforts and get the maximum return for CALs may be through the establishment of an industry consortium. This approach would require industry contributions for funding and manpower resources to help DoD develop and implement CALs. However, various industry members had mixed feelings relative to the concept of such a consortium. Further consideration of this approach would be dependent on individual member company evaluation of any consortium charter and the belief that the CALs objective can be accomplished more effectively through existing trade association structures.

Within the AIA product support segment of the CALs group, review activities were initiated for comments on the draft CALs implementation plans issued by the Air Force and Navy. The major thrusts of these plans are directed toward supportability up-front in design, reduction of supply support administrative time and automated technical data with print on demand capability. Additionally, AIA members reviewed and provided comments on the DoD's National Bureau of Standards Fiscal Year 1987 Statement of Work (SOW) for CALs. It was indicated that the SOW was well written, broad in scope and addressed all of the key standards issues. Additional AIA activities underway at year-end involved development of publications standards for economical and efficient implementation of digitized DoD publications and information.

#### **Automated Technical Order System**

AIA member companies are seriously concerned about the potentially detrimental effect on technical data support of Air Force weapon systems resulting from Air Force plans to apply the Automated Technical Order System (ATOS) to all major in-production aircraft. In industry's view ATOS, when fully implemented, will severely reduce or eliminate a contractor's ability to adequately support his product while it is in a high rate-of-change status.

Member companies recognize the need for automation of technical information and have fostered the advancement of this technology with considerable



capital investment. It is believed that ATOS will assist the Air Force in reducing the time required for dissemination of updated information. However, the evolution of ATOS and the variety of conflicting Air Force briefings and comments to industry on this system have led to confusion which has heightened some industry concerns. These include potential impediments to the implementation of the planned Computer Aided Logistic Support (CALS) system; lack of feedback to industry recommendations regarding ATOS specifications and standards; and lack of feedback regarding Air Force alterations to contractor data, which could affect contractor data base integrity and product liability. An AIA letter listing these concerns was forwarded to the Assistant Secretary of the Air Force with a request for an opportunity to work constructively with the Air Force to assure the successful implementation of ATOS. Concurrence was given to this request and an initial joint meeting on this subject was scheduled for January 1987 at Air Force Logistics Command headquarters.

#### **Manpower, Personnel And Training Interfaces**

During 1986, interface and liaison activities were maintained by AIA training interests with DoD, Army, Navy, and Air Force training management counterparts. AIA members sponsored the first of what is hoped to be a series of Training Technology Workshops incorporating formal presentations on computer-based training technologies along with hardware demonstrations. A paper covering the application of Instructional Systems Development was finalized and presented to AIA members in April 1986. Additionally, a new interface with ATEC (Aviation Technical Education Council) was established. This interface will provide an avenue to present industry viewpoints on proposed upgrading of existing FAA approved curricula.

AIA commercially-oriented training management members have expanded their liaison relationships with maintenance training counterparts in the Air Transport Association (ATA). In 1986, an ATA task group documented recommendations for AIA review and comment covering the identification of training levels, program design, guidelines and media delivery systems. It was determined that with a system approach the learning system can be designed from scratch with methods and media determined on the basis of the needs and requirements necessary to make training the most effective and efficient. Consequently, what should be taught is established before it is decided how to teach. This contrasts with the prior approach to developing training packages, where trainers are required to estimate course length, student numbers, aids and support equipment requirements based upon the way it has always been done. This method keeps the training community—and therefore the student being trained—at least one step behind the current state of the art. AIA members will continue to assist ATA in further improvements to the latter's maintenance training programs.

#### **Spares Management**

The final formal meeting of the joint DoD/Multi-Association Spares Management Group was held during March 1986 and an extensive list of 55 recommendations to improve spare parts management was

developed. Among areas affected by these recommendations are future buys, duplicate items, acquisition method code implementation, access to data, specifications and standards, data repositories and training. At year-end, OASD was developing an integrated plan to implement these recommendations. Anticipated benefits resulting from implementation include improved forecasting of future buy requirements, reduction in duplicate items leading to larger quantity buys, avoidance of possible expenditure for data not intended for procurement, development of additional sources, enhancement of breakout effort, faster retrieval of repository data and improved spares management capability. An AIA spares task group will continue to be available to assist DoD in implementing any of these recommendations.

### **Contractor Engineering Technical Services**

The Navy has undertaken a number of new initiatives to reduce its dependency on Contractor Engineering Technical Service (CETS) personnel to maintain and service shipboard systems at sea. Programs such as zero deployed CETS and the implementation of increased competition as opposed to sole-source contracting were introduced. While recognizing the valuable service CETS provide in assisting Navy technicians in maintaining aircraft and associated weapon systems, there is the realization that they exist due to the lack of trained and experienced military technicians.

The Navy's plan is to steadily reduce the number of deployed CETS, including CETS on work-up periods, until July 1987 when no CETS personnel would deploy. An element of the Navy's plan of action is to place heavy emphasis on timely maintenance training through a program titled Maintenance Training Improvement Program (MTIP). Field support managers from AIA member companies are assisting the Navy in this program by providing CETS personnel in a training capacity on a selected basis. MTIP is unique in that it provides the using activity with an assessment of the squadron's ability to maintain weapons systems based on a system of individual testing, allowing for immediate feedback and remedial training.

### **Aircraft Maintenance Documentation**

An AIA Service Publications task group assisted counterparts in AECMA (Association of European Aerospace Manufacturers) in the development and preparation of a vocabulary and writing rules guide to facilitate the worldwide preparation of aircraft maintenance documentation in simplified English language.

The problems of publishing technical information are probably more complex than those of any other publishing process. Not only is the information itself expanding at a tremendous rate, but it comes from diverse sources such as scientists or engineers who create the product and the people who manufacture, inspect, service and use it. In the aerospace industry, the airlines identified the need for clear communication of complex maintenance information. Thus, in the late 1970s, the Association of European Airlines asked airframe manufacturers to investigate readability criteria for maintenance documentation within the civil aircraft industry. As a result of this request, an AECMA working group, later joined by

AIA set up a project that researched the procedural texts in maintenance manuals. Its initial suggestions for improvement are the contents of a Simplified English Guide, copies of which were distributed to AIA members during February 1986. Comments from initial users prompted the publication of an expanded revised issue which was distributed during September.

#### **Monitoring Acquisition Activities**

An *ad hoc* AIA spares group has been monitoring new actions pending in Congress and DoD which, when formalized, will result in changes to the government acquisition process. While the group has not become involved in specific details of proposed changes, it has frequently referred acquisition information to other appropriate AIA groups. During 1986, it contacted Army, Navy, and Air Force buying activities, predominantly in the small purchases arena, to conduct a survey on the operational impact of implementation of recent changes in the following areas: Full and Open Competition and Breakout; New Warranty Provisions; New Refund Policy; New Data/Data Management Policies and Reverse Engineering.

The results of the group's queries indicate little or no effect in these areas. However, there was general agreement among the government agencies surveyed that all the new "help" has caused longer administrative lead times, increased procurement action backlogs, increased paperwork and less flexibility to get the job done. Additionally, concern was expressed about the difficulty of sustaining a competent work force. It was noted that by the time entry level applicants are trained, they take the first opportunity to move up in grade and are lost from the small purchases work force. A report on these queries was presented to OASD and the task group will continue its monitoring efforts.

#### **Maintenance Aids System**

The Air Force Human Resources Laboratory (AFHRL) has an ongoing program to develop techniques for using a computer system to present technical data for maintenance. Under the program, a prototype Computer-based Maintenance Aids System (CMAS) has been developed and tested. Based upon the results of the prototype field test, AFHRL has developed draft specifications for use in developing a system for operational use and for procuring technical data for use on the fielded system.

At the request of AFHRL, an AIA publications group reviewed the draft specifications and provided recommendations. It was the industry contention that existing specifications requirements will result in a system that does many things poorly and nothing well. For example, requiring the same system to be capable of text processing (including addition and modification of text), data base management and arithmetical calculations may make it unwieldy and slow. Also, designing the system to interface with a multitude of devices may add unnecessary expense and reliability problems. At year-end, AIA was awaiting response from AFHRL on the status of the industry recommendations.

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# AEROSPACE PROCUREMENT SERVICE

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The Aerospace Procurement Service supports the business management activities of member companies in the fields of procurement law, policy and regulations, accounting and financial management, contract administration, materiel management, patents, proprietary information and small and minority business. The Procurement and Finance Council and the Materiel Management and Patent Committees, each composed of senior executives of member companies, provide experts to initiate actions seeking to improve business relationships or to resolve problems of mutual concern to government and industry. Major activities of the Service during 1986 included:

## **Cost Principles**

In 1986, the Congress became very much involved in micromanagement of FAR cost principles, dictating the dollar amounts for which contractors could be reimbursed under DoD contracts for certain costs. Under the Fiscal Year 1986 DoD Authorization Act, Congress addressed 26 categories of cost, of which 10 were made unallowable and 16 required clarification by DoD. Costs for alcoholic beverages and memberships in social, dining or country clubs were among those declared unallowable. Among the cost categories requiring clarification were those for public relations and selling/marketing. The DoD implemented these requirements in the FAR, effective April 7, 1986.

Additionally, in enacting the Federal Civilian Employee and Contractor Travel Expenses Act of 1985 (P.L. 99-234), the Congress mandated that, under any contract with Executive agencies, contractor personnel per diem costs incurred while in travel status shall be considered reasonable only to the extent that such costs do not exceed the maximum per diem rates payable to federal government civilian employees. This requirement was implemented in the FAR on July 31, 1986 and is applicable to contracts resulting from solicitations issued after that date. AIA spearheaded the CODSIA effort to provide industry comments and recommendations in connection with these implementations.

## **Cost Accounting Standards**

The Cost Accounting Standards (CAS) organization established by the Department of Defense (DoD) under the DAR Council in 1985 became fully operational in 1986. As of year-end, the CAS Policy Group's effort had resulted in the publication in the *Federal Register* of three proposed rules. One involved incorporation into the FAR of the rules, regulations and



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Committee



ALBERT CROWDER, JR.  
E-Systems, Inc.

Chairman, 1986  
Patent Committee

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cost accounting standards promulgated by the now-defunct Cost Accounting Standards Board; all 19 CAS are to be included. In addition, changes to two standards (CAS 404, Capitalization of Tangible Assets and CAS 416, Accounting for Insurance Costs) were proposed.

DoD plans to issue final rules on the three changes early in 1987. Although the DoD CAS Policy Group does not propose to issue any new standards at this time, it was working at year-end on three cases involving changes to CAS 412 and CAS 413 (Pension Costs) and a change to CAS 416. AIA is closely monitoring the activities of the DoD CAS Policy Group, yet is careful not to commit AIA or any of its members to agreement that DoD has the legal right to assume the CAS function.

The new Chairman of the Committee on Banking, Housing and Urban Affairs (which has jurisdiction over the CAS function) reportedly indicated that CAS legislation is not needed unless it is demonstrated that DoD is not properly performing the CAS function. It appeared at year-end that industry would have to live with the DoD assumption of the CAS function, at least for the near future.

#### Lump Sum Wage Payments

The problem that arose in November 1983 when the Bureau of Labor Statistics (BLS) refused to include lump sum wage payments (LSWP) in its average hourly earnings index publication was resolved in 1986. The average hourly earnings indexes are broadly used as bases for making economic price adjustments in both defense and commercial contracts. Beginning in June 1986, the BLS included for SIC 3711 (aircraft manufacturing) dual indexes in its average hourly earnings publication. One index includes LSWP and the other does not. As to other



SICs, the BLS has undertaken a study regarding the publication of such dual indexes. The continued use of the LSWP concept in newly negotiated union labor agreements may bolster the BLS decision with respect to publishing dual indexes for the other SICs.

As a result of AIA's coordinate effort with the BLS in connection with LSWP, it was ascertained that the average hourly earnings index is not the best basis for making economic price adjustments. A better basis for this purpose would be an employment cost index (ECI) covering total employment costs (wages, fringe benefits, etc.). The BLS does not now prepare and publish usable indexes for the SICs applicable to the aerospace industry, but the agency has indicated a willingness to undertake an effort to develop and publish such indexes. Industry funding for this effort will be necessary for both development and continued maintenance of the indexes. An AIA *ad hoc* group has been established to work with the BLS on this project.

### **DoD Profit Policy**

In September, the Department of Defense published a proposed rule that would revise the DoD profit policy on negotiated contracts. The proposed revisions resulted from a joint service study of DoD's contract financing and profit policies, the Defense Financial and Investment Review (DFAIR). In addition to financing policy changes, the revisions call for restructuring of the Weighted Guidelines Method used to develop pre-negotiation profit objectives.

AIA took the lead in developing an industry-wide response to DoD on these proposed revisions. Major points addressed in the industry response included the fact that economic balance reported in DFAIR no longer exists; the rule proposed elimination of profit on IR&D/B&P; the policy must consider investments in special tooling and test equipment; working capital is not sufficiently rewarded; profits on professional and technical service contracts are not reasonable; contractor risk in independent development and productivity must be recognized; and the proposed rule would eliminate markups on General and Administrative expenses and land.

The Navy continued its independent profit study conducted by RRG Associates. Results had not been published at year-end but it is understood that the latest revision, updated in 1986, increases the data base of companies reviewed. AIA will continue to closely monitor developments on profit policy.

### **Legal Task Group**

The Procurement and Finance Council, after reviewing the various task groups that report to the Council, chartered a new Legal Task Group in 1986 in response to a need evidenced by an increasing number of legal questions raised by other task groups. This does not portend a shift of responsibility from other task groups, but it does recognize collateral interests and provides a ready forum for resolution of legal questions.

The Legal Task Group subsumed a prior one-issue Indemnification Task Group. Indemnification continues to be an area of concern, but did not appear to warrant continuation of a standing task group. Among other issues of primary interest to the Legal Task Group is product liability.

The Legal Task Group held its first meeting in September 1986 when a delegation from the group met with Air Force Assistant Secretary Thomas Cooper to apprise him of industry's concern over the backlog of indemnification requests being held up by the Air Force. Dr. Cooper advised that a new Air Force policy which was about ready for issuance would relieve the situation.

Proposed legislative solutions to the problems of both indemnification and product liability proved fruitless in the 99th Congress. There is no certainty that indemnification will be reopened in the 100th Congress, although product liability probably will get legislative attention because of its much broader range of interest. Public Law 85-804 continues to be the only statutory vehicle to provide indemnification on a case-by-case basis against unusually hazardous risks.

#### **Progress Payments**

In August, AIA wrote to Deputy Secretary of Defense Taft in reaction to his testimony before the Subcommittee on Defense of the Senate Appropriations Committee, wherein he noted the possibility of reducing progress payments to 70 percent and paying invoices later. The letter took exception to both the proposed delay of payments and the reduction in progress payments, which would have a significant impact on the defense industry's financial position.

The 1987 defense appropriation, incorporated in a continuing resolution, requires a five percent reduction in progress payments for both large and small businesses. AIA will continue to address what effect this will have on a contractor's financial position as part of a proposed study of the impact on profitability of numerous recent legislative and regulatory changes.

#### **Rights In Technical Data**

With AIA as the principal participant, a CODSIA Technical Data Task Group met regularly over an 18-month span of 1985-86, primarily to track the proposed implementation of the technical data requirement of P.L. 98-525 (Defense Procurement Act of 1984) and P.L. 98-577 (Small Business and Federal Procurement Competition Enhancement Act). CODSIA submitted comments on both the interim regulations and the proposed final regulations issued by the DAR Council to implement 98-525, as well as the Civil Agency Council proposed implementation of 98-577.

Ideally, industry prefers to see a single government-wide regulation. The Department of Defense and the General Services Administration similarly favor that approach but it appeared at year-end that realization was at least two years away. In the meantime, the task has been further complicated by the additional data rights provisions included in P.L. 99-500, the Defense Appropriations Act for Fiscal Year 1987. From a substantive standpoint, these are not onerous provisions; in fact they should help resolve favorably some of the problems industry has with the proposed implementation of P.L. 98-525.

On the plus side, the legislation now precludes DoD from requiring a contractor, either as a condition of being responsive to a solicitation or as a condition of receiving a contract, to agree to deliver proprietary data. However, the amendment also

requires DoD to define in regulations the terms "developed" and "private expense," which have never been satisfactorily defined in the past. There is some helpful guidance in the conference report, which points toward a broader definition of "developed" and suggests that data should not necessarily be tied to an item or process. The conference report also clearly states that any data developed under IR&D would be considered private expense data. Representatives of the CODSIA Task Group met with DoD officials to ensure that DoD is aware of industry concerns with respect to definitions. The proposed regulations were to be published for public comment in January 1987.

### **Spares Refund Policy**

The issue of spares refund policy was the subject of a continuing dialogue between DoD and industry during 1986. The most recent industry input was a November 1986 CODSIA letter to the Navy acknowledging the improved system of spare parts acquisition and pricing and establishment of voluntary refund programs by many defense contractors. At the same time, industry strongly objected to the Navy's attempt to formalize industry's voluntary refund program by making it contractually binding. A DoD-wide refund policy is desirable and should minimally include definition of "intrinsic value"; accommodate a variety of spare parts procurement methods, implemented prospectively; and, establish a price agreement through negotiation. AIA continues to pursue this objective.

### **Tax Reform**

The principal issues at stake in tax reform legislation as it evolved were preservation of the Completed Contract Method of Accounting (CCM); the R&D Tax Credit; the Investment Tax Credit; and treatment of IR&D.

The Tax Matters Task Group worked throughout 1986 to try to preserve CCM and also to ensure that IR&D could continue to be expensed. The benefits of CCM had already been significantly reduced by changes made in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). TEFRA, among other things, required capitalization of many costs which had been expensed in the past. The TEFRA changes took effect over a three-year period, but their full impact was not expected until 1988. Several studies, including one by the General Accounting Office in 1986, clearly showed the increases already experienced and the further projected increases in taxes paid by contractors using CCM. Yet CCM became a prime target of tax reformers seeking revenue sources to offset the decrease in personal income taxes.

CCM was preserved in the Senate bill but compromised in conference, and staffers were directed to devise whatever modifications were necessary to raise \$3.5 billion over five years. There was little room for negotiation in the choices left to the staffs. Defense contractors wanted to ensure that the construction industry became the source of a fair share (approximately one-third) of the \$3.5 billion. The favored sources of revenue from defense contractors appeared to be through capitalization of IR&D, which was the last remaining significant item that was still being

expensed after TEFRA. In the end, the conferees left IR&D alone, which means it is still a period cost (expensed), but they required that the accrued shipment or percentage of completion method of accounting be used for 40 percent of the revenue under long term contracts. Thus, CCM can only be used for 60 percent of the revenue under long term contracts.

The investment tax credit was repealed. However, the R&D tax credit, as credit against tax for a percentage of increased R&D effort, was extended for three years.

### **Unauthorized Clauses**

The Procurement Techniques Task Group addressed the continuing problem of inclusion by DoD agencies of unauthorized clauses in solicitations and contract modifications. To assist AIA member companies, the Task Group developed a format for letters that individual companies may use in corresponding with government agencies regarding use of unauthorized clauses.

The Task Group composed an AIA letter to the Navy on use of a contract clause entitled "Progress Payments—Withholding or Suspension—Ceiling Unpriced Orders." AIA efforts resulted in Army Redstone Arsenal's withdrawal of a policy setting fee limits for CPFF contracts.

AIA member company representatives were encouraged to report instances of government efforts to use unauthorized clauses in violation of a Deputy Secretary of Defense memorandum, dated August 1983, which directs DoD agencies to rescind all policy direction to procurement personnel not in compliance with defense procurement regulations.

### **Materiel Management Issues**

In April, AIA held a Subcontractor Kickback conference in Los Angeles that set the tone for self-policing in this sensitive area. Approximately 600 people, including vendors and suppliers, gathered to hear company officials express their concern over this problem. Topics included emphasis that special hotlines had been created, ombudsmen had been inserted outside the normal chain in materiel or program management, and that a renewed emphasis was being placed on purchasing-vendor relationships to avoid any semblance of favoritism.

A working group was formed to explore the involvement of member companies in the American National Standards Institute (ANSI) X-12 Committee, Economic Business Data Information Exchange. The goal is to eliminate as much paperwork as possible, to exchange electronically requests for proposals, vendor and supplier responses, purchase orders, invoices, and payment through personal computers in the network.

Several strategic and critical aerospace materials are imported from South Africa. In light of the sanctions imposed by the government, AIA was asked by the Administration for an impact statement, which was supplied to the Office of Strategic Resources. AIA offered no political statement, simply a summary of critical minerals, aerospace usage and the degree of substitutability, if any. Example: chromium for jet engines.

The Office of Strategic Resources seeks continuing AIA interaction. One request is to consider updating the 1982 Department of Commerce study on National Aerospace Needs.

### **Facilities And Property**

The Department of Defense is preparing to issue a DFAR/FAR on the Special Tooling/Special Test Equipment (ST/STE) section of Senator Stevens' amendment in the continuing resolution passed by Congress. AIA was asked for informal comment and was seeking to help DoD meet the interim rule publication date of January 16, 1987. Still unknown at year-end were the funding aspects, tax implications, how long the statute applies, subcontractor flow-down, and details concerning a requirement that industry would have to fund some special tooling.

Member companies were active in 1986 helping the Air Force with a proposed Special Tooling clause that will make significant change in record keeping, reporting and disposition. It appears that the Air Force will require contractors to designate ST by weight and volume on each item in the event that a storage problem develops and that such information will help the Air Force Logistics Command.

### **Industrial Modernization Incentives Program**

An Industrial Modernization Incentives Program (IMIP) project on Lessons Learned is being prepared for distribution throughout the industry and government, in concert with an AIA survey that shows respondents forecasting savings of \$4.8 billion over the next 10 years through the implementation of IMIP. Pacing items for the ongoing AIA projects include White House pronouncements that productivity will be a major theme in the last two years of the current administration; letters of support are being prepared for transmittal to appropriate Executive Branch agencies. The AIA work group is in touch with the Defense Systems Management College (DSMC). The goal is to insert an IMIP module in the primary DSMC course (Program Management Course) so that the budding program managers will be familiar with the DoD directives and policy statements on IMIP.

### **Air Travel Compensation Act**

AIA continued its efforts to develop support for federal legislation that would provide appropriate liability protection for the traveling public as well as those engaged in commercial air transportation. The objective of the AIA effort is to provide prompt compensation for the damaged public, assure full recovery of damages, and simplify the allocation of liability among parties jointly contributing to any catastrophic incident.

To develop an adequate and credible data base to support Congressional consideration of the subject, AIA contracted with Rand Corporation's Institute for Civil Justice to conduct a study covering domestic airline accident and insurance data involving 2,352 passenger deaths over a 12-year period. The study was scheduled for completion by July 1986, but the final report is expected in April 1987. In the meantime, efforts continue to keep Congressional members and staffs apprised of progress.



## Telecommunications

The Telecommunications Task Group represents AIA members in telecommunications matters before agencies of the federal government, and its subgroup – the Teleconferencing Advisory Group (TAG) – keeps member companies advised of current and future video teleconferencing planning and operational activities affecting aerospace, as well as keeping the teleconferencing industry informed of aerospace concerns. The TAG recently joined with representatives of the teleconferencing industry and the State Department to delay the accelerated adoption of a Japanese codec (coder-decoder) standard by the International Telephone and Telegraph Consultative Committee until United States users have had an opportunity to evaluate it.

AIA member companies will have in operation, by the end of March 1987, more than 50 full-motion video teleconferencing rooms, with substantial continued growth being planned. In the longer term, it is expected that one or more of these rooms will be interconnected with the Defense Commercial Telephone Network.

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# AEROSPACE RESEARCH CENTER

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The Aerospace Research Center is engaged in research, analyses and studies designed to bring perspective to the issues, problems and policies that affect the industry and the nation. Its studies contribute to a broader understanding of the complex issues that bear on the industry's and the nation's technological and economic success. The Center frequently plays a key role in development of association position papers on industry-related matters.

AIA's statistical research and publication activities are centered in the Economic Data Service (EDS), an activity of the Research Center that collects and distributes data on the aerospace industry and its relationship to the national economy. The association library is a part of the Research Center. It houses aerospace and aerospace-related books and periodicals; maintains departmental reports; responds to information inquiries from staff, members and the public; performs information searches and some subject research. During 1986, the Center was engaged in these activities:

## **Productivity**

At year-end, a study on *U.S. Aerospace Industry Productivity Trends* was completed and in review. The study compared the industry's performance with that of U.S. total manufacturing and U.S. capital goods manufacturing, as well as with that of the aerospace industries of major competitor countries. It pointed out some important trends in the composition of productivity inputs that are affecting productivity strategy. Special attention was given to the important role of advanced manufacturing technology in aerospace today.

## **Internationalization**

In conjunction with the International Council, the Center began a study of the impact and implications of internationalization in the aerospace industry. Relevant trade and investment trends and joint venture activity will be examined. The study will also compare the experience of aerospace to the broader experience of American industry, review causes of the different types of internationalization in the industry and assess the relative importance of each; explore the impacts of the internationalization trend on different industry segments; and assess the implications of the trend toward internationalization for U.S. policy.

## **Statistical Yearbook**

The Economic Data Service (EDS) compiled and published the 34th edition of *Aerospace Facts and*

*Figures*, the industry's statistical yearbook. The book presents data and narrative on aircraft production, missile and space programs, air transportation, helicopter usage, research and development, foreign trade, employment and finance, updating each time series with the latest available data.

#### Facts & Perspective

A new AIA publication with content developed by the Research Center—*Facts & Perspective*—was initiated in 1986. In a newsletter format, it will appear several times yearly on a non-periodical basis to provide data, information and analysis on a range of topics concerning the aerospace industry. The first edition centered on the industry's continuing contributions as the United States' leading manufacturing exporter.

#### Year-End Review and Forecast

ARC staff prepared 1986 year-end estimates of industry economic activity, based on three quarters of data, and projected key industry indicators for 1987. The data and accompanying analysis on sales, shipments, backlog, trade, capital expenditures and employment were provided to the media, Capitol Hill, Federal agencies and industry analysts.

#### Statistical Series

Interim reports of data collected by EDS were released throughout the year in more than two dozen statistical series addressing general industry activity, employment, aircraft production, foreign trade, DoD and NASA contracts, obligations and outlays.

#### Surveys

Assistance was provided to a number of AIA data gathering and analysis efforts in support of association projects on issues that included company employee relocation costs, the profit markup impact of recommendations resulting from the Defense Financial and Investment Review, trends in expedited and critical parts shipments, and potential insurance savings with government as self-insurer under negotiated fixed price contracts with progress payments. EDS annually conducts an industry employment survey and also annually aggregates data for about a dozen aerospace companies reporting energy consumption through AIA to the Department of Energy.

#### Data Issues

Having assisted an *ad hoc* committee working to resolve the issues of how to include lump sum wage payments in the Bureau of Labor Statistics' earning series on aircraft production workers, the EDS resumed publication of the Aerospace Hours and Earnings Series. EDS staff also participated in meetings of an AIA *ad hoc* group working to develop aerospace employment cost indexes that reflect total labor costs. EDS staff regularly participate in and assist the Helicopter Forecast Group of the Transportation Research Board.

The Research Center coordinated AIA presence on an *ad hoc* multi-association committee on the Energy Information Administration's Manufacturing Energy Consumption Survey. It provided input to the Bureau of Census on the Current Industrial Report for Civil Aircraft and Aircraft Engines to help assure that this source of industry information will remain accurate and valuable for users.

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# AEROSPACE TECHNICAL COUNCIL

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The Aerospace Technical Council is the industry's senior technical policy body and spokesman with responsibility for all technical and program management issues, as well as for advancing the nation's aerospace technology, for guiding the research, development, test and safety aspects of aerospace vehicles and for establishing and directing AIA's technical organization. Major Technical Council activities of 1986 included:

## **Key Technologies**

The Aerospace Technical Council's project on Key Technologies for the 1990s continued to progress toward a follow-on publication to *Aerospace Technology for the 1990s*. At the spring ATC meeting, after reviewing the list of 12 key technologies, it was agreed that roadmaps portraying the potential of these technologies should be developed. An *ad hoc* group was formed to review the roadmaps and develop a plan for presentation to the government. At year-end, there were eight key technologies for which revised roadmaps were being developed: Advanced Composites, Very Large Scale Integration Technology, Software Development Technology, Engine Technology, AI/Expert Systems, Ultra Reliable Electronics, Optical Information Processing Technology, and Advanced Sensor Technology.

## **Composite Material Characterization**

Ten AIA member companies have agreed, through a Memorandum of Understanding, to form a consortium for Composite Materials Characterization (CMC). CMC will generate — for consortium members' use — screening data (physical and mechanical properties) on the maximum number of new and advanced composite materials. Additionally, the consortium will provide the basis for obtaining design allowables and performing R & D in the area of non-destructive testing of composites. Participants in this joint venture will benefit from sharing of costs, eliminating duplication of effort, and providing standardization.

CMC Management is finalizing business and technical plans during this organizational phase. When operational, CMC will be independent of AIA and open to all interested parties. It is expected that organization will be complete by the latter half of 1987, at which time other interested companies can join at an estimated \$125,000 for the first year and \$100,000 annually.

## **Space Issues**

The Aerospace Technical Council has been monitoring the space arena with an *ad hoc* group that was



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Chairman, 1986 Aerospace  
Technical Council



R. NOEL LONGUEMARE  
Westinghouse Electric Corporation  
Chairman  
Technical Specifications  
Division



S. MICHAEL HUDSON  
General Motors Corporation  
Chairman  
Aviation Division



ARNOLD J. KNAULE  
The Singer Company  
Chairman  
Technical Management  
Committee



ROBERT L. CATTOI  
Rockwell International Corporation  
Chairman  
Space Committee



RAY D. LEONI  
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Chairman  
Rotorcraft Advisory  
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GEORGE J. FRANKEL  
Grumman Corporation  
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JOSE R. ELFALAN  
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International Standardization  
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WEBSTER C. HEATH  
McDonnell Douglas Corporation  
Chairman  
Transport Airworthiness  
Requirements Committee



JAMES F. CHARLES  
Rockwell International Corporation  
Chairman  
National Aerospace Sdts.  
Committee



KEN HERON  
McDonnell Douglas Corporation  
Chairman  
Materials and Structures  
Committee



JOSEPH F. GRASS III  
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Chairman  
Rotorcraft Airworthiness  
Requirements Committee



J. R. ELSTON  
The Boeing Company  
Chairman  
Embedded Computer Software  
Committee



M. M. SEARS  
McDonnell Douglas Corporation  
Chairman  
Electronics Systems  
Committee



PHILIP F. OESTRICHER  
General Dynamics Corporation  
Chairman  
Flight Test and Operations  
Committee



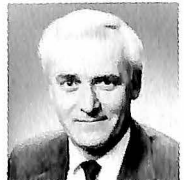
NORRIS HAIGHT  
McDonnell Douglas Corporation  
Chairman  
Airplane Noise Control  
Committee



ED COATES  
The Boeing Company  
Chairman  
Civil Aviation Advisory Group



RONALD G. SCHLEGEL  
United Technologies Corporation  
Chairman  
Helicopter Noise Control  
Committee



BARRY LATTER  
The Boeing Company  
Chairman  
Propulsion Committee

upgraded to committee status in 1986 because several issues were coming to a head. National launch systems are in the limelight and the industry as a body has not provided the government any views on this matter. Accordingly, the Council commissioned a study to characterize key elements for future space launch capabilities by identifying roles for industry, systems goals and decision factors.

NASA's Space Leadership Planning Group was charged with reviewing the findings of the National Commission on Space, considering the White House policy guidance and developing a credible implementation plan. While the first cut version of the implementation plan will be based on an unconstrained budget, the second version will offer several budget options and an alternative version of space leadership. At year-end, the NASA group was planning to request industry comments on the various implementation plans and AIA was gearing up to meet the request.

### **Defense Acquisition Streamlining**

In conjunction with the Department of Defense and assisted by the Electronics Industries Association and the National Security Industrial Association, AIA sponsored the second national conference on acquisition streamlining. Panels highlighted government and industry experience in the areas of program management, engineering, quality and controls. At the conference, attended by nearly 400 government and industry representatives, DODD 5000.43, Acquisition Streamlining, was distributed to all attendees.

AIA continued to work directly with OSD, individual Service Streamlining Advocates and NASA to publicize the value of streamlining technical contract requirements. In addition, industry advocated implementing DODD 5000.43 through its inclusion in the regulatory system, thus flowing down policy to action officers. A FAR case was established and at year-end the review process was under way.

As an adjunct to this effort, AIA initiated a project to identify counterproductive technical requirements most in need of streamlining actions. This effort will help the military services and OSD implement DODD 5000.43 by highlighting those documents that should be revised, cancelled or converted to new contractual status, e.g. a handbook or guide.

### **Program Management**

The aerospace industry has long advocated incorporation of acquisition policies in the FAR/DFAR as a means of assuring their effective implementation. In 1986, efforts were initiated to review acquisition policy documents such as DODD 5000.1, *Major System Acquisition*, and DODI 5000.2, *Major Systems Acquisition Procedures*, to determine the utility of incorporating them into the regulatory system.

### **Transport Airplane Cabin Safety**

Passenger safety and survival in transport airplane cabins has been significantly improved during 1986 as a result of a continuing program of the Federal Aviation Administration. Improvements that have been made to the existing fleet include more fire retardant seat cushions, low level floor exit lighting, improved fire extinguishers, smoke detectors, and improved emergency medical kits. Longer range

improvements that will be incorporated in new airplane designs and major refurbishments will result in cabin sidewall, ceiling and overhead bin panels constructed of materials with lower flammability and smoke characteristics. These material improvements resulted from FAA and AIA research and test programs. Significant improvements have also been made in passenger seat design, construction and testing that will provide additional protection in an emergency landing.

Additionally, representatives of manufacturers, airlines, FAA, aircrew unions and consumer advocates have reviewed regulations dealing with emergency evacuation of passengers. Criteria for escape path distance, location of exits, crew training and maintenance and reliability of emergency exits and slides are expected to be revised in proposed rulemaking during 1987. All these improvements in crashworthiness, post-crash fire protection and emergency evacuation greatly increase the ability of occupant survival in crash landings.

### **Helicopter Safety**

A rotorcraft crashworthiness project was established to develop and recommend realistic crashworthiness criteria for future civil helicopters. The recommendations were limited to future civil helicopters to allow designers to incorporate the safety features along with other design changes needed to accept the added weight. Energy absorbing seats with shoulder harnesses and a crash resistant fuel system are the significant crash safety improvements recommended. A stronger restraint system with both lap and shoulder belts coupled to an energy absorbing seat will increase the crash loads occupants can survive. A crash resistant fuel system is expected to delay post crash fires long enough to allow the occupants to escape a survivable crash.

Crash safety or crashworthiness of helicopters is an extremely important but complicated issue. If unrealistic criteria are used, a high weight penalty may make the helicopter unfit for its intended purpose. The study, based on analysis of National Transportation Safety Board and individual company accident data, recommended that any new requirements be realistic for the civil helicopter crash environment.

### **Economic Information Program**

AIA member companies make extensive use of the financial and operating statistics reported by air carriers to the Department of Transportation's Research and Special Programs Administration (RSPA). Airframe and engine manufacturers use the data for design and market analysis. AIA supported a DoT/RSPA effort to reduce air carrier reporting burdens by more closely aligning the data collected with the data needed to fulfill its aviation responsibilities. A final rule was under review at year-end and publication was expected early in 1987.

Budget pressures prompted DoT to seek the participation of both federal and non-federal users in the funding of the data program. AIA member companies contributed \$175,000 to the Fiscal Year 1986 program and they are working with DoT/RSPA to identify users of the data in order to establish a broader and more equitable user charge program for FY 1987.

## Software Standards Development

In recent years, the Department of Defense has been working to consolidate service standards and specifications for software into common DoD standards. The Joint Logistics Commanders delegated the project to the Computer Resources Management group chaired by a representative from Air Force Systems Command. The major DoD Standard (DOD-STD-2167, *Software Development Standard*) was published in the summer of 1985 with the proviso that Revision A would rectify industry concerns not incorporated in the first publication. Draft Revision A is circulating to industry through CODSIA as is a handbook (DOD-HDBK-287) on the implementation of the standard. Also being reviewed under CODSIA sponsorship is a related quality document, *DoD-STD-2168, Defense Software Quality Program*.

Software development is taking place under DoD contracts even while the standards are being developed. The software standards were developed with the idea that one standard could be used for large or small efforts and tailored to exclude unnecessary documentation. However, tailoring is not taking place and the entire standard is referenced when only pertinent parts should be used. This lack of tailoring is a significant cost driver on software development contracts and will force changes over time. DoD program managers, contracting officers and auditors must be educated about the tailoring features and agree to tailor the standard to fit the specific job.

In industry's view, the proposed document on software quality suffers from the same concern, in addition to specifying software evaluations that are vague. The standard is issued with such subjective quality indicators that it would be difficult if not impossible to comply with the requirements. In addition, there is a concern that software quality assurance is ill-defined. A good methodology and documentation process is necessary, but quality assurance cannot be applied to the final product as with hardware; quality must be designed into the software.

## Unducted Propfan Certification

New transport aircraft being designed for airline service in the 1990s feature an advanced propulsion concept consisting of an unducted propfan that promises a 40 to 50 percent savings in fuel over existing turbojet and turbofan engines. At year-end, several test engines were undergoing flight tests with encouraging results.

Airplane and engine manufacturers have reviewed current certification requirements for airplanes, engines, propellers and noise for their applicability to the unducted propfan engine installation. Potential problem areas appear to be noise and preventing damage from blade failure. A Federal Aviation Administration (FAA) team is visiting various manufacturers and airworthiness authorities to determine their views on possible certification or safety issues. A preliminary report of the team findings will be issued during the second quarter of 1987 and a public conference will be scheduled to review the preliminary report prior to any final regulatory changes. These efforts are intended to ease discussions with FAA and to minimize certification problems as the new engines are brought on line.



## Aircraft Paint Emissions

Air quality standards set by the Environmental Protection Agency (EPA) have caused considerable concern among aerospace companies which must paint metal parts or entire aircraft, because EPA insists that emissions of paint spray operations be reduced either through use of control equipment or through reformulation of paints. AIA's Environmental Affairs Subcommittee has worked with EPA to obtain agreement for standards development, while the Materials and Structures Committee has been working to develop universal specifications for primer and topcoat applications. The aerospace industry is working on paint reformulation as the best way to solve the problem because control equipment is expensive and inefficient for most metal parts painting. EPA has agreed that limiting volatile organic components (VOC) of aerospace coatings is a viable solution. However, paint reformulation may take more time than EPA is willing to allow.

The intent of this project is to maintain a high performance coating system that will not peel or erode in flight and still meet the EPA requirements. A universal specification for both military and commercial use would provide a broader market for paint producers and make aerospace applications more desirable. Two specifications have been published and circulated to paint manufacturers and interested coating vendors to see if paint performance can be maintained with drastically lowered VOC content. Some paint samples have been tested, but at year-end none had passed all of the necessary tests.

Late in the year a meeting with paint and coating manufacturers was held in Atlanta, Georgia with about 30 representatives of paint manufacturers in attendance. As a result of the meeting, additional samples were expected to be made available for testing.

## Technical Data Specification

The Army has proposed a general specification for technical data packages which, if approved, would replace the existing specification on drawings, DOD-D-1000. An industry review suggests that the document assumes that any "competent manufacturer can work from a data package without support of the original designers." The document, as written, inhibits tailoring and if not changed could easily escalate data cost by at least 50 percent and possibly as much as 150 percent. Much of this cost increase can be attributed to the how-to-do-it instructions integral to the specification. The specification would also cause a flow down of requirements to vendors which the industry views as unreasonable in that no consideration is given to the proprietary rights of OEM.

## R&M 2000 Program

The Air Force has initiated a program—called R&M 2000—to identify and institutionalize a set of principles that optimize reliability and maintainability in any system development. Since the program's inception, AIA has been working closely with the R&M 2000 Steering Group in the development of two brochures, one applicable to management personnel and the other to engineers. The management brochure has been published; it outlines means to achieve management commitment and motivation

to detail needs and requirements, to better consider design and growth needs and to achieve preservation and maturation. The engineering brochure will detail how engineers should implement R&M.

### **International Standardization**

The international committee for aerospace standardization, ISO/TC 20, convened its 28th plenary meeting October 22-23, 1986, in Moscow. The well-attended session brought together representatives of 12 major aircraft producing nations. L. M. Mead of Grumman Aerospace Corporation chaired the plenary session.

The Technical Committee (TC) made a number of policy decisions affecting the operation of its 10 subcommittees and the management of an extensive technical program covering all aspects of aerospace standardization, from fasteners to hydraulic parts. The TC agreed on quality assurance requirements and language to be included in future international aerospace part standards and procurement specifications, and reviewed a proposed part identification system for use in all international aerospace parts. The TC is also surveying needs for international standardization in the field of airborne electronic instruments and systems and is monitoring developments in standards for space applications.

The American National Standards Institute (ANSI) is the official U. S. member body of the Geneva-based International Organization for Standardization (ISO). AIA serves as the international secretariat of ISO/TC 20. Representatives from U.S. aerospace companies participate through the U.S. Technical Advisory Committee (TAG). The eventual goal of ISO/TC 20 is to develop a complete set of hard metric, international standards to meet all aerospace needs.

### **Aerospace Standards Strategy**

An aerospace industry standardization strategy was adopted by the AT Council to meet the AIA Board of Governors policy of May 1982, which established goals for improved coordination of aerospace industry standardization and for maintenance of the traditional U.S. position of world leadership in this area. The ATC strategy lays out a long term, pragmatic approach to implement the Board's policy, focusing primary attention on actions that can be accomplished within AIA resources and that have a high potential for completion.

Drawing on a general plan prepared earlier by AIA company standardization focal points, the strategy identifies several key objectives, which include promoting continued development and wide acceptance of "world class" U.S. aerospace standards; assuring that user positions on domestic and international standards drafts and policies are presented in an effective, coordinated manner; providing adequate resources to achieve industry standardization goals and using them effectively; maintaining a leadership role in world standardization to avoid negative impacts on U.S. manufacturing, sales, and interoperability requirements; and keeping alert to standardization developments and trends that could have a potentially detrimental impact on industry.

## National Aerospace Standards

AIA standards development activities in 1986 included publication of 56 new and revised National Aerospace Standards on such items as aircraft paints, airplane characteristics for airport planning, drills and numerous types of aerospace fasteners. One widely recognized AIA standard, NAS 3610 *Cargo Unit Load Devices*, was formally adopted by the International Standardization Organization (ISO) as ISO 8097. AIA continued to provide an industry viewpoint on Department of Defense standards by reviewing and commenting on 90 DoD documents.

DoD, through the Defense Industrial Supply Center (DISC), approached AIA with a request to reactivate the NASC's metric standards activity and develop, on a priority basis, a body of standards to support the metric design of the Light Helicopter Experimental (LHX) airframe. This approach is in accordance with DoD policy to adopt voluntary standards in preference to company or military specifications. DISC had provided AIA with a list of 250 proposed new standards that it would like AIA to develop over a three year period. These would be in addition to the 150 NAS metric standards AIA has already issued. At year-end, the Aerospace Technical Council was considering the request.

## Aerospace Metrication

The pace of metrication in the aerospace industry appears to be accelerating with the imposition of "hard metric" requirements on two major programs, the U.S. Army Light Helicopter Experimental (LHX) and the NASA Space Station, and on several lesser programs. Also, the Strategic Defense Initiative Organization (SDIO) is studying metrication of the SDI program.

The Aerospace Sector Committee (ASC) of the American National Metric Council (ANMC) provides a forum for all sectors of the aerospace community—industry, government, airline, etc.—to participate in joint planning for aerospace metric transition. AIA provides the secretariat on behalf of the ANMC. In September 1986, the ASC conducted a two-day Lessons Learned symposium. The theme was "Aerospace Metrication: It is Here." The symposium provided an opportunity for the participants to exchange information and experiences on past and current systems designed to metric measurement. Nineteen speakers from government and industry made presentations on the LHX engine and airframe, T-45A Trainer, Space Station, M230 30MM Gun, Army Tactical Missile System, and SDI. The symposium's basic message was that much progress has been made in metrication and the cost of converting to metric measurement on a program is less than originally thought.

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# HUMAN RESOURCES COUNCIL

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The Human Resources Council supports the business management activities of member companies in the fields of human resources management which includes industrial/labor relations, industrial security, employee compensation and benefits, equal employment opportunity/affirmative action planning, occupational safety and health and environmental affairs. The Council, through its Industrial Security, Compensation Practices, Occupational Safety and Health Committees and Environmental Affairs Subcommittee, each composed of senior executives of member companies, provides expert advice and assistance by initiating actions that will improve business relationships in its assigned areas and resolve issues of mutual concern to government and industry. The Council engaged in these major activities during 1986:

## **Defense Industry Hiring Practices**

As a result of publicity surrounding the issue of "kickbacks" in the defense industry and subsequent hearings by the Senate Subcommittee on Oversight of Government Management, the Council developed a set of Principles and Guidelines concerning hiring practices. These voluntary Principles and Guidelines were prepared pursuant to Congressional suggestion as an alternative to the imposition of legislation and/or DoD contractual language that would require defense contractors to release to prospective employers detailed information about the reasons former employees left their employ. The Council expected to recommend adoption of its proposed Principles and Guidelines by the Board of Governors at its spring 1987 meeting.

## **Human Resources Legislation**

The Council established a means to prepare timely responses to proposed Human Resources legislation of direct interest to the aerospace industry, such as a proposed amendment to the Fiscal year 1987 DoD Appropriations Act limiting contractor compensation to the maximum civil service compensation level; S.2402, Access to Health Care Act mandating that all states create "qualified health insurance risk pools"; S.2181 and H.R. 281, Construction Industry Labor Law Amendments of 1986 to end the practice of so called "double breasting"; H.R. 4300, Family and Medical Leave Act of 1986, requiring employers to provide extensive leaves of absence to employees; S.2050 and H.R. 1309, High Risk Occupational Disease Notification and Prevention Act, requiring employers to notify current and ex-employees of probable occupational health risks; Service Contract Act and Davis-Bacon reform initiatives; and plant closing legislation.



BOBBY F. LEONARD  
Martin Marietta Aerospace  
Chairman, 1986  
Human Resources Council



FRED G. FREIBERGER  
IBM Corporation  
Chairman, 1986  
Occupational Safety and  
Health Committee



REGIS J. CARR  
TRW Inc.  
Chairman, 1986  
Industrial Security  
Committee



CHARLES P. HAGBERG  
The Boeing Company  
Chairman, 1986  
Compensation Practices  
Committee

It is expected that these and similar bills will be introduced in the 100th Congress. The Council will continue to monitor closely and respond to legislative efforts that have long-term implications on labor/management relations and payroll costs.

#### **Personal Compensation**

With the adoption of D/FAR 15-205.6, the burden of proof of reasonableness of salary, wage and benefit costs has shifted from the government to the contractor. Also, individual elements of compensation are now subject to question and disallowance, rather than total compensation costs. In order to prove reasonableness, contractors will be required to present government auditors with details of data used to arrive at costs. The Compensation Committee continues to negotiate with compensation survey consultants to allow the sharing of their data with government auditors.

#### **Hazard Communications**

The U.S. Occupational Safety and Health Administration's Hazardous Communication Standard was extended to all manufacturers on May 25. It has wide ranging implications for the way contractors must account for, and communicate the presence of, hazardous materials in the workplace. As these requirements are extended into the workplace, many details of implementation—such as uniform package labeling, developing of employee training programs, and means of resolving differences between federal, state and local "right to know" laws—are being coordinated within AIA's Occupational Safety & Health Committee.

#### **Hazardous Material Information System**

The Occupational Safety and Health Committee provides liaison and coordination for the 30 member companies participating in the Defense Logistics Agency's Hazardous Materials Information System (HMIS). At year-end, the HMIS was "on line" only to government agencies; AIA was negotiating with DLA to extend this capability to AIA participants.

## **Open Burning/Open Detonation**

The Environmental Protection Agency requested that AIA's Environmental Affairs Subcommittee take the lead in development of an Open Burning/Open Detonation Guidance Manual to be incorporated into EPA's proposed Subpart X of 40 CFR 264. At issue is contractors' facilities not being granted a Part B permit for OB/OD, previously allowed by 40 CFR 265.382. The objective is to find a less complicated way to dispose of reactive wastes.

## **Waste Minimization**

The Environmental Affairs Subcommittee continues to monitor administrative and legislative efforts to establish waste abatement programs for private industry, perhaps modeled after public sector programs. AIA is working with the U.S. Office of Technology Assessment in its efforts to determine what steps industry can take to reduce amounts and types of hazardous materials used in research and manufacturing processes.

## **Security Plans and Programs**

Forty-seven of the 61 recommendations for improving security plans and programs made by DoD's Security Review Commission were expected to be implemented on January 1, 1987. Because of a tight deadline, changes to the Industrial Security Manual (ISM) were not coordinated by DoD with the contractor community, either through AIA or CODSIA. At year-end, AIA's Industrial Security Committee was closely monitoring immediate and long-term effects of these changes on the Defense Industrial Security Program and planned immediate action to initiate proposed modifications to the ISM where deemed appropriate.

## **Automated Security Clearances**

In cooperation with the Defense Industrial Security Clearance Operation (DISCO), AIA completed Phase 1 of a study to determine the feasibility of electronically transmitting Personnel Security Questionnaires and Letters of Clearance between contractors and DISCO. Preliminary results show potential savings of eight to 14 days for the round trip, compared to the present manual exchange. As this program becomes operational (sometime in 1987), contractors will obtain personnel security clearances faster, thereby realizing significant productivity savings by shortening the time employees are held off the job for which hired while awaiting clearance.

## **Industry Advisory Board**

At year-end, the National Security Council's Senior Intelligence Group for Intelligence was considering AIA's recommendation to establish an industry advisory board. This board would advise the SIG(I) of the impact on industry of proposed National Security Decision Directives related to industrial security programs.

## **Telecommunications Security Training/Certification**

AIA's Industrial Security Committee is working with the National Security Agency (NSA) to develop a program to train selected contractor personnel in NSDD 145 telecommunications security requirements. Contractor employees successfully completing the course will be certified as the principal contractor authority and contact for NSA on all telecommunication security matters.

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# INTERNATIONAL SERVICE

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THOMAS A. CAMOBASSO  
Rockwell International  
Corporation  
Chairman, 1986  
International Council

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

The growing internationalization of the aerospace industry, the expanding trade debate and the proliferation of issues confronting the industry led the Council to establish its priorities within a three-pronged program: first, the Council is addressing the day-to-day governmental and public positions that impact exports; second, the Council is embarked on a program to raise the awareness of the public and the government on the value of aerospace exports to the national well-being, security and influence; third, a concerted efforts is underway to expand AIA's international contacts.

## Day-to-Day Issues

In 1986, The International Council addressed a revised list of 30 issues that involved day-to-day actions. The list included these issues in the general area of Export Promotion: Trade Adjustment Assistance Extension, Foreign Trade Associations, Trade Seminars, Space, Barter and Countertrade, Foreign Assistance (including FMS), Foreign Corrupt Practices Act, Trade Reorganization, Protectionism, General Agreement on Tariffs and Trade, Free Trade Areas and Omnibus Trade Bills. In the area of Export controls: Operations Under Distribution License Regulations, International Traffic in Arms Regulations, Export Administration Act, Technical Advisory Committee on Trade, Licensing Procedures, Technology Transfer, Commodity Control List Regulations. Issues under the heading of Defense Trade include the NATO Industrial Advisory Group, Codevelopment and Coproduction, Emerging Technologies, Offsets, Memorandum of Understanding, Mandatory Advisory Opinions and Congressional Oversight of Arms Transfers. Under Export Financing: Export-Import Bank, ITC Investigation of 10-30 Seat Commuter Imports, Military Financing, International Agreement on Credits and Leasing.

## Trade Legislation

In the spring, the House of Representatives voted in favor of comprehensive trade legislation. The bill (H.R. 4800), among other things, would have given the President new trade negotiating authority, made numerous changes in U.S. tariff and customs provi-



sions, reduced controls on U.S. exports, clarified the Foreign Corrupt Practices Act and addressed the question of U.S. industrial competitiveness. AIA testified in support of the market-opening aspects of the bill in April.

When the bill reached the Senate, AIA made known the industry's positions on such matters as antidumping reforms and the need for reduced export controls. However, the Senate adjourned without the Senate Finance Committee having reported a bill. Trade legislation was expected to be a major issue in 1987.

### **Export-Import Bank**

The Export-Import Bank received a six-year extension of its charter through September 30, 1992. In addition, the reauthorization legislation provided for \$900 million in new direct loan authority for Fiscal Year 1987, new "I-Match" authority to make grants and interest subsidy payments on a trial basis, unrestricted transferability of Eximbank-guaranteed obligations, a \$100 million tied-aid "war chest" to meet subsidized foreign competition and several other improvements in the Bank's charter. AIA actively supported those elements of the legislation that were deemed to be critically important to the aerospace industry.

### **NATO Cooperative Programs**

Senator Sam Nunn led a Congressional effort to allocate \$250 million for the development of specific cooperative programs with the NATO allies of the U.S. Thirteen programs emerged from Department of Defense and NATO Defense Ministers. By year-end, Memoranda of Understanding (MOU) had been signed or were in the late stages of completion for all such projects. Unfortunately, the U.S. government did not consult industry in the formulation of the MOUs. Industry concern over this practice was made known to the DoD through the U.S. delegation to NATO Industrial Advisory Group.

In parallel, the International Council developed a basic position paper on NATO cooperative programs that was submitted and endorsed by AIA's member companies. While supportive of the thrust of the Nunn initiative, the paper asked DoD to develop detailed guidelines to provide favorable and expedited treatment for export licensing associated with industry-to-industry cooperatives projects, as well as those under Nunn Amendment agreements; transfer more rapidly classified and unclassified technical data among project participants; clear up misconceptions about the ownership of data delivered to the government with unlimited rights; institute procedures for some form of industry participation in the formulation of memoranda of understanding; and develop guidelines on third-country sales to remove the European excuse to "design away" U.S. componentry and technology. The position paper was provided to DoD.

### **Technology Cooperation**

The International Council worked with the Department of Defense to develop a booklet on procedures to transfer significant technologies from Japan to the United States. The procedures were working reasonably well, with some transfers already effected by year-end. The general effort to attract foreign technologies into the United States will be expanded to other areas.



## Export-Import Controls

AIA has set a high priority on working with senior management in the Department of State to develop procedures and resources to expedite the issuance of time-sensitive export licenses. Discussions with State officials have been cooperative and productive, resulting in the department's agreement to accelerate by three years the implementation of a plan to allocate funds for computer and microfilm resources. Some personnel will also be added. In addition, the department has established a working group to explore with industry recommendations to improve the export license procedures. AIA also continued to work with the Departments of Defense and Commerce to ensure continuing improvement in the licensing process.

## International Space

The Space Shuttle accident had a significant impact on the U.S. space program and equally profound consequences in the international arena. The grounding of Shuttle vehicles, and the U.S. reliance on them as the primary mode of space transportation until the accident, opened opportunities for foreign launch vehicles. The beneficiaries are the Europeans, the Chinese and possibly even the Japanese. It can be expected that American expendable launch vehicles plus the Shuttle itself will regain dominance of the U.S. market beginning about 1989. Foreign launch vehicles, however, will not be closed out of the world market because they will have gained valuable operational, technical and marketing experience. Toward the end of the century, the U.S. can expect a fierce international competition for a relatively limited market.

The "internationalization" of the Strategic Defense Initiative made some progress in 1986. Memoranda of Understanding have been agreed with the United Kingdom, the Federal Republic of Germany, Israel, Italy and one with Japan neared completion at year-end. Several contracts have been awarded abroad and a dozen multinational teams submitted proposals for "theater defense architecture" studies. Two significant uncertainties emerge from developments: one centers on how well efforts to bring U.S. allies into the SDI process will change technology transfer policies and climate, which often inhibit such cooperative ventures. The other deals with growing concern that the technology gains the U.S. may be funding will help allies to become even stronger competitors in high technology in the future.

The space committees of the International Council and the Technical Council have been working closely together to stay abreast of pending U.S. space plans in order to provide the government with the industry's views and recommendations when appropriate. For the moment, the government's interest in exploring in greater detail the internationalization of the Space Station, following AIA's submission of a paper on the issue, has been put on the back burner, in favor of greater emphasis on technical questions.

## Educational Efforts

The International Council conducts a continuing program of education to explain the international scope of the aerospace industry and its contributions

to the U.S. economy. In 1986, the Research Center and the Council joined to launch a major study entitled *Impact and Implications of the Internationalization of the Aerospace Industry*. The study will explore not only the dimensions of the international activities of the industry but will provide an educational tool.

The study will examine aerospace international trade trends toward joint ventures, citing their importance in positive terms. At the same time, the paper will address some of the negative aspects inherent in the transfer abroad of production experience. The internationalization of the military aerospace business will be scrutinized with particular attention to the objectives other than cost that influence defense purchases and international collaboration. The purpose of the study is not only to explore historical aspects of the aerospace's industry activities in the international marketplace but also to look at what the industry might expect in the future.

### **Expanded Foreign Contacts**

The growing internationalization of the aerospace industry spurred the third priority in the International Council's three-pronged program – the expansion of AIA's contacts with its foreign counterparts. In 1986, the Council undertook extensive efforts to initiate discussions between AIA and associations in countries which, in many cases, are both competitors and participants in cooperative programs.

The challenges of the international marketplace have never been greater. The cost of new products has risen while competitors continue to grow in numbers and capability. Many aerospace companies, in the U.S. and abroad, are compelled to pursue international collaboration for reasons of equity, cost and risk-sharing, market access and enhanced technological capabilities found in other countries. Trade associations loom as useful avenues for dialogue, providing forums where issues might be identified and solutions sought on the industry level. Expanded exchanges of information could foster at a minimum greater awareness of pending problems and other potential alternatives to highly charged political stances. In 1986, AIA undertook expanded dialogues with representatives from associations in Japan, the United Kingdom, Germany, Canada, Switzerland and Australia. Further joint meetings are planned, particularly at the time of the forthcoming Paris Air Show.

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# OFFICE OF CIVIL AVIATION

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The Office of Civil Aviation coordinates AIA efforts related to problems that have significant effect on the civil aviation community. It works closely with domestic and international agencies and other elements of the aviation community on issues of common interest and serves as a focal point for matters pertaining to manufacture of civil aircraft, including commercial transports, business jets and helicopters.

In 1986, the Office of Civil Aviation worked with the Office of Legislative Counsel and the International Council to establish an environment for world trade that would foster U.S. competitiveness and promote U.S. exports while demanding equal access to foreign markets. Included in this effort was testimony on a New Round of Multinational Trade Negotiations and continuing support and advice to the Administration and Congress on trade issues.

During 1986, an *ad hoc* committee of civil airframe, engine and component manufacturers was set up to provide advice to the U.S. government on its efforts to improve the discipline and enforcement of the GATT Agreement on Trade in Civil Aircraft. Specifically, industry seeks interpretive language to the code that more carefully defines the Agreements' prohibitions against government intervention in inducements, supports, directed procurement and national airline selections. Further, the U.S. seeks transparency in government support as a means of verifying compliance.

The Office of Civil Aviation also coordinated AIA's efforts in matters related to certification and aviation safety with the Federal Aviation Administration and the aviation community, and export matters related to fixed wing aircraft, helicopters and engines with the Export Import Bank, the U.S. Trade Representative's Office and the Departments of State, Defense and Commerce. In addition, the Office reviewed alternative proposals and started preparation of AIA positions related to trade issues generally and the Airport Trust Fund specifically.

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# OFFICE OF LEGISLATIVE COUNSEL

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

In 1986, the Legislative Office worked with AIA staff and member companies to prepare testimony for presentation to Congress on a number of matters of direct interest to the industry, including proposed conflict of interest laws ("revolving door"), amendments to the False Claims Act and proposed program fraud legislation, reform of the defense acquisition system, benefits of the U.S. space program, work measurement, the Truth-in-Negotiations Act, trade law reform proposals, aircraft cabin air quality and subcontractor kickbacks.

In addition, approved position papers and/or letters were submitted to Congress on the science and technology portions of the NASA Fiscal Year 1987 budget and funding for aeronautical research and technology programs, the reauthorization of the Export-Import Bank's charter and direct lending authority levels for FY 1987, re-establishment of the Cost Accounting Standards Board, 1987 funding for Department of Defense industrial preparedness programs, and on bills addressing construction industry labor law, high risk occupational disease notification, parental and medical leave and qualified health insurance risk pools. AIA also communicated with Congress regarding several amendments offered to the defense spending provisions of the FY 1987 continuing resolution, which dealt with reduced progress payments, funding of special tooling and test equipment by contractors, and curtailment of the allowability of contractor compensation.

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# OFFICE OF PUBLIC AFFAIRS

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JULIAN LEVINE  
TRW Inc.  
Chairman, 1986/87  
Public Affairs Council



BEAL BOX  
LTV Aerospace and Defense Company  
Chairman, 1985/86 Public  
Affairs Council

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

## Publications

AIA's principal public affairs periodical, the quarterly magazine *Aerospace*, continued to cover diverse subjects concerning industry performance and the activities of government agencies involved in aerospace matters. Among articles published in 1986 were the annual industry review of 1985 and a forecast for 1986, along with articles on the National Aerospace Plane program; Air Force Systems Command's Project Forecast II; industry participation in the National Initiative on Technology and the Disabled; the report of the National Commission on Space; the report of the President's Blue Ribbon Commission on Defense Management; a preview of the USAF's Advanced Tactical Fighter; a summary of the roles women are playing in upper level management, engineering and flight operations in the aerospace industry; a wrap-up of propfan development activities; progress in Strategic Defense Initiative research; military space activities; and the mounting problem of illiteracy in industry.

Continued as public affairs projects were the publications *AIA Quarterly Digest*, the *AIA Annual Report* and *Key Speeches*, the latter a reprint service calling attention to speeches of particular importance or special interest made by government officials or industry executives. Among *Key Speeches* published in 1986 were *Defense Procurement: Public Perceptions and Corporate Realities*, by Robert L. Kirk, then President and Chief Executive Officer of LTV Aerospace and Defense Company; *A New Aerospace Priority*, by

General Robert T. Herres, USAF, Commander-in-Chief, United States Space Command, an article on the growing importance of space to defense; *The Importance of Industry Self-Governance*, by Caspar W. Weinberger, Secretary of Defense; and *Defense—Are You Getting Your Money's Worth?*, by Lieutenant General Bernard P. Randolph, USAF, Deputy Chief of Staff, Research, Development and Acquisition.

In other publications activity, the Office of Public Affairs published the 1986 *AIA Directory of VTOL Aircraft*, which lists specifications and status of helicopters and other VTOL aircraft in operation, production or in research and development. On the press at year-end was a third revision of the AIA/Helicopter Association International *Guide for Presentation of Helicopter Operating Cost Estimates*. Through an agreement with the Helicopter Association International, that organization will oversee future publication of these periodicals and the *Directory of Helicopter/Helistops*.

Additionally, the Office provided editorial assistance to the Aerospace Research Center for the 1986/87 edition of *Aerospace Facts and Figures*, a widely used economic reference on the aerospace industry.

### Special Projects

A major activity of the Public Affairs Council and AIA Public Affairs staff was to draft a program to communicate a more positive and accurate view of the industry to the public and key decision makers. An *ad hoc* committee was formed at the April PAC meeting to assess the issue and make recommendations for AIA action.

In a separate action, the AIA Board of Governors at its May meeting, appointed a senior committee chaired by Donald R. Beall of Rockwell International to examine the public affairs operations of AIA. Through joint action of the AIA Executive Committee, the PAC and the Beall committee, a plan was developed and refined, and a study on public perceptions of the AIA industry was commissioned and accomplished. These were reported at the Phoenix Board meeting in November. The study, along with the plan and organizational proposal, provided a point of departure for the new AIA president and the Board to further refine the communications proposal and implement a program in 1987.

At the time of the 25th anniversary of President Eisenhower's farewell address, the Office of Public Affairs made a major effort to direct the news media and the public to the full context of his remarks. To put the oft-quoted "military-industrial complex" phrase into perspective, AIA President Karl G. Harr, Jr., wrote an editorial which appeared as an op-ed piece in *USA Today* and did a lengthy interview with *The Washington Post*. Other media were furnished background and encouraged to print the whole speech or to quote more extensively from it.

Dr. Harr made several public appearances, including Hill testimony in March on the topic of the benefits and the future of the space program and delivered a speech to the Washington Journalism Center in May on the same subject.

The Packard Commission report, released in July, placed strong emphasis on industry ethics. The report included the Defense Industry Initiatives on Business

Ethics and Conduct, which was signed by 35 members of the industry. Shortly after issuance of the report, AIA issued a release which quoted Karl Harr in support of the Commission's position on ethics. The release also included a Board of Governors' resolution, adopted in May, which established as a condition of AIA membership that a company adopt an appropriate code of business ethics and conduct. Packard Commission Chairman David Packard called the AIA actions "most welcome."

The annual Review and Forecast luncheon for the news media, which AIA sponsors each year in conjunction with the Aviation/Space Writers Association, was held in December. This was Dr. Harr's 23rd speech—and his final address as AIA president—to the group, which had grown significantly over the years and numbered approximately 300 for the 1986 event. Dr. Harr spoke of the unique nature of the aerospace industry and stressed the special responsibilities which accompany that uniqueness. There was extensive press coverage of his remarks and the accompanying statistical analysis of industry performance for 1986.



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# TRAFFIC AND TRANSPORTATION SERVICE

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The Traffic and Transportation Service is a guidance and coordinating point for the transportation management sector of the aerospace industry. As such, it serves as a medium for the exchange of views on government regulation of military and commercial transportation activities, both domestic and international. As appropriate, the Service provides staff representation before government agencies and carrier organizations. Providing guidance and direction for these presentations is the responsibility of the Traffic and Transportation Committee aided by the Regulatory Subcommittee and select task groups with expertise in the areas of Customs procedures, Department of Transportation hazardous material regulations, business travel and commercial airline activities, Department of Defense transportation management regulations and automation.

Activities of principal concern during 1986 were efforts by U.S. Customs to implement new procedures and controls related to the export and import of critical technology, changes in the import regulations to implement automated systems, new user fees on commodity imports and increased enforcement activity. Legislation and regulatory proceedings to retain the overall benefits of carrier deregulation and ancillary issues of direct interest to the industry were supported by the Service working with agencies of the administration and industry coalitions with similar interests. These issues included the maintenance of reasonable rate and routing standards for captive shippers, the retention of carrier liability provisions, a driver licensing system to enhance safety, reasonable highway access provisions and procedures to preempt state regulations when in conflict with federal standards.

In the area of defense traffic management, the Traffic and Transportation Committee conducted a seminar involving personnel from the services to update members on new programs being developed by the Air Force, Navy, Military Traffic Management Command and NASA. Working with the Air Force Contract Management Division, the Committee continued its effort to consolidate transportation and packaging data in future contracts.



RICHARD E. JOHANN  
Sundstrand Corporation  
Chairman, 1986 Traffic and  
Transportation Committee



## AIA KEY TELEPHONE NUMBERS

(Area Code 202)

President	429-4605
Senior Advisor to the President	429-4686
Vice President/Secretary	429-4620
Treasurer	429-4631
Aerospace Operations Service	429-4621
Aerospace Procurement Service	429-4628
Aerospace Research Center	429-4683
Aerospace Technical Council	429-4685
Civil Aviation	429-4626
Human Resources Council	429-4636
International Service	429-4643
Office of Legislative Counsel	429-4669
Office of Public Affairs	429-4656
Traffic and Transportation Service	429-4652
General Counsel	861-7810
Information	429-4600

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## MEMBERS

Aerojet General  
Aeronca, Inc., A Fleet Aerospace Company  
Allied-Signal Inc.  
    Bendix Aerospace Sector  
    The Garrett Corporation\*  
Aluminum Company of America  
The Boeing Company  
Celion Carbon Fibers  
    A Division of BASF Structural Materials, Inc.  
Colt Industries Inc.  
    Chandler Evans Inc.  
    Menasco Inc.  
    Delevan Corporation  
    Lewis Engineering  
Criton Technologies  
E-Systems, Inc.  
FMC Corporation  
Gates Learjet Corporation  
General Dynamics Corporation  
General Electric Company  
    RCA Corporation\*  
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The BF Goodrich Company  
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Grumman Corporation  
Harris Corporation  
Hercules Incorporated  
Honeywell Inc.  
IBM Corporation  
    Federal Systems Division  
IC Industries  
    Pneumo Abex Corporation  
    Abex Aerospace Division  
    Cleveland Pneumatic Company  
    National Water Lift Company  
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    ISC Marquardt  
    ISC Defense Systems  
    ISC Cardion Electronics  
    ISC Electro-Magnetic Processes  
    ISC Datacom/Microwave  
ITT Defense Space Group  
    ITT Aerospace/Optical Division  
    ITT Avionics Division  
    ITT Defense Communications Division  
    ITT Gilfillan  
Kaman Aerospace Corporation  
Lear Siegler, Inc.  
Lockheed Corporation  
The LTV Corporation  
Martin Marietta Aerospace  
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    Bell Aerospace Textron  
    Bell Helicopter Textron  
    HR Textron Inc.  
TRW Inc.  
United Technologies Corporation  
Western Gear Corporation  
Westinghouse Electric Corporation  
    Energy & Advanced Technology Group  
Zimmerman Holdings Inc.

\*Maintaining dual representation  
as a recently merged company



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AEROSPACE INDUSTRIES ASSOCIATION  
OF AMERICA, INC.

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