

AEROSPACE
INDUSTRIES
ASSOCIATION

 1967
annual report



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KARL G. HARR, JR.

TO THE MEMBERSHIP



The principal measurements of activity in the aerospace industry during 1967 conclusively demonstrated the industry's continuing pattern of growth.

These included:

- Sales reached \$27.2 billion, an 11 percent increase over 1966.

- Employment averaged 1,400,000 persons, making the aerospace industry the nation's largest manufacturing employer.

- Exports totaled more than \$2.2 billion, a \$575 million gain over 1966. Significantly, the principal aerospace export product was civilian aircraft which rose from \$522 million to \$789 million, a 42.9 percent increase over 1966.

- The industry's backlog rose to \$30.7 billion at year's end, compared with \$27.5 billion at the end of 1966.

These basic indicators of progress do not fully reflect the larger implications of technological accomplishments during the year, perhaps the most meaningful measurement of progress.

- The Apollo 4 mission, the most important unmanned space flight by the U. S. and a milestone toward achievement of the prime national goal of a manned lunar landing, was completely successful.

- A contract to build a supersonic transport was awarded, production models of an advanced fighter aircraft were delivered, and advanced development of a very high speed armed helicopter was continued.

- General aviation manufacturers produced more than 100 different aircraft models, many of them gas turbine-powered.

- Industry's strong technological and managerial capabilities, refined by the complex challenges of defense, space exploration and civil aircraft programs, were being increasingly used to find solutions to a wide variety of socio-economic problems ranging from education to crime control.

The Association made two major organizational moves to carry forward objectives of prime concern and interest to the industry.

The Office of Air Commerce was es-

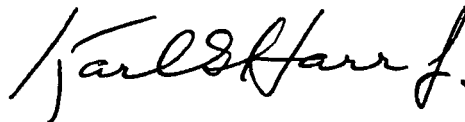
tablished as a focal point for all activities concerned with civil aviation. In conjunction with three supporting Councils—Transport Aircraft, Utility Airplane and Vertical Lift Aircraft—it works on behalf of all segments of the aircraft manufacturing community to foster, advance and promote the growth of air commerce. Policy direction is by the Air Commerce Executive Council comprised of the chairman and vice chairman of each of the three participating Councils. Programs involving matters of concern to only a single segment of the Office are handled directly by the concerned Council.

At the end of the year, the Public Relations Service was restructured to become the Office of Public Affairs. A Public Affairs Council was established, composed of senior policy officials from the member companies, to recommend public affairs policies and programs and to serve as the primary channel of communications for public affairs between member companies and the Association. There are four functional elements to the Office of Public Affairs: Press Relations, Publications, Research and Programs and Legislative Counsel.

The Council of Defense and Space Industry Associations (CODSIA), which was founded in 1964, continued to be a valuable instrument for its member associations in eliminating duplication of effort on matters of industry-wide interest. A major project handled through CODSIA during the year concerned management systems. A separate report on this effort is contained in this *Annual Report* on Page 30.

Covering only the highlights of the Association's activities during the year, the *Report* does not attempt to record every action undertaken by the Association.

Respectfully submitted,



Karl G. Harr, Jr.
President

AEROSPACE OPERATIONS SERVICE



The Aerospace Operations Service responsibilities are in manufacturing, materiel management, product support, quality assurance, service publications, and spare parts. Operating through six committees this Service provides a base for the study and solution of problem areas.

The Aerospace Operations Service, working in the various areas of aerospace production during 1967, established effective relationships with government and commercial customers which assisted in meeting increased demands for aerospace products and providing responsive logistics support.

Air Pollution Control

AIA continued its coordinated effort to reduce the pollution of air due to manufacturing processes in the aerospace industry. At the start of this study it had been decided to concentrate on finding substitute materials which would be acceptable as process material, rather than the more expensive alternative of installing solvent or solvent-vapor recovery or filtering systems.

However, aerospace companies are not permitted to make changes in processes, materials, or specifications without the approval of government customers. Sixteen federal specifications applicable to aerospace manufacturing operations performed under government contracts were found to be in conflict with Los Angeles Rule #66. Of these sixteen, 11 recommended new specifications for "exempt" substitutes have been submitted by AIA to DOD and eight of them have been approved. Cost differentials between the old and new materials are relatively insignificant but the development of the new materials made unnecessary the procurement of millions of dollars worth of capital equipment and substantial annual maintenance costs.

Cost and Leadtime Trends

The study of material cost and procurement leadtime continued in 1967. Using the Fall of 1965 as a baseline, a study conducted on 41 basic aerospace

materials and commodities indicated that procurement leadtime had reached a peak in early 1967 and then declined to a level of about 75 percent above the baseline. Indications at year's end were that leadtime is leveling off at approximately 50 percent above the baseline. Cost continues to increase but at a decreasing rate, average cost having increased 9 percent over the baseline. By use of these trends, AIA has been able to point out that price controls were not and are not necessary, nor is an extension of material allocations necessary for the industry to operate effectively.

Numerical Control Symposium

Late in 1967, approximately 60 aerospace manufacturing and numerical control executives met under AIA auspices to exchange and update their knowledge on recent numerical control problems and technical advances. The principal subjects covered were:

- Direct numerical control;
- Management monitoring of numerical control equipment;
- Computer graphics affecting the manufacturing operation;
- Adaptive control on numerical control data verification;
- Tape proving techniques.

The meeting demonstrated the value and the desirability of this type of program to advance the numerical control state-of-the-art.

Vendor Packaging Standardization

Ten National Aerospace Standards covering packaging of aerospace products by vendors were written in 1967 and approximately 15 more are under consideration. These standards eliminate individual company cost of preparing vendor packaging standards and reduce vendors' costs by eliminating the

need for packaging differently for each customer. Because 50 percent or more of the production of most prime contracts is obtained from subcontractors and suppliers, standardized packaging requirements provide significant savings.

Manufacturing Equipment Surveys

AIA continued its program of surveying available industry capacity versus projected aerospace requirements in various critical areas of manufacturing equipment.

The third annual Report on Profile Milling was completed, showing a continuing shortage of machine capacity for the next five years. The first Report on Aerospace Forgings was completed and indicated certain areas requiring continued study to avoid future shortages. The Gear Cutting and the Welding and Brazing Task Groups continued studying their respective areas.

Where possible the surveys are conducted in cooperation with the industry affected. For instance, the AIA survey of aerospace forgings requirements paralleled a capacity study by the Forging Industry Association. The results of the comparative studies are made available to the industries involved (aerospace, equipment manufacturers, and subcontractors) as well as to the government. Advance notice of impending shortages permits timely action to avoid them.

Numerical Control Training

AIA conducted a training program for over one hundred employees of the Defense Industrial Plant Equipment Center (DIPEC) in Memphis, Tenn., concerning the basic numerical control concepts, capabilities and applications. The program was commended by the Director of the Defense Supply Agency and a follow-up course is planned.

Service Publications Trends

The gap between the manufacturer and the user of today's complex equipment is bridged chiefly by technical publications. During 1967, Information Bulletins were distributed to key government logistics representatives and appropriate industry management describ-



ODIF PODELL
Curtiss-Wright Corporation
Chairman, Manufacturing
Committee



H. HALDANE HAWES, JR.
Ling-Temco-Vought, Inc.
Chairman, Materiel
Management Committee



STERLING B. SMELTZER
North American Rockwell
Corporation
Chairman, Product Support
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JOSEPH MATOLINA, JR.
Thiokol Chemical
Corporation
Chairman, Quality Assurance
Committee



ANTHONY A. FARKAS
North American Rockwell
Corporation
Chairman,
Service Publications
Committee



SAM SALIBA
Lockheed Aircraft
Corporation
Chairman, Spare Parts
Committee

ing developments in the preparation of handbooks and service data. Additionally, demonstrations were held to show available equipment that could be used in preparing technical manuals from magnetic tape or in transmitting technical manual information to 16 mm or 35 mm film from which other forms of micro-image or hard copy could be prepared.

One of the methods presented an electronic type composition system using a typesetter capable of setting the entire text for a page in two minutes through the use of video and computer techniques. This system has potential applications in the printing of catalogs, tabulations and other tasks involving massive quantities of information and a variety of type styles and sizes. These demonstrations and reports provide industry members opportunities to review service publications trends and to compare service data systems to redundant development activities.

ATA Liaison

Close coordination between AIA member company representatives and the Air Transport Association is continuing in both the service publications and spare parts areas. Objectives are to promote among the manufacturers a better understanding and increased utilization of the ATA specifications for aircraft service and supply data, the integrated data processing of supply information, and to assist ATA in evolving specifications that effectively serve the airlines and the manufacturers.

Significant results are being achieved. AIA recommendations were provided for reducing the costs of revisions to manuals, service bulletins and catalogs. Other recommendations on the specifications for integrated data processing of supply information embodied clarification of requirements and suggested changes in the scope and organization of this document. ATA acceptance of a number of these recommendations has been indicated.

Further studies are underway to ex-

pand the exchanges of parts consumption data to include performance, maintenance, and overhaul data. Such exchanges of information can provide the critical data needed by manufacturers to comply with performance life guarantees, as well as the full range of data needed by the airlines, without requiring separate and costly systems of data collection.

Manual Specification Reviews

Four military specifications applicable to the preparation of manuals for structural repair, aircraft engine analysis and ground operation and ship equipment and systems were reviewed and recommendations were submitted to the military services to clarify interpretation of their requirements.

Incorporation of these recommendations is expected to result in the preparation of technical manuals that will lead to overall reductions in time expended for maintenance and trouble shooting of complex equipment.

In conjunction with these reviews, a study was initiated to determine the overall cost effectiveness of a concept entitled Symbolic Integrated Maintenance Manual (SIMM) which provides data-presentation innovations that may be superior to the conventional technical manuals for some aerospace products.

Preliminary results indicate that SIMM manuals cost more to prepare than conventional manuals; however, this must be balanced against the cost savings expected to result if the SIMM program results in decreased troubleshooting and aircraft down-time. Additional cost effectiveness information will be required before conclusive findings are released.

Long Range Handbook Study

A preliminary report on the long range study of innovations in the preparation of handbooks and in the dissemination of operational and maintenance data packages envisioned for the mid-1970s has been completed and distributed for

final industry updating before formal submission to DoD.

Although technical manuals will continue to be the approved medium of operational and maintenance instructional material for some years, specialized hardware units utilizing sensor readout, information selection, display and print-out facilities are being considered for increased applications. This type of equipment is more costly at the present time but has the advantage of more rapid data retrieval and reduced storage requirements and is expected to reflect considerable reduction in the time that hardware is out-of-commission for repair. Additional assumptions helpful for long range planning will be incorporated in the formal report of this study scheduled for release in 1968.

Repair Time Reduction

A major problem of the military services is the length of time required for repair and overhaul of military equipment. This problem is most evident in Southeast Asia where high utilization of equipment and increasing wear-out rates are causing large volumes of parts to flow into the repair cycle pipeline.

Although most of this work is handled in-house by the military, a significant percentage is handled by contractors. In order to determine ways of improving performance, industry has been questioned on its experience and problems in performing this type of work. The responses are now being incorporated in a report to be presented to industry and the government in 1968.

Preliminary findings indicate that it will be possible to make recommendations for improving administration, contracting, funding, and communications between the contractor and the government to result in significant time savings. This is an important area because an estimated \$1 billion of reparable are always in the repair cycle.

Spares Procurement

The high cost and manufacturing inefficiency of fulfilling spare parts orders

received after the end of a production run prompted the initiation of an AIA study to determine how this situation can be improved.

Considerable dollar savings can be achieved by the government if final review action is taken to ensure the availability of foreseeable requirements for critical spare parts prior to the end of production while the contractor still has intact his effective work force and tool setup.

The study indicated that when present procedures do not require spares production phaseout programs there is not sufficient time to develop requirements and to justify or program funds or to coordinate such spares production with tooling disposition. It is planned to present these findings to the DoD, along with recommendations for establishing a joint government/industry task group to assist in establishing effective procedures.

Computer Technology and Quality Assurance

Quality or inspection data, requirements, methods, procedures, analyses and tests are examples of some of the functional quality responsibilities that have been incorporated into computer programs. Initial project reports show that individual company experience varies widely with the methods used, the programs attempted and the subsequent results.

An AIA study is underway to identify the problems associated with the introduction of computer programs to quality management requirements pointing out the tradeoffs and potential gains. Specific applications have been defined, and the experience gained with such programs is being developed into a set of guides for use in the introduction of any particular program.

Quality Inspection Study

Requirements for complex aerospace equipment have generated new sophisticated weapon materials and manufacturing techniques which, in turn, create requirements for effective inspection methods and processes.

An exhaustive study has been undertaken by AIA to anticipate requirements for new inspection techniques. These include:

- Coping with new materials and manufacturing methods.

- Fostering new inspection methods made possible because of discoveries such as the laser.

- Studying the effects of future measurements and tolerance requirements.

The objective is to attain, and make available, knowledge concerning non-proprietary techniques which contribute to the highest level of quality at the earliest stage of development.

Customer Relations

The implementation of the Defense Supply Agency program caused the plants of many contractors to be transferred from the contract (inspection) cognizance of a particular military service to cognizance of the Defense Contract Administration Service through one of its 15 field offices. The change involved not only systems and personnel, but also affected many procedures that had been developed with the customer through years of experience.

As common industry/DCAS problems develop, such as those dealing with non-conforming supplies or the management of calibration requirements, they are investigated by an AIA Task Group and then presented and discussed with DCAS to develop solutions.

Integrated Logistic Support

The management techniques that permit logistic support to be acquired and supplied concurrently with delivery of equipment/systems continue to develop at a rapid pace through the customer and industry experience being gained by actual usage.

Specialized task groups have maintained close working relations with the Naval Air Systems Command and the Army Aviation Command in the continuing refinement of their respective integrated logistic support requirement documents.

A continuing objective has been to restrict the documents to an identification and scheduling of requirements, and assignment of responsibility, without specifying the methods to be used by the contractor in accomplishing his tasks. Industry, the OSD and the military services are improving the efficiency and ultimate effectiveness of the logistic support systems through the application of these new management methods.

Contract Services

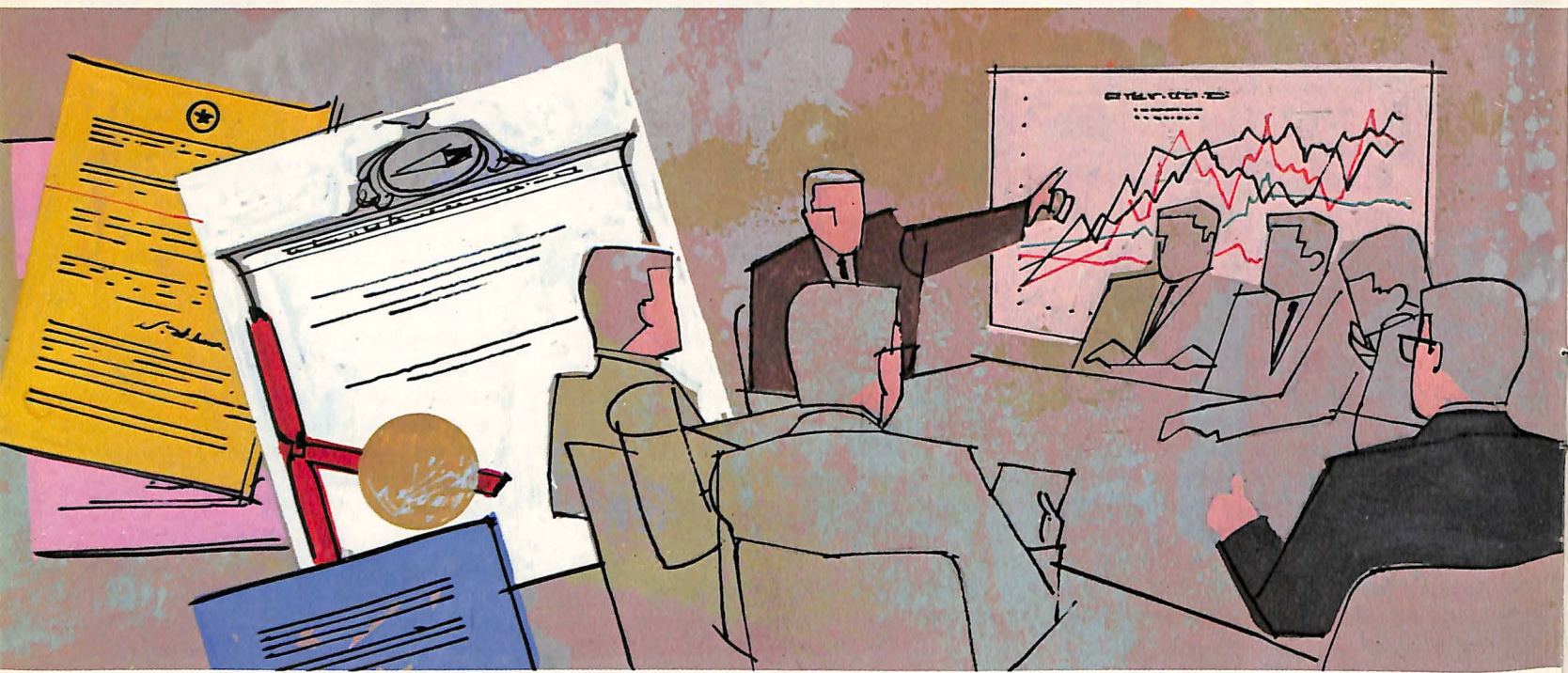
The various activities concerning government/industry contract services relationships are under continual surveillance by AIA. Periodic task reviews have assisted in the identification of trends, potential problem areas, and possible tasks.

Continuous liaison with representatives from the OSD and the military services and AIA provide for the free interchange of information and discussion of plans, programs, problems and suggestions for future action. This verifies the customer's continuing requirement for field service and the industry willingness to supply this service.

Logistic Support for Engineering Changes

Government contractual coverage and funding of new or revised logistic support requirements resulting from approved engineering changes are frequently not available on a timely basis because of organizational and procedural constraints. Contractors have often found it necessary to release such support items in anticipation of the receipt of contractual authority so that their equipment in the field would be supported.

An AIA *ad hoc* group formed with the Naval Air Systems Command studied in depth the problems and conditions preventing timely support of changes and presented recommendations to the Command which, if adopted, will remove the constraints and satisfy the support requirements.



AEROSPACE PROCUREMENT SERVICE



The Aerospace Procurement Service supports the functions of finance, accounting, contract administration, legal activities pertaining to procurement, patents, industrial security, government reports and manpower utilization. Five principal committees provide a medium for conducting evaluations and resolving problems of mutual concern to government and industry.

The Aerospace Procurement Service during 1967 carried forward its efforts in connection with proposed additions and revisions to government procurement policies and procedures, and in other areas relating to the business activities of member companies.

Significant actions included:

- Evaluation of revisions to the Armed Services Procurement Regulation (ASPR) reflecting acceptance of AIA suggestions to improve progress payment provisions.
- Participation in the joint efforts of the Department of Defense and the Council of Defense and Space Industry Associations (CODSIA) in the development of criteria for cost/schedule control systems.
- Comments on proposed revisions to ASPR implementation of the "Truth in Negotiations Act."
- Completion of a comprehensive review of ASPR coverage on patent and technical data rights and submittal of suggested improvements to the DoD.
- Cooperation with the DoD in the implementation of the Material Inspection and Receiving Report.

Contract Cost Principles

ASPR cost principles continued to be revised during 1967. AIA views were prepared and submitted on proposed additions and revisions to the principles dealing with gains and losses on the disposition of capital assets; relocation costs; patent costs; professional and consultant service costs; and general and administrative allocations to the direct and indirect cost base. Additionally, AIA initiated comments to the DoD requesting revision of the principle on training and education costs to reflect current contractors' requirements in these fields. The DoD has responded to these comments, indicating the need for revision and soliciting suggestions as to appropriate language to accomplish this goal.

Patent and Data Regulations

A comprehensive review and evaluation of the ASPR section dealing with patent and data matters, initiated in 1966, was completed and submitted to

the DoD during 1967. Follow-up with the cognizant DoD office indicates that many changes suggested by AIA have received favorable consideration and will appear in early revisions to the ASPR section.

Patent Legislation

As a result of recommendations of the President's Commission on the Patent System, companion bills sponsored by the Administration (S. 1042 and H.R. 5924), were introduced in the first session of the 90th Congress. Comments on these proposed bills, supporting some provisions and suggesting changes to others, were prepared and transmitted to the appropriate Congressional committees.

In the latter part of the 90th Congress, other legislation was introduced to revise the patent laws, in particular S. 2597, and comments expressing AIA's views were under preparation at the end of 1967 and will be submitted to the appropriate Congressional committees.

International Patent Matters

One purpose of the patent law revisions proposed by S. 1042 and H.R. 5924 is to harmonize U. S. patent laws with those of foreign countries to facilitate participation by the U. S. in a worldwide patent system contemplated by a proposed International Patent Cooperation Treaty. AIA comments were under preparation when advice was received that substantive changes were to be made to the proposed treaty. Accordingly, further action was deferred pending information as to such changes.

Cost or Pricing Data

The Department of Defense implementation of the "Truth in Negotiations Act" was closely checked by the General Accounting Office and Congress early in 1966.

This statute is designed to enable the government to recoup monies from a contractor to the extent that cost or pricing data submitted by the contractor and used in negotiations is defective, either in being incomplete, inaccurate or non-current, whether or not there is any culpability involved in the defect.

During 1967, DoD submitted four

separate proposals to amend the coverage of this subject, one of which permits post award audits of non-competitive fixed-price contracts. AIA developed comments and recommendations to the DoD, submitted through CODSIA, which delineated many inequities, over-application of the law and unnecessary paperwork and suggested solutions to these problems. Final ASPR coverage was published at the end of 1967, and it appears to be workable.

Cost/Schedule Control Systems Criteria

AIA, through CODSIA, continued efforts started in 1966 with a joint Defense/Industry Working Group on the development of a management control system, covering cost and schedule planning. During 1966, the AIA proposal of a more flexible approach was accepted and the resulting DoD Instruction, issued in late 1967, states criteria which a contractor's internal system or systems must meet rather than detailed requirements.

These criteria, for the most part, satisfy the mutual objective of keeping government requirements at the minimum and providing contractors with management flexibility so that motivation and improvisation will not be inhibited.

Implementing guidelines for the criteria were still under development at the year's end, with completion scheduled by mid-1968.

AIA will continue its participation in developing these implementing guidelines and efforts to maintain the philosophy of the criteria so that any sound management system should be able to satisfy the criteria.

Work Breakdown Structures

The DoD, acting through the Air Force, submitted a draft military standard prescribing a single DoD approach to work breakdown structures. This document, when issued, will support many of the extant management systems such as Cost Information Reports and Contract Fund Status Reports and

others under development, such as Configuration Management and Cost/Schedule Control System. Prior recommendations of AIA, made formally through comments on specific management system requirements and informally on the proposed military standard, had been largely recognized and the draft document was generally sound.

However, AIA prepared and furnished comments and recommendations for improving clarity and emphasis to assure that objectives and procedures remain clear and that work can be broken down in the manner in which the job is to be performed. The DoD plans further coordination with industry in 1968, prior to publication of the document in its final form.

Government Property

Increased emphasis was placed during 1967 on the importance of adequate controls and administration of government-owned property in the possession of defense contractors. In addition to several ASPR cases concerning property, interest in this matter was further stimulated by activity by the General Accounting Office and Congressional hearings which generally criticized the lack of adequate controls and effective utilization of government-owned property.

AIA evaluated and made recommendations with respect to several proposed ASPR revisions in the areas of utilization, property reporting, modernization credit, rental charges, control, and disposal of government-owned property in the possession of contractors. Certain views of industry were accommodated in the ASPR provisions. There are approximately nine ASPR cases still pending on the subject of property and other cases are anticipated.

In addition to working with the DoD, discussions were had with the National Aeronautics and Space Administration prior to the issuance of revised NASA procurement regulations, and NASA procedures are in substantial agreement with those of DoD.

AIA plans to continue joint efforts with cognizant DoD and NASA officials having primary responsibility for this subject to resolve problem areas to the mutual benefit of industry and the government.

Assets Management

A DoD/CODSIA liaison group initiated through AIA efforts was informally established in 1966 to provide a forum for discussion and exchange of ideas related to current implementation problems which affect both DoD and industry in resource management systems installations.

The efforts of this group in 1967 resulted in the official establishment of a DoD/Industry Assets Management Advisory Committee, operating through CODSIA and under the stated objectives of DoD Directives for formation and use of advisory committees, and resource management systems of DoD, and the charter of the advisory committee.

The functions of the Committee are:

- Serve as a nucleus for constructive DoD/industry collaboration in the implementation of resource management systems.
- Provide timely information from industry to the DoD concerning current implementation problems associated with resource management systems installation that affect both DoD and industry.
- Consider industry recommended solutions to resource management systems implementation problems.
- Recommend, where possible, solutions to resource management systems implementation problems.

Efforts will be maintained to utilize fully this committee as a focal point for resolution of implementation problems in the resource management systems areas to the mutual benefit of both industry and government.

NASA Financial Management Reports

A NASA handbook on procedures for reporting cost information from con-



G. L. WARRICK
Northrop Corporation
Chairman, Government
Reports Committee



WALTER J. HERBERT
Ryan Aeronautical Company
Chairman, Industrial
Relations Committee



THOMAS M. O'CONNOR
The Bendix Corporation
Chairman, Industrial
Security Committee



GLENN ORLOB
The Boeing Company
Chairman, Patent
Committee



J. R. JANSSEN
Lockheed Aircraft
Corporation
Chairman, Procurement and
Finance Committee

tractors, published in June 1967, established requirements for two series of reporting forms; NASA 533 series (Contractor Financial Management Reports) and NASA 534 series (Special Cost Study Reports).

As a result of industry discussions with NASA prior to issuance of the handbook, the reporting systems were revised to minimize impact on contractors and to render them compatible with comparable DoD systems. Subsequent to issuance of the handbook certain problems have been identified. As experience is gained with these procedures, efforts will be made to seek revised language to clarify and simplify the systems. NASA has recently proposed a revision of the form pertaining to reporting of support services functions and at year's end industry views on this matter were under development.

NASA Property Handbook

Since mid-1967, NASA has prepared several drafts of a proposed handbook containing procedures for property financial reporting for government-owned/contractor-held property.

The proposed handbook covers both real and personal property of the capital type, materials and supplies held for issue as needed, and certain completed space property and related spare parts, components, and work in process. The reports required to be furnished NASA concern analysis of government-owned/contractor-held property other than space property; and government-owned/contractor-held space property.

Several meetings were held between industry and NASA and the proposed document has been improved. Major industry concerns are that the new procedures should be compatible with contractual requirements; not create any deviation from sound accounting principles and contractors' approved cost accounting systems; and be compatible with DoD regulations in the property area.

The latest draft will be submitted to

the Bureau of the Budget for approval in 1968.

Material Inspection and Receiving Report

In December 1966, ASPR requirements for standard, uniform procedures with respect to preparation and distribution of the Material Inspection and Receiving Report were published. This document is used as an acceptance document, shipping document, and invoice and, therefore, is significant to a contractor's operation in the delivery of contract and items to the government.

Prior to issuance of the new regulations a number of industry recommendations were adopted which reduced the impact on contractors. However, there remain a number of operational problems, particularly in larger companies having complicated, mechanized procedures for handling the report. The ASPR requires additional clarification and amplification in order that contractors may establish their internal systems for implementation of the ASPR procedures. Considerable effort will continue toward the resolution of these problems.

DoD Safety Manual

A proposed DoD safety publication—Ammunition, Explosives, Dangerous Materials Safety Manual for Use in Procurement and Administration of Contracts—was studied and recommendations were made to the DoD to clarify the scope and application of the proposed manual; to eliminate objectionable standards; and to assure that proposed standards are compatible with aerospace industry operations.

Sex Differentials in Pension Plans

An AIA position paper objecting to the elimination of reasonable differentials, based on sex, in pension and retirement plans, was prepared and forwarded to the Equal Employment Opportunity Commission.

Security Questionnaire

In the development and implementation of procedures to assure that certain

information revealed by an applicant for clearance on the Personnel Security Questionnaire (PSQ) remain private from the employer, the Office of Industrial Security submitted to industry the proposed forms and changes to the Industrial Security Manual. AIA participated with CODSIA in this project pointing out that the whole concept runs contrary to the relationship of the government and industry in protecting information. CODSIA urged a pilot test program to prove out operational procedures and problems. The government is to implement the program without such a test.

Security Manual Changes

The Office of Industrial Security's proposed changes to the Industrial Security Manual were reviewed and coordinated by a CODSIA task force. Comments indicate that the new manual will be published in 1968 and will contain many of CODSIA's recommendations, which will result in savings and more workable security requirements for industry.

Warranties

Efforts to obtain reasonable warranty provisions for use in appropriate circumstances continued in 1967, particularly as to the issues of implied warranties and consequential damages which were not included in the latest ASPR revision covering warranties. In addition, AIA working through CODSIA succeeded in establishing a separate ASPR case on the subject of a technical data warranty. In view of the increased emphasis placed upon warranties, this matter will be closely followed in 1968.

Other Activities

During 1967, the Aerospace Procurement Service engaged in many other areas looking toward increased effectiveness in the government/industry procurement relationships. Subjects handled as a result of AIA-initiated actions included contract terminations, organizational conflicts of interest, and incentive contracts.

AEROSPACE TECHNICAL COUNCIL



The Aerospace Technical Council, the industry's top level technical advisory body, works in broad technical and management problem areas affecting both government and industry.

The Aerospace Technical Council in 1967 pursued a wide variety of problems affecting the entire spectrum of technical management in the aerospace industry.

One of the most effective techniques in solving or pre-empting problems was the continuous dialogue between the Council and senior technical management officials in government agencies.

This government-industry relationship has been productive in such areas as the use of fixed price contracts for research and development, proper application of management control systems and application of requirements as opposed to detailed procedures.

Systems Management

The Council has kept its attention focused on the broad area of systems management and to the details of disciplines, technique and management tools used to direct and control the total program life cycle of an aerospace system.

There has been excellent communication and cooperation with the Office of the Secretary of Defense, the military services and the National Aeronautics

and Space Administration to provide continuous review and refinement of the various systems. Substantial effort has been directed at the elimination of duplication and contradiction in programs requirements.

An extensive, in-depth analysis was made of the proposed Phased Project Planning system of NASA. This system defines discrete phases in project development that closely parallels the program phases, such as conceptual and contract definition acquisition, used by DoD.

It was found that the proposed approach could be workable but there was a lack of firm criteria as to how to proceed from one phase to the next which would lead to a proliferation of individual management systems by the various centers. The industry position was presented, and it was concluded that NASA would issue and apply the guidelines so that experience could be gained with the goal of making further refinements in the future.

Continued surveillance has been maintained of the application and modification of the Air Force Systems Command

manual covering the preparation of contract statement of work. This document which was analyzed in 1966 is in its first revision cycle.

Systems Engineering

An *ad hoc* group representing the Council has acted throughout 1967 as consultant to the AFSC during the formulation of a proposed systems engineering specification. This document would specify requirements to be met by the contractor during the life cycle of a system and would supersede the existing documents that are procedural in content. Although this specification will undergo formal industry coordination as an Air Force document early in 1968, industry will continue to press for a DoD coordination to provide for use by all service components.

As a complementary activity, analysis has been made of proposed documents which specify requirements for the application of various disciplines subordinate to the overall requirements of systems engineering such as human factors/engineering, systems safety and system security. The Council philosophy that this type of documentation should exist as guidance rather than contractual requirements will be negotiated in 1968.

Systems Effectiveness

The Council continued to appraise developments within DoD which have



potential impact on contracting for systems effectiveness. Discussions were held with many individuals and groups within the military services and the DoD staff. Information continued to indicate that though there are many proponents of systems effectiveness as a discipline, the formidable problems associated with contracting for systems effectiveness have been recognized and have not yet been solved.

Systems effectiveness analysis appears to be a valuable technique within DoD during the formulation of system programs. System effectiveness modeling techniques are being developed and pushed for comparison of proposals and for optimization of system design.

However, the project group has not been able to find significant indications of a near term capability to contract for a quantitative systems effectiveness requirement under an all embracing supra systems effectiveness discipline, as the early proponents seemed to propose.

Reliability and Maintainability

A survey of the mass data systems in use by the military services to record and feed back field operational experience data was completed. An evaluation indicated that these systems do not provide adequate measurements to serve as a basis for reliability and maintainability prediction techniques. Recommendations for alternate schemes to

provide the kind of data needed by industry are being generated.

Effort is continuing to document acceptable methods for demonstrating achievement of contractual requirements for system reliability and maintainability. An extensive survey of industry experience with the tri-service standard for equipment reliability testing was conducted and recommendations are being coordinated which will provide for decreased costs and testing time associated with long mean time between failure equipment, and other needed improvements.

A project to promote more standardization among the military services in their maintainability analysis requirements has been initiated.

Data Management

In the area of data management a guidance document—Judgment Factors Involved in Determining the Need for Data—has been developed. This document will provide guidance to program officers and their data management officers in the development of program data requirements which are properly aligned with procuring agency and industry responsibilities and prerogatives. These include program phase, type and size, contract type and planning agency requirements. Since the AFSC was the first military service to formalize rigid data requirements, the document has

been presented first to this command. Following review and response from the Air Force, the document can be adapted for presentation to the other services and DoD.

AIA has continued to maintain close liaison with OSD to assist in the formulation of a policy which will call for service-wide development of a system for the deferred delivery of technical data. Such a system would be an expansion of the application of the AFLC pilot program of Supply of Essential Engineering Data (SEED) which was reviewed during 1966-1967.

Configuration Management

The efforts in 1966 to maintain liaison and provide assistance in the formulation of a DoD-wide system of configuration management culminated, during 1967, in a massive effort to review and provide comment on the family of documents proposed by OSD.

These documents ranged from the internal DoD directive and instruction to the detailed standards and specifications for every element of configuration management. There were many omissions, conflicts and deficiencies in the proposed documents with the result that voluminous comment and recommendations were generated.

The comments and recommendations have been acknowledged by the Director of Defense Research and Engineering

with the notation that all will be considered. Separate task groups are now meeting to endeavor to reconcile industry and service component comment and recommendation.

Although OSD directed that the individual services suspend all action on their own systems of configuration management pending publication of the DoD system, the Council has maintained close liaison with the military services in order to provide the maximum of assistance in the required realignment of the individual systems with the requirements of the DoD system.

On a limited basis, the survey of the requirements of the various NASA centers has been continued with the purpose of spot-lighting the benefits which would accrue from adoption of an agency-wide system requirement for configuration management.

Engineering Drawings

Substantial effort was devoted in 1967 to the two major DoD documents dealing with the preparation and acquisition of engineering drawings.

In the case of the document concerned with the acquisition of drawings, which was the center of considerable divergence of opinion between industry and DoD in 1966, a document providing a proposal for guidance in the application for requirements for drawings was submitted to OSD together with a proposed revision of the parent document itself. The impact of this submittal brought about a re-evaluation of the previous OSD position on the document with the result that discussions regarding the complete revision of the document are now pending.

A highly successful review was concluded with the document concerned with the preparation of drawings. This review involved massive effort on the part of AIA and lengthy negotiations with OSD. However, major changes recommended were accepted. It has been estimated, on a conservative basis, that adoption of the industry recommended changes will result in cost avoidance of hundreds of thousands of dollars annually in every major program where the requirements of this document are applicable.

Turbojet and Turbofan Requirements

The improved government-industry communication at both policy forming levels and working levels during the first year of this two-year effort has been encouraging and fruitful.

AIA recommendations resulted in re-



C. L. SADLER
Sundstrand Corporation
Chairman, Aerospace
Technical Council



WILLIS M. HAWKINS
Lockheed Aircraft
Corporation
Chairman, Technical
Management Division



GEORGE C. MARTIN
The Boeing Company
Chairman, Airworthiness
Requirements Division



JACK A. GUNDERSON
The Boeing Company
Chairman, Technical
Contract Requirements
Committee



ROBERT A. WAGNER
Hughes Aircraft Company
Chairman,
Rotorcraft Airworthiness
Requirements Committee



J. W. McNARY
Piper Aircraft Corporation
Chairman, Small Aircraft
Airworthiness Requirements
Committee



L. S. MULL
McDonnell Douglas
Corporation
Chairman,
Transport Airworthiness
Requirements Committee



HARRY B. SMITH
Westinghouse Electric Corporation
Chairman, Technical Specifications Division



GORDON E. HOLBROOK
General Motors Corporation
Chairman, Engineering Validation Division



A. R. ANDERSEN
McDonnell Douglas Corporation
Chairman, Electronic Systems Committee



ROBERT M. DeHAVEN
Hughes Aircraft Company
Chairman, Flight Testing Committee



R. W. SEAMAN
Thiokol Chemical Corporation
Chairman, Rocket Propulsion Committee



ROYAL B. JACKMAN
Northrop Corporation
Chairman, Environmental Testing Committee



M. A. BENNETT
Continental Motors Corporation
Chairman, Air-Breathing Propulsion Committee



JOHN J. TAMSEN
Hughes Aircraft Company
Chairman, Reliability Committee



DAVID L. HORSEY
North American Rockwell Corporation
Chairman, National Aerospace Standards Committee



GEORGE M. REED
Avco Corporation
Chairman, Maintainability Committee



LEO SCHAPIRO
Lockheed Aircraft Corporation
Chairman, Materials and Structures Committee

lease of a revision to the military specification on Qualification Tests for Turbojet Aircraft Engines to clarify the intent of the military services with regard to requirements for qualification/production release of an engine. The major changes limited qualification testing for reliability to 150 hours and low cycle fatigue to 1000 cycles. This revision also clarified military intent that additional testing beyond qualification test would be contracted for separately.

At the further request of the Air Force and Navy, AIA has repackaged the present three specifications into a single specification which clarifies, simplifies and updates content. In addition, the Air Force and Navy requested that 50 requirements for which additional test verification be included. This task, is proceeding on schedule and the industry proposed revision is targeted for transmittal to the military services in the Fall of 1968.

Also at the request of the Air Force and Navy, an AIA-proposed engine smoke definition specification was completed. The substance of this will be incorporated in the proposed revision of turbojet specifications.

Coordinated comments have been provided on fuel, oil and engine component specifications and standards of concern to propulsion systems producers and users at the request of the Air Force and Navy. The ability of government-industry coordination to keep these current is of considerable value in simplifying contractual and procurement processes.

Liquid Rocket Design

The AIA continues to provide member company views on rocket propellant specification requirements, and to maintain DoD-NASA-industry interface in this expanding technological area. A proposed procedure for standardization of propellant nomenclature has been prepared. AIA comments were submitted to the Air Force on four propellant specifications.

Due to permeability of bladders or other barriers large enough, quantities of pressurizing gas may be dissolved in the propellant to affect rocket performance. Therefore, a standard method for measuring dissolved gases is needed. AIA has requested the Chemical Propulsion Information Agency to evaluate the available methods for determining the amount of dissolved gases present in the liquid propellants and develop a standard specification.

System requirements for space vehicles have resulted in the development of rocket engines which operate in pulsing firing modes. It is important that the performance of this type of engine, when firing in a pulse mode, be accurately defined and a standard method be developed for determining the pulse performance.

Various methods are presently used to measure the parameters required, such as flow rate and thrust to compute the experimental specific impulse and flow rate during the pulse mode operation. AIA has requested the Chemical Propulsion Information Agency to develop a standard method or methods for determining pulse performance.

Solid Rocket Design

In response to a request from the USAF Rocket Propulsion Laboratory, AIA prepared an outline of content for a proposed revision to Solid Propellant Rocket Specifications. That outline represented a new guidance type specification approach, and incorporated the AF5CM 375-1 configuration control philosophy and state-of-the-art reliability demonstration requirements.

An AIA-Air Force policy level meeting will be arranged to resolve policy direction on this task prior to any further detail work.

Structural Design Criteria

In a joint effort with the Air Force and the Naval Air Systems Command, twelve task groups comprised of industry specialists have reviewed a series of 24 military specifications covering structural design criteria for aircraft and missiles, and have submitted recommendations designed to update these documents with current known technology. Areas have been identified which require added research and development.

With the benefit of the industry recommendations, final drafts will be developed by the two military services and coordinated with industry.

Industry has identified two additional areas for improvement of structural design criteria. In the design of spacecraft and launch vehicles, there exists a need for common criteria for vehicles subjected to a common environment. A report outlining industry views and recommended action is now under study by NASA and the Air Force Space and Missile Systems Organization.

The second area of recommended action evolved from the successful application of the damage tolerance (fail-safe) concept to commercial jet aircraft.

An industry report, identifying damage tolerance techniques and the extent of their use by industry, is also under study by the Air Force and Naval Air Systems Command.

Structural Materials

In the development of new specifications and revisions to existing specifications on materials and their processing, the military services rely heavily on the experience and advice of industry, both users and suppliers.

Drafts of new and revised documents are circulated to the AIA, and the resulting comments are forwarded to the military services for their guidance in the preparation of the final drafts.

When the occasion demands, coordination meetings are arranged with representatives of the military services, with contractors and suppliers present, to resolve controversial points or facilitate agreement on the final draft. These exchanges result in improved documents, acceptable to all parties involved, resulting in better materials at lower cost.

During 1967, coordinations were effected on a number of specifications covering aluminum alloys, steel alloys, titanium alloys, and epoxy resins. Processing specifications covering anodizing of aluminum alloys, brazing and welding of various metal alloys, heat treatment of aluminum and titanium, and classification of castings were also coordinated. Coordination meetings were held with the military services and suppliers on specifications covering titanium alloys and heat treatment of aluminum alloy.

Aircraft, Space and Missile Electronics

Due to an entirely different induced environment, missile electronic systems design has gradually shifted away from accepted aircraft electronic systems practices. A similar situation has developed for electronic systems exposed to long-time space environment. This prompted the DoD Aeronautical Standards Group to request AIA to propose revisions to missile electronic requirements, and prepare a new specification including requirements peculiar to space on hard vacuum, radiation, high oxygen content and out-gassing.

A government-industry meeting in 1968 will review the AIA position on these three specifications. These specifications are being carefully coordinated so that all requirements that are common will be recognized and transferred to the military standard on General Requirements for Electronic Equipment, leaving only peculiar requirements in

the general specifications involved.

Microelectronics

AIA assisted DoD development and release of three of the five general standards undertaken on terms and definitions, packaging, and test methods and procedures. AIA is continuing to assist DoD in development of two additional standards and applications guidelines, and parameters to be controlled.

DoD is considering approval of a general specification for microelectronics which would complete the needed general requirements documents which AIA member companies need. AIA is considering actions industry can take to assist implementation of the DoD policy for use of microelectronics in military equipment.

Electronic Design Uniformity

The accelerated program recommended by the 1964 Government-Industry Workshop will be completed on schedule early in 1968. By bringing the total of government-industry resources together in this single program, rather than dissipating these in competing and uncoordinated programs, the actual workload involved was held constant as the output was quadrupled.

There have been 58 standards approved and released, and 13 of the original tasks have either been combined with another task or eliminated; eight others are scheduled for final approval.

Much discussion among the 16 military representatives and 31 industry participants was essential to achieve approval of these standards, and the results have been highly encouraging. DoD has given special recognition to the uniformity program as outstanding in military standardization programs.

It is estimated that implementation of these standards, in lieu of the over 500 separate service requirements which they supercede, accrued over \$12 million in cost avoidance by the end of 1967 and that \$33 million cost avoidance will accrue by 1970.

Environmental Testing Methods

Coordination effort with the military services through the Aeronautical Standards Group culminated in the issue of a new tri-service standard which prescribes methods and facilities to be used for environmental testing of aeronautical equipment. A continuing effort will be required to work with ASG to refine these procedures and to keep them practical and useful as contractual requirements.

Flight Testing Requirements

An AIA group rewrote the Air Force Contract Management Division Manual which governs control by the government plant representative over contractors' flight operations activity, and obtained its acceptance by the Air Force.

The new manual was recently published and provides for relaxation of many of the controls which formerly added unnecessarily to flight testing costs and delayed schedules. Additional project activity is underway to obtain relaxation of other such controls specified by military regulations and Air Force Procurement Instructions.

The latest version of the Navy's basic specification for airplane demonstration was reviewed and a coordination effort is underway with the Navy to incorporate many significant recommendations made by industry.

Changes in air traffic control procedures instituted by the Federal Aviation Administration, and other proposed changes, present problems in flight test operations which have required close coordination with the FAA. Concessions have been obtained to permit industry flight test programs under the new air-speed restrictions below 10,000 feet and under the expanded areas for positive control.

Continuing effort will be required with the FAA as the trend in air traffic control moves toward elimination of VFR traffic and still further expansion of positive control areas.

Aircrew Station (Cockpit) Geometry

Working with an inter-service panel, an industry task group has developed a new military standard covering aircrew station geometry for fixed wing, rotary wing, and V/STOL aircraft. The document establishes the requirements for aircrew station geometry in military aircraft to assure efficient, safe and comfortable operation. The crew station has a major influence on the design of the airplane, affecting the length, width, height and weight of the aircraft, all of which affect aerodynamic performance.

Following coordination and publication of the standard, effort will be focused on other cockpit areas such as escape and survival requirements.

Standardization Management

AIA policies aimed at improving aerospace standardization management benefits to both the government and industry have been approved. These policies included full AIA responsibility for representing the aerospace industry in

standardization management activities across the full range of aerospace products both nationally and internationally and with the government.

This "full responsibility" means that AIA will continue to conduct an in-house standardization effort, and monitor the total aerospace standardization effort in order to determine what needs to be done; take the appropriate action necessary to get the job done, either in-house or through arrangements with other organizations, and assure that satisfactory results are obtained.

A Standardization Management Policy Group (SMPG) was formed to place more emphasis on and focus the responsibility in AIA for aerospace standardization management.

The SMPG was instructed to undertake immediately to develop a complete aerospace standardization management program which would improve communication and cooperation with government standardization agencies, avoid duplication within industry, maximize acceptance of industry standards in preferred status, and improve interface with all standardization organizations.

In addition to the broader aspects of standardization management the Council's activities have included analyses of proposed and published requirements for specific standardization activities by individual service components and the OSD.

These analyses have included such specifics as Item Entry Control, Management of Non-Standard Commercial Items, Standardization Program Requirements (Navy), Synopsis of Part I and Part II Specifications (USAF) and Blue-print for Standardization (USAF). Preliminary discussions with OSD and the DoD Components have been enthusiastically received and there is every prospect that a fully viable, cooperative effort can be sustained.

Aircraft Noise

The Council's special *ad hoc* group which was appointed in 1966 to serve as the AIA focal point for all activity associated with the disturbance due to aircraft noise in the vicinity of airports has completed a full year of intense activity.

The group recognized early that the solution to the problem of aircraft noise could not be found entirely in the reduction of the sound level produced by an airplane. Therefore, all aspects of the entire air transport system of the nation must be analyzed and evaluated.

To accomplish this the group pro-

posed an operation's research program designed to develop a computer-driven mathematical model of the air transport system which would be capable of evaluating on an economic basis, the various trade-offs involved in all approaches to the abatement of aircraft noise.

This proposal was approved and a contract was let with an independent research activity, to be funded and administered jointly by AIA and the Air Transport Association, to carry out the operations research program on a pilot basis.

Although this program is still in its developmental stages it has attracted international attention. When the pilot phase is completed, early in 1968, it will be evaluated to determine the advisability of expanding the program to a full scale model.

Through this group the Council has maintained a continuing dialogue with the FAA relative to the development of noise criteria to be applied during the certification of transport aircraft.

On two occasions formal industry positions have been submitted to the FAA. The latest presentation, made jointly with the newly-formed Office of Air Commerce, included an in-depth report by the Council of the current state-of-the-art and the projected technical capability to reduce or suppress the sound made by aircraft.

The Council will provide representation in 1968 to a joint industry/government working group headed by FAA which will develop aircraft noise certification criteria for formal coordination.

Crashworthiness and Passenger Evacuation

The industry response to the FAA's proposed new rules on Crashworthiness and Passenger Evacuation for Transport Category Airplanes was well received and was incorporated in great part in the final rules published in September 1967. The objectives of the FAA and most of the objectives of the industry were met. While the rules call for a generally higher level of safety, they avoid a critical economic impact on the manufacturers and the airlines.

Part of the AIA proposal to the FAA was the establishment of a broad industry development program, designed to achieve a greater improvement in aircraft safety than envisioned by the new FAA rules. This development program, which is being funded by the participating manufacturers, is expected to cost more than \$2 million before it is completed in July 1968.

While it is not expected to produce

quick solutions or easy answers to the problem of crash survival, the development program is expected, by both FAA and industry, to improve significantly the safety of current and future aircraft.

V/STOL Airworthiness Rules

After eight months of intensive effort, involving fifteen companies and more than 70 engineers, the V/STOL Project Group presented a proposed draft of airworthiness requirements to the FAA. The need for such regulations was determined by the Vertical Lift Aircraft Council and was expressed to the FAA in the AIA report, Economies of VTOL Systems. The objective is to have tentative V/STOL standards by mid-1968.

SST Standards Review

Council representatives met with the FAA, NASA, Air Transport Association, Air Line Pilots Association, and others in a complete review of all airworthiness and performance standards for supersonic transport aircraft.

The group presented the industry position, which highlighted the latest developments in technology, for consideration in the updating and revision of these tentative FAA standards. The results of this meeting will be reflected in a further revision to the tentative standards. The FAA still plans to issue the Notice of Proposed Rule Making in December 1969, with the final rule being adopted concurrently with the first flight of the SST.

International Airworthiness Regulations

Industry positions are being prepared for incorporation into the FAA positions to be presented at the Eighth Meeting of the International Civil Aviation Organization Airworthiness Committee. The papers are concerned with the full spectrum of aircraft airworthiness, from the integrity of the aircraft structure through survivability in the event of a crash.

General Aviation Airworthiness

The AIA prepared and sent to the FAA detailed technical comments concerning more than 150 separate airworthiness items affecting general aviation airplanes. Included in this package was a major departure from existing standards concerning a special category of small airplanes for use in air taxi operations.

A considerably higher level of safety than that presently required for such aircraft was proposed by the FAA. Industry comments are presently being reviewed by the FAA for incorporation into the final rule-making action.

INTERNATIONAL SERVICE



J. ROBERT BAKER
North American Rockwell
Corporation
Chairman, International
Committee



The International Service during 1967 worked along a broad front in the complex areas of federal regulation as well as private and government financing involving exports of aerospace products.

U. S. aerospace exports during 1967 reached \$2.2 billion, well ahead of the previously predicted level of \$2 billion in the 1970's. Commercial aerospace exports of \$733 million in all categories were dominated by the significant exports of large jet transport aircraft. Meeting the demands of the international carriers, U. S. transport aircraft manufacturers exported 134 aircraft at a value of \$611 million.

Export Financing

The Export Import Bank in 1967 responded to the increasing demands for aircraft export financing. With assistance from commercial banks and with manufacturers participating, the large jet transport aircraft exports were financed principally by Eximbank, in the environment of a continuing tight money market.

In Fiscal 1967, Eximbank authorization for jet transport exports amounted to \$3.6 billion and represented 34 percent of the bank's long term loan authority.

Commercial banks during 1967 under the sponsorship of the Bankers Association for Foreign Trade proceeded with progressive plans to develop, on a consortium basis, a substantial capital fund for the purpose of financing overall export trade. AIA met with BAFT officials and discussed a proposal to form the Jet Aircraft Export Finance Committee (JAEFCO) of approximately 50 self-nominated banks to concentrate on loans for jet transport aircraft.

The industry's capability in providing export financing for its products, in addition to participation in bank loans, has continued on a relatively modest scale during the year as the aerospace manufacturers have increasing demands for extensive capital outlays involving production, research, and development and testing.

The use of company-owned accept-

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

ance corporations as a method of providing export credits has proved particularly helpful to the manufacturers of general aviation equipment and in many cases these exports would not have been financed by any other means.

Export Controls

The complexities of international trade require a constant review and evaluation of U. S. export regulations.

The control of third country exports, and the problems concerning market-area allocations in foreign licensing arrangements are requiring more attention in view of changing world conditions. In order to meet these problems, AIA continued its extensive liaison with government representatives concerned with these responsibilities.

Recognizing national interest objectives supplemented by the vital commercial growth of exports, AIA proposals have continually focused on this problem, and during 1967 discussions on specific export regulations controlling third country exports were begun in cooperation with the Department of State.

Tariff and Import Quotas

The lengthy Kennedy Round tariff negotiations were successfully completed during 1967. During these negotiations, AIA held a number of meetings with the U. S. Special Representative for Trade Negotiations, resulting in the resolution of several problems confronting the aerospace industry.

The European Economic Community aircraft tariff reductions proved similar to the U. S. cuts which will phase down from 10 percent of *ad valorem* value in 1967 to 5 percent in 1972. However, the smaller models of utility aircraft and the light helicopters continue to receive tariff protection in the EEC and the United Kingdom. Japan did not accomplish tariff concessions of aerospace products in the Kennedy Round. Canada made a 50 percent cut in aircraft tariffs which will also be staged down during the 1967-1972 time frame to a 7½ percent level.

Non-tariff barriers in the form of sales

taxes, and added value taxes as well as unusual and extensive government-supported export financing programs are the normal post Kennedy Round international trade restraints.

However, a paradox arose during 1967. After 30 years of reciprocal tariff reductions, a protectionist trend developed which resulted in a substantial number of new import quota bills being introduced in Congress.

In view of a declining U. S. balance of payments position, AIA is taking all appropriate steps to insure the unhindered international trade of U. S. aerospace products in direct support of the national interest.

Trade Promotion

The Paris Air Show was the highlight of international exhibitions of U. S. aerospace equipment during 1967. Exemplifying increased government support of aerospace trade promotion, the Department of Commerce supported by an AIA-organized industry steering group, established a U. S. national pavilion at the show grounds at Le Bourget.

Within the pavilion and elsewhere, more than 75 U. S. aerospace companies joined in demonstrating to the world their excellence in aerospace products. All U. S. exhibitors with prior experience at the Paris Show praised the unprecedented back-up by government. At the show's closing, a poll of all U. S. participants disclosed that not only was the aerospace story better told than ever before, but more than \$16 million of foreign business was on U. S. order books within the ten days of the Paris Air Show with several more millions in negotiations.

AIA served as the industry's focal point during the planning for the 1967 Paris Air Show.

International Cooperation in Space

AIA reviewed the potential international business of space equipment sales and made specific recommendations to the Department of State and the National Aeronautics and Space Administration.

Outlining the problems of export control and also supporting necessary security review, AIA requested positive actions in the export of items which do not affect U. S. policy.

Proposals concerning international cooperation in space covered these points:

- Logical separation of space equipment, from military equipment, in the export license review process of concerned government agencies.
- Adjustments of regulations to allow a fair degree of export permissiveness in non-military space equipment.
- Analytical and liberalized approach to the evaluation of state-of-the-art improvements for space products considered eligible for international trade.
- Emphasize industry's position concerning Intelsat with particular attention placed upon industry-government cooperation in the field of advanced technology in international trade.

Other Programs

Responding to the foreign interest in U. S.-manufactured utility aircraft and helicopters and their versatile capabilities, AIA developed and presented an audio-visual program to such agencies as the Agency for International Development and the State Department.

This program depicted specific use of the airplanes, both fixed wing and vertical lift, in their role as a vehicle serving man's social, economic, medical, agricultural and transportation requirements in emerging areas. The enthusiastic response by government officials indicated the need for continuing programs of this type.

In cooperation with the State Department, AIA supported the development and issuance of a comprehensive instruction calling for the promotion of U. S. manufactured general aviation equipment in 38 nations in Africa.

Accomplished as an initial market and promotion survey for this type of commercial aircraft in Africa, the preliminary response gave clear indication of its value and use in other Free World areas.

OFFICE OF AIR COMMERCE



The Office of Air Commerce is the focal point within AIA for all activities concerned with civil aviation. In conjunction with its three member Councils — Transport Aircraft, Utility Airplane and Vertical Lift Aircraft — it works on behalf of all segments of the aircraft manufacturing community to foster, advance and promote the growth of air commerce.



DWANE L. WALLACE
Cessna Aircraft Company
Chairman, Air Commerce
Executive Council

The Office of Air Commerce, established by the AIA Board of Governors in November 1967, directed its initial efforts to organization and defining programs of action.

Policy guidance on matters pertaining to the advancement of air commerce is provided by an Air Commerce Executive Council consisting of the Chairman and Vice Chairman of each of the three participating Councils.

Planning and implementation of AIA programs aimed at promoting the growth of air commerce and mitigating or eliminating constraining factors to such growth is the responsibility of the Air Commerce Programs Division, a working level group made up of equal representation from each of the three Councils.

Identification of Actions

The primary effort of the Office of Air Commerce during 1967 was to identify and initiate actions designed to resolve issues of immediate concern to the industry and to outline an AIA program of long term action.

With respect to matters of current concern, the three participating Councils, in concert, initiated the development of industry policy papers on such matters as the Federal Aid to Airports Program, air traffic control, and funding concepts to support future airport requirements and aircraft noise. It is intended that these papers will provide an industry overview in each of these significant problem areas, identify their scope and propose solutions for both near and long term application.

Task Group Assignments

With respect to long range action, the Office of Air Commerce initiated development of a program to define a systems approach study that will assess those factors that inhibit or constrain air commerce growth. Initial work to define and prepare recommendations for AIA action was undertaken by three task groups.

The first task group analyzed what research is required to document the demands of air commerce in the future to include forecasting the passenger and cargo expectation, the numbers of airline, general aviation and vertical lift aircraft, traffic at various airports, terminal needs, and all other aspects of the nation's air commerce requirements.

Coincidentally to this, the second group formulated plans for determining the capacities and limits on airspace, airports, access to airports and similar areas and for projecting future requirements based upon anticipated growth.

The third group analyzed methods for documenting the economic contributions of air commerce, determining the costs of required facilities and examining various methods for funding the needed advancements.

Action was well under way at the end of 1967 to integrate the work of the three task groups into a single study program that can serve as a basis for recommending corrective actions, public and private, that will assure the continued growth and benefits of a strong and viable national air transportation system.

TRANSPORT AIRCRAFT COUNCIL



JOHN O. YEASTING
The Boeing Company
Chairman, Transport
Aircraft Council

The Transport Aircraft Council coordinates industry views with respect to commercial air transport matters and promotes a wider public and professional understanding of the benefits of a viable air transport system. The Council, composed of senior executives from nine member companies, is responsible for policy and program matters pertaining to actions to support these objectives.

Transport Aircraft Council efforts, since its creation in November 1967, were directed toward organizing, designing programs of action and establishing appropriate liaison with government agencies, other segments of industry, and organizations concerned with civil air transport matters.

In addition to dealing with problems unique to transport aircraft manufacturer interests, the Council provides essential support to the Office of Air Commerce programs and actions directed toward the mitigation or elimination of those factors that inhibit or constrain the growth of all segments of aviation.

Actions undertaken in 1967 included:

Transport Flight Crew

In cooperation with the Air Transport Association, a study was conducted for presentation to the Federal Aviation Administration to support the contention that a two pilot flight crew on twin jet civil transport aircraft in no way compromises operational safety.

Aircraft Noise

In conjunction with the Aerospace Technical Council, initial studies were

completed concerning the state of the art in controlling aircraft noise in future generations of transport aircraft. This information has been provided to the FAA and to members of Congress for planning purposes in the development of realistic future noise certification criteria.

Jet Exhaust

In cooperation with the ATA, a status report was assembled and provided to the Department of Health, Education, and Welfare giving the best technical assessment possible of the current relationship of turbine engine exhaust emissions to the air pollution problem and the status of current efforts by the industry to reduce jet exhaust smoke.

Air Cargo

Action was initiated by the end of the year to examine current industry activities as they relate to air cargo matters and to define a program of Association action that will improve the dialogue among manufacturers, regulatory agencies and policy makers so as to advance this mode of transportation to its fullest potential.

UTILITY AIRPLANE COUNCIL



DWANE L. WALLACE
Cessna Aircraft Company
Chairman, Utility
Airplane Council

The Utility Airplane Council is active in all matters relating to general aviation which includes all flying except that of the military and commercial carriers. It promotes understanding, fosters growth, works for facilities, regulations and procedures conducive to maximum use of the private and business airplane.

Utility Airplane Council endeavored throughout 1967 to accelerate the growth of general aviation and to provide an environment in which this growth can be accommodated and continue.

During 1967, general aviation continued to make impressive gains both in the utilization of aircraft and in gaining recognition for the place that it has in the transportation system. At mid-year the Federal Aviation Administration officially confirmed that the busiest airport in the nation is one used exclusively by general aviation. One new student pilot permit was issued every three and a half minutes. Official records were not available at year's end, but it appears that general aviation flew considerably more than the 21 million hours reported for 1966.

Information Programs

The dissemination of news and information about the total field of general aviation was one of the primary efforts of the Utility Airplane Council. Regular

monthly reports on the production of new aircraft served to produce news releases about the industry.

A "Working Press Memo" was started which is mailed to news media. While the primary purpose of the Memo is to provide industry views and background information, direct pickup from these reports have been made by newspapers, magazines, and radio and television.

Specially tailored magazine pieces were prepared to detail the story of airport development needs, economic importance of general aviation, uses of aircraft and other subjects.

Conference-Briefing Reports

The slide-narration presentation covering various aspects of general aviation was updated during 1967. Originally produced in 1965, the material was presented at two important national aviation meetings by industry representatives. The first presentation of the year was at the Las Vegas International Exposition of Flight at which a select Con-



gressional and state official group saw the three-hour program. It was also presented to an aviation industry audience at the National Aviation Trades Association Convention at Dallas, Texas. Material from the presentation was reprinted in book form and widely distributed to security analysts, news media and other opinion leaders.

School Program Expansion

A program designed to both influence educators about the importance of aviation education in the classroom and to reach young people with the story of general aviation's place in their future was carried into the assembly halls of hundreds of high schools. The test program, completed in May, was expanded to three touring teams beginning with the September school term. Professional lecturers, aided by color slides and stereophonic sound, present the exciting story "In The Pilot's Seat" to high school audiences in the East, the Southwest and the Far West.

Aviation education curriculum guides were distributed, magazine articles written and placed, direct contacts made with educators and cooperation given to other groups to expand nation-wide school programs.

Airport Development Aid

Recognizing several years ago that communities must prepare adequate air-

port facilities to accommodate air commerce, the Council began an airport development information program, and distributed a complete packet of airport information designed to aid communities to get local support and action for airport development. Users of the UAC material credit it with helping to pass airport bond issues, gaining public support to open new airports and convincing civic leaders to improve present facilities. A group of aviation magazines carried full page ads as a public service promoting the use of this material.

FAA Activities

AIA has been working with the statistical sections of the FAA to bring about more meaningful data reporting on general aviation.

The first Notice of Proposed Rule Making issued by the FAA in 1967 incorporated some of the elements of the UAC Pilot Rating and Requirements Committee recommendations. The Notice, however, was withdrawn by FAA and no action taken.

A proposal to lower the area of positive control to 18,000 feet over the entire United States was opposed by the UAC and this Notice was withdrawn although a later proposal — also objected to by the UAC — to include only the Northeast quarter of the nation's airspace did become effective near year's end.

The problem of clear title to aircraft which has been a concern of industry moved closer to being resolved during 1967 although much still remains to be accomplished. The FAA formally withdrew a Notice of Proposed Rule Making which had been issued in 1966. At that time the UAC filed detailed comments opposing the notice as issued and urging a complete reevaluation of the recordation system. Following withdrawal of the Notice, a joint FAA-industry meeting was held to seek solutions and this work is continuing.

The UAC filed with the FAA a strong objection to the proposed rule change which would eliminate Special Visual Flight Rules. Opposition was based upon the view that Special VFR has proven to be safe and useful and that continuation of this service is required for the most efficient use of air facilities.

Detailed comments were filed with the FAA in relation to an Advance Notice of Proposed Rule Making relating to a schedule of fees and user charges.

The FAA withdrew a Notice of Proposed Rule Making which would have tied operations at all airports within a primary airport's control zone to the visibility conditions at the primary airport. UAC had opposed this on the basis of differing visibility conditions which occur within short distances and thus the unnecessary restrictions which such a rule would impose.

VERTICAL LIFT AIRCRAFT COUNCIL



ROBERT C. JACKSON
*Ryan Aeronautical Company
Chairman, Vertical Lift
Aircraft Council*



The Vertical Lift Aircraft Council coordinates and presents the vertical lift aircraft industry views on matters affecting these aircraft and in promoting the development and use of V/STOL aircraft in the U.S. and abroad.

The Vertical Lift Aircraft Council during 1967 concentrated on portraying the role vertical lift aircraft can play in contributing to the social and economic well being of the nation.

Specific effort was applied in heliport facilitation planning and the city-center to city-center transport areas. Liaison was established with the Civil Aeronautics Board team conducting the Northeast Corridor VTOL Investigation and Council staff actively participated in assisting the Department of Transportation in its effort to establish helicopter supported emergency medical service for the national highway system.

Demand for VLAC publications continued to grow and the 12 prints of AIA's public service film "When Minutes Really Count" are still being circulated. This film dramatizes the effectiveness of hospital heliports and helicopter rescue service and has been effective with civic groups, Chambers of Commerce and local government agencies.

Costing Formula

During the year the Council initiated discussion on and development of a Direct Operating Cost (DOC) formula for VTOL aircraft. This effort was undertaken in response to comment by the Civil Aeronautics Board, prospective users and state and local communities interested in establishing additional transport helicopter service in the metropolitan area.

The CAB and others wishing to establish such service focused on the lack of

a common measurement instrument to be used in the award of certificates for the new service. This work will continue on with the objective of providing a family of DOC's applicable to all potential VTOL configurations.

Highway Safety

Major effort was devoted to assisting the National Highway Safety Bureau and the U. S. Public Health Service in planning for emergency highway medical services authorized by the 1966 Highway Safety Act.

Staff prepared articles describing the role of the helicopter ambulance were provided to the Public Health Service for distribution nationwide.

In addition, Council staff provided industry liaison and background information to DoT in its award of three research contracts leading to Federal funding of a helicopter supported highway safety demonstration scheduled for early 1968.

VLAC Publications

During 1967, Council staff prepared and distributed:

- *The Vertical Lift Designation Chart* covering 77 production models and 19 research and development projects.
- *The 1967 Directory of Helicopters/Helistops in the United States, Canada and Puerto Rico* listing 1225 helicopter landing facilities, an increase of 428 since 1963 and almost quadruple the 357 reported in 1960.

- *The 1967 Directory of Helicopter Operators — Commercial — Civil Government and Helicopter Flight Schools in the United States and Canada.* Operators listed totalled 1023 with 2438 helicopters. The largest increase in operators occurred in the company and executive areas for a gain of 21 percent. Civil government agencies registered the largest gain in number of helicopters — an increase of approximately 30 percent over 1966. This increase reflects the emphasis being placed on the effectiveness of the helicopter by law enforcement agencies, fire departments, traffic services and rescue agencies.
- Four annual VLAC publications — *The Versatile Helicopter*, *Federation Aeronautique Directory of Helicopter Records*, *Directory of Recipients of Helicopter Awards 1954-1966*, and *Explanation of Helicopter Flight* — were updated.

Information and Education

A presentation entitled "Death on the Highways — A National Disease" was prepared by the Council staff and shown at the 1967 annual meeting of the Flying Physicians Association. Copies of this presentation were distributed to the governors of the 50 states and to national organizations concerned with highway development and safety.

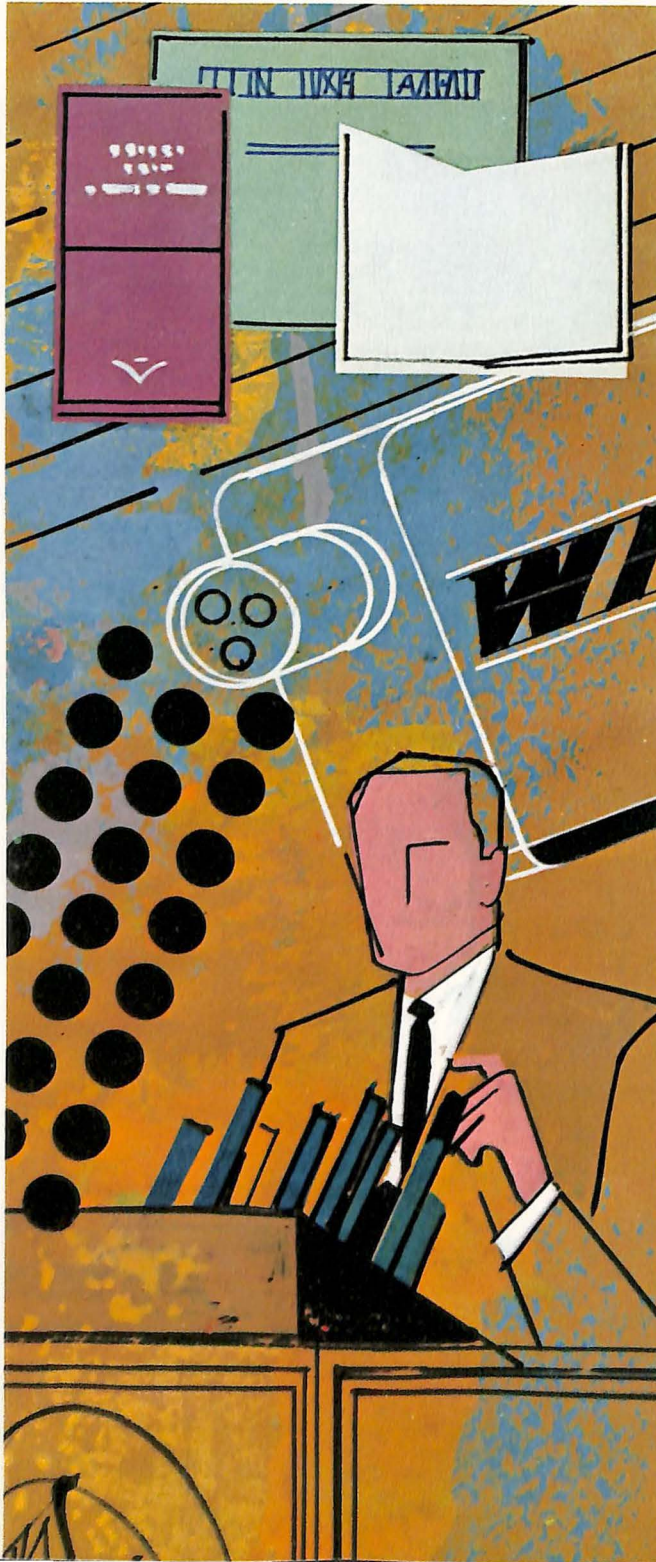
A similar presentation, "A Systems Approach to Air Commerce," was prepared as the keynote speech for the National Association of Business and Professional Women's "National Business Women's Week." Copies were distributed to representatives of national women's organizations.

Participation in support of programs conducted by other national organizations continued.

PUBLIC RELATIONS SERVICE



ROY CALVIN
Martin Marietta Corporation
Chairman, Public Relations
Advisory Committee



The Public Relations Service is the communications channel through which the industry's accomplishments and contributions to national security, space exploration, air commerce and overall advancement of technology are presented to the public.

The Public Relations Service in 1967 carried forward programs of information and education of the industry's accomplishments and goals.

At the same time, these basic information programs were broadened to include industry's growing activities in fields other than aviation and space through the utilization of an aerospace-generated systems management approach.

AIA, through its continuing contacts with all forms of media, the government and various private publics, in 1967 was firmly established as the focal point concerning major aspects of industry-wide information.

Following are the highlights of AIA efforts to put forward the continuing, dramatic story of the industry.

Speeches by President Harr

Karl G. Harr, Jr., president of AIA, carried out an active program of speeches before several groups, presenting positions and ideas on a wide variety of subjects of industry concern and interest. These included:

- Air Force Appreciation Day, Tucson, Ariz., *Aerospace and the Public Interest: The Hard Questions.*
- Aerospace Analysts of New York, New York City, N. Y., *The Aerospace Industry: Fundamentals and the Future.*
- 1967 Jaycees International Air Show

Symposium, Milwaukee, Wisc., *The Aviation Opportunity*.

- Airport Operators Council International Annual Meeting and Conference, Boston, Mass., *Air Transport: Past and Future*.
- Chamber of Commerce, Baltimore, Md., *The Space Age: Second Decade*.
- Wright Brothers Memorial Banquet, Los Angeles, Calif., *Aerospace and America*.
- Aviation/Space Writers Association, Washington, D. C., *Year-End Review and Forecast*.

These public appearances, in addition to spot news coverage, provided the basis for booklets and magazine articles exploring the subject material in depth.

Publications

The AIA publications program continued to be a primary method of presenting the industry story. Principal publications issued during 1967 included:

Aerospace Magazine. This publication continued as a major vehicle for public communications. A major utilization of *Aerospace Magazine* in 1967 was the cooperation with the U. S. Information Agency in the production of an issue devoted to the Paris Air Show. Editorial preparation was done by AIA. USIA translated the copy into French, printed and distributed 300,000 copies at the Paris Air Show.

Aerospace Year Book. The 45th annual edition of the *Year Book* was issued during 1967 and approximately 3,500 copies were distributed. A publication for the National Aerospace Education Council, *U. S. Aircraft, Missiles and Spacecraft* was made up from selected sections of the *Year Book*, and sold during 1967. Copy for the 1968 edition of the *Year Book* was well under way at year's end.

Aerospace Facts and Figures. This annual publication recognized by media, government, finance institutions and in-

dustry in general as the authoritative source for aerospace statistics was issued. The book was distributed commercially by Aero Publishers, Inc.

Annual Report. In addition to its primary function of informing the membership of AIA, the Report was useful to governmental and private organizations.

Mr. Harr was invited to appear on the TODAY Show on the National Broadcasting Company television network as the aerospace industry spokesman, marking the 10th anniversary of the space age. Other members of the panel included Astronaut John Glenn and Francis Keppel, former Assistant Secretary for Education, Department of Health, Education and Welfare. NBC's Hugh Downs interviewed the panel.

A booklet, "The TODAY Show Looks at Ten Years of Space Exploration," was published from the transcript. NBC assisted in a wide distribution of the publication.

Several other booklets were produced, including the text of Vice President Humphrey's speech before the Tenth Annual Goddard Memorial Dinner, "Progress in Peace and Technology." A booklet on civil applications of aerospace technology was also issued. This booklet was in the process of being revised and re-issued to a wide audience at year's end.

European Editors' Tour

The AIA in 1967 coordinated a successful tour of member company facilities by a team of four leading European aerospace magazine editors from England, France, Germany and Italy. During a 17-day visit to the U. S., the editors visited 22 company plants and laboratories from coast to coast. Two high level round-table discussions were arranged in Los Angeles and Washington with top executives in the aerospace industry and government participating. As a result of the tour, the editors gave

widespread coverage in their publications to developments in the U. S. aerospace industry and the individual companies visited.

Further, AIA coordinated a tour of a French television team to member companies for the production of a 30-minute TV special which was presented on a European-wide telecast preceding the Paris Air Show.

Economic Data Activities

The AIA continued to work with member companies regarding the Federal Aviation Administration Statistical Advisory Committee which was established in 1966. Progress was made in the identification of needed improvements in statistical information published by the FAA. This should have a strong impact on the improvement of forecasting of facilities requirements by FAA.

AIA served in an advisory capacity to the Bureau of Labor Statistics in relation to needs for manpower data by the aerospace industry as well as the total U. S. In this function, the requirements for information by the industry were furnished to the Department of Labor.

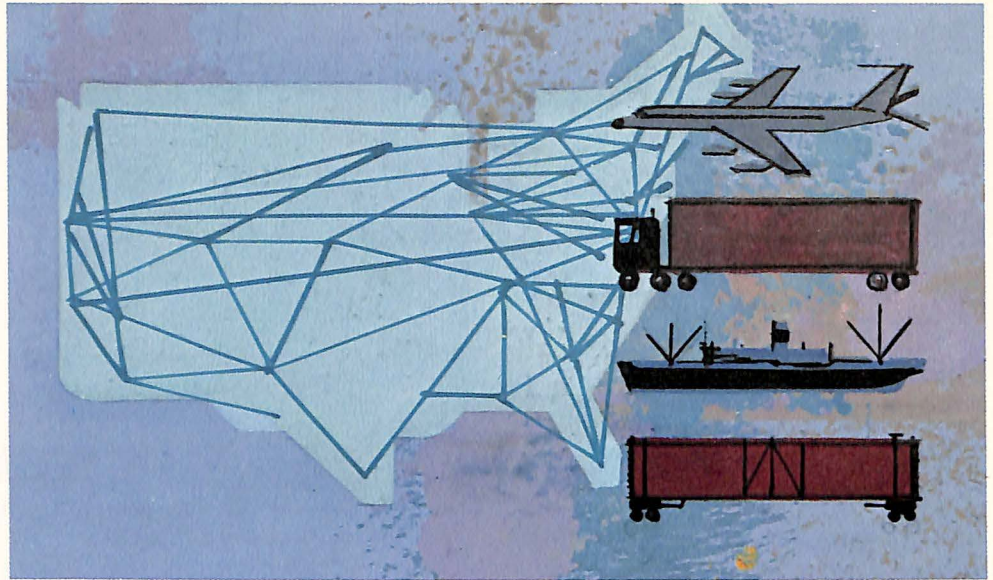
The Department of Commerce adopted AIA definitions for reporting of export statistics, and as a result of these revisions, AIA will supply monthly export statistics by country of destination to member firms.

AIA also served in an advisory capacity to the Bureau of the Census in the types of statistics to be collected on the forthcoming Census as well as in revision of its present monthly reporting series. As a result of these discussions the Census Bureau has agreed to review its reporting of aerospace activities.

NAEC Support

AIA continued its support of the National Aerospace Education Council in order to enrich and enhance the curriculum offered students.

TRAFFIC SERVICE



The Traffic Service is responsible for obtaining adequate, economical and efficient transportation facilities and service for the aerospace industry. The coordinated efforts of aerospace company traffic organizations, working through the Traffic Service, achieves results not otherwise possible by the separate efforts of member companies.



L. J. ROWLEY
Lockheed Aircraft
Corporation
Chairman, Traffic Committee

A major portion of the activity of Traffic Service during 1967 was devoted to representing AIA interests before Federal regulatory agencies in matters related to services and rates of common carriers.

A coordinated approach in this area is particularly productive and necessary in view of the fact that interstate surface carriers are permitted by statute jointly to consider, initiate and establish rates, rules and charges for their services. Air carriers subject to economic regulations by the Civil Aeronautics Board are permitted jointly to consider and formulate agreements affecting service and charges on a case-by-case basis.

The representation of the industry's position often requires Traffic Service intervention in proceedings before the Interstate Commerce Commission and, on occasions, the CAB. Participation in ICC proceedings has, in 1967, been productive and with results that can be measured in dollar savings to the industry. This is particularly the case with respect to motor highway household goods carriers.

These carriers provide transportation service for employee-owned personal effects at company expense and for substantial quantities of aerospace articles and components which require specialized, careful handling. AIA members spend nearly \$24.5 million annually for the procurement of this type service.

Household Goods Petition

A statistical sampling of member company household goods movements shows that this sum represents approximately 31,500 individual shipments of

an average weight of 5,000 pounds. The number of shipments is important in view of an attempt by the household goods carrier industry in 1967 to establish added arbitrary charges ranging from \$4.75 to \$30.00 depending upon the weights of shipments.

The unreasonable effect of the proposal on aerospace shipments plus the failure of the carriers to justify their application induced Traffic Service to file a petition with the Interstate Commerce Commission arguing *prima facie* unreasonableness and requesting suspension and investigation of the charges.

The Commission ruled favorably on this petition and the carriers cancelled the charges. The estimated annual savings to AIA member companies is \$551,250.

General Increase Investigation

Subsequently, the same carriers proposed a 4.4 percent general increase in rates. The annual impact of such an increase will be in excess of \$1 million. Traffic Service filed a petition with the ICC seeking a suspension and investigation of the increase. ICC granted the petition and commenced an investigation. The household goods carriers cancelled the increase.

Soon thereafter they again filed an almost identical increase which the ICC permitted to become effective. An AIA appeal was denied. Notwithstanding ICC approval of the increased rates, the carriers voluntarily suspended application until May of 1968. There is considerable doubt as to whether or not the increase will become effective.

Proposed Increase Cancelled

In another proceeding, the transcontinental motor carriers of general commodities proposed inordinately high increases — up to 84 percent — applicable to large loads of aerospace components. Traffic Service secured ICC suspension of the charges and in the hearing which followed obtained an order requiring the increases to be cancelled.

Delayed Payment Proceeding

Still pending at the end of 1967 was an ICC proceeding wherein Traffic Service opposed the imposition of penalty charges by household goods carriers for delayed payment of freight bills. Most often, such delays are unavoidable and caused by circumstances beyond the control of shippers.

Advance Rate Notices

In a landmark 1967 decision the ICC ordered the household goods rate bureaus to amend their rate-making procedures so as to provide shippers with advance notice of rate proposals and an opportunity to participate in their formulation prior to publication in tariffs. Traffic Service was active in deliberations leading to this decision, the effect of which should be a decrease in the number of formal adversary proceedings before the Commission.

Air Cargo Development

The CAB-conducted proceedings in which Traffic Service has participated during 1967 have been less controversial than those covered in ICC activities. Generally, they can be categorized as steps in the evolutionary development of air cargo and are concerned with problems revealed in a series of 1966 air cargo workshops sponsored jointly by the CAB and the National Industrial Traffic League.

The AIA Traffic Committee was instrumental in planning and conducting the workshops. In one such proceeding, the CAB undertook an analysis of air carrier loss and damage claim procedures and liability. Traffic Service contributed to that analysis. On several other occasions, the CAB authorized the air carriers to discuss jointly with interested shippers various tariff rules, regulations and agreements concerning air cargo service and handling arrangements. Traffic Service was a participant in such discussions.

Carrier Rate and Service Actions

In addition to representing the interest of members before the federal

agencies which regulate carriers, Traffic Service presented the position of members before the numerous surface carrier rate bureaus and traffic associations which function in accordance with agreements filed with the Interstate Commerce Commission.

Under such agreements the carrier organizations are required to provide advance notice to the public of any proposed changes or additions to their published tariffs. Traffic Service represents the interest of members before such organizations when a review of dockets reveals proposals adverse to the interest of the industry. Illustrative of cases handled in this manner during 1967 are the following:

- Transcontinental motor carriers proposed to provide special penalty charges of 150 percent on articles exceeding certain dimensions. This proposal would have been particularly adverse to aerospace companies that have a continuing requirement for transportation of outsize components. AIA objections to the proposal resulted in its withdrawal. Several such proposals of this nature were contested throughout the year. All were defeated.

- The railroads proposed a penalty charge on shipments not loaded to the full capacity of cars. AIA, along with numerous other shippers throughout the country, opposed this penalty. It was disapproved.

- Traffic Service also contested a motor carrier proposal to establish a nuisance charge to cover the transportation of documents accompanying shipments. The proposal was disapproved.

- The rail carriers also proposed an arbitrary and unrealistic distinction between electric and electronic articles which would greatly increase the transportation charges for the latter. Traffic Service vigorously opposed this action and carriers modified the proposal to remove all objectionable features.

- In another case, the nation's motor carriers proposed the adoption of penalty charges on shipments of less than a prescribed density. The proposal was highly unreasonable and administratively impractical. AIA filed statements in opposition, appeared in oral argument and is now awaiting disposition of the proposal.

Liability Limitation Opposed

One of the most controversial and troublesome tariff matters in which Traffic Service was involved in 1967 concerns carriers' attempts, both rail and

motor, to limit liability for loss or damage to aerospace commodities. Traffic Service appeared in opposition to all such proposals. However, the problem is a recurring one and undoubtedly will require continuing surveillance.

Government Agency Coordination

Traffic Service continued to coordinate the traffic and transportation interest of members with government agencies and departments. Creation of the Department of Transportation should have a salutary effect and facilitate the handling of traffic and transportation policy and procedural matters of interest and concern to member companies. The following are representative of the actions taken by Traffic Service in 1967 in cooperation with various government agencies including DoT:

- Reduction of paper work and time delays related to customs clearances and drawback refunds on imported material employed in the manufacturing process and subsequently exported.

- Revision of Department of Defense security instructions governing the transportation of classified material so as to reduce transportation costs without relaxation of security controls.

- Designation and maintenance of a national highway network sufficient to permit the unimpeded movement of large aerospace components.

- Joint action to devise a testing program which will measure the shock mitigating effectiveness of transportation vehicles.

- Coordinated action to establish requirements for augmented and improved air cargo service.

- Joint efforts to establish proper freight descriptions for common items moving via commercial carriers.

- Institution of programs which will foster and promote development of an improved and economical service for transportation of household goods by air and of explosives and dangerous articles by surface and air carriers.

Cost Savings

Traffic Service during 1967 continued its program of gathering and exchanging ideas and information relating to improved techniques used by member companies to support government cost savings efforts. Successful actions by individual aerospace traffic managers resulted in savings of approximately \$16 million. The results of coordinated actions taken under the aegis of the AIA Traffic Committee are reflected in this amount.

MANAGEMENT SYSTEMS



Resolution of the problem of the proliferation of government management systems requirements advanced strongly during 1967 through the activities of the DoD-CODSIA Advisory Committee for Management Systems Control.

The DoD early in 1968 plans to publish three major documents under which Phase III of the continuing Management Systems Control effort will operate. They are:

- DoD Instruction, "The Development of Management Control Systems for use in the Acquisition Phase."
- DoD Instruction, "Management Control System Selection and Application in the Acquisition Process."
- Management Control System List.

The following summarizes the events leading up to the publication of these key documents.

In January 1966, the AIA Systems Management Advisory Group (SMAG) report was finalized. This report focused on the concern of industry with respect to the increasing number of divergent and incompatible management systems being imposed upon industry by government agencies. The apprehension of industry dealt with the application of the diverse systems rather than their objectives.

The study concluded that the development of management systems is largely independent, uncorrelated and spear-headed by functional groups within each agency, and the use of committees and boards to provide desired coordination had not been effective.

Responsibilities Assigned

The results of this effort were discussed with the Deputy Secretary of Defense and other senior staff members of the Office of the Secretary of Defense. Industry made specific recommendations and DoD Directive 7000.1, Resource Management Systems of the Department of Defense, was issued.

The Assistant Secretary of Defense (Comptroller) was given the primary responsibility to provide for the design, installation and control of management systems throughout the DoD. These responsibilities gave to the OASD (Comptroller) authority to maintain overview of existing or proposed management systems within the various military departments and agencies, review and

approve proposed changes to existing or new systems, insure systems compatibility and uniformity, and provide policy guidance and general criteria governing management systems.

Subsequently, DoD invited industry, through CODSIA, to participate in a joint effort in the development of necessary courses of action to resolve the problem. In response to this request, a CODSIA Management Systems Task Group was established.

Advisory Committee Activities

By the end of 1966 initial planing for the program and the development of the approved plan of scheduled activities were almost completed. The DoD-CODSIA Management Systems Advisory Committee was officially established, and a detailed need-use analysis of selected management systems and preparation of the DoD documents controlling development and application of systems were scheduled for 1967.

The work of 1967 was detailed in a published master plan that guided the combined efforts of the industry and DoD members of the Advisory Group.

Approximately 50 industry and 40 government experts of diverse management backgrounds, selected by their top management, worked over a four-month period during 1967 to evaluate the need and the use of five categories of management documents (systems engineering, integrated logistic support, work breakdown structure, finance and schedule, and OSD source documents). In practice, the Task Group members evaluated their assigned documents without consideration of their government or industry affiliation, or their particular functional areas and the results were documented in group reports which represented the overall consensus of the group.

The two Instructions, developed during 1967 by the Advisory Committee, in addition to stating standards and criteria, essentially provide for a four-step process before a management system can be required on contract. Three steps are covered in the Development Instruction:

- Approval of a plan to develop or revise a management control system or portion thereof.

- Development of the system and co-

ordination and review and approval of drafts.

- Final approval of the system as developed and tested and inclusion on the very important Management Control Systems List.

The fourth step was considered sufficiently critical to deserve a separate Instruction. The Application Instruction requires:

- Pre-listing and official approval of those systems which the contracting agency feels suitable for the specific procurement within the standards and criteria provided in the Instruction.

DoD Development Instruction

This Instruction will require that all DoD components identifying a need for any new or revised management control system to submit a plan to the Assistant Secretary of Defense (Comptroller) who will approve the plan or recommend changes. The DoD component is then responsible for developing the management control system, coordinating it within DoD, reviewing it with industry and submitting it to the OSD (Comptroller) office for final approval and inclusion on the Management Control Systems List.

DoD Acquisition Instruction

This Instruction will cover the selection and contractual application of the documents on the Management Control Systems List. The objectives of this Instruction are to assure that management control systems are used to assist in the management of the acquisition rather than as an end in themselves; to identify factors whose interrelationships should be considered in determining the nature, scope and appropriateness of the management control systems documents to be placed on contract; and to establish three modes of government management (Visibility, Surveillance and Prior Approval) to be used in the application of the management control system.

The selection of these modes depends on the responsibilities of the buyer and the seller, the nature of the procurement, the type and amount of the contract as well as the program complexity. This Instruction requires that all management control system documents to be used on a particular acquisition be

listed on a new DD Form, the Management Control Systems Summary List which, when approved in the normal procurement review process, limits the management systems applied and is a requirement of the contract.

Management Control Systems List

The MCSL is an important fulcrum of the control process. This initial list resulted from an inventory developed by OSD and the DoD components and forms the basis of a more permanent list, the Authorized Management Control Systems List (AMCSL). Management Control Systems when passed through the Development Instruction, will be added to the AMCSL. In addition, during implementation of the control process, additional need-use action will assist in moving additional systems to the AMCSL or invalidating them as management control systems for application on contract. The Development Instruction covers this process.

Implementation Plan for Phase III

The Phase III plan covers the implementation management of the management of systems as expressed in the three DoD Documents previously described. A most important step in this plan is the scheduled program to review and revise, cancel or consolidate all of the documents listed on the MCSL following the criteria contained in Development Instruction. When this effort is completed the MCSL will be replaced by an Authorized Management Control Systems List. This effort is scheduled to be completed by June 1970.

As complementary efforts, the Implementation Plan also schedules the creation of a DoD Authorized Data List and a purging and consolidation of data requirements; a review of military specifications and standards and reorientation of this series of documents to deal only with the functional and physical characteristics of hardware products.

The total results of the DoD and industry efforts during 1967 will be documented in a final report issued jointly by DoD and CODSIA. It is planned that the final approved versions of the Instructions, the MCSL, the Phase II Report, and the plan for Phase III will be simultaneously issued at the start of Phase III early in 1968.

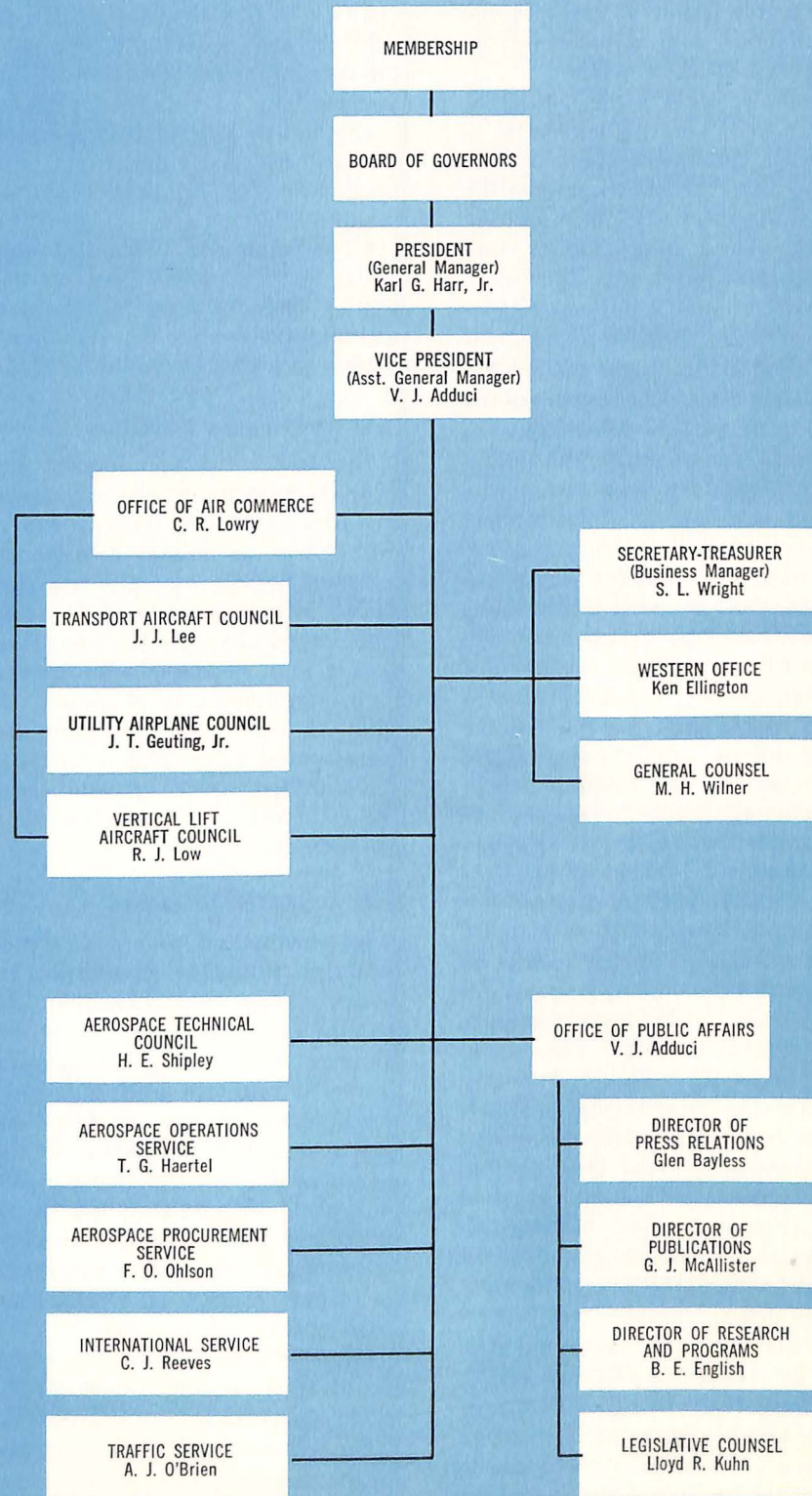
The Aerospace Industries Association of America, Inc. (AIA) is the national trade association of companies in the United States of America engaged in the research, development and manufacturing of aerospace systems, including but not limited to manned and unmanned aircraft, missiles and astronomical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

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

Membership of the Association at the end of the year totals 87, including 59 Division A (manufacturing) members, 13 Division B members, and 15 affiliate members.

ORGANIZATION CHART

(January 1, 1968)



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The Phase III plan covers the implementation management of the management of systems as expressed in the three DoD Documents previously described. A most important step in this plan is the scheduled program to review and revise, cancel or consolidate all of the documents listed on the MCSL following the criteria contained in Development Instruction. When this effort is completed the MCSL will be replaced by an Authorized Management Control Systems List. This effort is scheduled to be completed by June 1970.

As complementary efforts, the Implementation Plan also schedules the creation of a DoD Authorized Data List and a purging and consolidation of data requirements; a review of military specifications and standards and reorientation of this series of documents to deal only with the functional and physical characteristics of hardware products.

The total results of the DoD and industry efforts during 1967 will be documented in a final report issued jointly by DoD and CODSIA. It is planned that the final approved versions of the Instructions, the MCSL, the Phase II Report, and the plan for Phase III will be simultaneously issued at the start of Phase III early in 1968.



AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1725 De Sales Street, N.W., Washington, D.C., 20036