

1965  
ANNUAL  
REPORT



AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.

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KARL G. HARR, JR.

## TO THE MEMBERSHIP



By nearly every significant measurement, 1965 constituted the most productive year in the history of the aerospace industry.

Sales, employment, exports and virtually every other basic economic indicator revealed new records. In addition, major gains were made in the performance and reliability of aerospace products. Further, there emerged in 1965 the first tangible evidence of an added dimension to the industry in the application of its capabilities to a wide range of national needs not related to the industry's primary responsibilities in defense, space exploration and commercial aviation.

Activities in 1965 demonstrated convincingly that the aerospace industry can no longer be classified merely in terms of its product. It has become increasingly capability oriented. Its scientific and technical skills, its techniques of analysis and management of complex systems are providing a stimulus to every element of our society.

It is too early to measure the effects of this trend, and the ramifications are too far-reaching to be detailed here. There was, however, solid evidence of awareness at all levels of government of the industry's ability to utilize its technology and techniques in such challenging fields as air and water pollution control, surface transportation and even crime control.

Key measurements of aerospace activities in 1965 include:

- Sales reached an estimated \$20.9 billion, highest in the industry's history.
- Exports of aerospace products amounted to \$1.47 billion, the highest since World War II.
- Employment increased to 1,220,000, the highest since 1944. There were 203,000 scientists and engineers employed in the industry, the highest number ever.
- New orders at year's end amounted to \$20.4 billion.

■ Commercial orders for turbine-powered transports and utility aircraft were at an all-time high.

In space exploration, 1965 was the nation's most impressive year. There were six Gemini flights, five of them manned. Two astronauts orbited the earth 206 times in a flight lasting 14 days, achieving a rendezvous with another two-man Gemini capsule. Rangers 8 and 9 transmitted high-quality televised pictures of the moon's surface. Mariner 4 transmitted TV photographs of Mars across a distance of 134 million miles.

These were the brilliant evidences of our progress in space exploration. The most significant element of these successes, however, the achievement of equipment reliability that nudges perfection, largely escaped public notice.

The industry also progressed in the development of new aircraft and substantially improved intercontinental missiles, while meeting the demands of Vietnam operations.

The Association's activities were marked by a mobilization and integration of its resources for the resolution of problems involved in supporting the industry's heightened responsibilities. The demands for reliability, higher performance and management techniques to translate quickly discovery to equipment, required some new approaches in the mechanism of the Association.

Technology, finance and logistics, for example, cannot be conveniently separated. The Association adapted its structure to provide industry expertise across a spectrum of requirements. Inside the Association, a Management Systems Coordinating Board was established to better coordinate activities in which several services and councils have a mutual interest and responsibility.

The Association's joint sponsorship with the Air Force of a Data Management Symposium, for example, required the diverse talents of committee members and staff in the

Industry Planning Service, the Aerospace Technical Council and the Public Relations Service.

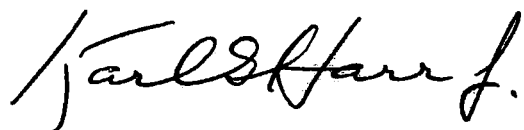
Data management is of mutual concern to government and industry. The symposium evaluated a system of data management, as a step toward keeping data management responsive and economic. The recommendations produced are being acted upon by the Defense Department and the Air Force.

It was also essential for the same reasons that adequate and appropriate inter-Association coordination not flag. In this regard, the Council of Defense and Space Industry Associations (CODSIA) continued to demonstrate its effectiveness. In the past twenty months CODSIA has accepted sixty projects for consideration and has acted upon about fifty of them.

The details of Association activities are reported in the service and council sections of this 1965 *Annual Report*.

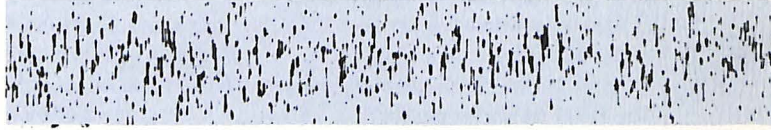
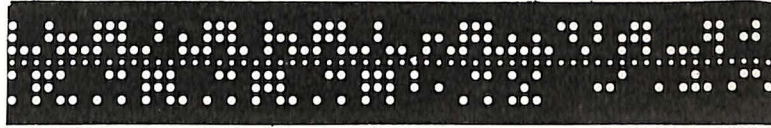
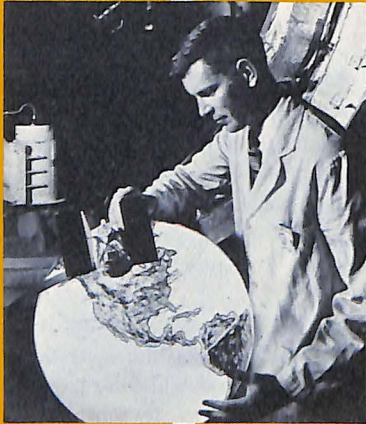
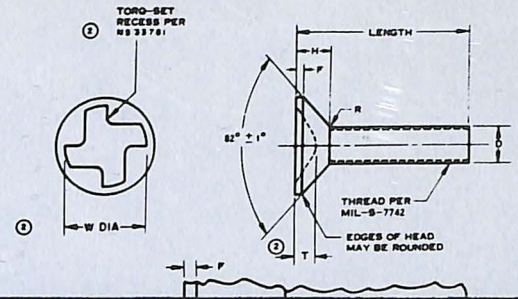
During the year, Mr. Dan Kimball, Aerojet-General Corporation, Mr. Malcolm P. Ferguson, The Bendix Corporation, Mr. Tom Knowles, Goodyear Aerospace Corporation, and Mr. J. S. McDonnell, McDonnell Aircraft Corporation, retired from the Association's Board of Governors. The Association is grateful for their many years of counsel and leadership which aided materially in the effectiveness of AIA activities.

Respectfully submitted,



Karl G. Harr, Jr.  
President

NATIONAL AEROSPACE STANDARD  
 AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC. 1725 DE SALES STREET N.W. WASHINGTON 6 D.C.



# AEROSPACE TECHNICAL COUNCIL



*The application of advanced technology and management expertise to complex defense, space exploration and aircraft systems is the governing characteristic of the aerospace industry. This is reflected in the Aerospace Technical Council, the industry's top level technical advisory body, through which broad technical and management problems, affecting both government and industry, are reviewed and solutions sought. In this role, the council is concerned with forward thinking, policy planning, trends and problems of technical management.*

*The council also is responsible for the overall management and guidance of 12 national technical committees. These committees involve more than 400 key industry people representing the various major research and engineering functions of the member companies.*



**FINN J. LARSEN\***  
*Honeywell Inc.*  
*Chairman, Aerospace  
Technical Council*

\*Resigned Nov. 30, 1965 to accept appointment as Deputy Director of Defense Research and Engineering.



**JAMES N. LEW**  
*Beech Aircraft  
Corporation*  
*Chairman, Airworthiness  
Requirements Division*



**B. D. HABER**  
*North American  
Aviation, Inc.*  
*Chairman, Technical  
Management Division*



**R. C. BLAYLOCK**  
*Ling-Temco-Vought, Inc.*  
*Chairman, Engineering  
Validation Division*



**I. G. HEDRICK**  
*Grumman Aircraft  
Engineering Corporation*  
*Chairman, Technical  
Specifications Division*

The Aerospace Technical Council is comprised of one member from each AIA member company drawn from senior corporate technical management. Responsibility for the operation of the council between its semi-annual meeting is vested in a 10-man Executive Committee.

Organizationally, the council functions through four divisions: Technical Management, Airworthiness Requirements, Technical Specifications and Engineering Validation. These divisions are manned by council members who manage and provide policy guidance to their subordinate committees which carry forward most of the projects.

Operationally, the activities of the council, its divisions and their committees, are similar. They are informed of government policies, procedures and actions which broadly affect the technical side of the industry; members are provided a forum to present and discuss problems of mutual concern; effective channels of communication are maintained with the customer and others to present the views of the industry, either in response to requests or on its own initiative.

This centrally managed technical organization, which succeeded the AIA Technical Service, completed its first year of operation in 1965. Results of this change are



**FRED C. SCHRODER**  
Bell Aerospace  
Corporation  
Chairman, Rotorcraft  
Airworthiness  
Requirements Committee



**J. C. LONELIUS**  
Douglas Aircraft  
Company, Inc.  
Chairman, Flight  
Testing Committee



**C. A. REMBLESKE**  
Beech Aircraft  
Corporation  
Chairman, Small  
Aircraft Airworthiness  
Requirements Committee



**D. F. WRIGHT**  
General Motors  
Corporation  
Allison Division  
Chairman, Maintainability  
Committee



**FRITZ C. SHADLEY**  
Avco Corporation  
Chairman, Electronic  
Systems Committee



**BRYCE L. CARTER**  
The Boeing Company  
Chairman, Transport  
Airworthiness  
Requirements Committee



**W. T. SUMERLIN**  
McDonnell Aircraft  
Corporation  
Chairman, Reliability  
Committee



**EDWARD HARPOOTHIAN**  
Douglas Aircraft  
Company, Inc.  
Chairman, Materials  
and Structures Committee



**L. M. PERDUE**  
The Boeing Company  
Chairman, Environmental  
Testing Committee



**GEORGE W. JEFFS**  
North American  
Aviation, Inc.  
Chairman, Technical  
Contract Requirements  
Committee



**EDWARD L. WALL**  
McDonnell Aircraft  
Corporation  
Chairman, National  
Aerospace Standards  
Committee



**B. A. SCHMICKRATH**  
United Aircraft  
Corporation  
Pratt & Whitney  
Aircraft Division  
Chairman, Air-Breathing  
Propulsion Committee



**WILLIAM J. BRENNAN**  
North American  
Aviation, Inc.  
Rocketdyne Division  
Chairman, Rocket  
Propulsion Committee

## AIRWORTHINESS REQUIREMENTS DIVISION

ROTORCRAFT, SMALL AIRCRAFT AND TRANSPORT  
AIRWORTHINESS REQUIREMENTS COMMITTEES  
FAA Procedural Regulations  
Airworthiness Regulations Review  
Equipment Standards  
International Airworthiness Regulations  
Acceptable Means of Compliance  
SST Airworthiness Regulations

## ENGINEERING VALIDATION DIVISION

### ENVIRONMENTAL TESTING COMMITTEE

Testing Specifications  
Procedural Standardization  
Facilities Standardization  
Methodology Standardization  
Procedural Effectiveness

### FLIGHT TESTING COMMITTEE

Flight Testing Specifications, Effectiveness and  
Safety  
Telemetry Systems  
FAA Flight Testing Regulations

### MAINTAINABILITY AND RELIABILITY COMMITTEES

Quantitative Requirements  
Analytical Techniques  
Engineering Design Aspects  
Evaluation  
Demonstration Plan  
Experimental Techniques

## TECHNICAL MANAGEMENT DIVISION

### TECHNICAL CONTRACT REQUIREMENTS COMMITTEE

Systems Management  
Program Management  
Configuration Management  
Data Management  
Systems Engineering  
Drawing Requirements

## TECHNICAL SPECIFICATIONS DIVISION

### AIR-BREATHING PROPULSION COMMITTEE

Design Requirements  
Specification Development  
FAA Advisory Circulars and Regulations Review  
Components, Fuel and Lubricants  
Utility Parts Standardization

### ELECTRONIC SYSTEMS COMMITTEE

Government-Industry Uniformity Program  
Electromagnetic Compatibility  
Microelectronics  
Non-Standard Parts Approval  
Electronic Parts Specification Management

### MATERIALS AND STRUCTURES COMMITTEE

Structures Design Criteria, Reliability and Fatigue  
Welding and Casting Requirements  
Materials Properties and Specifications

### NATIONAL AEROSPACE STANDARDS COMMITTEE

National Aerospace Standards  
Military Standards and Specifications  
Aerospace Standards Liaison

### ROCKET PROPULSION COMMITTEE

Design Requirements  
Liquid Propellants  
Solid Propellants  
Specification Review  
Utility Parts Standardization



reflected in subsequent reports on the activities of each division and committee.

The council conducted considerable activity to improve the industry-government relationship as it affects technical management. Particularly noteworthy was a series of meetings held with senior technical management counterparts in the Department of Defense and the National Aeronautics and Space Administration which provided opportunity for exchanges of viewpoints on new or revised policies while they were still in the planning stage. Typical were subjects such as contract definition, phased procurement planning, configuration management, unsolicited proposals, and levels of effort and policies related to research programs.

Another program of the council in 1965 was a study of the impact on industry of the many new management systems being developed by the government. The results of this study, which characterized this collective problem as probably the single greatest operational problem currently facing the industry, are manifold throughout AIA. Efforts resulting from this study are expected to be one of the major activities of the council in 1966.

There also was considerable joint activity with the council's fiscal, legal and contractual counterparts on other AIA committees in support of preparation of industry positions on such subjects as Cost and Economic Information System, Contractor Independent Technical Effort, contract audit manual provisions relating to special facilities, and conflict of interests.

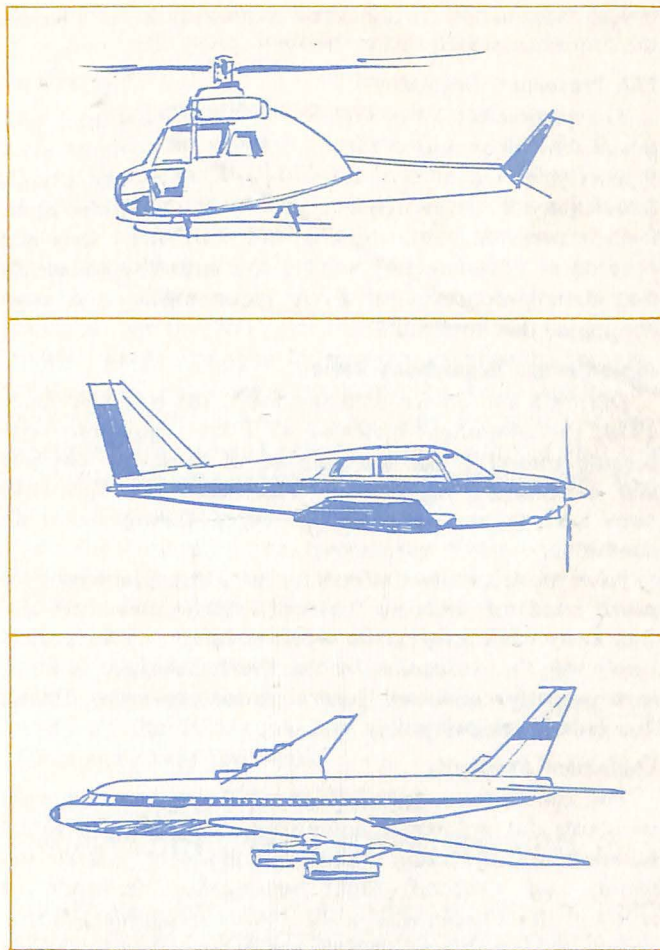
Pending legislative bills on high-speed ground transportation and a metric system conversion study were also reviewed and industry positions submitted.

## AIRWORTHINESS REQUIREMENTS DIVISION

The Airworthiness Requirements Division coordinates and presents the industry's views on civil aircraft airworthiness requirements matters. Operating through three committees representing manufacturers of rotorcraft, small airplanes and transports, the division maintains close liaison with government agencies involved in the operation and certification of civil aircraft.

The division in 1965 established policy level communication channels with the Federal Aviation Agency. Topics explored were resumption of comprehensive, periodic reviews of the respective airworthiness standards for different types of aircraft; development of new standards for emerging types of aircraft such as the business jet category, vertical take-off and landing and the supersonic transport; the status of agreements with foreign countries for reciprocal certification of U. S. aircraft abroad; levels of safety required of both original aircraft manufacturers and aircraft modifiers; and improved procedures of coordination between the manufacturers and FAA.

In subsequent working sessions, an advisory group composed of equipment "user" organizations including the Air Transport Association, Aircraft Owners and Pilots Association, the National Business Aircraft Association and AIA was established. This advisory group, headed by the FAA, will evaluate the need to develop particular equipment minimum performance standards and, after



determining that a standard is necessary, assign to a professional society the drafting of a standard.

Another result of these discussions was a request that the division advise a newly established FAA committee which will review the basic principles and concepts underlying the present FAA airworthiness standards. This study, which will be completed during 1966, will allow the industry to recommend improvements or changes to the existing basic airworthiness doctrine or recommend development of a new doctrine.

In support of the council's review of the relationship with the Society of Automotive Engineers, the division also established a management group to review the work of those SAE committees developing aeronautical standards and aeronautical recommended practices which are related to civil aircraft airworthiness. This group informs the SAE of those standards that the aircraft manufacturers consider should or should not be developed. This coordination ensures development of standards which can be used with the knowledge that any equipment procured would meet the applicable FAA technical standard order or the minimum performance standards.

## ROTORCRAFT AIRWORTHINESS REQUIREMENTS COMMITTEE

The Rotorcraft Airworthiness Requirements Committee prepares and presents industry views on common civil airworthiness matters concerning the design certification and use of rotorcraft. During 1965, the committee fur-

nished information on thirty FAA projects in addition to the projects assigned by the division.

#### **FAA Procedural Regulations**

The project on FAA type certification delegation proposals was a committee effort to reduce the costs of FAA type certification of civil rotorcraft. Prior to the change in rules, the FAA participated in the manufacturers' certification program, requiring duplication of many tests and procedures. Manufacturers have the authority to certify that their products meet FAA requirements, and have eliminated this duplication.

#### **Airworthiness Regulations Review**

During a conference with the FAA, the first held since 1959, the committee reviewed all FAA regulations concerning rotorcraft for the purpose of removing obsolete and unnecessary regulations. Subsequent meetings have been held to resolve problems raised during the main conference.

As a result of the conference, the FAA prepared proposed regulatory changes that will lead to lower certification costs while raising the level of safety. A secondary result was the realization by the FAA that there is merit in a properly conducted general review, reversing FAA's "no general review" policy.

#### **Equipment Standards**

The committee supplied FAA with comments on eight standards for rotorcraft equipment, including individual flotation devices, radio altimeter equipment, smoke detectors and rotorcraft flight instruments. Inclusion of many of these comments in the FAA's standards will materially reduce the cost of such equipment while increasing the overall level of safety.

#### **International Airworthiness Regulations**

At the request of the Interagency Group on International Aviation, the committee helped to formulate the government's position regarding proposed International Civil Aviation Organization regulations. The government was urged to work in establishing international contingency power ratings for helicopters.

#### **Acceptable Means of Compliance**

In order for a manufacturer to show compliance with detailed, subjective FAA airworthiness requirements, the agency issues non-regulatory advisory circulars explaining presently acceptable methods of compliance. Through an informal preliminary review of a number of advisory circulars, the committee provided the FAA with current technical information needed to develop workable documents. A typical example is the method of meeting FAA's structural reliability requirements. In order to show compliance, each company had to establish, with FAA, an individual program. The promulgation of a common acceptable means of compliance will eliminate this time consuming requirement. In addition, newer concepts, such as the fail-safe principle, have been introduced in rotorcraft certification procedures.

#### **SMALL AIRCRAFT AIRWORTHINESS REQUIREMENTS COMMITTEE**

The Small Aircraft Airworthiness Requirements Committee prepares and presents industry views on common civil airworthiness matters concerning the design, certifica-

tion and use of small airplanes. The committee presented information on eighteen FAA projects in addition to projects assigned by the division.

#### **FAA Procedural Regulations**

The committee aided in reducing the costs of FAA type certification of small airplanes by assisting in changing existing requirements to give more reliance to the manufacturers' certification. This eliminated redundant testing.

#### **Airworthiness Regulations Review**

The committee reviewed, with the FAA, regulations concerning small airplanes to update and remove obsolete and unnecessary regulations. Continuing efforts are being made to resolve problems raised at the conference.

#### **Acceptable Means of Compliance**

In order for a manufacturer to show compliance with detailed, subjective airworthiness requirements, the FAA issues non-regulatory advisory circulars explaining presently acceptable methods of compliance. Through a review of advisory circulars, industry has provided FAA with technical information needed to develop workable documents. An example is the development of an advisory circular setting forth a procedure to allow the use of non-self-exciting alternators in a manner that meets FAA electrical system requirements. Previously, each company desiring to use such devices had to develop, with the FAA, a compliance program or use conventional generators to meet the requirements.

#### **Aircraft Airworthiness**

Typical of the continuing committee efforts to improve the airworthiness requirements through upgrading, yet allow control of design parameters to remain with the manufacturer, is its development with the FAA of new rationalized speed spread criteria. Such criteria will materially improve airplane performance and safety.

#### **International Airworthiness Regulations**

Recognizing the importance of small airplanes in international commercial and private use, the International Civil Aviation Organization has proposed that some international airworthiness and operating standards be established for these airplanes. The committee, through the FAA, assisted in developing the government's position.

#### **TRANSPORT AIRWORTHINESS REQUIREMENTS COMMITTEE**

The Transport Airworthiness Requirements Committee is responsible for formulating and presenting industry views on common civil airworthiness involved in the design, certification and use of transport aircraft. In addition to projects assigned by the division, at FAA's request, the committee has assisted with 45 FAA projects.

#### **Procedural Regulations**

The most important of the 4 procedural regulations reviewed at FAA's request involved proposed changes to the rule now prohibiting a manufacturer from performing maintenance without obtaining a repair station permit and maintaining separate facilities. The committee pointed out that dropping the repair station certificate requirements would bring advantages to the FAA and the manufacturer in the form of reduced inspection and paper work, while ensuring the highest level of safety.

### Airworthiness Regulations

In addition to approximately 65 proposed changes to the present airworthiness regulations that were developed by the committee in preparation for a general airworthiness review to be held in 1966, the committee reviewed and recommended changes to five major FAA proposed airworthiness requirements. An example is the industry recommendation on flight recorder installation requirements, which were adopted and will produce greater reliability of the instrument and lower installation and maintenance costs.

### Equipment Standards

The committee commented on fourteen FAA equipment standards proposals (technical standard orders). Typical examples are proposed standards for emergency flotation devices, megaphones, inertial navigation systems, radio altimeter equipment, oxygen regulators, air turbine starters, smoke detectors, automatic altitude reporting encoding equipment and oxygen equipment. Committee activities on these highly diversified subjects have led, in some cases, to withdrawal of the FAA proposal and, in others, to revisions incorporating the committee's comment. Lower costs resulted.

### Acceptable Means of Compliance

In order for a manufacturer to show compliance with FAA detailed subjective airworthiness requirements, the FAA issues non-regulatory advisory circulars explaining presently acceptable methods of compliance. Through informal preliminary review of over ten advisory circulars, the committee provided the FAA with current technical information needed to develop workable documents. Joint development of the circulars eliminates the need for each company to develop, with the FAA, an acceptable method for showing regulation compliance. Typical efforts

involved development of installation standards for Category II equipment, cabin interior lighting measurement and replacement of radio equipment.

### SST Airworthiness and Performance Standards Review

A special AIA project group met with the FAA, Air Transport Association, NASA and others, to develop airworthiness and performance standards for the supersonic transport. While the positions presented and agreed upon at these meetings are of an interim nature, it is believed that by participating in the formulation of airworthiness standards for the SST, the manufacturers can avoid last minute design changes in meeting certification requirements. Two meetings a year will be held through the summer of 1969. FAA 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

At the request of the Interagency Group on International Aviation, the committee helped in the formulation of the government's position regarding proposed International Civil Aviation Organization regulations and procedures. Typical of the committee's activities, which were incorporated into the final U. S. position, were the comments on the ICAO accident investigation manual and ICAO equipment standards.

## ENGINEERING VALIDATION DIVISION

The Engineering Validation Division provides policy guidance in four specialized technical areas of flight testing, environmental testing, reliability, and maintainability. The division is an authoritative source for obtaining, coordinating, and presenting industry views on problems



which develop in relations with the customer and regulatory agencies. The scope of activity is limited to management of technological efforts as opposed to the solution of purely technical problems.

The division's four committees, which are composed of a limited number of members, are supported by corresponding representatives from other member companies. The committees work toward the resolution of interface problems related to the regulations, policies, and specifications of the government agencies and customer.

This organization of a division with limited membership committees represented an experiment of the ATC with an organizational concept which is considered more appropriate for specialized technical areas of interest. The division is responsible for assuring that all member company views receive full consideration by providing for participation from corresponding members, and exercising review and approval authority over project activity of the committees. Operational experience gained during 1965 indicates that this concept is worthwhile and effective.

#### **ENVIRONMENTAL TESTING COMMITTEE**

The Environmental Testing Committee is responsible for the effectiveness of environmental tests, and is concerned with standardization and coordination of environmental test procedures, facilities, and methodology.

##### **Military Testing Specifications**

The major effort in 1965 was devoted to responding to military requests for review of tri-service test procedures for laboratory simulation of operational environments of electronic components. The committee reviewed salt spray tests, random vibration tests, and cleaning solvent tests. Significant comments were generated to help formulate more realistic requirements, which adequately simulate the operational environment at reasonable cost levels.

A principal effort underway at the end of 1965 was a review of the basic military standard which specifies environmental test procedures for systems and subsystems.

##### **Development of Standard Testing Procedures**

The committee found a need for development of standardized test procedures to simulate the environment which produces stress corrosion in metals, and was successful in arranging for the development of a standard test procedure by the American Society for Testing and Materials. It also sought development of standard thermal-vacuum test specifications for spacecraft projects and is currently arranging for such a procedure to be developed.

#### **FLIGHT TESTING COMMITTEE**

The Flight Testing Committee is responsible for representing the industry regarding the safety and effectiveness of flight testing associated with aircraft, missiles and space systems, flight testing programs and procedures, flight testing areas and facilities, telemetry systems and test ranges.

##### **Telemetry Systems**

A major effort of the committee in 1965 was the review of proposed revisions to the DoD standards for flight test telemetry systems. It worked very closely with the technical working group of the inter-range instrumentation group, Department of Defense range commanders council, in a general revision to the standards for tape recorders, frequency division multiplexing systems, and time division

multiplexing systems. Committee effort on this project was directed toward providing more effective airborne telemetry systems, and compatibility of instrumentation systems at the government's test ranges.

#### **FAA Rules and Policy Documents**

The committee's comments on several FAA documents involved with rules on operation of aircraft resulted in decisions which are helpful in the conduct of airplane testing programs. One proposed rule would have seriously limited the areas for flight testing.

#### **Military Flight Test Specifications**

Other committee efforts in 1965 involved the review of a proposed revision to the Navy's basic specification for the demonstration program for new airplanes, and a review of the USAF specification on flight tests for airplane strength and rigidity. These projects are being continued.

#### **MAINTAINABILITY COMMITTEE**

The Maintainability Committee is concerned with the engineering design aspects of maintainability and the specification of quantitative maintainability requirements, and is responsible for analytical techniques employed to achieve and evaluate maintainability and the plan for assuring and demonstrating maintainability statistics.

A joint review, with the Reliability Committee, of the USAF reliability and maintainability guide and the standard on terms for effectiveness was accomplished by the committee. A major effort of the committee was the review of proposed new tri-service military standards covering the requirements of the program plan for maintainability and the methods for demonstrating achieved maintainability.

##### **Maintainability Program Plan**

The implementation of a military tri-service standard defining the requirements for a maintainability program plan was encouraged because of the conviction that a well managed maintainability program, during the development phase, will reduce long-run costs by substantially reducing operational costs and improving system effectiveness. The military services were urged to recognize and fund the required additional costs of implementing the maintainability program during development.

##### **Demonstration of Maintainability**

The committee's review of the proposed standard on demonstration procedures pointed out that demonstration procedures specified are most applicable to electronic systems, and urged that the maintainability demonstration program be integrated with the overall test program. A continuing effort is underway to recommend methods applicable to large dynamic mechanical systems.

#### **RELIABILITY COMMITTEE**

The Reliability Committee is engaged in the technical aspects of reliability and the specification of quantitative reliability requirements. The committee is concerned with analytical and experimental techniques employed to achieve and evaluate reliability and the plan for assuring and demonstrating reliability figures of merit.

##### **Reliability and Maintainability Guide**

In coordination with the Maintainability Committee, a reliability and maintainability guide designed for use by

the USAF Systems Project Offices in the management of system engineering and development was reviewed by this committee. Changes and additions were suggested so that optimum direction and control of contractual reliability and maintainability would be assured, reliability and maintainability would receive appropriate consideration early in the engineering design, design prerogatives of the contractor would be retained, and the current disciplines of reliability and maintainability would be held in proper perspective to industry needs.

#### Definition of Terms for Reliability

The committee, in conjunction with the Maintainability Committee, reviewed a proposed new standard for definition of terms for effectiveness and proposed that the standard be significantly improved before being published, citing the lack of many significant effectiveness terms. Additional terms are being identified and defined for use on this project.

#### Demonstration of Reliability

Major projects were established for the investigation and documentation of acceptable alternate techniques and methods for measuring and demonstrating the achievement of quantitative reliability requirements for air-breathing propulsion systems, liquid rocket propulsion systems, solid rocket propulsion systems, structures, and electronic systems. Successful completion of these projects in 1966 will provide the industry with acceptable methods to permit compliance with the complete spectrum of contractual reliability requirements.

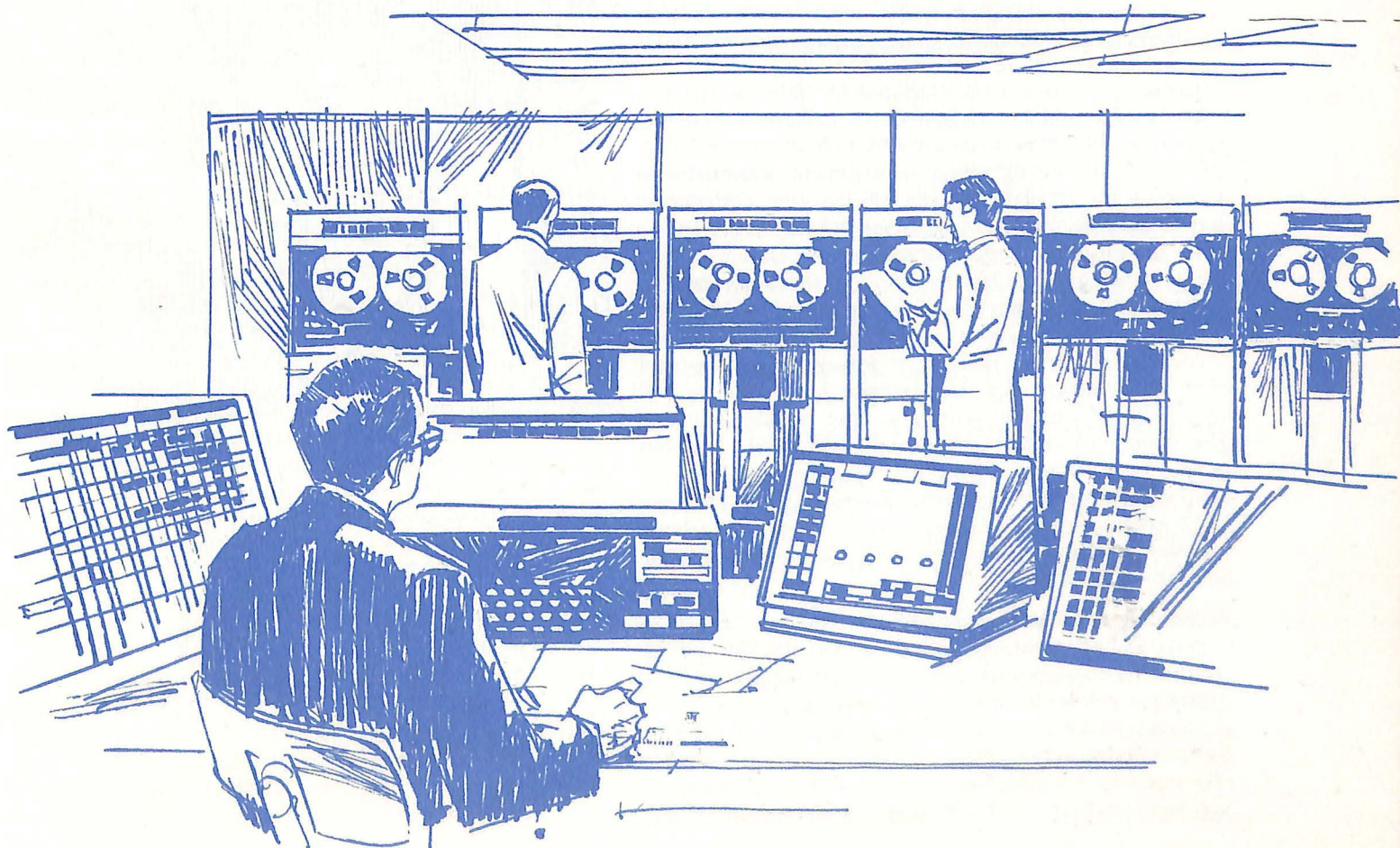
## TECHNICAL MANAGEMENT DIVISION

The Technical Management Division represents the industry on policy making activities of customer and regulatory agencies which have impact on technical management. The division also directs the activities of the Technical Contract Requirements Committee where the detail review of these policies and of government management systems is accomplished.

The division in 1965 was responsible for developing the items discussed in the meetings with the DoD and NASA senior technical management counterparts of the Aerospace Technical Council. These discussions, in addition to improving government-industry relations, included an exchange of viewpoints on new and revised policies. The division officers also participated in these meetings.

The division conducted a study involving government agencies and the procedures they are developing within the scope of systems management. The report, for the first time, identified each of the activities, their relationships and sometimes conflicting philosophies, and identified the principal offices involved and the major projects in work in DoD in the offices of the Director of Research and Engineering, the Assistant Secretary for Installations and Logistics, the Comptroller, the Army, Navy, USAF and NASA.

The meetings with DoD and NASA senior technical management personnel and a continuing emphasis to reduce the collective impact of government management systems on the industry will be the major activities for the division during the next year.



## TECHNICAL CONTRACT REQUIREMENTS COMMITTEE

The Technical Contract Requirements Committee works in the areas of systems management, systems engineering, configuration management, technical data requirements, drafting practices and other contractual requirements dealing with technical and program management.

### Systems Management

An area having a major impact on the industry is systems management which involves the techniques and management tools used in directing and controlling the total program life cycle of an aerospace product. The committee in 1965 cooperated with the Army, Navy, USAF, Office of the Secretary of Defense and NASA in reviewing the development of these techniques and management tools. Efforts of the committee supported the council's work in this area by identifying the specific government offices involved and their activities.

The committee also supports other committees by providing technical and program management viewpoints on such subjects as the Cost and Economic Information System (now Cost Information Reports), warranties, pricing of line items of data, engineering data retrieval system and NASA quality requirements.

### Configuration Management

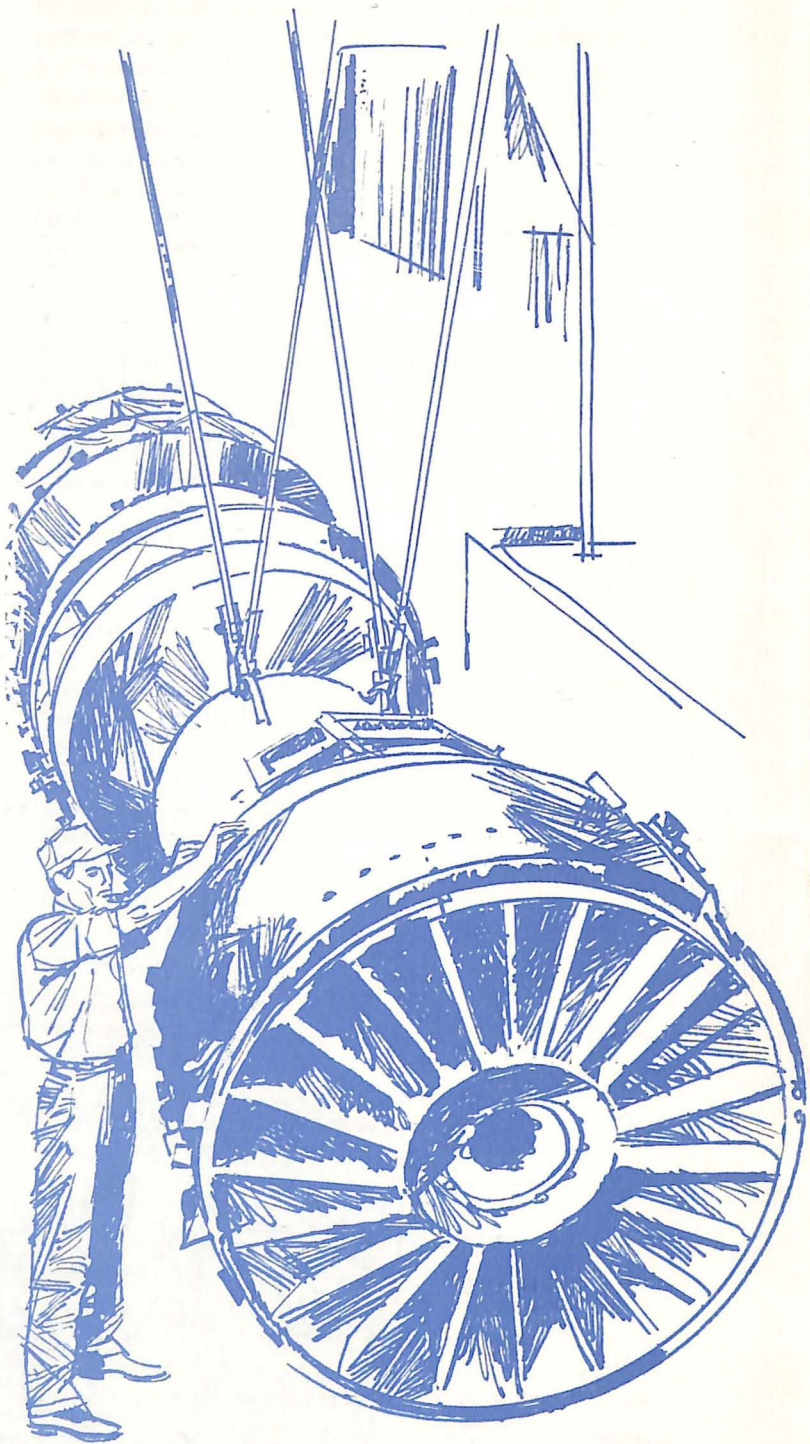
The Army and the USAF published configuration management documents in 1965 and the committee worked with both services and is continuing to provide information and comments to improve the effectiveness of the documents. An example is the interface systems proposal developed by the committee with the Air Force Systems Command. This proposal integrates the evolutionary development of interface definition, and its administrative control, into the existing systems of configuration management and systems engineering.

The committee worked with NASA in a study of a uniform agency-wide configuration management system. As part of this study, a review of the Apollo program requirements for configuration management was made to determine the effectiveness and efficiency of that system and of possible utilization on other NASA programs. In order to reduce the cost of future implementation, a joint effort is being made by NASA and the committee to minimize the differences between the various government management systems covering configuration management.

A major effort was initiated to follow the development of a DoD configuration management system which will eventually replace the systems of the military services. The committee is working directly with DoD and has provided information on the experience of industry with existing configuration management systems. The proposed DoD system is currently being reviewed by a Defense Industry Advisory Council working group with the assistance of the committee.

### Engineering Drawings

DoD published two major documents in 1965 dealing with engineering drawing preparation and acquisition. The committee provided comments on these documents and is working with DoD to improve their effectiveness for both the government and industry. An example of the contribution made by the committee is the standard identification numbering system. The proposed system provides a uni-



form method of hardware identification and is being considered by both DoD and NASA.

#### **Systems Engineering**

The committee worked with the Air Force Systems Command in formalizing systems engineering management procedures. Comments on the procedures resulted in significant changes being made in the statement of policy which governs their implementation. These changes will assure the contract application of the requirements.

#### **Data Management**

The committee supported the activities preceding and during the AIA/Air Force Data Management Symposium. Several committee members served as panelists at the symposium and presented papers, while other members served as panel coordinators.

In cooperation with other AIA committees, a project to follow up the recommendations of the symposium is planned to insure timely implementation of the many significant recommendations.

### **TECHNICAL SPECIFICATIONS DIVISION**

This division has broad policy responsibility for standardization management in the industry. The members provide policy direction to five system-oriented committees on rocket propulsion, airbreathing propulsion, materials and structures, electronics and standards.

A major division effort during 1965 was conduct of a study of the relationship between AIA and the Aerospace Council of the Society of Automotive Engineers. The study included new procedures for the SAE budget review and allocation of support among AIA member companies. Interim recommendations resulting from this study were made to the AIA Board of Governors and completion of this effort is expected in 1966.

Another important activity during the year concerned the need for centralized management of aerospace standardization activities. This resulted in approval of an *ad hoc* study which will explore the need for coordination among the many national groups, in addition to AIA and SAE, that create standards for use by the aerospace industry; the possible effect on the industry of top level government consideration of ASA as a central coordinating agency for all American standards; problems with and an increase in the importance of international standardization; the effect of increased effort by DoD and NASA directed to resolutions of standardization problems; and improvements needed in the industry-government interface with these agencies. The purpose of this study will be to seek simplification and improvement of this industry-government relationship and the overall value and usability of standards for the industry.

The division has urged each of its committees to promote improvement in coordination with the government of standards and specifications within its scope, and to emphasize the resolution of basic philosophical differences prior to undertaking review of extensive detail requirements. This has produced better government-industry understanding and teamwork, and minimized unproductive efforts. The division will continue these efforts in 1966 to improve industry's role in standardization management for the maximum benefit of aerospace programs.

### **AIR-BREATHING PROPULSION COMMITTEE**

The Air-Breathing Propulsion Committee develops, coordinates and reviews proposed military specifications and requirements and the Federal Aviation Agency and Civil Aeronautics Board regulations governing the design, installation and demonstration of air-breathing propulsion systems, components and fuel. The committee also evaluates design requirements which involve functions assigned to committees of the Engineering Validation Division.

#### **Design Requirements and Specification Development**

A project group was formed to develop a specification, to be completed in 1966, for lift engines for vertical take-off and landing (VTOL) aircraft. Although there is much development activity in this area, no specifications now exist. This draft specification will be presented to the military for multi-service coordination.

#### **Specification Review**

A review of the proposed revision of the military specifications for turbojet and turbofan engines was conducted in 1965. This was the first opportunity in five years for industry to review a specification before its approval and release by the military. The high order of effectiveness of this review, due in part to joint participation by both airframe and engine developers, helped promote much better understanding between industry and the military services, and a new pattern has been established for major specification review. The military services have approved the specifications.

#### **FAA Advisory Circular Review**

A project group and members of the FAA Propulsion Branch made a detailed review of proposed advisory circulars on foreign object (bird) ingestion and type certification procedures. Acting on the suggestions of the project group, FAA will modify these two circulars before release. A review has been completed of two chapters of a proposed advisory handbook for engine certification and comments supplied to FAA. Comments were supplied to FAA on proposed changes to the ICAO Accident Investigation Handbook.

#### **Special Projects**

A project group is working to develop standards for the definition and measurement of the exhaust smoke from turbine engines. This project, undertaken at the request of the Navy, as a result of problems encountered in fleet operations, is also of interest to commercial operators.

#### **Component Specification Review**

At the request of the Aeronautical Standards Group, a review has been made of nine proposed revisions to military specifications and standards. The time allowed for such reviews normally is limited to from forty-five to sixty days, which in the past has caused some difficulty. The new organization has proven its value in the expeditious handling of these requests to meet the deadlines.

#### **Joint Activities**

In addition, the Air-Breathing Propulsion Committee, jointly with the Rocket Propulsion Committee, has carried on two projects. One reviewed the revisions to the Bulletin of Specifications and Standards applicable to aircraft engines and propellers with the Aeronautical Standards Group and the military. The other has provided management guidance to the SAE committees concerned with standardization of propulsion equipment. This group has

been effective in reducing the time required for approved standardization of utility parts.

#### **ELECTRONIC SYSTEMS COMMITTEE**

The Electronic Systems Committee formulates, coordinates and reviews specifications and requirements for electronic systems, and electronic equipment and components from a systems viewpoint. The bulk of activities is carried on through project groups, with the committee's views providing policy, direction and approval of each project group's activity.

#### **Improved Government-Industry Relationship**

Major improvements in government-industry relationships and cost effectiveness of coordination has resulted from the joint Government-Industry Uniformity (Design) Program, and AIA-USAF-Navy-Aeronautical Standards Group annual updating of airborne electronic equipment design requirements. These programs bring the total of government-industry resources to bear on mutual problems, rather than dissipating these in competing and uncoordinated programs. The success of these programs was responsible for initiation of an electromagnetic compatibility program along similar lines.

#### **Design Requirements (Uniformity Program)**

A joint DoD-AIA-EIA program, started in 1960, resulted in the identification of eighty-four conflicting and duplicating design requirements in twelve basic electronic specifications. In a joint effort, approximately twenty-four of these requirements have been resolved into acceptable tri-service standards and an equal number are in the final coordination phase.

A committee survey indicated that annual savings of \$12 million can be achieved when the program is completed in 1968, and that \$3 million in savings have accrued and that another \$3 million will be realized in 1966 in a

single area by application of twenty-three standardized engineering practices in place of about 275 conflicting and duplicative requirements which previously formed the basis for operating procedures.

#### **Electromagnetic Compatibility**

A tri-service task group has been activated as a result of a joint AIA-EIA recommendation to update and standardize design requirements and test procedures used to determine levels of interference generated by electronic equipment, and the levels of interference which electronic equipment must be designed to tolerate without deterioration of its performance.

Terms and definitions received industry coordination in 1965 and a review of design requirements and test procedures is scheduled for early 1966. Test equipment standardization will reduce the number of instruments a contractor requires to run the test for the military services.

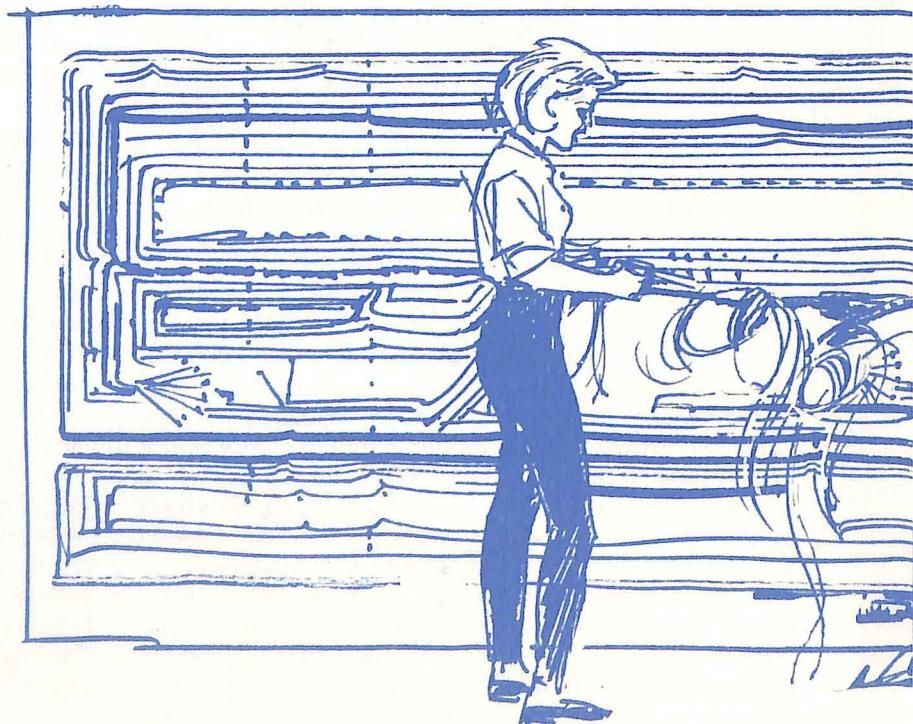
#### **Parts Specification Management**

Advanced electronic parts specifications are being developed by the military services, NASA agencies and prime contractors without adequate knowledge of progress of similar developments.

AIA has sponsored two government-industry discussions as a follow-on action to DoD-AIA and NASA-AIA Electronics Workshops. The Technical Specifications Division has approved a project to plan actions in cooperation with EIA and DoD to implement an effective joint government-industry parts specification management program. This is aimed at achieving a unified parts specification management program acceptable to NASA and the military services.

#### **Microelectronics**

The first committee recommendations on a proposal by the military on microelectronics terms and definitions resulted in an improved proposal and further efforts are planned for a more comprehensive standard.





A project was initiated in 1965 to represent systems manufacturers' needs for DoD-NASA-industry agreement on terms and definitions, standard test procedures, general specification for microelectronics devices, and applications guidelines. This will require close coordination with DoD concepts of engineering design, procurement and field support of systems incorporating microelectronics.

#### ESC-EIA Coordination

The committee interests in EIA activities were studied to determine the best means for achieving coordination and avoiding duplication. Coordination has been achieved by joint DoD-AIA-EIA uniformity programs in design and electromagnetic compatibility by bringing the total government-industry resources to bear on useful efforts, and minimizing redundant programs. In other areas, mutual AIA-EIA interest will be identified upon initiation of a project. The sponsor will be responsible for liaison with EIA to minimize duplication.

#### Electronic Requirements

The committee, for the twelfth successive year, assisted the USAF, Navy and the Aeronautical Standards Group with revisions of four main specifications for airborne electronic systems and test equipment. This reduces the cost of new contract proposals by eliminating the need for many deviations and development of special requirements necessitated by outdated specifications.

#### Specifications and Standards Coverage

Defense Electronics Supply Center requested a review of the present range of military specifications and standards coverage on electronic components, and recommendations on specific documents which require revision, cancellation or preparation to provide optimum coverage. Identified were military specification efforts having the greatest potential for simplifying and making more usable the overall electronic specification and standards system.

### MATERIALS AND STRUCTURES COMMITTEE

The Materials and Structures Committee determines that government and industry requirements for structural design criteria and materials are adequate and precise.

A major part of the committee's activities are carried out through *ad hoc* project groups. Policy, direction and final approval of work by the project groups is provided by the full committee. The committee also reviews requirements and makes recommendations to government agencies whose actions have a significant bearing on the committee's responsibilities.

#### New Materials

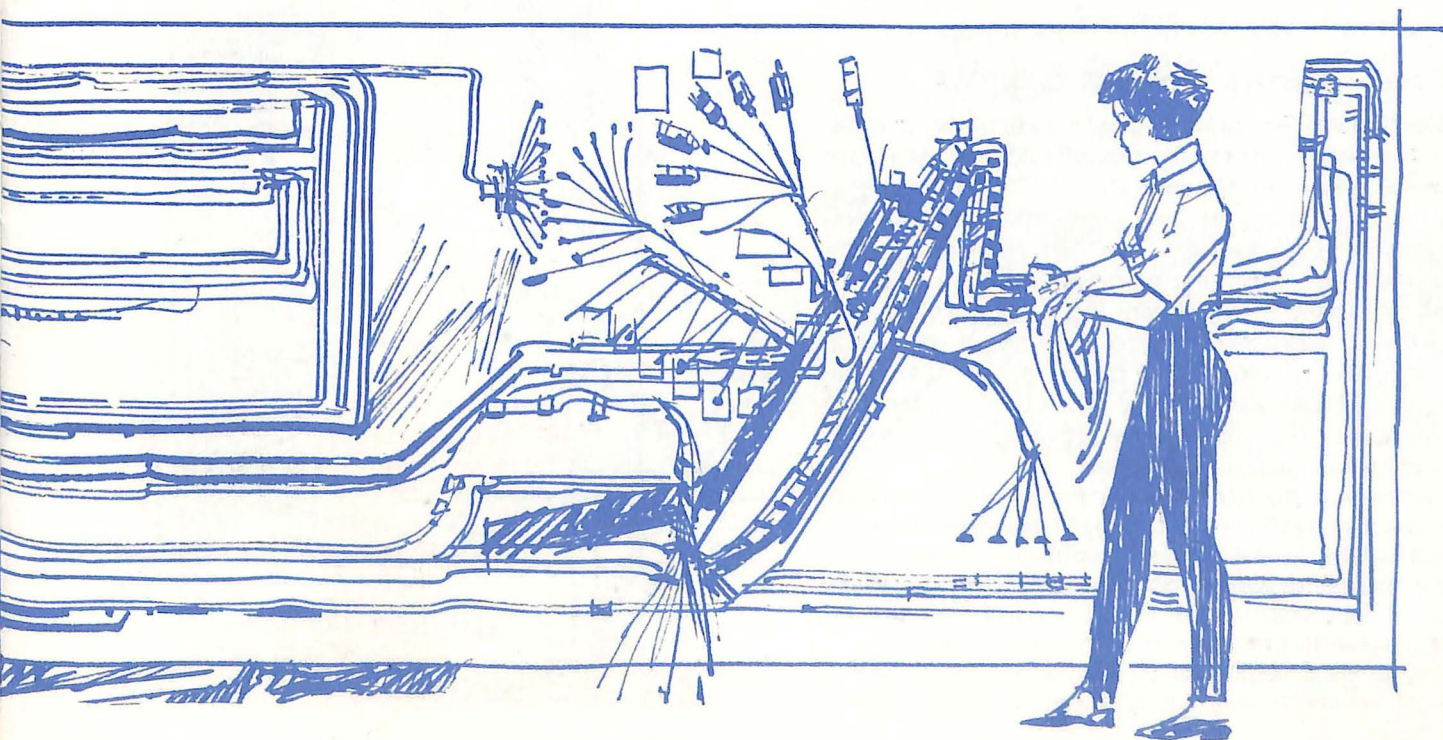
A cooperative test program among 9 companies has developed the mechanical properties of a new aluminum alloy which has improved resistance to stress corrosion and higher fracture toughness properties. The data obtained in the program are for the use of the military services for basic documents on design properties.

#### Structural Design Criteria

A joint project of the committee, the Air Force Flight Dynamics Laboratory and the Bureau of Naval Weapons was the initiation of a review of the military specifications series of documents on aircraft structural design criteria. Approximately twenty separate specifications will be revised.

Other projects of the committee cover design criteria for missiles, launch vehicles and spacecraft. Current company and government practices will be reviewed with the goal of establishing uniform criteria acceptable to industry, DoD and NASA.

Another effort in the field of design criteria is the review and assimilation of damage tolerance (fail-safe) techniques used in the design of commercial aircraft. Recommendations on these techniques will be made to government agencies.



### **Structural Reliability**

This project group seeks to determine design parameters which have an effect on the reliability of aerospace structures, since requirements by procuring agencies for demonstration of reliability are becoming more prevalent. Developments of this project are being coordinated with the Reliability Committee which has a complementary project covering demonstration and measurement methods.

### **Stress Corrosion of Aluminum Alloys**

Data on experiences with stress corrosion cracking of aluminum alloys have been collected by this project group, and published in a report issued by the Defense Metals Information Center, a DoD activity conducted by Battelle Memorial Institute.

The report lists those aluminum alloys associated with stress corrosion cracking in service and the major contributing sources of the stresses. Preventive techniques developed and recommendations for research are outlined in the report.

### **Review of Military Specifications**

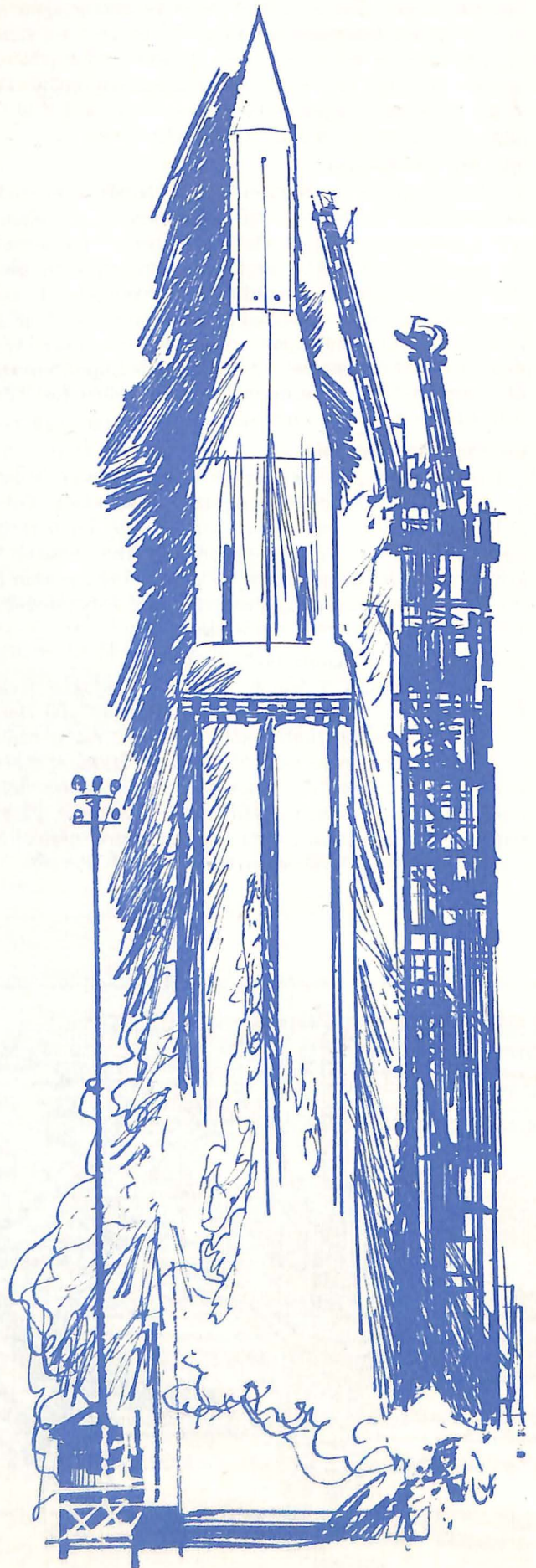
A continuing activity of the committee is the review of military specifications on structural materials. During 1965, recommendations have been submitted to the military services on specifications for aluminum, titanium and steel alloys, landing gear, radiographs for steel welds, heat treat and corrosion protection processes.

### **NATIONAL AEROSPACE STANDARDS COMMITTEE**

The National Aerospace Standards Committee develops, maintains and promotes the use of National Aerospace Standards which involve more than 1,200 internationally-used industry standards and specifications on fastener, electrical and other aerospace hardware, and makes recommendations on similar government parts documentation.

An arrangement, unique with NASC, is the direct participation of representatives from government agencies in the activities and meetings of the committee. They contribute considerably to technical discussions, the exchange of information on standardization activities, and the resolution of mutual standards problems. Currently, 17 representatives from the Army, USAF, Bureau of Naval Weapons, Aeronautical Standards Group, Defense Supply Agency and its centers, and NASA work with the committee.

The committee carries out its work through the assignment of individual projects to member companies that act as sponsors. The project may require the development of a new standard, revision of an existing one, or a compilation of comments and recommendations on government



standards and specifications. The sponsor's responsibility starts with the initiation of the standard, extends through the coordination of the proposed document with the committee and with representatives of interested agencies, includes the resolution of comments and recommendations, and finally concludes when the standard is issued or, in the case of government documents, when resolution of the submitted recommendations has been achieved. More than eighty standards documents were issued or revised in 1965 and approximately ninety government standards and specifications were reviewed.

#### **United States Standards Institute**

The committee endorsed the recommendations of a Department of Commerce special panel that primary responsibility for development of voluntary standards remain with appropriate trade associations and technical societies. Another recommendation that a United States Standards Institute be recognized and chartered by the Congress as the official U. S. representative in international standardization activities was also endorsed. A reconstituted and federally chartered American Standards Association was proposed for the new Standards Institute.

#### **Qualification Procedures**

At the request of the DoD Office of Standardization Policy, the committee submitted recommendations on specification qualification testing and the establishment of qualified products lists. The study indicated the usefulness to industry of the program and specific steps for improvement.

#### **Rivet Standardization**

DoD accepted a committee standard on blind rivets. The ever-increasing use of this standard by industry has resulted in a superior item at a considerable cost savings. The magnitude of savings is apparent since a single manufacturer may install as many as 70,000 rivets daily.

#### **Miniature Electrical Connectors**

Specifications and standards for a family of miniature electrical connectors for use on aerospace vehicles and associated ground support equipment have been developed. These connectors are resistant to environmental conditions of temperature and humidity, offer improved performance over existing connectors, and retain the ability to mate adequately with older connectors.

#### **ROCKET PROPULSION COMMITTEE**

The Rocket Propulsion Committee develops, coordinates and reviews proposed requirements and specifications

for rocket engines, propellants and their use. In addition, it is responsible for the appraisal of the design requirements which involve functions assigned to the committees of the Engineering Validation Division.

#### **Design Requirements**

In response to a request from the Air Force Rocket Propulsion Laboratory, the committee established a project to re-draft the existing military specifications for solid rocket motors. One of the results of this project will be a simplification of the existing specifications and a reduction in number from 5 to 2. It is desirable that this specification be coordinated with NASA as well as with the military services. A final review will be made of the liquid rocket specification which was prepared and submitted to the USAF in draft form. RPL proposes to coordinate this specification with NASA as well as the other two services.

#### **Liquid Propellants**

The liquid rocket propellant project group provided assistance to the USAF Rocket Propulsion Laboratory by reviewing existing or proposed propellant specifications and the formulation of specifications for new propellants. Six propellant specifications have been reviewed and comments have been supplied on five proposed specifications. This group is a primary source of technical information for the Liquid Rocket Propellant Information Manual which is published by the Chemical Propulsion Information Agency. Information on six propellants has been supplied. In addition, this group has provided advice on propellants to various NASA programs.

#### **Solid Propellants**

The solid propellant safety project group has supplied revisions to a USAF manual covering general safety provisions for solid propellant sample cutting and has studied the problems of propellant producers dealing with several agencies and their activities in industrial and explosive safety. This group has made a preliminary review of DoD draft documents for implementation of the "Water Pollution Control" and "Clean Air Acts."

#### **Specification Review and Standardization**

The committee participated jointly with the Air-Breathing Propulsion Committee in the review of joint military bulletins and standards and in the guidance of SAE committee activities. In addition to the continuing activity of the project groups, a review of the USAF proposed specification on propellant feed systems is being made by the committee.

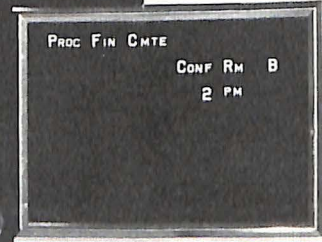
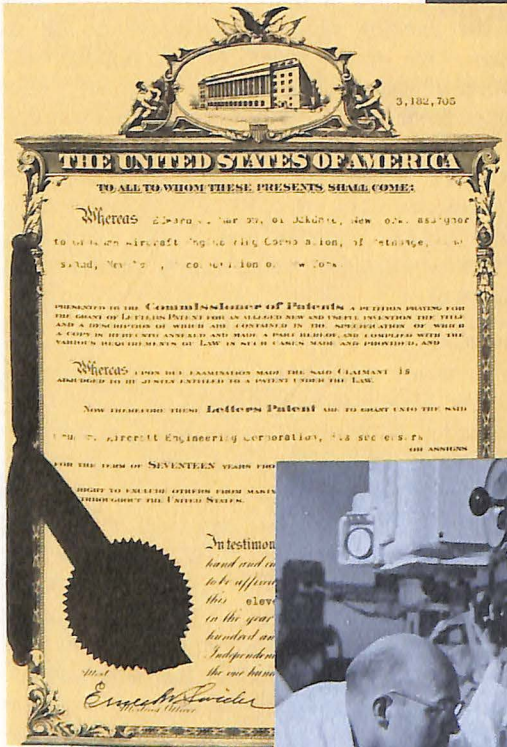
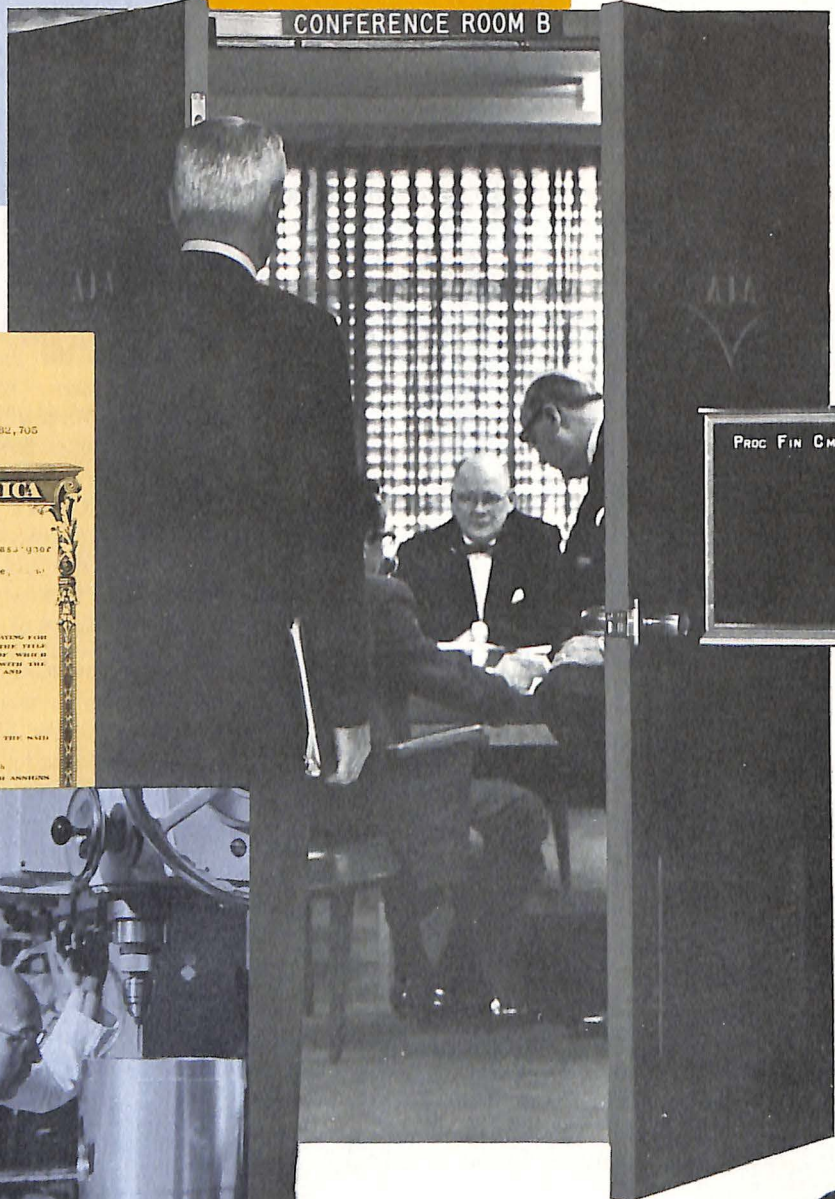
# NASA PROCUREMENT REGULATION



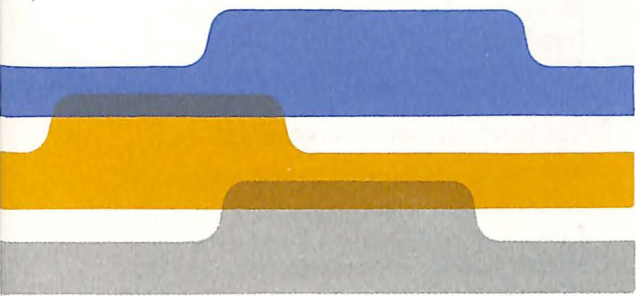
# ARMED SERVICES PROCUREMENT REGULATION



CONFERENCE ROOM B



# INDUSTRY PLANNING SERVICE



*The principal management functions of aerospace firms have their counterparts in the Industry Planning Service. These include the fields of finance, accounting, contract administration, legal matters, patents, industrial relations, industrial security, manufacturing, materiel management, procurement, quality assurance, government reporting and product support.*

*Operating through eleven major committees, this service provides a medium for the study of common matters and assists in the solution of government-industry problems. The committees maintain close liaison with government agencies, professional societies and other trade associations, and their efforts are augmented by task groups and panels of industry experts.*

Industry Planning Service in 1965 was engaged in numerous assignments in connection with the consideration of new or revised policies, regulations, laws, and specifications which affect the business activities of the industry. Examples of major accomplishments include:

A review of the revision of the section of the Armed Services Procurement Regulation on government property matters by a Facilities Policy Task Group which included the Procurement and Finance, Government Reports and Manufacturing Committees.

A study of the Cost and Economic Information System (now Cost Information Reports) by a joint task group including members of the Government Reports, Procurement and Finance, and Technical Contract Requirements Committees.

A review of a DoD report on contract support services and progressive recommendations by a task group which included representatives of the Product Support, Industrial Relations and Procurement and Finance Committees.

The Data Management Symposium, co-sponsored by the USAF and AIA, which involved the joint efforts of various industry members and AIA staff.

Industry Planning Service committees in 1965 worked with committees of other industrial associations in preparing industry recommendations for the Council of Defense and Space Industry Associations (CODSIA). The cases handled under CODSIA auspices were broadened considerably in 1965, and activities are reported by the individual committees.

## **GOVERNMENT REPORTS COMMITTEE**

The Government Reports Committee deals with reporting, financial and business management systems involved in the contractor-government relationship.

In 1965, government imposition of management and reporting systems covering increasingly broad areas gained momentum. The amalgamation of existing systems into integrated, correlated systems "packages" accounted for a major portion of the committee's work.

Committee activities included working with the Air Force Systems Command and other military organizations on their management information systems and data management systems; providing the Assistant Secretary of Defense (Comptroller) with specialized technical advice in the development of the Cost and Economic Information System (CEIS) and Selected Acquisition of Information for Management Systems (SAIMS); and working with NASA headquarters and centers in determining their financial information needs.

The committee continued its efforts in the areas of records management, military standard procedures, data processing and the reduction of paperwork. In keeping with the increasing tendency toward integrated manage-



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



RULON NAGELY  
North American  
Aviation, Inc.  
Chairman, Materiel  
Management Committee



P. B. PROCTOR  
Hughes Aircraft  
Company  
Chairman, Quality  
Assurance Committee



J. CURTIS COUNTS  
Douglas Aircraft  
Company, Inc.  
Chairman, Industrial  
Relations Committee



MELLOR A. GILL  
Grumman Aircraft  
Engineering Corporation  
Chairman, Patent  
Committee



HOWARD R. KENNEDY  
General Dynamics  
Corporation  
Convair Division  
Chairman, Service  
Publications Committee



JAMES A. DAVIS  
General Electric  
Company  
Chairman, Industrial  
Security Committee



JAMES T. ELLISON  
Martin Company  
Chairman, Procurement  
and Finance Committee



JOHN T. LEWIS  
United Aircraft  
Corporation  
Sikorsky Aircraft  
Division  
Chairman, Spare Parts  
Committee



JACK MANNION  
Northrop Norair  
Chairman, Manufacturing  
Committee



M. M. SIAR  
Ling-Temco-Vought, Inc.  
Chairman, Product  
Support Committee

#### GOVERNMENT REPORTS COMMITTEE

Financial Reporting  
Military Standard Procedures  
Progress and Cost Reporting  
Contractor Performance Evaluation  
Plant-wide Data Reporting  
Paperwork Reduction  
Data Management

#### INDUSTRIAL RELATIONS COMMITTEE

Personnel Practices  
Labor Relations  
Wages and Salaries  
Manpower Training and Development  
Employee Safety  
Unemployment Insurance

#### INDUSTRIAL SECURITY COMMITTEE

Protection of Classified Information  
Security Clearances  
Control of Areas  
Visitor Control Procedures  
Plant Protection  
Civil Defense

#### MANUFACTURING COMMITTEE

Maintenance of Processing Solutions  
Manufacturing Equipment Specifications  
Tool Holder Specifications  
Uniform Cutting Tests Specification  
Manufacturing Information Exchange  
Review of Specifications  
Air Pollution  
Manufacturing Equipment Panel  
Preservation and Packaging

#### MATERIEL MANAGEMENT COMMITTEE

Small Business  
Subcontract Management  
Make-or-Buy Policy  
Economic Assistance Program  
Subcontractor Performance Evaluation  
Procurement and Subcontracting  
Component Breakout  
Non-Termination Residual Inventory

#### PATENT COMMITTEE

Federal Patent Policy  
Government Patent Regulations  
NASA Patent and New Technology Clause  
Proprietary Rights in Technical Data

## PROCUREMENT & FINANCE COMMITTEE

- Contract Cost Principles
- Contractors' Weighted Average Share
- Government Property
- Warranties
- Special Projects
- COMSAT Regulations
- Contract Terminations
- Cost and Fund Limitations
- Incentive Contracts
- Indemnification
- Insurance
- Organizational Conflicts of Interest
- Procurement Statutes
- Renegotiation
- Rentals
- Independent Research and Development
- Taxation
- Data Management

## PRODUCT SUPPORT COMMITTEE

- Service Publications Committee
- Spare Parts Committee
- Training Panel
- Field Representative Support Panel
- Maintenance/Maintainability
- Aerospace Ground Equipment

## QUALITY ASSURANCE COMMITTEE

- Government Liaison Panels
- NASA Quality Requirements
- Duplicate Vendor Surveys
- Quality Systems Comparisons
- Calibration and Standards Studies
- USAF Spare Parts Quality Audit
- Non-Conforming Materials
- Quality in Numerical Manufacturing
- Specification Changes

## SERVICE PUBLICATIONS COMMITTEE

- Requirements for Military Manuals
- Standardization of Manual Specifications
- Manual Printing and Distribution Practices
- Army Writing Guides
- Navy/USAF Aircraft Maintenance Manuals
- Aircraft, Missile and Space Systems Manuals
- ATA Specification Coordination
- NASA Technical Manual Application
- Cost Saving Techniques
- Operating and Maintenance Data Retrieval

## SPARE PARTS COMMITTEE

- Provisioning Documentation Requirements
- Provisioning Policies and Procedures
- Federal Cataloging and Data Screening
- Spare Parts Replenishment Practices
- Contractor Support Procedures

ment and reporting systems, the committee adopted a project-type organization to increase committee effectiveness and to insure that maximum emphasis is placed on the matters of greatest impact to member companies.

### Cost Information Reports (CIR)

The committee worked with the Council of Defense and Space Industry Associations (CODSIA) on the Cost and Economic Information System (CEIS), the predecessor of CIR. As a result of information provided by the committee, DoD made substantial revisions toward simplifying its requirements and restricting its application. The revised system was released for industry's comments late in 1965, and completion of the committee's initial review is anticipated early in 1966. CIR is included in the Selected Acquisition of Information for Management Systems (SAIMS), on which work will continue.

### Military Management and Reporting Systems

The USAF has under development a management information system and a cost information system resulting from several years' intensive effort, and the other military services are in the process of developing similar systems. The committee has been particularly active in working with AFSC in the translation of the Contractor Financial Requirement Estimate into systems being developed. It is an objective of the committee that all of these systems be made compatible with each other and those under development at DoD. Progress was made toward this objective in 1965, and the committee will increase its efforts in 1966.

### NASA Management and Reporting Systems

The committee has worked actively with NASA in the development of its management systems so that NASA's unique needs will be served and its management systems will be generally compatible with those of DoD and the military services. As a result of the committee's efforts, the Financial Management Reporting System (FMRS) and its related manuals are being developed to replace the existing system. With continued committee advice, it is anticipated that requirements for contractors will be substantially reduced and that general compatibility with DoD systems will be achieved. The committee is working with both NASA headquarters and the Office of the Secretary of Defense on the systems.

### Military Standard Procedures

The committee continued in 1965 to cooperate with DoD in developing codes to describe business transactions, particularly for use in computerized and centralized contract administration. The committee assisted in developing a revised Material Inspection and Receiving Report which will become effective July 1, 1966. Efforts on related military standard procedures are expected to continue during 1966.

### Other Activities

Other committee efforts included:

*Records Management:* Significant progress was made in reducing government record retention requirements. An *ad hoc* committee report, which included industry recommendations, was forwarded to DoD for implementation, and revised record retention requirements are being incorporated into ASPR. The committee is cooperating with the Procurement and Finance Committee.

*Data Processing:* The committee continued to study the government's application of automatic data processing techniques to business transactions so that compatibility with contractors' business practices will be achieved.

*Reduction of Paperwork:* The committee continued to cooperate with the Bureau of the Budget in its efforts to contain, restrict and reduce paperwork requirements placed on industry by the government.

*Other Management Systems:* In addition to the major management systems, the committee participated with other AIA committees in monitoring of specialized management systems (such as Configuration Management and PERT/Cost) under development in DoD and the services. Activity in these areas is expected to increase in 1966 as these systems become integrated with larger, more comprehensive management and reporting systems.

## **INDUSTRIAL RELATIONS COMMITTEE**

The Industrial Relations Committee is concerned with the exchange of ideas and information on various aspects of industrial relations. This is facilitated through subcommittees on Compensation Practices, Government Affairs and Employee Safety. Committee activity includes devising solutions and providing policy positions.

### **Manpower Development and Training**

An *ad hoc* Task Force on Training was established to review the Manpower Development and Training Act (MDTA) and other legislation involving the training of manpower. Through the Office of the Manpower Administrator of the Department of Labor, a meeting was arranged for the task force with representatives from the Departments of Labor, Commerce, Health, Education and Welfare, and the Office of Economic Opportunity. An explanation was given of each government agency's function under MDTA. The task force prepared a report, "Summary of Recent Federally Sponsored Education and Training Programs (with special emphasis on MDTA)," for distribution to the committee. The task force will continue to keep abreast of regulations and laws in the training area.

### **Missile Sites Labor Commission**

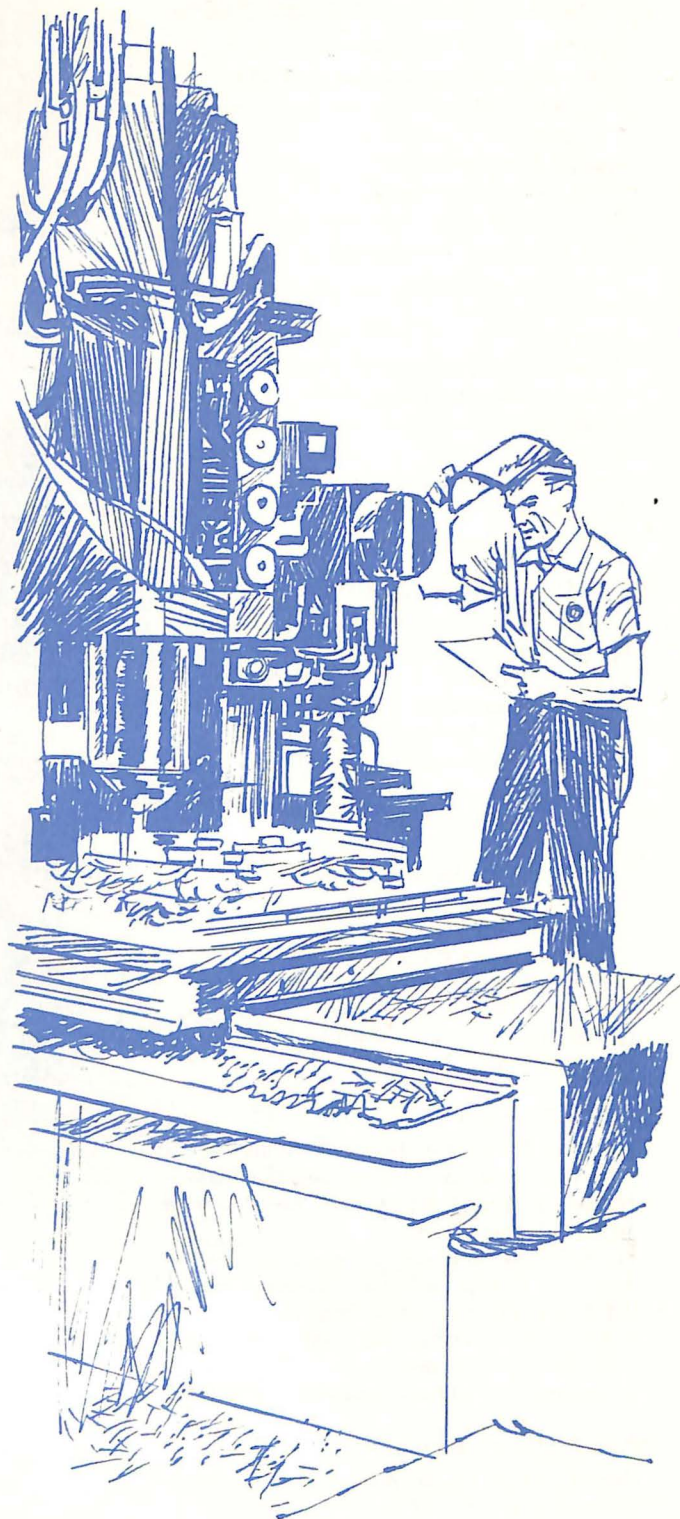
The Industrial Relations Committee provided assistance to the industry representative on the President's Missile Sites Labor Commission on the question of possible alteration of the present form and structure of the Commission.

### **Federal Unemployment Adjustment Benefits**

The committee analyzed the possible effects of provisions of proposed legislation that would establish federal unemployment adjustment benefits. The analysis, presented to the House Ways and Means Committee, showed that industry would experience a very sizeable increase in federal and state unemployment taxes if the legislation were enacted. Further objections were made to the establishment of federal benefit standards, the disqualification provision which put no premium on job retention, and the extension of length of payment period to people who moved beyond the province of the unemployment insurance. No Congressional action was taken in 1965.

### **Doubletime for Overtime**

The Compensation Practices Subcommittee provided data for a statement concerning proposed legislation on





the payment of doubletime for work in excess of 48 hours a week. This would be reduced one hour each year so that it would eventually result in doubletime after 45 hours a week. The statement pointed out that payment of doubletime would create few new jobs, and result in additional costs. The statement was furnished to the Subcommittee on Labor of the Senate Labor and Public Welfare Committee, and a similar statement was sent to the General Subcommittee on Labor of the House Committee on Education and Labor. No Congressional action was taken.

#### **Employee Safety**

The Employee Safety Subcommittee was organized to provide an exchange of information on employee safety and industrial hygiene problems and practices among member companies. Government speakers explained the administration of the Walsh-Healey Act, procedures in making safety and health inspections, status of proposed safety and health regulations, and a program to reduce federal employee injuries 30 percent by 1970.

#### **Rules of Practice under Walsh-Healey Act**

The committee directed the preparation of a brief on a proposed amendment to the rules of practice under the Walsh-Healey Act which would permit the Secretary of Labor to set multiple minimum wages for separable groups of occupations within an industry. A similar case in another industry was pending appeal in the courts. The deadline for the filing of data, views and arguments was early in 1965. Request was made to the Secretary of Labor to extend the filing date to a reasonable time after the court's decision, and the filing of arguments was indefinitely postponed.

### **INDUSTRIAL SECURITY COMMITTEE**

Industrial Security Committee interests involve the processing, control and storage of classified material, personnel security clearances, area control, visitor control, plant protection and civil defense. The committee promotes high standards of efficiency in industrial security, and coordination between industry and government agencies in security policies.

#### **Security Administration Transfer**

The administration of the security program for industrial plants was transferred in 1965 from the military services to the Defense Supply Agency (DSA). Maintaining a close liaison in connection with the transfer, the committee arranged for top security officials from the Department of Defense and Defense Supply Agency to visit several member companies. They observed both the operation of the security program in industry and the efforts being made to reduce security costs.

#### **DoD Industrial Security Manual**

A new and expanded set of regulations, the Industrial Security Manual, was issued in 1965 by DoD. The committee reviewed the manual for compliance and implementation within each member company. Security officials from government agencies met with representatives from industry to explain and discuss the new and revised regulations in the manual as well as the administration of the security program. Further study of the manual by the committee produced a rewrite of a section by DSA.

### **MANUFACTURING COMMITTEE**

The Manufacturing Committee works in broad policy areas relating to manufacturing research and development, manufacturing equipment, tooling methods, processes, preservation and packaging. The committee functions through *ad hoc* committees. In addition to working toward achieving reductions in manufacturing costs during 1965, the committee improved communications with DoD, the military services and NASA in areas of scientific advancement requiring improved or new manufacturing and production concepts.

The committee was reorganized in 1965, after transferring from the Aerospace Technical Council to the Industry Planning Service. The committee's former subordinate functional committees were abolished and *ad hoc* committees or panels formed for specific tasks.

#### **Controlled Maintenance of Processing Solutions**

An *ad hoc* committee sought to determine the effectiveness of chemical processing and the cost that would be saved by eliminating contamination elements from the chemical processing solutions and controlling the active constituents. The committee estimated that each aerospace company applying the results of this study will save \$50,000 to \$100,000 annually. This project is scheduled for completion in mid-1966.

#### **Uniform Cutting Tests Specification**

An *ad hoc* committee prepared a set of uniform cutting tests, agreeable to the aerospace industry and the machine tool builders, to be used for acceptance tests on newly purchased machine tool equipment. These uniform tests will define: work piece geometry; cutter geometry; feeds and speeds; accuracies to be achieved and results; inspection methods; and equipment and standards. Due to standardization and the elimination of each member company preparing test specifications, the committee estimates savings of \$1,000 on each machine procured.

#### **Vendor Packaging Standards**

An *ad hoc* committee developed in 1965 more than twenty vendor packaging standards which are used throughout the aerospace industry. Twelve more are under consideration. This standardization has minimized overlapping of standards and directives from individual companies and saved them the cost of preparing standards. The uniformity of prime contractor requirements on vendors will simplify the vendors' task of complying with the needs of their various customers, resulting in savings to the vendors, the prime contractors and the government.

#### **Metal Shipping Containers Specification**

At the request of the USAF, an *ad hoc* committee reviewed the proposed specifications on metal shipping containers, and provided recommendations.

#### **Tool Holder Specifications**

Purpose of this *ad hoc* committee is to develop tool holder standards for numerically controlled machine tools to obtain an optimum degree of usage interchangeability. This will require coordination not only within the aerospace industry but also with the machine tool and accessory manufacturers. When this project is completed in late 1966, the committee estimates that there will be savings of \$5,000 for each numerically controlled machine using these tool holder specifications, which will result in a

total savings in the aerospace industry of more than ten million dollars over the next several years.

#### **Voluntary Manufacturing Information Exchange**

The changeover from soft to hard metals (such as titanium, beryllium and high-strength steels) in the aerospace industry is being made with dramatic swiftness. For this reason, an *ad hoc* committee was formed to conduct a technical panel on "Advancements in Manufacturing Technology for Titanium, Beryllium and High-Strength Steels." The principal subjects covered were titanium forming and diffusion bonding; fusion and resistance welding; managing steel fabrication; metal removal; and beryllium fabrication.

As a result of the success of the manufacturing information exchange, the committee plans future information exchanges in other areas.

#### **Review of Specifications**

Other *ad hoc* committees issued performance specifications on aerospace requirements for an electron beam welder and for a contour milling machine which are numerically controlled. These specifications permit machine tool manufacturing companies to develop equipment for specific aerospace requirements at lower costs than if each machinery manufacturer conducted market research and designed machines, some of which would not fulfill the industry's stringent requirements. Member companies realize savings by using the specifications.

#### **Air Pollution**

The Manufacturing Committee, in connection with a proposed rule by the Los Angeles Air Pollution Control District, undertook a review of air pollution. An *ad hoc* committee studied the feasibility of using exempt organic solvents, water based materials or other methods of processing aerospace products, instead of conventional compounds, and is considering the substitution of non-controlled hydrocarbons for diluents and thinners.

#### **Manufacturing Equipment Panel**

The USAF requested the committee to undertake studies and provide advice on the newer hard metals and

the equipment for working them. The aerospace industry is rapidly increasing its use of titanium, beryllium and other hard metals. Ten years ago, less than 15 percent of the metals being machined for aerospace vehicles consisted of the hard metals. Today, the ratio is 35 percent. Within the next ten years, it may be as high as 70 percent.

The committee has organized an *ad hoc* panel to look at the overall industrial base of machine tools and manufacturing equipment for working the future materials and to recommend policy changes to the USAF and other government agencies based upon these studies. The *ad hoc* panel will also explore manufacturing problem areas such as forming, bonding, welding and fabricating the newer metals, and it will keep up-to-date the USAF report on profile milling requirements for hard metals in the 1965-1970 period. This report involves the qualitative machine, tool requirements, the performance requirements, and a look at the hard metals of the future. The panel will work with the USAF, NASA and with the top management of the machine tool and equipment manufacturers.

#### **Packaging Management Conference**

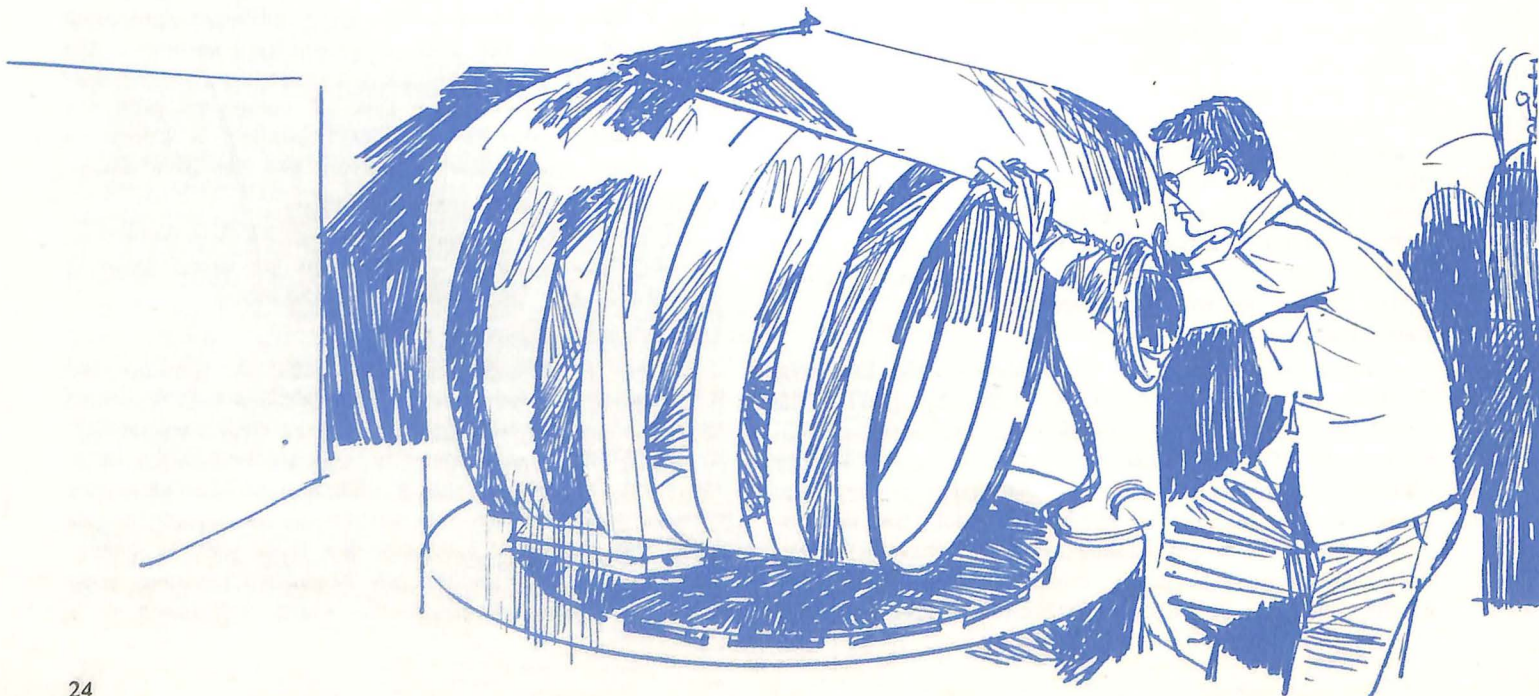
An *ad hoc* committee has been formed to conduct a Packaging Management Conference to enable packaging management representatives of industry and the government to discuss and resolve mutual problems regarding military packaging. Agenda items have been prepared for a conference in 1966.

#### **MATERIEL MANAGEMENT COMMITTEE**

The Materiel Management Committee is involved in the areas of subcontracting, purchasing and materiel management. Policy guidance is provided by the committee which is composed of vice presidents or directors of materiel for member companies. Detailed work is carried out by *ad hoc* task groups and monitoring panels.

#### **Small Business Forum**

The Small Business Administration requested assistance for a series of Small Business Forums scheduled in seven cities. The forums feature presentations by government



agencies and industry. Principal purpose of the forums is to inform small business of the industry's requirements.

#### **Subcontract Management Symposium**

In cooperation with representatives from other industry associations, the committee participated in the Air Force Systems Command/Industry Symposium on Subcontract Management. The primary objective of the symposium was to identify areas in which operational problems could be reduced. Of the recommendations developed, seventy-two required USAF or DoD action and nineteen required industry action. AIA acted as the coordinating agent on the industry items.

#### **Make-or-Buy Policy**

The committee has been active on the make-or-buy policy since 1959, primarily with the USAF. Activities in 1965 have resulted in proposed changes to the Armed Services Procurement Regulation. Extensive comments by the committee were coordinated with the Procurement and Finance Committee, since it is now an ASPR matter, and through the Council of Defense and Space Industry Associations (CODSIA) to the DoD.

#### **Economic Assistance Program**

In 1963, the DoD, the Small Business Administration and the Area Redevelopment Administration worked with the committee in a program to develop labor surplus area supplier sources. Under the plan developed, sources are located and screened for capability in one or more categories developed by the SBA and ARA and transmitted to the DoD. After review in DoD, the referrals are transmitted to AIA where they are distributed to the member companies. This subject is managed for the committee by its Small Business Monitoring Panel which estimates that in the last year, 20 AIA companies participated in the program with approximately 7,000 to 8,000 Request for Proposals being sent to labor surplus areas. The panel estimates that awards in excess of \$50 million were made as a result of this program.

#### **Subcontractor Performance Evaluation**

Several DoD regulations require the prime contractor to make positive determination of the responsibility of

prospective subcontractors. The committee is vitally concerned with this program and has an *ad hoc* task group that has prepared industry comments on these regulations. Several possibilities of formulating a standard Subcontractor Performance Evaluation System are under consideration by the task group.

#### **Multi-Year Procurement and Subcontracting**

The savings achieved through prime contracts that are multi-year procurement prompted the committee to check the possibilities of similar savings in subcontracting where the prime contract is not a multi-year contract but because of its nature does repeat annually. The committee discussed these possibilities with the Navy and DoD. The Navy is determining the changes necessary in the ASPR to permit multi-year procurement in subcontracting when the prime is not multi-year, and the committee is supplying information.

#### **Component Breakout**

The committee has examined a study by the Logistics Management Institute on the cost of component breakout. This study adds the cost of processing the procurement documents to government-furnished equipment and compares it to the cost of contractor-furnished equipment which already includes this sum. The study shows that many items are more economical as contractor-furnished equipment, and the committee is working with LMI on this subject.

#### **Non-Termination Residual Inventory**

The USAF includes a clause in fixed-price incentive contracts and in fixed-price redeterminable contracts which imposes reporting, control and disposable obligations with respect to material used in performance of a contract. These are similar to the requirement of the government property clause in cost-reimbursement contracts. An *ad hoc* committee was formed with representatives from the Procurement and Finance Committee to prepare comments and opinions on this clause. Discussions were held with USAF personnel and this clause was eliminated.

### **PATENT COMMITTEE**

The Patent Committee acts in the fields of inventions, patents, trademarks, copyrights, and proprietary data. The committee is the means of advising member companies on developments in federal administrative and legislative policies and procedures in these fields. The committee, upon request from the executive and legislative branches of the government, provides industry views on proposed new or revised legislation, policies and procedures.

Four principal subcommittees handle matters in the areas of federal patent policy, government patent regulations, NASA patent and new technology policy and proprietary rights in data. Other subcommittees are formed to deal with such subjects as particular contract specifications and authorization and consent provisions of government regulations, as well as new and proposed changes to laws and regulations relating to patent infringement.

#### **Federal Patent Policy**

During the 1st session of the 89th Congress, several bills for establishing a federal patent policy, as well as to amend patent laws to permit patent infringement actions against government contractors, were introduced and





hearings were held by the Patents, Trademarks, and Copyrights Subcommittee of the Senate Judiciary Committee. The Federal Patent Policy Subcommittee of the committee prepared a statement on the proposed legislation and the chairman of the subcommittee presented the statement and testified at the hearings. The statement generally supported the legislation contained in S. 1809 with suggested amendments to provide for the disposition of title to inventions in order to protect the equities of all parties.

#### **Government Patent Regulations**

The Government Patent Regulations Subcommittee prepared comments and recommendations on a proposed Armed Services Procurement Regulation covering the administration of patent rights clauses. The proposed ASPR imposed administrative burdens on contractors and provided both for liquidated damages and the forfeiture of title to inventions. The subcommittee's recommendations, which were embodied in a CODSIA position paper on this matter and transmitted to the DoD, suggested changes materially reducing administrative burdens and eliminating liquidated damages and forfeiture, except under specific limited conditions.

The subcommittee also participated in the development of a CODSIA position paper on a proposed revision to ASPR covering the processing of licenses, assignments and infringement claims.

#### **Proprietary Rights**

The Proprietary Rights in Technical Data Subcommittee studied the administration of ASPR Rights in Technical Data clauses, and found the principal problems stemming from the implementing documents issued by the services, which in some instances are contrary to ASPR policy and requirements. The subcommittee prepared and submitted to DoD a letter pointing out the various difficulties being encountered by industry, particularly with respect to implementation. Many of the problems set forth are being or have been corrected.

The subcommittee has also prepared comments on suggested changes to DoD provisions on rights in technical

data made by the Design Equipment Manufacturers *ad hoc* Committee in an effort to effect appropriate revisions to ASPR and other DoD documents.

#### **NASA Patent and New Technology Clause**

The subcommittee responsible for dealing with NASA patent and data policies is concerned over the time delay between petitions for waiver and a NASA decision on the petition. The subcommittee is preparing recommendations to NASA on this subject.

The subcommittee also worked on questionnaires and forms for inventions and patents to be used by NASA in dealing with prime contractors.

#### **Patent Office Fees**

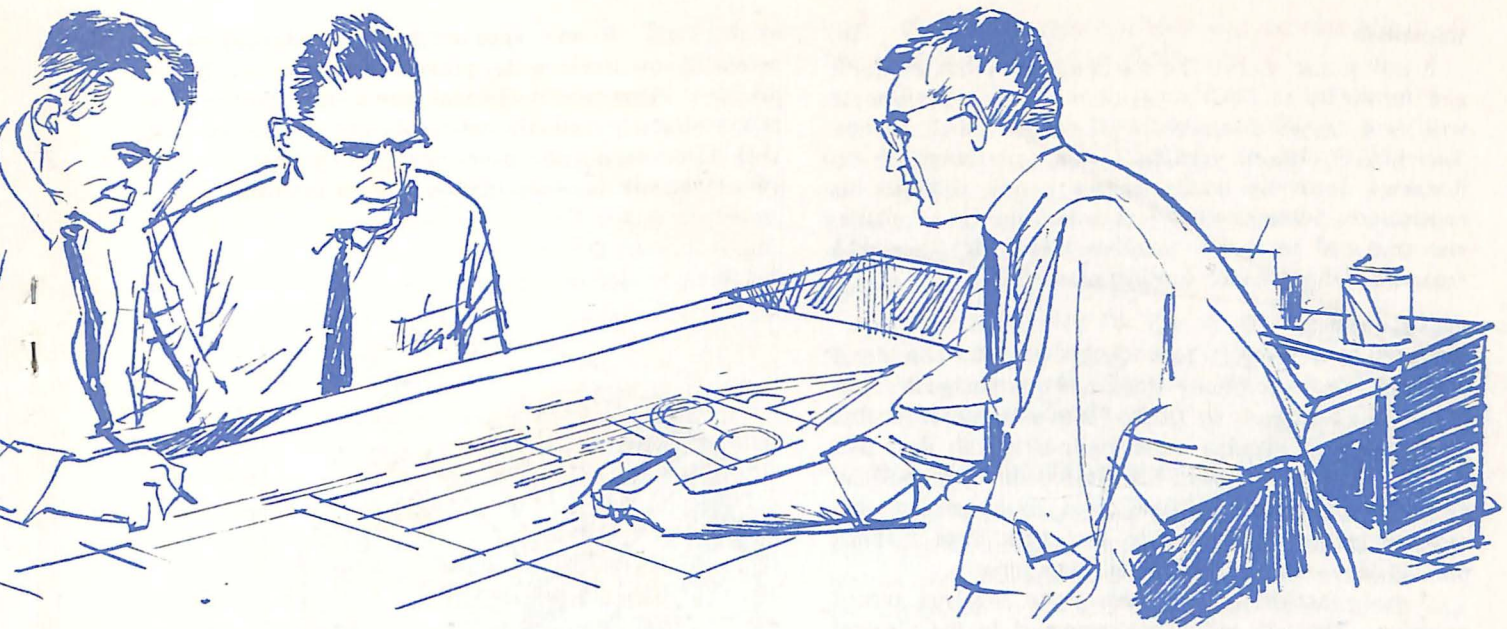
Several bills for establishing new and higher fees for services by the Patent Office were introduced in the 1st session of the 89th Congress. In addition to increasing fees, certain of the proposed legislation also sought to establish maintenance fees which would require the payment of fees to continue a patent. The Patent Office Fees Subcommittee submitted to the Patents, Trademarks, and Copyrights Subcommittee of the Senate Judiciary Committee a statement recommending the deletion of maintenance fees but supporting an increase in fees to adjust them to the present value of the dollar. These recommendations were included in the Act.

#### **Other Activities**

The committee worked with the Patent Office to improve Patent Office practices. It also studied other areas such as the patents rights clause for facilities contracts, contract specifications and patent department expense allowability, and has made recommendations to government agencies on these subjects.

#### **PROCUREMENT AND FINANCE COMMITTEE**

The Procurement and Finance Committee acts in the fields of contract administration, financial and legal matters relating to federal procurement, as well as federal and state taxation. The committee provides the means of



informing member companies of developments in federal procurement policies and procedures, particularly of the Department of Defense, the National Aeronautics and Space Administration, and the Atomic Energy Commission. The committee also responds to requests from government agencies and the Congress for industry views in its fields of activity.

Projects are assigned to task groups with membership selected to provide expertise in a particular field.

#### **Contract Cost Principles**

The Contract Cost Principles Task Group works with government agencies in the development and refinement of equitable cost principles. The task group and its two *ad hoc* subcommittees on rental costs and costing of special facilities proposed revisions to the ASPR section dealing with such subjects as: *employee morale, health, welfare, food service and dormitory costs, excess idle plant costs, plant reconversion costs, relocation costs, deferred compensation, intracompany material transfers, and costs beyond the control of the contractor.*

While many of these ASPR revisions have not yet been issued, those that have reflect the DoD's acceptance of many industry recommendations. Information developed by the *ad hoc* subcommittee on rental costs materially aided the preparation of a CODSIA report on the charges for contractor acquired electronic data processing equipment. The *ad hoc* subcommittee on special facilities has assisted in developing an equitable policy for the charges of such facilities as wind tunnels and computers.

#### **CWAS**

The Contractors' Weighted Average Share of Risks Task Group studied the reasonableness of costs involved in the assumption of a certain percentage of cost risk as determined by the contractor's range of activities. The DoD sought comments on a proposed revision to the ASPR for implementing CWAS, concurrently with conducting a survey of industry to determine the CWAS factor. Representatives of the task group assisted in the

preparation of the CODSIA position on the proposed CWAS, and it is likely that many of industry's recommendations will be embodied in the ASPR provisions.

#### **Government Property**

The ASPR provisions governing the acquisition and use of government property were studied by the members of the Facilities Policy Task Group, who sought solutions to problems in three areas: (1) acquisition and control of special test equipment; (2) application of certain provisions to subcontractors; and (3) competitive advantage evaluation procedures, including the application of rent and rental evaluation factors to government facilities, special tooling, and special test equipment. In addition to discussions with DoD, the task group met with NASA officials in connection with its proposed regulations on government property in order to achieve compatibility with the ASPR.

The task group also has directed efforts toward establishing an equitable facilities modernization credit clause, and has furnished the USAF with recommendations. A USAF modernization credit clause, embodying AIA recommendations, has been issued and is authorized for use by AFSC divisions.

#### **Organizational Conflicts of Interest**

Industry's experience with the implementation and administration of the organizational conflicts of interest policies of the DoD and NASA indicate that generally accepted competitive practices in procurement have been unduly inhibited.

An AIA task group prepared position papers which served as the basis for CODSIA letters to DoD and NASA regarding their policies. The thrust of the CODSIA communications was directed toward clarification and uniform administration of the policies, particularly whether or not DoD and NASA deemed a conflict of interest to be involved in a particular procurement. The task group is continuing its efforts toward an equitable and practical solution to the problem.

## Warranties

A task group studied the warranty provisions in ASPR and forwarded to DoD suggestions for their revision as well as a request for withdrawal of the USAF clauses. The USAF clauses, relating to the correction of deficiencies, including data, imposed severe liabilities on contractors. Subsequently, DoD revised the USAF clauses and restricted their use, and has taken the other AIA recommendations under consideration.

## Special Projects

The Special Projects Task Group in 1965 considered the Navy Contract Clause Book and procurement forms issued on a trial basis by DoD. Further consideration has been postponed pending more experience with their use.

The task group reviewed the subjects of warranties and limitation of costs and funds and recommended that separate groups be formed to deal with these matters, particularly in view of their long range aspects.

A major activity of the task group involved record retention. The task group recommended to the General Services Administration changes in regulations and urged adoption of new ASPR coverage that would contribute to current efforts of reducing paper work.

## Other Activities

The committee, through other task groups, dealt with such matters as insurance coverage, indemnification against unusually hazardous risks, incentive contracts, price adjustment for suspensions and delays, and other procurement subjects. One area of committee activity has been the study of DoD principles pertaining to technical effort relating to a contractor's independent technical effort (CITE) in bids and proposals. Members of the committee are working on a DoD/tri-association task group in the implementation of this concept.

## PRODUCT SUPPORT COMMITTEE

This committee is engaged in broad efforts to insure the operation and maintenance of equipment ranging from a complex weapon system to a simple accessory.

(Activities of two working committees, Spare Parts and Service Publications, are reported separately.)

### Field Representative Support

Responsibility for field representative support was transferred in 1965 from product support managers to field service managers who have direct supervisory responsibility. The product support managers were concerned primarily with problems of the DoD Contractor Support Services Project (CSSP) task force study. The field service managers were involved in the implementation of the new DoD directive resulting from the study.

The committee recommended the use of contractor technical field services when it assures the military users of a high level of operational, service and maintenance capability; an early recognition, fast transmission, prompt study and solution and reply by the contractor to the user of field developed problems on the equipment; and reports to the factory (designer) of all field operating, service, and maintenance conditions concerning the equipment or system to permit product improvements.

Committee efforts, working with CODSIA, resulted in the preparation of a series of industry recommendations

to the DoD. It now appears that the industry will be permitted to continue to provide field support for its products. However, individual company adjustment to new contracting methods and regulations will be required. Task forces within the panel have been named for each military service to study implementation problems.



### **Military and Space Training Manual**

A major objective of the training panel was accomplished by the completion of the "Contractor's Training Manual." This manual, prepared by a task force from the training panel, provides concise guidelines for standard Army, Navy, USAF and NASA programs for contractor training of the government's operational and maintenance personnel, and assists in the identification and understanding of government training requirements and requests for training proposals.

### **QUALITY ASSURANCE COMMITTEE**

The Quality Assurance Committee responsibilities include those customer requirements concerned with policies, procedures and specifications dealing with the quality of a product, equipment or system, based upon general and detailed engineering specifications and quality requirements.

A Steering Committee, composed of past chairmen of the committee and the current committee officers, manages current committee business and reviews actions taken since the preceding meeting.

Committee responsibility is further delegated to liaison panels and projects. The members of a liaison panel are responsible for the year-round representation of the committee to a particular segment of the customer's organization. Separate committee tasks are identified as projects and each is delegated to a project sponsor. Some projects, such as the review of the DoD reasoning behind the "discontinuance of the Navy bonded stock programs," may be of a short term nature; others, such as the "duplicate surveys of vendors," may extend over a considerable period of time and involve studies, questionnaires, conferences with customer personnel and many recommendations prior to solution.

#### **Committee Transfer**

One of the committee's accomplishments during 1965 was an evaluation in conjunction with its transfer from the Aerospace Technical Council to the Industry Planning Service. Principal objectives of the review were to increase operating efficiency, reduce individual tasks or distribute them more equitably, and promote participation by a greater number of members.

#### **NASA Quality Requirements**

The CODSIA study of NASA quality requirements publications was a major committee project and the excellent cooperation at the NASA locations by the CODSIA team contributed to the final result.

The final report, which will be presented to NASA early in 1966, includes an appraisal of the NASA quality policy, and recommendations for changes.

#### **Duplicate Vendor Surveys**

Repetitive and duplicating surveys of vendor capabilities continues to be a problem and new approaches to a solution are being sought.

#### **Audit of Replenishment Spare Parts**

A specialized project group has been working with the Air Force Logistics Command in its study which is directed toward better quality of spare parts.

#### **Quality Cost Analysis**

A project group has been studying the problems and conditions confronting a standardized analysis of quality

costs. The results are preliminary and the next phases of the program are yet to be determined.

#### **Materials**

Increased customer interest in materials or parts that do not comply identically with specification requirements and material review requirements has resulted in the naming of a panel to investigate conditions and make recommendations for future actions.

#### **Other Quality Assurance Projects**

A project concerning the role of quality assurance in numerical manufacturing and the relaxation of controls is in a study phase. Upon completion, decisions will be made as to the next courses of action.

### **SERVICE PUBLICATIONS COMMITTEE**

Working with government agencies the committee provides recommendations for more efficient methods of preparation and dissemination of publications necessary for the installation, operation, repair, parts identification and overhaul of aerospace products.

#### **DoD Specification Standardization Program**

The committee in 1965 provided recommendations on a number of draft specifications as a participant in the Technical Manual Specifications and Standards Program. The program, which is a continuing effort, covered general requirements for the preparation of technical manuals; minimum requirements for commercial equipment technical manuals; installation, operation, maintenance and repair manuals for missile systems and equipment; and aircraft maintenance technical manuals and Ground Communications-Electronic Time Compliance Technical Orders.

#### **USAF Manuals**

A wide range of specification review actions was accomplished with the military services including the evaluation of USAF structural repair manuals to determine their suitability for use by the other services. This activity also involved the incorporation of additional requirements to expand their application in such areas as corrosion control practices and wear and rework instructions. In another USAF area, an *ad hoc* panel of committee members provided assistance in the development of specification for preparation of instruction manuals for flight crews.

#### **Army Writing Guides**

The committee completed a review of requirements for a series of Army writing guides which are used to prepare instructions for technical data maintenance and overhaul of aeronautical accessories, engines and support equipment. Acceptance of the recommendations submitted will facilitate standardization of requirements without restricting flexibility in configuration coverage or production methods needed by a contractor to produce manuals efficiently. Committee assistance for the evaluation of additional instructions was offered.

#### **Navy Electronics Trouble-Shooting Manual**

The committee evaluated a new type of Navy technical manual to determine its applicability as a trouble-shooting guide, and industry capability for production. The conclusions of the study were presented to the Navy.

#### **Air Transport Association Specification**

A continuing review effort is carried on with the Air

Transport Association, by an *ad hoc* panel, to coordinate amendments for an ATA specification for manufacturers' technical data which applies to commercial aircraft manufacturers. During 1965, recommendations have been submitted to the ATA Advisory Board concerning a number of specific changes to the specification and also suggestions for the initiation of educational seminars by the ATA group as a means of clarifying the need for adequate overhaul data from accessory manufacturers.

#### NASA Technical Manuals

In connection with a committee-initiated program, an *ad hoc* panel presented to NASA officials a report of its survey of NASA's technical manual requirements. The results of the survey, which have been discussed with NASA officials, will form a basis for further committee assistance to NASA in the publications area.

#### New Techniques

The committee has assigned a panel, on a continuing basis, to search for new developments in data processing equipment, automatic checkout systems, microfilming and information filing, and storage and retrieval methods which will affect the future preparation of handbooks and manuals and the dissemination of service publications data. Items of significant interest are brought to the attention of the whole committee and, where feasible, demonstrations of the equipment are arranged. The most significant item discussed at the national meeting of the committee concerned a system designed to give rapid access to individual frames of microfilm displayed in a viewer for application as a trouble-shooting guide and step-by-step instructional procedures.

#### Information Services

In order to meet an objective of providing technical publications information service to committee members and their government counterparts, the committee's information panel prepared and distributed a number of releases, through its Information Bulletin system, during the past year. Included were such subjects as automated

cost control and scheduling for publications, trends in handbook illustration, and a data acquisition and technical evaluation concept which provides a system of automatic recall of data by using activities from a central library for maintenance and operational readiness of missile, aircraft and spacecraft systems.

#### SPARE PARTS COMMITTEE

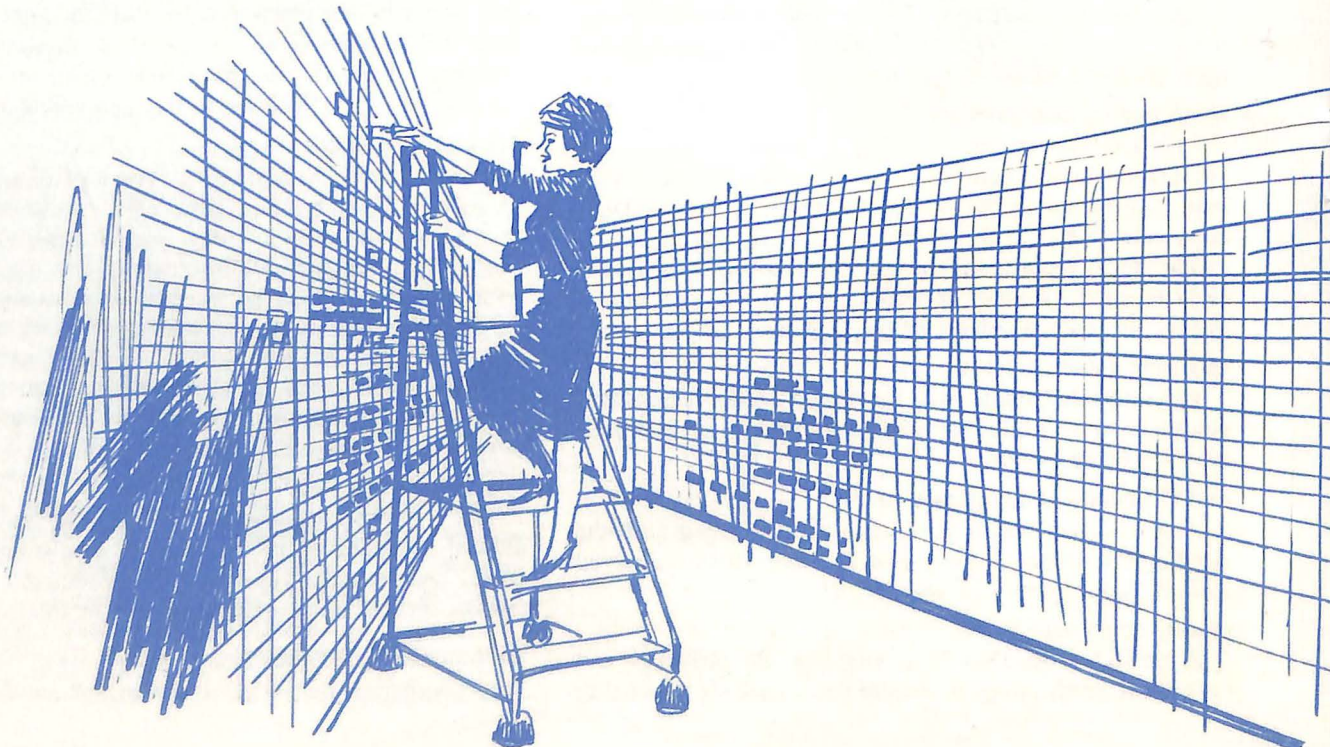
The Spare Parts Committee is concerned with the policies, procedures and practices for the selection, ordering and inventory control of spare parts, special tools, test and aerospace ground equipment, training aids and training equipment. For twenty years, the committee has worked closely with the military services, coordinating and making recommendations concerning new developments and revisions in these areas. Through reviews of proposed procedures and amendments, the committee seeks to achieve cost reductions and improvements in support operations.

#### Spare Parts Replenishment

The committee completed a review of a government military standard for procurement method coding which was issued to supplement the military services' breakout regulations. This standard establishes procedures for acquiring and transmitting recommendations of contractors concerning the procurement method of designated replenishment spare parts. The committee's review, submitted to the government, pointed out the need for clarification of language relating to data rights, final decisions on codes and disagreements on code recommendations.

The committee also conducted a survey of AIA members concerning problems being experienced or anticipated in the implementation of these methods. The survey showed there is little experience in recommending procurement method codes. Further review efforts will be carried on by an *ad hoc* panel.

A separate *ad hoc* panel has been assigned to study





various methods currently in use which provide contractor authorization to submit provisioning data with restrictive legends so that provisioning action will not be delayed in any negotiations with the government concerning proprietary rights. Pending the outcome of this review, which will be coordinated with members of the AIA Procurement and Finance and Patent Committees, the findings of the panel will be presented to government representatives.

#### **Army Support Procedures**

Many committee recommendations have been incorporated in a standardized Army provisioning procedure. Utilization of this document will achieve greater uniformity and interpretation of requirements.

#### **Air Force Support Procedures**

The USAF is giving consideration to committee recommendations for a materiel support procedure which has been incorporated in an Air Force Systems Command instruction guide and will be included in the overall Air Force management regulations.

An evaluation of a proposed USAF specification concerning preparation of modification kits was completed by the committee and recommendations noting difficulties in interpretation of requirements were submitted. The USAF subsequently rewrote the specification, incorporating many of the committee's suggestions. Another committee review action presently under way concerns a proposed USAF short cut provisioning procedure. This document would select and order spare parts where a minimum of contractor documentation is determined adequate for source coding or where the lead time requirements versus the production delivery schedule will not permit processing of complete provisioning documentation. Interim recommendations concerning this procedure have been submitted and further committee action is planned.

#### **Industry Initiated Actions**

An industry study to determine the feasibility of contractor compliance with government requirements for the breakdown and provisioning of vendor reparable items

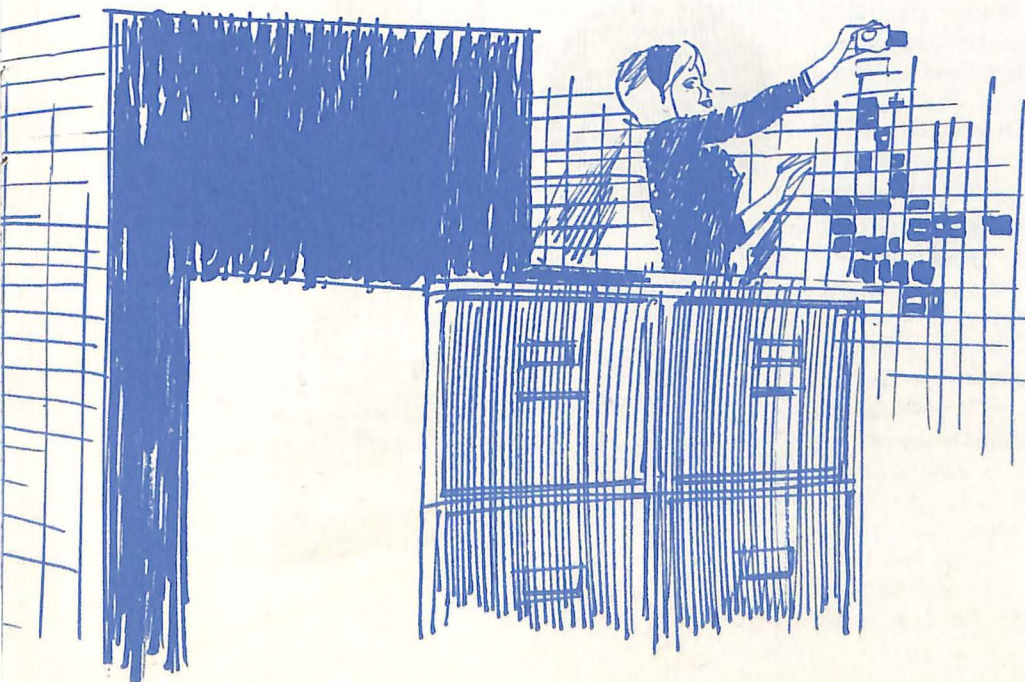
(VRI) was initiated by the committee in early 1963, with invited participation of the Electronic Industries Association (EIA). An analysis of vendor data problems and cost factors was completed and submitted to DoD. The report indicates that the cost to support the defense effort could be reduced significantly in the area of reparable items by establishing new criteria for the provisioning of assemblies instead of individual parts. This method of obtaining VRIs could save DoD as much as 30 percent of the present multi-million dollar annual expenditure for this purpose. DoD has not taken specific action.

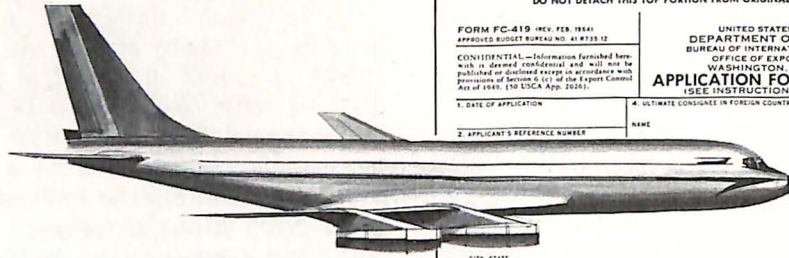
The committee has also continued its efforts to improve a previously developed proposal for parts support for NASA space systems as a result of work experience by its members in various NASA projects. NASA officials indicate the early establishment of a logistics management facility at NASA headquarters. This action is expected to facilitate industry coordination efforts on overall support operations with NASA facilities.

#### **Cataloging**

The committee has been monitoring the spare parts cataloging operations of the military services on a continuing basis. It has reviewed and furnished views concerning the clarification of requirements on proposed revisions for both the Navy and USAF specifications governing the preparation of item descriptions for cataloging purposes. A substantial number of the committee's recommendations will be incorporated in the next version of these documents.

Separately, an *ad hoc* panel, together with counterpart members from EIA, has conducted an industry survey of the entire federal cataloging system to check for problem areas. The initial findings indicate that there is a substantial time lapse in the receipt of federal stock numbers subsequent to the submittal of item identifications, and that a reduction in number of the eighteen different methods of federal stock number notifications may ease this problem. Further panel study of the subject is planned prior to the submission of a report to DoD.





**DO NOT DETACH THIS TOP PORTION FROM ORIGINAL AND DUPLICATE WHEN SUBMITTING APPLICATION**

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**FORM FC-419** (REV. FEB. 1964)  
APPROVED SUBJECT MATTER NO. 41 8733 12

UNITED STATES OF AMERICA  
 DEPARTMENT OF COMMERCE  
 BUREAU OF INTERNATIONAL COMMERCE  
 OFFICE OF EXPORT CONTROL  
 WASHINGTON, D. C. 20230

**APPLICATION FOR EXPORT LICENSE**  
(SEE INSTRUCTIONS ON BACK OF FORM)

**1. DATE OF APPLICATION**

**2. APPLICANT'S REFERENCE NUMBER**

**3. ULTIMATE CONSIGNEE IN FOREIGN COUNTRY**

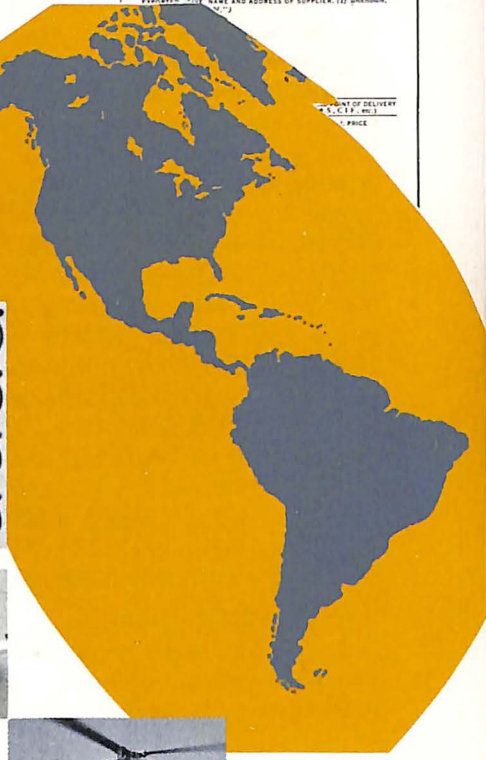
**4. INTERMEDIATE CONSIGNEE IN FOREIGN COUNTRY:** (1) name, state "NONE"; (2) unknown, state "UNKNOWN")

**5. IF PURCHASER IN FOREIGN COUNTRY IS OTHER THAN ULTIMATE CONSIGNEE:** GIVE NAME AND ADDRESS. (1) name of ultimate consignee, state "SAME AS ITEM 4"; (2) name of intermediate consignee, state "SAME AS ITEM 3.")

**6. IF APPLICANT IS NOT THE PRODUCER OF COMMODITY TO BE EXPORTED:** (1) NAME AND ADDRESS OF SUPPLIER; (2) unknown, "N/A")

**7. IF APPLICANT IS NOT EXPORTING FOR HIS OWN ACCOUNT, GIVE NAME, PRINCIPAL AND EXPLAIN FULLY**

**8. (a) QUANTITY TO BE SHIPPED**      **(b) COMMODITY**      **(c) VALUE OF COMMODITY**      **(d) PRICE**



**"E"  
Award**



# INTERNATIONAL SERVICE



*The International Service, operating through the International Committee and four working committees, coordinates and stimulates the aerospace industry's export programs. It appraises markets in foreign countries, interprets industry viewpoints on export matters and provides information concerning a diversity of export subjects of direct concern to member companies.*



ERLE M. CONSTABLE  
*Lockheed Aircraft  
International, Inc.*  
Chairman, International  
Committee

U. S. aerospace exports in 1965 reached \$1.47 billion, the highest since World War II. This was an increase of 21.5 percent over 1964, and a contributing factor in improving the nation's trade balance.

It was also the eighth time since World War II that exports exceeded the \$1 billion mark.

The aerospace export record in 1965 can be largely attributed to these factors:

- The world-wide acceptance of U. S. aerospace products for their reliability and economy of operation;
- The expanded use by the industry's exporters of AIA's International Committee as a prime communication link with government agencies concerned with foreign trade;
- The federal government's extensive efforts to promote international trade and to alert private industry to sales opportunities abroad.

The 1965 export statistics underscore the industry's response to the government's export expansion drive. In 3 major commercial categories, export increases have been especially significant. In terms of dollars, jet transport sales abroad are up more than 67 percent over 1964, utility aircraft 39 percent, and helicopters 25 percent. Overall commercial aircraft exports in 1965 are estimated at \$435 million, as compared with \$287 million in 1964, an increase of 52 percent.

Looking at another aspect of the international trade picture, U. S. imports of foreign aerospace products also increased in 1965. According to the Census Bureau, the first nine months of 1965 saw \$110 million worth of aerospace products imported into this country, an increase of 81 percent over the comparable 1964 period. This rise can normally be anticipated in a good export year.

The outlook is for sharply rising exports in 1966 and succeeding years. AIA manufacturing firms all report a substantial backlog of orders for 1966.

#### **Government Efforts**

Evidence of the federal government's concern about international trade can be seen in the reorganization of the National Export Expansion Council in 1965, which is headed by the Secretary of Commerce and includes in its membership some of the top industrialists of the nation. Its function is to spotlight major impediments to increased U. S. exports and to recommend any steps needed to remove them.

Karl G. Harr, Jr., president of AIA, testified in March before the Senate Commerce Committee in support of the proposed Export Expansion Act of 1965. The bill was drafted primarily as a means of extending unusual credits to expand sales to the lesser developed countries of the

world, thereby increasing the scope of the U. S. export base. The proposed legislation served to focus government attention on the need to place the U. S. business community in a favorable position to share in the world's newly developing markets.

This was one of a number of efforts to assist in the trade expansion program. The government is seeking to raise the level of exports over the long term, not just to cure current deficits, but to build a healthy export program to a percentage base more closely identified with the Gross National Product.

#### **Committee Activities**

The International Committee heard in March from the Deputy Assistant Defense Secretary for International Logistics Negotiations. He indicated for the first time that industry might have to adopt a new approach to maintain its military air exports at their present high levels. But he also noted that military exports have tripled in the last half decade and that orders for goods and services would approximate \$1.8 billion for 1965. In addition, he predicted that the annual order volume would lead off at approximately \$1.5 billion for the next ten years.

In order to achieve a Common Defense Market, a concept of production cooperation proposed by the Secretary of Defense, the International Committee believes that an expansion of licensing and technical assistance arrangements would be one practical way to enable foreign defense suppliers to meet U. S. specifications on bids. In the view of the committee, foreign contributions to total weapon systems should be limited to subcontracts, components and subsystems.

The committee has informed the Defense Department that any form of Common Defense Market, if it is to promote foreign contributions to the common defense, will require a reappraisal of the national disclosure policy.

At their spring meeting, International Committee members had discussions with officials of the Agency for International Development and heard an address on the balance of payments problem by the Under Secretary of the Treasury. The Treasury official said the current U. S. balance of payments deficit was being aggravated by the cost of maintaining U. S. military establishments overseas, insufficient export surpluses, American investments abroad, the "travel gap" and individual spending by American tourists abroad. He stated that further increases in exports would be the most effective way to alleviate the problem.

AID officials discussed with committee members "The Role of Industry in Meeting AID's Requirements in Developing Countries." This was a highly successful meeting between committee members and AID officials.

The AID Administrator told the group that the emerging nations can gain the most economic benefit by developing useful internal air traffic systems rather than by undertaking large-scale international air services in which they would be at a competitive disadvantage with the more sophisticated countries.

The International Service — in cooperation with the

Association's Utility Airplane and Vertical Lift Aircraft Councils — engaged in advance preparations for joint equipment capabilities briefings by industry members before AID's program and development planning officials. These briefings are scheduled to take place in 1966, with a follow-up presentation by transport manufacturers.

AID has made it clear to the aerospace industry that U. S. expertise in many fields is certain to be recognized and used in future development programs of U. S. economic aid to foreign nations.

The International Committee met in October in New Orleans, a major port for Central and South American exports. The topic was "Near Term Future of Aerospace Exports in Latin America." In addition to committee members, participants included officials of the Defense Department and civilian agencies.

Experts briefed the attendees on the need for refurbishing Latin America's air defenses and commercial air equipment, and stated that as the Latin American nations develop politically, their economic stability will improve, thus brightening the prospect of increased markets for U. S. aerospace products. Participants also were advised of some moderate plans to assist certain Latin American nations in building up or modernizing their defensive posture as needed for hemispheric defense.

U. S. civil air attaches from Central and South America described the requirement for modernizing existing commercial air fleets and the projected needs for expansion.

#### **International Space Programs**

The industry's export of space equipment last year amounted to an estimated \$4.65 million. American companies provided, among other things, design and engineering services, subsystems, and satellite components to foreign governments and industries embarking on space programs. Products contributed included sounding rockets, sounding rocket payloads, and communications satellite ground terminals as well as fuels and consulting services.

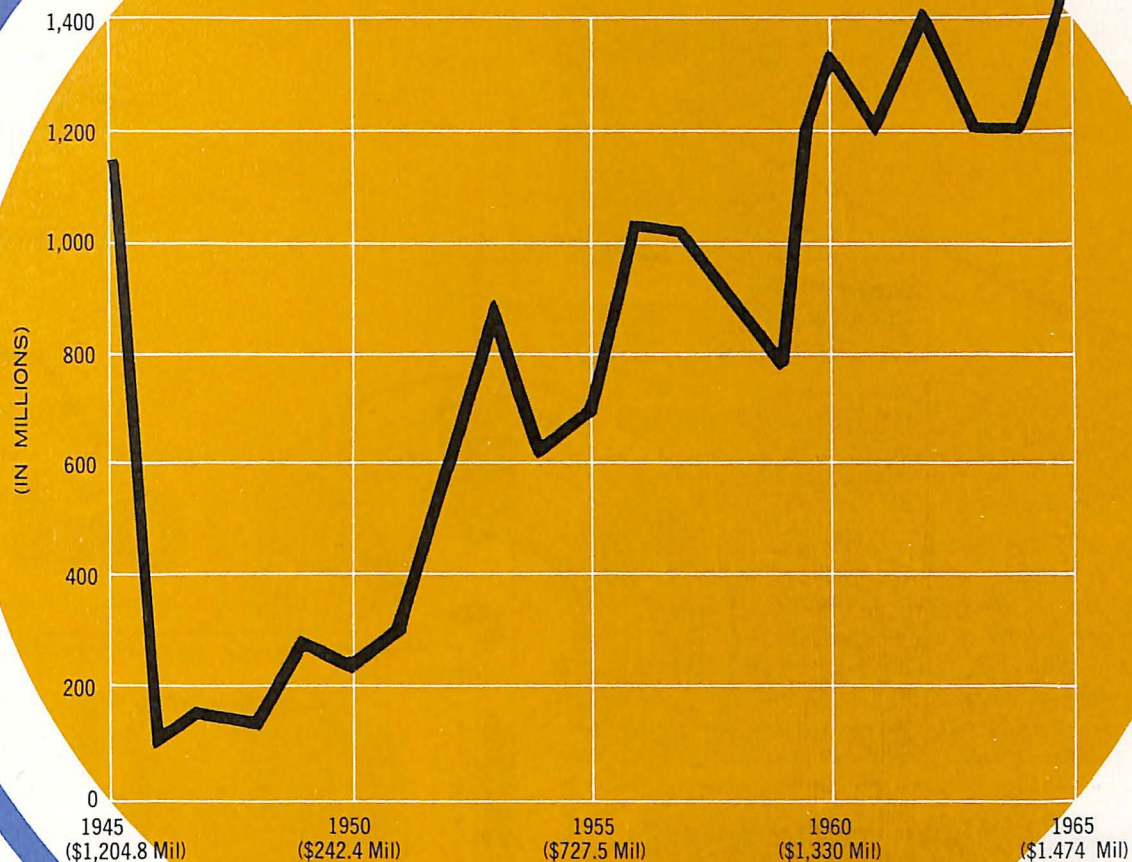
U. S. aerospace manufacturers also supported NASA's international space programs, which involve sixty-nine foreign nations. U. S. efforts in this area were reported to the National Citizens Commission on Space during the White House Conference on International Cooperation.

It is estimated that U. S. exports of space products and services in 1966 will approach the \$10 million mark.

#### **Tariffs**

A serious challenge to the intent and effectiveness of the Kennedy Round of international tariff negotiations arose during 1965 when France withdrew from the European Economic Community negotiating group. This, together with the protective attitudes of various key industrial nations in Europe, has hampered the free reciprocal trade concept of aeronautical products.

U. S. general aviation aircraft manufacturers presently are confronted with escalating tariff and trade barriers in several vital foreign market areas. Sales taxes, excessive demonstrator charges, import surcharges and tariffs well above the U. S. level are decided deterrents to export



UNITED STATES  
AEROSPACE EXPORTS

sales. These problems have caused American manufacturers of utility aircraft to believe that equitable tariff reciprocity is questionable at present and that the U. S. aerospace industry should reappraise its position concerning tariffs on this type of equipment.

The possibility that aircraft may be negotiated on a special category basis under the provisions of the Trade Expansion Act of 1962, and the fact that alternate proposals must be developed due to EEC resistance to the Kennedy Round, may well warrant a new tariff position on the part of the aerospace industry during 1966.

#### AIA Receives "E" Award

Accomplishments of the International Committee resulted in AIA's receiving the Presidential "E" Award. Seventeen of the forty-seven aerospace firms making up the committee's membership also have received this award.

#### State Directive

During 1965, the State Department for the third time in seven years issued a directive to all its Free World

posts to promote government-industry cooperation in stimulating the export of U. S.-manufactured aerospace products. AIA worked closely with the State Department on this matter.

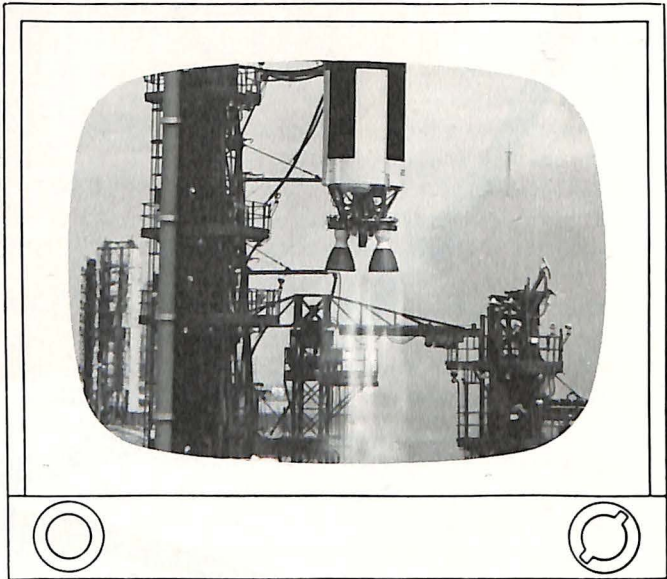
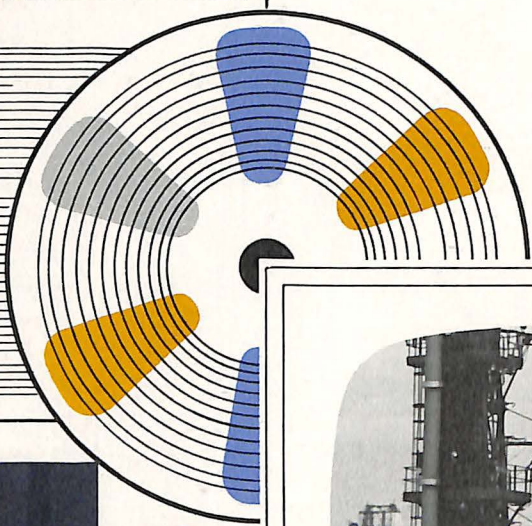
#### White House Conference

The White House Conference on International Cooperation devoted to aviation received an excellent review from the Committee on Aviation of the National Citizens Commission on International Cooperation. This report and the discussions covered several subjects of interest to AIA members.

Of principal interest to the International Committee and in direct support of another AIA project — air cargo promotion — were the recommendations that the U. S. develop a dynamic new program to facilitate and encourage the continued growth of international air travel and trade, develop modern air cargo entry procedures, eliminate non-tariff barriers affecting aviation products, and expand private aircraft tour programs.

**aerospace NEWS**

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.  
 1700 DE SALES STREET, N.W., WASHINGTON, D. C. 20036 TEL. 800-622  
 PUBLIC RELATIONS SERVICE  
 NEWS BUREAU



## PUBLIC RELATIONS SERVICE

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*The Public Relations Service prepares programs and publications concerning the aerospace industry's policies, accomplishments and contributions to national security and the civilian economy for presentation to the public. It endeavors to identify major problems encountered by the industry. It works toward improving public awareness of the industry, serves as information center, and puts particular emphasis on responding to requests for information from media, government agencies, educational and financial institutions and the public.*



RICHARD J. DAVIS  
*Douglas Aircraft  
Company, Inc.  
Chairman, Public  
Relations Advisory  
Committee*

The Public Relations Service concentrated in 1965 on establishing broad acceptance of the industry as an influential element of the nation's economy as well as being vital to its defense and space efforts. During the year, the nation's news media and public and private decision-makers signified encouraging interest in the increasing role aircraft are playing in passenger and cargo transportation, and the responsibility the industry has assumed in efforts to improve the environmental and social climate.

Utilizing the AIA president's speeches, and by publishing numerous articles on a variety of civilian as well as national security aerospace subjects, the service's efforts helped to create a better informed public.

Further, the Public Relations Service joined with the USAF Information Services in conducting press and radio coordination for the AIA/Air Force Data Management Symposium in Los Angeles.

The service organized press and radio coverage of a series of Small Business Forums sponsored by the Small Business Administration, the AIA and other defense-space oriented associations.

Public relations support was also given to meetings of the International Committee in San Francisco and New Orleans.

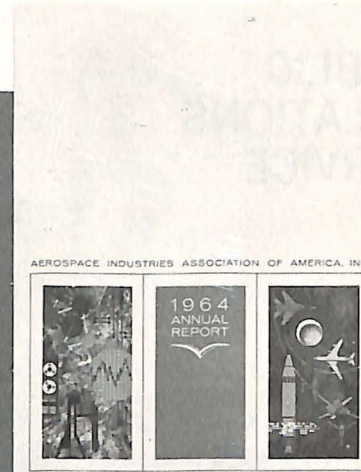
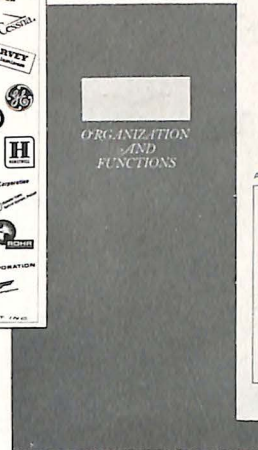
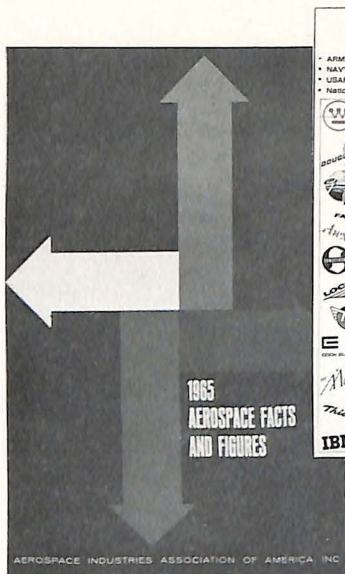
In order to establish a closer working relationship with member company public relations offices, the AIA staff held a series of meetings with Washington public relations representatives of its companies, and government information specialists.

The Economic Data Service was brought under administration of the Public Relations Service, and as the Economic Data Branch increased and broadened the collection and analysis of statistics and economic data for use internally by the various councils and services, as well as for public releases.

Bringing the library into the Public Relations Service was designed to provide comprehensive and easily accessible information involving industry and government programs and policies. Microfilming of AIA records and papers was undertaken, and will be completed during 1966.

### Speeches

A most important element in the public relations program is, and will continue to be, a regular schedule of speeches and appearances by the AIA president. Addresses before the New York Academy of Sciences, the Economic Club in Detroit, the Commonwealth Club in San Fran-



cisco, the Rotary Club in Philadelphia, the Arkansas Academy of Sciences and Valley Education and Research Foundation at the University of Arkansas, the AIA/USAF Data Management Symposium in Los Angeles, and the Aviation/Space Writers Association in Washington drew news and public attention, and provided the basis for contributions to follow-on articles and statements that were reprinted in newspapers, professional journals, magazines and the Congressional Record.

Similarly, articles signed by the AIA president were a valuable asset to the service's program in reaching service, trade and general publications.

The AIA president also was interviewed by both radio and TV newsmen, including the Voice of America, for broadcasts covering such subjects as the Gemini-Titan 3 flight, the semi-annual survey on aerospace industry employment, the year-end review and economic forecast of the industry.

#### Films

Three 16mm TV film clips were produced during 1965 for television distribution to stations across the country. The first of these, in black and white, was a news clip covering the manned Gemini-Titan 3 flight. The second pointed up the accident rescue potential of the helicopter

combined with the hospital heliports. The third was concerned with the need for downtown heliports.

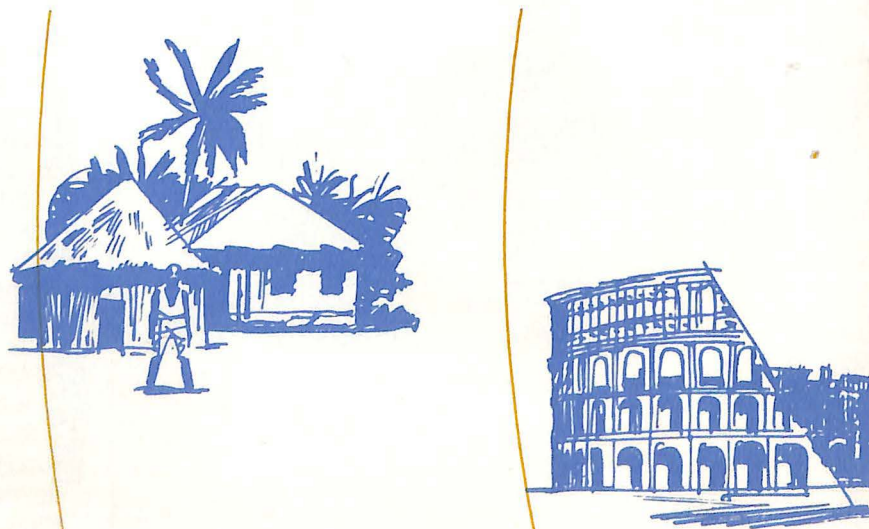
The two helicopter films became the basis for a longer promotional film made in behalf of the Vertical Lift Aircraft Council for use before civic groups.

In the fall, Voice of America began radio interviews with leaders at various levels of management, engineering and production in several aerospace companies for worldwide broadcast over the VOA Breakfast Show. This project is continuing in 1966.

#### Publications

*Aerospace Magazine*, the principal AIA publication, has gained wide acceptance as a quarterly for the past 3 years. The decision was made that in 1966 it would be issued monthly with a chart and tabular presentation of indicators designed to give an economic profile of the industry.

Three publication projects were carried out in cooperation with the United States Information Agency. AIA prepared a booklet, *U. S. Aviation Today*, which USIA printed for distribution at the Paris Air Show. Later the booklet was revised, color photographs obtained, and the USIA printed the booklet in four colors for overseas distribution under the title of *Wings: USA*. The third booklet, entitled *U. S. Aerospace: Skills Forge the Future*, with





## THE AEROSPACE INDUSTRY

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.



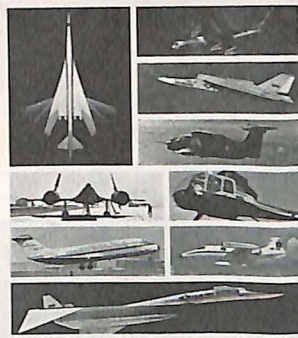
U. S. AEROSPACE  
Skills Forge The Future

THE IMPLICATIONS OF  
GOVERNMENT-INDUSTRY RELATIONS IN

AIA

AEROSPACE TECHNOLOGY—  
AN APPROACH FOR TOMORROWS

Remarks By Karl G. Harr, Jr.  
President  
Aerospace Industries Association



# WINGS U\*S\*A

# 1965

AIRCRAFT, MISSILES AND SPACECRAFT-1965

10,000 words of copy and numerous color pictures, was prepared for USIA for similar distribution. This book and *Wings: USA* will be translated into several foreign languages.

A 16-page rotogravure-type publication, *The Aerospace Industry*, was distributed to government and service organizations, libraries, schools, Civil Air Patrol, members of the National Aerospace Education Council, the media and the aerospace industry. Copies are available to respond to approximately 10,000 requests per year to AIA for general information on the industry.

A decision was made in 1965 to resume publication of the *Aerospace Year Book*, after a three-year lapse. The sections have been revised to accommodate the changing nature of the industry and a summary of important events during the interim years will be included.

The first edition of a booklet, *AIA Organization and Functions*, was prepared to further the understanding of the mission and operation of AIA.

The two annual publications, the *AIA Annual Report* and *Aerospace Facts and Figures*, were published. *Facts and Figures* was distributed through Aero Publishers, and continued to have a sale of about 4,000 copies.

Three speeches by Karl G. Harr, Jr., AIA president, were reprinted in two booklets for general distribution.

### Economic Data

This branch serves as the source of basic statistics for the aerospace industry. Information on the significant economic trends are collected, analyzed and published. It is responsible for developing economic and reference data, identifying trends, and documenting technological changes that shape the industry's future.

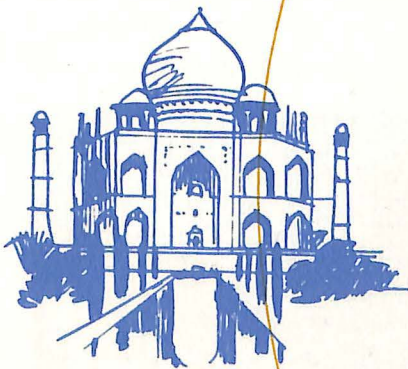
The branch also supports and assists the councils, services, committees, and working groups of AIA in the preparation and collection of data.

For example, assistance was provided to the Industry Planning Service in preparing economic analyses of unemployment compensation programs. It worked with the International Service to organize a system of reporting military exports. Work on this project will continue in 1966. Regular surveys of aerospace exports and imports have been improved.

A number of studies were made including a semi-annual survey of employment in the aerospace industry, a quarterly report on civil aircraft orders and an improved survey of monthly sales of general aviation aircraft.

### NAEC

The National Aerospace Education Council continued to receive financial and editorial support from AIA.



USE TYPEWRITER OR BALL POINT PEN. BEAR DOWN AND PRINT ALL LETTERS.

SHIPPER WILL COMPLETE ALL ITEMS BELOW BOLD LINE EXCEPT SHIPPER'S COPY

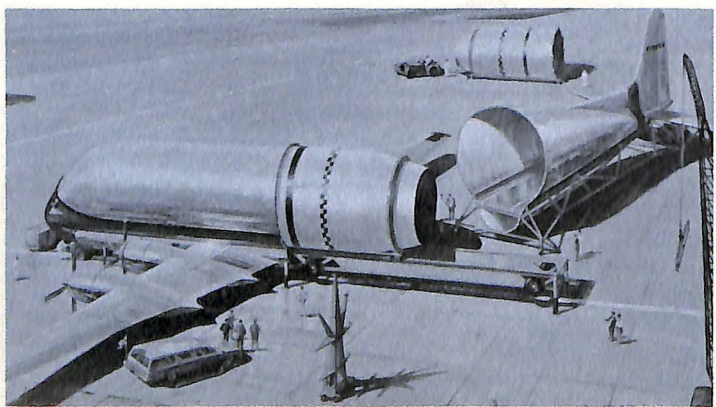
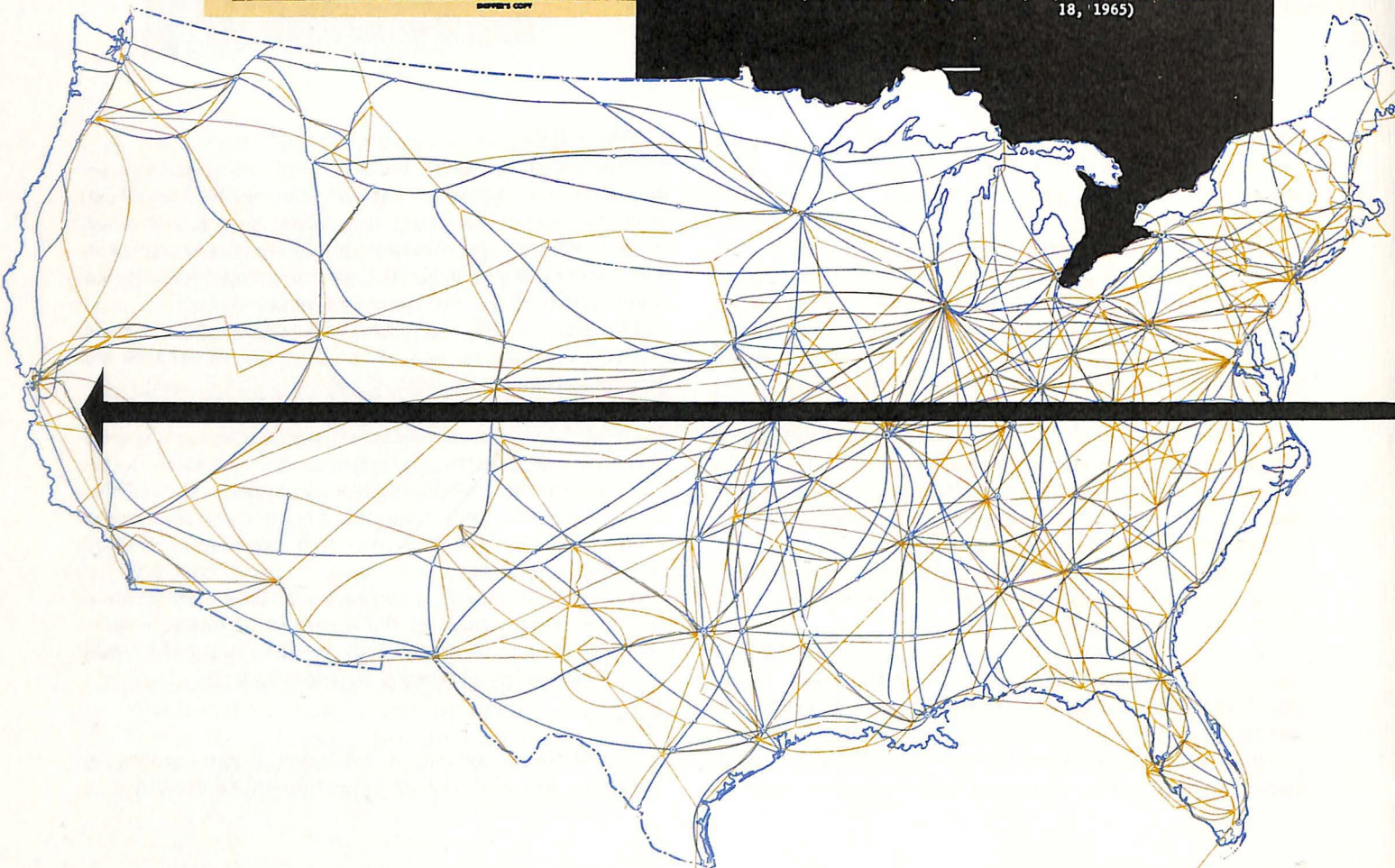
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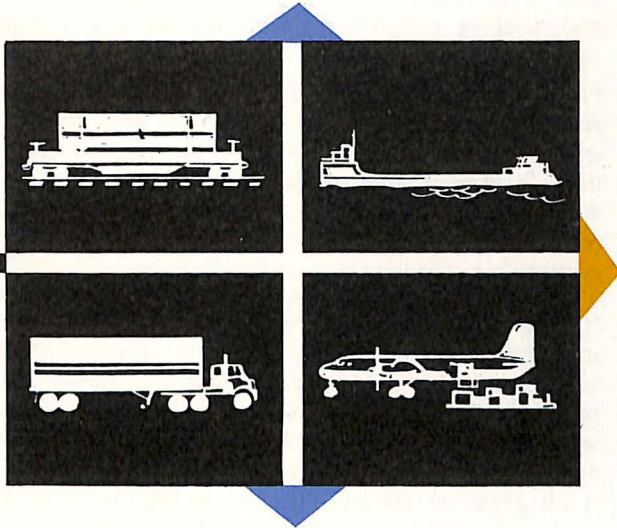
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**BEFORE THE  
INTERSTATE COMMERCE COMMISSION**

J. H. ROSE TRUCK LINE, INC. (APPLICANT) ) RELEASED RATES ORDER  
) NO. MC-637  
COMMODITIES REQUIRING SPECIAL EQUIPMENT ) (Service Date October  
18, 1965)



## TRAFFIC SERVICE



*The Traffic Service is responsible for obtaining for the aerospace industry adequate, economical and efficient transportation facilities and service. Traffic Service is an adjunct to the traffic departments of members in areas where an industry-wide approach can accomplish results not otherwise obtainable by the individual efforts of company traffic managers.*



R. J. BREITINGER  
Westinghouse Electric  
Corporation  
Chairman, Eastern Division  
Traffic Committee



J. W. HIGGINS  
General Dynamics  
Corporation  
Convair Division  
Chairman, Western Division  
Traffic Committee

Traffic Service is traditionally concerned with carrier rates and service, especially government regulation in those areas, and acting to secure and maintain the lowest lawful charges on aerospace materiel.

A companion activity which has required increasing emphasis in recent years is the interrelationship of the interests of AIA member traffic departments and those of the aerospace industry's principal customer, the federal government. Continuous liaison is necessary to insure that duplication of functions and efforts does not impede contract performance or increase production costs.

Brought clearly into focus in 1965 was a third and equally important activity: the concentration of effort in specifically identified areas to either reduce costs incidental to transportation or to promote programs which will otherwise advance the overall interests and objectives of the aerospace industry.

Actions taken by Traffic Service and the Traffic Committee in 1965 have been effective in all three areas of activity.

### **Traffic Service Operations**

Depending on whether their facilities are located in the eastern or western half of the U. S., forty-one traffic managers serve on the Eastern Division of the Traffic Committee and fifty-two on its Western Division. The AIA Director of Traffic Service serves as Secretary to the committee and, on matters of joint interest, acts as the committee spokesman before carrier bureaus and associations and the various military and other federal departments.

Throughout 1965, the activities of the committee were coordinated by means of Traffic Bulletins which advised committee members of pertinent decisions of the courts and regulatory agencies and of military and other government directives and regulations. The bulletins also coordinated government requests for aerospace action on traffic and transportation matters, kept members apprised of rate and service developments taking place in the carrier industry and advised them of legislative developments concerning transportation.

### **Goals and Objectives**

Activities of Traffic Service and its Traffic Committee generally follow a predetermined course. The Traffic Service GO (goals and objectives) program applies the expert traffic management talents of the aerospace industry to specific areas of activity.

The principal objective is cost reduction for both industry and the government in the movement of materiel and personnel. To attain this objective, small task forces were established to concentrate effort on specific goals.

Following is a summary of 1965 task force activities:

- *The Air Cargo Task Force* designed a program to promote the availability, utility and cost compatibility of air freight service as related to the requirements of the aerospace industry. Greater public acceptance of air freight transportation will result in rate reductions and improved, augmented carrier service. Public acceptance of air freight is being retarded because of the absence of opportunities for shippers and shipper groups to meet and discuss problems and needs with the air carrier industry. As a result of action taken by the task force, the Civil Aeronautics Board agreed to sponsor several regional shipper-carrier air cargo workshops in 1966.
- *The Shock and Vibration Task Force* drafted a research and testing program to provide standards for determining the effectiveness of motor carrier transportation equipment to reduce shock and vibration. In the absence of such standards, both industry and government generally package materiel to the highest level of protection and require carriers to provide the finest advertised equipment. Both practices add significantly to costs. The task force, in cooperation with the National Bureau of Standards, has initiated planning for a program to be conducted under the auspices of the Bureau. Several federal agencies have indicated interest in this program and have, informally, expressed their intention to join with AIA as co-sponsors of the study. The program will be continued during 1966.
- *The Highway Network Task Force* seeks to promote a national highway network linking government and industrial activities appropriate for the efficient and safe movement of large and heavy aerospace products. Before large shipments can move over the highways, carriers or individual manufacturers must make costly surveys in order to establish the capabilities of the various highways to accommodate the movements. The task force established the geographical areas of interest to AIA members which need to be linked together by a road network. During 1966, this will be followed by identifying and recording the weight and clearance characteristics of the network. The information will be kept current.
- *The Household-Goods-by-Air Task Force* developed a program to promote an integrated surface-air carrier service for the transportation of household goods. The program contemplates reductions in transportation costs, damage and expense for transferred employees. The task force drafted a program calling for a series of planning discussions with individual air and surface carriers in 1966.
- *The Task Force to Catalog Extraordinary Transportation Equipment* proposes to establish in cooperation with the National Aeronautics and Space Administration a national, centralized catalog of such equipment. At the present time there is no effective means for users of specially-designed transportation equipment to determine the availability of existing equipment capable of satisfying shipping requirements either with or without modification. Thus users must design and construct specialized transporters. The task force met with government and industrial organizations concerning the establishment of the catalog and will continue its activity in 1966.
- *The Educational Task Force* seeks to define the academic curriculum necessary to prepare students to occupy traffic management positions in the aerospace industry. The broadening responsibilities of industrial traffic departments, changing technologies and the need to reduce on-the-job training periods make it essential that there be available a reservoir of college-trained job applicants. The task force compiled an outline of position requirements within the aerospace industry and will coordinate its activities with the American Society of Traffic and Transportation which has undertaken an exploratory study.
- *The Task Force on Transportation Plans and Formats* is preparing a draft plan which can be employed to establish the respective roles, responsibilities and capabilities of industry and government with respect to the transportation aspects of the contractual relationship. This project was undertaken at the request of, and is being coordinated with, various government agencies.
- *The Task Force on Government Policies and Procedures* is carrying out an initial review of traffic and transportation requirements placed on industry as set forth in various government policies and procedures. Recommendations of the task force will be acted upon by the Traffic Committee and coordinated with the government agencies involved.
- *The Task Force on Passenger Transportation* is responsible for keeping abreast of such developments, analyzing them to determine their effects and reporting results to the Traffic Committee. During 1965, the task force devoted a considerable portion of its activity to the Civil Aeronautics Board proceeding on travel agents at plants. This concerned the right of commercial travel agents to locate offices on the facilities of industrial customers, and the amount of commission which airlines should pay agents for tickets sold at such facilities. The efforts of the task force served to acquaint committee members with the complicated issues of the proceeding. The task force also kept committee members apprised of developments concerning airline baggage allowances and charges, status of jet surcharges, and significant developments with respect to transatlantic and other air fares.

#### **Rate and Classification Subcommittee**

The Rate and Classification Subcommittee is responsible for keeping AIA members alert to significant carrier attempts to establish unreasonable rates and rules. The subcommittee also identifies carrier rate areas where affirmative action can be taken to accomplish adjustments in existing tariff provisions. Within assigned geographical areas of responsibility, individual subcommittee members review docket proposals which carrier rate bureaus and associations are required to publish under the provisions of the Interstate Commerce Act. Proposals of interest to the aerospace industry are circulated to all committee members for review and comment, and followed, where necessary, by the filing of an AIA statement of position



with the rate bureau or association concerned. When action at the rate bureau level does not have the desired results, petitions for relief are frequently filed with the ICC.

The following represents significant actions taken in this area during 1965:

Successfully opposed motor carrier attempts to assess a 50 percent arbitrary charge on extreme dimension shipments. Prevented the imposition of an increased charge of up to \$25 per truckload for shipments requiring protection from cold. Obtained disapproval of attempts by the motor carrier industry to amend provisions of the uniform bill of lading so as to permit carriers to sell undelivered merchandise without advance notice to owners of the goods. Successfully opposed attempts by motor carriers to embargo shipments of radioactive material weighing less than 30,000 pounds. Opposed and secured the cancellation of carrier attempts to increase rates on aircraft radomes, plastic and rubber articles, aluminum and zinc articles, shipments containing explosive material, projectile or rocket parts, and a proposed charge of 50 cents for extra copies of bills of lading.

Appeals to the ICC were taken in four instances. In one proceeding, motor carriers attempted to increase rates on shipments of large articles such as aircraft engines, aircraft sections and missile components by as much as 66 percent. Following the filing of a petition by AIA, the ICC suspended the increase and carriers discontinued their attempts. Another appeal to the ICC concerned the attempt by one of the principal motor carriers of aerospace products to limit its liability for negligent loss or damage to \$75,000 per truckload; this limitation applied notwithstanding the fact that the carrier carried insurance coverage of up to \$3 million per trailerload. The appeal had the desired effect and the carrier withdrew its application for limited liability. A subsequent appeal was filed with respect to a similar proposal by another motor carrier. The appeal was denied. In another proceeding before the ICC, efforts by AIA successfully precluded increased truckload rates of approximately 7 percent applicable to shipments of rocket parts.

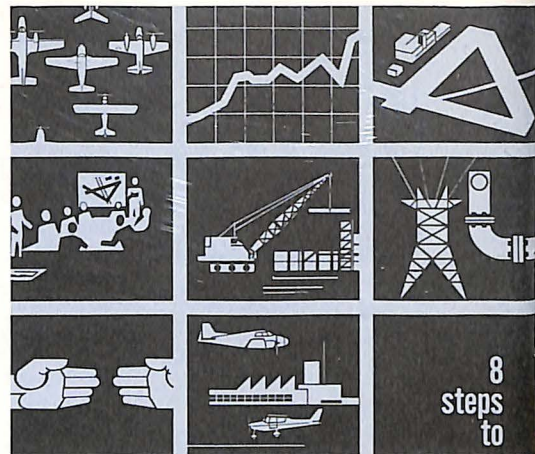
#### **Government-Industry Coordination**

A close working relationship is maintained between Traffic Service and the various government traffic offices, particularly those of the Department of Defense, the National Aeronautics and Space Administration and the Atomic Energy Commission. This relationship was maintained throughout 1965 by frequent attendance of government traffic personnel at meetings of the Traffic Committee and by numerous conferences, discussions and correspondence between representatives of the government, the Traffic Service director and Traffic Committee members. In this way overlapping and duplication of efforts and activity were avoided. At the same time, Traffic Committee members were afforded advance opportunities to comment on proposed government regulations and procedures. The following are illustrative of joint actions which were taken throughout the year to promote and improve the government-industry relationship:

- As a result of joint action taken by the Defense Supply Agency and Traffic Service, provisions were included in the DSA Transportation Manual to relax controls on contractors, thus reducing the government cost of administering contracts and permitting it to take full advantage of contractors' traffic expertise.
- The Air Force Systems Command closely coordinated its activity with Traffic Service and the Traffic Committee in developing traffic and transportation procedures for inclusion in the Air Force Plant Cognizance Program.
- NASA worked closely with Traffic Service in developing policy and procedures governing the application of reduced government freight rates to shipments of materiel moving on commercial bills of lading under cost-reimbursement contracts.
- The AEC coordinated with Traffic Service and Traffic Committee members a proposed directory of shipping containers for radioactive materials.
- Traffic Service held several conferences with personnel of the Military Traffic Management and Terminal Service on matters of government-industry interest, including the use and application of the short form government bill of lading, application of government reduced rates to contractor shipments, bill of lading audit programs and numerous meetings and discussions concerning joint AIA/MTMTS interest in carrier freight rate and classification proceedings.

#### **Cost Reduction Program**

Activities of the Traffic Committee in 1965 continued to contribute to the effectiveness of the Department of Defense cost reduction program. These included actions to reduce total distribution costs as well as direct point-to-point transportation costs. Inasmuch as DoD procurement absorbs a large portion of aerospace production, the efforts made by the Traffic Committee result in a direct reduction of military procurement costs and constitute savings in all areas of federal procurement of aerospace products. Successful efforts by individual aerospace traffic managers throughout the past year resulted in savings of more than \$13 million. Included in this sum are the results of coordinated actions taken by the Traffic Committee. Continued emphasis will be placed on this program in 1966.



8  
steps  
to

**AIRPORT DEVELOPMENT**

AIRPORTS  
MEAN  
BUSINESS

UTILITY AIRPLANE COUNCIL • WASHINGTON, D. C.



FAA 1710 1 UNITED STATES OF AMERICA, WASHINGTON 25 DC




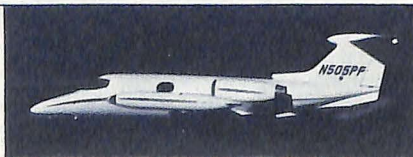
**FEDERAL AVIATION AGENCY**

THIS CERTIFIES THAT IV **JOHN ROCHESTER DOE**  
 V **1234 FIFTH AVENUE**  
 HOMETOWN, PENNSYLVANIA

DATE OF BIRTH	HEIGHT	WEIGHT	HAIR	EYES	SEX	NATIONALITY
9/20/20	67 in	170	BROWN	BLUE	M	U. S. A.

IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF  
 II **PRIVATE PILOT** NO. III **1234567**

RATINGS AND LIMITATIONS  
 XII **AIRPLANE SINGLE ENGINE LAND**

# UTILITY AIRPLANE COUNCIL

*The Utility Airplane Council represents AIA members in general aviation activities, encompassing all civil aviation with the exception of commercial air carriers. The council, which is composed of the top-level representatives from those companies that produce the airframes and powerplants for general aviation, works with government agencies on regulatory matters, and disseminates informational and educational material on general aviation and its position in the total transportation system.*



**JAMES R. KERR**  
*Avco Corporation*  
*Chairman, Utility*  
*Airplane Council*

The Utility Airplane Council in 1965 increased its membership from 7 to twelve companies. Its activities covered a wide variety of fields, with continuing emphasis on the development of programs to accelerate and prepare for the rapid growth of general aviation.

It was the biggest year in general aviation's history. The 8 companies, which report to AIA and account for more than 95 percent of the production of general type aircraft, produced 11,852 new airplanes having an estimated retail value of \$422 million. This represented an increase of 27 percent in units over 1964 and 60 percent in dollar value.

The use of utility aircraft continued to climb with the active fleet of general aviation airplanes exceeding 95,000 by the end of 1965. Flight hours were estimated by the Federal Aviation Agency at more than 16½ million, representing a movement of people and goods of more than 2¼ billion miles.

#### **Task Force Programs**

Task forces of the council's Education Committee worked on airport development, public education, pilot licensing, airspace usage and export activities.

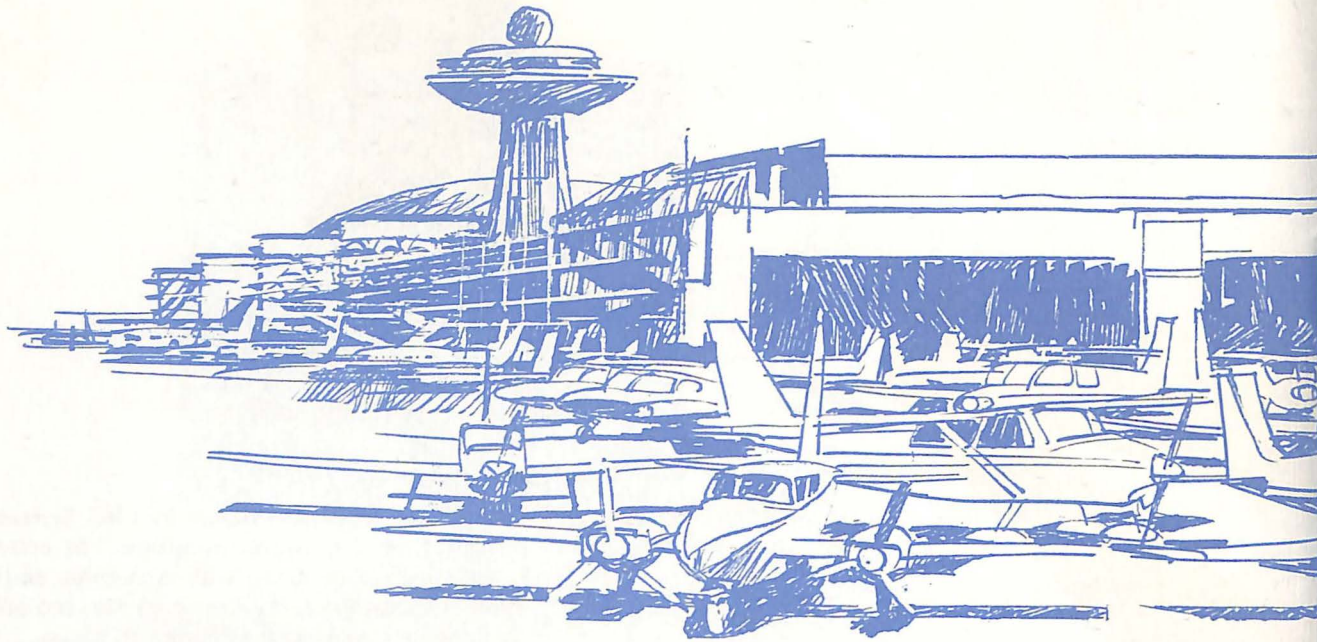
#### **Industry Conference**

The committee, in September, sponsored and presented a conference-briefing attended by more than 125 individuals from about 50 different organizations. They represented such diverse interests as insurance actuaries and airlines, county governments and state aeronautics commissions, the Budget Bureau and airplane owners. This program was designed to document the position of general aviation in the nation's transportation system and its contributions to economic and social development. The programs of the Education Committee were explained and cooperation sought from the associations, groups, and agencies concerned with this development.

A transcript of the conference was printed and distributed. The presentation on the excellent safety record of general aviation, which continues to show dramatic improvement, was reprinted by one magazine; numerous other media quoted from the material. The National Aerospace Education Council reproduced the significant highlights of the presentations and distributed the material to more than 5,000 key educators throughout the nation.

#### **Expanded Public Education**

Efforts to broaden the base of public information con-



tinued. The GROW Kit of films, records, and manuals, introduced in 1964, was distributed to new areas including aerospace workshops. About 100 kits were purchased during the year bringing the total number to 600 which are now in the hands of dealers, distributors and other local general aviation centers.

The council prepared a special kit with 2 of the 4 films and presented it on permanent loan to 180 aerospace workshops to be used not only in these workshops but also to be made available to educators attending the study sessions for subsequent use in classrooms.

Also in the field of classroom activity, the council printed a condensation of a comprehensive study on the feasibility of aviation-oriented curriculum. This was distributed to every college and university in the U. S.

#### **Airport Development**

The airport development program was launched early in 1965 with the release of 2 basic materials. These were a brochure on the importance of an airport to a community and an airport development portfolio containing a compilation of materials ranging from the economic importance of an airport to planning facilities.

During the year nearly 300,000 copies of the brochure and nearly 5,000 portfolios were distributed. Thousands of letters of comment and commendation have been received with many of them specifically relating advances in local airport development to the use of UAC materials.

#### **Pilot License Study Advanced**

The study of pilot licensing and requirements continued through the year with substantial progress since initial work in this field in 1964. The task force working on this project continued to keep the Flight Standards Service of the Federal Aviation Agency informed. Early in the year the FAA designated its Chief of Airman Training as its official liaison with the industry task force. Simultaneous with the UAC study program, the FAA is conducting its

own examination of the licensing procedures with a mutual exchange of views.

A task force was formed to undertake work in the airspace regulation area similar to that which is being conducted by the pilot rating and requirements group.

#### **Industry Views to FAA**

Another special task force of the Education Committee has been developing a program to provide FAA information about how the industry views general aviation, its economic impact and its relationship to the total transportation complex. Much of the material presented in the conference-briefing evolved from this work. The council had received from the Agency by the end of 1965 an acceptance of the invitation to hold more meetings and the specific times and places are being determined. Discussions will take place during 1966 with selected groups of key FAA and other government officials. The objective of these specialized briefings is to inform the concerned officials of the industry's views of general aviation—today and tomorrow—and, in turn, to have the benefit of their views and develop further mutual understanding.

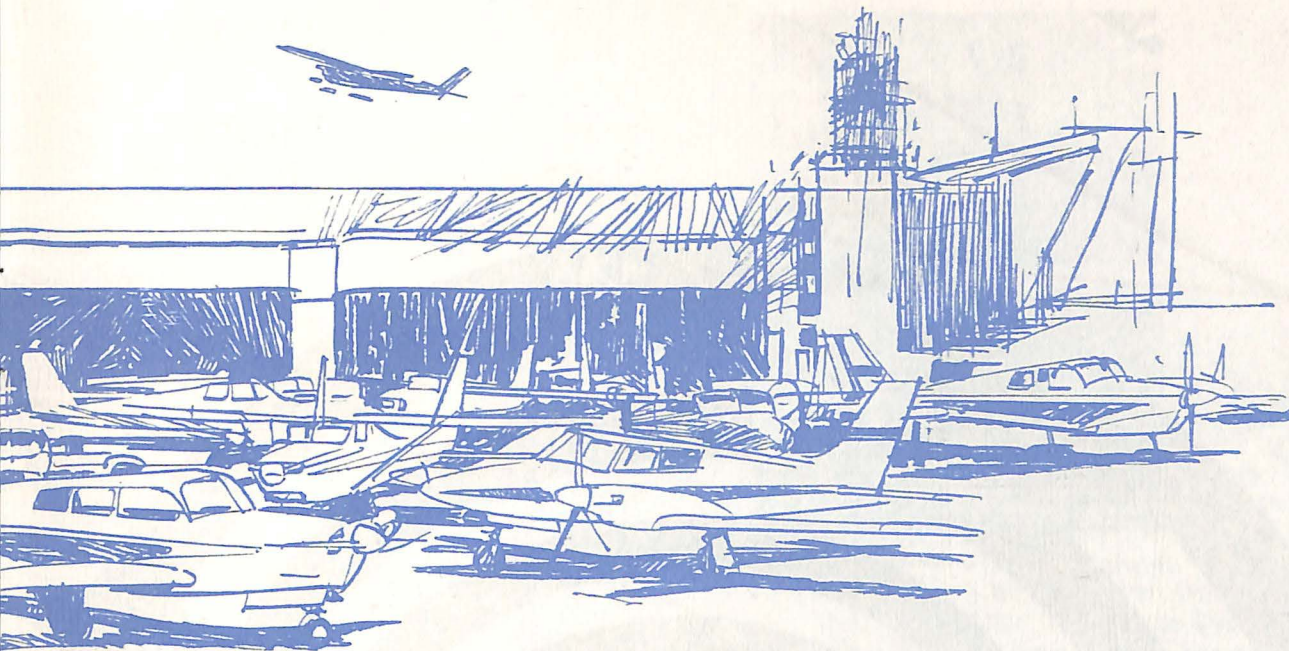
Another step in public education was the development of exhibits to be used in various shows. These were first used at the AeroClassic Flying Show at Palm Springs, Calif., in November. Literature on airports and general aviation flying was distributed. During the AeroClassic's program, the council received its national award for achievement in the field of education. This was a result of the total efforts of the Education Committee.

#### **International Development**

The industry's foreign market development continues to merit increased attention in coordination with the International Service of AIA. Exports of utility airplanes increased to more than 2,300 in 1965 from 1,775 in 1964. Value of these exports amounted to more than \$61 million.

During the Paris Air Show materials developed by the





council, including films from the GROW Kit, were supplied to the USIA information center.

Early in the year the FAA withdrew a notice of proposed rule-making which had been opposed by the UAC. This related to a proposed set of prerequisites for taking written examinations for licenses. Under the proposal, applicants would be limited to those persons who had actually taken flight instruction.

The council also submitted detailed comments on an advance notice of proposed rule-making on radio navigation and communication equipment requirements for general aviation aircraft. These comments covered a wide spectrum of airspace structuring, distance measuring equipment, transponders and similar aids to navigation.

UAC comments opposed a notice of proposed rule-making which would tie operations at all airports within the control zone of a primary airport to visibility at the primary airport. The rule, as proposed, would restrict operations at airports where visibility is good because visibility was below VFR operation a few miles away. Opposition was based on visibility differences which can occur between short distances, thus making one airport usable while another, only a short distance away, would be closed due to poor visibility. A control zone, the comments pointed out, is no different in this respect than any other controlled airspace.

#### **User Charges**

Although user charges were not specifically proposed during 1965, the subject was of concern to industry because of informal statements and proposals. It is obvious that user charges will be proposed during 1966 and the council has been gathering data to deal with this controversial topic.

For more than 5 years the UAC has endeavored to have the FAA change a requirement that aircraft identification numbers be at least 12 inches high. The present

requirement adds as much as \$100 to the cost of a new airplane. The position of the FAA is that numbers this large are required for national defense in air-to-air identification. The UAC contends that if this were true, then the requirement should have been immediate rather than providing for a two-year period for conforming.

Working through the UAC as well as in cooperation with the AIA Aerospace Technical Council, manufacturers have failed in their efforts to change the rule and it became effective January 1, 1966. A petition to have the rule set aside was denied but the UAC will continue its efforts to remove this requirement.

#### **Coordinating Programs**

The council maintained continuing liaison with government agencies, dozens of other aviation groups, and individuals and organizations concerned with aviation. These contacts ranged from the American Road Builders Association to the Air Transport Association, the National Association of State Aviation Officials and the Civil Air Patrol. Similarly, the council acted as an information source about general aviation with a continuous flow of materials to the press, security analysts and other individuals and groups. Staff members gave numerous talks and lectures at universities, seminars, trade meetings and service clubs.


In conducting its various activities the council has reached beyond its own company members by enlarging its subcommittee membership to include representatives of other organizations and associations. These include the National Aviation Trades Association, Aircraft Owners and Pilots Association, National Association of State Aviation Officials, educators, publishers, and, as observers, representatives of the Federal Aviation Agency.

Cooperation of these and other groups was sought both to gain the skills and talents of the most capable individuals and to seek greater planning coordination.




**DIRECTORY**

1965 DIRECTORY  
OF THE  
HELICOPTER OPERATORS  
COMMERCIAL—EXECUTIVE—GOVERNMENT  
AND THE  
HELICOPTER FLIGHT SCHOOLS  
IN THE  
UNITED STATES AND CANADA




PUBLISHED BY  
THE VERTICAL LIFT AIRCRAFT COUNCIL  
AEROSPACE INDUSTRIES ASSOCIATION  
1725 DE SALES STREET, N.W., WASHINGTON, D. C. 20036

**1965 DIRECTORY**  
OF FOREIGN HELICOPTER OPERATORS  
MILITARY — CIVIL GOVERNMENT — COMMERCIAL



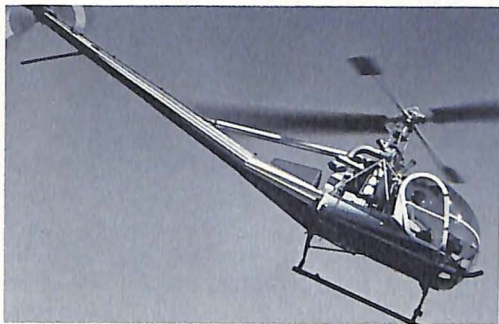
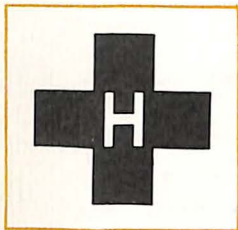
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1725 DE SALES STREET, N.W., WASHINGTON, D. C. 20036

**HELIPORTS -  
HELISTOPS  
IN THE  
UNITED STATES  
CANADA  
PUERTO RICO**



Published by  
VERTICAL LIFT AIRCRAFT COUNCIL  
AEROSPACE INDUSTRIES ASSOCIATION  
1725 DE SALES STREET - WASHINGTON, D. C.  
DECEMBER, 1964

# VERTICAL LIFT AIRCRAFT COUNCIL



*The Vertical Lift Aircraft Council, consisting of fifteen member companies, provides an authoritative source for obtaining, coordinating and presenting the vertical lift industry's views on mutual problems and promoting worldwide use of helicopters and other types of vertical and short take-off and landing (V/STOL) aircraft.*



W. PAUL THAYER  
*LTV Aerospace  
Corporation  
Chairman, Vertical Lift  
Aircraft Council*

The organization of the Interagency Task Force for V/STOL aircraft marked a significant step toward formation of a national policy and plan for the development and use of vertical lift aircraft. Its membership includes representatives of the Federal Aviation Agency, the Civil Aeronautics Board, the Defense Department, the Departments of Army, Navy, and Air Force, the National Aeronautics and Space Administration, and the Department of Commerce. The establishment of such a task force was recommended to the Federal Aviation Agency by the council two years ago.

The council already has started work on an economic analysis of vertical lift systems as parts of a multi-mode intercity transportation network. This will constitute a major council effort during 1966.

As part of this analysis, the council will cooperate with the Commerce Department in its studies on the transportation problems of the Northeast Corridor; V/STOL development work, sponsored by NASA, will also be explored. A series of presentations is planned for the appropriate government agencies in time to provide constructive contributions to the FAA report to the President and other aspects of the Northeast Corridor Project. Completion of a report, to be entitled "Economies of VTOL Systems," is scheduled early in 1966.

To carry out this effort most effectively, the council, together with the AIA Public Relations Service, is developing a program to acquaint the public — as well as federal, state and local government officials — with the advantages of vertical risers as a city-center method of transportation. Initial planning has been accomplished.

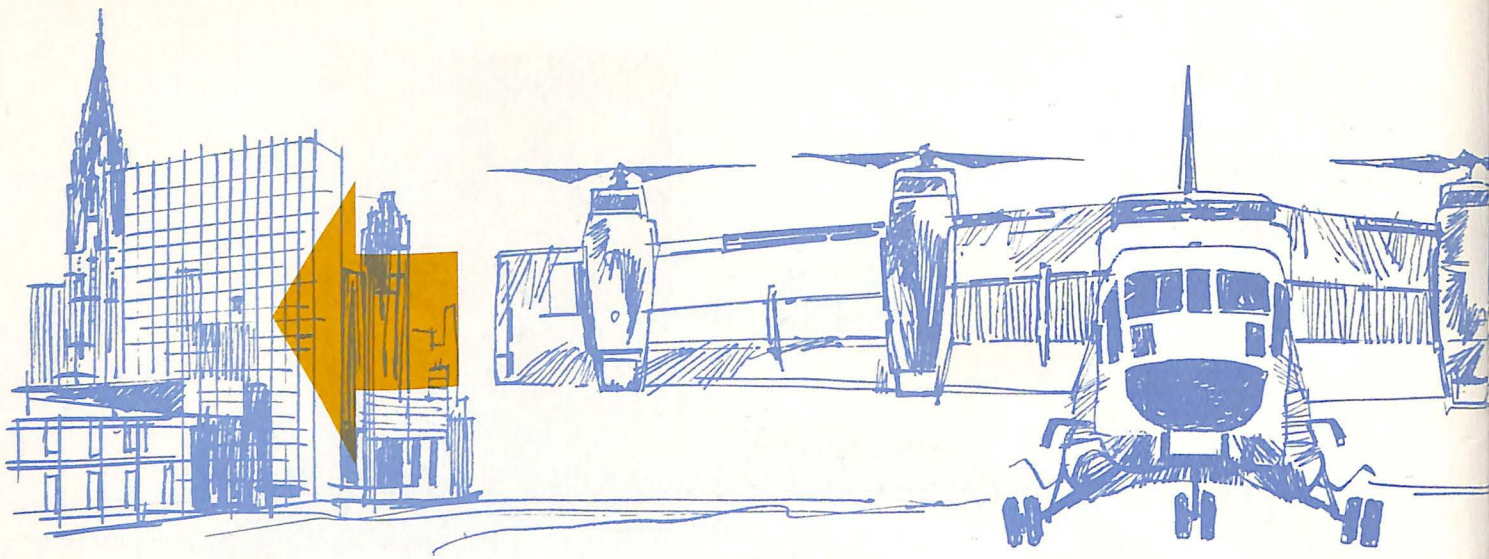
Liaison with the Federal Aviation Agency was given additional emphasis, resulting in a more effective relationship. The FAA's Aircraft Development Service is working closely with AIA, and suggestions and contributions from the council staff are now being solicited.

Similar attempts to encourage liaison have been directed at the National Aeronautics and Space Administration, and the results have been encouraging. For example, NASA has agreed to consider fifty-eight specific V/STOL development projects recommended by the council.

#### **Heliport Presentation**

Preparation of council-approved heliport promotional material is continuing. Two color film strips were prepared and distributed as public services. One portrays the helicopter in a rescue role, the other as a component of an intra-city transportation system.

An expanded, five-minute revision of the rescue clip



will be released in January, 1966. Entitled "When Minutes Count," this film dramatizes the use of helicopters in rescuing highway accident victims and transporting them to hospital heliports. The expanded version will be narrated by 1965 Council Chairman W. Paul Thayer.

The AIA Public Relations Service arranged nationwide television coverage of the film clips. Prints will be made available, on loan, for presentation by council companies and civic groups concerned with aviation programs.

The growing acceptance of the hospital heliport is indicative of the overall effectiveness of the heliport promotional effort. To date, almost 50 heliports are in operation in hospitals and other medical treatment facilities, including company hospitals supporting off-shore oil rigs in the Gulf of Mexico, public hospitals serving highway accident victims and military medical centers.

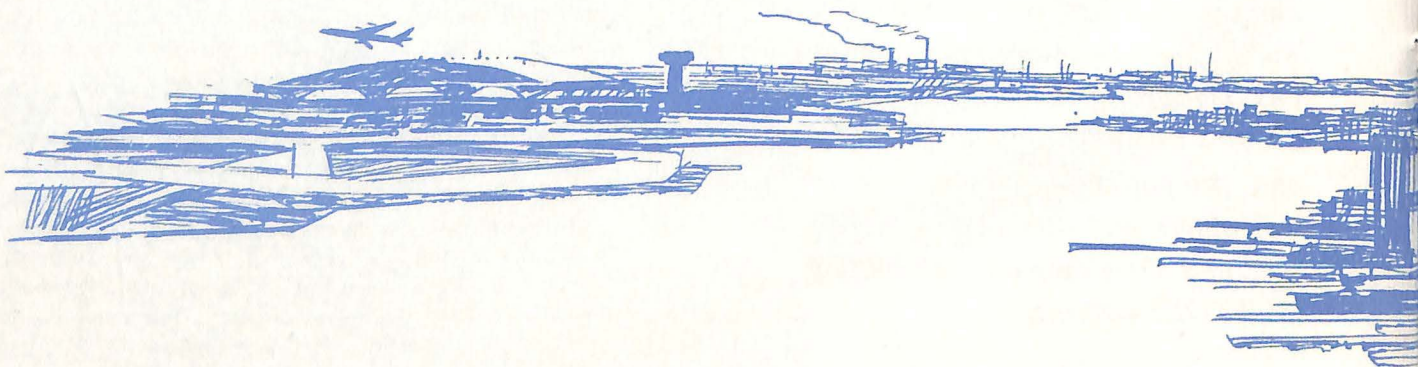
A presentation entitled "Rx for a Heliport" was prepared by the council staff and shown at the 1965 annual meeting of the Flying Physicians Association. An ex-

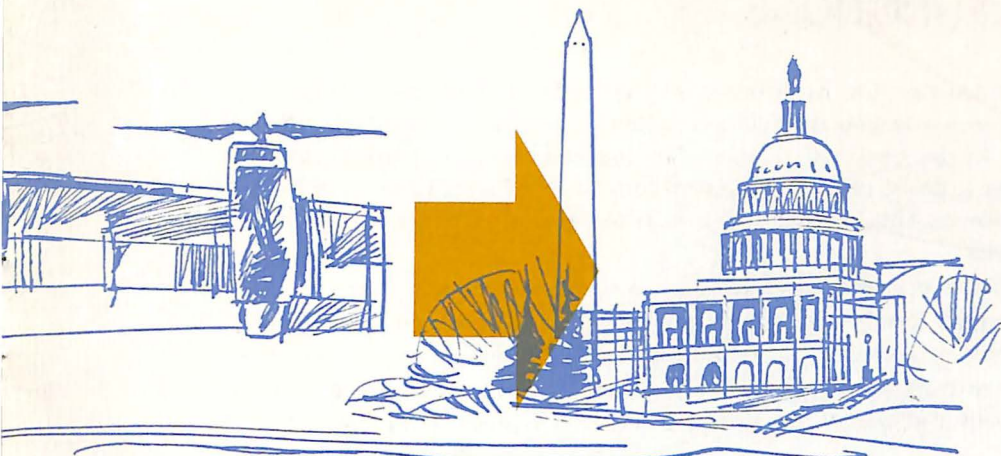
panded and illustrated version of this feature was later published in *The Modern Hospital*.

#### VLAC Publications

During the year, the council staff prepared and distributed:

- A revised Vertical Lift Aircraft Designation Chart covering forty-one models in production, ranging in size from 1 to seventy-two places. Seven current research and development projects also were listed.
- The 1965 Directory of Helicopter Operators and Helicopter Flight Schools in the U. S., Canada and Puerto Rico. This showed that the number of commercial helicopter operators increased from 451 in 1964 to 508 in 1965; the number of helicopters operated increased from 1,333 to 1,537 during the year. Including executive and civilian government listings, there were 860 operators flying 2,053 helicopters in 1965.





- The 1965 Directory of Heliports/Helistops in the U. S., Canada and Puerto Rico, which listed more than 1,100 heliports and another 68 proposed.

In addition, a new publication — the 1965 Directory of Foreign Helicopter Operators — was compiled and distributed. This provided data on 544 military and civil operators in eighty-one foreign countries. They operate 4,116 helicopters, of which 1,904 are U. S.-built and designed. Of the 2,212 remainder, 1,514 are of U. S. design and built by foreign licensees. Only 698 are of foreign design and manufacture.

Three annual VLAC publications — (1) The Versatile Helicopter, (2) Federation Aeronautique Internationale Directory of Helicopter Records, and (3) Recipients of Helicopter Awards 1944-1965 — were brought up to date.

#### **Information and Education**

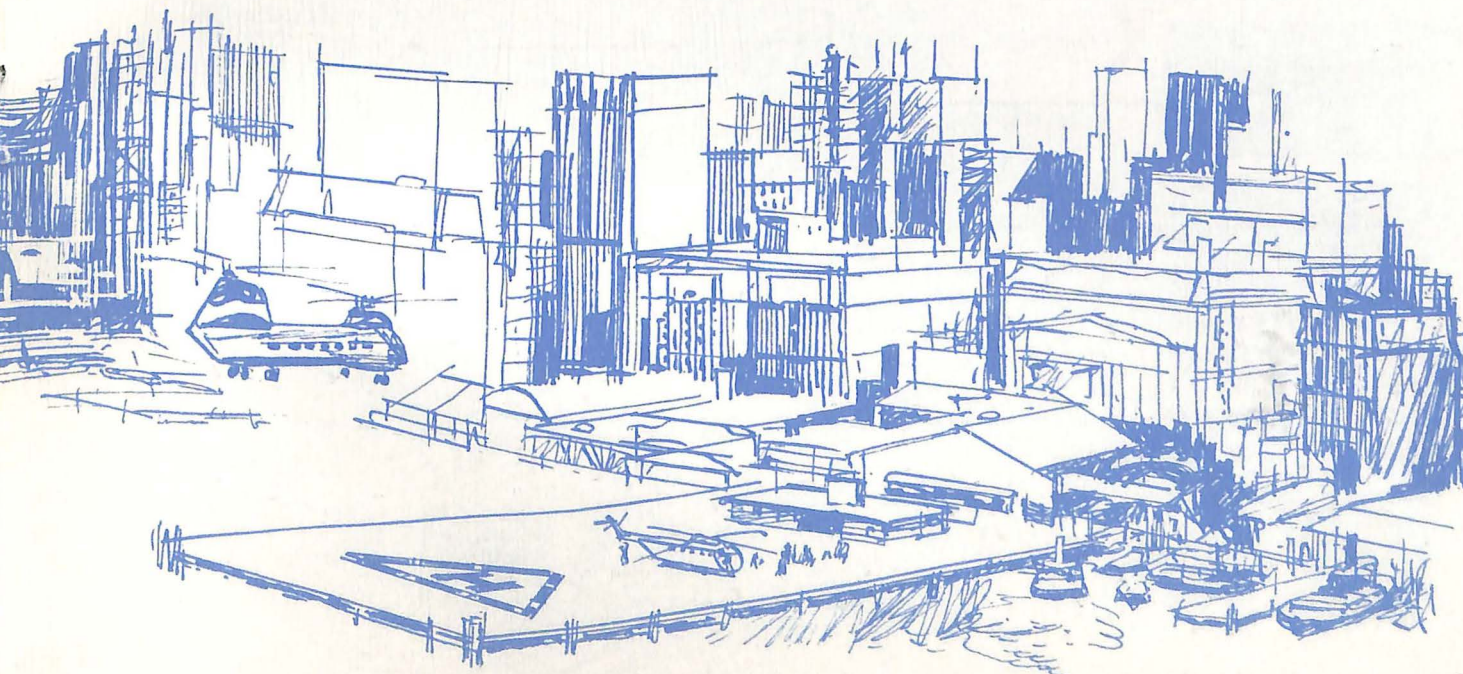
During 1965, the council staff filled requests from teachers and students seeking background information and capabilities data for theses and presentations.

The council also continued to participate in the annual Air Transport Management Institute sponsored by the American University Graduate School. Using materials provided by member companies and the council staff, the chairman made a presentation entitled "Vertical Lift Aircraft for Short Haul Transportation" and later participated in a workshop discussion period on the subject.

#### **International Programs**

During the year, the council staff, working with the International Service and Utility Airplane Council, helped to review requirements for vertical lift aircraft in U. S. foreign aid programs. This was a first step toward providing the State Department and the Agency for International Development with an industry position on balanced aviation systems capable of promoting overall economic development to complement other transport functions.

Planning sessions scheduled for 1966 will be followed by presentations directed at active participation in specific aid projects.



# ORGANIZATION AND FUNCTIONS

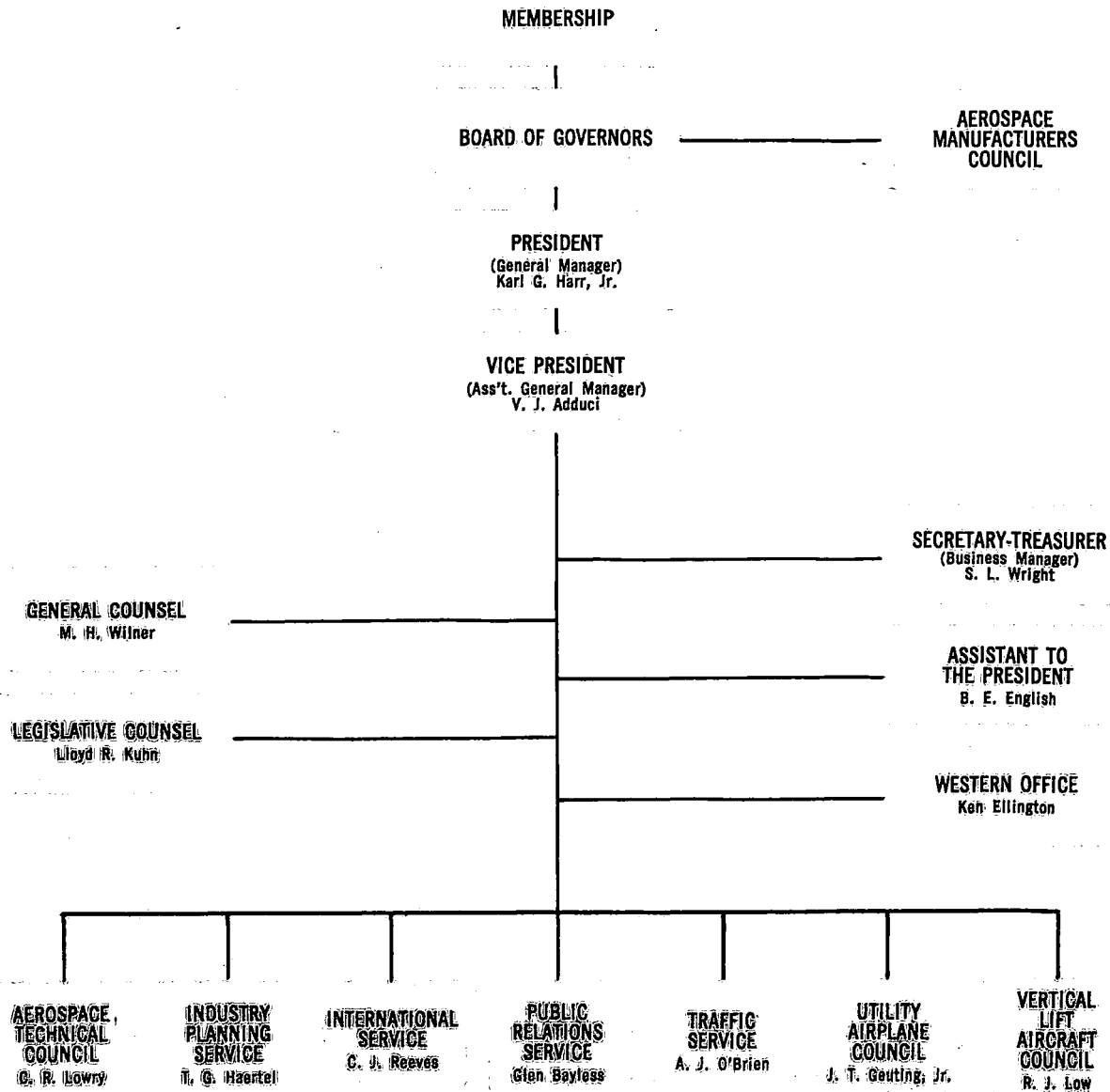
The Aerospace Industries Association of America, Inc. is the national trade association of the manufacturers of aircraft, missiles, spacecraft, propulsion, navigation and guidance systems, support equipment, accessories, parts, materials and components used in the construction, operation and maintenance of these products.

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.

The Aerospace Industries Association was created over forty years ago to serve as a vehicle for the lawful interchange of information among its member companies, and to represent those companies in their relations with their customers, government or commercial, on matters of industry-wide interest.

Through its committees of industry experts and its staff, the Association provides a medium for collaboration on non-competitive problems common to the industries and major segments of the industries which comprise its membership.

Membership of the Association totals 95, including 61 Division A (manufacturing) members, 16 Division B members, and 18 affiliate members.



# AIA MEMBER COMPANIES

## DIVISION A

Aerodex, Inc.  
Aeromet-General Corporation  
Aeronca Manufacturing Corporation  
Aeronutronic Division, Philco Corporation  
Aluminum Company of America  
American Brake Shoe Company  
Avco Corporation  
Beech Aircraft Corporation  
Bell Aerospace Corporation  
The Bendix Corporation  
The Boeing Company  
Cessna Aircraft Company  
Chandler Evans, Inc.  
Control Systems Division of Colt Industries, Inc.  
Continental Motors Corporation  
Cook Electric Company  
Curtiss-Wright Corporation  
Douglas Aircraft Company, Inc.  
Fairchild Hiller Corporation  
The Garrett Corporation  
General Dynamics Corporation  
General Electric Company  
Defense Electronics Division  
Flight Propulsion Division  
Missile & Space Division  
General Laboratory Associates, Inc.  
General Motors Corporation  
Allison Division  
General Precision, Inc.  
The B. F. Goodrich Company  
Goodyear Aerospace Corporation  
Grumman Aircraft Engineering Corp.  
Gyrodyne Company of America, Inc.  
Harvey Aluminum, Inc.  
Hercules Powder Company  
Honeywell Inc.  
Hughes Aircraft Company  
IBM Corporation  
Federal Systems Division  
International Telephone & Telegraph Corp.  
ITT Federal Laboratories  
ITT Gilfillan, Inc.  
Kaiser Aerospace & Electronics Corporation  
Kaman Aircraft Corporation  
Kollsman Instrument Corporation  
Lear Jet Corporation  
Lear-Siegler, Inc.  
Ling-Temco-Vought, Inc.  
Lockheed Aircraft Corporation  
The Marquardt Corporation  
Martin Company  
McDonnell Aircraft Corporation  
Menasco Manufacturing Company  
North American Aviation, Inc.  
Northrop Corporation  
Pacific Airmotive Corporation  
Piper Aircraft Corporation  
Pneumodynamics Corporation  
Radio Corporation of America  
Defense Electronic Products

Rockwell-Standard Corp.  
Aircraft Divisions  
Rohr Corporation  
The Ryan Aeronautical Company  
Solar, Division of International Harvester Co.  
Sperry Rand Corporation  
Sperry Gyroscope Company Division  
Sperry Phoenix Company Division  
Vickers, Inc.  
Sundstrand Aviation, Division of Sundstrand Corporation  
Thiokol Chemical Corporation  
TRW Inc.  
United Aircraft Corporation  
Westinghouse Electric Corporation  
Aerospace Electrical Division  
Aerospace Division  
Astronuclear Laboratory

## DIVISION B

Aviquest, Inc.  
Parker & Company International, Inc.  
Manufacturers Aircraft Association, Inc.  
Brukner, Clayton J.  
Bush, Charles T.  
Chambers, Reed M.  
Condon, Cyril Hyde  
DeSeversky, A. P.  
Eggert, H. F.  
Fales, Herbert G.  
Hanks, Col. Stedman Shumway  
MacCracken, Wm. P., Jr.  
Scholle, Howard A.  
Sikorsky, I. I.

## HONORARY LIFE MEMBERS

Loening, Albert P.  
Loening, Grover

## DIVISION OF AFFILIATE MEMBERS

Air Carrier Service Corp.  
Associated Aerospace Activities, Inc.  
Aviation Financial Services, Inc.  
Aviation Week  
Booz, Allen Applied Research, Inc.  
British Aircraft Corp.  
(U.S.A.), Inc.  
John Alvin Croghan  
Eastern Aircraft Corp.  
Information Handling Services, Inc.  
Lybrand, Ross Bros. & Montgomery  
National Aviation Corp.  
National Credit Office, Inc.  
Smith, Kirkpatrick & Co., Inc.  
Space/Aeronautics  
Texaco, Inc.  
U. S. Aviation Underwriters, Inc.  
Robert L. Walsh  
Edwin C. Walton

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.

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