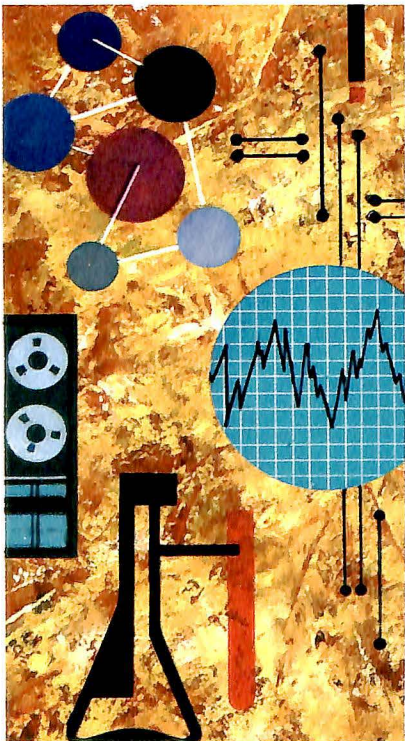


AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.



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Marty Hill



1964 ANNUAL REPORT

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.

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TO THE MEMBERSHIP



KARL G. HARR, JR.

The Aerospace Industries Association in 1964 directed its major efforts toward the goal of a more productive industry-government relationship in order to assist its members in meeting their expanding technological and managerial challenges.

The necessity for an effective relationship with government lies in the nature of the industry. The aerospace industry is a unique member in the family of U. S. industries since it is at the same time influenced by the complicated interplay of the private enterprise system and the necessity of being immediately and effectively responsive to national needs as determined by its government customers. The industry, therefore, is heavily geared to national policy and the public interest.

Major steps taken by the Association during the past year to promote a more effective industry relationship with government included the following:

- Assuming a leading role in the establishment of the Council of Defense and Space Industries Associations (CODSIA). This organization serves as a vehicle for the coordination and simplification of the complexities of the government-industry relationship by speaking with one voice where similar viewpoints exist among trade or industry associations. Members of CODSIA are Atomic Industrial Forum, Automobile Manufacturers Association, Electronic Industries Association, National Security Industrial Association, Western Electronic Manufacturers Association and AIA. The concept of CODSIA and the potentialities of its role have already gained it the respect and support of the government.

- Holding the National Aeronautics and Space Administration-Industry Aerospace Forum to discuss methods and techniques of solving problems and improving efficiency in ten different areas. These areas included financial management and reporting, logistic support, technical

direction, propulsion, electronics and facilities. The forum provided the means for an exchange of ideas and a frank expression of views. Its benefits are continuing with this stimulus to improved communication.

▪ Restructuring the Association's Technical Services to accommodate the increasing shift of emphasis in industry from volume production to research and development. The Aerospace Technical Council, which was created in 1963 to provide advance planning in technical areas, produced a reorganization plan which was approved by the Board of Governors at the fall meeting. Basically, the plan streamlines and consolidates the old committee structure of the Technical Service so there is a significant saving in people and travel, and reorients its direction toward the managing of technological efforts as opposed to the handling of purely technical problems.

▪ Utilizing the expertise available in the industry for the Association's many committees to provide specific suggestions on solutions to government-industry problems. For example, one AIA committee provided support to a program involving improvement and simplification of electronic specifications. The Committee's survey indicated that annual savings of \$12 million can be achieved when the program is completed in 1968, and that savings of \$3 million can be made in 1965 in a single area by application of 17 standardized engineering practices in place of the approximately 200 often conflicting or duplicative requirements which had formed the basis for standard operating procedure before the program's inception.

▪ Taking the initiative through committee and council work in conceiving and proposing new and better methods for all contractual relations with the government. A vast pool of capabilities is being utilized to recognize modifications needed and to make constructive recommendations. Imaginative consideration to mutual government-industry

problems remains a prime guideline for all committee and council work.

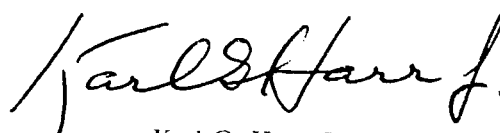
Two major measurements of the industry's activities — sales and employment — reflected the increasing technological character of the industry. Sales continued at the \$20 billion level in 1964, with research, development and testing accounting for a higher percentage of the total than in 1963. Although the industry is still the nation's largest in terms of manpower, employment dropped from an estimated 1,285,000 in December, 1963, to 1,104,000 in December, 1964, due largely to the decline in production workers.

Profit rate of the aerospace industry, traditionally below all other manufacturing industries, continued in this pattern. Compared with the all-manufacturing average of 5.1 percent, the rate of profits to sales in this industry averaged about 2.5 percent, a slight increase over 1963.

Export sales of the industry during 1964 amounted to \$1.3 billion, the fourth consecutive year that exports have exceeded the billion dollar mark. The government during the year took steps to place the U. S. aerospace industry in a competitive position with other nations in financing export sales. This reinforces our prediction of \$2 billion in aerospace exports by 1970.

The record of the Association's activities and achievements is too lengthy to describe in a brief message. Details follow in the individual sections on its Services and Councils.

Respectfully submitted,



Karl G. Harr, Jr.
President



AIA ORGANIZATION AND FUNCTIONS

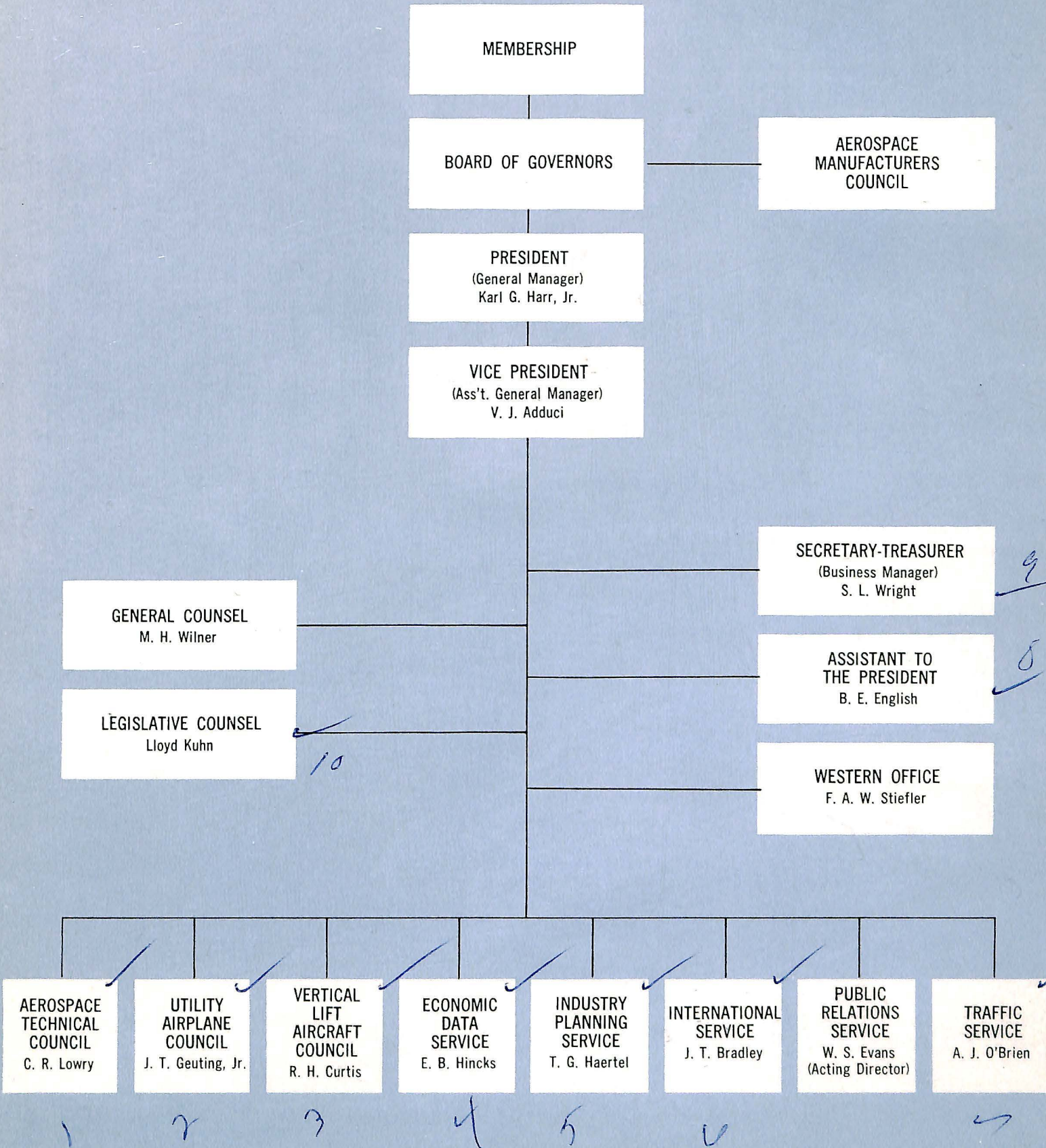
The Aerospace Industries Association of America, Inc., is the national trade association of the manufacturers of aircraft, missiles, spacecraft, propulsion, navigation and guidance systems, support equipment, accessories, parts, materials and components used in the construction, operation and maintenance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

Association policy is determined by a Board of Governors consisting of senior executives of twenty-six member companies plus 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 98, including 61 Division A (manufacturing) members, 17 Division B members, and 20 affiliate members.



MEMBERSHIP

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INDUSTRY
PLANNING
SERVICE
T. G. Haertel

INTERNATIONAL
SERVICE
J. T. Bradley

PUBLIC
RELATIONS
SERVICE
W. S. Evans
(Acting Director)

TRAFFIC
SERVICE
A. J. O'Brien

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ECONOMIC DATA SERVICE

The Economic Data Service compiles statistical data on the aerospace industry, and statistical and economic information on the financial and technological environment within which the industry functions. This Service is responsible for developing economic and reference data for the Association, identifying trends affecting the aerospace industry and documenting technological changes that shape the industry's future. The Service also develops a basic statistical and historical record of the aerospace industry on a quantitative basis which is issued annually by the Public Relations Service and titled *Aerospace Facts and Figures*.

The Service directly supports and assists the Councils, Services, Committees, and working groups of AIA. The International Service (formerly the Export Service) worked with the Economic Data Service in the preparation of economic trends and statistics for use in the industry's position paper for the government tariff negotiators. Assistance was provided to the Industry Planning Service in preparing the economic and quantitative portions of a proposed industry position for use in a proceeding before the Secretary of Labor in connection with the Walsh-Healey Act.

In cooperation with the Aerospace Technical Council, data was developed for the National Aeronautics and Space Administration concerning the internal techniques of aerospace companies for documenting innovations by engineers and technicians working under NASA contract.

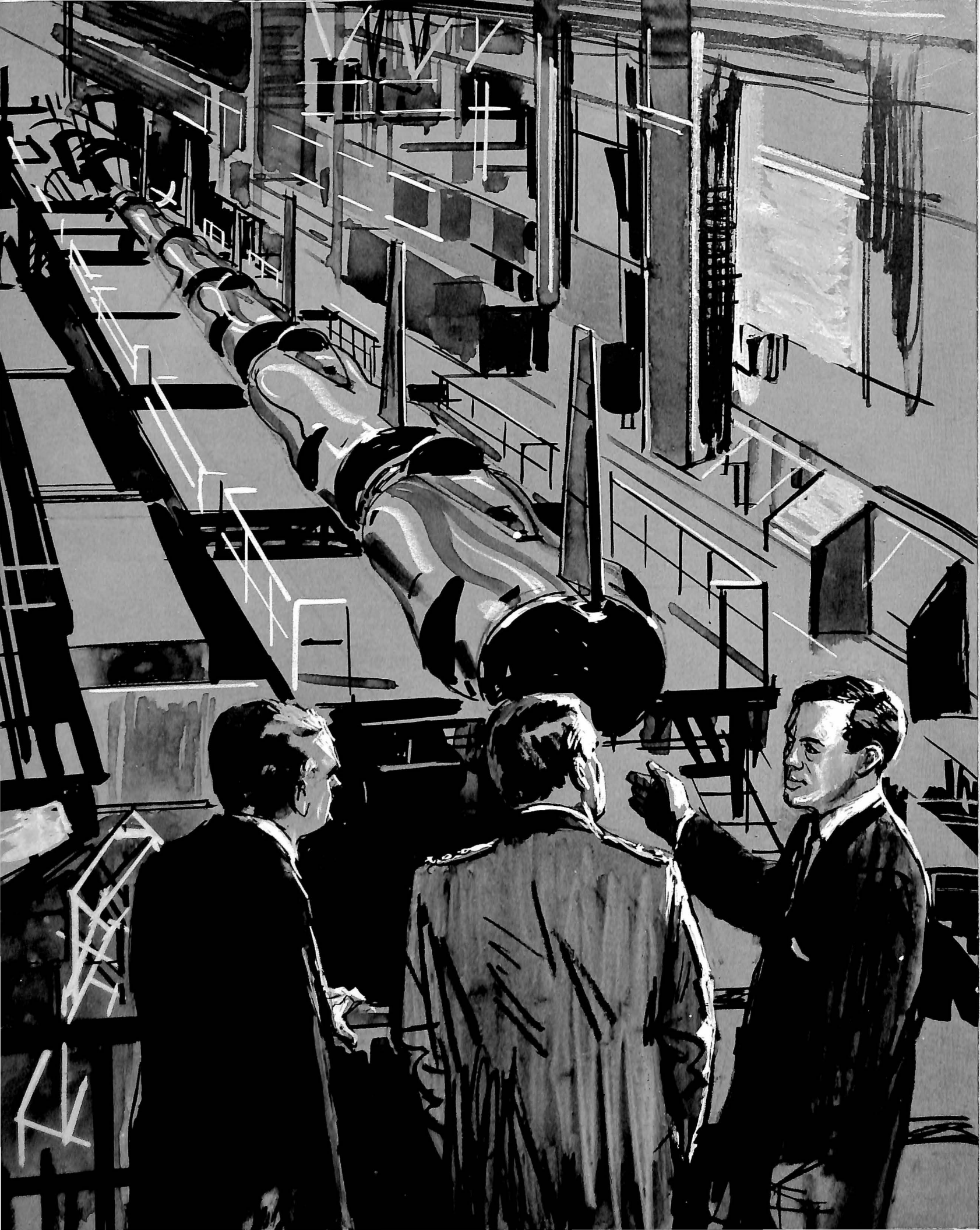
A major exchange of data on compensation practices of each Association member company was placed under contract by the Economic Data Service in support of an expanded program of the companies represented on the Industrial Relations Committee. An exchange of data among member companies for analyzing manpower utilization will be developed on an experimental basis during 1965.

In the area of systems, rather than statistics, the Service continued to monitor the ways by which elements of the Defense Department and NASA are influencing or directing the methods of aerospace companies, under contract to DoD or NASA, for indexing, storing and retrieving technical information generated within the company or received from outside sources. This work is in collaboration with the applicable working groups of the Aerospace Technical Council and the Industry Planning Service.

The Service also has been responsible for working with DoD and its contractors on a program to establish a bank of data on the rates of profit realized on each major completed DoD contract.

Work continues with statistical gathering units of the Departments of Commerce and Labor on the technical details of their data collections and tabulations. Significant changes are likely in 1965, largely because of the magnitude of the new NASA programs and the government's desire to measure the space-oriented activities of the aerospace and other industries.

The Service continues to operate AIA's Data Room for secure handling of information, and the Library for use by all Association staff and member companies and to render related in-house service. Advisory services on data handling techniques are regularly supplied other staff and committees upon request.



INDUSTRY PLANNING SERVICE

Industry Planning Service is a focal point of coordination and liaison between government and the aerospace industry for a wide variety of subjects. These are the fields of contracting, legal, accounting, finance, industrial relations, industrial security, materiel management, government reporting, product support, spare parts and service publications.

Industry viewpoints are generated by the deliberations of committees of aerospace industry specialists from member companies in the fields noted above. The committees review and consider drafts of proposed government policies, procedures, regulations, specifications and other documents which affect the aerospace industry and on which industry views are requested. The committees also initiate projects where warranted because of problems experienced in industry or government. Committee officers and staff maintain contact with government officials to offer AIA's services in the solving of mutual problems and to assist both government and industry by interchanging information of mutual interest. Most committees schedule one or two government-industry meetings to provide opportunities for direct exchange of views, plans and other information.

The most important impact on Industry Planning Service areas of responsibility in 1964 was caused by the issuance of a variety of system management and data directives and procedures. The Industry Planning Service committees, in conjunction with other committees within AIA, have provided detailed recommendations to the government.

The greatest impact on IPS activities is likely to be in the areas of change generated by Project 60 implementation — the transfer of contract administration from the military departments to the Defense Supply Agency and in turn to Defense Contract Administration Services Regions. These fast moving changes affect practically all of the major activities of IPS and of contract organizations. Industry and AIA will be alert to the changes in policies, regulations and procedures and will supply industry appraisals and recommendations wherever they can contribute to the effectiveness of the transition and the improvement of government-industry procedures.

Many of the principal fields of interest within the Industry Planning Service affect the well-being of the aerospace industry. The techniques and policies which are involved can be of material assistance to the government-industry teamwork in developing and producing military aircraft, missiles, spacecraft, systems, components, parts and equipment.

Effective January 1, 1965, the Manufacturing Committee and the Quality Control Committee were transferred to Industry Planning Service. However, the 1964 reports of these committees are in the Technical Service section.

GOVERNMENT REPORTS COMMITTEE

The Government Reports Committee deals with reporting, financial, and business management systems. Its activities embrace reporting requirements, information usage and evaluation, design of forms, military standard procedures, record retention, and related activities. The Committee works with the Bureau of the Budget, Department of Defense, National Aeronautics and Space Administration, and other government agencies as well as with other AIA Committees.



J. F. POWER
Lockheed Aircraft Corporation
 National Chairman,
 Government Reports
 Committee



D. V. DORMAN
Martin Company
 National Chairman,
 Industrial Relations
 Committee



MICHAEL MINNICH
*Thompson Ramo
 Wooldridge Inc.*
 National Chairman,
 Industrial Security
 Committee



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Northrop Corporation
 Chairman, Materiel
 Management Committee



G. C. SULLIVAN
Lockheed Aircraft Corporation
 Chairman, Patent
 Committee



JOSEPH CORIE
Northrop Corporation
 Chairman, Procurement
 and Finance Committee



HAL BAYER
Douglas Aircraft Company, Inc.
 Chairman, Product
 Support Committee



JAMES BURICH
Goodyear Aerospace Corporation
 National Chairman,
 Service Publications
 Committee



W. E. PARSONS
The Boeing Company
 Vertol Division
 Chairman, Spare
 Parts Committee

GOVERNMENT REPORTS COMMITTEE

- Data Processing
- Program Progress Reporting
- Manufacturers Planning Reports
- Records Management
- Government Facilities & Property Systems & Reports
- Military Standard Procedures
- Plantwide Data Reporting
- Cost & Economic Information Systems
- Propellant Reporting
- Time-Phased Progress and Cost Reporting
- Contractor Performance Evaluation
- Contractor Cost Study
- Inspection and Receiving Reports (DD 250)
- War on Paperwork
- Data Banks
- Data Transmittal
- Bureau of Budget Hearings
- Formalization of Contract Reporting Requirements

INDUSTRIAL RELATIONS COMMITTEE

- Safety
- Unemployment Insurance
- Wage and Salary Including Fringe Benefits
- Manpower Training and Development
- Personnel Practices
- Labor Relations

INDUSTRIAL SECURITY COMMITTEE

- Handling of Classified Information
- Security Clearances
- Control of Areas
- Visitor Control Procedures

MATERIEL MANAGEMENT COMMITTEE

- Impact of Distressed Labor Problems on Subcontracting
- Joint Industry DOD Training Programs
- Make or Buy Policy
- Performance Incentive Contracting
- Project Organization
- Responsibility of Prime for Subcontractors
- Purchasing System
- Terminations
- NASA Activities
- Small Business

PATENT COMMITTEE

- Proprietary Rights in Technical Data
- Federal Patent Policy
- Patent Office Fee Bill
- Government Patent Regulations
- Patent Infringement
- NASA Patent Policy & New Technology Clauses
- Contract Specifications
- Authorization & Consent Clauses

PROCUREMENT & FINANCE COMMITTEE

- Contract Cost Principles
- Incentive Contracts
- Termination Settlements
- Contractor Independent Technical Effort
- Facilities Policy
- Depreciation Policies
- Procurement Statutes
- Taxation of Government Owned Property
- Indemnification Against Unusually Hazardous Risks
- Special Projects
- Patents & Proprietary Rights
- Organizational Conflicts of Interest
- Renegotiation
- Contractor Weighted Average Share

PRODUCT SUPPORT COMMITTEE

- Integrated Single Support Concept
- Contract Technical Service Personnel
- Management of Contractor Data
- Military Personnel Training Requirements
- Joint Industry/NASA Logistics Support
- Support of Military Exports
- Weapon System Effectiveness
- Aerospace Ground Equipment, Requirements Policy
- Configuration Management

SERVICE PUBLICATIONS COMMITTEE

- Exchange of Cost Saving Techniques
- General Requirements for Military Manuals
- Manuals for Missiles and Space Systems
- Army 5-Part Manuals
- ATA-100 Service Publications Specification
- Technical Manual Printing and Distribution
- Information Panel
- Standardization of Manual Specifications (MITM Program)
- Developments in the Acquisition, Storage and Retrieval of Operating and Maintenance Data
- Detailed Technical Manual Cost Estimating, Recording and Reporting Requirements
- Survey of NASA Technical Manual Applications

SPARE PARTS COMMITTEE

- Federal Cataloging and Prescreening Data Requirements
- Uniform Technical Documentation Provisioning Format Requirements
- Spare Parts Provisioning Policies and Procedures
- Aerospace Ground Equipment Provisioning Documentation
- Contractor Support Procedures for Army, Navy and Air Force and NASA
- Design Change Procedures Documentation
- Spare Parts Replenishment Procurement Policy & Practices

During 1964, the Committee maintained an exceptionally high level of activity in all areas of interest which reflected an increased level of activity on the part of the government, particularly as related to the creation of sophisticated management and reporting systems. Some of the more important areas of activity follow.

Data Management

The Government Reports Committee, in conjunction with other concerned AIA Committees, has worked actively in the development of Air Force Systems Command Manual 310-1, which lists data reporting requirements and their values in proposals and contracts. The Committee also assisted in the development of AFSCMs 375-1 through 5, dealing with configuration management and control and the relevant work breakdown structure. Special AIA *ad hoc* committees were established during 1964, in coordination with existing AIA Committees, to cover the broad spectrum of these manuals. Representatives from the Committee have been appointed to serve on *ad hoc* committees and have been active participants. It is expected these data management systems will continue to receive considerable action during 1965.

Financial Management Reporting Systems

DoD, NASA and the military services were active in the financial management reporting field during 1964, and a comprehensive overhaul of various systems and techniques is in progress. The trend is toward obtaining more information from contractors than in the past. At the same time, it is possible that, despite an increased requirement for information, the total reporting workload may be reduced through elimination of redundant reports. A major potential problem to industry is inherent if each system under development is permitted to be implemented, since duplicate contractor accounting systems might prove necessary. Some of the systems now being studied by the Government Reports Committee are:

Cost and Economic Information System (CEIS)— This system is intended to cover all financial, business management and similar reporting systems required by DoD and the military departments from contractors. It is expected to include reporting of man-hours and costs against a detailed work breakdown structure by functional area (Manufacturing, Engineering, Quality, etc.); a plant-wide employment report; and learning curve and production data. According to a DoD directive, CEIS is to produce the cost and economic data necessary for PERT, PERT/Cost and configuration management as well as for financial management and other business purposes.

NASA Financial Management Reporting System (FMRS)—This is the NASA equivalent of CEIS and uses as its cornerstone the NASA Form 533 and similar reports being developed. This system was explored in some detail at the NASA-industry workshops. The Committee continues to assist NASA in keeping efforts in this connection consistent with industry practices.

AFSC Manual 174-1 and Contractor Financial Reporting Manual (CFRM)— This Manual serves as a collecting point for Air Force financial reports and their instructions, pending implementation of CFRM and subsequent implementation of CEIS. Essentially it will update current

reporting requirements and instructions. The Contractor Financial Reporting Manual is being prepared by AFSC and is intended to be a major revision in the Air Force's requirements for financial management reports. It is anticipated that CFRM will be issued on an interim basis, pending full development of CEIS. Similarity between CFRM and the NASA efforts on FMRS appear substantial.

PERT/Cost and Cost Planning and Appraisal (CPA)—Revisions are being made in PERT/Cost and CPA by the Office of Assistant Secretary of Defense (I&L). These changes may affect the compatibility of these systems with CEIS which is intended to include PERT/Cost and CPA.

Military Standard Procedures

The Committee is continuing its beneficial cooperation with the Defense Supply Agency on the Military Standard Procedures as they relate to contractor operations. The procedures being followed and developed are: Military Standard Requisitioning and Issue Procedure for Contractor Use (MILSTRIP); Military Standard Transaction Reporting and Accounting Procedure (MILSTRAP); Military Standard Item Characteristics Coding Structure (MILSTICCS); Military Standard Activities Address Directory (MILSTAAD); Military Supply and Transportation Evaluation Procedure (MILSTEP); Military Industry Logistics Data Interchange Procedure (MILDIP); and Military Standard Transportation and Movement Procedures (MILSTAMP).

Material Inspection and Receiving Report DD-250

At the request of the DoD, a task group composed of members of the Government Reports Committee and other interested committees discussed and reviewed a proposed revision of a DoD form, Material Inspection and Receiving

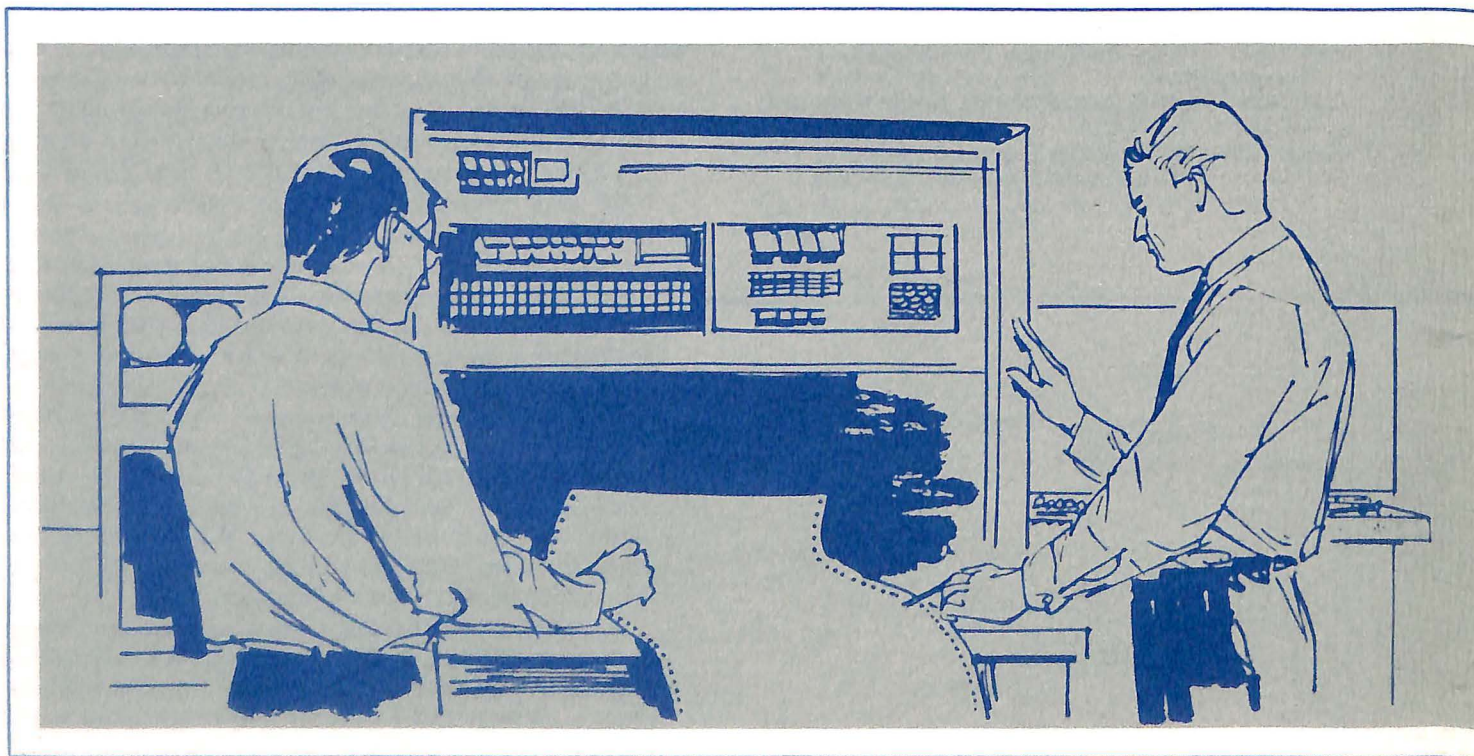
Report, that would allow for mechanized handling in the forthcoming Defense Contract Administration Service Regions.

The form is used as an acceptance document, shipping document and invoice and is a most significant part of contractors' operations in the delivery of contract end items to the government. The appointed task group immediately responded with comments and recommendations to the Department of Defense's proposed revision. The results of the industry response were subsequently incorporated into a Study Group Report submitted to the Office of Assistant Secretary of Defense (I&L). That portion of the form concerned with the proposed revision of the form was later made available to the industry Task Group. Another intensive review and analysis was conducted and transmitted to the DoD.

Continued coordination of the efforts to revise the form procedures will be maintained by the Defense Supply Agency in conjunction with that agency's development of the Defense Contract Administration Service Regions (DCASRs) and the promulgation of the Defense Standard Contract Administration Procedure (DEFSCAP). As these activities are of utmost importance to contractors, close liaison will be maintained with the Defense Supply Agency to effectuate a satisfactory conclusion that will meet the requirements of the government with minimum impact on industrial contractors.

Records Management

As a result of the continuing efforts by the AIA Government Reports Subcommittee on Records Management to find a solution to government contract records-keeping requirements, a General Services Administration-Department of Defense committee was established in 1964. The purpose of this committee was to centralize the thinking of the government and industry and to submit a proposal



for review by the DoD and GSA.

The subcommittee reviewed three draft proposals and a final report on the subject prepared by the GSA-DoD group. In each case, the AIA subcommittee held meetings and submitted written comments. In order to avoid conflicting opinions, all letters were routed through the Advisory Council on Federal Reports since this group was coordinating the reactions of other industry groups. This procedure was adopted in a personal visit by AIA and ACFR members with the GSA-DoD Committee. Despite remaining areas of disagreement, considerable progress has been made in the area of reducing contract records-keeping requirements and a favorable solution is forecast for 1965.

Government Property Control and Reporting

In addition to collaborating with the Procurement and Finance Committee in the review and modification of Section XIII and Appendix B of the Armed Services Procurement Regulation (see report of the Procurement and Finance Committee), the Government Reports Committee has worked actively with the Defense Supply Agency and the Defense Industrial Plant Equipment Center (DIPEC) in the development of their reporting and system requirements. The Committee aided NASA in the development of Form 1018 which covers property reporting by contractors to that agency. Collaboration was close and the reporting requirements were made compatible with industry practices. Considerable cost savings will be realized in this area by both industry and government.

Aerospace Fuels Management

As a result of the joint efforts of the Air Force, NASA, and the Committee, it is expected that problems which contractors have experienced relative to the Air Force/NASA

relationship on aerospace fuels, business transactions, reporting, storage and cross-charging will be avoided. Attendant cost savings will result.

Data Processing

The Automated Information Systems Subcommittee was formed as part of the Committee during 1964. This subcommittee will address itself primarily to the business and financial aspects and transactions concerning automatic data processing. The Subcommittee is working on AUTODIN, a DoD-wide communication and data processing system under the Defense Communication Agency and use of computers in contract administration. In addition, the subcommittee serves as a consultant to the Government Reports Committee on the data processing portions of its activities. The trend toward increased utilization of automatic data processing equipment by the government, particularly in Project 60 implementation and in implementing the Military Standard Procedures, points toward increased emphasis on this area in the future.

INDUSTRIAL RELATIONS COMMITTEE

During the past year the Industrial Relations Committee has concerned itself not only with its responsibilities in the fields of personnel administration, manpower, training, employee compensation, fringe benefits and safety, but also in other important areas.

In order to establish the Committee on a more efficient basis, an *ad hoc* subcommittee appointed by the national chairman prepared both a charter for the Committee and a set of goals and objectives for Committee guidance.

Compensation Practices and Government Affairs Subcommittees

The Committee also authorized the formation of two permanent subcommittees to be concerned with compensation practices and government affairs. Both groups will report to and work in close relation with the Industrial Relations Committee.

Both subcommittees held their initial meetings during the year, and have already undertaken assignments.

For several years the Western Region of the Industrial Relations Committee had maintained a Safety Subcommittee. The Committee voted to replace the regional committee by an Employee Safety Subcommittee with membership on a national basis. The charter for this group was approved and the organization of the subcommittee is proceeding.

The Committee prepared a statement for presentation to the Select Subcommittee of the House Committee on Education and Labor, expressing opposition to a bill on overtime penalty. No action was taken on the bill during the last session of Congress.

When the Aeronautical Law Committee of the American Bar Association passed a resolution—Elimination of Work Stoppages and Suspension of Activities in Aerospace and Air Transport Industries—the Committee prepared a position paper outlining the aerospace industry's reasons for opposition to the resolution, which would have forced an impasse in any company's bargaining with a union into compulsory arbitration. Committee members and company legal representatives visited the Chairman of the ABA Aeronautical Law Committee to discuss the position paper.

Subsequently, the resolution was withdrawn from the agenda of ABA's House of Delegates' annual meeting. Action by the ABA Board of Governors has resulted in the transfer of this subject to the Labor Law Section of ABA for future consideration.

The Secretary of Labor during the year issued a "Proposed Amendment to the Rules of Practices in Determining Minimum Wages Under the Walsh-Healey Act." The amendment, if put into practice, would have enabled the Secretary to make multiple wage determinations, on an arbitrary basis, compared with the long-established practice of making a single minimum for an industry.

The Committee and AIA staff prepared a brief setting forth the objections to such action on the grounds that arbitrary and wholly discretionary criteria for multiple wage determinations can only result in wage-inflationary practices detrimental to the nation's economy and the defense effort. The Secretary postponed indefinitely the time for filing objections. A Court of Appeals decision on a similar previous action by the Secretary, in another industry, is also pending.

INDUSTRIAL SECURITY COMMITTEE

The field of activity of the Committee includes the safeguarding of classified material within the facility, physical security within the plant, civil defense, and the establishment and maintenance of operational procedures to discharge properly the responsibilities involved in those areas.

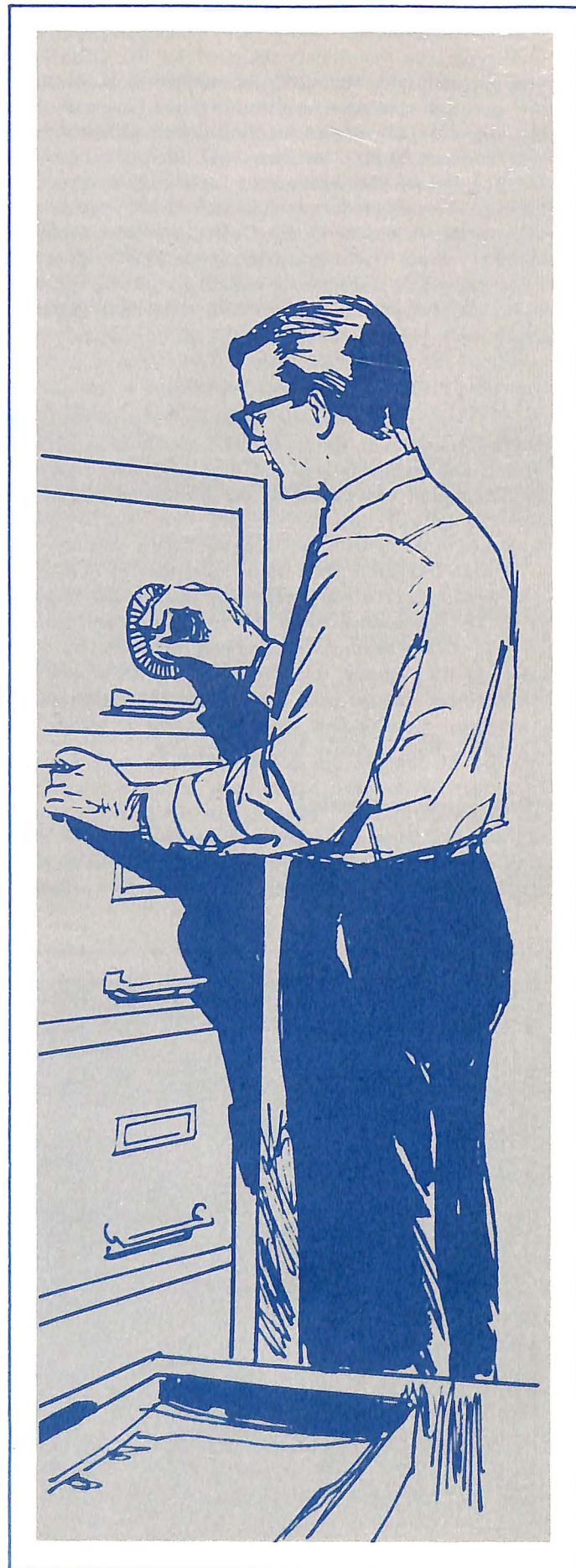
During the past year the DoD began a program — Project 60 — under which security responsibilities will be transferred from the military services to the Defense Supply Agency (DSA). The administration of the security program by a single agency has long been advocated by this Committee as a means for operational efficiency and resultant reduction of costs. Several of our member companies have been included in the pilot program of Project 60. Other DSA regional offices will be opened until the new system includes all areas of the United States. A new and expanded set of regulations, the Industrial Security Manual, will be distributed in 1965, and its contents will be reviewed by the committee with a view toward full implementation within each member company. Should the Committee review disclose any problem areas, committee agreement on solutions or courses of action will be submitted to the DSA.

Committee members as individuals and through the Committee are constantly exchanging information with those government agencies which have security cognizance in the plants. This exchange is invaluable to both groups and results in regulations which combine theory with daily experience in the operation of the security programs in the plants.

At the national meeting of the Committee, forty-one representatives from industry discussed matters of mutual interest with seventeen top security personnel from the several contracting agencies.

MATERIEL MANAGEMENT COMMITTEE

The Materiel Management Committee (formerly Materials Procurement Committee) initiates coordination between industry and government agencies, as well as between mem-



ber companies in several areas of procurement policies and practices. These include subcontract management, purchasing, inventory and requirements control, warehousing, small business and labor surplus area subcontracting, price and cost analysis and cognizance of supplier patent and rights in data problems.

Air Force/Industry Procurement Advisory Committee

The Materiel Management Committee participated with the Advisory Committee and with other interested AIA committees in formulating positions on procurement problems pertaining to replenishment of spare parts, the use of government audit personnel as related to government regulations, and developing recommendations for solution. The Committee recommendations for use of government audit personnel were instrumental in accomplishing the beneficial changes incorporated in Air Force Procurement Instructions.

Supplier Data

The Committee took affirmative action with recommendations designed to clarify and otherwise improve ambiguous and conflicting directives pertaining to the contractual requirements being imposed on prime contractors for the furnishing of supplier data. The Committee reviewed Armed Services Procurement Regulation data clauses and modifications in terms of their requirements and ramifications. This review provided seven specific recommendations which were endorsed by the Committee. Efforts expended in coordinating these recommendations with the Defense Industry Advisory Council (DIAC) to secure consideration resulted in some of the desired changes to the ASPR.

Make or Buy Policy

Extensive Materiel Management Committee interest and activity on the make or buy policy had been evident since 1959. The Materiel Management Committee members and top level Air Force personnel, through many direct meetings, were instrumental in obtaining an acceptable and uniform interpretation so that only major items are to be contained in the make or buy listing.

Communication Satellite (COMSAT) Procurement Regulations

The impracticality of the Procurement Regulations prescribed by the Federal Communications Commission for COMSAT procurement and the inadequate definition of the FCC/COMSAT relationship created the need for the Committee to review these regulations. One of the significant changes brought about by the Committee in presenting the industry position was increasing the dollar floor for application of the rules from \$2,500 to \$25,000.

At the request of this Committee, a formal hearing was held before the Bureau of the Budget relative to approval of the reporting requirements involved in the regulations. This hearing gave industry the opportunity to discuss the impact and difficulties of compliance with the new procedures and the required reports which did not have the approval of the Bureau of the Budget at the time of publication.

Although the Committee representatives were commended by the Bureau of the Budget for their presentation, it was decided that the regulations and report requirements would be approved pending time to evaluate actual effect. The Committee is submitting to the FCC its comments with respect to the COMSAT Procurement Regulations.

Competition at Subcontract Level

As a result of the emphasis placed on competition at the subcontract level by the Secretary of Defense, the Committee is closely following the activities of the Logistics Management Institute (LMI) in determining the existing degree of competition at the subcontract level. Five Materiel Management Committee member companies are participating in a pilot test with DoD on competitive procurement reporting to determine the existing degree of competition at the subcontract level. Several other member companies are carrying on the same project without DoD cognizance. The basic ground rules recommended by LMI and the proposed reporting format and plan have also been brought to the attention of the Committee membership. Early discussions were inconclusive because competition had not been defined. This problem has been resolved by agreement to use the Armed Services Procurement Regulation definition of adequate competition.

DoD/AIA Economic Assistance Program

Industry support of the Executive Branch of the government's interest in the problems of distressed areas is manifested by the activities of the subcommittee assigned to maintain vigilance on the impact of distressed labor problems on subcontracting.

Meetings have been held with the Director of the Office of Economic Utilization Policy of DoD and officials of the Department of Commerce, Defense Supply Agency and the Small Business Administration resulting in a voluntary DoD/AIA Economic Assistance Program. This program is intended to channel business to subcontractors and suppliers located within labor surplus areas.

The success of this DoD/AIA program motivated the Committee to expand the program by encouraging more companies to participate.

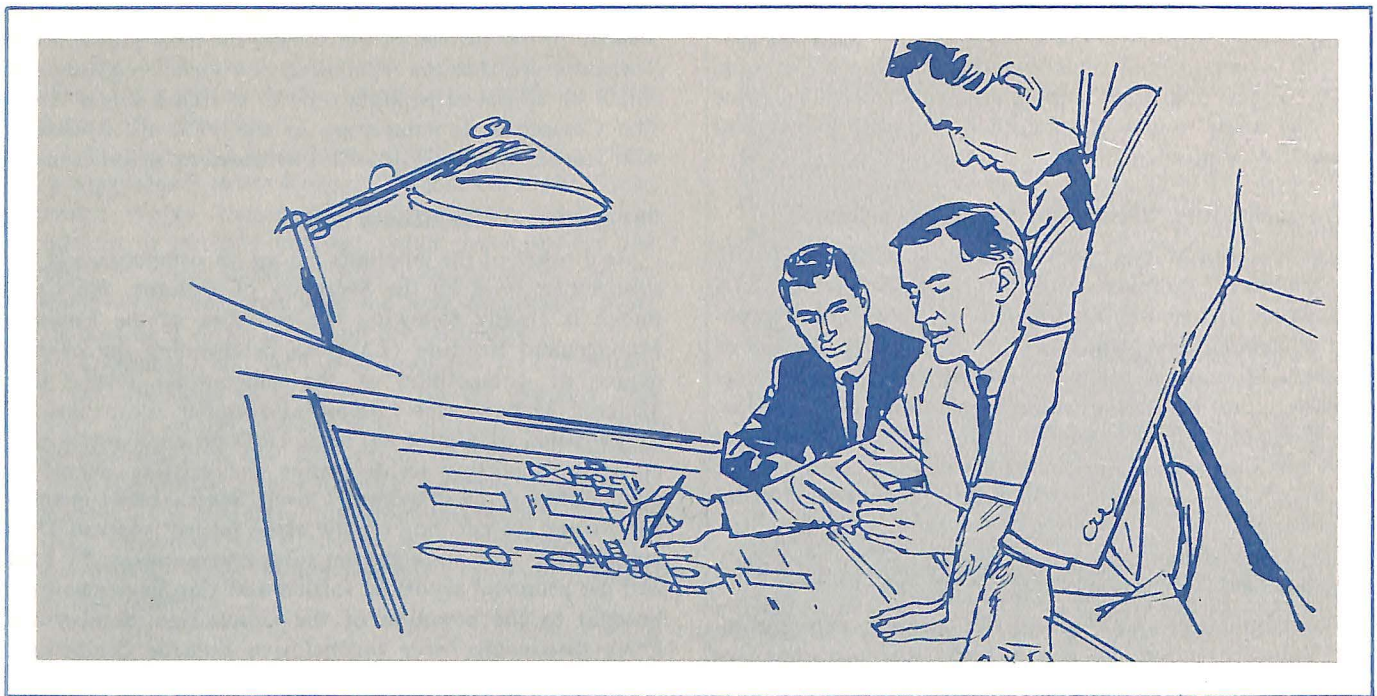
Purchasing System Reviews

Considerable activity by the Air Force has been evident since early 1963 for the establishment of a rating system to evaluate prime contractor purchasing systems. The Materiel Management Committee is vitally concerned with the outcome of this effort, and the tests conducted and progress made have been monitored closely. The Committee is able to provide background for generation of industry comments in response to new ASPR sections which may cover this subject.

Small Business Programs

Participation in regional seminars, Small Business Consultation Programs, Small Business Opportunity Days and other member company originated programs to inform the small business community on subcontracting potential are among the areas in which the Committee is taking action.

The Committee is acting to stimulate member companies



to obtain more public recognition of the extensive efforts being demonstrated in support of the Small Business Program.

Cooperation with Small Business Administration

The Committee maintains close liaison with the Small Business Administration, and several member companies are participating in a voluntary referral program under which small business firms desiring aerospace business are referred to contractors.

The Committee has been monitoring the progress of the Voluntary Small Business Referral Program. The Small Business Administration is advised of referrals which have led to successful business placements under the program.

Value Engineering at the Subcontract Level

During 1964 there were included in the Armed Services Procurement Regulation contractual requirements for value engineering programs in prime contracts. However, value engineering programs also are being instituted in subcontracts and the Committee has been coordinating with the DoD the problems arising from the inclusion of value engineering clauses and arrangements in subcontracts.

Air Force/Industry Symposium on Subcontract Management

In cooperation with representatives from other industry associations, the Materiel Management 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. Joint Air Force/Industry Panels considered the following subjects: source selection, legal problems, proposal analyses, quality assurance, cost control, schedule control, technical control, and the AFSC program relating to Zero Defects. The symposium devel-

oped 86 recommendations, and about 80 received positive response from the Air Force, with an indication that the majority of the recommendations will be adopted and implemented.

PATENT COMMITTEE

The responsibility of this Committee lies in the broad field of inventions, patents, trademarks, copyrights, and proprietary data. It is the mechanism whereby the AIA member companies review and discuss existing and proposed Federal administrative and legislative policies and procedures and present to the government the views of the industry on modifications or revisions to policies and procedures.

Federal Patent Policy

The Committee has continued its attention to the application of the policies set forth in the Presidential Memorandum on Patent Policy which was issued late in 1963. Recommendations have been submitted to the various agencies with respect to the procurement regulations which implement the Presidential Memorandum, particularly to the DoD with respect to revision of the ASPR on patent policy.

The Patent Committee prepared and transmitted to the DoD, at its request, special recommendations on revision of the ASPR relative to patent rights under contracts for research and development, with emphasis on problems in connection with the implementation of the proposed ASPR changes.

Proprietary Rights in Technical Data

The DoD in 1964 revised the ASPR pertaining to rights in technical data and the Committee submitted information concerning the difficulties of the implementation of the revised regulation. Proposed changes in the regulation will

be forwarded following the gaining of experience in its use.

Officials of DoD have attended Patent Committee meetings in order to present information on the development of contractual treatment of proprietary rights and technical data, and to discuss applicable proposed and current procurement regulations with the Committee membership.

The Committee devoted considerable effort to studying the effects of procurement regulations with respect to rights in data on subcontractors and vendors. Members of the Committee provided the DoD recommendations with respect to implementation of the procurement regulation to subcontracts affected by rights in data requirements.

NASA Patent Policy

During 1964 the Committee reviewed the development of the NASA patent waiver regulations, and members of the Committee worked closely with appropriate NASA officials to provide industry reviews and recommendations toward the improvement of the waiver regulations.

Industry has been concerned with the development of provisions in NASA procurement regulations requiring the reporting of "new technology." The Committee has followed the development of NASA contract clauses requiring such reporting, and members of the Committee have met with NASA officials at Patent Committee meetings to consult on the development and implementation of the new technology clauses.

Other Activities

The Committee worked with Patent Office personnel toward the improvement of Patent Office practices.

AIA transmitted to the Congress its objections to H. R. 8190, which generally provided for significant increases in the fees payable to the Patent Office in the filing of patent applications and the maintenance of the patents during their 17-year life. While supporting legislation equitably increasing Patent Office fees, AIA objected to the institution of maintenance fees and an increase in recording fees, as well as certain other new fees. As a result of the position taken by this and other associations this legislation will be reconsidered by Congressional committees. AIA also objected to independent proposed rule making by the Department of the Interior which would provide a title patent policy for certain of the Department's research and development programs. Such proposed rule making was withdrawn and the Department of the Interior is now preparing patent policy for its R&D programs consonant with Administration policy contained in the Presidential Memorandum.

A Patent Advisory Panel under the Federal Council for Science and Technology was established to develop guidelines for implementing the patent policy provided in the President's Memorandum, and to provide guidance in the distribution of government-owned patents developed within the government or acquired under government contracts. The Patent Advisory Panel is composed of representatives from the departments and agencies of the government. Members of the Patent Advisory Panel have attended Patent Committee meetings for the purpose of discussing the activity programs of the Panel and receiving views and recommendations of AIA with respect to their programs.

PROCUREMENT AND FINANCE COMMITTEE

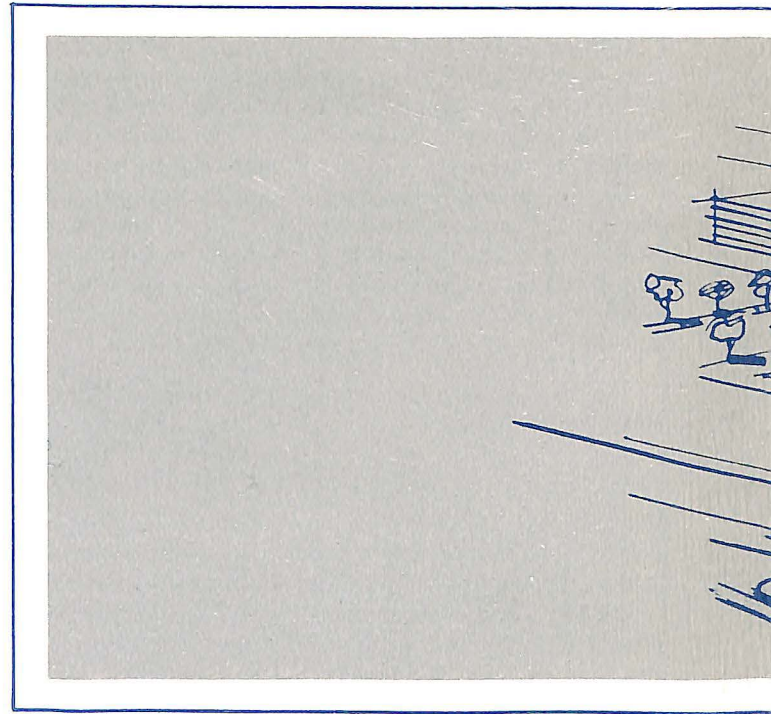
The Procurement and Finance Committee, which is responsible for handling industry problems in the procurement, legal, financial, contractual, accounting and tax areas, is composed of the ranking financial, contracts, and legal officers of the member companies. Because of its size, problems within the area of responsibility of the Committee are handled by Task Groups, which may be of more-or-less permanent nature or of brief tenure depending upon the subject matter assigned to them. While the business of the Committee is carried on through Task Groups or special *ad hoc* groups, the views of the full Committee are always obtained and form the basis of guidelines for the work of the Task Groups.

There was increased activity during 1964 in the government procuring agencies, most particularly in DoD, as well as in NASA, AEC and the GSA. As a consequence, the Procurement and Finance Committee and its Task Groups were active in many important areas. The following are typical: the formulation by DoD of a Contractor Cost Reduction Program; a critical analysis by DoD and NASA of the regulations of those agencies relative to the allowability of costs of contractors' independent research and development; reconsideration by the DoD of the weighted guidelines techniques for determining contractors' profits; consideration of a new concept, known as Contractor Weighted Average Share (CWAS), for determining allowable costs and as a consideration in the relaxation of controls; the delineation of responsibility between DoD contracting officers and auditors in analyzing contractors' proposals; the formulation of a proposed requirement that contractors determine and report cost and pricing information relative to line items of technical data; the consideration of guidelines to implement a DoD directive establishing a new Cost and Economic Information System for government contractors; the drafting by DoD and NASA of revised manuals for the control of government property, special tooling and special test equipment in the custody of contractors; and the ASPR Committee's vast project of expanding the Armed Services Procurement Regulation to include the procurement, accounting and reporting regulations and directives, of general interest, of the various military services.

The Procurement and Finance Committee, through its Task Groups and other *ad hoc* groups, supplied information and expert consultation to the government procuring agencies regarding the problem areas summarized above as well as others.

Contract Cost Principles

One of the most active areas coming under the cognizance of the Committee was the area of allowable contract costs. The Contract Cost Principles Task Group continued its review of proposed changes to and administration by DoD and NASA of their contract cost regulations. It furnished advice and counsel to those agencies relative to the cost in such areas as rental of facilities and equipment, deferred compensation of employees, employee relocation, and employee overtime. Several members of this Task Group also served on an inter-association committee which assisted DoD and NASA in reviewing procurement



regulations related to the allowance of the cost of contractor-generated research and development. This work continues.

An important new approach to the allowability of contract costs is the Contractor Weighted Average Share. In essence, it would relate the degree of control exercised by the government over contract costs directly to the relative amount of risk assumed by each contractor as evidenced by the type of contracts included in its sales backlog. The control exercised over contractors whose entire backlog is under cost-plus type contracts would be comprehensive. On the other hand, the degree of control exercised by the government over the costs of contractors with a high percentage of fixed price contracts in their backlog would be substantially reduced. A special Task Group of the Procurement and Finance Committee is working with DoD in the evaluation of the CWAS approach.

Cost Reduction

Representatives of the Committee, in cooperation with representatives of other interested associations, prepared and submitted to DoD an industry position on a proposed directive prescribing a Contractor Cost Reduction Reporting Program. In a series of meetings with representatives of DoD, the Committee succeeded in obtaining agreement from government representatives to amend the proposed regulation by eliminating the requirement for annual cost reduction goals and for the reporting of cost reductions by specified, detailed categories. DoD representatives also agreed that the regulation should clearly indicate that there will be no comparison of contractors on the basis of reported cost reductions, and, finally, that the reports required by the regulation will be in lieu of any other cost reduction reports required by the various services and branches of DoD.

Incentive Contracting

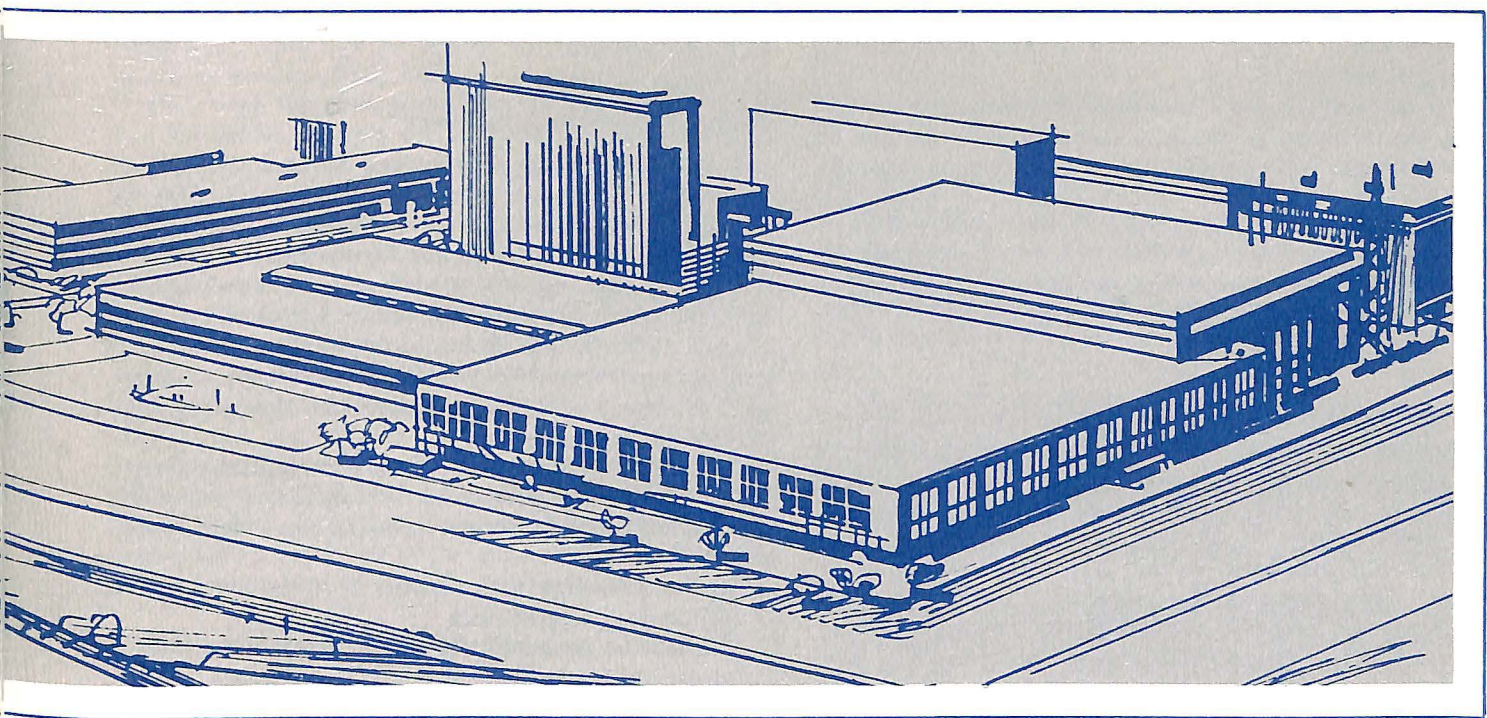
Important developments also occurred in the field of incentive contracting, which is the responsibility of the Incentive Contracts Task Group. Review by the Committee of a Defense Procurement Circular which contained material interpreting the ASPR on weighted guidelines indicated that portions of that circular appear to be inconsistent with the policy in the ASPR regarding the use of the weighted guidelines techniques for determining profit or fee. Upon the recommendation of the Committee, DoD was requested to reconsider the circular. Representatives of the Committee also furnished counsel to the DIAC Working Group on Profit and Fee which had been given the responsibility of reviewing the circular. A subsequent Defense Procurement Circular which was issued rescinded the first circular and amended the ASPR. The new circular satisfies many of the objectives which industry raised.

The Incentive Contracts Task Group has started a study of the structuring and administration of incentive contracts to ascertain what improvements can be made.

In June 1964, at the NASA-Industry Aerospace Forum, a workshop on Incentive Contracts was held. There was a thorough exchange of ideas regarding the use of incentive contracts by NASA, and the improvements which could be made. Follow-ups on the conclusions raised by this workshop are in progress.

Government-Owned Facilities

The Facilities Policy Task Group, which monitors developments in the government regulations relative to the furnishing of, and accountability for, government property, special tooling and special test equipment, was productive during the year. An extended amount of time and effort was spent on the review of a proposed revision of an ASPR which specifies the conditions and policies under which



government property, special tooling and special test equipment are furnished contractors, and an ASPR appendix which is the manual for the control of such property, tooling and test equipment in the custody of contractors. As the result of the work of the Task Group in this area, including expert consultation furnished the ASPR Committee, substantially all of the recommendations advanced by the Task Group were adopted.

Similar counseling was furnished by the Task Group to NASA in connection with that agency's proposed revision of its Industrial Property Control Manual. Recently NASA has advised that it is considering withdrawing the proposed manual and issuing a new draft for review and comment at a later date.

Analysis of Contractors' Proposals

The Secretary of Defense during 1964 issued a memorandum delineating responsibility between government contracting officers and auditors in analyzing contractor proposals. Review of this memorandum by the Committee indicated that it was the consensus that the memorandum placed too much authority in the audit function and too little authority with the contracting officer. An *ad hoc* group of the Committee, in cooperation with other industry associations, sent a letter to the Secretary of Defense requesting reconsideration of the memorandum. As a result of this communication, DoD advised that a special working group of DIAC was being set up to review the memorandum and recommend needed changes for clarification. The Committee is cooperating with the working group and with DoD in this effort.

Indemnification

The Task Group on Indemnification has continued its efforts to obtain introduction and passage of legislation

which would adequately protect contractors and the public with respect to uninsurable risks incurred in the performance of defense and space contracts. As a result of its work, various studies have been made of the problem raised by the lack of indemnification authority to cover unusually hazardous risks for which adequate insurance coverage is not generally available. The Task Group will continue to work with both NASA and DoD in an effort to obtain agreement on the best possible approach to this problem.

Technical Data Costs

The DoD requested interested associations to review and comment on a proposed procedure for the determination and collection of cost information on engineering documentation and related technical data. The proposed procedure, which would require contractors to determine and report the cost of line items of data, was unacceptable since it would greatly increase contractors' costs without a corresponding benefit to the government. Accordingly, a special *ad hoc* group of the Committee was appointed which, in cooperation with other interested associations, prepared a presentation on the subject to DoD. This *ad hoc* group is now working with DoD in redrafting the proposed directive so that it will meet government objectives in a manner which is practical and realistic from the contractors' point of view.

NASA-Industry Workshops

In addition to the NASA-industry workshop on Incentive Contracts, previously referred to, there were also workshops on Facilities, and Financial Management and Reporting.

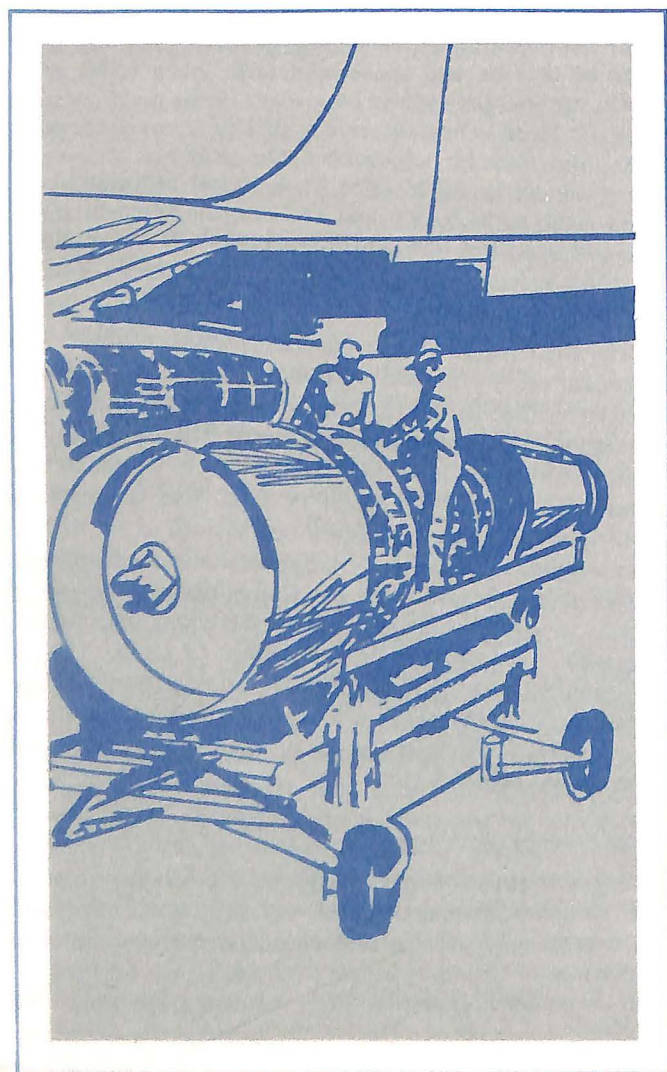
In the workshop on Facilities, the discussion pinpointed problems arising from the use by contractors of government-furnished property and facilities in the performance

of NASA and DoD contracts. Plans were made for improved liaison with NASA for the cooperative solution of these problems.

In the workshop on Financial Management and Reporting, the discussion produced a thorough understanding of the problems surrounding incremental funding and the modifications needed in a NASA form which is the basis of a financial management system. It was agreed that small working groups comprised of NASA and industry participants should be appointed to recommend needed action to solve the problems pointed up in the discussions.

General

The Committee prepared and filed with government procuring agencies numerous industry presentations regarding changes in regulation and contract clauses. For example, industry comments were filed on the proposed revision of an ASPR relative to cost and pricing data. The revised section embodied many of the Committee's recommendations. The Committee also submitted comments to DoD objecting to a proposed new ASPR provision requiring the use of standard identification and part numbers. The proposed new ASPR provision was withdrawn. The Committee also filed comments with the General Services Administration with regard to a proposed revised Certificate of Non-Collusion, prepared by that agency. Changes were



made in the certificate, as finally issued, to include many of the comments.

PRODUCT SUPPORT COMMITTEE

The Product Support Committee is responsible for all the subjects that must be planned and considered in the operation and maintenance of a weapon system and its equipment. The Spare Parts and Service Publications Committees, representing two of such subjects, are designated as working committees of the Product Support Committee. Product training, field technical service (product) representation, maintainability, and aerospace ground equipment are representative of subjects under the management of Product Support panels.

Examples of the Product Support Committee responsibilities include the review and formulation of policy and any related policy problems, including the following support subjects:

- Qualitative maintenance analysis.
- Maintenance support plans.
- Maintenance design criteria.
- Service publications.
- Spares and repair parts.
- Special tools, test equipment, and ground support equipment requirements and procurement.
- Field service representation.
- Qualitative personnel requirements inventory.
- Customer training, training aids, equipment, courses, instructors, etc.
- The support aspects of maintainability, reliability and maintenance engineering.
- Contractor modification and repair of equipment.
- Product status and trouble reporting.
- Real property installed equipment.
- Ground cooperational equipment.
- Post-delivery system configuration and compatibility control.
- Various elements, other than the above, as part of a weapons system management support contract.

The working committees and panels are responsible for the review and development of the specifications, instructions, procedures and operating methods that apply to the subjects for which they hold responsibility. Support subjects that are not the responsibility of a working committee are assigned to Product Support panels for action. The coordination of activity between the committees and panels is a major Product Support Committee task. A continuing Committee objective is the promotion of the centralization of responsibility for the preceding subjects. This is obviously just as desirable within industry as well as the DoD and the military services.

Subjects requiring a substantial effort during the year were those dealing with cost management or cost avoidance maintenance data reporting, contractor technical service requirements, weapon system effectiveness evaluation methods, and the review of policy relative to training requirements.

Field Support Service

The field support services required in the aerospace industry are necessarily of a specialized technical nature

since they must be able to cope with highly sophisticated equipment. This type of service is often confused with other services involving little or no technical capability. In fact, when the government uses the broad term "service" it includes not only the technical but also the house-keeping, building and ground maintenance types of service as well.

Contractor technical services, along with other service functions, have been closely checked by the DoD, the military services, the General Accounting Office, and Congressional committees. The increased management at the military services level has resulted, in some cases, in excessive degrees of procedural management and control over individual contractor employees. AIA and the military services are studying the problems of these controls to assist the Department of Defense Special Project Group appointed to study the policies and practices in the utilization of contract support services. It is hoped that the cooperative efforts will result in the sense of balance necessary to the development of controls and procedures.

NASA-Product Support Committee Workshop

A workshop conducted with National Aeronautics and Space Administration on the subject of Logistic Support led to the development of a NASA policy document or directive to be published as Program Support. Previously, the project system of NASA allowed the individual projects and centers to develop their own support policies. The Program Support directive supplies direction from NASA headquarters to the projects and centers for support guidance and minimum planning requirements.

Discussion of technical publication requirements centered around the probability of a need for NASA specifications covering the preparation of handbooks or manuals. Experience to date is being accumulated by use of a questionnaire and it is anticipated that recommendations for the development of certain types of NASA specifications will be made by industry.

A draft copy of provisioning work sheets prepared by NASA was reviewed in the workshop and recommendations resulting from subsequent reviews have been presented to NASA. A spare parts provisioning policy has subsequently been presented for the review of the workshop members.

Training of Military Personnel in Operations and Maintenance

The revitalization of interest in training by the Air Force was met by the creation of the Training Panel of the Product Support Committee. Their initial task, the review of the System Training Equipment Management manual, has been completed and delivered to the Air Force Systems Command. This group also has been authorized to develop an index of training specifications for use by industry and the military services.

Customer Relations

Communications and customer relations have always been recognized as one of the major tasks of the Committee. While customer contracts are of a continuing nature, the Committee officers have felt that visits with the customer personnel early in the year to establish a pro-

gram for the year can be of major benefit to all parties. This tour, which is known as the Executive Officers' Tour, was conducted in 1964 and followed the pattern that was established in previous years.

SERVICE PUBLICATIONS COMMITTEE

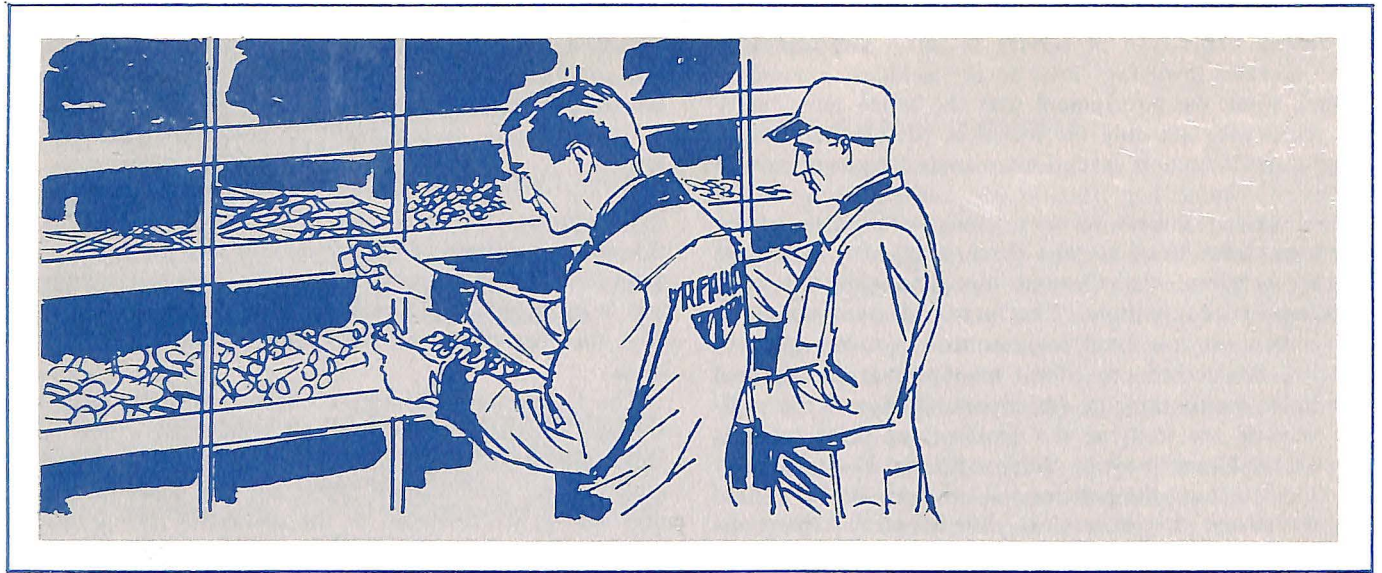
The Service Publications Committee seeks solutions to the varied problems of publishing minimum essential technical information to support aerospace products properly, and is made up of 112 publication managers representing AIA member companies and their various product divisions.

The Committee's primary concern is with the economical and accurate preparation and timely delivery of technical handbooks. These handbooks—containing operation, maintenance, modification, overhaul, and parts identification data—are essential for the successful use of today's missiles, aircraft, engines, accessories, and other complex equipment.

The rapid application of scientific knowledge to aerospace equipment is reflected in the increasingly complex new designs and in continuous design changes. By contrast, most people who operate and maintain this equipment have changed very little despite increased training and selective job specialization. Therefore, one problem with which the Committee is concerned is the continuous improvement of technical publications to bridge the gap between equipment complexity and human capability. Through the Committee's efforts, more efficient methods of preparation and dissemination of service publications data are being evaluated and implemented continually.

Another important aspect of the Committee's activities is to counteract the allegations of high costs of technical manuals made by those not aware of all the facts or familiar with the requirements and function of technical manuals. The Committee's objective is to present accurate information to obtain a true perspective of handbook preparation responsibilities and costs. One of the tools used to reach this objective is an "Information Bulletin" which contains significant current data and articles of interest in the field of technical publications. The bulletins are published regularly by the Committee and submitted to more than 100 key government logistics personnel as well as to appropriate industry management. Overall, the Committee's objectives are:

- To support the product and the user's need through effective publications, considering all elements of support.
- To initiate economies through simplification of requirements, wherever feasible, and through exchange of cost-saving techniques among member companies.
- To furnish assistance to government agencies, including preparation, review, and recommendations on specifications as they pertain to service publications and the use of aerospace products.
- To advance with the rapidly changing requirements of both government and industry by using new techniques and equipment and by implementing new communication concepts as they are developed.
- To provide an information service on publication matters to both Committee members and government personnel.



Formal Reports

As a result of the AIA/DoD workshop on service publications, the following reports were issued:

- Industry Practices Concerning Work Efforts (Tasks) Applicable to Technical Manual Preparation.
- Methods of Estimating and Reporting Elements of Technical Manual Costs.
- Standards for Determining Capability of an Organization To Produce Adequate Technical Manuals.
- Guide To Determine the Adequacy of Technical Manuals.

The original industry tasks have been completed with the publication of these reports. Review of this material with the government workshop participants is planned in 1965.

Technical Manual Specification Review Program

The Committee is continuing an active working relationship with the efforts of the Military/Industry Technical Manual Standardization Program (MITM). In addition to the participation of individual members assigned to several MITM task groups, the Committee has reviewed a large number of draft specifications released by this program. Several specifications also have been reviewed for the individual services. In addition, a panel is working with the Army Technical Publications facility at St. Louis to review new proposed and revised specifications. At the Army's request, the panel currently is coordinating industry comments on a series of new writing guides.

A panel is assigned to work with the Air Transport Association on a technical manual specification for transport aircraft. This panel has met with the ATA Advisory Board to review several proposed amendments to the specification. The panel currently is assisting ATA on problem areas involved in securing adequate overhaul data from accessory manufacturers.

Developments in Technical Publications

This panel is a continuous activity that investigates new communication methods and equipment applicable to the field of technical publications. The results are furnished

twice yearly to the Committee, and during the year information on ten different systems was presented.

Timely Printing of Technical Manuals

Problems and printing delays resulting from the government's transfer from contractor-administered printing of technical manuals to the Government Printing Office still are evident. The Committee is continuing to study this subject.

Relaxation of Controls

During 1964, the Committee members were asked to point out any contractual requirements that could be eliminated or relaxed for cost savings without reduction in quality. A special panel has been established to review all recommendations received by AIA that might apply to service publications. The purpose of the review is to ensure that the information submitted is clear and sufficiently documented so that it can be understood readily by those who are not publications specialists.

Cost-Cutting Techniques

A continuing effort of the Committee is to sponsor presentations on various cost-cutting techniques used by selected member companies. The subjects range from new and improved methods and techniques to simplified work procedures. At least two hours are set aside at each national meeting for these presentations.

Publication Cost Management

A cost management panel has been working with Air Force Systems Command personnel to ease the handbook cost reporting requirements. The Committee's recommendations for simplifying cost reporting and estimating were well received by AFSC; further action is awaiting their implementation.

AIA/NASA Workshop

To foster early planning, a panel has been established in coordination with NASA to determine the course that

should be followed in the development of technical publication requirements.

SPARE PARTS COMMITTEE

The Spare Parts Committee deals with uniform spare parts technical documentation; provisioning specifications; procedures and formats; federal cataloging and aerospace ground support equipment provisioning; contractor support plans and procedures; spares design change documentation; spare parts replenishment procurement procedures and practices; modification and equipment repair; and the planning and management of materiel support.

The challenge confronting the Committee in assisting the military services in achieving a reduction in the inventory while maintaining a high state of readiness has been met, as illustrated by the following examples. In the Air Force alone the spares inventory has been reduced from almost \$10 billion to \$8 billion between fiscal years 1961 and 1964. During the same short period the annual purchase of spares has decreased by 38 per cent. This trend emphasizes the importance of constant improvement in logistics management.

Spares Workshop Projects

In furthering the joint aerospace industry/DoD forum and workshop activities in 1963, the Committee has conducted a survey of member companies concerning a Department of Defense inquiry on the potential application of incentive contracting techniques to reduce costs in the initial support area. The initial conclusion of this study indicated that the provisioning area does not lend itself to practical incentives. However, because of the varying viewpoints revealed by the survey, some additional detailed studies are to be conducted.

Another item with which the Committee has concerned itself involved the difficulty encountered by the military services in obtaining timely and adequate provisioning technical documentation. A study indicated that the problem centered around vendor documentation requirements and submittals. It was recommended that the Committee members carry on a concerted effort through their individual companies with the suppliers on the importance of submitting proper and timely provisioning documentation.

The Committee also has initiated action concerning the problems and costs of responding to requests from the military services for the breakdown and provisioning of vendor repairable items. A detailed survey showed that excessive costs to contractors result from such requirements. The study also indicated that it would be more economical, in some situations, to consider a vendor item assembly as a spare rather than a field-repairable part provisioned by bits and pieces.

The determination as to which one of these procedures should be used cannot yet be defined by a standard set of criteria. However, the results of sample applications during the study indicated the possibility of savings in excess of 30 per cent in the total cost (contractor and customer) of provisioning vendor repairable items. Further studies are under way to define and develop a method of predetermining whether to procure assemblies or piece parts.

In an extension of workshop activities with NASA conducted by the Product Support Committee, Spares members

participated in discussions leading to the development of a NASA policy support document. In furtherance of these discussions, the Spare Parts Committee provided recommendations to NASA through the workshop group on a proposed formula for determining support parts requirements. The Committee also has reviewed a NASA proposed provisioning policy for support.

Support Procedures

A wide range of activities involving spares support procedures is carried on continuously by the Committee with the military services. One such example concerned a proposed standardized provisioning procedure developed by the Army to replace the ten different procedures that were being used by the various Army elements. Committee recommendations endorsing this proposed procedure for possible use as a universal provisioning document for all military services were presented to the Army.

An *ad hoc* group of Committee members has been working with the Air Force in developing a materiel support procedure for development, test and evaluation programs applicable to all divisions of the Systems Command. A draft version of this procedure, reviewed by the Committee, revealed conflicts with current data management concepts which will necessitate further *ad hoc* group activity with the Air Force directed toward a modification of this support procedure.

An evaluation of existing Air Force provisioning procedures has been initiated by the Committee in an effort to reduce the cost of compiling, revising and distributing the Priced Spare Parts List/Spare Parts Exhibit. This would also improve the timing for submission of Priced Spare Parts Lists with relation to the schedule for the spare parts delivery and should favorably affect design and configuration documentation workloads.

DoD High Dollar Spare Parts Breakout Program

The Committee has been monitoring the methods of the military services for determining which spare parts can be procured under competitive bid and which must be procured from the prime contractor. Within the three services, the Air Force approach, now known as Competition With Confidence, most closely parallels an AIA proposal made in 1962. Recently, the DoD has issued a revision to its original breakout procedure which tends to be more receptive to contractor participation in the reviews. Copies of this new revision have been distributed to the Committee for further study and possible reference use in improving provisioning conference negotiations.

Resident Provisioning Team Program

As the result of a Committee survey, an *ad hoc* panel was established to determine the specific operating techniques for installing Air Force Resident Provisioning Teams at contractors' plants to expedite the support order cycles for supplying spare parts. This panel, augmented by other industry members, developed a proposed Air Force Procurement Instruction which later became the basis for an official Air Force procedure. Committee members will monitor the implementation of this procedure in their individual company operations and no further Committee action is contemplated unless problems develop.



INTERNATIONAL SERVICE



C. JAMES REEVES, JR.
*North American
Aviation, Inc.*
*Chairman, International
Committee*

International Committee

International Advisory Committee
International Finance Committee
Military and Space Committee
Trade Development Committee

The International Service is a central point for promoting and coordinating the aerospace industry's over-all export programs.

Aerospace international trade, a significant force in America's industrial and technological complex, continued to expand during the year. Total aerospace export sales for 1964 were \$1.3 billion, marking the fourth consecutive year that this industry has exported over \$1 billion in goods and services. Increases were reported in almost all program categories, including heavy transports, utility aircraft, helicopters, engines, electronics, and supporting components. Helicopter exports alone climbed to \$20 million, compared to \$14 million during 1963.

Financing Programs

There is promise of even greater achievements during the balance of this decade and the first part of the next. The sales effort in both military and commercial international aerospace programs is one of this industry's basic responsibilities. However, in order to supplement this export activity, the government has had to recognize the basic limitations of financing structures on an international scale that have limited the expansion of the export potential of aerospace products.

The government today is providing the administrative building blocks to place the U. S. aerospace industry on a competitive footing with its international competitors. With this greater Administration awareness of the importance of international aerospace trade, the estimate of \$2 billion in U. S. aerospace export sales for 1970 and beyond has been adopted as a realistic goal.

Aerospace product programs are vulnerable to both global politics and scientific evolutions. The very nature of the aerospace accomplishments in technology, dramatic as they are, create great problems of obsolescence with a corresponding effect on aerospace export trade.

Political forces among the Free World nations also affect export sales of U. S. aerospace products. These range from a foreign government regulation restricting the exportation of a small instrument component to a parliamentary decision relating to the approval of a multimillion-dollar equipment project. All of these relationships must be conducted in an atmosphere of stringent, talented competition, for in the international market place the U. S. aerospace industry and its products — both hardware and services — no longer stand unchallenged. This industry is aware that the U. S. article exported must be both efficient and competitively priced. Too, it has become increasingly evident that modern financing tools which will guarantee at least equality on this competitive plateau should be furnished to this industry.

Product diversification is still another factor which affects international aerospace trade today. As companies acquire new talents and the fruits of research and development become evident, international business will increase.

The industry faces new challenges as aerospace exports maintain their climb in the billion-dollar market place during this decade. New markets are emerging for an industry geared to transition, and such trade potential will be a new and challenging frontier with a new set of accompanying international perplexities. This industry and its Association accepts this challenge as an opportunity.

INTERNATIONAL COMMITTEE

The AIA International Committee is composed of 110 export executives representing forty-six major U. S. aerospace manufacturers conducting international trade. Of the forty-six companies actively pursuing new and broader export markets, eighteen of these firms have been awarded the Export "E" by the Department of Commerce. A representative number of these companies have more than doubled their international efforts during the past three years. The International Service program includes:

- Endorsing and supporting the Trade Expansion Act of 1962.
- Bringing a greater recognition of aerospace exports by the Department of Defense through Committee meetings and programs to the degree that the Defense Industry Advisory Council has created a permanent group to promote military exports under the direction of a newly created Deputy Assistant Secretary of Defense for International Logistics Negotiations.
- Conducting, for a period of four years, briefings, tours and meetings with U. S. Air Attaches (military), U. S. Civil Air Attaches and other commercial and transportation officers of the U. S. Government, in an effort to inform these officers of aerospace export activities for their assignment abroad.
- Conducting since 1950 in cooperation with government officials national meetings and symposia concerned with the many factors directly involved in aerospace export trade.
- Being instrumental in gaining support from Eximbank which, previous to 1955, financed \$54 million in aircraft exports, and since has financed \$495 million in aerospace products exported.

International Tariff Negotiations

International tariff negotiations, which began during 1964 in Geneva under the auspices of the GATT countries, hold promise for increased international trade. As in 1962, when the aerospace industry supported the Trade Expansion Act, the industry tariff brief filed in 1964 directly supported national tariff policy and over-all U. S. economic and political objectives. Few basic American industries have been able to correlate their own consolidated positions and so thoroughly support broad U. S. international trading policies as the aerospace industry. Basing its position on the reciprocal concept of tariff reductions and tariff maintenance, the industry is optimistic regarding the removal of import and quota restrictions and other similar restrictions to international aerospace trade.

International Finance

International finance is the single most important factor of aerospace exports. The problem of competitive financing became acute when our export sales began to expand at a more rapid rate five years ago. Through efforts exerted by the International Committee and individual member companies, progress has been made in the form of proclamations from government agencies, including the Depart-

ment of Defense which has issued statements that no military sales would be lost because of lack of financing; from the Export-Import Bank which liberalized financing of our commercial products to some degree; and from private banks which assisted in selected transactions.

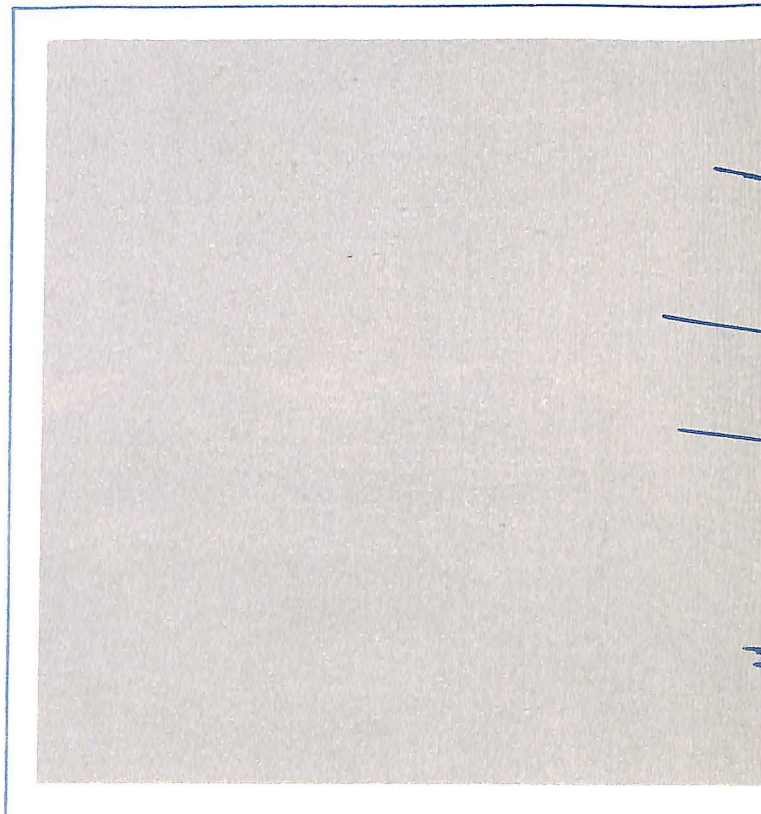
There have also been new delegations during 1964 by the Eximbank to private commercial banks which enable them to commit Eximbank without prior reference on political risk guarantees, commercial credit guarantees, and short- and medium-term transactions up to \$100 million in specified countries which comprise the major markets.

A new international financial policy is taking form within the Agency for International Development (AID). This new policy came about specifically as a result of a comprehensive report by the FAA. This report stated that AID had failed to recognize the important role of aviation in the economic growth of the developing nations. The attitude is so well recognized that it was noted in the Foreign Aid Bill with this statement: "The Agency for International Development has generally avoided the financing of U. S. aerospace exports with the notable exception of equipment for Ethiopian Airlines and a few major airport development programs."

If this new policy is implemented to the degree that has been proposed, it means that aviation in the future will be recognized as an integral part of the communications and transportation systems in developing nations and not something that is introduced as an afterthought after a stabilized economic growth rate has been achieved.

International Cooperative Programs

International cooperative programs affect, directly or indirectly, every segment of the aerospace industry. These programs include four separate categories: cooperative



R&D, cooperative logistics, cooperative production and cooperative sales.

Starting with cooperative R&D, which began about ten years ago with grant aid under the Mutual Weapons Development Program, funds of over \$50 million a year were appropriated to this effort under the concept that nations allied to the U. S. needed a stimulus to regain their industrial base. This concept assumed that once the industrialized nations achieved this capability they would design, develop, and produce their own weapon systems and thereby relieve the U. S. of the burden of supplying arms and support. This program has diminished each year to the present fiscal year's budget which contains only limited administrative funding.

With the decline or elimination of these older cooperative programs, new concepts have taken their place, either through bilateral or multilateral agreements. The U. S. has entered into agreements for the interchange of patent rights and technical information for defense purposes with the following countries: Australia, Belgium, Denmark, France, Germany, Greece, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom.

Cooperative logistics operates similarly to the cooperative R&D program. DoD has currently under negotiation for consideration joint logistics support agreements with the following countries: Australia, Belgium, Denmark, France, Germany, Iran, Italy, Japan, Netherlands, New Zealand, Norway and Spain.

This program came into being primarily for two reasons. The first involved requests from the foreign nations which felt they could procure spares and support more economically through established U. S. channels rather than setting up their own procurement agencies and supply

channels. The second reason emanated from DoD which felt that allied military forces should have common logistic support to insure maximum combat effectiveness.

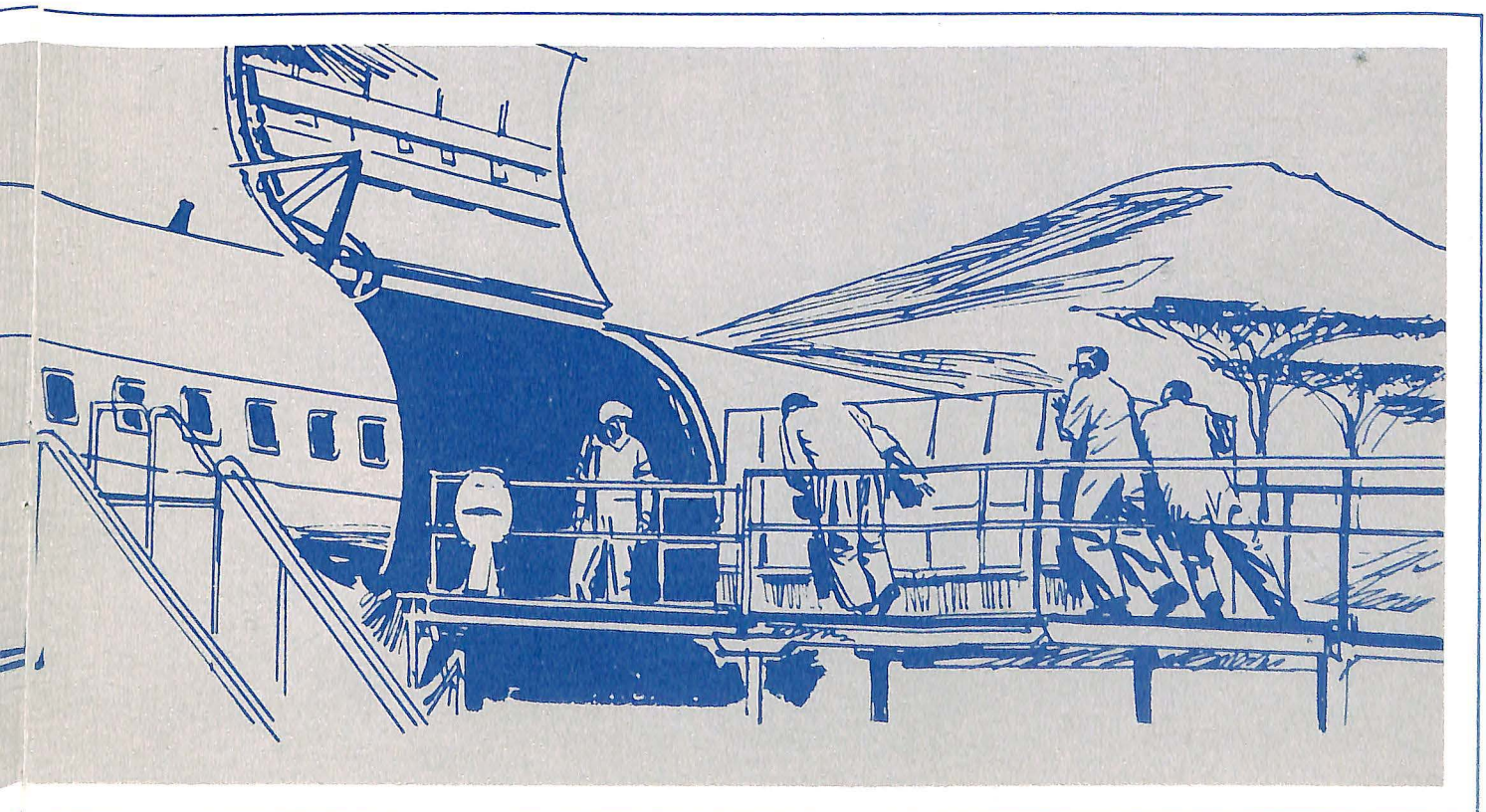
In practice this presents some complex problems, many of which directly affect the aerospace industry. Pricing, product support, follow-on spares, technical assistance, modification, and training are all involved to some degree if this program is to be implemented to its fullest extent. At this point, DoD has indicated that items will be introduced into the common system on a selected basis. This, of course, can complicate supply and support programs already in successful operation by many aerospace companies.

Present cooperative production programs now in existence reflect a trend in this direction. Airframes, for example, are mainly redesigned to accommodate other engines; engines are modified for specific performance; and missiles are adapted to other systems. All of these require redesign and in most cases new development which is shared between trading nations.

International Trade Development

The importance of regional geographic areas was highlighted in 1964 as the International Committee introduced a program of exploring the aerospace potential and near-term future of aeronautical developments in selected countries of the Far East. Foreign government officials directly concerned with aeronautical international trade and aviation policy development in their respective countries participated in these meetings.

Looking forward, the International Committee plans to meet during 1965 with Latin American and African officials concerned with aeronautical trade and economic development.





PUBLIC RELATIONS SERVICE



CARLYLE H. JONES
Sperry Rand Corporation
Sperry Gyroscope Company Division
Chairman, Public Relations Advisory Committee

Public Relations Advisory Committee

- Executive Committee
- Editorial Subcommittee
- Aerospace Education Subcommittee
- Shows & Exhibits Subcommittee
- Aircraft Sound Subcommittee
- Government Liaison Subcommittee

The Public Relations Service in 1964 continued the program reorientation started in the latter part of the previous year by aligning its functional activities toward improving the industry's public position.

To assure the most effective means of accomplishing this, the Public Relations Service was reorganized. A News Bureau was created to specialize in the handling of all press releases, magazine feature material, and book and picture projects. Emphasis was placed on audio-visual projects designed to project an accurate image of the aerospace industry, through television, radio and motion picture programs.

An expanded speech program, designed to improve the president's opportunities to speak on significant national platforms, was initiated. Press conferences, sometimes televised, and wide distribution of speech content was made as a part of most speech projects.

A public relations representative was assigned to each committee meeting at which national news would be generated. The aim was to provide public relations guidance and release of information for committee members and national guests appearing at these meetings.

Illustrative of the early effects of the reorganization are several key accomplishments in each of the segments of the Public Relations Service operation.

News Bureau

One of the initial steps in the more specialized approach to news coverage was the realignment of mailing lists of the Service. The aim was to eliminate duplication, increase the number of significant addresses and target the releases more directly to interested outlets, such as Industrial Editors, Airline Industry Editors, Financial Columnists and Writers, Aviation Trade Press, Aviation/Space Writers Association, Daily Newspapers Editors, Business Papers, Washington Press Corps, Trade Press (other than aviation), Foreign Press, Military Press, Plant City Press, Science Editors and Columnists.

For specific events, such as national committee meetings, an information kit was designed and is in use.

Press assistance was highly effective in support of two major AIA Committee meetings—the Export Committee meeting in San Francisco and the Procurement and Finance Committee meeting in New Orleans.

In the first instance, announcement of Administration plans for improved financing for aerospace exports provided the opportunity for international coverage. In New Orleans, a luncheon hosted by AIA's Procurement and Finance Committee and attended by Mr. Harr occasioned unusual local press interest and afforded an excellent opportunity to present the aerospace industry story.

PRS prepared and issued 77 press releases dealing with programs and accomplishments during the year, an increase over the previous year.

Responding to President Johnson's proclamation of International Aviation Month, AIA sponsored a reception and luncheon for 40 foreign directors and ministers of aviation touring the United States as guests of the Federal Aviation Agency. The affair, held at the Department of State, and attended by Washington international rep-

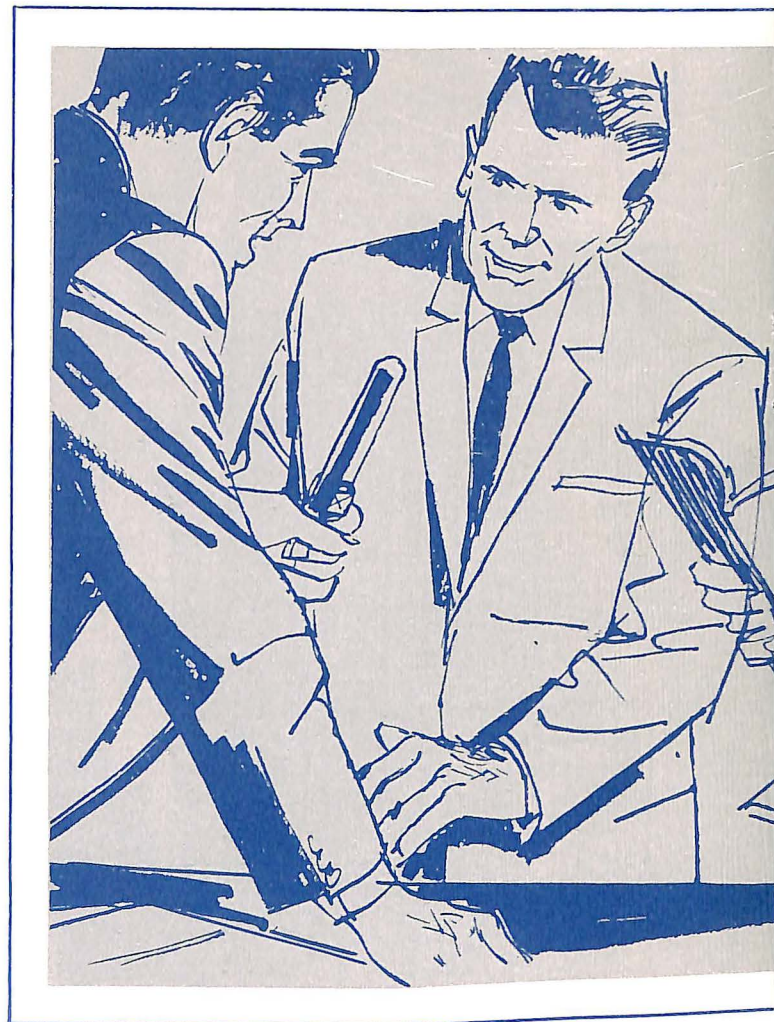
representatives of AIA member companies and government officials, was co-hosted by Assistant Secretary of State for Economic Affairs, the Honorable E. Griffith Johnson, and AIA president Karl G. Harr, Jr.

Audio-Visual

An active audio-visual program was inaugurated with a focus on television, radio and motion pictures. Utilizing film clips, interviews with the Association's president and topics of major significance to the industry as its tools, a series of continuing radio and television efforts was launched in which AIA will address itself to major problems facing the industry today.

The president of the Association, evaluating basic issues confronting this industry and the effect that the potential solution of these problems might have on overseas economies, was interviewed over the Voice of America. Dissemination was made to audiences throughout Europe, the Middle East and Africa, translated later into nine foreign languages and broadcast to most of the Eastern hemisphere.

Film clips provided another useful communications tool. Two clips were produced—one on the Orbiting Geophysical Observatory (OGO) scientific satellite of the National

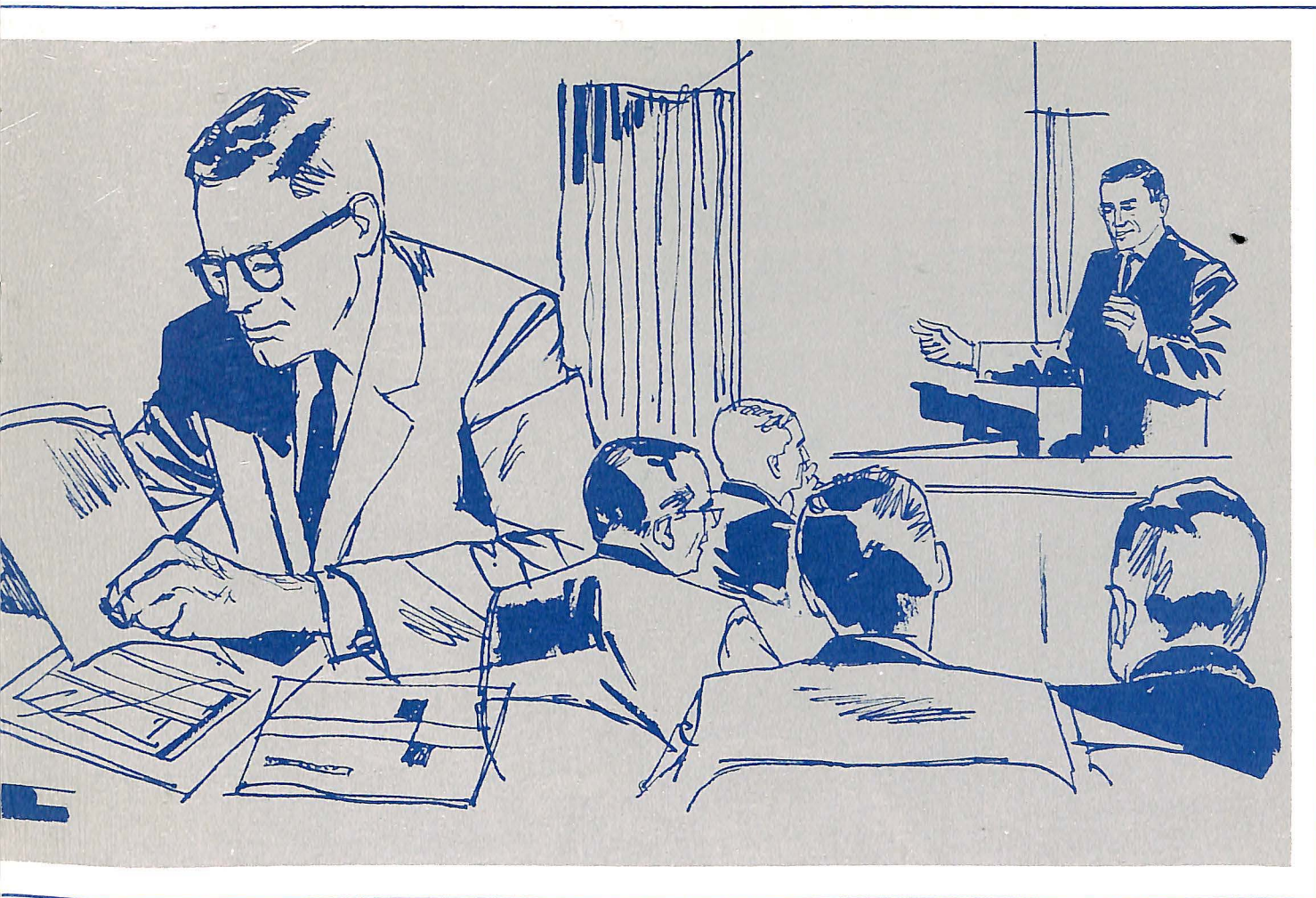


Aeronautics and Space Administration and the other on the transportation of cargo by jet aircraft. These were distributed to television stations throughout the nation and surveys conducted by the distributing medium indicate excellent viewing times and usage of 95 per cent.

The AIA motion picture "All Systems Go," while nearing the end of its useful lifetime due to obsolescence, was distributed to television stations throughout the country for viewing. It was used during the year in 401 telecasts before audiences estimated at 13,314,500 prior to removal from distribution at the end of the year.

Publications

Aerospace Quarterly—Circulation of this publication, directed at such audiences as press, financial community, educators, libraries, business and industry and government, continued to be well received. A reader survey produced approximately 4,500 responses with 97 per cent indicating they wished to receive the publication. The comments were highly favorable. The winter issue of *Aerospace* was devoted to international trade, and keyed to the meeting in Washington of foreign ministers of aviation and the Wright Day celebration.



Aerospace Facts and Figures—This annual statistical and textual record of the aerospace industry has grown in stature until today it is considered the most authentic source for aerospace statistics. The book is widely used by such groups as the media, government officials and financial analysts. In addition to a distribution made by the Association, largely to media and government, the commercial distributors of the book sold approximately 4,000 copies.

Annual Report—This summary of Association activities was widely distributed to press, government and industry and requests for additional copies caused the press run to be increased by 500 copies.

CODSIA

With the creation of the Council of Defense and Space Industry Associations in mid-year and the appointment of Mr. Harr as chairman for its first year of operation, the AIA Public Relations Service has assigned responsibility for the release of information for the organization.

NANAC

The Public Relations Service acted in a liaison and

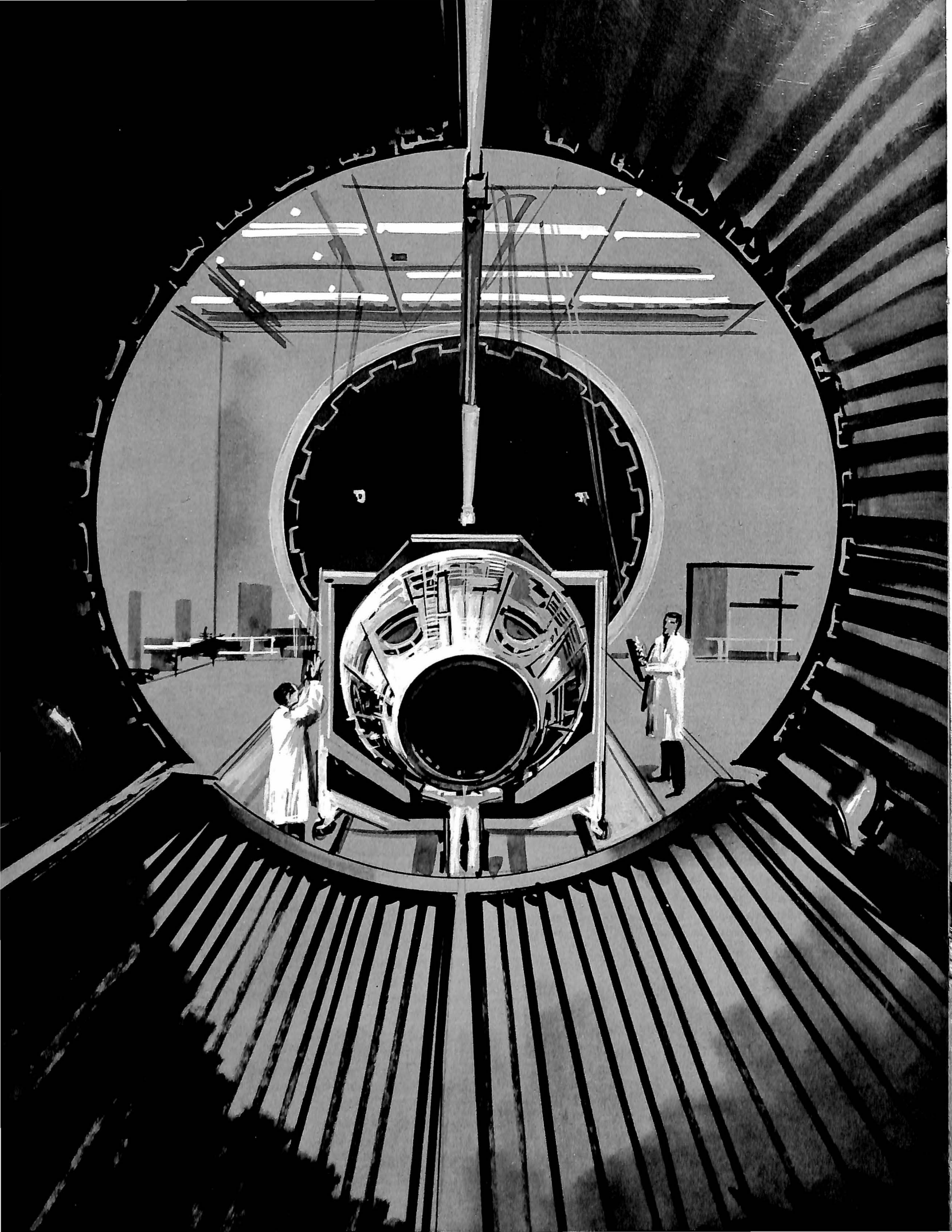
advisory capacity with the National Aircraft Noise Abatement Committee during the year, meeting with the Public Relations Committee and providing judgments on subjects and proposals related to noise abatement when requested.

Aerospace Education

The Association continued its support to the National Aerospace Education Council during 1964. The Public Relations Service staff provided assistance in NAEC product improvement, established better liaison to assist in the production of these materials, and made attempts to attain additional financial support for the Council's activities.

NAEC reported that nearly 26,000 requests for information were received during the year, an increase of about 1,000 over the year before. Of these, nearly 21,000 were filed by teachers seeking assistance in such areas as "How to Prepare a Unit on Space Science."

Finally, PRS again worked in close cooperation with NAEC in collecting the material which was utilized in *U. S. Aircraft, Missiles and Spacecraft*. This is an annual pictorial and textual publication, covering the industry's current hardware. It was well received and attained a distribution of 15,000 copies.



TECHNICAL SERVICE

With the aerospace industry's shift from production oriented to research and development oriented programs, the committee programs in the Technical Service have changed from the purely technical to those more closely linked with management of technical effort.

The Aerospace Technical Council (ATC) was formed during 1963 to act as the industry's top-level advisory group on technical matters, to concern itself with forward thinking and policy planning in technical areas, and to provide overall supervision and policy guidance for the Association's technical committees. Membership on the Council is limited to one from each AIA member corporation, drawn from top corporate research and engineering management.

The first action of the Council was a review of the Association's Technical Service. By November a reorganization plan was completed, approved and ratified by the Board of Governors. The plan establishes a functionally oriented line organization reporting directly to the Council, which considerably shortens lines of communication and authority, consistent with the needs of today's technical environment. It will be implemented early in 1965. It is expected that the Association's technical activities will reflect the potential built into the new organization to provide the most effective means for mobilizing the technical talent of the aerospace industry to identify and recommend needed solutions to industry-wide problems.

AIRCRAFT TECHNICAL COMMITTEE

This Committee's membership represents engineering management of those companies engaged in design and production of aircraft.

There were no formal meetings during 1964, but since many of the Committee members are also members of the new Aerospace Technical Council they were involved in the Council's deliberations on reorganization.

Aerospace Research and Testing Committee

The activities of the Aerospace Research and Testing Committee (ARTC), spanning a period of more than twenty years, are concerned with common industry problems of research and testing in the areas of structures, dynamics and materials. Engineers and scientists from 47 member divisions comprise the Committee.

Designated areas are managed by panels of specialists who meet as required to carry out assignments and to exchange information. A contract test program to confirm new constant bandwidth FM standards was successfully completed, and a comprehensive handbook on telemetry standards has been published by a panel on Flight Test Telemetry. Other panels have published state-of-the-art reports in the areas of Aircraft Alighting Dynamics and Thermophysical Properties.

In addition to the work of its panels, ARTC completed 33 projects this year, covering such topics as the strength of welded joints containing discontinuities, properties of potting compounds, micrometeoroid environment standardization, radiographic inspection of solid propellant motions, wind aloft data for launch design criteria, and stress corrosion cracking of aluminum alloys.

Six new reports in the ARTC technical series were published during the past year. Subjects covered were safety



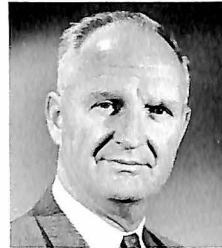
R. E. HORNER
Northrop Corporation
 Chairman, Aerospace
 Technical Council



E. A. BRITTENHAM, JR.
Goodyear, Aerospace
 Corporation
 Chairman, Aircraft
 Technical Committee



G. W. WESTPHAL
PneumoDynamics
 Corporation
 Chairman, Accessory and
 Equipment Technical
 Committee



R. A. COOPER
The Garrett Corporation
 Chairman, Electronic
 Equipment Technical
 Committee



M. R. STANLEY
Northrop Corporation
 Norair Division
 Chairman, Flight
 Operations Committee



P. H. OWEN
Aerojet-General
 Corporation
 Chairman, Manufacturing
 Committee



C. J. McDOWALL
General Motors
 Corporation, Allison
 Division
 Chairman, Propulsion
 Technical Committee



P. B. PROCTOR
Hughes Aircraft
 Corporation
 Aerospace Group
 Chairman, Quality
 Control Committee

AIRCRAFT TECHNICAL COMMITTEE

Aerospace Research & Testing Committee
 Dynamics & Aeroelasticity Research Panel
 Flight Test Telemetry Panel
 Structures Panel
 Thermophysical Properties Panel
 Airworthiness Requirements Committee
 Personal Aircraft
 Rotorcraft
 Transport
 Vertical Lift Aircraft
 Engineering Contract Requirements Committee
 Drafting Panel
 National Aerospace Standards Committee
 Powerplant Installation Committee

ACCESSORY & EQUIPMENT TECHNICAL COMMITTEE

Administrative Engineering Committee
 Drafting Practices

ELECTRONIC EQUIPMENT TECHNICAL COMMITTEE

Electronic Parts Committee
 Connector Panel
 Electron Tubes Panel
 Gyros & Accelerometers Panel
 Microelectronics Panel
 Radiation Effects Panel
 Relay Reliability Panel
 Semiconductor Devices Panel
 Electronic Equipment Specification Committee
 Design Uniformity Program
 Electromagnetic Compatibility Panel
 Drafting Panel
 Electronic Systems Reliability Committee

FLIGHT OPERATIONS COMMITTEE

Safety Panel

MANUFACTURING COMMITTEE

APT Management Council
 APT Technical Advisory Project
 Aerospace Manufacturing Engineering Committee
 Numerical Panel
 Electronics Manufacturing Engineering Committee
 Manufacturing Conservation Panel
 Manufacturing Equipment Committee
 Manufacturing Test Engineering Committee
 Preservation & Packaging Engineering Committee

PROPULSION TECHNICAL COMMITTEE

Propulsion Working Committee
 Powerplant Airworthiness Requirements Panel
 Turbine and Jet Engine Panel
 Propeller Requirements Panel
 Engineering Data Panel
 Reliability Panel
 Liquid Rocket Engine Control Components Panel
 Liquid Rocket Propellants Panel
 Solid Propellant Safety Panel

QUALITY CONTROL COMMITTEE

Government Special Liaison Panels
 Measurements Standards & Calibration
 Reliability Panel

practices for space chambers, telemetry standards, space simulation vacuum chambers, and alighting gear dynamics. In addition, the complete series was reviewed and many of the reports revised and updated.

Recommendations were made to government agencies on specifications covering aluminum alloys, classification and inspection of castings, electronic lead materials, resistance welding, aluminum forgings, and heat treating of aluminum alloys.

Significant savings in both dollars and hours have accrued to member companies participating in ARTC activities. These savings resulted from the reduction of effort made possible for each member. For example, the jointly sponsored program to develop new constant bandwidth FM standards cost each participant approximately 4 per cent of the total expense. The joint development of requirements for manned space chambers was accomplished in a fraction of the calendar time which would have been required had this been attempted by each company needing such information.

Airworthiness Requirements Committee

The Airworthiness Requirements Committee (ARC) is composed of engineering representatives from airframe manufacturers concerned with the certification of aircraft, rotorcraft and VTOL vehicles. The Committee represents the industry with the Federal Aviation Agency in certification and airworthiness matters. It initiates proposals for revision of the Civil Air Regulations and related policies and procedures where they concern airworthiness requirements, and similarly establishes the manufacturers' position when such proposed revisions are prepared by the FAA.

Since there is a wide divergence of interest among the various manufacturers, the Airworthiness Requirements Committee is divided into four groups — Transports, Personal Aircraft, Rotorcraft and VTOL Aircraft.

Several meetings on specialized subjects have been held between FAA and ARC/transport groups after the latter had submitted either formal or informal comments on FAA proposals. Included in these were such subjects as FAA proposals having to do with arresting gear installations for turbine-powered transports at major airports, stall-warning and stall-prevention devices for jet transports, emergency evacuation procedures and recodification of regulations. The transport manufacturers also participated in several meetings at which a government committee, studying the effects of lightning strikes reported on its findings.

Engineering Contract Requirements Committee

The Engineering Contract Requirements Committee (ECRC) completed its eleventh year of operation at an unprecedented level of activity. During the year the Air Force 375-series of management manuals became available for coordination. The Army, NASA and DoD released the first of their new series of system management documents, and many of the technical centers of the DoD released new specifications governing requirements for specialty functions. All of these documents, in varying degrees, affected the technical operations of the member companies. Functioning as industry's representative for the analysis, coordination and preparation of comments

on the new requirements, the ECRC organized to provide experienced analyses and timely responses on each of the new projects.

Early in the year the ECRC participated in the preparation of comments and suggested changes to Volume I of the Air Force Systems Command Manual 310-1 on management of contractor data and reports. That activity was followed by an offer to AFSC that ECRC act as the collecting agent for industry comments generated by the use of Form 9 in Volume II of the manual.

ECRC, acting in concert with other AIA committees, embarked on an analysis and review of the requirements of the new Air Force Manual 375-1 on configuration management during the acquisition phase. As a result of this review, requirements of the manual were made more compatible with contractors' procedures and the desired system effects became more readily achievable.

Shortly after the issuance of AFSC Manual 375-1, its companion, AFSC Manual 375-5, became the subject of review by the ECRC. Although this document has not yet been released for formal coordination with industry, its system engineering requirements have been commented upon by several member companies, and a full-scale review is planned in 1965 to assure compatibility of the two documents.

The ECRC agenda has included approximately 40 active projects during 1964, many of which were accomplished in cooperation with other AIA committees. Typical of those subjects in which the ECRC participated in order to reflect the engineering and system management effects are the following: maintainability requirements; safety engineering requirements; quality program requirements; value engineering; contractor cost reduction; requirements for data; the ASPR section on qualified products; reliability management, and the Defense Standardization Program.

In addition, the ECRC acted as industry coordinator on the military standards for preparation of specifications for aircraft, reliability test criteria, maintainability definitions, human engineering design criteria-system facilities, and the Engineering Qualification Approval Procedures program.

The ECRC Drafting Panel has also been active during 1964. Its drafting specialists have acted as industry sponsor on the military standards for the types and definitions of drawings, revision of drawings, drawing sizes and formats, and configuration identification numbers and nomenclature.

The Drafting Panel also followed the activities of various military agencies, which are aimed at revising current government documents controlling drafting practices, microfilm, and associated data lists. Paramount among the planned revisions is to combine the requirements of all current military standards affecting drafting practices.

National Aerospace Standards Committee

The National Aerospace Standards Committee (NASC) is composed of leading standards engineering personnel appointed from the airframe, missile, and space systems manufacturers. Their function is the study of mutual standardization problems of aerospace system parts, components, materials, processes, and related standards, specifications, and policy matters. This leads to the adoption and promulgation of appropriate industry standards, pro-

motion of their use consistent with improved design and economic considerations. Also, at the request of the government agencies, the Committee annually reviews and submits technical comments on numerous proposed documents.

More than 150 National Aerospace Standards (NAS) were issued during the reporting period. Highlighting the year was the citing of the NASC as an exemplary standardizing body in separate study reports on the Use of Industry Standards by both the Department of Commerce and the Air Force. Such action lent further recognition to the NAS series, which is used both nationally and internationally in military and commercial applications. Three additional government liaison representatives joined the unique and cooperative government participation, thereby extending direct committee contact within the Air Force, Army, Navy, National Aeronautics and Space Administration, and Defense Supply Agency.

Indexing and publishing of the National Aerospace Standards is accomplished for AIA by the National Standards Association, Inc. Automatic distribution of current standards is made to 1,000 companies, government agencies, colleges, technical schools, libraries, and individuals. International distribution includes 24 foreign countries and complimentary mailings are made to using agencies of our government.

In addition to the normal project, survey and review activity on standards during the past year, which is expected to continue through the next year, is extensive committee activity in the area of cost avoidance as it is related to standards. Two aspects of the subject are of interest to NASC.

The first is relative to a comparison of the NASC standards program as opposed to development of individual company standards, or specific parts for each application, with respect to direct and potential savings through use of standards.

In the past, individual studies of specific standards have been made showing actual and potential savings resulting from their use. Few if any of these examples have shown figures representative of a standards program in its proper perspective or the cost avoidance type savings that could result from better exploitation of a standards program.

The current study involves collection of data from all NASC members to determine an average cost in preparing a standard, and cost of related work. Due to the mode of operation of the committee, all members do, at some time, sponsor work on the generation or revision of a standard and/or review of a standard or related specification. Each is qualified to participate in the study. These standards have wide acceptance and use as is evidenced by their distribution, not only within NASC member companies, but in many other companies, in the government, and in other industries. Thus comparison of the costs for issue and maintenance of the NAS program compared with issue and maintenance of individual company part standards will be the basis of cost avoidance directly due to the use of the NAS system. Such information will be of interest to the management of all NASC companies in support of standards activities.

The second area of cost avoidance which is of direct interest involves those changes made by the military which may be detrimental to the best interests of NASC member

companies. The effect on industry is that of increasing costs of operations relating to standards, with little or no improvement in the end product. Participation in committee activities by government liaison members allows frank discussion of these problems. This frequently initiates action to prevent unsatisfactory changes. This again is cost avoidance. In this second area of interest, a NASC member company is preparing a detailed study showing how many standards and specifications are changed each year and the cost effect upon NASC member companies. Various recommendations are proposed and being concurred in by NASC members. It is planned that upon completion of the study, it will be submitted to both the liaison members and to other appropriate government agencies for consideration as cost avoidance material.

Powerplant Installation Committee

The Powerplant Installation Committee (PIC) has technical and administrative responsibility for propulsion system installations and related matters in airframe, missiles and space vehicles. The Committee provides technical advice in matters relating to propulsion system installation requirements to military and civil agencies of the government, and also assists other committees of AIA in matters involving such engineering efforts.

The committee has held two regular meetings during 1964, and has also participated in *ad hoc* operations jointly with the Propulsion Working Committee (PWC). Among the accomplishments of this committee are:

Reviewed, in a meeting with the engine manufacturers, recommendations previously submitted to the Aeronautical Standards Group for revisions to the turboprop-turboshaft engine specifications, thus reducing the number of conflicting requirements between PIC and PWC.

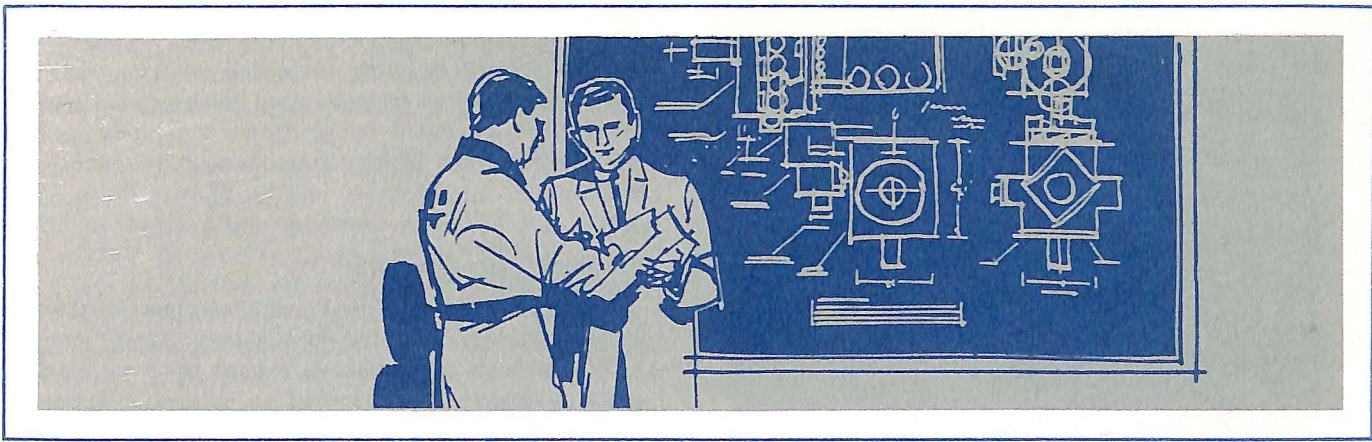
Responded to a proposed new rule-making by FAA on the subject of crash resistant fuel tanks by establishing a project group of transport manufacturers. The group recommended that a clean-up of obstacles in and adjacent to airport areas would do more to help the safety problem than the imposition of new rules which might actually deteriorate airworthiness capabilities of transport airplanes.

ACCESSORY & EQUIPMENT TECHNICAL COMMITTEE

The Accessory & Equipment Technical Committee (AETC) represents the segment of the aerospace industry concerned with auxiliary equipment, such as electric, hydraulic, pneumatic and mechanical systems. Its 25 members provide an authoritative source on engineering, performance and regulatory matters in the accessory field.

Through its working committee, the Administrative Engineering Committee (AEgC), AETC has worked closely with other AIA committees in providing comments and recommendations on military specifications of the management type dealing with engineering drawing changes, configuration management, data management, value engineering and item identification. In addition, several hardware type specifications were reviewed.

A number of military documents involving requirements and standards for engineering drawings were reviewed by the AEgC Drafting Panel, working in conjunction with the AIA Joint Drafting Practices Panel.



ELECTRONIC EQUIPMENT TECHNICAL COMMITTEE

The rapid changes currently taking place in the electronic systems operating environments and applications requiring higher performance, reliability and longevity, indicate a need for continued dynamic improvement of the government-industry interface for developing new designs, components and product assurance concepts.

The Electronic Equipment Technical Committee (EETC) continued in 1964 to demonstrate its ability to meet the numerous technical and management challenges of the ever-expanding interfaces of electronic engineering with manufacturing, new environments, new applications, and increased complexity.

Electronic systems manufacturers' views were integrated with the views of weapon and space systems primes on six weapon systems management type specifications. This type of specification was also considered in terms of its possible effect and combined dollar impact.

Presentations and discussions provided understanding of problem and planning areas, assessed technical trends, and developed joint government-industry efforts to solve mutual problems. These included highlights of Naval Ordnance technical programs, incentive contracting, Digital Fire Control Program, MIT Instrumentation Laboratory history, and the present program on Apollo and Polaris guidance systems. Visits to the Naval Ordnance Test Station (NOTS) and MIT Instrumentation Laboratory for briefings and tours provided valuable background in the direct area of members' responsibilities.

In an endeavor to improve cost effectiveness, the EETC directed its working committees to reorient their routine considerations toward improving their relationships with government customers, and reducing the burden of conflicting philosophies and requirements in the electronics area.

Technical coordination between AIA and Electronic Industries Association on a working committee level was good. An outstanding case of coordination between two associations has been that of the Specifications Uniformity Program. In policy areas, EETC is hopeful that the recently launched program of inter-association coordination by the AIA and EIA staff will be effective in bringing the total industry resources to bear on improved government-industry relationships without wasteful duplication.

The benefits of EETC activities to government and industry lie in the economies that accrue from the high degree

of continuity of engineering management and production techniques made possible by the coordination process.

Electronic Equipment Specification Committee

Cost reduction, and assistance to DoD in developing and updating tri-service design requirements marked Electronic Equipment Specification Committee (EESC) activity during 1964.

Working with Electronic Industries Association, EESC has provided the industry support to a joint military-industry program of General Electronic Equipment Specifications Improvement and Simplification. The program involves identification of existing or potential common requirements within the twelve principal general electronic equipment specifications, extracting these common requirements, developing military and industry resolutions thereof, and consolidating resolved uniform practices into a common reference repository. Thirty-four projects undertaken to date are completed or are in terminal phases of completion. The program is estimated to require three more years for completion of the remaining 50 projects which have not yet been started.

An EESC survey report, released in June 1964, estimated that a savings of \$12 million annually can be achieved by the program when completed. The savings which will occur this year are estimated at \$3 million in the single area of savings related to simplification of design efforts by application of the 17 standardized engineering practices in place of approximately 200 conflicting and duplicating requirements.

In recognition of the large potential savings from the Joint Government-Industry Uniformity Program, the Assistant Secretary of Defense (I&L) and the Assistant Secretary of Defense and Deputy Director (R&E) directed the military services to develop an accelerated schedule and allocate resources and priorities appropriate to the full realization of the benefits to be derived.

For the eleventh consecutive year the EESC assisted the Aeronautical Standards Group in coordination and improvement of Navy and Air Force specifications on general design of airborne electronic systems related to test equipment and environmental requirements. This joint effort has maintained these much-used documents in a state of high acceptability to both the military services and industry. This is another outstanding example of progress through organized government-industry cooperation.

Joint meetings with military and NASA specialists on



electromagnetic compatibility requirements led to a joint AIA-EIA recommendation that the DoD activate a government-industry program to update and standardize the test procedures and methods used to determine levels of interference generated by electronic equipment and the susceptibility levels which electronic equipment must withstand.

Electronic Parts Committee

The year 1964 produced major changes in electronic parts technology. This led the Electronic Parts Committee (EPC) to a shift in emphasis toward resolving electronic parts development as opposed to systems requirements, and improving the government-industry interface.

EPC pinpointed three major areas—microelectronics, reliability of connectors and relays, and central DoD/NASA parts management systems—as offering far-reaching advancement potentials. To aid in nation-wide efforts in these areas, EPC liaison with all branches of the military, NASA and other industrial parts committees was strengthened.

Microelectronics. Parts technology advanced rapidly toward use of completely integrated, self-sufficient circuits of very small size, requiring, however, as many communication channels as their predecessors. Entirely new harnessing and connection concepts and philosophies are needed for interconnections and connection of microelectronic modules, ceramic printed circuits, and functional electronic blocks. Committee efforts were directed toward standardizing connectors for use with the previously standardized flexible flat conductor type cable. The connector specification is in the final stage of approval for release. Standardization of microelectronics terminology was actively pursued by the DoD, and EPC submitted its coordinated recommendations. The Committee urged the DoD to recognize early the necessity of a uniform approach to the ultimate microelectronics standardization needs. EPC is pooling resources with the Air Force/Space Parts Working Group to obtain valid data on the reliability of the microelectronic parts.

Connectors and Relay Reliability. The addition of reliability requirements to connectors was developed through cooperation of EPC, the Society of Automotive Engineers, Electronic Industries Association, and the military services.

EPC completed fourteen separate tasks which were combined into EETC Technical Report "Guidelines to Controlled Reliability in Relay Specifications." These guidelines, in combination with NAS test procedures, and MIL-R-5757, provide for the first time an acceptable procurement base for established reliability relays.

Central Parts Specification Management. A NASA industry electronics workshop provided insight into NASA plans for facilities and programs of its Electronics Research Center. The area to be implemented first is components technology. A major ERC mission is to develop the engineering base for specifications and components which are several orders of magnitude better than present components in space applications. NASA needs common electronics requirements standards which can be applied by all. AIA will seek to improve its communication and coordination with NASA on parts standardization, qualification and application data.

Two follow-on meetings of the DoD/industry electronics workshop advanced to the threshold of a unified DoD/NASA/Industry Parts Specification Management Program, capable of significant improvement in parts reliability at a reasonable cost.

Item Entry Control. EPC assisted the Defense Supply Agency in its study of item entry control by developing replies to twelve basic questions posed by the Director of the DoD Item Entry Control Office. This study indicated that an excellent job of item entry control is apparent within separate weapon systems. What is needed is a single DoD-NASA specification system to provide good government engineering and procurement documentation for parts developed in a given weapon or space system, so that it may be available to other systems designers who may need the same parts.

Parts Data Bank. At the request of the Air Force, AIA arranged for five EPC member companies to participate in a service test of the Air Force Engineering and Logistics Information Systems (Parts Data Bank). Indications are that when fully implemented, this system can provide significant improvement over current methods of parts selection.

Electronic Systems Reliability Committee

In response to a military request, and in close cooperation with DoD, the Electronic Systems Reliability Committee (ESRC) provided the key sponsor for resolving coordinated AIA recommendations of AIA/ESRC, EESC and ECRC on "Test Levels and Accept/Reject Criteria for Reliability of Electronic Equipment."

ESRC participated, along with other committees, in preparing coordinated AIA recommendations on a proposed Reliability and Management of DoD Systems standard. Because of urgent military need for this standard, and since the AIA recommendations on a previous draft had been considered by DoD and incorporated to a large extent, this important task was completed in thirty days. It is expected that this will lead very soon to release of the other documents required to provide a complete set of tri-service reliability specifications, which has been a major DoD/AIA goal for some time.

ESRC and ECRC assisted the Air Force in coordination of a standard on Human Engineering Design Criteria for Aerospace Systems Facilities and also initiated new projects on maintainability demonstration techniques, and maintainability symbols and definitions.

FLIGHT OPERATIONS COMMITTEE

The Flight Operations Committee (FOC) was established to provide a concerted effort on the part of the manufacturers to diminish the collision potential between flight test aircraft and other airspace users, and to act for industry on other matters pertaining to flight operations, including flight test.

During the past several years, the FAA and AIA have been coordinating on a daily basis to insure that flight test operations can be continued, without undue restrictions, in the safest possible manner. The implementation of positive control throughout the country has presented some rather complex scheduling, flight planning and communications problems. However, they have been worked out

by the establishment of special arrangements throughout the country which best suit the particular flight test activity and local traffic control environment.

In a series of meetings between AIA and the Air Force, the latter generally agreed, and steps are being taken, to revise Air Force directives to indicate more clearly Air Force and industry responsibilities in the flight testing of Air Force aircraft and missiles.

The Safety Panel, composed of safety experts from member companies, assisted the military services with comments on proposed aerospace safety specifications.

MANUFACTURING COMMITTEE

The Manufacturing Committee (MC) is composed of top-level manufacturing executives who develop broad policies in the areas of concern of its five working committees. These include manufacturing research and development, manufacturing equipment, conservation, production testing, tooling, methods and processes and other factory type operations. Heavy emphasis was placed on working toward achievement of reductions in manufacturing costs.

A major industrial milestone was achieved when the MC approved transfer of complete responsibility for the APT Program to IIT Research Institute. APT — Automatically Programmed Tools — is the computer language and system for numerical control applications which has been developed under the guidance of the MC since 1958. This transfer, which was approved by the Committee and ratified by the Board of Governors, signaled the conclusion of AIA sponsorship of the program, which has been described as a classic example of industrial statesmanship wherein competitive companies working together have contributed significantly to the advancement of our industrial society. This transfer followed an earlier transition of this aerospace program to a broader industry base, as its participation increased to include membership from the automotive, farm implement, machine tool, computer and numerical control systems industries, as well as several government agencies. An international APT Program had also been initiated earlier in the year, with the establishment of a European office by IITRI. It is hoped that the transfer will result in further expansion of the APT technology and extension of its benefits to all U. S. industry.

Activities during the coming year are expected to be directed toward a closer relationship with DoD, the military services and NASA to improve the industry's manufacturing capability as new requirements develop.

Aerospace Manufacturing Engineering Committee

Major accomplishments of the Aerospace Manufacturing Engineering Committee (AMEC) included actions and recommendations in furtherance of the government-industry relationship and actions of direct benefit to the manufacturing programs of participating companies. The specialists comprising the Numerical Panel of the AMEC contributed materially to the efforts of the committee in both areas.

A request to the Bureau of Naval Weapons that it sponsor a program to evaluate heat treat fixture materials for use at elevated temperatures resulted in the issuance by the Bureau of a survey of interest letter to selected companies. The Defense Industrial Plant Equipment Center and the Air Force requested industry opinion on support

of adoption by the American Standards Association (ASA) of character coding requirements of an existing Electronics Industries Association specification. A position paper was prepared which formed the basis for recommendations to ASA by industry and government. In regard to chemical milling, a Committee survey resulted in recommendations for a government-funded program to improve maskants and other state-of-the-art limitations. Replies have indicated interest by government agencies in such a program. Technical support was provided to the APT Long Range Program managed by IIT Research Institute. A technical advisory group of industry specialists in numerical control functioned as an effective communication link between AIA and non-AIA participating companies and IITRI.

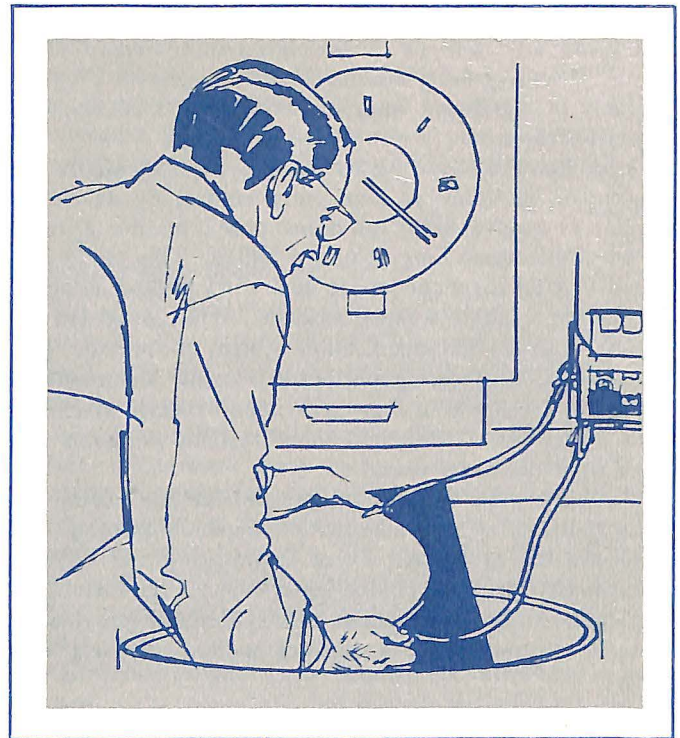
Tool holder standards were prepared and published which will reduce costs to member companies and the government by providing interchangeability between numerically controlled machine tools of the same capacity and capability, and by making possible reduced tool holder inventories. Digital magnetic tape standards for numerical control applications also were prepared and published concurrently with the break-through in the state-of-the-art that proved their effectiveness. A manual — Guide to Aerospace Manufacturing Research and Development — was compiled and published. This manual is a compendium of problems, solutions, present progress and future trends in the critical areas of metal removal, forming, joining and processing that serves to eliminate unnecessary costs, because the information it contains facilitates direction or redirection of manufacturing research and development programs of member companies. Such programs also give better guidance and direction through information gained from frequent meetings, utilizing slides, motion pictures, and handouts. Duplication of costly manufacturing research and development investigations are obviated.

During 1965 the committee, in line with overall AIA policy, will concentrate its efforts on problems that are involved in the government-industry relationship and those internal industry problems of wide common application and promise of early pay-off.

Electronics Manufacturing Engineering Committee

In its first full year of operation, Electronic Manufacturing Engineering Committee (EMEC) did not embark on a large number of projects, restricting itself to the establishment and approval of only twelve specific projects. So that activity can be conducted in the best interests of the industry, the concept of each prospective project is developed during project group workshop meetings. It is then considered in full Committee session and approved or disapproved, and if approved, confirmation of industry need and interest is obtained by an exploratory questionnaire before a project is granted official status. Reduction of manufacturing costs is one of the major factors considered in the development, selection, and approval of projects.

Two projects were completed. The first covered the concept and feasibility of automated wire harness assembly. Results and recommendations were transmitted to the Manufacturing Equipment Committee. Successful accomplishment of mechanization of fabrication of wire harness assemblies could result in far reaching benefits. The second covered a review of problems relative to defects in



wire in "as received" condition. Results were referred to appropriate AIA committees to effect the necessary design and inspection measures to correct the recurring defects.

As active projects progressed they were subjected to critical scrutiny by the Committee to determine that the desired pay-off would be achieved. Some were found to overlap and were combined. Others were subjected to priority evaluation and were dropped. Only those projects that give promise of culminating in recommendations to the government, or of early pay-off to the majority of participating companies are retained.

Advantage was taken of committee meetings to use them as a forum for presentations on research and development in electronic manufacturing techniques. Because there are no other forums covering the specific areas, committee members consider the presentations to be of inestimable value. Presentations were received on behavior of materials in a space environment, UXL interconnection technique, use of infra-red techniques in detecting life type failures on production line, and fabrication techniques of multi-layer circuit boards.

The Committee will continue its policy of limiting the number of projects to those of maximum interest to the industry and government.

Manufacturing Equipment Committee

The Manufacturing Equipment Committee (MEC) provides the aerospace industry with a single authoritative source for the investigation, coordination, and resolution of mutual noncompetitive problems concerning the design criteria, quality and economic considerations of equipment required to support aerospace manufacturing.

This committee, composed of 44 manufacturing personnel representing the major aerospace companies, is one of the few committees which supplies design and performance specifications for National Aerospace Standards.

MEC action resulted in seven new NAS specifications, updated revisions to three NAS specifications and the final reporting of four study projects. The seven new specifications are:

- Printed Circuit Board Drilling Machine, Numerically Controlled
- Lathe — Precision — Numerically Controlled
- Resistance Spot Welding Equipment — 3 Phase
- Measuring Inspection Machine — Precision — Numerically Controlled
- Glossary of Manufacturing Equipment Terms
- Tool and Cutter Grinding Machine
- Resistance Seam and Roll Spot Welding Equipment — 3 Phase

The range of these specifications illustrates the wide scope of Committee activity.

In developing such specifications the Committee utilizes a cross section of technical capability. The rapid evolution of new materials and processes in aerospace applications makes the maintenance of a strong, cost-conscious and efficient manufacturing capability a vital national as well as industrial concern. As a result, agencies of the Department of Defense have frequently requested the Committee to participate as expert technical advisors in such important programs as the Air Force Modernization Program.

Assistance to and liaison with government agencies is continuously given high priority. Examples of such assistance during the past year are:

- Joint Industry-Government Forum held in Washington, D. C., with representatives of six DoD agencies and the Committee staff.
- Joint AIA/NMTBA/USAF Meeting at Wright Patterson Air Force Base, Ohio.

In both instances Committee representatives served to provide the avenue of communication for the aerospace industries equipment.

In addition to developing new specifications, an active program for the revision of existing NAS specifications is constantly conducted in order to keep specifications up to the state-of-the-art. For example, recent technological advances in application of high strength materials have required complete revision to the specifications for profiling and contouring milling machines. In order to accomplish this revision, the project committee must be simultaneously well informed on the latest advances in machine control systems and in the rigidity and power requirements dictated by the machinability characteristics of both present and foreseeable materials.

Aerospace vehicles now on the drawing boards encompass the usage of more exotic, harder-to-fabricate materials. These materials are vital to maintain technological supremacy. The Committee's projects and plans for future activity will emphasize efforts to define realistic equipment requirements for our industry, giving appropriate recognition to the state-of-the-art in equipment manufacturing.

Manufacturing Test Engineering Committee

A major accomplishment of the Manufacturing Test Engineering Committee (MTEC) during the past year was the development of a Drafting Room Manual for use in the preparation of drawings of in-plant (non-delivered)

test equipment. The drafting practices outlined in the manual provide documentation that is acceptable to the customer and will result in substantial savings over that required by military specifications.

The MTEC is comprised of 47 members whose area of responsibility covers final product testing and check-out prior to the delivery to the customer. The Committee worked on fifteen projects during the past year, completing six. Major emphasis is placed on value review through the Manufacturing Acceptance Test Economics Study (MATES) program which seeks the most economical approach to product testing by means of a proper combination of documentation, equipment complexity and technical skill.

Typical of MTEC's projects are the development of standards for automatic test programming, the effect of miniaturized electronics on test equipment, industry standards for calibration and maintenance procedures, electromagnetic radiation interference, and standards for grounding test equipment.

MTEC has joined with other AIA committees in making recommendations to government agencies. Joining with the Quality Control Committee, many problems in the calibration and measurements area have been coordinated with the National Bureau of Standards. Recommendations covering special tooling have been directed to the ASPR Committee through the Manufacturing Committee and the Procurement and Finance Committee.

Preservation and Packaging Engineering Committee

An overall accomplishment of the Preservation and Packaging Engineering Committee (PPEC) during 1964 was reevaluation of projects to retain only those of high priority. Criteria used in establishing priorities were involvement of industry-government relationship or an early pay-off in reduction of costs of preservation and packaging to the majority of the AIA member companies.

Specific accomplishments were:

- Participation in a NASA/industry workshop which resulted in compliance with a request by NASA for industry-developed recommendations on policies NASA should adopt covering preservation, packaging, packing and marking.
- Recommendations to the military services for improvement of standards and specifications on methods of preservation and on preparation and use of packaging data forms.
- Publication of fifteen National Aerospace Standards which member companies may use to obtain economical and effective packaging of components and parts purchased from subcontractors and vendors.

In-process projects of importance are a vigorous program to compile and provide to the government an estimate of cost reductions that can be obtained from standardization by government of systems used for procurement of packaging data and another to develop recommendations for improvement of specifications or packaging of hazardous materials.

Future operations of the Committee will concentrate on maintenance of an effective industry-government relationship and work on projects that clearly have a significant cost saving potential and meet universal needs.



PROPULSION TECHNICAL COMMITTEE

The Propulsion Technical Committee (PTC) is a main committee composed of executives generally at the vice president or director of engineering level of companies engaged in research, development and production of air-breathing or rocket engines of their own design for the propulsion of aircraft, spacecraft and missiles.

The Propulsion Technical Committee has restricted its efforts to those subjects of an engineering nature which have to do with across-the-board AIA policy.

Propulsion Working Committee

The Propulsion Working Committee (PWC), which is a working committee under the Propulsion Technical Committee, is comprised of membership generally at the chief engineer level from companies who have designed and produced air-breathing engines, rocket engines or propellers. During this second year of operation for the combined engine, rocket and propeller groups, it became evident that an opportunity should be provided at each general meeting for the air-breathing engine and rocket engine groups to meet for discussions of their own peculiar problems. This was accomplished by separating the groups for half-day sessions in connection with each PWC meeting.

On topics of general AIA interest, PWC has cooperated with other AIA technical committee activities in the review of such items as value engineering, configuration management, data management, cost reduction, and relaxation of controls. Specialized groups, either *ad hoc* or panel, met one or more times to act for PWC in specialized areas. Actions taken as a result of these meetings include:

Development, in conjunction with performance specialists from the airframe manufacturers, of a standardized method of presenting engine performance data, which could reduce the cost of preparing such data up to \$25,000 for each different engine model.

The engine and propeller manufacturers have commented upon, and met with the General Counsel of FAA for discussions to assure that in recodifying existing Civil Air Regulations, no new requirements were invoked through rewording.

Reviewed in a preliminary manner, an airframe proposal

which would extend engine contingency ratings now in effect for helicopter turbine engines to engines for fixed wing airplanes also.

In monitoring work done by several committees of the Society of Automotive Engineers involved with propulsion standardization matters, the PWC has been successful in expediting release of standards for government and industry use by weeding out low priority projects and developing an alternate method for releasing projects delayed by lack of government approval. Time from the initiation to release of utility parts standards has been thereby reduced approximately 50 per cent.

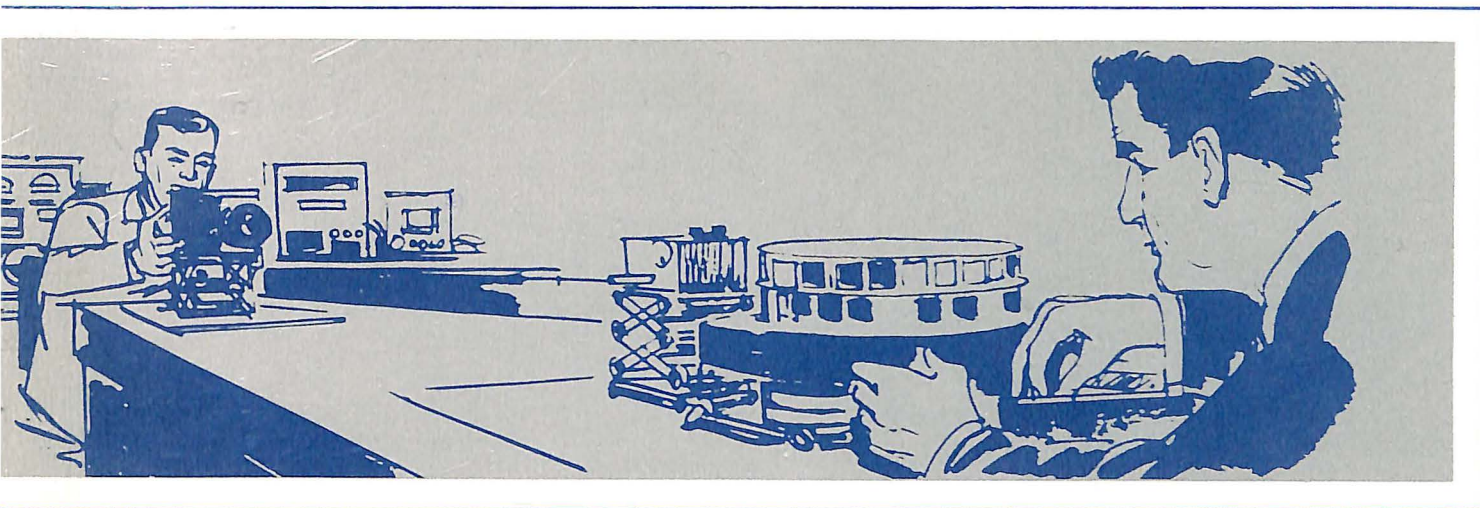
A project group appointed by the PWC met several times for a review of Navy maintainability requirements, and developed recommendations for applying maintainability requirements to engines. Two phases were proposed: research and development, and production. Coupled with this recommendation was a recommendation for more effective failure reporting by both the Air Force and the Navy, to give engine manufacturers needed data.

Elements of a Reliability Program, as viewed by the engine manufacturers with respect to engines and related equipment procured by the Navy, were prepared in response to a Navy request. If adopted, this will result in a more realistic reliability program for engines, by omission of philosophies applicable primarily to other types of airborne equipment.

A proposal was presented to NASA by a selected group of PWC members at a NASA/industry workshop which dealt with the need for a centralized index of requirements documents issued by various NASA Centers. NASA participants in the workshop session admitted the need for such an index for their own as well as industry use, and it is hoped that this may be forthcoming in the near future.

The PWC Liquid Rocket Propellants Panel achieved recognition by the Liquid Propellant Subgroup of the Interagency Chemical Rocket Propulsion Group as the propellants user group to whom matters pertaining to liquid rocket propellants should be referred. The Propellants Panel has cooperated with both NASA and the Air Force Rocket Propulsion Laboratory in dealing with specifications for a number of liquid rocket propellants.

The PWC Solid Propellant Safety Panel has developed a formalized reporting system for exchange of information



relative to hazardous incidents or accidents in preparation, handling and storing of solid propellants.

A special project group, after developing a proposed revision to the liquid propellant rocket engine specifications, has reviewed the version released by the Air Force Rocket Propulsion Laboratory for coordination with other government agencies and industry. It is expected that this group will meet with the responsible government agencies.

The PWC is awaiting Air Force and Navy reaction to revisions developed by the industry on specifications covering both turbojet and turboprop-turboshaft engines.

Preliminary discussions have been held with Air Force representatives with respect to consideration of a new philosophy on qualification testing and the establishing of confidence levels of large solid propellant rocket motors.

QUALITY CONTROL COMMITTEE

This was the first full year in which member companies operated under the restated comprehensive quality program requirements of the DoD and the military services. A major program of the Quality Control Committee (QCC), therefore, was to identify common problem areas related to implementation and application, and to discuss interpretations and workable solutions. At the annual meeting, both government and industry representatives agreed that the transition to the new requirements had been made without undue difficulty and with little or no increase in costs. Success of the program can be attributed in a large measure to the effective work of the special liaison panels of the Committee in maintenance of communication with government personnel.

The Committee, through another liaison panel, accomplished similar communication with NASA personnel to the end that a firm program was established to coordinate revisions to its quality program requirements. The revisions are designed to add requirements that will better assure the quality needed in space vehicles and to eliminate requirements that do not contribute to quality.

Relationship with the FAA was maintained effectively. AIA's recommendations for revision of provisions of the Civil Air Manual relating to quality control were favorably received.

A panel established a relationship with officials of the Atomic Energy Commission. Other examples of the Com-

mittee's activity to improve the industry-government relationship are:

- Participation in a coordination meeting on a military handbook covering evaluation of contractors' quality programs.
- Participation in a Quality Assurance Panel at the Air Force Systems Command/Industry Symposium on Subcontract Management.
- Providing advice to the Army Missile Command on reliability programs.
- Assistance to other AIA committees in reviewing several proposed government documents.
- Participation in symposia on Zero Defects programs.

An important internal exchange of information is accomplished through the Committee's project for updating the Quality Control Systems Comparative Reference Study. The object of this project, originated in 1954, is to provide quality control managers with a periodic, comprehensive survey of quality control systems and techniques to be used for comparative reference in evaluating various phases of their quality control systems.

Significant projects in process include determining the extent of duplicative surveys, checking process control operations of vendors and developing recommendations for remedial actions. Another is examining costs related to quality to discover ways to reduce costs. A third has the objective of reducing multiplicity of government specifications covering quality programs.

Joint Drafting Practices Panels. The Drafting Practices Panels are concerned with government requirements for engineering data and documentation. Late in 1964, a proposed revision to MIL-D-70327 was received from the DoD Office of Technical Data and Standardization Policy. Copies of the DoD proposal were distributed to the membership of nearly every AIA committee due to the widespread interest. Panel sponsors having responsibility for the coordination and establishment of an AIA position with respect to the new document were in process of collecting comments from panel members. Inasmuch as the DoD proposal had been circulated to other trade associations and technical societies at the same time it was transmitted to AIA, the matter probably will be handled as a CODSIA project with a joint reply and set of recommendations to DoD on this subject.



TRAFFIC SERVICE



VERN W. PORTER
*North American
Aviation, Inc.
Columbus Division
Chairman, Eastern
Traffic Committee*



P. F. FORDERER
*Lockheed Missiles
and Space Company
Chairman, Western
Traffic Committee*

Traffic Committee

- Eastern Traffic Committee
Rate and Classification Subcommittee
- Western Traffic Committee
Rate and Classification Subcommittee

One of the primary functions of Traffic Service is to represent the mutual and joint interests of AIA members before carrier bureaus and rate associations.

Public carriers regulated by the Interstate Commerce Commission are unique in that they are permitted by law to consider and agree jointly to the level of rates which they charge for their service. Acting under Congressional sanctions which relieve them from provisions of the anti-trust laws, the individual carriers have banded together into national and regional rate bureaus. The railroads and motor carriers are organized in separate associations.

Against this structure of carrier rate-making power, the efforts of individual shippers are often ineffective to obtain or maintain reasonable rates for service rendered by carriers. The lone voice of a single shipper, if heard, is too often ignored.

Traffic Service thus serves as 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.

When efforts at this level are unproductive and the situation warrants, Traffic Service presents and argues the position of member companies before the Interstate Commerce Commission. In such cases the carrier associations or bureaus oppose AIA in adversary proceedings and the ICC rules on the matters in issue predicated on the facts adduced and the controlling law. During 1964, Traffic Service participated in several proceedings, both before carrier boards and the Interstate Commerce Commission.

In addition to its activity in matters related to carrier rates and service, Traffic Service also coordinates the interests of its members with respect to traffic and transportation matters involved in relationships with their principal customers, the government agencies, primarily the Department of Defense and the National Aeronautics and Space Administration. Several actions of this nature were accomplished. Additionally, Traffic Service represents the interests of its members before various other regulatory and administrative agencies of the government, such as the Civil Aeronautics Board, Department of Commerce and U. S. Customs Bureau.

Traffic Service Functions

The Traffic Service functioned through two general committees, each composed of the principal traffic officers of member companies located in the eastern and western halves of the United States. The Director of Traffic Service served as the Secretary of the two committees. Two Rate and Classification subcommittees performed and met concurrently under the aegis of each of the general committees. Matters of joint interest to the members of the Traffic Committees were continually coordinated by means of one hundred and thirty Traffic Bulletins issued during the year. These bulletins covered developments in the transportation industry and the various decisions of courts and regulatory agencies of interest and concern to aerospace traffic organizations. In a similar manner, military and other governmental directives and regulations and government requests for coordinated action with the aerospace industry in the traffic and transportation areas were also distributed. Members of the AIA Traffic Committees were kept apprised of Congressional developments concerning traffic and transportation.

Industry-Government Relationship

A substantial portion of the activity of Traffic Service is devoted to coordinating the interests of Traffic Committee members with government organizations responsible for traffic and transportation. Throughout the year, particular emphasis was placed on establishing close working relationships with the traffic and transportation segments of the National Aeronautics and Space Administration. To this end, representatives of the Traffic Committees and traffic personnel from NASA participated in a NASA-Industry Aerospace Forum. Workshop participants concluded that a program should be established and maintained which will permit NASA and aerospace traffic managers to coordinate closely their activities on matters of mutual concern and interest. It was determined that, from time to time, NASA representatives would attend and participate in meetings of the AIA Traffic Committees.

Workshop participants also concluded that action should be taken by industry and government to establish a central repository of information, or coordinating point, containing the description, availability or proposed planning for vehicles capable of transporting articles of extreme dimension or weight. Establishment of such a repository will contribute to better utilization of existing equipment by making possible joint utilization by lease or other exchange, thus minimizing the time, effort and expense entailed in the development and production of duplicative pieces of such equipment. Action was subsequently taken with the Department of Commerce to initiate a study with respect to the establishment of such a repository.

The Traffic Service and the traffic and transportation elements of the military services continued their cooperative efforts, particularly the transportation offices of the Assistant Secretary of Defense (I & L), Air Force Systems Command and the Defense Traffic Management Service, Defense Supply Agency. Many of the problems which heretofore existed with respect to the military-industry traffic relationship were overcome during the past year by virtue of the cooperative efforts of all concerned. Rep-

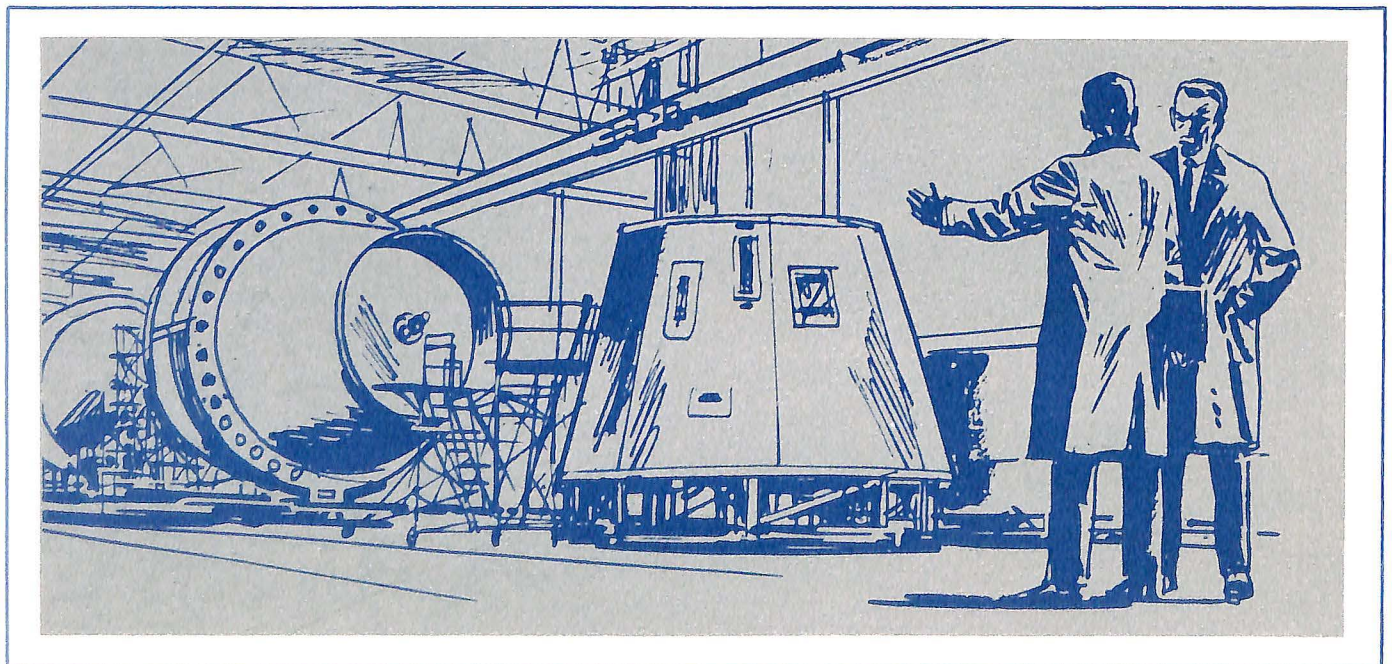
resentatives of the several military traffic organizations attended and participated in meetings of the Traffic Committees.

Of significant importance and interest to Traffic Committee members was the action taken within the military establishment to form the Defense Contract Administration Services Region (Project 60). This activity, when fully operational, will, among other things, provide for centralized surveillance of the industrial traffic activities under military contracts. The AIA Traffic Committees and those responsible for the traffic portion of this new agency have worked together during the past year, and their actions will go far in eliminating problems which would otherwise arise once the new agency is fully operational.

Carrier Rates and Practices

One of the principal functions of Traffic Service is to represent the interests of members with respect to the rates and services of carriers employed by the traffic departments of its members. Representative of actions by the Traffic Service regarding rates and services are:

- Defeated motor carrier attempts to establish a 25 per cent rate increase on aircraft brakes, landing gears and wheels.
- Successfully opposed attempts by motor carriers to modify truckload rates on aerospace products and thus avoided increases of from \$400 to \$500 per trailerload.
- Proposed and was successful in obtaining rate reduction of varying amounts covering high-density rocket parts.
- Successfully opposed attempts by the motor carrier industry to establish a \$1.00 surcharge on all shipments.
- Represented the interests of members before the National Classification Board of the American Trucking Associations in opposition to proposals to increase by 40 per cent the rates governing movement of various



aluminum articles. Disposition of this proceeding was still pending at year's end.

Regulatory and Government Administrative Activities

Traffic Service participated as a party of record in the following three formal proceedings before the Interstate Commerce Commission:

- The Commission prescribed rules and regulations which will improve the service provided by household goods van carriers. The new rules will benefit AIA members by doubling the amount of recovery obtainable from carriers in the event of loss or damage to shipments. The new rules also require carriers to expedite their handling of claims.
- The Commission also adopted the position advocated by AIA and held that reduced rates applicable by law to the U. S. Government may, under given circumstances, be assessed against shipments of contractor materiel moving in support of government contracts.
- In the third proceeding, the Commission permitted the household goods carrier industry to increase its rates up to 15 per cent. AIA opposed the carriers in this proceeding both before the ICC Board of Suspension and also on appeal to the full Commission.

Traffic Service also coordinated the interest of members in several other proceedings before the ICC and CAB. These included an ICC proceeding to exempt from regulation motor carrier movements of materiel having a prior movement by air; a CAB rule-making proceeding concerning the matter of simplifying air tariff publication procedures; and a CAB investigation into increased airline baggage allowances. Traffic Service proposed to CAB adoption of a policy favoring the establishment of joint rates and through service by trunkline carriers and helicopter operators. Such a policy, if implemented, will improve service to travelers, relieve airport congestion and promote the establishment of efficient and economically sound common carrier helicopter operations.

The Bureau of Customs acted favorably on the recommendation of Traffic Service that customs regulations be amended so as to provide, on an optional basis, for the presentation of shippers' export declarations and the accomplishment of other formalities at airports of origin rather than at ports of exit. This procedure will reduce delays to shipments and the cost involved in making company personnel available at distant ports of exit for the purpose of accomplishing clearance formalities.

Preliminary action has been taken with the Bureau of Standards to undertake a testing program to establish standards which can be used to determine the shock mitigating effect of common carrier highway transport equipment used for the transportation of delicate aerospace components.

Traffic Committee Activities

Attendance at meetings of the AIA Traffic Committees permits company traffic managers to meet with their counterparts from other companies and the military departments and to thus obtain the benefit of a broad base of experience of others engaged in the same field of endeavor. A considerable amount of trial and error is thus avoided.

This is particularly important in this period of new and improved products with its accompanying problems and challenges which are being met for the first time in this or any other industry.

Activities of Traffic Service and the actions which it takes to represent the interests of AIA members have their genesis as a result of discussions held and determinations reached at committee meetings. Throughout the twenty-one-year existence of Traffic Service, meetings of the eastern and western committees have been separately conducted, usually twice a year with one annual joint meeting, or a total of five meetings a year. Under the provisions of a new committee charter adopted this past year, meetings of the eastern and western divisions of the Traffic Committee will be held on a joint basis, ordinarily three times a year, so as to permit more timely coordination and consideration of the interests of all traffic committee members and to conserve meeting funds.

In addition to the activities previously discussed, the traffic committees in 1964 either initiated or continued actions on the following projects:

- Undertook to coordinate the interests of AIA members, the Bureau of Public Roads, and the DoD in establishing an index of specified highway routes capable of transporting oversize and overweight shipments.
- Coordinated efforts with the DoD and NASA to develop more effective and mutually satisfactory regulations setting forth contract terms and procedures and simplified practices related to the use of government bills of lading.
- Established a project to develop a standard format which will provide transportation planning information to the government agencies. Such information is necessary to enable the agencies to evaluate program needs, cost factors and other data required to pre-plan transportation requirements involved in procurement programs.
- Action continued to develop a national system for the coordinated highway-air transportation of household goods.
- Undertook a survey to determine action which must be taken to attract and retain college-trained traffic and transportation personnel within the aerospace industry.
- Established a program to determine the need for committee activity necessary to coordinate the interests of members with respect to in-plant transportation and distribution and automotive fleet operations and maintenance programs.
- Continued efforts to coordinate activities of traffic committee members to obtain the maximum benefits to be derived from the development and utilization of air transport.
- Continued support of government cost reduction programs by the exchange of ideas and information related to improved techniques and procedures which can be used by all traffic committee members. Under this program successful efforts by individual aerospace traffic managers in 1964 resulted in savings in excess of \$10 million. Reflected in this sum are the results of coordinated actions taken under the aegis of the AIA Traffic Committees.



UTILITY AIRPLANE COUNCIL



W. T. PIPER, JR.
*Piper Aircraft
Corporation
Chairman, Utility
Airplane Council*

The Utility Airplane Council is composed of the five airframe and two engine companies which produce more than 90 per cent of all general aviation airplanes. The Council represents these companies in many fields of mutual interest.

During the year major UAC effort focused on the need for creating public awareness and understanding of the importance of general aviation to the local communities and the nation. Only through such public understanding will success be achieved in removing obstacles to progress in the general aviation field, and in the creation of a proper climate in which the industry can realize its full growth potential.

GROW Kit

The Council's Education Committee produced a communication kit of materials to show the economic impact of general aviation and its many facets of service. This material, the GROW Kit, consists of film strips, recorded commentary and instruction manuals. It not only provides the dealer and distributor organizations with the "whys" and "hows" of creating a favorable climate for general aviation in local areas across the country, but also provides materials for their own use in reaching public groups. Launched in mid-year, the kit at year's end had been purchased by more than 500 individuals, companies, Chambers of Commerce, Airport Commissions and State Aeronautics Commissions, and a number have been ordered by foreign governments and aviation organizations. The initial production costs for the material were underwritten by the Council member companies and individual copies are made available at the cost of producing each complete unit.

Airport Program

Plans for the Airport Development Program were initiated to provide the most comprehensive material ever assembled on the subject. Kits of materials will provide information ranging from the importance of the airport to community economy to the ways of keeping airport benefits in the public mind.

Recognizing that the strongest voices for airport development are those of local citizens, the kit will be placed into the hands of all who need it and will use it. But, in addition, the Airport Development Program will be supported by national and local publicity and public relations as a means of directing attention and building public support for this vital segment of the nation's air transportation system.

Pilot Licensing

Another activity of the Council's Education Committee has been a study of private pilot licensing. The UAC is of the strong opinion that the present FAA license structure is not compatible with today's state of the art, nor does it properly fit the needs of today's pilots. A new concept of pilot licensing has been developed which approaches licensing from the standpoint of what an individual wants and needs to do with an aircraft, and the related skill and knowledge he needs to be a competent and safe pilot.

This concept, which the UAC believes would lower the threshold for the beginner as well as provide greater incentive for upgrading of skills, has been presented to the

Flight Standards Service of the Federal Aviation Agency. It is the Council's hope that the FAA will join in an industry-government effort to develop the concept into a new pilot licensing structure to replace the present government regulations.

FAA Information Seminar

Another activity which has been progressing in 1964 and will be ready for presentation early in 1965 is an information seminar with the FAA. While those in higher echelons of the agency who have access to complete information have a growing understanding of general aviation and its position and relation to the total air transportation system, there is, in the view of the Council, a need to broaden understanding at these high FAA levels. This will logically lead to understandings at FAA working levels where the Council finds there is not full knowledge. The seminar is being designed to provide to the FAA a factual and complete account of general aviation's position and needs.

Airspace Usage

Recognizing other areas which will have increasing effects on the industry, the Council's Education Committee has initiated a subcommittee to study the problems of airspace usage in a similar manner to the work in the pilot license area of the Pilot Rating and Requirements Committee.

In conducting the various Education Committee activities the Council has reached beyond the member companies and invited qualified experts from various segments of the industry and government to advise and assist its studies. Among these have been officials of the Federal Aviation Agency, state aviation officials, the National Safety Council, National Aviation Trades Association, educators and private pilots.

International Sales

The industry's foreign markets are an area of increasing attention and studies are being initiated to see how the various domestic education programs now under way can be appropriately adopted to use abroad. The importance of the industry's international sales comes into sharp focus when it is pointed out that during 1964 it exported 1,775 aircraft to more than 70 countries, which is a substantial increase over 1963 when 1,577 were shipped abroad. In its export studies the UAC is working closely with the AIA International Service (formerly Export Service).

These activities in the areas of education and development are both immediate and long-range in nature. Educational programs will continue on an accelerated schedule but concentration in this field will not alter the Council's activities in regular and special areas of mutual interest to member companies.

FAA Liaison

The Federal Aviation Agency proposed a consolidation program for Flight Service Stations. The proposal represented an attempt to reduce operating costs by consolidating a number of stations through remoted communications systems, installing secondary stations to be operated on a part-time basis, and establishing a system of airport

information desks, on the basis that new technology made this possible and practical.

Participating in discussions with the FAA, the Council raised questions regarding the consolidation proposal. It was urged that the proposal be tested on a limited scale. A test program, starting in 1965, will evaluate the plan in each of the FAA regions.

In commenting on the FAA's proposal to consolidate Flight Service Stations, the UAC again questioned the advisability of a regulation for mandatory radio contact with a Flight Service Station, when the FSS is located on an airport of intended landing and when the airplane is radio equipped. Difficulty in enforcing the regulation, coupled with a questionable safety aspect of a partial control of the flight area, were cited as reasons for the impracticality of the regulation. A notice to withdraw this regulation has been issued by the FAA.

Similarly, a proposal by the FAA to lower the floor of controlled airspace from 24,000 feet to 18,000 feet was opposed by the UAC and other aviation groups as unnecessary and unduly restrictive. This proposal was withdrawn.

A Notice of Proposed Rule Making (NPRM) was issued by the FAA which would require extensive check-out tests for pilots who would fly different types of aircraft. Opposition by UAC was due to the lack of any significant information which suggests that unfamiliarity with an aircraft is an accident cause which requires such a regulation.

A notice to withdraw proposed changes in regulations concerned with the operation of aircraft on and around uncontrolled airports was issued by the FAA. These regulations had been opposed by the UAC, along with other general aviation organizations.

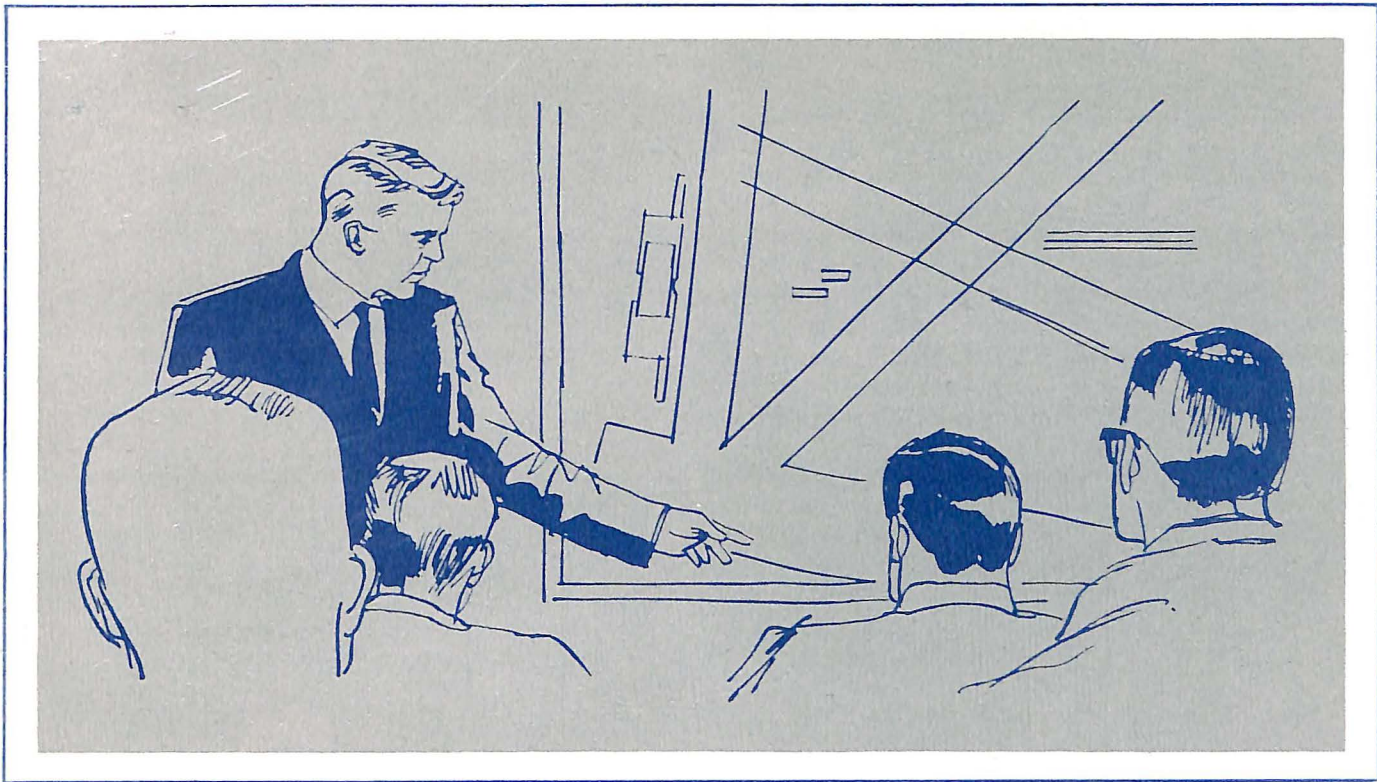
Because of reorganization of the Technical Service, the responsibilities for general aviation aircraft normally assumed by that Service were temporarily handled in the UAC.

The Council's Technical Advisory Committee and engineering officials of UAC member companies studied the FAA's airworthiness regulations as they affect the design and production of general type aircraft.

Meetings were held in connection with FAA rule recodification which has been going forward within that agency. Monitoring of the recodification proposals as they affected the airworthiness requirements of general type aircraft revealed areas of concern which were worked out in conference with the FAA.

The industry has found that there is a considerable disparity of interpretation by FAA of its regulations affecting Type Certificate (TC) and Supplemental Type Certificate (STC) applicants. To provide equivalent airworthiness, recommendations have been made that the same interpretation and requirements of the existing regulations be applied to TC and STC applicants in all FAA Regions. The UAC has further proposed that when a Supplemental Type Certificate has been granted which affects the Type Certificate of another manufacturer the STC applicant be required to affix an appropriate identifying name plate. As a result of these representations, the industry has been informed that FAA will issue a Notice of Proposed Rule Making on this subject which the industry will carefully review and comment upon when issued.

The FAA Administrator has stated the agency has no



desire to impose unnecessary rules or to regulate areas in which the industry is capable of assuming responsibility. The industry is responsible for the integrity of its products regardless of FAA airworthiness requirements. Some years ago the FAA established procedures which permitted a manufacturer to assume the responsibility for certifying that its products met the Federal standards without detailed FAA participation in the certification process. The industry favors this procedure which has greatly expedited its design and manufacturing activities. During the year, the industry has reviewed the FAA regulations concerned with the Delegation Option Procedure and its administration. As a result, some changes have been discussed with FAA which the industry feels will improve these regulations and up date their administration in a manner which would be mutually desirable for both the FAA and the industry. Late in 1964 the Council was informed that a Notice of Proposed Rule Making was being readied by FAA which the agency suggests will accomplish the industry's objectives.

The Council, through its technical representations at the working level of the agency and also in discussions at top administrative levels, continued to press for the reinstatement of an Annual Review of Airworthiness Requirements. The FAA informed the industry it would be willing to conduct such a review in the spring of 1965 and agreed to meet with the industry to review again the procedural plans for such a review which the UAC, through the AIA Technical Service, had formally filed with FAA.

The Federal Aviation Agency Administrator appointed a high-level board to conduct a study of aviation human resources. Known as Project Long Look, it was concerned with appraising civil aviation. The Council manager was appointed to be a member of the General Aviation Task Force of this study board and participated in various study

and consulting sessions. Member companies of the Council conducted an extensive survey of their dealer organizations utilizing a questionnaire prepared by the UAC staff in consultation with the study board. The results of this were tabulated by the Economic Data Service of AIA and the Council office prepared interpretative comment. The report became a part of the total project study and recommendations.

Staff Activities

Continuing liaison with government agencies, other aviation groups, and individuals and organizations concerned with aviation was maintained by the Council office. The manager and his staff assistant were frequent spokesmen to aviation audiences ranging from youth groups, state aviation meetings, Chambers of Commerce, a university seminar, to the annual meetings of the National Safety Council.

A constant flow of statistics and information about general aviation emanated from the Council office which is a recognized source for authoritative information and data about the field of general aviation. This includes not only the regular monthly report on aircraft shipments, but also answering inquiries from investment houses on the pattern of aviation economics, and development of spot and feature news in publications. In a report to the AIA members at the annual meeting concerning the Council's activities, the UAC Chairman summarized the activities in this way: "The sum and substance of these various activities of our Council is to provide leadership in the study, the preparation of tools, and the dissemination of information which may be used by all segments of aviation so that the value of general aviation can be fully understood, thus enabling it to be of even greater benefit to individuals, business communities and to the nation."



VERTICAL LIFT AIRCRAFT COUNCIL



CHARLES H. KAMAN
*Kaman Aircraft
Corporation*
*Chairman, Vertical
Lift Aircraft Council*

The fifteen members of the Vertical Lift Aircraft Council represent companies involved in the development and production of helicopters and other types of Vertical Take-off and Landing aircraft. The Council's objectives are to coordinate and present the vertical lift aircraft industry's views on non-competitive problems and to advance and promote the world-wide utilization of VTOLs.

Government-Industry Relations

A study — Outlook for Vertical Lift Aircraft in Scheduled Commercial Transportation — an independent appraisal prepared by United Research, Inc., was sponsored and funded by Sikorsky Aircraft Division, United Aircraft Corporation; Small Engine Department of the General Electric Company and the Vertol Division of the Boeing Company. This study which made an important contribution to future planning for VTOL aircraft was brought to the attention of government agencies concerned with transportation policy. Council staff, with the concurrence of the chairman and the three sponsoring companies, scheduled briefings on the study by the United Research, Inc., project director before the appropriate personnel in the Department of Commerce and the Federal Aviation Agency.

In addition to these briefings, copies of the study were made available to Council members and other interested government agencies.

Helicopter Subsidy

Beginning in fiscal year 1962, the Congress imposed a limitation on how much annual subsidy could be spent by the Civil Aeronautics Board for the three scheduled helicopter airlines in Chicago, Los Angeles and New York City.

The Senate-House conferees approved only \$3.358 million for FY 65 of the \$4.3 million requested and further enjoined the CAB not to include "one penny" for helicopter subsidy in its FY 66 budget estimates.

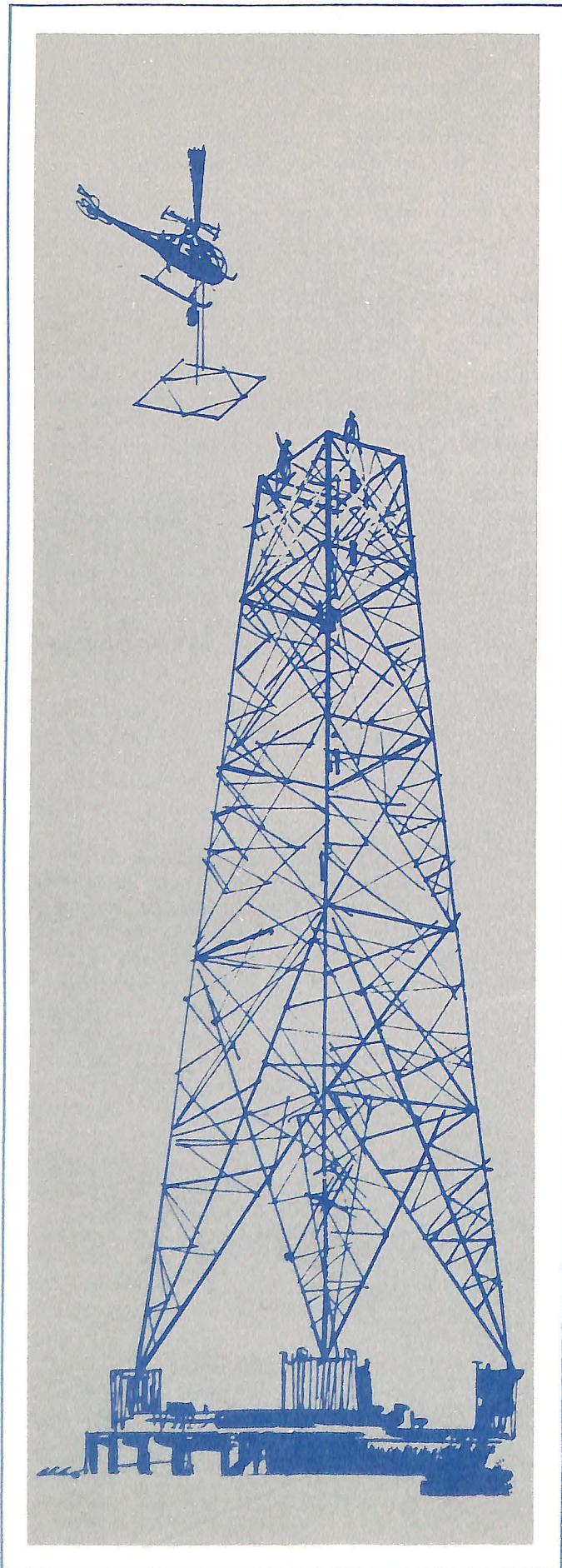
At the request of the CAB, representatives of the Vertical Lift Aircraft Council met with the CAB's Helicopter Subsidy Task Force to review the current subsidy status and recommend an appropriate course of action for consideration by the Board.

As the industry's spokesman, the AIA Council chairman supported the CAB's program for a gradual reduction in the helicopter subsidy over the next five years, terminating by 1970. He reported the current equipment would be in use until 1970, and the manufacturers are continuing product improvement aimed at increased availability and and increased time between overhauls to reduce operating costs.

The AIA Board of Governors noted a Council resolution calling for continued government support and voted unanimously to establish a Task Force consisting of Kaman, Boeing-Vertol and Sikorsky, with L. Welch Pogue as Counsel, to prepare and present testimony before Congress should the views of industry be requested. Action to implement the Board's position was approved at a special executive meeting of the Council.

FAA-Industry Cooperation

Two years ago, the Council recommended that the FAA's 1959 Heliport Design Guide be revised to reflect



new developments and techniques. To assist in the revision, a special Council Helicopter Committee was named to serve as a working group with the FAA on this project. The 1964 Guide has been published as an Advisory Circular to supplement the Council's helicopter development program.

The lack of rotary-wing and helicopter data in recent FAA Statistical Handbooks has been noted by Council members and staff. A meeting was held with the Chief of FAA's Statistical Branch, AIA Economic Data Service Director and Council staff and as a result these statistics are now being made available through the FAA's new Data System.

Airworthiness

As an interim measure, during the re-organization of the Technical Service, Council staff was assigned responsibility for the Airworthiness Requirements Rotorcraft and VTOL Committees.

Two major projects of the Rotorcraft Committee were:

- Preparation of re-codification recommendations for the Federal Aviation Agency of the Civil Air Regulations (CAR's) to Federal Air Regulations (FAR's).
- Preparation of proposed agenda items for the Federal Aviation Agency Rotorcraft Regulations Conference.

Following several preparatory meetings, the Rotorcraft Committee met with the FAA General Counsel's staff to consider industry's re-codification recommendations. These were accepted and the FAA expressed appreciation for AIA's cooperation and experienced assistance on this project.

This proposed FAA Rotorcraft Regulations Review was one of the four major recommendations in the Vertical Lift Aircraft Council's 1963 presentation to the FAA.

The Rotorcraft Committee has prepared and submitted to FAA detailed, annotated agenda items for consideration at the review to be held in 1965.

Los Angeles Terminal

The Manager of the Downtown Air Terminal Project for the City of Los Angeles requested the Vertical Lift Aircraft Council's assistance regarding the current capabilities and outlook for the future of vertical lift aircraft in planning for the proposed downtown aviation facility.

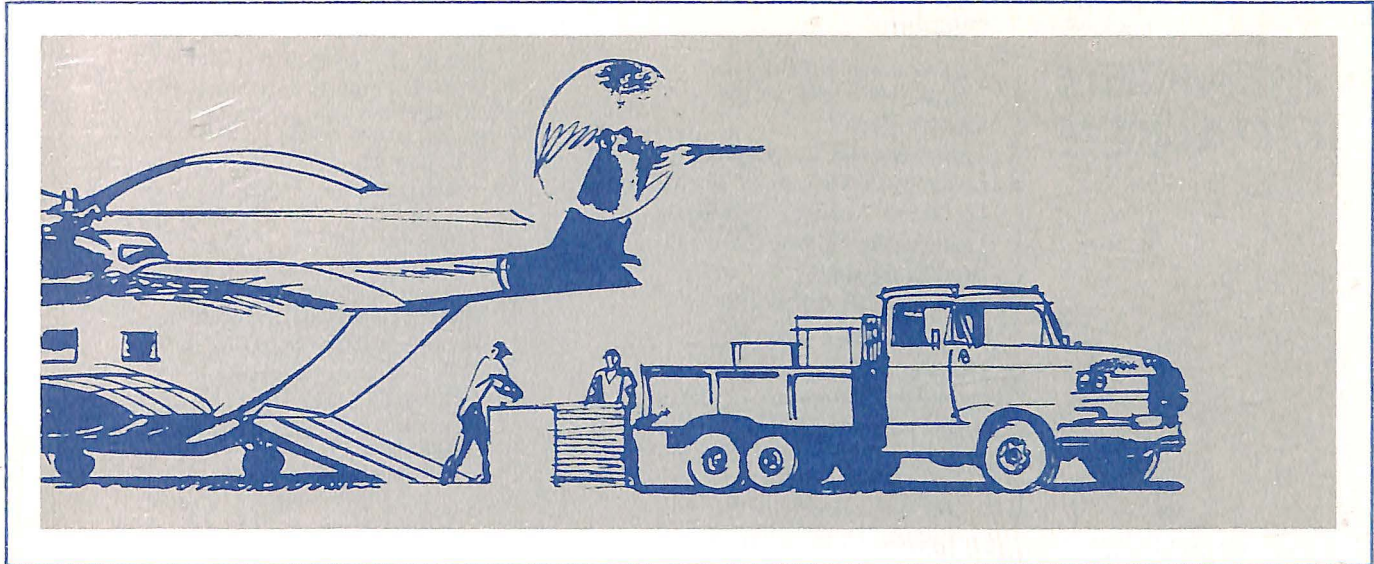
The current master planning for this facility includes the construction of a public heliport, runways for use by STOL aircraft and possibly surface rail or monorail service between Union Station and the Los Angeles International Airport.

The need for this project was based on three factors — the pending development of the supersonic transport, the increasing use of VTOL aircraft and the need for increased accessibility to centers of air transportation.

Representatives of the Council attended a meeting with the Department of Airports of the City of Los Angeles to discuss this plan. Other organizations represented were the Stanford Research Institute, Los Angeles Airways and NASA.

Heliport Presentation

The Council approved preparation of a heliport presentation in the form of films and slides to encourage the development of public heliports. The presentation will be



used by Council members, helicopter operators, airport operators, and city and state aviation officials in appearances before civic planning groups.

ATA Liaison

Representatives of the Council are serving on an *ad hoc* committee to prepare modification of the Air Transport Association's standard method of estimating direct operating costs to include helicopters and other VTOL aircraft. One meeting of the Committee has been held and memoranda on proposed modifications have been circulated to the Committee members.

VLAC Publications

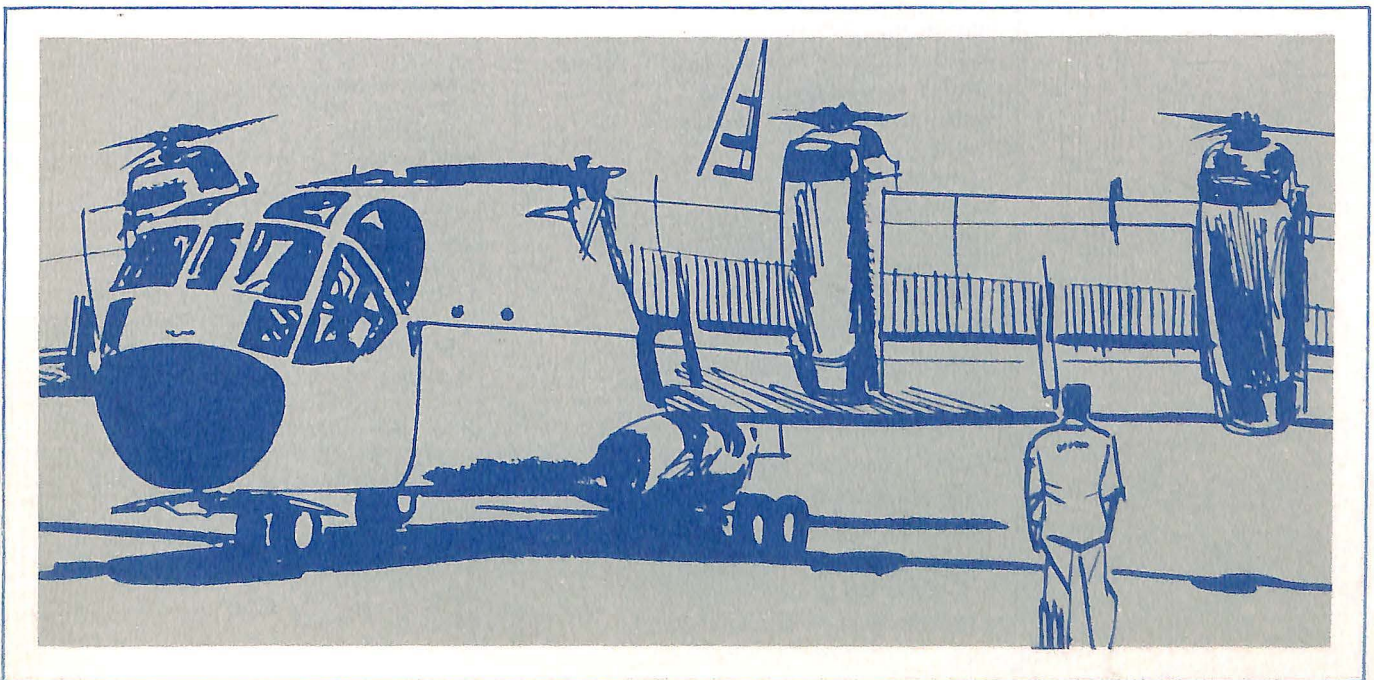
Among the publications prepared by the VLAC staff during the year were:

- A revision of the Vertical Lift Aircraft Designation

Chart covering 35 models in production, ranging in size from 1-place to 73 places. Twenty-three research and development programs are listed.

- The 1964 Directory of Helicopter Operators and Helicopter Flight Schools in the U. S. and Canada which showed that the number of commercial operators increased from 405 (with 1157 helicopters) in 1963 to 451 operators (with 1333 helicopters) in 1964. Including executive and government (civil) listings, there were 710 operators flying 1767 helicopters in 1964.
- The 1964 Directory of Heliports/Helistops in the U. S., Canada and Puerto Rico which listed 1,000 heliports and another 90 proposed.

Three annual VLAC publications, The Versatile Helicopter, Federation Aeronautique Internationale — Directory of Helicopter Records and Recipients of Helicopter Awards 1944 — 1964, were brought up to date.



AIA MEMBER COMPANIES

DIVISION A

Aero Commander Div.
Rockwell-Standard Corp.
Aerodex, Inc.
Aerojet-General 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
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.
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.
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Pacific Airmotive Corporation
Piper Aircraft Corporation
PneumoDynamics Corporation
Radio Corporation of America
Defense Electronic Products
Republic Aviation Corporation

Rohr Corporation
The Ryan Aeronautical Company
Solar, Division of International
Harvester Co.
Sperry Rand Corporation
Sperry Gyroscope Company Division
Sperry Phoenix Company Division
Sperry Utah Company Division
Vickers, Inc.
Sundstrand Aviation, Division of
Sunstrand Corporation
Thiokol Chemical Corporation
Thompson Ramo Wooldridge Inc.
United Aircraft Corporation
Westinghouse Electric Corporation
Aerospace Electrical Division
Aerospace Division
Astronuclear Laboratory

DIVISION B

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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.

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Loening, Albert P.
Loening, Grover

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Eastern Aircraft Corp.
Electronic Industries
The Chilton Company
Information Handling Services, Inc.
Lybrand, Ross Bros. & Montgomery
National Aviation Corp.
National Credit Office, Inc.
Robert Schasseur, Inc.
Smith, Kirkpatrick & Co., Inc.
Space/Aeronautics
Texaco, Inc.
U. S. Aviation Underwriters, Inc.
Vickers-Armstrongs, Inc.
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