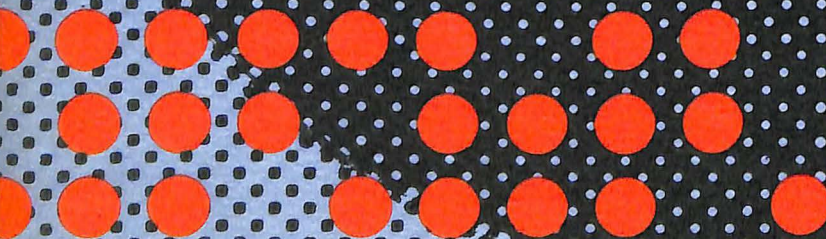


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ANNUAL
REPORT



AEROSPACE
INDUSTRIES
ASSOCIATION
OF AMERICA
INCORPORATED



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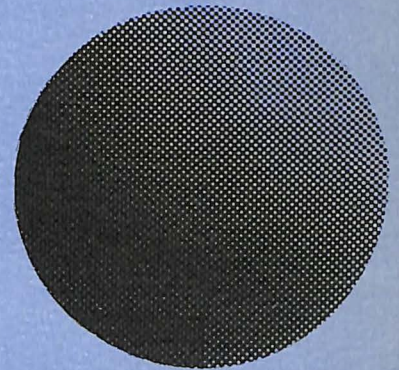
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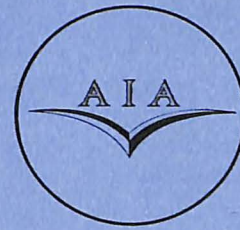
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ORVAL R. COOK

To the Membership



The AIA fiscal year, which ended October 31, 1961, was one of important advancement in all aspects of the industry's operations, both military and civil. It was a year of international unrest, highlighted by a new crisis in Berlin, the resumption of nuclear weapon testing, and the successful orbital flight by the Russians; yet the Nation could find some reassurance in the growing strength of its defense establishment.

The aircraft fleets of the armed services were bolstered by the addition of improved, higher performance planes. Several missiles emerged from test status to become part of the operational arsenal. Most important, perhaps, was the progress in the major deterrent area of intercontinental ballistic missiles. Weapons of this type moved from the test pads to operational silo sites, completing a developmental cycle of remarkably short duration.

The ICBM program accomplishments are prodigious. Eight years ago this potent deterrent to aggression existed only on paper, and even three years ago the operational target dates were responsibly labeled "impossible."

Massive technical problems of research, development, testing, production and silo site construction required concurrent solutions, along with training of military personnel in their maintenance and operation. The solutions, in turn, opened up new problem areas. There was

only a meager background of comparable experience to draw upon. The total efforts of the military services, industry and labor culminated this year—operational readiness at hardened sites. The ICBM program, by any standard, must rank as one of the major achievements of this century.

A heartening aspect of this program is the success of the Missile Sites Labor Commission in averting the damaging effects of strikes that had earlier plagued site construction.

There was reassurance, too, in the space flight progress made by the United States during the year. It was a year in which the first American astronauts ventured into space. The broad front approach of U. S. scientific technology began to pay dividends in the field of communications, meteorological, surveillance, detection and scientific unmanned satellites.

The aerospace industry can be justifiably proud of its contributions to these achievements. Despite the problems attendant upon advancing technology and changing requirements, the industry once again demonstrated its ability to respond to challenge and to change.

Even though the United States has attained the strongest military posture it has ever had in peacetime and has reached a degree of progress in space flight which demonstrates a definite capability for the achievement of planned goals, neither this Nation nor this industry can rest on these technological laurels. The technological breakthroughs required to assure leadership in the exploration of space, the ever-increasing importance of qualitative superiority in weapons as the major element of our national security, and the increasingly keen competition for the world's civil aviation market require the utmost dedication, not only of all elements of industry but of governmental organizations as well.

Changing Industry Role Challenge to Management

The aerospace industry still is in a difficult stage of transition from serial production of aircraft to a low-volume production of highly diversified and sophisticated products. At least a third of its total effort is in research and development.

One of industry's most pressing and challenging problems is to build the technical and managerial capabilities necessary to keep pace with the scientific, technical and productive capabilities of its laboratories and plants.

The sweeping scope of today's technological effort, the need to convert expeditiously scientific findings from the laboratory to operational status, the difficulty of striking the optimum point of time for this conversion, the magnitude of funds involved, all demand management techniques of the highest order.

Management has responded to this challenge with characteristic vigor. Program control techniques have been developed which record project status at all times, and help predict or isolate potential trouble spots before they can become disastrous.

But even the most prescient managerial techniques can never create time. Our pool of scientific and tech-

nical talent and the finest facilities are simply a potential. The best possible management and use of time available is a prime requirement.

An outstanding example of industry's efforts to conserve time is the development of the APT (Automatic Programmed Tool) system. This project was inaugurated when the Air Force asked the Massachusetts Institute of Technology to produce a prototype of a system for preparing tool control data. Following completion of the basic research, the system was turned over to AIA for the construction of an industrial version of the system. Nineteen member companies agreed to pool their knowledge and, in February 1959, their findings on the subject were published. Today, twenty companies are contributing top talent to develop manufacturing techniques that could revolutionize production methods, not only in the aerospace industry, but also in other industries. The results of their combined efforts in the third phase of the project will be given to the Armour Research Foundation shortly. This program represents public service of a high order.

Electronic data processing techniques are now commonplace tools of management, and aid in the development of informed judgment essential to prompt decision making, particularly where it involves a trade-off between time, cost and performance.

Facilities Acquisition

A major problem area is the acquisition of research, development, testing and production facilities required for modern weapon systems. We have the anomalous situation of an excess of floor space while seeking the means to build new facilities, principally for research, development and testing.

Funds for new facilities financed by industry must, in the long run, come from earnings. A recent survey reveals that the aerospace industry today reinvests 70 per cent of its net earnings for facilities, research and development, and working capital, while paying only 30 per cent to the stockholders as dividends. This compares with an average of 45 per cent of earnings retained for facilities and capital by other major industries.

At the same time, there is a need for funds to pursue research and development in areas that offer promise of substantial technological gains. Research projects in the past usually produced only a marginal profit and, in some cases, resulted in a loss to the company. These projects were undertaken because they held the promise of an eventual production contract where a reasonable profit might be earned. Thus, the former incentive is disappearing, and equitable means must be developed to encourage private initiative in generating new ideas.

One of the most effective methods of encouraging facilities investment would be liberalization of Government depreciation policies. Depreciation presently allowed U. S. industry is estimated at about \$5-billion-a-year less than it should be to keep plants and equipment modern. A study of equipment with a 15-year life shows that the U. S. allows 13 per cent to be written off the

first year, compared with more than 50 per cent in Japan and Great Britain. In three years, the U. S. permits a write-off of 35 per cent, compared with 70 per cent in Great Britain.

Improving the Aerospace Product

The Aerospace Industries Association is working closely with the Department of Defense and the military services to find solutions and improvements in several problem areas. The areas currently being investigated include:

- Development of new procurement techniques, particularly in research and development, which will be consistent with progress made in technology.
- Elimination of obsolescent specifications and the development of new specifications to take advantage of technological gains.
- Reduction of technical and administrative reports.
- Standardization of procurement policies to avoid discrepancies of interpretation.
- Source selection and design proposal costs.

These are typical of the many areas in which the Department of Defense and industry are cooperating to improve the Nation's defense posture. It is equally important that industry cooperate with other elements of the Government. Obsolete or obsolescent laws which are no longer applicable or which create artificial barriers to the timeliness and efficiency by which industry carries out its assignment should be critically examined. Industry recognizes its responsibility to present its views on such legislative matters.

Industry also is cooperating closely with the National Aeronautics and Space Administration and the Federal Aviation Agency in furthering their aims and objectives. For example, industry provided detailed information to the FAA, covering almost every phase of civil aviation, including industry's views on the supersonic transport, to assist FAA in developing national aviation goals. These goals were reflected in the recently-released Project Horizon report which presents a detailed outline of the prospects and problems of the next decade in civil aviation.

Supersonic Transport

The report stated the dominant reason for moving ahead with the supersonic transport: "Beyond the economic and social justification for the development of a supersonic transport, international prestige considerations argue heavily in favor of going forward with the development of such an aircraft on a timely basis. The loss of this Nation's pre-eminent position in the production and sale of transport aircraft would be a stunning setback. In the light of Russian accomplishments in space technology, it is imperative that the United States must retain its leadership in aviation."

The discussion of the supersonic transport program was concluded with a recommendation which recognized the salient fact that no single company or even a combination of companies can afford the costs involved.



AUGUST C. ESENWEIN
President
Aerospace Industries Association

August C. Esenwein assumed title as Deputy General Manager, October 1, 1961, and took office as President of the Aerospace Industries Association, January 1, 1962. Prior to his selection as President of the Association, he had been Executive Vice President of the Convair Division of General Dynamics Corporation until his retirement from that Corporation, July 31, 1961.

With long experience in engineering, manufacturing and administration, Mr. Esenwein, who was born July 28, 1906, has been in the aerospace industry for almost his entire professional career. He was, successively, General Manager of the Buffalo Aero Corporation in his native city of Buffalo, New York; President of the Keystone Corporation, and President and General Manager of Fabricators, Inc., both of Erie, Pennsylvania.

During World War II, he served in the United States Air Force and, as a Lieutenant Colonel, was assigned to the Air Materiel Command. Following World War II, he became Executive Vice President and General Manager of Aviation Maintenance Corporation, Van Nuys, California, and later, Executive Vice President and General Manager of Piper Aircraft Corporation. In 1950, he joined Convair and was Vice President and General Manager of that company's Fort Worth, Texas, operation until his appointment as Executive Vice President, Convair Division, General Dynamics Corporation, in February 1959.

A 1927 graduate of the Sheffield Scientific School, Yale University, Mr. Esenwein holds a degree in electrical and industrial engineering.

The report stated: ". . . If the national goal of producing a supersonic transport aircraft by 1970 or soon thereafter is to be achieved, a coordinated, Government-directed research effort . . . must be implemented with energy and purpose."

Industry is already well along with advanced design studies for supersonic transports and is continuing development work on many subsystems. It is ready to move ahead with a full-scale effort on this program at any time.

Utility Airplanes and Helicopters

Utility aircraft production in 1961 is estimated at 6,800 aircraft with a retail value approximating \$170 million. While this figure is slightly lower than 1960 production, a resumption of continued growth in the industry is forecast for the decade ahead.

Both the dollar value and unit volume of industry's sales have more than trebled in the past 10 years. The industry during that period produced more than 50,000 aircraft. Similar impressive gains appear to lie ahead inasmuch as general aviation now is the largest user of the Nation's airspace and aviation facilities. Advance design and lower operating costs are adding greatly to the growing usefulness of the general aviation fleet.

By 1970, it is estimated that there will be 105,000 general aviation aircraft in operation and that they will account for 65 per cent of the total flying hours.

The future of VTOL/STOL aircraft is equally promising. Turbine power has provided the basis for more fully realizing the benefits of these versatile aircraft. The military's helicopter operations is an invaluable proving ground for these new models which are now entering service with scheduled helicopter airlines.

Today there are 265 commercial helicopter operators in the U. S. and Canada using 822 helicopters, compared with 193 operators using 705 helicopters in 1960. The utilization of helicopters as business aircraft also is increasing.

Aerospace Exports

Aerospace exports were a significant factor in halting the downward trend in international payments which posed a serious threat to our gold reserves. Exports of our equipment in 1960 reached a peacetime high of \$1.33 billion, a gain of 73 per cent over the previous year. However, this year will show a decline from 1960.

Most of the increase in exports came in the significant fields of transport and utility aircraft where there is stiff competition from the British and French aircraft firms as well as the Soviet bloc. Particularly important, from the viewpoint of international relations, is the fact that the U. S. exported aircraft to most of the newly-sovereign nations in Africa.

Competing nations today have excellent technical capability and production facilities. They are aggressively moving into export markets. We must use every available sales resource, and develop new techniques, if this Nation is to maintain and enhance its aeronautical export position.

Increments of Progress

The U. S. launched its first manned space flight in May to a peak altitude of 115 miles on a 300-mile suborbital flight with the Mercury capsule Freedom VII. The flight was duplicated in July. The first successful launch of the Samos surveillance satellite took place in late January and Midas III, the second successful satellite in the missile detection series, was launched into

orbit in July.

The most advanced meteorological satellite yet developed, Tiros III, also went into orbit in July, and a truly global system of weather prediction came closer to realization.

The first vehicle of the Ranger series, designed for unmanned lunar exploration, was launched in August, but it was directed into earth orbit, not lunar trajectory, to test all systems before attempting moon launch in 1962.

First component tests of the Saturn booster system were completed during the year, and initial tests of the single chamber 1,500,000-pound thrust F-1 were made during the year.

The X-15 special research program progressed very satisfactorily during the year. The X-15, with NASA, Air Force and Navy pilots at the controls, reached top speeds of more than 4,093 miles per hour and an altitude of 217,000 feet.

The Titan I, the Nation's second intercontinental ballistic missile, completed final tests and was scheduled for operational use in 1961.

U. S. aircraft set a series of world records during the year.

On December 13, 1960, the A3J flew to a new world's altitude record of 91,450.8 feet for jet planes carrying a 1,000 kilogram (2,204 lbs.) load. This was more than 24,000 feet higher than the previous world record set by a Russian jet.

In January, the B-58 bomber captured a whole series of payload/distance records. On one flight, three records were set: no payload; 1,000 kilograms payload; and 2,000 kilograms payload over a 1,000-kilometer closed course. The speed was 1,284.7 mph.

In the same week, a companion B-58 took similar records for the 2,000-kilometer closed course with a speed of 1061.8 mph.

In August, an F4H aircraft recaptured the world's three-kilometer low altitude record (under 300 feet) with an average speed for four passes of 902.7 mph. During the year, eleven new international helicopter records in categories of speed, altitude, altitude with payload and distance over straight and closed courses were made by Council member companies (Bell, Kaman, Sikorsky). Five of these records were formerly held by the USSR.

AIA Activities

A comprehensive account of Association activities is contained in separate sections of this report. The actions represent the cooperative, unstinting efforts of 1,600 aerospace executives serving with AIA services, councils and committees. Internally, the aerospace industry earnestly seeks to improve the efficiency of its operations. There is a great deal to be done; there always will be in a dynamic industry. One area that is receiving close attention from management is to reduce the amount of time and effort expended in preparing for and attending meetings that produce little, if any, results. In this con-

nection, a study of company participation in the activities of technical and scientific societies to determine their usefulness and effectiveness has been undertaken by one AIA council.

During the past three years a Missile and Space Council has been established along with several new technical committees. This year a Product Support Committee was created as a focal point for recommending industry policy in the vital area of logistics support, and to provide a vehicle for improving operational capability of the equipment produced by the aerospace industry.

Following the approval of the Executive Committee of the Board of Governors, most of the committee functions staffed by the West Coast office have been transferred to Washington. This will permit the Association to exercise centralized control of these functions and, at the same time reduce its administrative overhead.

In furtherance of the Association's program to centralize control of its administrative functions in its Washington office, Mr. Morton Wilner, of the Washington, D. C. firm: Wilner, Bergson, Scheiner & Lessenco, has been retained as Legal Counsel. He replaces Mr. Henry G. Hotchkiss, of the New York firm of Lowenstein, Pitcher, Hotchkiss, Amann & Parr, who has served with distinction as legal counsel to the Association for more than 28 years.

Colonel Harrison Brand, Jr., who served as Secretary-Treasurer of this Association for more than twenty years, retired September 1. Colonel Brand established a sound system of managing the financial affairs of AIA, and administered it with distinction.

Mr. Samuel L. Wright, formerly Assistant Secretary-Treasurer, and who has been closely associated with the management of the organization since 1949, has been elected by the Board to succeed Colonel Brand.

This is my last report to the membership as President of the Aerospace Industries Association. As I informed the Board of Governors in 1960, following 34 years in military aviation and five years of active work with this industry, I desire to retire from the presidency of the Association.

I will continue to maintain a high degree of interest in the aerospace industry, with which I have been acquainted for the past thirty years.

At the same time, it is with genuine pleasure that I report the selection by the Board of Governors of Mr. August C. Esenwein to succeed me as President of the Association. His long experience in engineering, manufacturing and administration in this industry eminently qualifies him for this position.

Respectfully submitted,



ORVAL R. COOK

President

Aerospace Industries Association



AIA Organization and Functions

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

AIA has 108 members, classified as follows:

Division A—63 voting members

Persons, firms or corporations engaged in manufacture within the industries served by AIA.

Division B—21 voting members

Certain members who were Division C members on June 8, 1945, at which time this class of membership was closed.

Division of Affiliates—24 non-voting members

Persons, firms or corporations interested in aeronautics or astronautics but ineligible for Division A membership.

Determination of policy and responsibility for management of AIA property and affairs are vested in the Board of Governors, which is elected annually by the membership. It is composed of senior executives from twenty-six Division A member companies plus the Association President. An Executive Committee of six Governors, including the President, has authority to act for the Board of Governors between meetings.

To provide a forum for discussion of common problems, an Aircraft Manufacturers Council, composed of the Governors plus senior executives from fifteen additional Division A member companies, meets twice a year between the semiannual meetings of the Board of Governors.

The President, who is also General Manager, serves as

the active managerial and administrative head of the Association and is responsible to the Board of Governors for execution of its policies.

The Vice President and Assistant General Manager performs the functions assigned him by the President and General Manager and discharges the duties of the latter in his absence. The Secretary-Treasurer acts as Business Manager of the Association.

Legal and Public Relations Counsels and a Legislative Adviser are available to assist the President and General Manager.

The Association's Washington staff, consisting of sixty-nine employees, functions through five Services and three Councils, providing staff assistance to AIA's nineteen main committees, nineteen working committees, and temporary panels, task and project groups organized to consider specific problems. The Western Office of the Association, located in Los Angeles, has a staff of four persons and reports to the President and General Manager through its Manager.

Functioning through its committees, AIA provides the medium for collaboration on non-competitive technical, financial, public relations, industrial relations, patent, export, traffic, product support, legal and tax problems of mutual interest to its members. On matters which affect the whole industry, the Association frequently acts as its spokesman—generally as a result of consideration and approval by the Board of Governors or the Executive Committee. The Association's three councils concentrate their efforts toward solution of problems of particular significance to the guided missile, helicopter, and utility airplane segments of the industries which the AIA represents.

MEMBERSHIP

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(General Manager)
Orval R. Cook

August C. Eesenwein
(Effective Jan. 1, 1962)

VICE-PRESIDENT
(Asst. General Manager)
G. F. Hannaum

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Legal
Public Relations

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WESTERN OFFICE
(Manager)
T. Grant

EXPORT SERVICE
I. H. Taylor

MISSILE AND SPACE COUNCIL
J. F. Phillips

HELICOPTER COUNCIL
D. R. Mockler

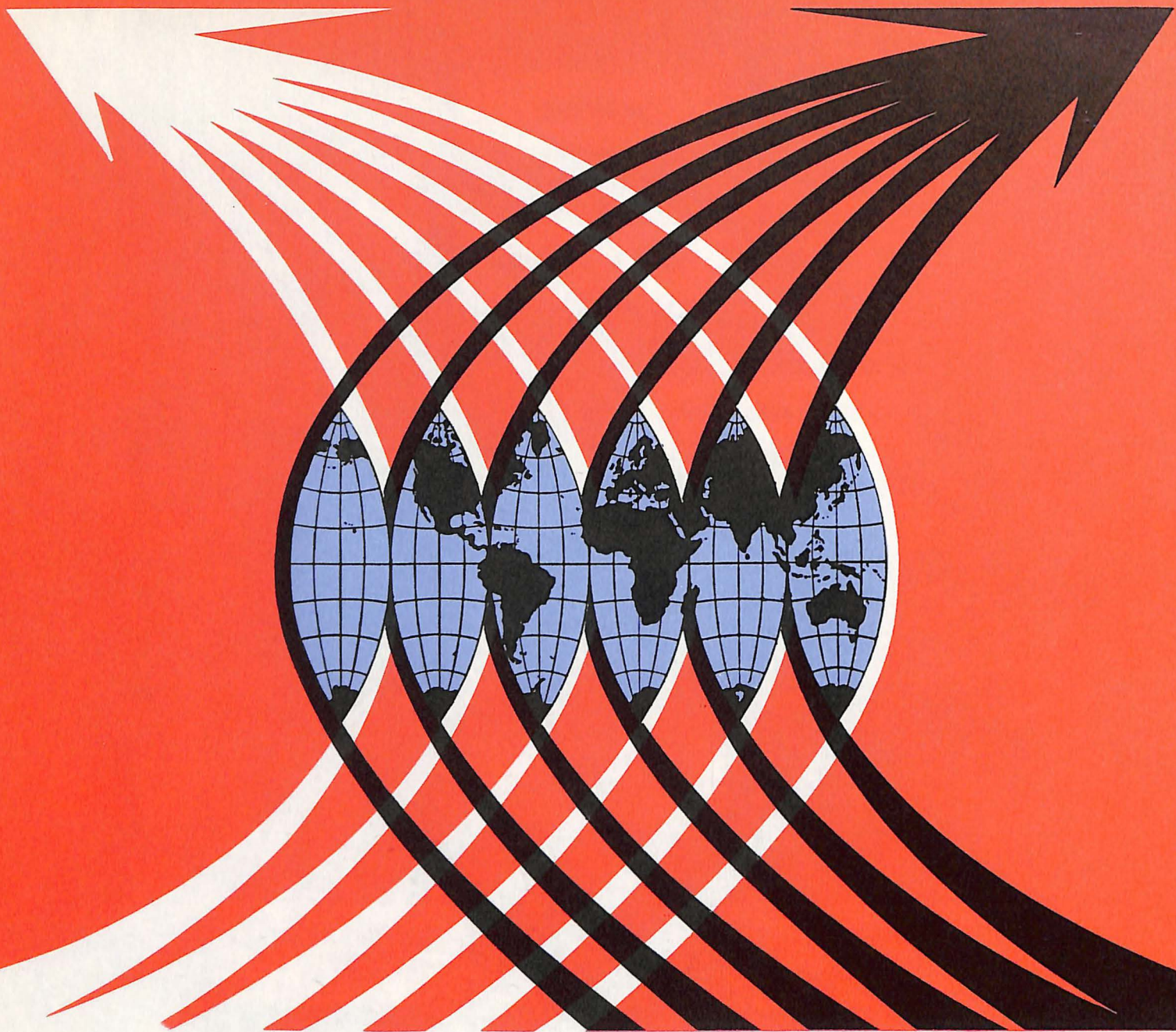
INDUSTRY PLANNING SERVICE
G. F. Hannaum

PUBLIC RELATIONS SERVICE
B. E. English

TECHNICAL SERVICE
S. D. Daniels

TRAFFIC SERVICE
A. J. O'Brien

UTILITY AIRPLANE COUNCIL
J. T. Geuting



Export Service



ROBERT W. DOUGLASS, JR.

*United Aircraft International
Chairman, Export
Committee*

EXPORT COMMITTEE

Export Advisory Committee
International Finance Committee
Military Program Support Committee
Trade Development Committee

Export markets for aerospace products, with which the AIA Export Committee is concerned, present a thoroughly varied pattern with respect to political, economic, sociological and other aspects. Within the past year, 16 countries—mostly in Africa—have been added to the list of nations who are buying United States aerospace products. American aerospace firms in 1960 exported to 102 of the 110 nations of the world.

Although export business has become almost as routine as the pursuit of domestic sales, the problem of doing export business has not progressed so rapidly. The products of the aerospace industry suffer the same handicap as all other merchandise when it comes to changes in national ownership. Many of the problems of export, difficult for individual company solution, are eased through coordinated AIA Export Service efforts. This is why members of AIA, thus far, have been able to cope successfully with common export exigencies in maintaining their position as the world's leading group of exporters of aerospace products.

The Export Service, directed by the Export Committee, is supported by four working committees, and the Export Service staff. The operation has been conducted continuously for 42 years, ever since AIA's predecessor organization, the Aeronautical Chamber of Commerce, came into existence in 1919.

In dealing with foreign buyers, especially in the newly emerging countries of Africa and Asia, American exporters are confronted with a wide variety of problems derived from varying ideological, economic and social climates. Hence the Export Committee and staff must be endowed with a flexible capability which utilizes fully its own resources as well as those of Government and other industries.

U. S. Aerospace Exports Break All Records

As predicted a year ago, 1960 exports of U. S. aerospace products shattered all peacetime records. They totalled \$1.33 billion—a 73 per cent increase over 1959 exports. The increase, \$561,905,000, was the largest registered in any export trade category, the greatest individual industry export contribution toward correction of the country's recurrent imbalance of international payments. The aerospace export total was 7 per cent of the Nation's total of merchandise exports.

The 73 per cent increase in aerospace exports was by far the greatest among U. S. capital equipment exports. It was followed by industrial machinery (up 17%), construction, excavating, and mining machinery (up 9%), automotive (up 2.8%) and electrical apparatus (up 1.2%).

Practically all categories of aerospace hardware con-

tributed to the 1960 record achievement. Most notable were transport aircraft of 30,000 pounds and over (largely jets), which advanced 348 per cent in value and utility aircraft which advanced 63 per cent.

While the Bureau of the Census returns through June do not provide a conclusive basis for estimating 1961 totals, the months of May and June show a rising tendency which indicates the yearly figure should be between \$1.2 and \$1.3 billion—about 5.3 per cent below 1960. Through June, exports held up quite well except for the larger transports (jets) which, following the 1960 re-equipment peak, declined 30.4 per cent in units and 25.5 per cent in value. The net slippage was 10 per cent.

A pronounced recovery of jet transport foreign deliveries is anticipated during the last half of 1961. Twenty-two were delivered during the first half of the year and the backlog of export deliveries during the balance of the year was estimated to be 105 units, bringing the year's total to 127 units contrasted with 92 for 1960. An important sustaining factor in the first six months of 1961 was the strength of civil utility aircraft—up 15 per cent in units and 25.4 per cent in value.

This excellent aerospace export showing the past 18 months has been accomplished in spite of greatly increased competition from revitalized foreign manufacturers, especially British and French. Important contributing factors were the continuation of a relatively stable fiscal situation abroad, easing of foreign import restrictions and the pronounced world-wide preference for American aerospace products. This preference, so long manifested by commercial military and civilian users of American flight equipment, is soundly based on quality, serviceability, economics and safety. This is especially true of transport aircraft with 85 per cent of such equipment of the airlines of the free world being manufactured in the U. S. The optimistic 1961 prediction regarding American aircraft of all categories is based on this record of preference which dates back to the beginning of the aviation era.

The longer range appraisal of aerospace exports is no less clouded than the world situation in general. On the horizon there is a threat of serious reversal of the upward trend of recent years. The European and other economic communities are manifesting stiffening competition. The Russian competitive threat remains just beyond the horizon and, if it materializes, will have to be recognized and dealt with largely as a government-to-government problem.

Aerospace Exports—A National Asset

The Government and the public in general is realizing that the aerospace industry's export contribution to the

national welfare far exceeds its purely economic benefits. Probably no other medium of communication has done more to advance the image of America's free society abroad than the export of American aerospace products. It has been officially stated that U. S. aviation hardware exports are an instrument of this country's foreign policy. In recent years, the Government has taken positive steps to assure that its overseas services give high priority to the support of the aerospace industry's export trade expansion efforts.

With the natural advantages of having the largest domestic market in the world, adaptable climate and terrain to assure thorough product testing, highly skilled manpower utilizing the most advanced engineering and plant facilities, the U. S. alone is in a position to supply in quantity and quality the airborne products and components which assure a position of leadership in this field. The aerospace products going from American production lines to buyers abroad are well advanced from the prototype stage. They are not the fruits of a short-range, speculative venture committed to the production of 10, 25, 50 or even 100 units. U. S. products offered for export are tried and proven.

In summary, aerospace exports: (1) bolster, by example, U. S. world esteem, (2) vastly contribute, communication-wise, to the social and economic well-being of free peoples throughout the world, (3) benefit the U. S. economically through accrued taxes, increased employment, retarding the imbalance of international payments and, above all, (4) accomplish all these benefits and more without any expense to the taxpayer and at a lower cost to the purchasers. Earnings derived from exports bolster the very low earnings from defense

business and find their way into increased manufacturer investment in research, equipment and facilities, which in turn benefit the industry's capability to meet U. S. military and civil requirements.

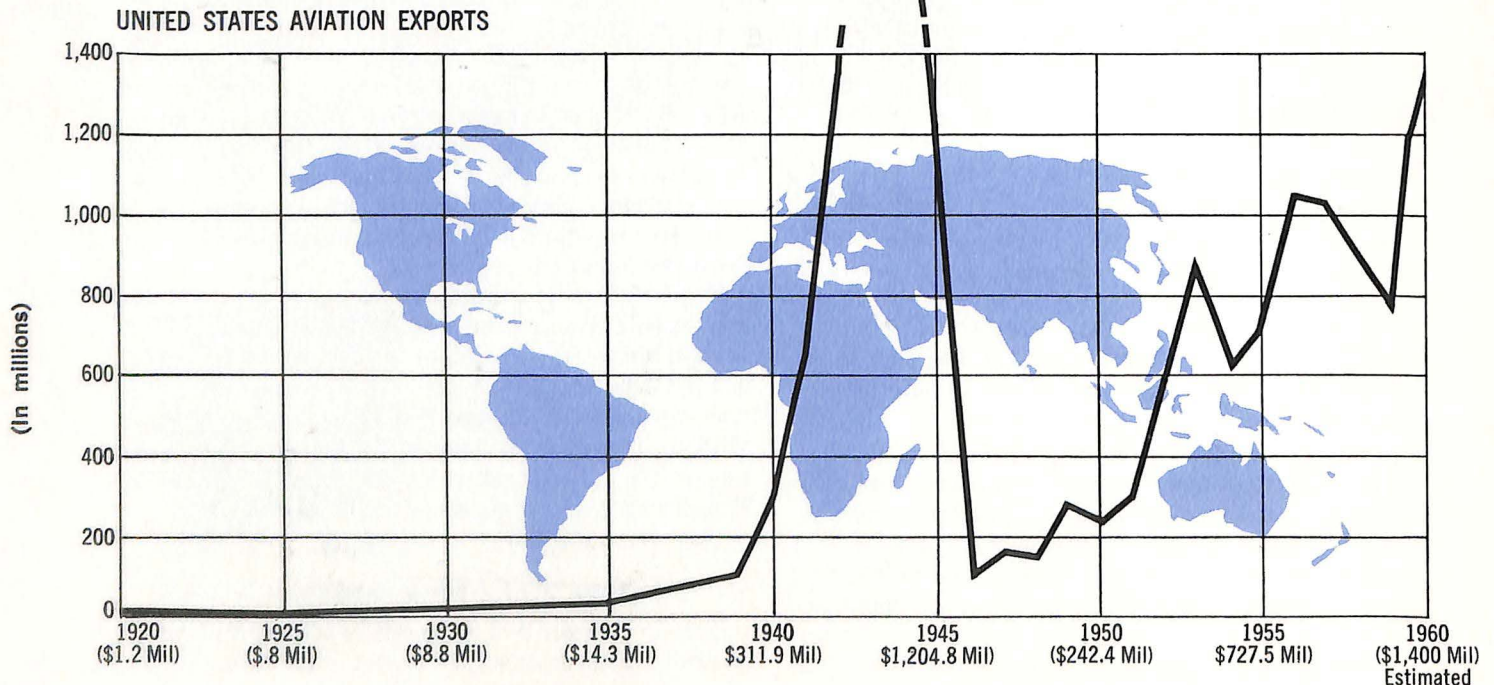
Export Committee Operations

The AIA Export Committee is composed of representatives of thirty-five leading manufacturing companies who are the most active exporters. The four working committees are Advisory, International Finance, Military Program Support, and Trade Development. The full Export Committee holds at least two national meetings each year to consider matters which have been referred to it by the working committees but is always subject to call when circumstances warrant.

The working committees are on a constant, full alert basis and, in the interest of utilizing the industry's specialized export manpower to the best advantage, call meetings (full committees or task groups, according to the nature of the requirement) only when matters of sufficient importance arise.

It is a cardinal rule that matters brought before the AIA Export Committee must (1) be of broad and important interest to the membership, (2) be of non-competitive nature with regard to member companies, (3) not be in the process of handling by another association, and (4) must be handled in such a way that no action will be taken which conflicts with the interests of any AIA members.

The majority of the export problems coming before the Committee are continuing in nature. Some situations are cleared up quickly; others may be alleviated, while still others may remain through periods of dormancy.





Unless settlement is final, the cognizant working committee keeps the matter on the "alert" list. Export Committee organization members and AIA Export staff are constantly prepared to meet incipient problems so that defensive action may be taken early to avoid the necessity of coping belatedly with a "frozen" situation. Because of this ability, the industry is called into consultation on proposed developments such as new or revised Government regulations often before they are promulgated.

Cooperative Spirit of Government

Through an intensive process of orientation, the Export Committee organization has, during recent years, greatly advanced the Government's awareness and understanding of the aerospace industry's export problems. Since 1959, the Departments of State and Commerce, FAA and other Government agencies have issued directives to overseas personnel to give top priority to the trade expansion efforts of our industry. This governmental cooperation is proving increasingly beneficial in many ways.

Progress Toward Adequate International Financing

One of the most critical phases of aerospace product sales, especially aircraft sales, is the capability of offering the foreign prospect credit terms comparable to those offered by foreign competitors. This is especially true because aerospace companies are unwilling to operate on a barter basis, accepting partial payment in goods, as do several government-subsidized foreign competitors.

The Export-Import Bank has made a great deal of progress in overcoming this handicap by arranging substantial loans on utility aircraft (up to 5 years) and transport aircraft (up to 7 years on jets). In 1960, 67 per cent of the \$138 million of the Bank's medium term (5-7 years) financing was for jet transports. The record has been improving since then.

Financing is an area which requires special Committee vigilance, since many devices (mostly barter and government subsidy arrangements) are constantly being utilized by foreigners to the vast disadvantage of American firms. Herein may lie the basis for better U. S. terms to equalize the financing benefits enjoyed by foreign competitors.

The International Finance Committee (18 member companies) maintains close liaison with representatives of the Export-Import Bank, the Development Loan Fund (in process of being amalgamated with the International Cooperation Administration into the A.I.D.), commercial bankers, insurance companies—all of which are or may be heavily involved in the financing of aerospace exports. This Committee activity has accomplished a great deal toward advancing an understanding of the industry's needs and eligibility for broader, more liberal export financing.

While the Development Loan Fund and International Cooperation Administration do very little aircraft financing or procurement, both of these organizations attend Finance Committee meetings because they do have aviation interests involving foreign airport building,

modernization programs, and ground support projects. Other financial organizations with which the Committee maintains close contact are the World Bank and its subsidiaries and the Inter-American Development Bank.

Military Exports—Government/Industry Relations

The 28 member company representatives on the Military Program Support Committee are concerned primarily with military equipment. Their areas of interest include: grant and reimbursable aid; off-shore procurement; clearance and export licensing of product, technical data and foreign manufacturing licenses; protection abroad of proprietary rights; mutual weapons development program; and industry-foreign government procurement procedures. These and correlated matters are continually under study by the Committee or its task forces. The Pentagon and the Departments of State and Commerce are the principal Government agencies of concern to this Committee.

During 1961, the most pressing problems were concerned with military product licensing agreements and related technical data. While the critical situation caused by the division of authority between the Pentagon (DOD/ISA and the Services) and the Department of State is improving, the present administration of these controls appears in many respects to place unnecessary barriers in the way of industry's legitimate sales efforts. The Government's multi-lateral approach in this area obviously must be coordinated if industry is to work effectively in partnership with the Government.

In the area of foreign military aid, industry-Government relations are generally satisfactory.

There is a continuing concern about off-shore hardware and research and development activities. Industry's position in these matters is constantly set forth to Government officials by the Committee.

Of growing concern to the Committee is threatened extension of requirements that foreign governments procuring U. S. military or quasi-military aircraft and related materials must deal on a government-to-government basis, possibly without regard to low priority or sensitivity of certain products involved. Whenever this effort is not dictated by national security requirements, the Committee will oppose it aggressively.

A Program for Foreign Trade Expansion

The AIA Trade Development Committee (representative of 26 member companies) deals with a wide range of non-competitive subjects which could be broadly described as "aerospace industry's foreign sales relations" and "Government/industry export cooperation." In the first bracket, this Committee's activities are:

- (1) To organize meetings with members of foreign air forces and civil aviation missions on official, orientation tours as guests of the U. S. Government. From 1955 through September 1961, 77 meetings were held for 3,000 visitors from 34 foreign countries.
- (2) To arrange for annual meetings in which foreign

embassy, air, military, naval and civil air attaches participate with their principal staff assistants.

In the second category are:

- (1) Foreign trade statistical services,
- (2) Tariffs and related impediments to foreign trade,
- (3) The foreign market reporting services of the Departments of State, Defense (including the tri-Services), Commerce, the Civil Aeronautics Board, and the Federal Aviation Agency.

In support of reporting services, two successive Secretaries of State and Commerce since 1959 have sent formal directives to all U. S. embassies and major consular offices in the Foreign Service to render all possible appropriate assistance to the sales expansion efforts of the U. S. aerospace hardware manufacturers. The Federal Aviation Agency has directed similar instructions to its foreign personnel. In like manner, the military services have been assisting the aerospace export industry.

An outstanding example of cooperation was initiated in 1958 when AIA export executives were first afforded an opportunity to participate in the curricula of air attache-designee classes of the U. S. Army Intelligence School so that the attaches might better understand the foreign trade objectives of the aerospace industry and thereby help the American trade interests in their assigned areas. Since 1958, 16 successive classes have been attended by Export executives.

Other matters are being explored and extended by the Trade Development Committee with great success. One new project, being inaugurated upon the premise that there is an inseparable relation between the national interest and aerospace products export business, is the launching of a Government-industry cooperative program to learn, interrelate and evaluate the international factors affecting long-range U. S. aerospace product planning and distribution.

This Committee also has cognizance of foreign air shows and trade fairs, in which areas the Department of Commerce has been most helpful.

Publications and Services of AIA/Export

Most of the work of the AIA Export Service finds expression in the various programs of the Export Committee. These are too numerous to detail. Constant liaison is maintained with foreign embassy personnel and aerospace national trade associations abroad.

There are six series of Export Service publications: GEN's (over 100 issues annually) of timely general interest; FAR's, in which hundreds of Foreign Service (State, FAA, ICA and attaches) dispatches are briefed and distributed to members; and specialized series of bulletins going to members of the four working committees. In addition, there is an annual issue of the "World Directory of AIA Member Company Foreign Offices" which, because of the detail supplied, is especially sought by U. S. foreign officers and others to help them locate the U. S. industry offices and branches in their areas of assignment.



Helicopter Council



STANLEY HILLER, JR.
Hiller Aircraft Corp.
Chairman, Helicopter Council

With turbine-powered helicopters in use by the military and the four scheduled helicopter airlines, industry leaders predict the decade of the 60's will bring a technological and economic "breakthrough"—a breakthrough that will permit the helicopter to realize its unique operational versatility.

The Helicopter Council, organized fourteen years ago, through its ten members and staff, coordinates efforts in areas of legislation, regulation and heliport planning to develop full utilization of the helicopter. As a part of the public relations program, the Council is working to: (1) aid public understanding of the benefits which wider helicopter usage would bring; (2) clear away

unrealistic legal obstacles to the location of heliports at sites where they may be of the greatest use to the public; and (3) correct local laws and regulations which tend to inhibit helicopter operations.

Survey of Operators

Council staff made an industry survey of the commercial, Government, and executive helicopter operators in the United States and Canada which revealed that the commercial helicopter industry has become big business—conservatively estimated at \$50,000,000 annually, with “57 varieties” of service being performed. Leading these diversified uses are construction work, oil and mineral exploration, agriculture, powerline and aerial patrols and photography.

Council staff also revised the lists of helicopter operators—commercial, Government, and executive, as well as the helicopter flight schools in the United States and Canada. The 1961 revision of these lists revealed a substantial increase in the number of operators and helicopters in all three categories. For example, in 1960 there were 193 commercial operators with 705 helicopters; in 1961, 265 operators with 822 helicopters. There was a noticeable increase in the number of corporations now using helicopters as airborne “executive suites”—moving key personnel and industrial equipment to the right spot in the minimum amount of time.

Heliport Development—A Continuing Council Program

Another Council project was publication of the second edition of the Directory of Heliports/Helistops in the United States and Canada. Completed in September 1961, it showed an increase of 48.9 per cent during the

year in the number of helicopter landing facilities. The directory shows a definite and interesting trend—an increase in the number of hospitals and motels that have heliports/helistops. This trend emphasizes the immediate need for city-center heliports.

In 1958, the Council published “Your Heliport Design Guide” as an aid to alerting the public and various officials to the importance and comparative simplicity of heliport selection, preparation and operation. A special Council committee, aided by representatives of the FAA and the HAA, is currently working on the authorized 1961 revision.

New U. S. Records

An Air Force directive, and comments by Government officials, cited the need for the U. S. to establish new world aviation records. To assist Council members in this endeavor, important to national prestige and a factor in the export market, Council staff distributed a specially compiled directory of the Federation Aeronautique International helicopter records. During the year, eleven new international helicopter records in categories of speed, altitude, altitude with payload and distance over straight and closed courses were made by Council member companies (Bell, Kaman, Sikorsky). Five of these records were formerly held by the USSR.

The latest revision of the Helicopter Designation Chart was expanded to include the *Present Status* (operational, production, research and development) of each helicopter listed on the chart. The 25 types of helicopters currently in production range in size from the Drone to the large 25- to 31-passenger transport helicopters.

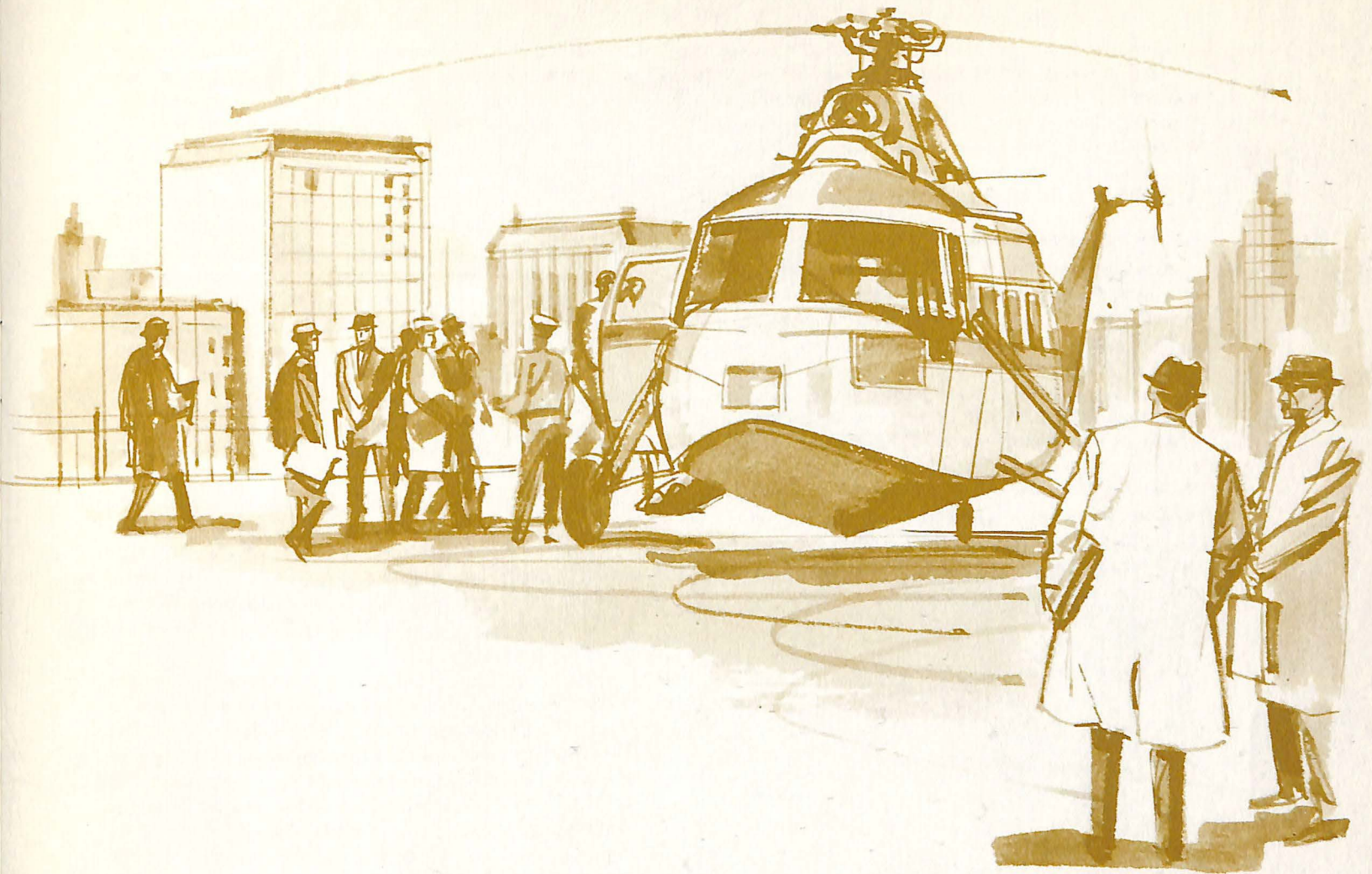
Council Publications

In serving as the clearing house for information on the helicopter industry, the Council has available for distribution the following specially prepared publications:

1. “Legal Aspects of Planning for Urban Heliports” by L. Welch Pogue and George C. Neal
2. “Authority Required to Operate Helicopter Service” compiled by L. Welch Pogue
3. Directory of Recipients of Helicopter Awards 1944-1960 (to be revised annually)
4. Helicopter films—available from Council member companies for showing on TV and before schools, civic organizations and other groups (revised annually)
5. “The Versatile Helicopter”—background article outlining varied uses of the helicopter (revised annually)
6. Lists of foreign military, Government and commercial helicopter operators (first published in 1960—scheduled for annual revision)
7. List of helicopter service applications pending before the CAB (revised when needed)
8. Explanation of helicopter flight—non-technical statement prepared for distribution to school-age children.



Scheduled helicopter service is a valuable tool to the busy air traveler. Today it is the most efficient means of transporting passengers between airports and the center of cities. The introduction of turbine power constitutes a major development in helicopter transport. These new machines have a capacity of 25-28 passengers, virtually double the capacity of the largest piston engine craft, along with substantial improvements in speed, operating economy and all-weather capability.



“Fixed-Wing Thinking”

Following a preliminary meeting with the FAA Administrator, a committee of the Council met with the Director of the Bureau of Flight Standards of the Federal Aviation Agency and other FAA personnel to discuss the need for the highest possible degree of freedom from “fixed-wing thinking” in the regulation of helicopter manufacture and operation.

Council staff assisted members of the AIA Airworthiness Requirements Committee in preparing a detailed formal statement outlining the development of the industry and citing specific regulatory problem areas.

This meeting was beneficial. If all safety requirements can be met, an FAA observer stated that it would not be bound by “fixed-wing thinking” in exercising the functions of regulation in the helicopter field. In addition, the Council invited the FAA representatives to become more familiar with the individual manufacturers’ facilities.

Regulatory Questions

The Council continues to work closely with the AIA Airworthiness Committee and the FAA on regulatory

questions of vital interest to the industry. For example, Council comments were coordinated and submitted on behalf of the members on the proposed revisions of Part 47 and Part 626 of the Civil Air Regulations. The Council’s comments lent additional support to the operators’ position.

At the request of Human Sciences Research, Inc., (under contract to the FAA to conduct a survey of heliport marking and lighting) Council staff arranged a meeting of representatives of other associations to discuss the project. Subsequently, a recommendation was made that the study be expanded to include water, elevated, ground level and rooftop landing areas. The report is scheduled for completion by year end.

Proposal for Airport Emergency Work

The Helicopter Council submitted a proposal to the FAA Administrator that consideration be given to the use of helicopters in fire-fighting and rescue emergencies at commercial airports.

In acknowledging the proposal, the Administrator commented that until additional experience is gained or further studies are conducted to ascertain whether or not a greater aircraft fire and rescue capability can be

obtained from the helicopter, recommendation for procurement would not be appropriate at this time. The subject was an agenda item at the fall meeting of the Council. The August, 1961, issue of the *Legion Air Review* carried an editorial on the Council's proposal and urged that the FAA give serious consideration to acquisition of fire-fighting helicopters at major airports.

American Legion Resolution

Another example of the American Legion's support of Council objectives was the adoption of Resolution No. 556 at its annual convention in Denver, Colorado, in September. The Resolution read:

"WHEREAS, the helicopter has proved itself a useful and versatile vehicle for both military and peaceful uses; and WHEREAS there is need for increased emphasis on the many services the helicopter offers to enhance our way of life; NOW, THEREFORE, BE IT RESOLVED by the American Legion in national convention assembled in Denver, Colorado, September 10-14, 1961, does hereby reaffirm its position adopted at the Forty-first and Forty-second National Conventions

to the end that the American Legion continues to promote and encourage the development and use of helicopters and the passage of necessary ordinances and regulations as will permit their efficient operation."

Extension of Helicopter Airlines and Heliports

One of the standing projects of the Council (extension of certificated helicopter services to areas other than New York, Chicago and Los Angeles) moved forward this year with the announcement of hearings by the Civil Aeronautics Board of applicants for the District of Columbia Helicopter Service Case. This proposed service would provide the Nation's Capital and Baltimore with helicopter transportation to the three airports in the area (Friendship, National and Dulles), as well as inter-airport transportation for those requiring such service.

The CAB further pointed out the need for a municipal city-center heliport for Washington, D. C. At the request of the Civil Aeronautics Board, with the cooperation of the Aviation Committee of the Metropolitan Washington Board of Trade, the National Capital Planning Commission, and the District Commissioners, initiated a heliport site survey in the District of Columbia for submission to the District Commissioners for approval and action.

The Helicopter Council is on record with the Federal Aviation Agency that the location of the heliport is crucial to the determination of the volume of traffic. The Council recommended that the heliport be within a few blocks of Washington's midtown business center and that the FAA operate the heliport as it does the Washington National and Dulles Airports—this would then be the first FAA-administered heliport in the country—a model for the Nation.

Council staff continued to make available to the press background information on the industry. This past year, material pertaining to helicopters appeared in six issues of *AEROSPACE*, and the August issue carried a special insert by Stanley Hiller, Jr., Council Chairman, titled "Travel Shortcut." In addition to the 50,000 regular circulation of *AEROSPACE*, additional copies will be distributed by Council staff.

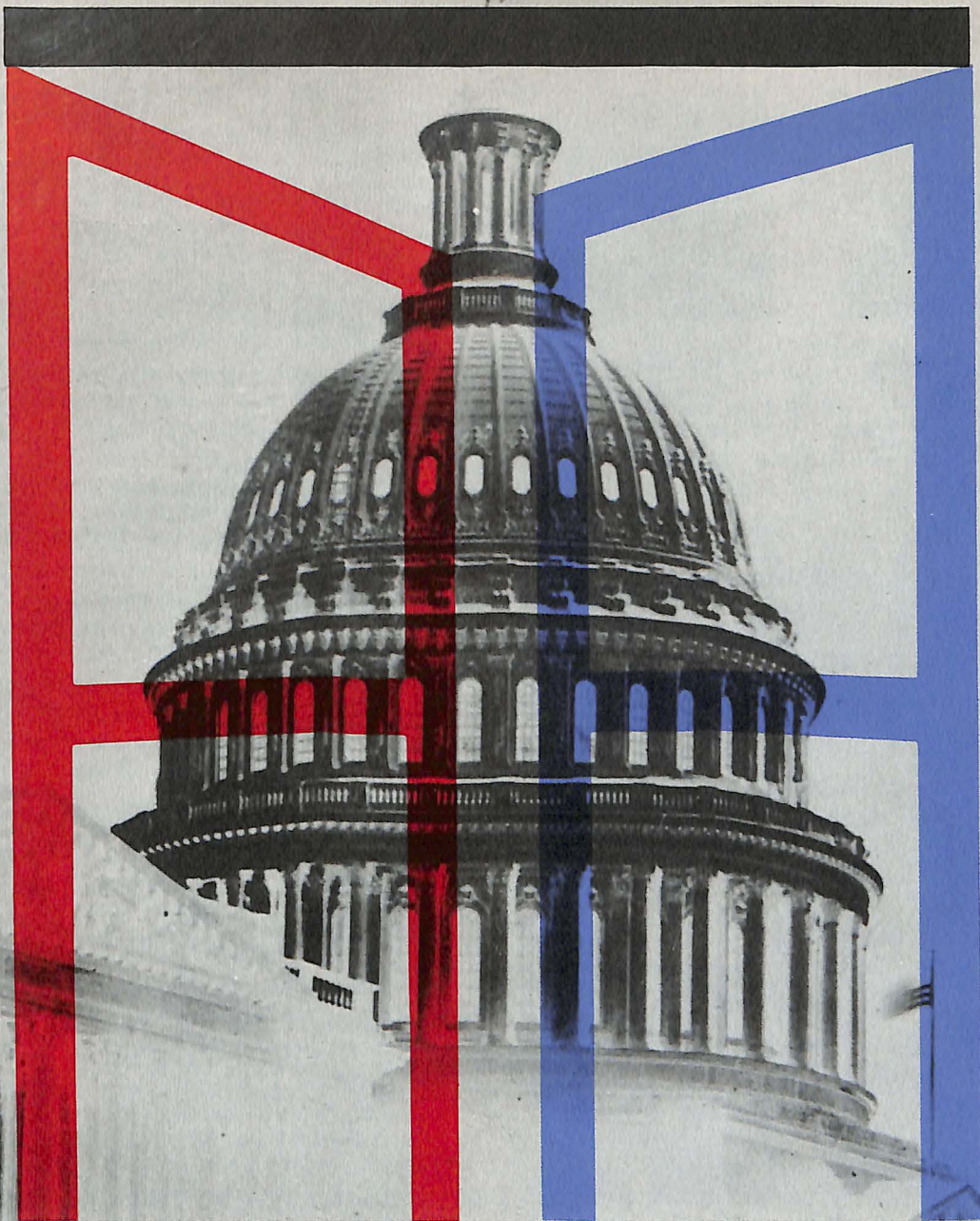
Projects Horizon and Hummingbird

An analysis of pertinent sections of the Report of the Task Force on National Aviation Goals—Project Horizon—was prepared and distributed.

The second report under the FAA Project Hummingbird was published during the year. Member companies assisted in the preparation of this technical summary and compilation of characteristics and specifications on steep-gradient aircraft.

Due to the growing importance of VTOL aircraft of other than helicopter configuration, the Helicopter Council has been authorized by the Board of Governors to operate in the future under the designation of the Vertical Lift Aircraft Council, thus affording membership privileges to other AIA members interested in this field.





Industry Planning Service

The Industry Planning Service is concerned with important problems affecting the business and administrative operations of the industry. The work of this service is done by the following committees.

PROCUREMENT AND FINANCE COMMITTEE

The Procurement and Finance Committee is charged with the responsibility for activities of the Association pertaining to the financial, tax, contractual, accounting and procurement problems of the industry. Although only one meeting of this Committee is held each year, its activities are carried on through a number of small



WILLIAM HUMMEL
*North American
 Aviation, Inc.
 Chairman, Government
 Reports Committee*



FRANZ O. OHLSON, JR.
*Republic Aviation
 Corporation
 Chairman, Patent Committee*



JAMES L. HOBEL
*Rohr Corporation
 Chairman, Industrial
 Relations Advisory
 Committee*



JOHN F. SUTHERLAND
*McDonnell Aircraft
 Corporation
 Chairman, Product Support
 Committee*



GEORGE D. HIGGINS, JR.
*General Dynamics
 Corporation
 Chairman, Industrial
 Security Committee*



ROBERT NELSEN
*General Electric Company
 Chairman, Service
 Publications Committee*



JAMES B. GORDON
*The Bendix Corporation
 Chairman, Procurement
 and Finance Committee*



OTTO JANSSEN
*The Garrett Corporation
 Chairman, Spare Parts
 Committee*

GOVERNMENT REPORTS COMMITTEE

Electronic Data Processing
 Program Progress Reporting
 Aeronautical Manufacturers Planning Reports
 Records Management

INDUSTRIAL RELATIONS ADVISORY COMMITTEE

Safety
 Unemployment Insurance
 Wage and Salary

INDUSTRIAL SECURITY COMMITTEE

PROCUREMENT AND FINANCE COMMITTEE

Contract Cost Principles
 Equal Employment Opportunity
 Termination Settlements
 Reserves Pending Execution of Release
 Facilities Policy
 Procurement Legislation
 State Taxation of Government Owned Property
 Indemnification Against Unusually Hazardous Risks
 Record Retention
 Proprietary Rights
 Duty and Customs
 Renegotiation
 Federal Patent Policy

PATENT COMMITTEE

Proprietary Rights in Technical Data
 Patent Provisions of the Space Act
 Federal Patent Policy
 MIL-D 70327
 NASA Data Requirements Clause
 Multiple Sources of Supply
 ASPR Section IX, Part 1
 Infringement of Copyrights

PRODUCT SUPPORT COMMITTEE

Spare Parts Procurement Policies
 Data Problems in Product Support
 Exchange of Support Organization Information
 Maintenance Personnel Training Requirements
 Overall Product Support Program
 Study of Technical Representative Problems

SERVICE PUBLICATIONS COMMITTEE

Exchange of Cost Saving Techniques
 General Requirements for Military Manuals
 Manuals for Missiles and Space Systems
 Minimum Maintenance Data for R&D Test Equipment
 Navy Maintenance Manuals
 Army 5-Part Manuals
 Navy Aircraft Periodical Maintenance
 ATA-100 Service Publications Specification
 Technical Manual Printing and Distribution
 Information Panel
 Handbook and Catalog Preparation by EDP Methods
 Standardization of Manual Specifications

SPARE PARTS COMMITTEE

Federal Cataloging and Prescreening Data
 Uniform Technical Documentation Provisioning
 Spare Parts Provisioning Policies and Documents
 Aerospace Ground Equipment Provisioning Documents
 Contractor Support Procedures
 Weapon System Periodic Maintenance Requirements
 Replacement Parts Sales Problems
 Spare Parts Procurement Policy and Practices
 Spare Parts Call Contract Practices

task groups which are created for the purpose of handling particular problems.

Improved Procurement Practices

A primary function of the Committee is liaison and cooperation with the Department of Defense and the military services toward the improvement of procurement policies, practices and procedures, with the objectives of reducing costs and improving efficiency.

During the year, this Committee has pursued and maintained a close liaison with personnel of the Department of Defense and the military services in efforts to devise new contracting techniques which would result in a continuing maintenance of high contract performance while reducing costs. This Committee has supplied information and personnel in connection with presentations to the DOD and the military services, utilizing working groups as a means of accomplishing these objectives. This procedure has been successful and will continue.

For example, as a result of the efforts of a working group of this Committee, the record retention period has been reduced from six to three years for pre-existing, completed, and terminated contracts, as well as for new contracts. This accomplishment represents very considerable cost savings to both the DOD and this industry—savings which are expected to increase.

Significant efforts also are being made to reduce the amount of paper work involved in performing Government contracts, again to reduce the man-hours of work and the money required to perform such contracts.

Indemnification Against Unusually Hazardous Risks

One of the most important problems with which the member companies are concerned involves the risks incurred in performance of many of their defense contracts. Because of the nature of these projects, adequate insurance coverage generally is not available, at least in sufficient amounts. As a result, contractors have been forced to place their assets in jeopardy—indeed the very existence of the contractors—should there be a catastrophe resulting in property damage or personal injury to the public which could be traceable to the performance of a defense contract. Until adequate insurance coverage is available for the protection of the public, it is necessary that the Government assume this liability.

Although this Association has cooperated with the Department of Defense and NASA, the insurance industry and other interested industry groups in seeking the enactment of suitable legislation on this subject, such legislation has not as yet been enacted. It is hoped that more vigorous DOD action during the second session of the 87th Congress and better understanding on the part of the Congress will result in eventual enactment of equitable legislation.

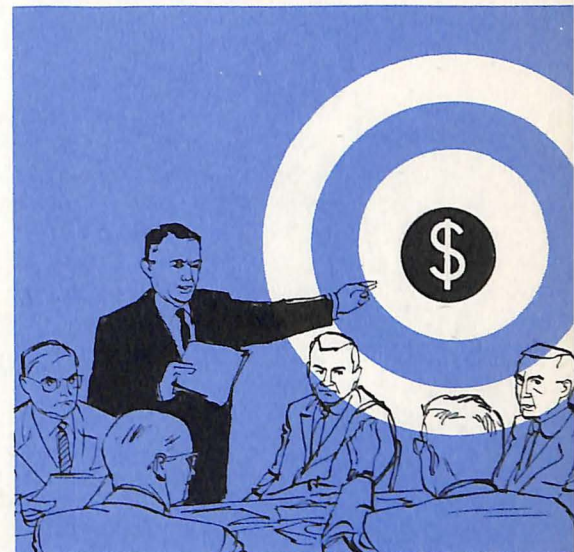
During the first session of this Congress, indemnification legislation applying only to NASA and its research and development contracts was actively under considera-

tion by the Space Committees of the Senate and House. Although this legislation, limited to NASA, was not enacted during the first session, it is expected that there will be early consideration during the second session, and that enactment will take place at an early date in calendar 1962.

Renegotiation

The current Congressional study to determine the need for extension of the Renegotiation Act of 1951, beyond its expiration date of June 30, 1962, has occupied much of the attention of the Procurement and Finance Committee. This study is being conducted by the Joint Committee on Internal Revenue Taxation, whose report to Congress is required by January 31, 1962.

A study of 65 defense fixed price incentive and cost plus incentive contracts reveals remarkable accuracy in pricing by industry. The total adjusted target cost in these contracts was slightly over \$3 billion. The net under-run, or the difference between the original estimates and final cost, was \$4.2 million or 1.4 per cent less than the target.



The position of the aerospace industry on the renegotiation process and its present application has been presented to the Joint Committee by the AIA. In addition, conferences have been held by AIA staff and representatives of the member companies with the Joint Committee staff for the purpose of amplifying the formal presentation.

The final report of this Congressional group will recommend either extension or expiration of the Renegotiation Act, or changes in the renegotiation process itself.

Depreciation

The depreciation policy of the Government, for both tax and contract pricing purposes, is of special concern to the AIA and its members, and it has required much of the attention of this Committee. This policy is especially onerous for the aerospace industry because of the characteristically high obsolescence factor in its facilities and the repressive effect the policy has upon modernization of facilities in these critical times.

During each of the last two national emergencies, provision was made in the tax law for accelerated amortization of facilities certified as necessary to the defense programs. The Internal Revenue Code of 1954 liberalized, to some extent, the method of computing depreciation deductions for tax purposes. These have now been accepted for contract cost purposes by the Atomic Energy Commission as well as by the Department of Defense.

However, these new methods are considered by the aerospace industry to be only a first step in the direction of a permanent, realistic depreciation policy.

The Procurement and Finance Committee expressed to the House Ways and Means Committee the industry's views on President Kennedy's proposal of a tax credit for business concerns as an incentive to acquire or construct new facilities. The AIA position was that although certain benefits would accrue to the industry, the pro-

posed tax credit was so complex and would be so administratively cumbersome that it would not accomplish its objective. The AIA took the view that this would be only a stop-gap measure and far short of a solution to the real problem—a permanent realistic depreciation policy.

Coupled with the President's proposal was a request for removal of capital gains treatment currently applied to the sale of capital assets of a taxpayer. The AIA took the position that such gains should be treated as ordinary income only when there exists a permanent and more equitable depreciation policy.

Although action was not taken during the first session of this Congress, a draft bill for discussion purposes was prepared by the staff of the House Committee on Ways and Means. This draft is currently being reviewed by the members of the Procurement and Finance Committee. The AIA views will be presented to the Ways and Means Committee and the Senate Finance Committee at the next session of the Congress.

Government-Owned Facilities

The AIA Procurement and Finance Committee has worked closely with the DOD and the military services toward equitable policies covering the furnishing of Government-owned facilities, particularly special test equipment and other special tooling, as well as brick and mortar and production facilities. Numerous meetings with Government personnel have been held this year and presentations of the position of this industry have been made on this subject which have occurred during the year.

This problem is inextricably linked with the depreciation policy of the Government, not only for tax purposes but also for contract cost purposes. The restrictive depreciation policy of the government, at least as applied to the aerospace industry, when coupled with the over-all uncertainties involved in defense programming and the high cost of acquisition, act as a deterrent to defense contractors to provide certain facilities, particularly those needed for research and test purposes, of the type needed for defense work. It has been necessary, therefore, for the Government to fill the gap, particularly when the facilities required for the performance of certain contracts are of such a nature as to make them highly speculative rather than a business risk.

Nevertheless, the member companies of this Association have plowed back approximately 70 per cent of all earnings in order to provide, among other things, certain necessary facilities for the performance of defense contractors. The total dollar value involved has exceeded that which has been provided by the Government in the way of facilities to such contractors.

Contract Cost Principles

During the 15 months in which the new contract cost principles have been in effect, the Procurement and Finance Committee has maintained a close surveillance over their administration. When policy problems have



arisen during the negotiation of contracts, as well as in the post-audit process, efforts have been made to reconcile differences so as to provide equitable solutions.

One area in these contract costs principles has received special and continuing consideration. In the administration of the provisions of such cost principles which pertain to contractor-generated research and development, several problems have arisen and remain to be solved. Indications are that Government contracting officers and audit personnel are deviating, not only from the intent but also from the language clearly set forth in the ASPR paragraphs pertaining to the allowability of such expense as a contract cost. Accordingly, efforts are continuing toward obtaining more equitable applications of such ASPR provisions.

Settlement of Terminated Contracts

In view of the importance to this industry of fair, fast and final settlements of contracts terminated for the convenience of the Government, especially when a project is cancelled which affects large segments of this industry, the Procurement and Finance Committee has continued to watch closely the policies and procedures of the DOD and the military services in this area. Although certain problems still remain unsolved and certain practices and procedures need improvement, there exists a close working relationship between the DOD and this industry, with efforts being made on both sides to resolve the issues involved and provide improved settlement practices and procedures.

One of the knotty problems still plaguing industry revolves around the profit formula and the extent to which a prime contractor is entitled to profit on the work performed by subcontractors.

Proprietary Rights in Technical Data

Continuing and serious difficulties are encountered by the member companies of this Association in the administration of the provisions of the Armed Services Procurement Regulation which pertain to the rights of contractors in technical data developed at their own expense.

The Procurement and Finance Committee, working with the AIA Patent Committee, has sought certain changes in this regulation so as to provide the necessary protection for such proprietary information. Representatives of this Association have met informally on several occasions, and at two formal meetings, with DOD representatives in attempts to resolve the issues involved.

The most recent meeting with DOD representatives was on July 31, 1961. It is hoped that, as a result of this meeting, a revision of the applicable provisions of the ASPR will be made and that this revision will be an improvement over the existing policy and that improved administration will result.

The very existence of many companies depends upon the manufacturing processes and data pertaining to such factors as heat treatments required for particular metals, tolerances, etc., which make these concerns the best

qualified to produce a particular article. The information and other data concerning these exclusive capabilities is proprietary to the companies concerned. Such data would not be for sale at any price, since the knowledge has been acquired and developed over the years through the expenditure of much time, effort, and money. The question of protecting the private property of design manufacturers of aeronautical and space equipment has been and will continue to be a most serious problem, not only for the prime contractors but particularly for the thousands of small companies that design and develop so many of the essential items needed in modern weapons systems.

Patent Policies

This Committee, in conjunction with the Patent Committee, has sought the adoption of amendments to the patent provisions of the National Aeronautics and Space Act. The provisions of that Act require title to all inventions made, or first reduced to practice, in connection with a contract or a proposed contract with NASA, to be vested in the Government, unless a waiver is granted by the Administrator. Legislation is currently pending in Congress which would make more equitable the patent provisions of the Space Act.

During the first session of the 87th Congress, the AIA Procurement and Finance Committee and the Patent Committee have been concerned with legislative proposals which would establish a uniform patent policy for application by the executive departments and agencies, and which would provide for ownership by the Government of all inventions and discoveries made during or in connection with the performance of a contract with the Government. A representative of this Association testified at a hearing by a Subcommittee of the Senate Committee on the Judiciary, which has under consideration certain proposals deemed harmful to industry generally and the aerospace industry in particular. Although legislation on this subject was not enacted during the first session, it is expected that the proponents of such a Federal Patent Policy will continue their efforts.

It is the position of this Association that the Government's patent policy should be flexible and provide the necessary incentives; further for the acceptance of Government defense contracts, the contractors who make inventions and discoveries should be entitled to the exclusivity required for sales in the commercial market.

In addition to the subjects which have been mentioned, the Procurement and Finance Committee has been concerned with numerous other problems affecting the welfare of this industry and its ability to perform effectively as a part of the American private enterprise system. One illustration pertains to Executive Order No. 10925 under and the regulations which were ultimately issued by the President's Committee on Equal Employment Opportunity. A task group of the AIA Procurement and Finance Committee has been working closely with the staff of the President's Committee on Equal Employment Opportunity in the development of

its regulations so as to resolve many of the issues which exist.

Other problems pertain to the numerous contract clauses which have been issued by the military services, but which were not specifically authorized by the Armed Services Procurement Regulation. Examples are a BuWeps clause pertaining to the withholding of funds due contractors pending execution of release and an Air Force clause pertaining to special termination costs.

PATENT COMMITTEE

Federal Patent Policy and Proprietary Rights in Technical Data

The Patent Committee has worked closely with the Procurement and Finance Committee in developing testimony and legislative recommendations supporting the patent system, which has historically stimulated the creative talents of the American people. Also, working with the Procurement and Finance Committee, the Patent Committee has sought the improvement of the provisions in the Armed Services Procurement Regulation dealing with proprietary rights in technical data. Progress is being made as the result of several meetings with representatives of the Department of Defense and the military services. It is expected that a revision of these provisions, to be issued by the DOD in the near

future, will include improvements in the provisions as well as providing for their more equitable administration.

NASA Patent Licensing Regulations

Provisions in the Space Act currently require that the Government acquire title to all inventions and discoveries made in connection with, and during the performance of, a contract with NASA, except where specific waivers can be negotiated. As a result, proposed regulations concerning the licensing of such inventions and discoveries with respect to which NASA has title were submitted to this industry for review and comment. The position of the aerospace industry was made known to the NASA at a public hearing held on September 20 and 21, 1961. This industry expressed its opposition to these regulations on the grounds that they would reduce incentives to NASA contractors for the making of inventions.

Federal Aviation Agency Patent Policy

On November 2, 1960, the Federal Aviation Agency prescribed a policy for the payment of royalties to the Government for inventions made during the performance of a contract with the FAA. A position in opposition to this policy was presented to the FAA by the AIA Patent Committee. Several formal and informal meetings with FAA personnel have also been held seeking the revocation of, or certain amendments to, these regulations.

Other Activities

In other more general areas the Committee has concerned itself with certain clauses of a so-called "bootleg" nature which pertain to patents and proprietary data. These clauses have been prescribed by the military services from time to time without prior approval by the DOD and not in conformity with the ASPR.

Similarly, numerous bills dealing with patents, trademarks, and copyrights, introduced during the first session of the 87th Congress, have been considered by the AIA Patent Committee. The position of this industry when considered appropriate, has been made known to the Congress with respect to these various measures.



GOVERNMENT REPORTS COMMITTEE

The Government Reports Committee is specifically concerned with reporting requirements and data collection systems imposed by the Government on the aerospace defense industry. The Committee's position is that the flow of essential information to the Government should be assured, but that reporting of unnecessary, superfluous or unuseable information is a major element of cost to this industry and, therefore, to the Government. Such burdensome impositions should be eliminated to permit substantial resources to be applied more productively in other areas. The Committee has enjoyed considerable success in working with Government toward increasing efficiency and reducing such costs. It has provided the liaison, coordination and communications with Government agencies on the simplification, standardization or elimination of Government reporting requirements, existing and proposed.

Working relationships, procedures and programs that will provide the Government with essential reports at minimum cost are advanced by semi-annual national meetings of the Committee to which are invited representatives of the Bureau of the Budget, the Department of Defense, and other cognizant Federal Agencies.

During the past two years, the Committee reviewed with various Government agencies over 140 individual reporting requirements. These efforts resulted in elimination of some reports immediately. In many other instances, compromises acceptable to both industry and Government were negotiated. Comprehensive reports on these activities were prepared for AIA management and committee members.

One such proposed requirement, recently issued in coordination draft form by the Aeronautical Systems Division of the Air Force, was the Manual for Contractor Cost Data ("Comet"). It was interpreted by the Air Force as a manual which establishes procedures for reporting cost estimates and cost expenditures to enable more stable decisions with reference to projections of costs and cost management.

Costs estimates of putting "Comet" into effect varied widely since the Air Force had not adequately defined the specific requirements. However, it was apparent that the costs would be significant and could approach 10% of the contract amount depending upon the extent of the details on which cost data would be required. Moreover, the detail generated by this program was obviously too voluminous to be of practical value to a Program Manager. Discussions at various levels within the Air Force and industry resulted in the Air Force recalling the original draft of "Comet" for revision and refinement.

Subcommittees composed of industry experts in specific fields are established as required. The NASA Data Requirements Subcommittee works with the National Aeronautics and Space Administration in the overall delineation of that agency's reporting requirements. The Facilities and Properties Subcommittee is working

with the Department of Defense in developing a "Uniform Records Card" which has been approved by the Bureau of the Budget and is now being implemented by the services. The Government Reporting Management Data Systems Subcommittee assists Government agencies in obtaining from member companies meaningful and useable management data by machine methods.

Simplification of the "Aeronautical/Missile Manufacturers Planning Report" was achieved by the joint effort of the Air Force and the AMPR/MMPR/SEMPR Subcommittee (Aeronautical/Missile/Support Equipment Manufacturer's Planning Report). Two forms proposed by industry and approved by the Bureau of the Budget were accepted by the Air Force thus eliminating 22 forms previously required under four reporting systems. Also, as a result of this Subcommittee's work, DD-1177 "Cost Incurred on Contracts" was eliminated as an Air Force requirement. On both the AMPR/MMPR Systems and DD-1177 form, negotiations with the Army and Navy continue toward the same goal.

The persistent increase in demand for more and more control data by the Department of Defense, AEC, NASA, and other agencies, increases the scope and importance of the Government Reports Committee's activities.

It is the objective of the Committee to inform member companies of all reports and data systems requirements, and to limit these to what is actually needed for proper surveillance and be of assistance to both the Government agencies and industry in keeping these demands within reasonable bounds.

PRODUCT SUPPORT COMMITTEE

This is AIA's newest committee which was formed this year to meet the need cited by responsible military department and industry executives for one over-all product support voice in AIA. The mission of the Product Support Committee is to act in policy areas which will ensure highest operational capability of the complicated equipment produced by the aerospace industry.

The Committee is concerned with the industry-wide problems of logistic support in areas such as—qualitative maintenance analysis; maintenance support plans; service publications; spares and repair parts; special tools, test equipment, and ground support equipment requirements and procurement; field service; military maintenance personnel training, training aids and equipment; the support aspects of maintainability, reliability and maintenance engineering; contractor modification and repair of equipment; real property installed equipment support; and post-delivery system configuration and compatibility control.

SERVICE PUBLICATIONS COMMITTEE

The Service Publications Committee is concerned with the policies, procedures and arts involved in the preparation of illustrated parts breakdowns and manuals covering the operation and maintenance of aerospace equip-

ment. The importance of service publications has been increasing in proportion to the growing complexity and sophistication of missiles, spacecraft and aircraft. For example, operations in missile handling, testing, launching and firing are controlled particularly closely by technical manuals, which are the primary communications link between the supplier of the equipment and the user. To accomplish this, the Committee, which is comprised of ninety service publications managers of aerospace manufacturing companies, works closely with its counterparts in the military departments, Department of Defense, NASA and ATA.

AIA and the Committee provide to the Government and to member companies a variety of valuable services, examples of which follow:

Cost Reduction Methods: Because of the very substantial sums spent in the production of technical manuals, this Committee since its inception has taken continuous action to bring about improvements and economies in their publishing. Part of the agenda of each Committee meeting is devoted to the exchange of information concerning cost-saving techniques developed by member companies. Working panels keep abreast of and report to the Committee on new equipment and methodologies in the graphic arts, data processing, etc. Manufacturers of the various equipment make presentations to the Committee concerning information retrieval methods, catalog preparation equipment, methods of measuring and improving the production of service publications departments, etc. It is believed that every member present at a national meeting carries back to his office some ideas which he can implement in his operation.

Industry Initiated Actions: The Committee initiates actions and offers its services in generating new specifications or amendments necessary to bring existing specifications up to date. For example, the Bureau of Naval Weapons accepted the offer of the Committee to prepare a proposed new general requirement specification governing the format of technical manuals. The Committee was well equipped to do this, having just completed a careful review of a proposed Air Force specification. Within 30 days after the Navy expressed the desire for this action the Committee laid its proposed document before the Navy. This specification has been revised and edited by the Navy and is now in final review for early issuance.

Another Committee initiated program is one involving clarification of technical manual areas not frequently understood by many in Government and industry. One example is a proposed magazine article explaining how handbook data are procured.

Review of Proposed or Existing Specifications: The Committee is frequently given the opportunity to review proposed specifications and amendments prepared by the military departments and to recommend revisions based upon contractors' experience and judgment. For instance, a review was recently completed on the technical publication requirements for ballistic missiles and

space systems. The Bureau of the Budget referred this document to AIA for comment and, having issued its recommendations, the AIA Committee will work with the Air Force in further refining the document.

Information Services: AIA transmits to its members and elements of Government counterparts copies of new specifications and amendments to them—speeches, scientific papers, exhibits, pertinent information brought out in Congressional hearings, and discussions of other AIA committees having a bearing on technical manuals.

Several months' time is often saved between the member company's receipt of new specifications, through AIA, and the eventual official receipt. Much interest also is expressed in these mailings by Government addressees, who sometimes learn of new developments of their counterparts in other Departments through this AIA service.

Another medium of information is the field trips which the Committee schedules in connection with its national meetings, permitting Committee members and their Government guests to tour military bases and to converse with the personnel actually using technical manuals prepared by members of this industry in the maintenance and operation of aerospace equipment. Similarly, in Government/industry meetings in which



the Committee is joined by its Government counterparts and military leaders, there is an exchange of information on policies, problem areas and other matters of mutual interest, all of which is very valuable.

The Committee holds only two meetings a year and depends upon small panels of its members to conduct its studies.

SPARE PARTS COMMITTEE

The Spare Parts Committee has been in existence for 18 years. Its membership is comprised of 125 managers and assistant managers of spare parts and product support department representatives of all segments of the aerospace industry. It operates under a system of small ad hoc panels which are established to undertake the solution of individual problems, make recommendations to the Committee and cease operation after action has been taken.

Since its inception, the Committee has worked with the military departments and the Department of Defense, assisting in the development and revision of policies, procedures and practices for the selection and ordering of spare parts, special tools, test and aerospace ground equipment and training aids and training equipment directed toward economies and improvements which, in turn, result in more workable procedures and in the elimination of causes of delay and expense.

The Association presented to its membership some preliminary information received from the Air Force concerning a plan under which replenishment spare parts would be procured by the Air Force on a competitive

bid basis except for certain critical items. The Air Force invited industry's suggestions and, based upon voluminous correspondence from the chief executive officers of the companies in the industry, much additional information concerning the problems involved was assembled by AIA and made known to the Air Force.

The purpose of the new Air Force program is to reduce the price of spare parts by increasing competition through the creation of additional sources of supply. This industry is ready to support any program intended to reduce the cost of national defense provided it contains some promise of achieving that objective while at the same time preserving the national military capability. As we now understand the new Air Force program, we believe it will neither reduce costs nor preserve military capability.

In connection with the semi-annual national meetings of the Committee, there are joint industry/Government meetings. These joint meetings provide opportunities for the interchange of ideas, policies and plans between the representatives of the military and industry, with mutual benefits resulting. In addition, field trips are conducted to military bases, where Committee members and their Government guests can observe support operations and receive firsthand knowledge about problems being experienced. With this knowledge, improvements can be developed more readily.

Support Procedures: During the past year, various efforts of the Committee have been under way with the military departments. For example, reviews of proposed changes in Air Force initial and follow-on spares procedures have resulted in recommendations which include the need for format standardization and for the separation of provisioning documentation costs from the price of the hardware. In connection with the latter, members of the Committee have canvassed the industry to determine the relative costs of the provisioning documentation required by the various spares procedures and have referred the results of this survey to the Air Force.

The Committee worked with the Air Force in developing a revision to the present military specification for aerospace ground equipment data which will be more adaptable to the new weapon systems being planned.

Adoption of the industry recommendations submitted will provide for more realistic timing requirements and for simplifying the language that has been used to present the various data requirements.

With the simplification of Air Force and Navy support documentation presently under way, efforts have been initiated by the Committee for review of the current Army Aviation provisioning procedures.

The Committee also participated with the Bureau of Naval Weapons in developing another in the series of Weapon Requirements support procedures. This document provides for more simplified instructions for contractor material support during the build-up period of a program, and reduces the need for additional support documentation through its multiple applications.

Air Force Contractor Support Procedure: Recognizing



that there is a definite need for an Air Force support document covering the requirements for contractor support during the build-up period of a program, the Committee has taken the initiative in developing a proposed support procedure. Following a program of coordination, a finalized support document will be presented to the Air Force.

DOD Uniform Provisioning Format Instructions: A number of previous recommendations, submitted by the Committee for the improvement of uniform provisioning documentation formats, were incorporated in the DOD Instruction 4151.7, released officially during January of this year. In furtherance of continuing improvements in this document, the Committee has been invited to assist the Department of Defense in assessing the elements of data contained in the current Instruction with a view toward simplifying the requirements for documentation preparation.

Call Contracts: As the result of mounting pressures from governmental agencies and in some quarters of Congress, the military departments are being instructed to make increased use of competitive bidding-type contracts, rather than the open-end call-type. Because of the savings in money to both military and industry, and also because of the expeditious manner in which spare parts deliveries can be handled through call contracts, the Committee has initiated a project to study the various alternatives involved. A statistical questionnaire has been forwarded to the industry to assist in preparing recommendations.

Procurement Improvements in Support Area: Acting on an invitation extended to AIA to assist in improving Air Force procurement philosophies and practices, the Committee established a study project to develop suggestions in the support area. Recommendations covering the determination of spare parts and aerospace ground equipment requirements, clarification of cataloging procedures and closer coordination between training and operational activities have been developed and presented to the Air Force.

INDUSTRIAL RELATIONS ADVISORY COMMITTEE

This past year has been an especially active one for the Industrial Relations Advisory Committee whose primary purpose is to provide a central and authoritative source of information on manpower and other industrial relations.

In addition to the usual surveys and exchange of information, two Presidential Executive Orders have required considerable work on the part of both Committee and staff. In one case the draft of the rules and regulations of H.R. 10925 establishing the "President's Committee on Equal Employment" were reviewed by an IRAC subcommittee together with representatives from AIA's Procurement and Finance Committee. Several modifications recommended by the group were incorporated into the order.

The Order H.R. 10946 establishing the "Missile Sites

Labor Commission" has also entailed considerable work by the Committee. The "Holland Committee," a panel, was appointed by the Secretary of Labor to work out the criteria for division of work at the missile sites. Representatives of the Committee and counsel attended hearings before the panel and testified for the industry. The results of the implementations of these two Orders will be discussed at the Committee's next national meeting.

In the past the Committee has made surveys for and provided other information to Government agencies when requested to do so. The Committee, through counsel, subcommittee members and staff have represented the Association in such areas as hearings before Congressional committees, hearings before the U. S. Labor Department's Wage and Hour and Public Contracts Division in the matter of minimum wage determinations for our industry. It has provided an industry representative for the U. S. delegates to the International Labor Organization meetings.

A member of the Committee is presently serving, and has served for years, on the Labor Department's "Advisory Committee on Unemployment." Another Committee member is representing our industry on the Department of Labor's "Missile Sites Labor Commission."

INDUSTRIAL SECURITY COMMITTEE

The Security Committee was established shortly after the military agencies were combined under the Department of Defense. Through the efforts of this Committee the individual security regulations governing contractor personnel and the protection of classified information were combined into a Department of Defense "Industrial Security Manual." Over the years many changes and additions to this Manual, recommended by this Committee, have been incorporated into the Manual.

Scope of activities of the Committee include, in addition to security matters, civil defense and plant protection policies as well as operational procedures in connection with plant operation. And for several years this Committee, at the request of the Department of Defense, has acted in an advisory capacity to DOD. In this connection, a subcommittee convened early this year to review the Department of Defense Security Manual. Its recommendations, following approval of the Industrial Relations Advisory Committee, were submitted to the Department of Defense. In April, the Committee, with representatives of the Department of Defense and the military agencies, met in discussion of the proposed changes. Agreement to incorporate some committee proposals was made and consideration to others with a view to including them in the Manual was promised.

While the reorganization of the civil defense program has not yet been completed, Department of Defense responsibility for a considerable portion of the program should see a considerable increase in civil defense efforts. This Committee has urged such action on several occasions.



Missile and Space Council



DOUGLAS M. HELLER

*The Bendix Corporation
Chairman, Missile and
Space Council*

The activities of the Missile and Space Council (formerly, the *Guided Missile Council*) have been directed toward two basic areas of Government-industry relationships in the missile and space field. The first has been the fostering of a better understanding of the Nation's guided missile and space vehicle requirements, both military and civil. The second has been the development of techniques to translate these requirements into capabilities more rapidly and efficiently.

Successful development of superior guided missiles and space vehicles is vital to our national security and national prestige. However, the costs of our missile and

space programs are of such magnitude that every effort must be made to eliminate duplication, waste and artificial restraints which retard technical progress and increase costs. Carefully enunciated, clearly understood national goals, applicable to both the civil and military aspects of these programs, are essential.

There is no longer any technological question of the Nation's eventual capability to send a manned or unmanned vehicle almost anywhere in this solar system. The fundamental know-how is already evident in our present hardware. But successful missile or space programs depend upon much more than technical competence. They require the marriage of a variety of complex components into an integrated system within acceptable cost parameters. The key to success is effective program management at all levels of Government and industry.

Composition of the Council

The Missile and Space Council is composed of one member from each of thirty-two AIA companies who are prime contractors for guided missiles or space vehicles, or whose interests encompass considerable design or manufacture of various elements of missile or space vehicle systems. The scope of the Council's activities encompass, on an industry-wide basis, top level company management problems relating to guided missiles and space vehicles. Individual members are generally of the corporate executive vice president or vice president level.

During 1961, as in the past, the Council has continued its practice of holding its conferences at Government establishments in an effort to gain a better understanding of mutual Government-industry problems relating to missiles and space vehicles.

Technical/Scientific Societies

A major portion of the Council's effort in 1961 has

been devoted to a study of the effectiveness of technical/scientific societies' activities in the aerospace field. Meetings with representative society executives were conducted and close scrutiny was made of company participation in society activities. Areas explored included: (1) the need for exchange of ideas and knowledge of individuals with common interests via technical society meetings; (2) the increasing number of technical societies devoted to specialized fields of scientific activity and, in some cases, the overlapping activities of the various societies; (3) the increasing number of meetings which, in themselves, effect a substantial increase in the number of scientific papers required to substantiate the holding of such meetings and the effect this has on the over-all quality of papers presented; (4) the increased costs to AIA member companies in supporting and sending representatives to such meetings—this in proportion to the benefits received; (5) the solicitation of company displays and exhibits for the meetings of some societies.

Inter-Service Data Exchange Program (IDEP)

The Council continued to follow the progress of the Defense Department program of collecting and distributing test data on ballistic guided missile components. It informally transmitted its views to the DOD on the volume of data received by the companies and on its currency.

Value Engineering

In response to a request from the Air Force, the Council reviewed suggested clauses on value engineering, proposed for insertion in guided missile contracts on a selective basis. The Air Force was advised of the views held by the collective M&SC on the three types of proposed contract clauses for development, production and fixed-price incentive contracts.





Public Relations Service



KEN ELLINGTON
Republic Aviation Corporation
 Chairman, Public Relations
 Advisory Committee

PUBLIC RELATIONS ADVISORY COMMITTEE

- Executive Committee
- Editorial Subcommittee
- Aviation Education Subcommittee
- Shows & Exhibits Subcommittee
- Aircraft Sound Subcommittee

Activities of the Public Relations Service during the year have been directed toward eight major staff objectives:

1. Keeping the public, and especially those who lead opinion, informed of the progress and problems of the industry in air and space.
2. Informing and interpreting to legislators and administrators in Government, through regular communications channels, those conditions and developments which affect the industry and its capabilities.
3. Reporting constantly to the membership of AIA on important events, policies and procedures on the national scene, especially in Washington.

4. Advancing by every available means the objectives and policies defined by the Board of Governors and the Public Relations Advisory Committee.

5. Keeping and disseminating an accurate and authoritative statistical and factual record of the industry's progress, in both military and civil air and space.

6. Working and counseling with other AIA services and committees in reporting and advancing their respective objectives.

7. Coordinating, researching and informing members on market data sources as an aid to long-range production planning. These analytical operations are in non-competitive areas.

8. Working with other national organizations and with Government departments toward common goals in military and civil air and space programs.

The explosive advance in aerospace technology, the constantly-changing demands made on the industry, the broadening base of the industry itself, and the growing tendency toward restrictive legislation and regulation have tested the resiliency of the Public Relations Service in the last year.

Information and interpretation have become increasingly important. It is the function of the Public Relations Service to keep the facts, policies and reasoning of the industry in true perspective to important elements of Government, to opinion-forming groups and to the general public. It is especially important to keep the press informed, since opinions are frequently derived from the writings of those who report the news.

Through publications and special communications sent to Congressional and administrative desks and to thought-leaders and press, and through personal contacts, this Service has attempted to interpret those matters which affect the industry and its responsibilities.

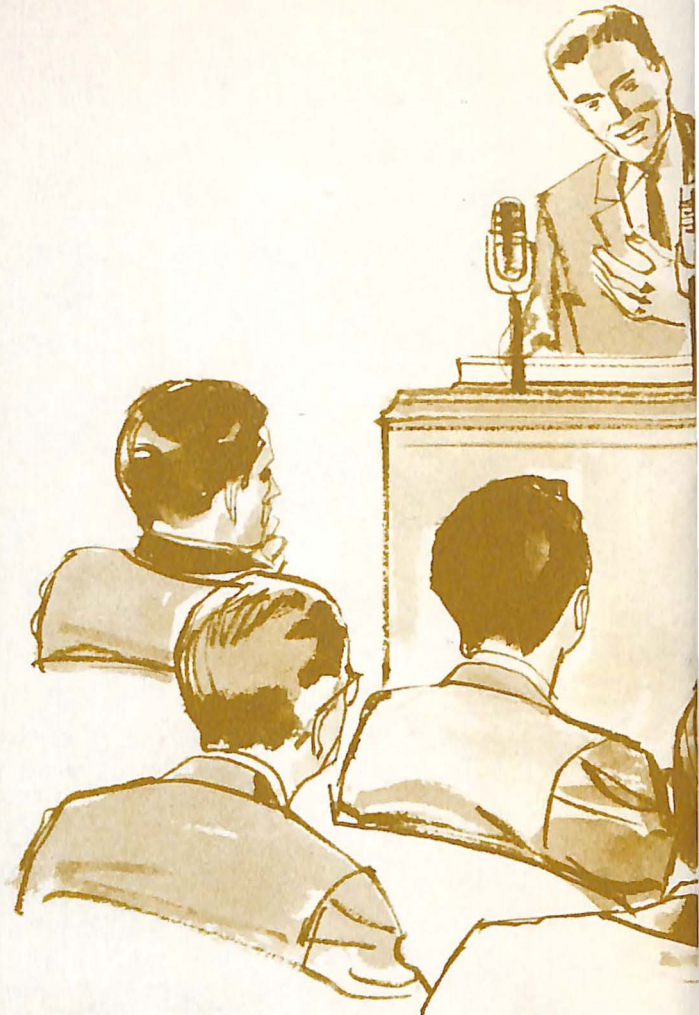
No less important is keeping the AIA membership informed of events, trends and attitudes which affect them. Throughout the year, the Service has reported on and interpreted Washington and other national developments.

The Public Relations Service has been primarily concerned with building a better understanding of the industry during 1961—a year made difficult due to increasing demands for an expansion of this Nation's entire aerospace program. Coupled with this situation has been an increasing inflexibility in Government procurement practices and a reorientation of most aircraft and missile programs.

As a result, the Public Relations Advisory Committee, with AIA staff acting as its communications channel, has endeavored to keep industry management apprised of rapidly unfolding developments originating in the Congress and in the Department of Defense and at the same time to interpret industry's position relative to these developments for the public.

Publicity

During the reporting period beginning November, 1960, Public Relations Service has issued 66 news re-



leases and an additional 11 releases tailored for radio and television newscast. Circulated among some 1,800 writers and editors in the fields of aerospace, business and finance is **LETTER TO AEROSPACE WRITERS**. This publication, issued monthly, finds wide acceptance among various media writers, and features reports on industry employment, wages, aircraft deliveries, U. S. space and missile programs and civil export activity.

Speeches

In 1961, the President of AIA and other executives of the staff have made several addresses of national interest as well as numerous reports before private groups and Government agencies. Among them were such topics as: Government-industry roles and responsibilities, status of the aerospace industry, defense spending and the outlook for industry, and the industry and education.



Publications

AEROSPACE is the monthly publication of the Association. Its circulation today is approximately 50,000 with copies going to members of Congress, editorial writers of some 600 newspapers, and selected financial management and labor groups, approximately 10,000 libraries, as well as other selected segments of the public and Government.

The principal policy change in AEROSPACE in the last year has been the use of the names of specific companies and products when the utilization of such names adds to the meaning of the article. This policy, which was recommended by the Public Relations Advisory Committee and approved by the Board of Governors has been of great value. The articles have gained wider acceptance through this added validity in reporting.

For example, the insert article, "Partners in Space,"

for the first time published a recapitulation of U. S. space efforts with major contractors credited for their contribution. It placed in proper perspective the aerospace industry's role in this vital effort, and was widely used as an editorial subject. Approximately 15,000 additional reprints were ordered. Another insert article, "Target: Moon," tied together the tremendous requirement from industry—crediting individual companies—to place a man on the moon. The exploitation of this newsworthy subject gained considerable press attention for the aerospace industry's role.

In furtherance of aerospace industry aims, AEROSPACE has carried a wide variety of articles commenting upon and explaining the problems and capabilities of the aerospace industry. These articles include: The joint effort by the Department of Defense and the Aerospace Industries Association to survey specifications and reporting requirements in an effort to reduce costs; the promotion of helicopters as the solution to travel between metropolitan centers and airports; a major article and accompanying publicity effort on AIA's coordinating role in the automatic programming of numerically-controlled tooling; an article by Deputy Defense Secretary Roswell L. Gilpatric on the swiftly changing requirements in defense and technology; an article on the need for changing depreciation legislation; a lead article on predicted growth for general aviation in the next decade; article by Senator Engle on patent legislation; article on cost reduction efforts by the aerospace industry; article on the need for Government-industry cooperation on the development of a supersonic transport; full-page chart on satellites for commerce and defense; article on patent legislation by Congressman Mitchell.

Aerospace Year Book: The 1961 edition was published March 15, in the same format as the 1960 edition. Reflecting a substantial improvement over previous issues, the 1961 edition contained 484 pages. The 1962 edition of the *Year Book* is scheduled for publication on February 1, 1962. This publication is widely used by editors and writers as an authoritative reference work on past, present and future aerospace matters.

U. S. Aircraft, Missiles and Spacecraft—1961: Under its new title, excerpted pages of the *Aerospace Year Book* once again were published by the AIA for the National Aviation Education Council. The booklet was comprised of 160 pages, plus a 3-color cover. AIA purchased 2,500 copies for distribution to the press and other selected groups. NAEC ordered 12,500 copies and to date has sold 7,000. Expected sales by NAEC by year-end 1961 will reach approximately 11,000.

Space—Challenge and Promise: This booklet, published in the spring of 1961, delineates the history of space exploration; the benefits which will accrue to the free world from space exploration; and the role and responsibilities of the aerospace industry on this new frontier. AIA distributed 100,000 copies to the American Legion, to selected segments of the general public and to the Nation's press. Additional dissemination of approximately 50,000 copies of this industry story was

gained through individual member company purchases, at cost, for distribution in plant cities.

Aerospace Facts and Figures—1961: Published in the same format as in previous years, the booklet emphasized missiles and space programs. It is a valuable reference work for editors, writers, business and financial houses, and administrative and legislative Government. Primary costs for publishing this annual statistical and textual report of the industry were underwritten in the first 2,000 copies. American Aviation Publications purchases follow-on printings of the book and handles sales to the public. The 1962 edition of *Facts and Figures* is scheduled for publication on May 15.

Annual Report: 7,000 copies of the *Annual Report* were published and distributed to Congress, Government officials, selected AIA committee executives and to the press.

Background Memoranda

During the past year, staff has issued numerous background memoranda covering virtually all aspects of the problems confronting the industry as well as detailed analysis of such subjects as: selected excerpts from Congressional hearings, the Year-End Statement of the aerospace industry, Aerospace aspects of the Federal budget, etc.

Market Data

Due to the constant changes in the defense market and the intensification of competition, there is an increasing need for marketing intelligence. In view of the technical competence of most companies in the industry, member companies have found it necessary to establish general and technical information analysis operations to assist the corporate level in their long-range production planning. Personnel engaged in this activity continually look to AIA for marketing data sources not readily available. As a result, a market research service operating in non-competitive areas is provided by our Public Relations staff.

To maintain this service effectively requires considerable research in military and other Government agency areas in developing sources and determining the availability and existence of specifics relating to:

- (a) Present and future military procurement policies regarding aircraft, missiles and space programs.
- (b) Research and development programs of the three military services.
- (c) Analysis of current and future trends of the defense budget.
- (d) Government directives or policies of significance to the aerospace industry.

As such information is acquired, it is abstracted and issued in frequent bulletins to market researchers and long-range planners. During the current reporting period, 49 bulletins have been issued. In addition, hundreds of requests are received by letter, telephone, and in interviews for marketing data having a specific application.

Characteristically, a trade association is regarded by

the general public as a source of any and all information on the industry represented. Through the year, Public Relations staff processes thousands of such requests, providing information to the press, to technical societies and other organizations, and to individuals. Data Research maintains reference files for timely and qualitative reports and technical papers.

Aid to Education

In another area, AIA supports, with a substantial annual grant, the National Aviation Education Council, a non-profit organization. The staff and Public Relations Advisory Committee work closely with NAEC through representation on its Materials of Instruction Committee. These seek to help create more awareness in our future citizens of the role of air and space in American society and their contributions to national defenses, to the national and world economies, and to cultural and technical progress.

In addition to the support given to NAEC, AIA publishes and distributes directly to students, teachers and librarians, educational bulletin board materials, and other miscellaneous aviation education aids. Written requests for these materials in 1961 amounted to ap-



proximately 12,000. Of these, the majority were bulk quantity requests by teachers for aviation workshops and youth counselors.

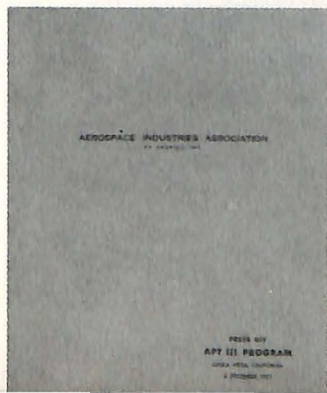
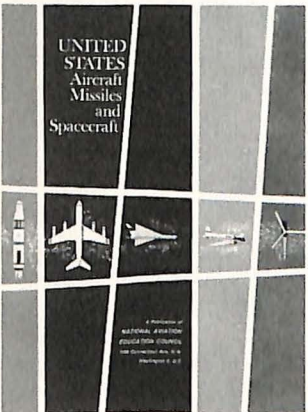
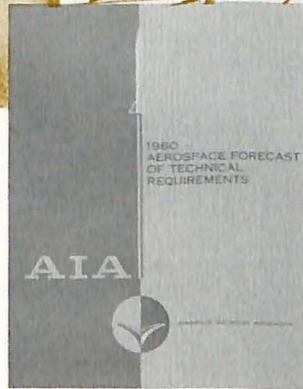
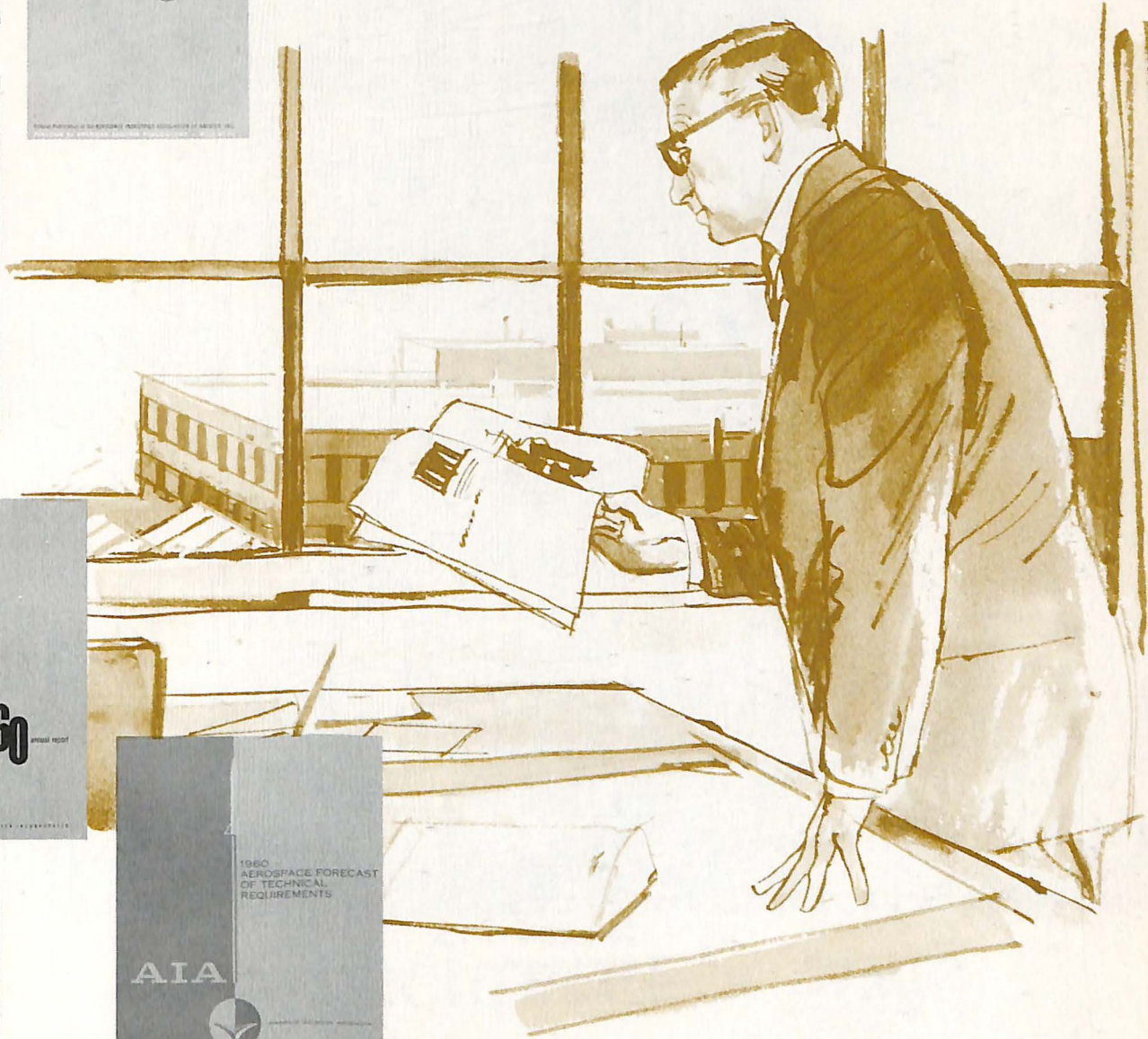
Close liaison is maintained with aviation educators in Government agencies, technical societies, and trade associations, so that requests for subject matter not available from AIA can be referred to the proper sources.

Staff has made presentations to students in plant area high schools and national and state aviation education workshops, outlining careers in the aerospace industry.

Cooperation With Other Organizations

The Association's public relations operations continue to increase cooperative activities with other organizations whose aims are in consonance with those of this Association.

For example, staff has worked closely with the Air Transport Association and the Airline Pilots Association in furtherance of the aims and objectives of the National Aircraft Noise Abatement Council. This organization is concerned with seeking broader public understanding of noise associated with commercial aircraft operations. NANAC, at the same time, acts as a repository for the exchange of industry information on noise problems and control measures in aerospace noise reduction programs.





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Corporation
Chairman, Aircraft
Technical Committee



BURT C. MONESMITH
Lockheed Aircraft
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Chairman, Manufacturing
Committee



IRVING KALIKOW
General Electric Company
Chairman, Accessory and
Equipment Technical
Committee



FRANK L. DOBBINS
The Boeing Company
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Procurement Committee



N. V. PETROU
Westinghouse Electric
Corporation
Chairman, Electronic
Equipment Technical
Committee



B. A. SCHMICKRATH
United Aircraft Corporation
Chairman, Propulsion
Technical Committee



SELDEN A. CONVERSE
Grumman Aircraft
Engineering Corporation
Chairman, Flight
Operations Committee



HARVEY C. CHRISTEN
Lockheed Aircraft
Corporation
Chairman, Quality Control
Committee

AIRCRAFT TECHNICAL COMMITTEE

- Aerospace Research & Testing Comm.
- Dynamics & Aeroelasticity Research
- Fatigue Research
- Flight Test Telemetry
- Airworthiness Requirements Comm.
- Helicopter
- Personal Aircraft
- Transport
- Powerplant Installation
- Engineering Contract Requirements Comm.
- Drafting
- National Aerospace Standards Comm.

ACCESSORY & EQUIPMENT TECHNICAL COMMITTEE

- Administrative Engineering Comm.
- Company Specifications
- Drafting for Numerical Control Machines
- Drafting Practices
- Microfilm
- Proprietary Rights

ELECTRONIC EQUIPMENT TECHNICAL COMMITTEE

- Electronic Parts Committee
- Connectors
- Electron Tubes
- Gyros
- Relays
- Semiconductor Devices
- Wire
- Electronic Equipment Specifications Comm.
- Radio Noise Interference
- Drafting
- Reliability

FLIGHT OPERATIONS COMMITTEE

MANUFACTURING COMMITTEE

- Aerospace Manufacturing Engineering Comm.
- Numerical Panel
- Manufacturing Conservation Comm.
- Manufacturing Equipment Comm.
- Manufacturing Test Equipment Comm.
- Preservation & Packaging Comm.

MATERIALS PROCUREMENT COMMITTEE

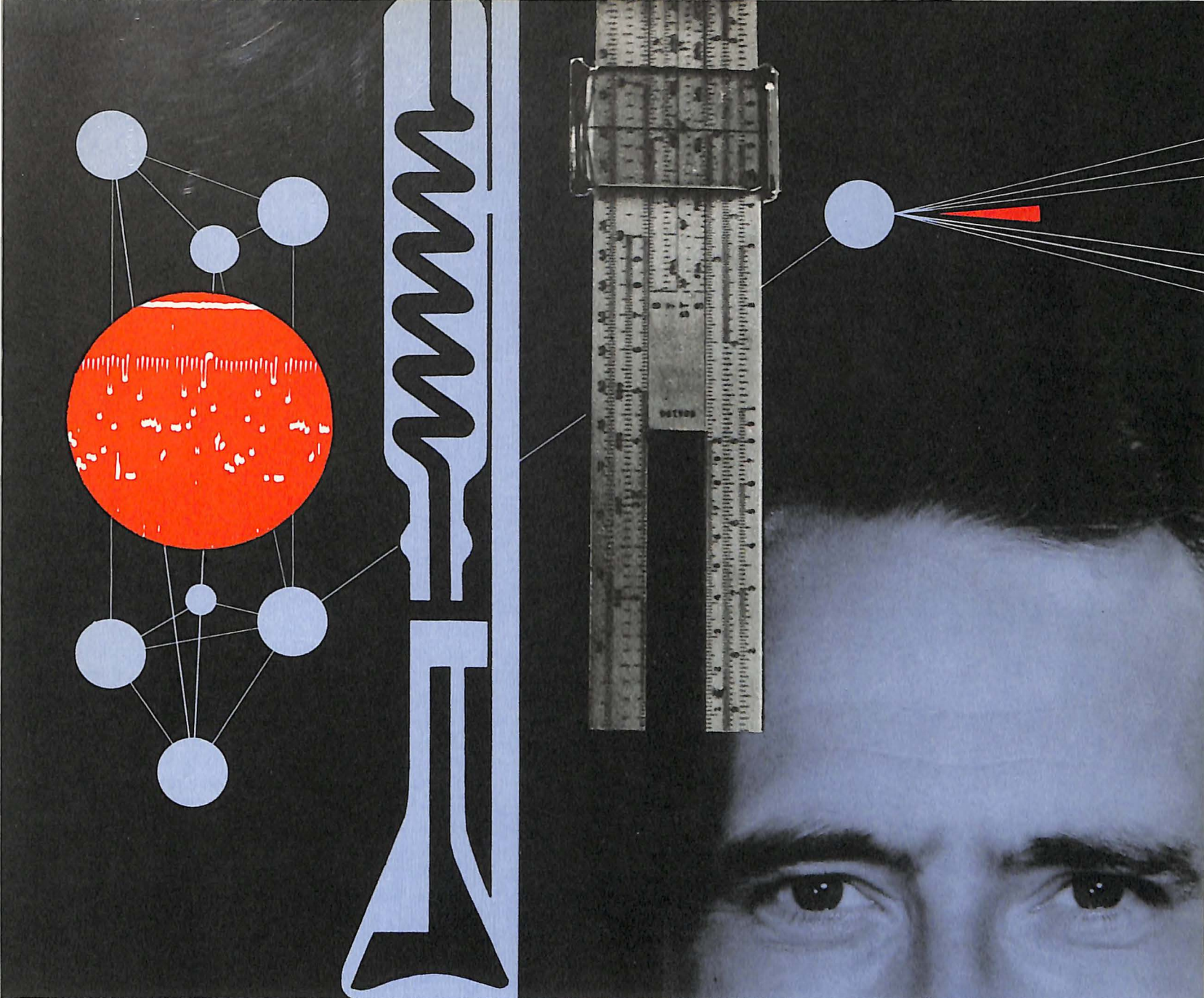
- Economics
- Government Regulations
- Inter-Committee Relations
- Materials Management

PROPULSION TECHNICAL COMMITTEE

- Engine Committee
- Powerplant Airworthiness
- Turbine & Jet Engine Requirements
- Propeller Committee
- Rocket Committee
- Liquid Propellant Division
- Accessory Components
- Propellants
- Solid Propellant Division
- Drafting
- Reliability

QUALITY CONTROL COMMITTEE

- Measurement Standards & Calibration
- Reliability Functions

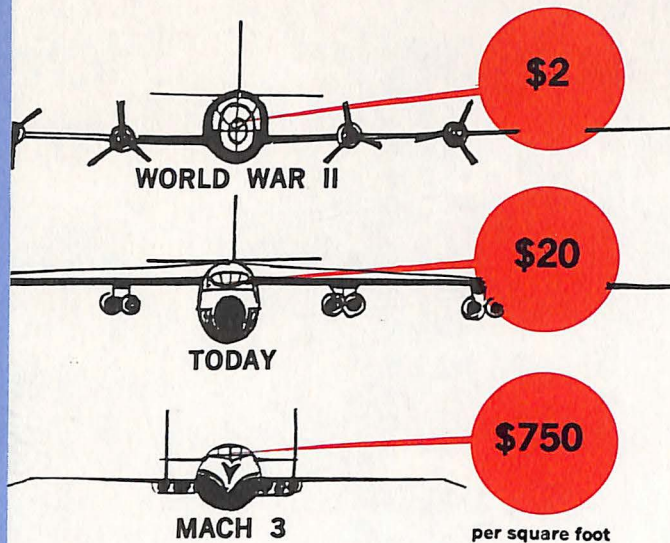


Technical Service

The Technical Service encompasses those Association committees and activities which involve the engineering, manufacturing, procurement, quality control and flight test functions of the industry. Through meetings and project activity the programs of this Service serve the technical interests of both the member companies and those agencies of the Government having responsibilities in the aerospace field.

Aircraft Technical Committee

The Aircraft Technical Committee is composed of principal engineering executives from member com-



Costs of modern weapon systems have increased greatly due to the requirement for more sophisticated parts to accomplish their missions. For example, the plexiglass windows on a World War II bomber cost \$2 per square foot; today's double-layered windows with internal heating units cost \$20 per square foot; and the glass-plus-heater windows of a Mach 3 airplane will cost \$750 per square foot—an overall price increase of 75 times in 15 years.

panies engaged in the design and production of aircraft.

During the past year, although the Committee held no formal meetings it supplied NASA with recommendations for priorities on supersonic transport research and development studies, determined financial support for technical activities, and with other committees participated in studies on engineering data requirements, improvement of specifications, and organization of this Service.

The ATC also provides policy direction of its working committee programs through the Aerospace Research and Testing Committee, Airworthiness Requirements Committee, Engineering Contract Requirements Committee, and the National Aerospace Standards Committee.

Aerospace Research and Testing Committee

The development of research and weapons systems for man's entry into space, requiring the application of entirely new technologies, forms the dominant theme of the cooperative efforts of the forty company representatives on the Aerospace Research and Testing Committee.

Illustrative of the breadth of ARTC activities are three current panels in the following specialized subject areas: Dynamics and Aeroelasticity Research, Fatigue Research, and Flight Test Telemetry and Associated Data Handling Systems.

Each of these panels has a number of active assignments to carry out, ranging from improved design

criteria for aerospace vehicles, to the development of new standards for time coding of telemetry data, which is now obligatory on all flight ranges.

Twenty-three ARTC projects were completed the past twelve months, and twenty-six more currently are in various stages of accomplishment. Assignments have ranged from standardization of test procedures to cooperative product evaluation studies. Increasing emphasis is being placed on the long-range projection of technological environments and the attendant requirements for materials, systems and capabilities to meet the demands of our changing industry product picture. Outstanding of the work in this field is the AIA Forecast of Technical Requirements. This study, prepared as advice to military agencies and associated industry, now is issued biennially. Together with the several other AIA technical committees which regularly contribute to the Forecast, ARTC now is engaged in the preparation of material for the 1962 report, to be issued in September of next year.

A predominant factor in the development of advanced systems is the requirement for extensive testing, both of a basic and applied nature. With the advent of true space vehicles, simulation of the environments of space is an essential but costly undertaking. In order that the national capacity for such testing may be compared with the requirements of pending programs and may be assured maximum application, a comprehensive summary of space simulation facilities in this country has just been completed. This report, the only one of its kind in recent years, already is seeing substantial reference usage by Government agencies charged with the analysis of the Nation's experimental capabilities. At the same time, it is providing to aerospace companies information on facilities which may be engaged for sub-contract testing, thus saving duplication of expensive equipment.

The ARTC, on many occasions, is called upon to provide comments and opinion in assistance to such agencies as the Department of Defense, the Air Force Systems Command, the Bureau of Weapons, the National Academy of Sciences, etc. During the past year, the Committee has been of service to these agencies in the accumulation of aerospace industry recommendations through twelve major surveys and investigations, the results of which are of direct use to contributing members as well as to the Government agencies requesting the advice.

These are but a few examples of how ARTC's work promotes more efficient defense programming and production. Daily, the Committee members and the specialists contributing to the various projects, are studying present and anticipated problems. The results of this work are a valuable contribution to the Nation's aerospace industry.

Airworthiness Requirements Committee

The Airworthiness Requirements Committee is composed of engineering representatives from those airframe

manufacturers concerned with the civil certification of aircraft and rotorcraft. The Committee represents the industry with the Federal Aviation Agency in all certification and airworthiness matters. It initiates proposals for the revision of Civil Air Regulations and related policies and procedures where they concern airworthiness and certification, and similarly establishes the industry position when such changes are proposed by the FAA. Since there is such a wide divergence of interests among the various aircraft and rotorcraft manufacturers, the Airworthiness Requirements Committee has been divided into three groups—Transports, Personal Aircraft, and Helicopters. In effect, there are three Airworthiness Requirements Committees, at least insofar as technical matters are concerned.

During the past year the Airworthiness Requirements Committee reviewed FAA's final proposals relative to the last airworthiness review, and after a series of AIA meetings (Transport, Personal Aircraft, and Helicopter), our AIA recommendations were sent to the FAA and subsequently discussed with officials of the Agency.

Numerous individual proposals initiated by the manufacturers and FAA were also discussed with the Agency,

and some of these have been accepted, such as the one engine out rating for turbine powered helicopters.

Also of particular interest are AIA's airworthiness proposals for Part 3 (Personal Aircraft) Turbine Powered Aircraft. These have been submitted to FAA as a substitute for those originally proposed by the Agency and further discussions will take place before requirements are established by FAA.

Of current importance is an FAA/industry project to improve on the present performance regulations for jet transports and to arrive at more realistic testing requirements for them. A week-long meeting with the FAA, Air Transport Association and AIA was recently concluded on this subject, and further conferences are scheduled.

The initial FAA/industry supersonic transport airworthiness meeting will be held this winter. We are interested in assuring that the FAA does not adopt airworthiness standards for the SST prematurely. A carefully thought out program should first be established which would provide for the promulgation of airworthiness standards on a realistic basis.

In addition, the orderly certification of subsonic jet transports, helicopter transports and personal aircraft jets will be the major task of ARC.

Engineering Contract Requirements Committee

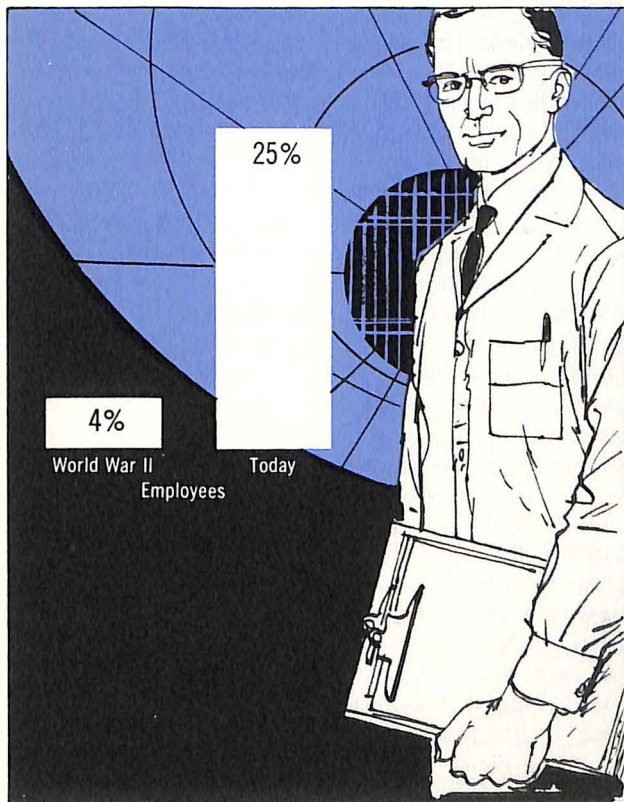
The purpose of the committee is to provide an active technical group representing the aircraft and missile manufacturers in the coordination, formulation, and revision of engineering contract requirements. During 1961 the committee participated in the review of MIL-R-27542 "Reliability Requirements for Aerospace Systems and Subsystems," and led the coordination efforts with the Air Force to obtain its release. This document supersedes MIL-R-26674, MIL-R-25717, and AFBM 58-10—all specifications on the same subject. Effort is continuing to consolidate other reliability requirements and reduce the number of specifications on reliability released by the Air Force. In addition, contact with the Navy is being maintained in an attempt to have the reliability requirements of the two Services compatible.

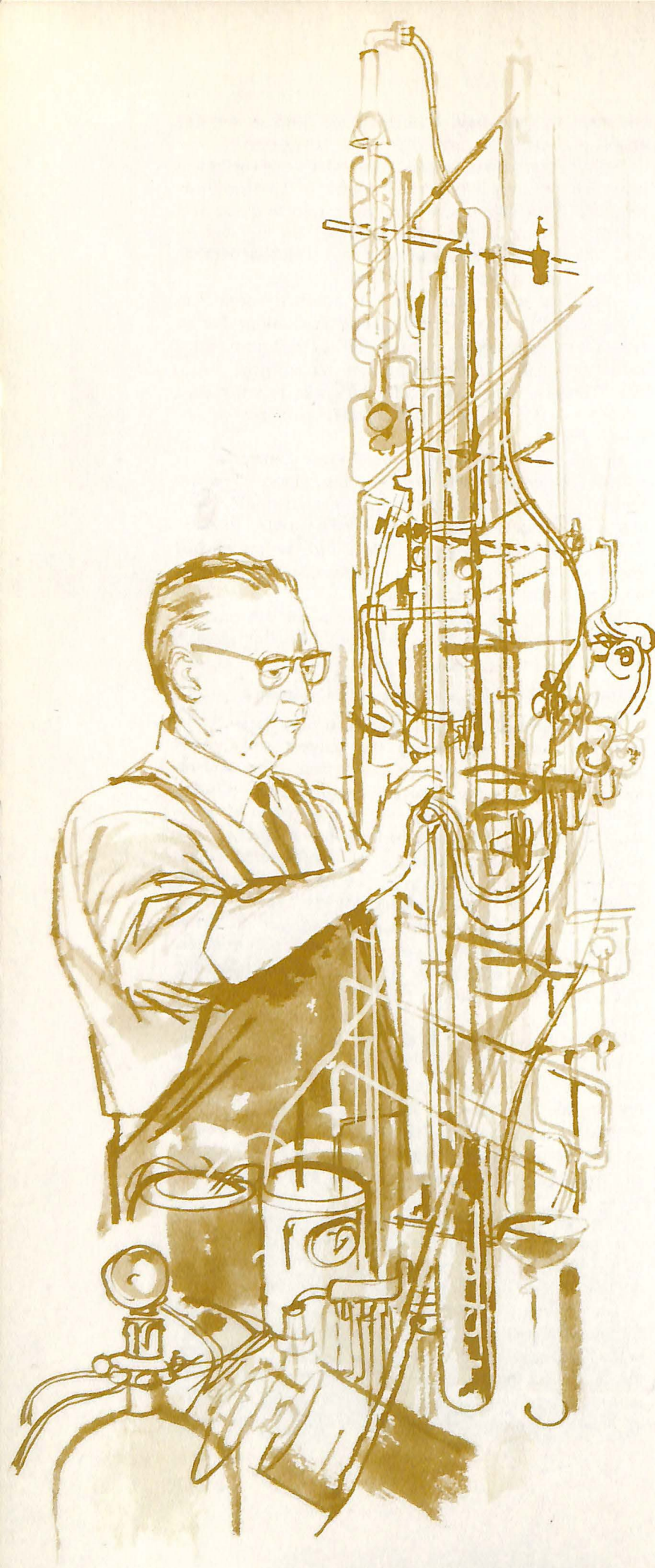
In the general area of technical specifications, the committee is assisting the Navy Bureau of Naval Weapons in its Specification Review Program, to delete unrealistic technical requirements, to remove obsolete specifications and to develop means whereby BuWeps can more effectively utilize industrial association standards.

The Air Force weapon system specifications which were coordinated late in 1959 are undergoing a revision. It has been necessary again to sponsor review of the documents and establish an industry position.

The committee is currently reviewing contract clauses for the implementation of engineering qualification approval procedures, value engineering effort, and requirements for test data in accordance with the inter-Service data exchange program and constantly strives to reduce or limit the amount of unnecessary data requirements

A major aerospace company today has 19,000 employees in engineering and technical departments—about 25 per cent of the total employment. At the peak of employment during World War II, engineering and technical employees accounted for less than 4 per cent of the total. The aerospace industry is in the forefront of today's great technological advance.





appearing in specifications.

The ECRC is supported by a drafting panel with 48 representatives. This drafting panel reviews and coordinates recommendations with the AIA Joint Drafting Panel for submittal to the Armed Forces Supply Support Center on the 62 active projects within the Drafting Practices Standardization Program of AFSSC.

The ECRC will continue to take an active part in the joint industry/Government effort toward the refinement of Government procurement documents to minimize the expenditure of administrative defense dollars.

National Aerospace Standards Committee

The National Aerospace Standards Committee represents the aircraft and missile manufacturers for the study of mutual standardization problems of aircraft and missile parts, components, materials and processes, and related standards, specifications and other documents. The findings of such studies are implemented by adoption and promulgation of appropriate industry standards, promotion of their use consistent with improved design, and advising cognizant Government agencies or other activities of airframe and missile views in this area of study when deemed advisable or at the request of such agencies.

Recognizing the need for closer Service-industry association in developing and maintaining an adequate Defense Standardization Program, the Department of Defense, at the invitation of the NASC, established liaison representatives in each Service activity sharing standardization interest with the NASC. Thus, in the introduction of standards, more direct channels are established for the flow of information.

In the twenty years this Committee has existed, 760 standards and specifications have been generated. Each of these standards at the time of issue had approval and usage by the companies represented in the NASC. There has been no flight vehicle in the U. S. inventory since World War II which has not included a considerable number of NAS standard parts. The current three volume 1785-page set of National Aerospace Standards, having both military and commercial application, is published and distributed for AIA by National Standards Association to about 800 companies and individuals.

Much standardization work has been done during the year through projects in the fastener field and other hardware, where higher design requirements are obsoleting current products and it is essential that new ones be standardized. There are 127 projects now in process which will lead to the release of new standards and updating of existing standards.

The NASC standardization activities have been largely integrated with corresponding activities of the Army, Navy, Air Force and National Aeronautics and Space Administration. In the Government's unification program, however, there has been a gradual absorption of aeronautical standards and specifications into the much broader military series, where the preponderance of interest is non-aeronautical. Aerospace quality is no

longer the prime factor in the MIL standards and specifications and it is becoming increasingly necessary for industry to request deviations from the MIL series to meet its needs. The NASC conducts their accelerated standardization efforts to support the rapid technological advancement of new materials and products to support present and future space vehicle needs.

During the past year, at the request of the military services, approximately 125 proposed specifications, directives, regulations and policies regarding standardization were reviewed by the NASC prior to their release.

Accessory & Equipment Technical Committee

This Committee is composed of one member from each of twenty-five AIA companies who are manufacturers of accessories and equipment for aerospace systems. These include systems for aircraft, guided missiles, and space vehicles, except those predominantly electronic in nature. Individual members are generally at the engineering managerial level and represent the management views of their companies on technical matters. A major element of the AETC is its Administrative Engineering (Working) Committee, which concerns itself primarily with engineering contract requirements.

During 1961, a considerable portion of the committees' effort was in joint action with other AIA committees in presenting AIA views and recommendations on specifications and standards—those proposed by either the military or industry, and in recommending changes and improvements in existing documents.

Effort was devoted toward improving the understanding between accessory and equipment companies and the Air Force of the interpretations of MCP 71-77, "Engineering Data Requirements for Materiel and Services (USAF)." Several meetings were held with Air Force personnel on this matter. Additional attention on this subject was given via joint action with other AIA committees. Similar conferences were initiated with Navy representatives concerning comparable documents.

Following up on a suggestion from the Air Force, that Service was advised of the consolidated views of the accessory and equipment companies on five sub-areas in USAF procurement philosophies and practices where improvements might be effected. These sub-areas are: (1) Drastic Reduction or Elimination of Unnecessary Data; (2) Specification Communications: (a) Availability, (b) Unification of Military and Industry Standards, and (c) Overspecification of Requirements; (3) Simplification of Federal Item Identification Program; (4) Proprietary Rights; and (5) Reduction of Proposal Effort Requirements.

Some attention was given to the problem of what changes in drafting procedures might be indicated when the use of numerically controlled machines for manufacturing becomes more prevalent. Preliminary studies indicate that one outstanding consideration for the preparation of numerically controlled tapes is the complete usage of the decimalized inch.

The imposition of contractor-oriented manufacturing,

process and design specifications on subcontractors was investigated in order to alleviate the necessity for subcontractors to use the prime contractor's specifications when Government or industry specifications, or the equivalent vendor specifications, are available. The results of this study were made available to all AIA companies.

Electronic Equipment Technical Committee

Electronic engineering executives of twenty-eight AIA member companies constitute the Electronic Equipment Technical Committee, which provides electronic technical support to over-all AIA goals and objectives, and coordinates industry-wide problems confronting electronic systems engineering management.

AIA electronic efforts were initiated about ten years ago and remain unique in reflecting defense electronic systems manufacturers' views. In technical matters related to electronic components, AIA committees speak solely from the position of a using industry. Thus they are distinctive rather than duplicative of other association's efforts.

EETC meeting discussions have sought solutions to such problems as minimizing costs for engineering documentation, reducing cost of engineering efforts in technical proposals and timely introduction of solid state circuits and microelectronics into military systems.

EETC visits of military installations to observe military field usage of electronic systems included: NASA Jet Propulsion Lab and Goldstone Facilities, atomic submarine USS Seawolf, Polaris field ballistic missile trainer facility, and Navy Underwater Sound Lab. Presentations by Government and industry specialists provided valuable information on application of PERT to subsystems and equipment; use of mechanized design techniques; Polaris weapon system and NASA lunar and planetary programs.

In cooperation with other main technical committees, the EETC has participated in policy studies, requested by Secretary of Defense, on elimination of unnecessary engineering data requirements and how to improve specifications.

The Committee participated in discussions on Technical Service organization, and assisted in direction and coordination of engineering matters of concern to other main technical committees, including engineering documentation; weapon systems specifications; reliability; maintainability and environmental requirements.

EETC also provides policy direction of its working committees, which coordinate present and future engineering requirements related to manufacture and integration of electronic equipment and systems in aircraft, missiles, spacecraft and their associated ground checkout, control and detection systems.

EETC working committees provide coordinated recommendations on needed changes in procurement specifications, test procedures, and environmental and reliability requirements, and serve as a valuable link in the coordination channel between military, weapon system

primes, electronic systems contractors, and component manufacturers. Engineering requirements have, in ten years, progressed through increased severity of military requirements for supersonic aircraft, missiles and spacecraft. Although electronic systems have now surpassed most other systems in reliability, there is a continuing need for diligence if industry is to meet tomorrow's aerospace electronic needs at reasonable cost and on time.

Electronic Equipment Specification Committee

The Electronic Equipment Specification Committee is composed of twenty-five members representing major companies engaged in the design, development and production of electronic equipment. The Committee's scope includes all general specifications for electronic equipment design, reliability and engineering documentation.

At the request of the military, the Committee participates in joint military-industry periodic revision of technical requirements to reflect latest technical knowledge. This results in military procurement of better products in less time and at a reduced cost over that required if deviation negotiations to obsolete specifications are necessary.

The first phase of a program to unify common design requirements of the three services has produced in EESC proposed unified military requirements in design areas including electrical overload protection, soldering techniques and methods, interchangeability, bearings, and weldings. As each unified requirement is accepted by the military, it will be issued in a looseleaf Military Standard, for reference in the general specifications and the present scattered coverage will be deleted. The 1200 referenced specifications will be reduced by 50 per cent or more through this unification of requirements, under sponsorship of the Armed Forces Supply Support Center with support of all three military services, other associations and EESC. The magnitude of this effort is evidenced by more than one hundred design parameters covered independently in the twelve general specifications of the three military services and the 1200 documents referenced therein.

EESC also continues to participate in annual Aeronautical Standards Group meetings for coordination, improvement and unification of BuWeps and Air Force specifications on general design of airborne electronic systems, related test equipment, and environmental requirements. For the past eight years this program has been an outstanding example of military-industry teamwork to keep these specifications up-to-date and usable with a minimum of effort and cost.

The Committee has a panel and representation on the Joint Drafting Panel for coordination of engineering documentation. The Radio Interference Panel has reviewed MIL-I-6181 "Interference Control Requirements," and plans to review other related documents. The High Potential and Megger Testing Panel is developing a proposal for a standardized test procedure.

In addition to these continuing projects, the Commit-

tee has reviewed individual specifications at the request of the military services, including reliability (AF) and (BuShips); general specification for ground electronic equipment (AF); missile electrical connections (Army Ord); modules (BuWeps); general specification for Naval ship and shore electronic equipment (BuShips).

Currently, the Committee has active projects reviewing specifications in the fields of printed circuitry, wire color coding and identification, electronic modules, and antenna systems. The Committee also maintains surveillance over thirty general specifications which affect the design and production of electronic equipment.

Electronic Parts Committee

The Electronic Parts Committee is composed of representatives of twenty-five major electronic systems manufacturers. The Committee has a continuing program to provide military services and parts manufacturers with information on improved and new parts requirements for advance systems.

The Committee also provides direction of its subordinate panels and projects on semiconductor devices, microelectronics, gyros, relays, connectors, wire and electron tubes. Through these subordinate activities, the EPC assists the Government in updating requirements for maximum quality at a reasonable cost. The Committee is continuing to assist in implementation of DOD recommendations for a specification management system capable of providing up-to-date engineering and procurement data for reliable electronic parts, including a means for the military to collect and disseminate test data.

The Committee is studying what attributes of microelectronics need to be standardized and the timing of such need. EPC has recommended military control of material finish and tolerances on component leads to insure compatibility with both soldering and welding assembly methods. The Committee has prepared coordinated views of system manufacturers on semiconductor device design for guidance of both the military and device manufacturers; assisted the military in revising semiconductor devices preferred parts list and improved specifications for parts listed thereon.

Electron tube activity has been shifted to system manufacturers' needs for traveling wave, hydrogen thyratron, gas diodes, and other tubes not expected to be replaced by semiconductors in airborne and associated ground equipment in the next five years.

The Gyro Panel has issued technical reports on standard gyro terminology, test instructions for rate and integrated gyros, and is defining additional tasks to be undertaken.

The Connector Panel is preparing a recommendation for uniform connector requirements for equipment procured by all three military services.

The EPC program is aimed at cooperation with the military and parts manufacturers in defining future needs and preparation of engineering documentation for parts required in advanced systems.

Flight Operations Committee

The Flight Operations Committee 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. It is composed of the chief test pilots or directors of operations for thirty-three manufacturing companies.

Prior to establishment of FOC the manufacturers were virtually completely responsible in the event of a collision with another aircraft, regardless of who may have been at fault. Based on FOC efforts and recommendations of AIA to the FAA, this situation no longer exists.

During the past two 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 manner possible. For example, prior to implementing positive control in the Chicago-Indianapolis area, FAA advised AIA of their plans well enough in advance to work out (through AIA) special arrangements for the flight testing of North American (Columbus) aircraft. After a year of operations under these special arrangements, both FAA and North American seem completely satisfied.

During the past year the Flight Operations Committee has continued in its efforts to reduce the collision potential between flight test aircraft and other airspace users in many other ways. At AIA's suggestion, an FAA/ATA/AIA team visited "critical" areas, meeting with local counterparts in their respective organizations, to devise new operating procedures which would reduce the collision possibility between flight test and air carrier aircraft. These procedures will now be expanded to include other airspace users.

Noise abatement has been one of the Committee's projects during the past year and a half, and certain of the Committee's members have participated in technical committee meetings of the National Aircraft Noise Abatement Council.

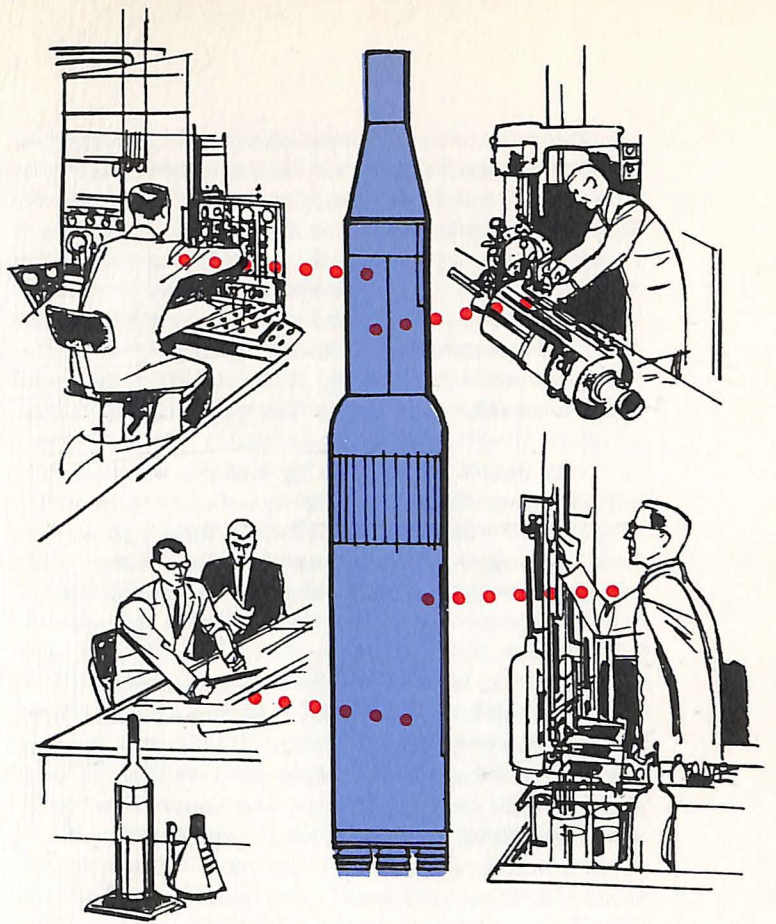
Flight testing is a completely unique type of operation and not generally understood by other aviation authorities. Hence, the FAA/AIA daily relationship through the staff, has on numerous occasions averted implementing regulations or procedures which would have completely halted flight testing in some instances and added appreciably to their cost in others.

Manufacturing Committee

Directing the efforts of its working committees, this is a main committee of the production executives from manufacturing member companies.

The major portion of this past year's work has been Automatically Programmed Tooling (APT) and transition of the aerospace program to a broader industry base. The Committee decided to place the APT program with Armour Research Foundation. A smooth transition from the Association to ARF is anticipated.

The Committee through the next year will continue its efforts to insure a manufacturing capability pacing the state-of-the-art in the aerospace field.



The technological demands of space exploration require that the aerospace industry utilize numerous different technical specialties, ranging from acousticians to thermodynamicists. Many of the specialties did not exist a few years ago. One major component company employs 49 different categories of research and development specialists. Multiplying this by the thousands of companies engaged in aircraft, missile and space projects furnishes an idea of the wide scope of technological effort in the industry.

Aerospace Manufacturing Engineering Committee

Now comprised of 43 members, the Aerospace Manufacturing Engineering Committee has been energetically engaged in implementing its broadened scope in the field of manufacturing research and development. The AMEC is now engaged in working-level operations relative to efficient and effective research and development, application and implementation of manufacturing methods, processes, tools, techniques and operational systems in use, planned and anticipated future requirements of the aerospace industry. During the year, six projects were completed and ten new projects initiated. Added to five carry-over studies, a total of 15 projects are presently being implemented with activity primarily directed toward improvement of the state-of-the-art, cooperative effort with other agencies and professional societies, coordination with governmental agencies on controversial items and improvement in numerical control techniques.

One of the more significant accomplishments has been fostering exchange among member companies of non-

proprietary information in improvement of existing or advanced manufacturing and tooling methods and procedures. Culmination of a study early in 1961 in the field of electronics manufacturing resulted in eight new projects directed toward state-of-the-art improvement in the manufacture of such items as circuit boards, connectors, wire handling, and assembly methods. The AMEC has established a system of liaison with other AIA committees, including ARTC, EESC, JDP and NASC to minimize project overlapping and duplication of effort.

"Work shop" sessions during business meetings provide for discussion of specific manufacturing problems of mutual interest. Significant benefits have been derived from this method of information interchange, with resultant savings realized through the elimination of duplicated effort on similar, industry-wide manufacturing problems.

Close liaison with other organizations has provided an effective vehicle for review of proposed new standards and revisions to existing documents. Both users and suppliers have benefited by minimized catalogs of such items as drills and jig bushings, and the resultant minimum inventories required. One project has been established on common industry-wide metal removal problems, soliciting assistance from sources outside the industry.

AMEC has received documentation on military appraisals of product and manufacturing development needs during the next 15 years through its liaison with the Materials Advisory Board of the National Academy of Sciences. Such documentation enhances the industry's position in determining how best to allocate corporate funding for manufacturing research and development to develop techniques that will be required in the foreseeable future. This type of liaison can materially reduce the possibility of tangential costly effort predicated on less knowledgeable direction. Liaison has also been maintained with DOD and military agencies, especially on Government specifications and procurement instructions affecting manufacturing research and development. The AMEC, in conjunction with the National Aerospace Standards Committee and Joint Drafting Panel, successfully negotiated revision of proposed specifications for undimensioned drawings mutually acceptable to customer and contractor.

Considerable effort has been concentrated in administration of the Numerical Panel's activities. During 1961 members from the AMEC and NP worked jointly in development of the APT long-range program, which was culminated in September with the establishment of Armour Research Foundation as the APT long range contractor. For the remainder of 1961 and 1962 both organizations will play major roles in accomplishing a smooth transition of APT from the AIA program to the APT long range contractor.

Goals and objectives for 1962 include advancement of the state-of-the-art of circuit board drilling, developing optimum methods of selecting parts for machining

on numerically controlled equipment, further standardization of purchased solderless connectors, aid in accomplishing the transfer of the APT program to Armour Research Foundation, and searching out impending Government specifications and arranging coordination to avoid unnecessary manufacturing costs.

Numerical Panel

Reorganized in November of 1960 to operate under the Aerospace Manufacturing Engineering Committee, the Numerical Panel has concentrated over the past ten months in the following areas of numerical control: (1) New areas of technology and application, (2) Promoting efficiency and reduced costs, (3) Development of standards and operating compatibility, and coordination with other trade associations and professional societies.

Carrying forward the AIA's five-year old program in numerical control technology for manufacturing, the application of numerical control to drilling, welding, riveting, tooling, and milling are being investigated. Related studies also include evaluating applications of numerical control to lofting and drafting. Providing support to several AMEC projects, under analysis are applications of numerical control in the field of electronics manufacturing. Projects on criteria for optimum selection of parts and tools to be machined by numerical control, tooling and fixture problems associated with continuous path machines and point-to-point machines will be documented in the form of handbooks, which should find wide use throughout industry.

Industry standards are directly related to the use and performance of numerical controls, machines, methods and processes. Typical is NAS943 perforated tape standards for numerically controlled equipment. This standard has resulted in a significant reduction in the diverse and multiple perforated tapes and tape preparation equipment marketed by systems manufacturers. The preparation of the newer magnetic tape control standards is presently being cooperatively developed among these organizations. NAS938, Machine Axis Nomenclature, is being re-examined to determine if state-of-the-art changes are required. Use of this standard has greatly simplified understanding of machine configurations, characteristics, and performance capabilities by user and manufacturer alike.

A study, possible culminating in an NAS specification, is pointed at reducing the \$50,000 to \$60,000 tooling inventory now required for each NC machine tool of one widely accepted type made by different manufacturers. This specification, if achieved, will serve to insure future savings of even greater magnitude by furthering the industry-wide goal of tooling interchangeability.

Coordination with other associations has provided the vehicle for exchange of technical viewpoints and compatible standards. From these efforts have come axis nomenclature standards and greatly improved compatibility for numerical control systems, including Bendix, Dynapath, General Electric, Mark Century, and

Thompson Ramo Wooldridge "third generation" controls.

The Numerical Panel has continued to function as a vehicle of communication with cognizant military agencies in all facets of the numerical control field. Appraisal of the requirements for research and development in numerical control manufacturing has resulted in continued funding by the Air Force of numerical control hardware and research in advanced system for NC data processing.

Perhaps the most important activity of the NP has been the conduct of the APT III project, a general purpose data processing system which links design requirements to manufacturing, which has operated over the past year in a centralized mode at San Diego, California. In December of 1961, 21 participating corporations will receive complete APT III computer programs and documentation, including a five-day indoctrination symposium, to be conducted for representatives of participating organizations. The APT III system will contain many improvements over earlier system releases, which will result in a significant reduction of part and computer programming costs. The APT project will also play a significant part in implementing the transfer of the APT long range program to Armour Research Foundation.

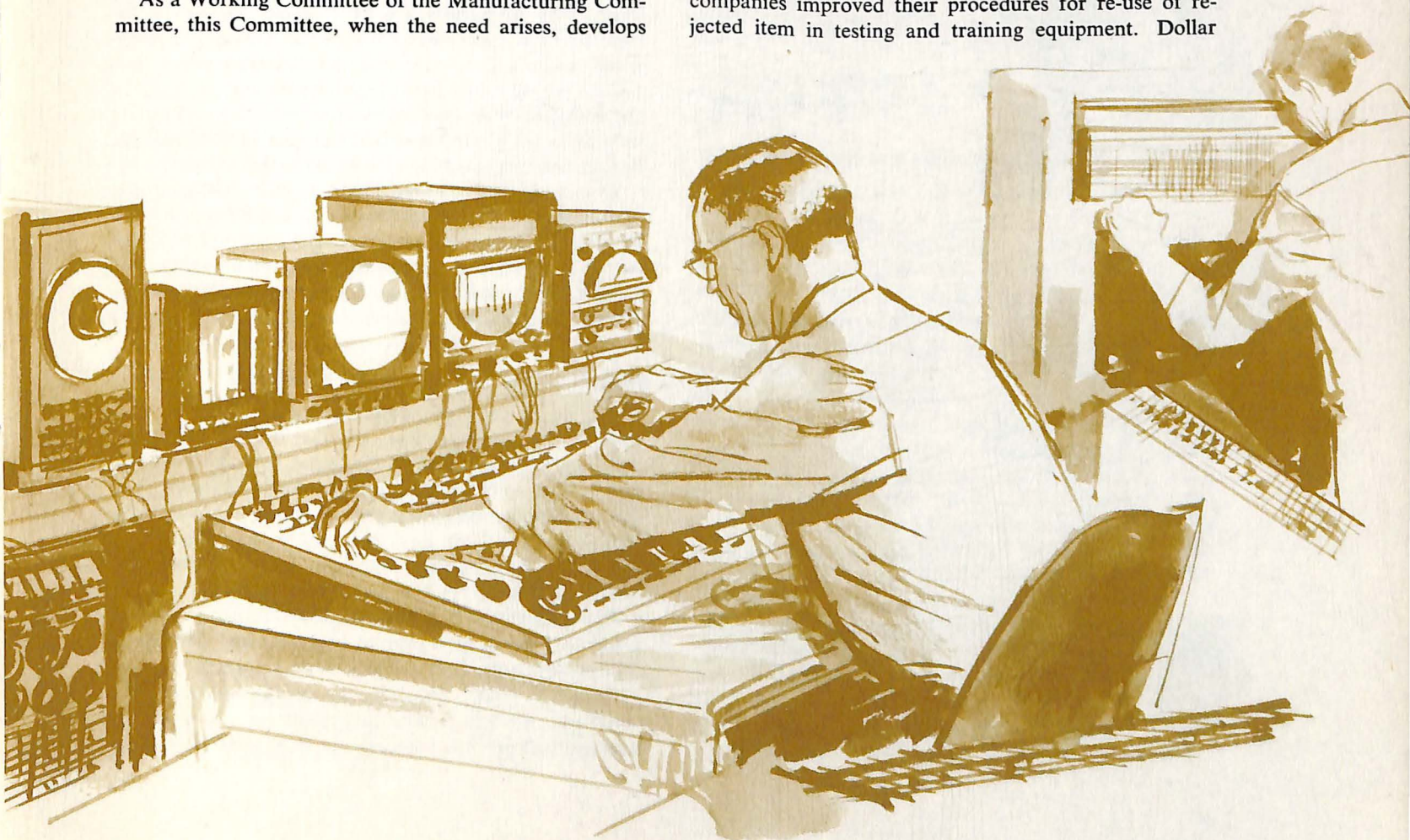
Manufacturing Conservation Committee

As a Working Committee of the Manufacturing Committee, this Committee, when the need arises, develops

industry opinion and recommendations concerning the contract requirements of the military services on the economic utilization and handling of the materiel elements of production and production support. Further, its members originate and interchange information on proven conservation practices for the overall improvement of the conservation programs of the companies they represent. Conservation coordinators of forty member companies make up the Committee.

The fact that no significant changes were made in the regulations on conservation, or the reports required, indicates that the military services are satisfied with the effectiveness of the conservation programs of member companies. Hence, no Committee work in this area of responsibility was needed. The Committee, therefore, intensified its activity in the exchange of information to obtain even further effectiveness. Maximum participation was obtained in the two continuing activities for such interchange: (1) "Handouts" (descriptions of profitable conservation practices) distributed at each semi-annual meeting, and (2) Distribution of replies to specific "requests for information" in the interim between meetings.

Specific projects highlighted new conservation areas. Information from a project on methods to reduce peak-loads and power factors in the consumption of electricity enabled one company to save an estimated \$18,000 in a six-month period. As a result of another project, two companies improved their procedures for re-use of rejected item in testing and training equipment. Dollar



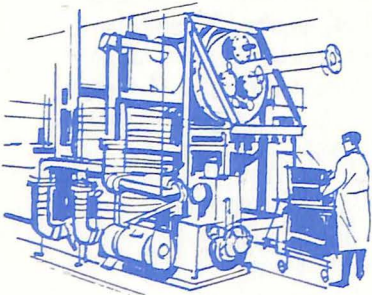
value of items re-used increased two-fold in less than six months.

The Committee believes that the current increases in production of defense equipment will cause both the military services and the contracting companies to place even greater emphasis on conservation of scarce and costly materials. Accordingly, the Committee through the next year will continue to search for more and better ways to discharge its responsibility for conservation.

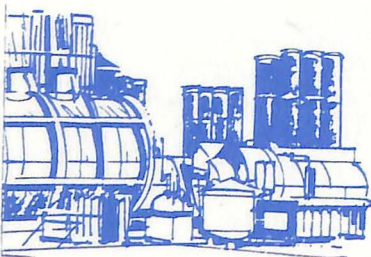
Manufacturing Equipment Committee

Implementing its broadened scope, the past year has been one of intensified activity for the Manufacturing Equipment Committee in the investigation, definition, resolution and coordination of mutual non-competitive problems concerned with fabricating, processing and allied facilities affecting aerospace manufacturing technology. Its 38 members representing aircraft, missile, accessory and equipment, and powerplant manufacturers, are cooperatively engaged in the execution of 16 projects to define performance requirements for advanced machinery and equipment necessitated by the

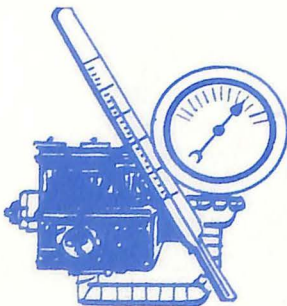
Typical of the aerospace industry's advanced research facilities is a laboratory which can:



- Simulate altitudes up to nearly 200 miles.



- Test rocket propulsion nozzles over a thrust range of 100 to 25,000 pounds.



- Provide temperatures of 1500 degrees Fahrenheit and a flow rate of 25 gallons per minute in a liquid metal "loop."

rapidly changing state-of-the-art. These projects will result in standards for advanced equipments including fusion and resistance welding, automatic inspection, cutter grinders, shear forming, electrical discharge or electrochemical metal removal, circuit board fabrication and assembly, ultrasonic cleaning and power shearing. Also included will be specifications for numerical control systems utilized on equipment for lofting, thin wall tube bending and horizontal and vertical boring mills.

To insure promulgation of usable and attainable standards which will result in uniform equipment, reduced lead time and lower acquisition cost, all standards are closely coordinated prior to national publication with affected machinery and equipment manufacturers, military agencies and interested trade associations.

Five study projects are investigating the standardization potential of general welding, material handling, chemical milling, ceramic processing and plating equipments. Four control projects assume a continuing responsibility for uniformity and technical integrity of specifications, including standard format, cutting tests, alignment and tolerance tests and numerical control systems provisions.

Typical of the NAS standards published during the year was the revised NAS909 for knee and bend type milling machines and the new NAS949 for thin wall tube bending equipment.

Over the past year the Air Force has funded two major equipment R&D contracts recommended by the MEC: one on impact rubber forming equipment for high strength materials, and a second covering development of computer programming techniques, which will permit use of lower cost computers for data processing for numerically controlled machines. Air Force funding of a third MEC-proposed R&D project on high energy impact forming is anticipated in the near future.

During the forthcoming year the MEC will continue to plan and conduct activities which will provide the DOD, military agencies and industry a competent portrayal of aerospace manufacturers' requirements for standardized machine tools, their controls, as well as other manufacturing systems.

Manufacturing Test Equipment Committee

The basic premises, that every manufactured item must be tested and qualified, and that the test equipment must be more precise than the tested item, have caused the test equipment field to grow to major proportions in the complete aerospace system. A number of new techniques, ranging from infra-red analysis to miniaturized electronics, finds representation among the 45 members of the Manufacturing Test Equipment Committee.

The cooperative activities of MTEC encompass the resolution of common current problems and consideration of the impact of technological advances on test equipment. These extremes may be illustrated on the one hand by the recent publication by AIA of an extensive design handbook of test equipment parts and

materials, on the other hand by a new study which will examine the effect of hyperminiaturization on future test equipment design.

Like most AIA committees, MTEC conducts its business largely through project assignments. Seventeen such projects are engaged currently in cooperative studies. Typical are "Calibration Standards for Test Equipment," "Standards for Automatic Test Programming," "Factory Applications for Ground Support Equipment," "Reutilization of Surplussed Commercial Test Equipment," and "Determination of the Effects on Test Equipment of Nuclear Instrumentation." In all these projects the achievement of common standards and exchange of data and experience have resulted in reduced cost of end product check-out.

In a move designed to effect additional economies in the areas of production testing and test equipment, MTEC's field of interest was broadened by the parent Manufacturing Committee to include ground support test equipment, because of the inherent relationship between test equipment used on the factory floor and that designed for field check-out. A project was established with the objective of determining the extent and eliminating duplication of effort in the design and use of ground support equipment and in-plant test equipment.

Preservation and Packaging Committee

Responsive to requests from the Department of Defense and the military services, the Preservation and Packaging Committee gathers from member companies and coordinates into unified recommendations the industry's opinion on specifications and related documents which set the requirements for preservation, packaging, and marking of defense equipment. Further, it serves to facilitate cooperative effort among member companies on common packaging problems. It is composed of sixty-one members representing thirty-four companies. In addition, Committee proceedings are distributed to a mailing of forty-one addressees.

The Committee completed reviews and preparation of recommendations on military specifications and standards for the following: methods of preservation, marking for shipment and storage, preparation for delivery of parts and equipment, elastic type cushioning material, and preparation for delivery of liquid oxygen system components.

In process are reviews of military specifications for packaging of anti-friction bearings, and aluminum skids for loads not exceeding 50,000 lbs. The Committee also has projects active which will solve common problems related to vendor packaging standards, and packaging and handling of "Dangerous Materials."

The Committee is cognizant of the joint effort of the DOD and AIA to make a comprehensive review of the overall specification problem, and of the moves by the DOD to consolidate the procurement of common-use items (the new Defense Supply Agency). It expects new and changed packaging specifications and proce-

dures will emanate from these actions which will come before the Committee for review.

Materials Procurement Committee

Materiel management, subcontracting and procurement are the areas of concern to this Committee, whose membership is comprised of the materiel directors of the AIA member companies.

In the materials management area this year, the Committee concluded an acceptable policy on the subject of procurement documentation between industry and the Air Force; made recommendations whereby the Air Force can make more effective secondary administration of contracts; studied potential use of incentive clauses to encourage value engineering and value analysis programs; surveyed industry practices in small order procurement to find optimum method of handling; and made an organizational study of materiel overhead management costs, which assisted individual companies in evaluating their own performance and cost reduction.

In the Government regulations field, lines of communication were established with small business interests of the Government, with the objective of meeting the intent of Government small business programs aimed at greater participation of small business in defense industry. The Committee also worked with the President's Committee on Equal Opportunity to develop practical ground rules for implementing the Executive Order on Equal Opportunity.

More and more attention is being focused on this Committee, since in its areas of responsibility the membership is responsible for administering more than one half of the prime contractor defense dollar in the aerospace field.

Propulsion Technical Committee

The Propulsion Technical Committee is a Main Committee whose members are executives at the engineering management level of companies engaged in research, development, and production of engines, rockets, or propellers of their own design for the propulsion of aircraft, spacecraft, and guided missiles.

Although comparatively few formal actions have been necessary on the part of the propulsion industry alone, pertinent contributions have been made jointly with those of other main technical committees in the over-all AIA effort directed toward improving Government-industry relationships and the reduction of costs. Of specific benefit to PTC will be a DOD-NASA joint committee studying the present status and future needs of U. S. missile boosters. The need for such a committee had been recognized by PTC and recommendations made for the establishment of such a group.

The PTC has met informally with both military and NASA representatives for information exchange on problem areas. It is expected that detailed activities of the propulsion industry will be delegated to working level groups in the future, emphasizing management policy items for review by this Committee.

Engine Committee

The Engine Committee, a working committee of the Propulsion Technical Committee, is concerned with both civil and military requirements in the design, development, and production of air-breathing engines. Membership on this Committee is generally at the chief engineer's level. The Engine Committee acts in conjunction with the Propeller and Rocket Committees in the development of recommendations applicable to the entire propulsion industry. As time progresses, more of these items appear to be of across-the-board interest, with fewer items being directed specifically at air-breathing engines, rockets, or propellers.

The Engine Committee has reviewed proposed revisions to the military specifications on ram-jet engines and has submitted to the Government coordinated recommendations prepared in conjunction with the airframe propulsion installation specialists. Similarly, the Engine Committee has, at the request of the military services, reviewed specifications applicable to turboshaft and turboprop engines for the purpose of up-dating requirements which have become obsolete. Joint recommendations of the Engine Committee and propulsion installation specialists of the airframe and helicopter manufacturers are expected to be submitted to the Government before the end of the year.

After reviewing AIA recommended revisions to the turbojet engine specifications submitted during 1960, the Government has a counter-proposal, prepared by the Navy and Air Force, for the Engine Committee's consideration. Activity on this project will extend into 1962.

After nearly three years of negotiation with the Federal Aviation Agency, proposed rule-making has been prepared by FAA which will allow extended engine operation at take-off power in multi-engine turbine-powered helicopters. When issued, resulting changes in the Civil Air Regulations will provide necessary relief to the manufacturers and operators of helicopters.

The Engine Committee has commented on the FAA Supersonic Transport Report and will participate in FAA-industry discussions on this subject.

The Engine Committee, in conjunction with the Rocket and Propeller Committees, has provided guidance and direction to certain related committees in the Society of Automotive Engineers, as in the recommendations for the standardization and use of screw threads in the areas of high strength-high temperature applications.

Rocket Committee

Membership on the Rocket Committee, both Liquid and Solid Propellant Divisions, is at the chief engineer's level. Rocket Committee activities have been most productive in the areas of specialist panel activities, both from the standpoint of rockets and across-the-board propulsion.

The Accessory Components Panel has expanded its scope to include radiation and high vacuum effects on components. This is in addition to the preparation and release of components specifications for use by the

rocket industry in providing guidance to components manufacturers.

A task group of representatives from the manufacturers of liquid propellant rockets and guided missile companies met to prepare a revision of the "Handbook for Contamination Control of Liquid Rocket Propulsion Systems." The revision, issued 1 August 1961, supersedes the original issue of 7 March 1960, of which nearly 3,000 copies were distributed. The universal acceptance of this handbook material by both industry and the Government has been very gratifying, and is believed to have been a contribution to cost saving.

The Rocket Committee, through its representation on the PTC Reliability Panel, PTC Drafting Panel, and other panels, has contributed materially to the success of these groups.

Propeller Committee

The Propeller Committee, for the first time in several years, has been faced with a new general specification for propellers, intended to supersede a similar Air Force specification in effect for many years. This document has stimulated interest of not only the propeller manufacturers, but has involved coordination with the engine manufacturers and propulsion installation specialists of the airframe manufacturers because of the inter-relationship of problems. These groups cooperated in the preparation and submittal of comments to the military services and met with the services on three occasions for the resolution of problem areas. It is expected that the resulting specification will be much more practical and beneficial to all concerned.

Propeller companies are represented on, and take an active part in, all activities of across-the-board propulsion interest.

Quality Control Committee

Quality control directors of the forty-three largest member companies comprise the Quality Control Committee. It has the primary purpose of collecting and coordinating into unified recommendations the industry's opinion on quality control and reliability policy directives and inspection specifications of the DOD and the military services, the Federal Aviation Agency, and the National Aeronautics and Space Administration. The majority of the recommendations are developed in response to specific requests from the Government agencies concerned. Another purpose of the Committee is to provide a pool of the industry's best quality control talent which can be drawn upon as needed for participation in joint efforts with Government agencies and professional societies to develop advanced quality control and reliability techniques.

Significant activities for the past year were as follows:

A. A joint industry-Government session at the Tenth Annual QCC Meeting to seek solutions to common problems.

B. Liaison meetings with administrative quality control personnel of the Federal Aviation Agency and the

National Aeronautics and Space Administration to obtain information on current developments in Government quality control.

C. Participation in measurement research conferences with the National Bureau of Standards.

D. Participation in joint AIA Technical Committees' reviews of Air Force weapon system reliability specifications.

E. Preparation for the Department of Defense of a summarization of industry opinion on timeliness and adequacy of in-service materiel deficiency and failure data and recommendations for a uniform system.

F. Review of Government specifications covering qualifications for welders, magnetic particle and penetrant inspection personnel, and radiographic inspection procedures.

The Committee's program for the future will include the following:

—Through its Special Liaison Panels, maintenance of liaison with administrative quality control personnel of the DOD, Military Services, FAA, and NASA.

—Through the QCC Reliability Panel, participation in joint technical committees' reviews of weapon system reliability requirements.

—Continuation of its cooperative effort with the National Bureau of Standards to develop new measurement standards and refine those existing, concentrating on standards applicable in electronics and the new "LASER" developments.

—Completion of its biennial Quality Control Systems Study.

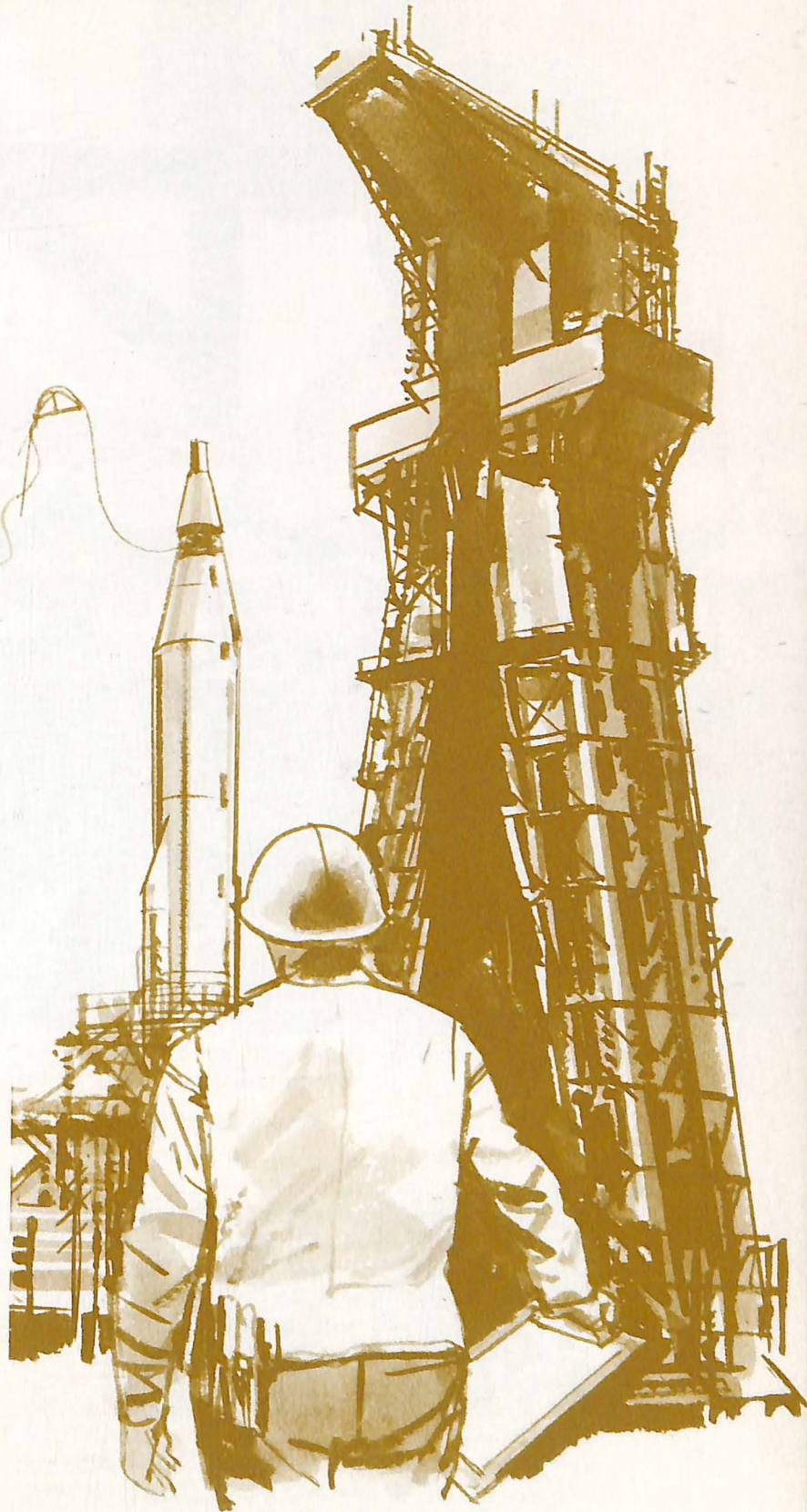
—Completion of a review of DOD Handbook (Interim) H-110, "Evaluation of Contractor Quality Control Systems," to develop recommendations for its improvement.

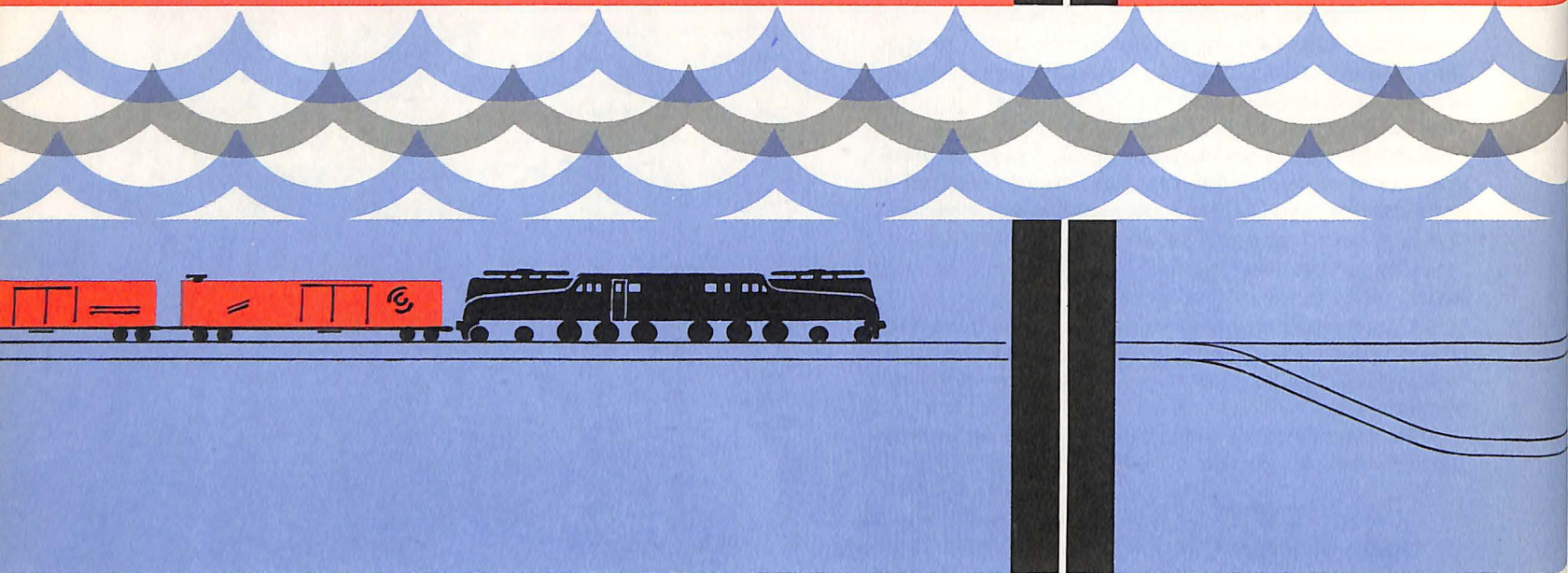
—Review of quality control specifications on requests from the issuing agencies.

Joint Drafting Practices Panel

Activities of the four Drafting Practices Panels (airframe, propulsion, accessory, and electronic) during the past year have included the coordination of individual standards and specifications referenced in MIL-D-70327, the "unified drafting document." Although industry recommendations on MIL-D-70327 were expected to result in a joint DOD-industry meeting during 1961, reticence on the part of the military services and industry alike toward a change at this time, due to a mutual desire for more experience with the document, have led to the belief that the specification may remain unchanged until some time in 1962.

The Drafting Practices Panels, under guidance of the Joint Drafting Panel, have assumed the responsibility of reviewing a series of new Government documents dealing with microfilm, aperture cards, and various "implementation documents" which have been issued and invoked contractually by the individual military services. Close liaison between the panels and various working committees has been maintained in this respect.





Traffic Service



ROME P. CLINTON
*Minneapolis-Honeywell
Regulator Company
Chairman, Eastern Traffic
Committee*



SAM E. KEITH, JR.
*General Dynamics
Corporation
Chairman, Western
Traffic Committee*

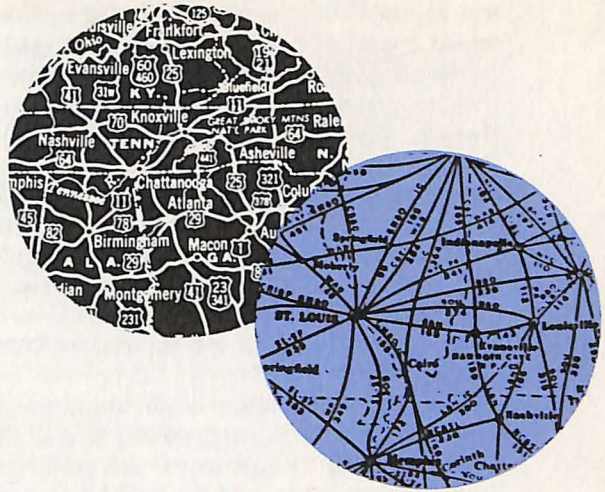
Traffic Committee

Eastern Traffic Committee

Rate and Classification Subcommittee

Western Traffic Committee

Rate and Classification Subcommittee



During 1961, Traffic Service continued its emphasis on the changing role of traffic in part due to increasing production of missiles, space vehicles, and atomic weapons and in part due to more frequent representations before Federal regulatory agencies to insure that interests of aerospace manufacturers were not subordinated to the interests of carriers regulated by those agencies. The year was also marked by numerous approaches to carriers and their tariff associations for the purpose of establishing reasonable rates, charges and service applicable to aerospace components and by actions taken to forestall carrier-sponsored proposals inimical to the best interests of the aerospace industries.

Particular effort was also exerted by Traffic Service throughout the past year to coordinate the joint and several interests of both its members and the principal customers they serve, the various departments of the Federal Government.

How Traffic Service Functions

Depending upon whether their facilities are located in the Eastern or Western half of the United States, fifty-four traffic managers serve on the Eastern Committee, and fifty-seven on the Western Committee. Each committee is headed by a chairman who, along with a vice chairman and Rate and Classification chairman, is elected by the membership for a term of one year. The AIA Director of Traffic Service serves as Secretary to both committees and, on matters of joint interest, is delegated responsibility by the committees to act as their spokesman before carrier associations and organizations and the various military and other Federal departments. With the approval of the committees, and by specific authorization of the AIA President, the Traffic Service Director also serves as AIA attorney before the Federal transportation regulatory bodies on matters of primary

interest and concern to AIA Traffic Service.

Each committee meets twice yearly and the two committees hold one joint annual meeting. Throughout the year, the activities of the committees are coordinated by means of Traffic Bulletins which are distributed from the AIA office in Washington. Traffic Bulletins keep members advised of pertinent decisions of the courts and regulatory agencies of interest and concern to aerospace traffic organizations, as well as apprising them of military and other governmental directives and regulations. The bulletins also serve as a means of coordinating Government requests for aerospace action on traffic and transportation matters and, additionally, keep members apprised of legislative developments. In the past year, 150 such bulletins were issued.

The Director of Traffic Service also provides research on traffic and transportation matters concerning carrier service, tariff rules, regulations and liability, and similarly provides general reference to regulatory and judicial edicts concerning these matters.

Regulation of Transportation

In 1961, Traffic Service participated in four formal proceedings before the Interstate Commerce Commission and, on various occasions throughout the year, matters of interest to aerospace contractors were handled informally before the Civil Aeronautics Board and the Federal Aviation Agency as well as the Interstate Commerce Commission. In one proceeding before the ICC, AIA successfully contested a 5 per cent advance in van carrier rates and thus forestalled increased costs to members of \$600,000 to \$750,000 per year for the shipment of their employees' household goods. Moving household goods of employees costs AIA companies alone between \$12 to \$15 million each year.

In another proceeding, intervention before the ICC

was accomplished for the purpose of assuring the continued availability of experienced and qualified motor carriers to provide transportation of missiles and space vehicles, components and parts, at reasonable rates and charges. Protest was also lodged with the ICC against attempts by van carriers to continue long-maintained discriminatory practices preventing industrial shippers from securing the advantages of split-lot reduced rates. In still another proceeding, AIA intervention before the ICC seeks modification of existing unreasonable rules and practices of motor van carriers of household goods. Final ICC decisions in the latter three cases are now pending.

In an action before the Civil Aeronautics Board, the Director of Traffic Service, serving also as Chairman of the Aeronautics Committee of the National Industrial Traffic League, petitioned the Board to cancel outstanding minimum rate orders applicable to air freight carriers which would, in effect, aid the growth of air cargo service. The Board subsequently cancelled all outstanding minimum rate orders. Traffic Service also commenced action designed to assure consideration of user interests in matters connected with international air agreements under the auspices of the Federal Aviation Agency.

Carrier Rates and Service

Coordinated action by the Traffic Committees in 1961 resulted in the development of strong supporting evidence which was instrumental in securing favorable action by carriers on AIA proposals to establish reasonable reduced rates on various aerospace commodities. On other occasions, action by the Traffic Committees has effectively forestalled carriers' proposals to increase rates to unreasonably high levels. For example, motor carriers agreed to an AIA proposal to reduce the rates on solid rocket propellants by approximately 50 per cent. Action was also successfully taken to secure reductions of the rates on honeycomb material to levels approximating, in some cases, 25 per cent. In another action, the AIA Traffic Committees prevailed upon nationwide motor carriers to withhold publication of highly objectionable tariff provisions which would have impeded the movement of aircraft and missile electronic instruments. The Traffic Committees during the year were also instrumental in securing reasonable rates applicable to rocket engine containers, jet engine thrust reversers, rocket engine handling harnesses, Class A and B explosives, radioactive material, and various other aerospace commodities.

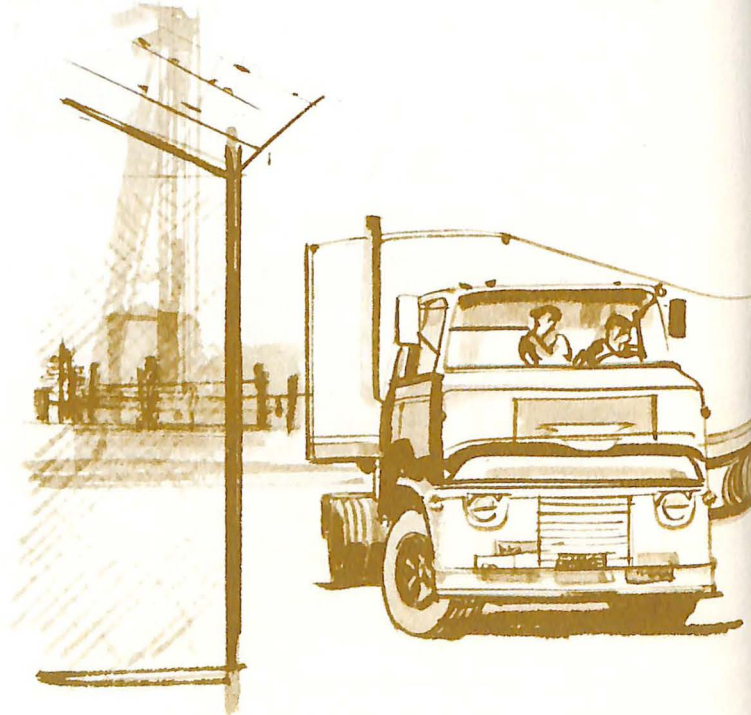
Government Traffic Agencies

The service provided to aerospace industries by Traffic Service and the Traffic Committees is paralleled in the Federal Government by various traffic offices within the military establishment and civil agencies. Traffic Service maintains close coordination in the various traffic areas through daily contact with the Government agencies concerned. Additionally, representatives of such agen-

cies participate in discussions at meetings of the Traffic Committees. In this manner, a close and mutually beneficial relationship exists between AIA and the office of the Director of Transportation, Assistant Secretary of Defense (I and L), the Military Traffic Management Agency, the Directorates of Traffic and Transportation of the Air Force Systems and Logistics Commands, the Atomic Energy Commission, the National Aeronautics and Space Administration, and various other Government agencies and departments.

Military Procurement Traffic Management

Within the military establishment a distinction is made between the management of traffic delivered from contractors' facilities to military first destinations, as contrasted to that traffic which is moving from facilities of subcontractors to the plants of prime contractors in support of military contracts. In the first instance, management is exercised by the single manager for Department of Defense traffic, the Military Traffic Management Agency (MTMA). MTMA, therefore, is responsible for the direction, control and supervision of all functions incidental to the effective and economical procurement and use of commercial freight and passenger transportation service within the United States by the military departments. To exercise this responsibility, MTMA has established an effective vertical type management organization with headquarters in Washington, D. C. and with regional operational offices at five locations elsewhere throughout the United States. Establishment of MTMA in 1957 for the first time made available to Traffic Service and to aerospace contractors a single point of contact within the military establish-



ment for the coordination of matters subject to the management control of that agency. There is thus in-being an open and direct channel of communication between Traffic Service and the Military Traffic Management Agency which permits the expeditious resolution of problems.

Such, however, is not the situation with respect to the military exercise of procurement traffic management concerning the movement of material in support of military contracts. In this area there is a decided diffusion of military control, both policy and operational, with the result that in many instances the resolution of traffic problems is made extremely difficult, if not impossible, because of the multitude of splinter military procurement traffic management offices, each apparently autonomous and seldom accountable to either one or a limited number of headquarters policy offices.

The Traffic Committees have devoted a considerable amount of time and effort in 1961 attempting to resolve problems generated by this situation. Without limiting the emphasis on the other activities of Traffic Service, particular effort in the year ahead will be devoted to attaining maximum economy and efficiency in the procurement traffic management area.

Additional Activities of Traffic Service

Although a considerable portion of the activity of Traffic Service in 1961 was devoted to matters related to regulatory agencies, it has also functioned with success as an arm of the traffic organizations of its individual members on an industry-wide basis, thus avoiding duplication of efforts by individual members operating independently.

In this area during the year Traffic Service:

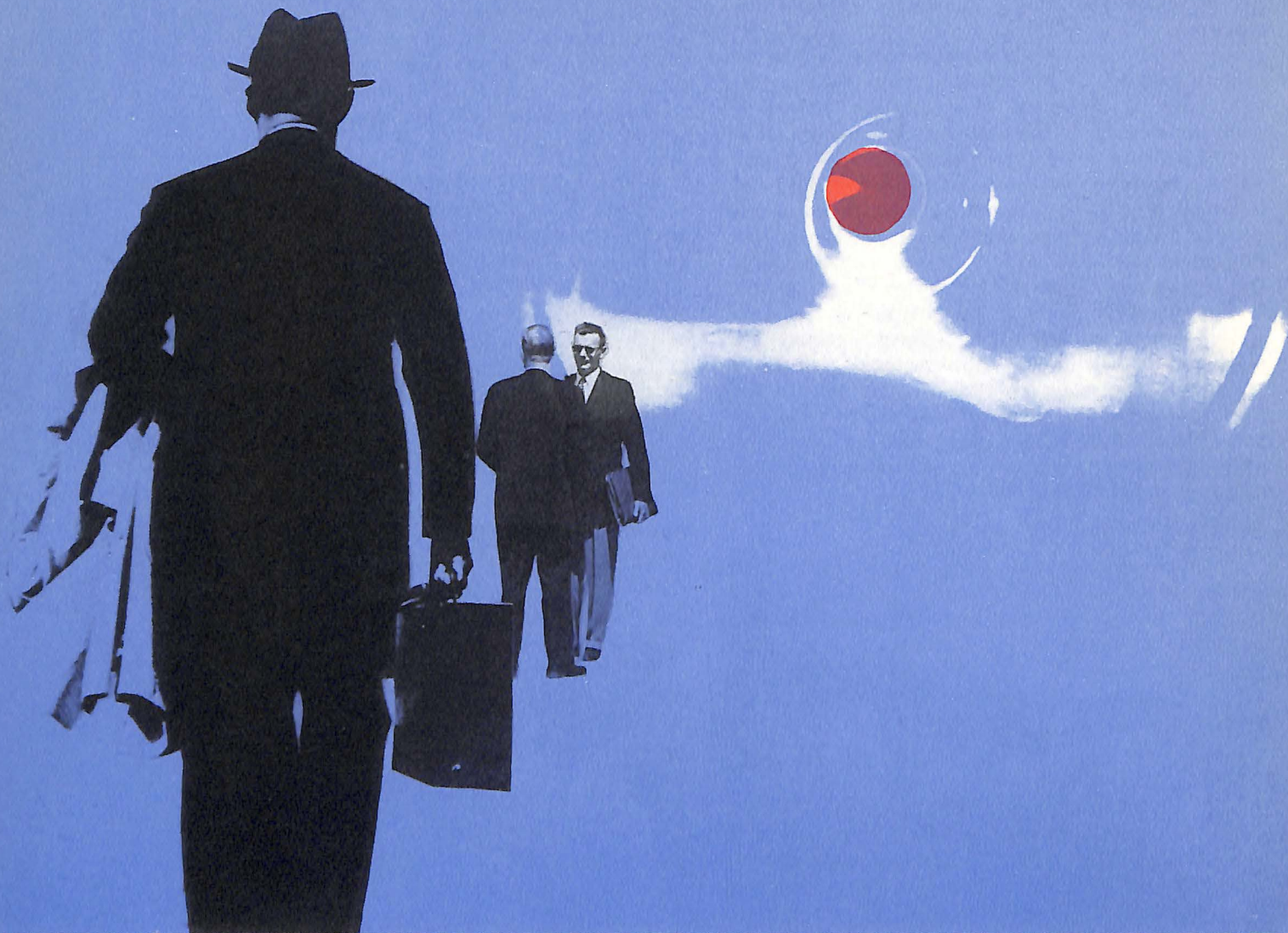
- Recognizing the potential in an effective program for the movement of household goods by air, both from the standpoint of reduced cost and diminution of loss and damage, developed density patterns of household goods shipments for the aerospace industry. With this compilation as a basis, action was taken which will result in 1962 in the establishment of regular air carrier service throughout the United States for the movement of household goods.

- Prepared and submitted to the House Committee on Interstate and Foreign Commerce a statement in support of legislation which will give shippers redress before the ICC for the recovery of unlawful charges on past shipments transported by motor carriers and freight forwarders.

- Presented to the Atomic Energy Commission a resume of the difficulties being encountered by AIA members in accomplishing the movement of nuclear material within and through various states via both private and for-hire carriers. This presentation was accompanied by a recommendation that the AEC jointly develop procedures with the organizations of state governments which will permit the safe, orderly and unimpeded movement of nuclear materials.

On a continuing basis throughout the year, Traffic Service coordinated its activities with those of other AIA services, councils, and committees on such matters as, for example, industrial security, spare parts procurement, exportation and importation of aerospace material, indemnification, guided missiles and propellants.





Utility Airplane Council



DWANE L. WALLACE

*Cessna Aircraft Company
Chairman, Utility Airplane
Council*

The Utility Airplane Council anticipates strong and continuing growth in both unit volume and dollar value of utility aircraft sales in the decade ahead. Perhaps the best measure of this faith in the future is that during the past year the general aviation manufacturing industry and its widespread distributor-dealer organization continued to make substantial capital expenditures—numbering in the millions of dollars—to improve plant equipment, expand floor space, and increase the efficiency of its productivity and of its customer service, while a large segment of American industry was entrenching or curtailing expenditures because of the business recession.

The dollar value and unit volume of the industry's sales have more than trebled in the past ten years, during which period the members of the Council have produced more than 50,000 aircraft. In recent years they have been responsible for well over 90 per cent of both the unit volume and dollar value of general aircraft and engine production and sales.

From early indications, it appears 1961 production will total about 6,800 aircraft having a retail value approximating \$170,000,000, compared with 1960 production of 7,588 aircraft having a value in excess of \$200,000,000. The drop is anticipated because of the business slump early this year. However, the industry is rebounding strongly as economic conditions improve.

General aviation is now the largest user of the Nation's airspace, and of its airport, air communication, and air navigation facilities. Counts at 230 FAA control towers throughout the country show 25,774,152 take-offs and landings during 1960. Of these, approximately 14,800,000 were general aviation movements, 7,100,000 airline, and the balance military. Of course, these counts were at only 230 airports. General aviation operates to and from more than six thousand, while the airlines service less than 600; and, as a result, general aviation is now the largest feeder system to the airlines and serves as such without subsidy.

Advance design and lower costs of operation in present-day equipment has added to general aviation's value in times of emergency and disaster, providing a ready transportation reserve without cost to the Government; and most of general aviation's fleet can, in an emergency, operate from roads and small open areas and fly over the barriers which will have disrupted much of the Nation's surface transportation.

In achieving the growth and progress which has and is occurring in the utility airplane business, the members of the Utility Airplane Council have clearly demonstrated their ability to develop, produce and market aircraft and equipment which meet the desires and needs of the public. They have demonstrated their ability to obtain private financing to keep pace with the demands.

Despite the great progress of the past decade, the decade ahead presents a potential which is almost unlimited. The FAA Administrator recently said, ". . . what is known as general aviation. . . already own and operate three-quarters of the active airplanes in the country, roughly 70,000 airplanes as compared to the airlines' fleet of 2,000. General aviation's share in ten years should swell 80 or 90 per cent over the sixties."

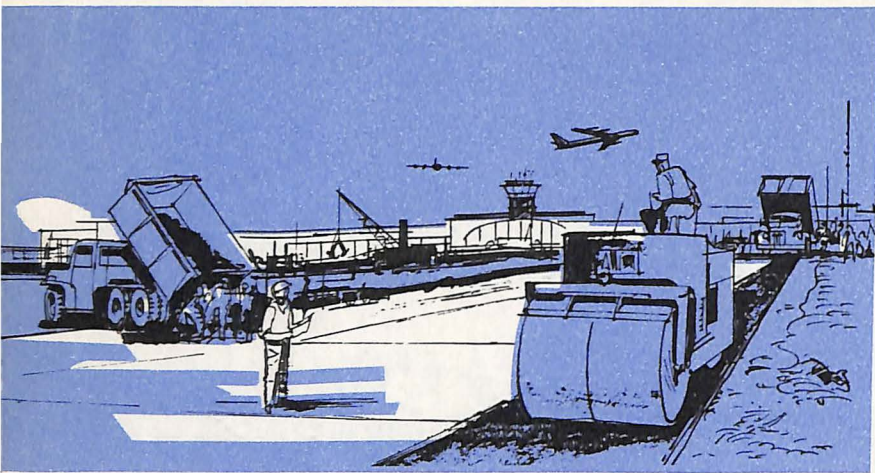
Participation in Horizon and Beacon Task Force Activities

Early in the year the new Federal Aviation Administrator, at the behest of the President, announced the appointment of a "task force on national aviation goals." Divided into two principal areas of study, Project HORIZON was concerned with U. S. aviation policy objectives and goals for the period 1961-1970, and Project BEACON was concerned with problems of air traffic management and recommendations to insure the safe and efficient utilization of the Nation's airspace.

These task groups are worthy of note from the standpoint that each project had a task force member specifically appointed to represent general aviation views on a co-equal level with other members of the task force. In past years there have been a number of study groups concerned with various fields of civil aviation, but this is the first time that general aviation was represented in such a major Government study as a distinct segment of the total civil and military aviation community. The suggestions of the Utility Airplane Council were solicited in the selection of the general aviation qualified task force members and in the formation of the reports.

As these task forces conducted their studies, the UAC staff and members responded to numerous informal inquiries for data and views; and the UAC made formal presentations to the task groups.

The UAC also participated in the preparation and was a party to recommendations made by the General Avia-



The Federal Aviation Agency states that the U. S. should build 465 new airports and improve 2,839 existing airports to meet the civil aviation needs of the nation over the next five years. The total cost of the improvements is estimated at \$1.1 billion during the five-year period with about \$900 million required for purchasing land, paving runways, taxiways and aprons.

tion Council, a group of general aviation related associations, of which the UAC is an active member.

Among these comments and recommendations were:

Air Transportation

... Our Nation leads the world in air transportation. To continue that economic advantage, adequate airports and heliports must be provided for passenger and cargo movements in all phases of air transportation.

While the provision and maintenance of an adequate system of airport facilities is essentially a state and local responsibility, the Federal Government can be of great assistance through research and development in the improvement and design of airports; long-range location planning; advice and assistance in community airport planning; and through Federal financial aid with stipulated sums specifically provided for general aviation airports. Emphasis was placed on the need for many more small airports close to concentrations of population and industry and in the need to modernize existing small airports with electronic navigation aids and night lighting.

Four categories of needed airport improvements and additions were detailed:

- A system of air strips geographically located to provide national air accessibility comparable to that provided by our national highway system.
- Special general aviation airports conveniently located in large population areas to increase air accessibility for general aviation and to ease the air traffic burden at major air terminals.
- Because of the growing feeder and air-taxi function of general aviation in the general-airline partnership, all new airports, including the large metropolitan and international type airports must provide

adequate general aviation facilities. Most existing airports of this metropolitan terminal variety are now inadequate in this regard and must be improved.

- Landing facilities for helicopter and STOL-VTOL aircraft for both private and public transportation must be provided at regular airports and within the urban-suburban areas, as a part of the overall national system of airports and landing facilities.

The continuing decrease in the numbers of manned military aircraft has and will continue to result in the abandonment of military airports. These airports can effectively fill a civil need which would otherwise have to be separately financed. The Department of Defense should be required to prepare a long-range plan for the orderly transfer of such airports to civil agencies and make this plan available to the Federal Aviation Agency, so these can be retained as airports; and also, joint civil-military use is frequently quite practical and should be permitted and encouraged.

Airways and Air Traffic Control

... The United States must recognize more than ever during the next ten years the need for an integrated and truly "common" system of domestic airways, air navigation and traffic control facilities, and services to cope with the complexities of safely and efficiently operating all types of aircraft—small, slower aircraft as well as jets—under both visual (VFR) and instrument (IFR) flight conditions. The tremendous growth which has and continues to occur in general aviation will require that the air traffic system be wholly capable of accommodating increasing numbers of general aircraft.

... Attention was called to the frequent reference of the Government and others to "our crowded skies." General aviation feels this has been greatly over-stressed and that emphasis should be placed on the fact that only a few major terminals have relatively dense traffic.

Weather Service

... There should be increased research for improved observation, reporting, analysis and dissemination of weather information affecting general aviation activities.

International Aviation and Border Crossing

... Much improvement is needed in simplification of documentation and procedures affecting international air commerce and in providing customs, immigration and health services at U.S. border crossing points for aircraft owners and operators which are comparable to those provided those crossing in automobiles, boats and trains.

Mobilization Planning

... There should be emergency provisions for the continuing manufacture, maintenance, repair and operation of general aircraft because of the essential role which general aviation will play under such emergency conditions.

Safety Regulation

. . . Aviation safety regulations should provide a foundation on which the development of general aviation can continue. Informal Government and industry cooperative planning should continue to precede rule-making procedures, and should be energetically applied to a reduction of regulatory detail to the greatest degree compatible with safety. The Government should also adhere to a philosophy of minimum surveillance and control of the manufacturers and a maximum of delegation of responsibility.

Research and Development

. . . Direct participation by the Government in the development of general type aircraft and equipments should be confined, as it is now, to basic research. It was in such a climate that general aviation grew into one of the main segments of our air transportation system.

Annual Review of the Civil Air Regulations

. . . Civil Air Regulations can be changed in an emergency by the authority vested in the Government. For this reason, the Civil Air Regulations should be deleted, amended or expanded only as the result of an annual or biennial review based on an agenda mutually established by industry and Government. A primary purpose of such periodic review should be to cull obsolescent and extraneous material.

Aviation Education

. . . Government's prime educational responsibility is in the encouragement of cooperative programs with industry and schools and through the creation and maintenance of a climate encouraging to the growth of aviation.

The expected growth of general aviation will pose problems which cannot be answered by legislation and administrative control and must be jointly solved through understanding, respect, and support on the part of the general public and of those who produce and use the tools of air travel. Civic leadership, formal schools, and various segments of the industry must take the lead in providing realistic aviation education. The Government should be a willing partner in such programs.

Statistical Information

. . . The Government alone is in a position to supply detailed statistical information such as fleet size and composition, hours flown, uses of aircraft, airmen, airways and traffic controls and airports. Such information is an invaluable educational tool.

The problem in the past is that a great deal of this public information is not current. Quite apart from routine information, the Government's research on airports, air space use, economics and growth trends provides new data which should be made rapidly available to the public.

Task Forces Recommendations Recognize General Aviation Needs

It is impossible to properly evaluate the contents of the task force reports until they have been thoroughly studied by the Utility Airplane Council members and staff, and the process of Government implementation has been observed. However, in contrast to past Government studies and reports, general aviation's requirements have been quite comprehensively considered in the Reports. For example, one of the goals spelled out in the Project HORIZON Report is "accelerate the growth of general aviation, recognizing it as an essential and expanding element of the national transportation system, enhancing both the business life and leisure time of those who utilize it." A general aviation chapter of the report details many of the clues to general aviation's present and future position and expresses the same confident optimism the Utility Airplane Council members hold for the future. This statement is significant: "In view of the increasing importance of general aviation in the total U. S. aviation picture, the FAA should consider recognizing this importance by establishing an organization highly placed in the FAA hierarchy to concern itself solely with the problems of general aviation."

As this was written, Project BEACON's Report had not yet been made public. However, the Manager of the Utility Airplane Council has been briefed by this task force as one of a cross-sectional group assembled to provide advance indication of industry reactions to their intentions. His principal impression was the attention which general aviation's requirements had received in the deliberations of the Project BEACON group.

Simplification of Single Pilot Flying

The Federal Aviation Administrator has proposed and has indicated much interest in a long-range research program to simplify the instrumentation of the single pilot aircraft to facilitate instrument flying, which he has named, "Project Little Guy." The Administrator believes



much military research can be borrowed for civil application. He also believes the instrumentation and electronic developments in the space programs may have additional value for general aviation. Although it is much too soon to evaluate this proposed FAA project practically, the industry has volunteered its cooperation.

Aircraft Identification Marking

Last year the Utility Airplane Council responded to an FAA draft release proposing standardization of methods of affixing alphabetic and numeric identification and nationality markings on aircraft. Present optional methods permit large markings on the aircraft sides, or on the top and bottom of the wings. The proposed standardization would eliminate the wing markings and require large (12") marks on the sides or on the vertical tail.

The reason for the optional permissive use of large side markings was to facilitate military recognition under the Aircraft Defense Identification Zones system (ADIZ). Since the ADIZ system no longer is in existence, markings now serve much the same purpose as an automobile license plate. While twelve-inch marks are appropriate for large aircraft, the Utility Airplane Council believes that for small aircraft, two-inch marks on the sides or vertical tail are sufficient. Thus the 12-inch standard markings have been vigorously opposed.

Project Tightrope

Earlier this year the FAA set up a small task force of aviation-experienced attorneys to review the FAA's rule-making and enforcement procedures. The UAC's recommendations to Projects HORIZON and BEACON were referred also to this group.

The UAC along with the GAC also recommended that the Administrator create an Office of Rule Making under an Assistant Administrator and remove rule-

making authority from the FAA's Bureaus (now Services). The purpose of this recommendation was to place rule-making in an objective atmosphere completely apart from the concerned Services. Whereas an FAA Service could propose a rule-making action, they would have to defend its purpose, just as the concerned aviation public now does under the present draft release procedures conducted by the various FAA Services. The proposal has yet to be commented upon either by the FAA Administrator or the Project TIGHTROPE group.

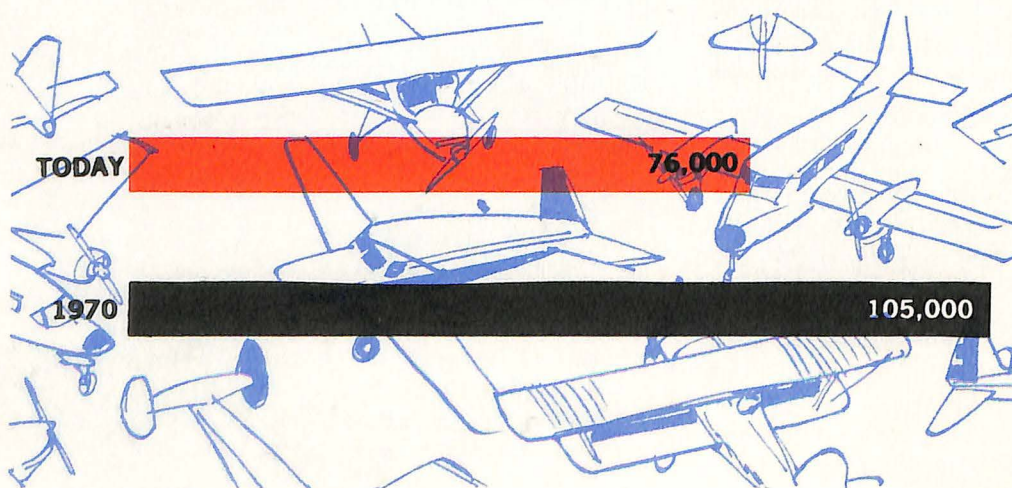
Up-Grading the FAA Airports Division

The Utility Airplane Council, along with the members of the General Aviation Council recommended that the Airports Division of FAA be removed from the Material and Facilities Service and be given Service status equal to the other FAA Services. This recommendation has also not been answered by the FAA, but reorganization has not been completed. Such reorganization, as it occurs, is being carefully observed and monitored by the Council and its staff in terms of its effect upon the general aircraft industry.

Liaison Activities with the General Aviation Community, the Government, and the Public

The Council staff performs continuous liaison activities for the Council and its members with the various Government agencies and departments, particularly the FAA, as they relate to the manufacture of aircraft and as they affect the general aviation field. The Utility Airplane Council participates actively in the work of the General Aviation Council, of which it is a member, and the UAC Manager serves on an uncompensated basis as its Secretary. The Council Manager is a frequent spokesman and participant in industry and public gatherings and in fields of education. The Council is a recognized source of general aviation information and its office is constantly solicited for industry views and information.

General aviation, which includes all civil flying with the exception of commercial air carriers, has grown rapidly, and the trend will continue. Today there are 76,000 planes in the general aviation fleet, and this number is expected to reach 105,000 by 1970.



AIA Member Companies

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Aeronca Manufacturing Corporation
Aeronutronic, Division of Ford Motor Company
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American Brake Shoe Company
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 Sperry Gyroscope Company Division
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Sundstrand Aviation, Division of
 Sundstrand Corporation
Thiokol Chemical Corporation
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DIVISION B

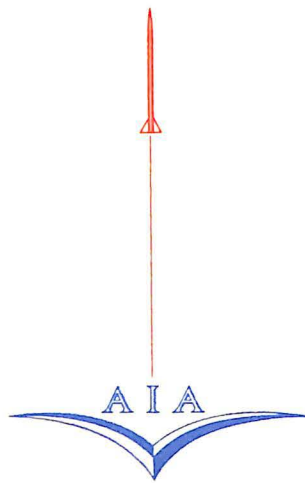
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Parker & Company
Manufacturers Aircraft Association, Inc.
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Bush, Charles T.
Chambers, Reed M.
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DeSeversky, A. P.
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MacCracken, Wm. P., Jr.
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Sullivan, John Dwight

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Loening, Grover

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