

42^D

ANNUAL
REPORT

of the Secretary
of Commerce

U. S. DEPARTMENT
OF COMMERCE

1954



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REPORT
of the Secretary
of Commerce



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Letter of Transmittal

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, December 31, 1954.

SIRS:

Submitted herewith to the Congress is the Annual Report of the Secretary of Commerce for the fiscal year ended June 30, 1954. The report describes briefly the services to business and the public and the administrative history of the Department's operating bureaus and agencies during that year.

Respectfully,



Secretary of Commerce.

THE VICE PRESIDENT.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES,

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OFFICIALS OF THE DEPARTMENT

As of June 30, 1954

Secretary of Commerce.....	SINCLAIR WEEKS.
Under Secretary of Commerce.....	WALTER WILLIAMS.
Under Secretary of Commerce for Transportation	ROBERT B. MURRAY, JR.
Assistant Secretary of Commerce for International Affairs.....	SAMUEL W. ANDERSON.
Assistant Secretary of Commerce for Domestic Affairs.....	LOTHAIR TEETOR.
Assistant Secretary of Commerce for Administration	JAMES C. WORTHY.
General Counsel.....	STEPHEN F. DUNN.
Director of Public Information.....	ALBERT N. LEMAN.

Heads of Bureaus and Offices Under the Supervision of—

UNDER SECRETARY OF COMMERCE:

Director, Coast and Geodetic Survey.....	R. F. A. STUDDS.
Commissioner, Patent Office.....	ROBERT C. WATSON.
Director, National Bureau of Standards....	A. V. ASTIN.

UNDER SECRETARY OF COMMERCE FOR TRANSPORTATION:

Administrator, Civil Aeronautics Administration	FREDERICK B. LEE.
Administrator, Defense Air Transportation Administration	THEODORE HARDEEN, JR.
Chairman, Federal Maritime Board.....	LOUIS S. ROTHSCHILD.
Administrator, Maritime Administration...	LOUIS S. ROTHSCHILD.
Commissioner, Bureau of Public Roads....	FRANCIS V. DU PONT.
Chief, Weather Bureau.....	F. W. REICHELDERFER.

ASSISTANT SECRETARY OF COMMERCE FOR INTERNATIONAL AFFAIRS:

Director, Bureau of Foreign Commerce....	LORING K. MACY.
--	-----------------

ASSISTANT SECRETARY OF COMMERCE FOR DOMESTIC AFFAIRS:

Administrator, Business and Defense Services Administration.....	CHARLES F. HONEYWELL.
Director, Office of Business Economics....	M. JOSEPH MEEHAN.
Director, Bureau of the Census.....	ROBERT W. BURGESS.
Director, Office of Field Services.....	GUY E. WYATT.
Director, Office of Technical Services....	JOHN C. GREEN.

ASSISTANT SECRETARY OF COMMERCE FOR ADMINISTRATION:

Chairman, Appeals Board.....	FREDERIC W. OLMSTEAD.
Director, Office of Budget and Management.....	OSCAR H. NIELSON.
Director, Office of Facilities Operations and Management.....	GEORGE T. MOORE (acting).
Director, Office of Personnel Management.....	CARLTON HAYWARD.
Director, Office of Publications.....	DONALD R. BURGESS.
Director, Office of Security Control.....	NEWMAN SMITH.

42d ANNUAL REPORT OF THE SECRETARY OF COMMERCE

The Department in 1954

In the first full fiscal year of the Eisenhower Administration the Department of Commerce shaped its plans and programs to serve the Nation by fostering a freer and more vigorous private-enterprise system.

The year was a period of readjustment to peace following the end of the Korean conflict on July 26, 1953. Wartime inflationary pressures had warped production and markets out of normal patterns. After record prosperity the economy had started to slide and did not level off appreciably until the summer of 1954.

Complex problems of transition confronted all businessmen. They needed for planning purposes reliable, timely information on the state of the economy and the outlook. They desired advice and practical assistance in developing industrial activity and in providing employment. They wanted a medium for expressing their views on the proper role of government in promoting economic stability and growth—and the assurance that their ideas would be available to high levels of government.

The Department has attempted to fulfill these aspirations as a vital service to the American people, whose individual well-being in large part depends on the prosperity of our competitive enterprise system.

The following report records many ways in which the Department carried out this mission. It lists major accomplishments in behalf of the public in those fields of commerce, industry, transportation and science in which the Department has a traditional responsibility. This introduction sketches briefly some of the significant operations that are described in detail in subsequent pages.

Two new agencies were created to promote expansion of both domestic and oversea commerce: the Business and Defense Services Administration and the Bureau of Foreign Commerce.

The Business and Defense Services Administration initiated a program of government-industry teamwork through industry divisions and special industry conferences for the exchange of services, information, and opinions regarding the economy and national security. Through BDSA and other agencies, the Department issued a wealth of technological reports, special studies, and data to help businessmen keep abreast of changing conditions in their industries, improve production methods, enter new fields, and increase sales. Special emphasis was given to the needs of the distribution trades and small business.

The Bureau of Foreign Commerce acted in myriad ways to prompt increased interest by American business in world trade, tourism, and investment abroad; and to reduce handicaps and provide more information about opportunities in these fields. Expanded news services and new guidance publications were undertaken to furnish more and timelier trade and investment leads. Individual assistance was given daily to numerous businessmen—both directly from Washington and through the Department's Field Service. Controls were eased on shipments to friendly nations and the export licensing system was streamlined and speeded up.

Strengthening of the Field Service was continued by extending the new system of cooperative offices across the Nation. About 900 chambers of commerce and other local business groups have become cooperative offices, augmenting the 33 field offices in providing far-flung local communities and especially small business with Department services, publications, and reports.

The Department's publications program was revised to meet the modern needs of business of all sizes for more timely and meaningful statistics and management guidance. Through better planning and methods—often utilizing new high-speed electronic computers—the Department enlarged the collection and speeded up the analysis and publication of commercial and industrial data.

New, authoritative studies of income distribution, investments, and the transactions of business, government, and consumers with each other and with foreign nations were prepared by the Office of Business Economics.

The Bureau of the Census more than tripled the number of sampling areas on which monthly estimates of employment and unemployment are based and developed new speedier services, such as a monthly advance retail-trade report issued only 10 days after the end of each month.

In the transportation field, new policies and programs were developed by the Civil Aeronautics Administration, Maritime Administration, and Bureau of Public Roads. These included the largest airport program since 1951, the biggest peacetime shipbuilding program, and the greatest two-year Federal-aid highway program in history—all of which will spur business and make jobs.

The Department strengthened the public services of its scientific and technical agencies. Among the advances was completion by the National Bureau of Standards of the most modern radio-propagation research laboratory in the United States.

The Weather Bureau reinforced its storm-warning system by the addition of more converted surplus radar equipment. Flood forecasting services were expanded. To promote safety, remote-reading ceiling and visibility detectors were put to practical use at several airports after the successful completion of experiments.

The Coast and Geodetic Survey completed the Perimeter Survey of the Arctic Coast of Alaska to provide basic data for future strategic and economic development of the entire Alaskan sea-land area. The tidal-wave warning system, with stations ranging from the South Pacific to the far north, was benefited by adding new stations.

In the Patent Office improvements and economies were effected in many activities such as recording and digesting assignments, photocopying, correspondence, filing, and binding. The *Manual of Patent Examining Procedure* was completely revised.

The Department also engaged management-engineering firms to apply modern business know-how to operations in further efforts to reduce costs and increase efficiency. By eliminating nonessential projects and by streamlining organization, employees were reduced from 55,102 to 41,865. At the same time administrative costs were cut sharply, saving more than \$8 million a year. Total expenditures of the Department were 10 percent less than in the previous fiscal year.

An Executive Development Program was started to increase incentives in the career service and to train qualified manpower for future needs. For the first time, each Bureau established a systematic promotion plan under which employees in competitive jobs were appraised objectively. The long-standing Incentive Awards Program was revitalized to encourage employees to find ways of saving money and improving services.

For national security, numerous research and development projects of extreme importance were undertaken by the National Bureau of Standards and other scientific and transportation agencies of the Department. Plans were completed for gearing facilities of these units to the widespread needs of a major emergency.

The Business and Defense Services Administration initiated a simplified Defense Materials System that eliminated needless and expensive red tape in military and atomic energy production. It also collected facts on economic reserves, advised on stockpiling, listed industrial potentials, and held industry conferences on preparations to maintain industrial continuity in the event of attack.

During the year a friendly atmosphere was provided in the Department in which the public was welcomed and businessmen, representing enterprises of

all sizes, were encouraged to voice their opinions and discuss their problems with officials and expert personnel, who tried to help them with sound advice and service of value. The aim was to help business succeed, for prosperous business makes jobs and increases the prosperity of everyone.

Immediate Office of the Secretary

BUSINESS ADVISORY COUNCIL

The Business Advisory Council was formed in 1933 for the purpose of giving the Secretary of Commerce a group of confidential advisers, drawn mainly from the business community, who might reflect the point of view of progressive management on the administrative problems within the Department's jurisdiction, as well as on general problems of public policy.

The Business Advisory Council met with the Secretary on six occasions during the fiscal year, with an average attendance of 75 members, both active and graduate.

Committees met periodically on Latin American trade, general manpower problems, industrial relations, minerals policy, taxation, patents, and economic policy.

Seven new members were invited to serve, and three active members were elected to graduate status. Two members were lost by death.

The total active membership on June 30, 1954, was composed of the following:

- | | |
|---|---|
| *Harold Boeschstein, Chairman, Toledo, Ohio. | *Donald K. David, Boston, Mass. |
| *S. D. Bechtel, Vice Chairman, San Francisco, Calif. | Paul L. Davies, San Jose, Calif. |
| *Eugene Holman, Vice Chairman, New York, N. Y. | Frank R. Denton, Pittsburgh, Pa. |
| *Reuben B. Robertson, Jr., Vice Chairman, Hamilton, Ohio. | R. R. Deupree, Cincinnati, Ohio. |
| *Sidney J. Weinberg, Vice Chairman, New York, N. Y. | Charles D. Dickey, New York, N. Y. |
| S. C. Allyn, Dayton, Ohio. | Marion B. Folsom, Washington, D. C. |
| W. L. Batt, Philadelphia, Pa. | William C. Foster, Washington, D. C. |
| *John D. Biggers, Toledo, Ohio. | John M. Franklin, New York, N. Y. |
| Fred Bohlen, Des Moines, Iowa. | G. Keith Funston, New York, N. Y. |
| Ernest R. Breech, Dearborn, Mich. | *Crawford H. Greenewalt, Wilmington, Del. |
| *Lucius D. Clay, New York, N. Y. | F. G. Gurley, Chicago, Ill. |
| *John L. Collyer, Akron, Ohio. | Joseph B. Hall, Cincinnati, Ohio. |
| *Ralph J. Cordiner, New York, N. Y. | Robert March Hanes, Winston-Salem, N. C. |
| *John Cowles, Minneapolis, Minn. | Charles R. Hook, Middletown, Ohio. |
| C. R. Cox, New York, N. Y. | Preston Hotchkis, Los Angeles, Calif. |
| Harlow H. Curtice, Detroit, Mich. | T. V. Houser, Chicago, Ill. |
| | A. W. Hughes, New York, N. Y. |
| | James S. Knowlson, Chicago, Ill. |
| | *E. H. Lane, Altavista, Va. |

* Member of Executive Committee.

*Fred Lazarus, Jr., Cincinnati, Ohio.	T. S. Petersen, San Francisco, Calif.
Donald B. Lourie, Chicago, Ill.	Clarence B. Randall, Chicago, Ill.
*George H. Love, Pittsburgh, Pa.	Winfield W. Riefler, Washington, D. C.
J. Spencer Love, Greensboro, N. C.	Alden G. Roach, Los Angeles, Calif.
Deane W. Malott, Ithaca, N. Y.	John W. Snyder, Toledo, Ohio.
George C. Marshall, Leesburg, Va.	J. P. Spang, Jr., Boston, Mass.
J. W. McAfee, St. Louis, Mo.	Kenneth A. Spencer, Kansas City, Mo.
Thomas B. McCabe, Chester, Pa.	Robert T. Stevens, Washington, D. C.
L. F. McCollum, Houston, Tex.	R. Douglas Stuart, Ottawa, Ontario, Canada.
James H. McGraw, Jr., New York, N. Y.	Gardiner Symonds, Houston, Tex.
Paul B. McKee, Portland, Oreg.	Juan T. Trippe, New York, N. Y.
George G. Montgomery, San Francisco, Calif.	Thomas J. Watson, Jr., New York, N. Y.
Thomas A. Morgan, New York, N. Y.	John Hay Whitney, New York, N. Y.
George L. Morrison, New York, N. Y.	Langbourne M. Williams, New York, N. Y.
Aksel Nielsen, Denver, Colo.	

OFFICE OF THE GENERAL COUNSEL

The Office of the General Counsel, the chief legal officer of the Department, provides direct legal advice and services for the Secretary, the Under and Assistant Secretaries, and other departmental officials. The General Counsel also exercises general supervision of the legal divisions in the bureaus and offices having legal staffs, and handles legal matters for those units which do not have legal staffs. The basic three divisions of the Office are in the fields of domestic affairs, international affairs, and transportation, each under an Assistant General Counsel.

The Department engaged actively in work with other interested agencies in the field of labor-management relations and proposed legislation in this field. This activity reflects the significance of these subjects to the business community. For the same reason, the Department participated in activities relating to the antitrust laws. This participation included support of legislation to eliminate uncertainties in these laws and representation on the Attorney General's National Committee to Study the Antitrust Laws, where special attention was given to antitrust problems in foreign commerce, in labor practices, and in the patent field. This Office participated in these efforts of the Department of Commerce to assist business and industry in their relations with the Government, and in the resolution of the several types of problems frequently encountered in Government procurement contracts, termination of contracts, and disposal of surplus property.

Legislative Activities

The Office of the General Counsel coordinates the legislative program of the Department and prepares or reviews answers to requests from committees of the Congress or other authorities with respect to pending or proposed legislation. This work is done under the immediate supervision

*Member of Executive Committee.

of the Deputy General Counsel, in order to assure close liaison and prompt and efficient action on requests of committees and Members of Congress.

A number of bills of major interest to the Department were processed by this Office. Significant items, in the field of domestic affairs, were legislation for establishment of the Small Business Administration and liquidation of the Reconstruction Finance Corporation, codification of Title 13 of U. S. C. relating to Census, Public Law 411 directing the taking of the Census of Business covering 1954, disposal of synthetic rubber plants, amendments to the Securities Exchange Act, amendments to the Flammable Fabrics Act, Public Law 678 extending temporarily the suspension of import duties on metal scrap, amendments to the Atomic Energy Act, and perfecting amendments to the Trade Mark Act of 1946. In the field of transportation, the Office was concerned with such legislative items as the establishment of a national defense reserve of tankers, modernization of merchant vessels, insurance covering financing of ships, charter of tankers by the Navy, the Federal-Aid Highway Act, transportation of cargoes in United States vessels, amendments to the Federal Airport Act, charter of ships to the Philippines, and release of certain conditions with respect to the Hog Island tract in Philadelphia. In the field of international affairs, significant legislative items included extension of the Reciprocal Trade Agreements Act, suspension of import duties on metals necessary to the defense effort, and customs simplification.

Domestic Affairs

The Domestic Affairs Division reviewed all contracts pertinent to the domestic bureaus and offices entered into by the Department, which required approval of the Secretary, and it rendered legal opinions and services requested by such bureaus and offices. The Division also prepared or reviewed the majority of all requests from domestic agencies of the Department for opinions of the Attorney General or Comptroller General and other matters submitted to those officials, including reports on litigation.

The legal activities in connection with the Business and Defense Services Administration included the simplification and revision of regulations covering the operations of the Defense Materials System. The purpose of the revised Defense Materials System is to maintain in being the framework for an expanded defense production program and at the same time reduce to a minimum the burden which such a program imposes on industry. These regulations were issued on April 1, 1954, after extensive consultation with private industry and other Government agencies with an interest in the subject matter. In addition, these activities included legal advice with respect to the defense and mobilization activities of the Department undertaken pursuant to the Defense Production Act, the National Security Act, the Strategic and Critical Stockpiling Act, and the Rubber Act, and with respect to activities of the Department in fulfillment of its

responsibility to foster, promote, and develop foreign and domestic commerce.

International Affairs

The International Affairs Division of the Office of the General Counsel is responsible for all legal work required by the Bureau of Foreign Commerce and falling within the responsibilities of the Assistant Secretary of Commerce for International Affairs. Its major responsibility, from the viewpoint of volume, current importance, and complexity, arises from the administration of the Export Control Act, under which the Department regulates commercial exports so as to protect the domestic economy and to withhold from potentially unfriendly destinations commodities of security or strategic significance.

Export control legal work consists of two types: (1) Compliance work involving violations cases, prosecution of administrative compliance cases, and liaison with and assistance to the Department of Justice in connection with criminal cases and (2) administrative work such as preparation of regulations, review of procedures, and assistance in interpretation of regulations and procedures. In addition, this Division was responsible for a variety of legal services arising under the Foreign-Trade Zones Act, the China Trade Act, and the British Token Import Plan. This work includes drafting, and advising on the legal applicability of, regulations issued under such laws and programs, as well as review for legality of administrative actions taken thereunder.

This Division participated in the preparation of reports to Congress on legislative proposals in the foreign-trade field, including the Customs Simplification Act of 1954, the Universal Copyright Convention Ratification, the Mutual Security Act of 1954, the Trade Agreements Extension Act of 1954, revision of the Export-Import Bank Act, the bill authorizing disposal abroad of surplus farm products, and a variety of tariff and trade bills following the President's message to the Congress on foreign economic policy in furtherance of the report of the Randall Commission.

Transportation Division

During the past fiscal year, this Division has been responsible for legal advice to the officers of the Department in matters pertaining to transportation. It has been engaged, among other things, in the drafting and processing of legislation designed to (1) promote the development and safety of air transportation, (2) encourage the development of a merchant marine suitable for meeting commercial and national defense needs, and (3) provide assistance necessary for the planning and construction of an adequate highway system.

Bills providing for the following were among those which were enacted: Establishment of a national defense reserve of tankers and promotion of construction of new tankers, modernization and improvement of merchant-

type vessels in the reserve fleet necessary for national defense, facilitation of private financing of new ship construction, sale of certain war-built passenger-cargo vessels, construction and long-term charter of tankers by the Navy Department, construction of the St. Lawrence Seaway, and authorization of appropriations for fiscal years 1956 and 1957 for expanding construction of Federal-aid highways.

OFFICE OF PUBLIC INFORMATION

The Office of Public Information helped further the economic objectives and programs of the Department by providing the daily press, trade publications, radio, television, and other media with factual information, statistics, and special reports on business, industry, science, technology, transportation, and foreign trade.

In addition to acting as an informational clearing house on day-to-day activities of the Department, the Office served as a central point of reference and contact for professional writers and editors seeking specialized information on the Department's bureaus and agencies.

The Office directed the scheduling of news releases by the constituent bureaus and initiated a survey of mailing lists to improve distribution and eliminate duplication.

Office of the Assistant Secretary for Administration

The Assistant Secretary of Commerce for Administration serves as the principal assistant to the Secretary on all matters of Departmental administration and management. It is the primary responsibility of this office to assure the effective administration of the programs of the Department and its proper representation before other agencies of the Government.

A significant change was made in the position of the Assistant Secretary for Administration by the 83d Congress. Originally, the position was created by Reorganization Plan No. 5 of 1950 as Administrative Assistant Secretary of Commerce, a position within the competitive service. The legislative history of the laws relating to the office narrowly limited the duties and responsibilities of the holder of this office to the field of pure administration. Actual practice indicated that the overall effective supervision of the management functions of the Department is on a policy-making level. Thus the contemplated role of the Administrative Assistant Secretary was never fully realized.

The position of Administrative Assistant Secretary was abolished and a new position established by Section 304 of Public Law 471, 83d Congress, Second Session, approved July 2, 1954, as Assistant Secretary of Commerce. By Department Order 134, Amended, the position was designated as Assistant Secretary of Commerce for Administration. The holder of this position is now appointed by the President, by and with the advice and consent of the Senate, to perform such duties as the Secretary of Commerce may prescribe.

The elevation of the position to a Presidential appointment on a par with the other Assistant Secretaries of the Department has the advantage of strengthening the management functions of the Department and, at the same time, further preserving and strengthening the career service, as those officials responsible for personnel, budget, operations, publications, and security will continue in the career service to provide continuity of administrative functions. The managerial functions of the Department, through the Office of the Assistant Secretary of Commerce for Administration, will thus receive the supervision of an individual of a stature comparable to their importance who can advise the Secretary and initiate as well as implement policy.

APPEALS BOARD

The Appeals Board for the Department of Commerce, by departmental order, serves as an impartial body to make final decision on certain appeals from the public when adversely affected by orders, regulations, or administrative action of the Department in connection with export control matters, importation of foreign excess property, and other statutory authority of the Department. It also hears appeals relating to contracts of the Bureau of Public Roads and other appeals specifically assigned to it by appropriate authority.

Many appeals relating to export controls involve classified material, which the Board must consider and evaluate with a view to protection of the Government, and the doing of equity to the exporter. In some cases, representations have been made, through the Department of State, by embassies of the nationals involved, and the Board must consider the case in the light of all these factors. In appeals not relating to export control there are often complex situations involving voluminous records that must be thoroughly studied before reaching a decision.

When possible the Board avoids formal hearings by resolving the issues through correspondence and informal meetings, and at times is able to advise a potential appellant of appropriate procedures to obtain his end without an appeal.

During the past fiscal year the Board disposed of 80 appeals involving 20 hearings. Since its creation no adverse decision by the Board has been carried to the courts.

OFFICE OF BUDGET AND MANAGEMENT

The Office of Budget and Management is the central point of control over the Department's financial affairs and organizational development. It reviews budget estimates, controls all funds, reviews organizational structures, develops organizational plans, and makes continuing studies of functional and organizational relationships.

The office reviews departmental administrative and operating practices, procedures, and methods; evaluates the Department's programs in terms of efficiency of management and economy of operations; and promotes participation in the Department's management improvement program. In addition, it furnishes a central fiscal advisory service to all bureaus. This Office also carries out the responsibility for the planning and coordination of mobilization activities for the continuity of government and insures that the national civil-defense assistance program is carried out in accordance with delegations made to the Secretary in this area.

Budget Activities

The Office of Budget and Management considered regular annual budget estimates of \$1,036,420,188 for the fiscal year ending June 30, 1955. After review by the Office, the Secretary of Commerce approved \$869,487,500 for transmittal to the Bureau of the Budget. The President's budget, which was transmitted to Congress on January 21, 1954, included \$854,020,000 for the Department of Commerce.

In addition to the regular annual budget estimates, supplemental appropriation requirements for fiscal year 1954 in the amount of \$94,537,341 were reviewed. The Secretary approved the supplemental estimates in the amounts requested for transmittal to the Bureau of the Budget. The Presi-

Table I.—Summary Comparison of Expenditures, Department of Commerce, Fiscal Years 1953 and 1954

	Fiscal year ended June 30, 1953		Fiscal year ended June 30, 1954		Change (+ or -)	
	Expended	Percent of total	Expended	Percent of total	Amount	Percent
Office of the Secretary.....	\$28, 724, 664	2. 7	\$7, 299, 511	0. 8	\$-21, 425, 153	-74. 5
Bureau of the Census.....	12, 719, 471	1. 2	8, 916, 953	. 9	-3, 802, 518	-29. 9
Civil Aeronautics Administration.....	159, 940, 202	15. 1	138, 080, 214	14. 5	-21, 859, 988	-13. 7
Coast and Geodetic Survey.....	12, 336, 301	1. 2	12, 880, 319	1. 4	+544, 018	+4. 4
Bureau of Foreign and Domestic Commerce.....	10, 274, 370	1. 0	8, 324, 779	. 9	-1, 949, 591	-19. 0
Maritime Administration.....	235, 277, 583	22. 2	155, 255, 834	16. 3	-80, 021, 749	-34. 0
Patent Office.....	12, 207, 321	1. 1	11, 964, 497	1. 3	-242, 824	-2. 0
Bureau of Public Roads.....	552, 717, 255	52. 2	573, 467, 679	60. 3	+20, 750, 424	+3. 8
National Bureau of Standards.....	7, 936, 931	. 7	7, 572, 164	. 8	-364, 767	-4. 6
Weather Bureau.....	27, 248, 418	2. 6	26, 420, 323	2. 8	-828, 095	-3. 0
Total, general and special accounts, Department of Commerce.....	1, 059, 382, 516	100. 0	950, 182, 273	100. 0	-109, 200, 243	-10. 3

Source: Advance data from "Combined Statement of Receipts, Expenditures, and Balances of the United States Government for the Fiscal Year Ended June 30, 1954."

Table II.—Summary of Balances, Appropriations and Expenditures, Department of Commerce, Fiscal Year Ended June 30, 1954

	Unexpended balance June 30, 1953	Appropriation 1954	Total (columns 1 and 2)	Expenditure 1954
Office of the Secretary	\$8, 270, 798	\$6, 150, 000	\$14, 420, 798	\$7, 299, 511
Bureau of the Census	1, 657, 985	8, 270, 000	9, 927, 985	8, 916, 953
Civil Aeronautics Administration	48, 520, 890	138, 822, 093	187, 342, 983	138, 080, 214
Coast and Geodetic Survey	2, 680, 624	12, 750, 000	15, 430, 624	12, 880, 319
Bureau of Foreign and Domestic Commerce	1, 292, 903	8, 300, 000	9, 592, 903	8, 324, 779
Maritime Administration	179, 414, 989	163, 370, 000	342, 784, 989	155, 255, 834
Patent Office	1, 126, 396	12, 000, 000	13, 126, 396	11, 964, 497
Bureau of Public Roads	39, 823, 748	556, 461, 925	596, 285, 673	573, 467, 679
National Bureau of Standards	10, 956, 024	6, 440, 000	17, 396, 024	7, 572, 164
Weather Bureau	4, 656, 214	27, 000, 000	31, 656, 214	26, 420, 323
Total, general and special accounts, Department of Commerce	298, 400, 571	939, 564, 018	1, 237, 964, 589	1, 950, 182, 273

Does not reflect a credit to expenditures of \$2,597,203.34 in Inland Waterways Corporation account.

Source: Advance data from the "Combined Statement of Receipts, Expenditures, and Balance of the United States Government for the Fiscal Year Ended June 30, 1954."

dent approved the supplemental requirements in the amount indicated and transmitted them to the Congress for consideration.

Supplemental appropriation requests totaling \$212,779,246 for fiscal year 1955 also were reviewed. The Secretary approved these supplemental requirements in the amount indicated for transmittal to the Bureau of the Budget. The President approved \$148,550,746 of the 1955 supplemental appropriation requests and submitted them to the Congress.

Management Activities

The Office of Budget and Management was instrumental in promoting management surveys by outside firms of the following bureaus: Civil Aeronautics Administration, Bureau of the Census, National Bureau of Standards, and Coast and Geodetic Survey. These surveys, which included a review of program responsibilities, organizational structures, and general management of the bureaus, resulted in noteworthy recommendations for various improvements leading to greater economy and efficiency of operations. Steps have been taken for evaluation of these recommendations and for appropriate implementation.

Under the new impetus to mobilization and defense planning resulting from specific delegations of responsibility by the Office of Defense Mobilization to the Secretary, the Office of Budget and Management took the initiative in developing to a state of operational readiness plans for the continuity of essential functions of the Department. This included the development and implementation of programs for reducing the vulnerability of essential departmental activities and the planning for their emergency operations under attack conditions. Plans have been prepared for providing the Department's personnel, materials, facilities and services during the existence of a civil-defense emergency or during an emergency resulting from a natural disaster.

An active part was taken in the creation of three new primary units

(namely, the Business and Defense Services Administration, Office of Business Economics, and the Bureau of Foreign Commerce) through the consolidation of five existing organizational units. The new units were established with clear lines of authority for their separate fields, and with emergency functions converted to a sound economic peacetime basis in a framework that can be readily adapted to an emergency operation if and when necessary.

Financial accounting and reporting services were provided in connection with liquidation of the Inland Waterways Corporation, an instrumentality of the United States created June 3, 1924, by an act of Congress. The physical properties were sold on July 1, 1953, to the Federal Barge Lines, Inc., for \$9,000,000 on an installment-purchase basis. Temporary operating rights were not granted to the purchaser by the Interstate Commerce Commission until September 30, 1953. In the interim, the Corporation operated the system for the account of the purchaser. On June 30, 1954, the purchaser met his initial principal payment of \$444,000 plus interest of \$337,500 (at the rate of $3\frac{3}{4}$ percent on the principal of the mortgage). The certified statements of the Federal Barge Lines, Inc., indicate satisfactory financial condition under the terms of sale and reveal a modest profit for the year ended June 30, 1954. The Inland Waterways Corporation is presently winding up its affairs as a former carrier, including the settlement of claims in favor of and suits against the United States.

Special Activities

During the year, the Office of Budget and Management engaged in a variety of special management activities. The following examples are representative of the types of projects undertaken:

Made a special review of the functions performed by the field installations of five of the Department's bureaus in the Denver area to ascertain whether or not these activities were being conducted as efficiently and economically as possible. As a result of the recommendations following this review, 4 service buildings and 16 automobiles were transferred to the General Services Administration. It was also disclosed (1) that in the 3-month period immediately preceding the review the Department's personnel level in this area had been reduced by 26 positions, at an annual saving of \$75,898, and (2) that during the review it was agreed that a further reduction of 28 positions would be made, resulting in an additional saving of approximately \$160,200 a year.

Surveyed certain field printing activities of the Weather Bureau and, as a result of the recommendations, the Weather Bureau followed through with plans for consolidating two printing plants. This consolidation is expected to be completed early in 1955.

Arranged to have the freight forwarding services in connection with the Department's foreign shipments and imports handled through the General Services Administration's field installations at no cost to the Department. This eliminated a need for the Department to duplicate a service already provided by GSA. The potential saving to the Department is estimated at \$4,000 a year.

Assisted the Bureau of the Census in promoting a proposal to make available to all other Government agencies the use of available time on Census-owned tabulating

equipment for the performance of statistical and other specialized functions which otherwise would necessitate the rental of special equipment from outside sources. This proposal was received enthusiastically by the agencies approached and a number of requests for the use of Census facilities have been made.

Worked closely with the Bureau of the Census and the Maritime Administration in developing improvements in accounting operations and procedures. As soon as final changes and documentation can be completed, the improved accounting systems can be approved. In the Civil Aeronautics Administration, much preliminary work has been done looking to a revised system incorporating cost accounting. The General Services Administration and the General Accounting Office collaborated with the Office of Budget and Management concerning the results of their several property accounting studies. The improvements recommended are being coordinated by the Office of Budget and Management for incorporation in the Department's general systems of accounting.

Conducted a survey of the central stockroom operations of the Office of the Secretary which resulted in the discontinuance of a substantial number of the items stocked and the return of approximately \$47,000 in surplus stocks to the General Services Administration.

Participated in the reorganization of the Office of Facilities Operations and Management, which was accomplished to provide for a strong management program in the areas of property, records, and safety.

Completed a survey of legislative material purchased by the several bureaus. This resulted in the discontinuance of a number of such items at an annual saving of approximately \$7,000.

Participated with representatives of the Civil Aeronautics Administration and the General Accounting Office in developing new appropriations structures for the CAA. These have been designed for clearer presentations along performance budget lines and will permit the development of an accounting system which will furnish accounting support with a minimum of prorations.

Inquired, in collaboration with the Office of Publications, into the possibility of reducing the Department's expense in connection with printing the daily *Synopsis of U. S. Government Proposed Procurement and Contract Awards*. Negotiations were completed with the Government Printing Office and the Superintendent of Documents whereby the Department would pay only the cost of the "make-ready" plus free distribution copies of the publication. A check made at the end of a 12-month period disclosed that under this arrangement, together with some additional refinements, savings to the Department amounted to \$44,508, or approximately two-thirds of the previous year's cost for this publication.

OFFICE OF FACILITIES OPERATIONS AND MANAGEMENT

The Office consisted of the Accounting Division, Operating Facilities Division, Property and Records Division, Departmental Library, Office Services Staff, and Special Services Staff. The Office activity primarily consisted of serving the immediate Office of the Secretary, Business and Defense Services Administration, Bureau of Foreign Commerce, and Office of Business Economics with communications, procurement, accounting, supplies, etc., as well as library facilities, property and space allocations, and motor fleet management.

Economies were effected in the cost of telephones amounting to \$16,700 a year. Teletype facilities were consolidated with an operational savings. Over 7,000,000 pieces of mail were read, routed, and handled. Approximately 10,000 purchase documents were issued having a value of nearly \$1,000,000. In addition, 165 contracts valued at over \$6,000,000 were examined. Simplified purchasing methods were expanded with economies. The inventory in the stockroom was reduced by \$47,000 by returning consumer goods to General Services Administration for reissue, rather than retaining them as overstock in the Department stockroom.

The library loaned over 100,000 books and publications during the year. Requests for information and reference assistance numbered over 34,000. The *Business Service Checklist* was published weekly, and the Library Reference List was published monthly. A supplement to *Department of Commerce Publications* was issued. The cataloged collection now contains 368,036 volumes.

The Office took leadership in departmentwide plans for the utilization of property and equipment. Over \$12,000,000 worth at acquisition prices was disposed of. It is estimated that in excess of \$1,000,000 in savings in procurement of property was effected through redistribution of excesses.

The space occupied by the Department in the metropolitan area was reduced by 630,000 square feet. The estimated value of this space including Government-owned buildings amounted to an annual rental of \$980,400. Privately owned space released by the Department had a rental value of \$175,000 per year.

In the records field, the Department, with the assistance and cooperation of General Services Administration, strengthened its records management program:

	<i>Cubic feet</i>
Volume of records on hand July 1, 1953.....	680,000
Volume of records transferred to Federal records centers and to agency centers in fiscal year 1954.....	113,000
Volume of records disposed of in fiscal year 1954.....	65,000
Volume of records on hand July 1, 1954.....	596,000
Volume of records in operating space July 1, 1954.....	520,000

The Department's motor-vehicle fleet was reduced by 613 vehicles.

During the latter part of the 1954 fiscal year, complete reorganization plans were made for the Office, looking forward to its designation as of July 1, 1954, as the Office of Administrative Operations, consisting of the Property and Space Division, Records Division, General Services Division, Safety and Motor Vehicle Division, and Library Division. Surveys were being made in the areas of the Records Division, Safety and Motor Vehicle Division, and Library Division to establish their roles in giving greater assistance to counterpart functions in the bureaus.

OFFICE OF PERSONNEL MANAGEMENT

During the fiscal year 1954, the Office of Personnel Management was reorganized, and operating functions were combined with staff functions. The reorganization resulted in the elimination of 10 positions at an annual savings of \$53,000, and also made possible certain other savings in connection with telephone service, and office and storage space. This reduction in staff has neither involved curtailing any essential services, nor prevented the inauguration of new activities found necessary or desirable in sound personnel administration.

In the interest of providing better understanding of personnel policies and to effect improvements in personnel practices throughout the Department, the Department of Commerce Personnel Council, composed of all bureau personnel officers, held eight meetings.

Staff guidance and assistance has been furnished to bureau personnel staffs in the form of some 25 administrative orders and circulars, through the issuance of a biweekly information bulletin on personnel matters, and through the handling of numerous oral technical inquiries with respect to specific problems and situations.

Members of the staff of the Office of Personnel Management participated in a number of internal organization and management surveys.

Position classification procedure has been streamlined. Increased emphasis has been placed on developing accurate job descriptions by having supervisors and employees work together on the statements of duties, responsibilities and requirements of positions. In addition, the Department has gone beyond the minimum requirements of law to provide that large numbers of positions be reviewed annually to see whether they are still necessary and whether they are properly classified. The Office of Personnel Management also participated with the other members of the Interdepartmental Lithographic Wage Board in reviewing wage plans and developing practices to improve the wage system.

Placement practices have been substantially improved. Orientation of new employees is supplemented by followup conferences with the employees and with operating supervisors, in order to effect better utilization of personnel. Placement of physically handicapped and older workers has been encouraged through advising bureau personnel offices and operating officials of the capabilities of such persons for certain types of jobs. The establishment and administration on a centralized basis of a reemployment priority list, containing the names of approximately 1,500 employees separated by reduction in force, insured the fair and equitable consideration of separated employees in connection with job openings.

An executive inventory and development program has been inaugurated which provides for inventorying key positions, vacancies, and requirements; evaluating incumbents; developing reserves from which to fill each position

when a vacancy occurs; and identifying employees in intermediate grades who have good potential for advancement.

Management Activities

The Office of Personnel Management has furnished guidance and assistance to bureau personnel branches in establishing promotion plans under which employees occupying competitive positions are appraised objectively, have equality of opportunity, and are considered for selection on a competitive basis.

In order to strengthen the performance rating system, operating officials have been encouraged to rate employees more candidly and accurately in order that the outstanding and inefficient employee may be positively identified.

The employee suggestion program was given additional emphasis through the initiation of an employee suggestion contest, which caused the participation to increase 100 percent. During the year a total of 258 suggestions were adopted resulting in savings of \$77,043.45, with the employees receiving \$6,816.50 in awards.

Superior accomplishment salary step increases were approved for 83 employees.

Six employees were given efficiency awards; two employees received \$600 annual increases and one a \$400 annual increase, and three received cash awards totaling \$610. Savings were estimated at over \$3,000,000.

The sixth annual awards ceremony was held in February 1954, at which 124 employees of the Department were given special recognition for their meritorious or exceptional service.

The Office of Personnel Management has cooperated actively with the Civil Service Commission and with the President's Adviser on Personnel Management by detailing staff members to work on special projects such as the development of a handbook for agencies' use in evaluating personnel management; plans for the improvement of overseas employment practices; the development of improved regulations on reductions in force, leave, job evaluation standards, premium pay, allowances and differentials, and incentives and awards; and many other matters.

A voluntary payroll deduction plan has been inaugurated, in cooperation with the Bureau of Internal Revenue, to facilitate clearing up any overdue Federal income taxes.

The Office of Personnel Management has cooperated with other offices and agencies in the development of new or improved legislation relating to personnel management. The staff has reviewed, analyzed, and furnished comments on approximately 60 items of legislation as a basis for formulation by the Office of the General Counsel of the Department's position on the proposed legislation.

During the fiscal year 1954, a review of the excepted appointment authority provided in Schedules A and B of the Civil Service Rules and Regula-

tions was conducted and a determination reached as to the positions which would be recommended to the Civil Service Commission for retention in schedules A and B and for inclusion in a new schedule, C, comprising positions of a policy-determining or confidential nature. At the close of June 30, 1954, 83 positions were excepted from the competitive requirements of the Civil Service Rules and Regulations, under schedule C.

The total number of paid employees on the rolls of the Department decreased from 55,102 to 41,865 during the period July 1, 1953, to June 30, 1954. The monthly payroll figure for the same period decreased from \$21,816,218 to \$16,955,369.

OFFICE OF PUBLICATIONS

The editorial control and distribution policy functions of the Office of the Secretary and the Department's printing and forms design work are handled by this Office.

Sales of the Department's publications through the Superintendent of Documents increased \$47,000 over those of the year before and amounted to \$1,320,000. They accounted for almost 27 percent of the total sales receipts of the Division of Public Documents.

The Office reduced its payroll 62 positions, or \$197,144 at an annual rate.

The Publications Division reviewed proposals for new publications estimated to cost \$217,000. Seventeen projects that would have cost about \$8,000 were disapproved and limiting conditions were placed on other projects totaling \$48,000.

A saving of about \$45,000 annually was made for the Department through a cooperative arrangement with the Superintendent of Documents for a new method of handling the *Synopsis of U. S. Government Proposed Procurement and Contract Awards*.

At the suggestion of the Office, two publications were discontinued, one as being competitive with private publications in its field and the other being taken over by a private association.

The Office assisted the Patent Office and the Weather Bureau in their successful efforts to bring about a sizable reduction in printing costs.

Office of the Under Secretary

The Under Secretary of Commerce serves as the principal deputy of the Secretary in all matters affecting the Department of Commerce and exercises general supervision over its bureaus and offices.

In addition three major agencies of the Department are directly responsible to the Under Secretary. He gives particular attention and policy

guidance to the Coast and Geodetic Survey, the Patent Office, and the National Bureau of Standards.

COAST AND GEODETIC SURVEY

The services performed by the Coast and Geodetic Survey are directed toward the advancement of the marine, aviation, commercial, and industrial interests of the Nation. This Bureau is responsible for surveying and charting the coastal waters of the United States and its Territories and possessions. It provides a framework of geodetic control in the interior of the country to be used as starting points for mapping and engineering construction; collects and publishes data on tides and currents; compiles and publishes aeronautical charts for civil and military aviation; makes observations of the earth's magnetism; and investigates earthquakes and their destructive effects. It is primarily a field organization administered from Washington, where the basic field data are processed and the results made available to other Government agencies and to the public in the form of maps, charts, and technical publications.

Increasing emphasis on aviation and the military preparedness program continues to be felt by the Survey. There has been a steadily mounting demand for aeronautical charting services and for acceleration of the mapping program in areas of strategic importance, particularly Alaska. Considerable emphasis is given to these phases of the Bureau's program.

Hydrography, Topography, and Tides

Seventeen ships and three shore-based parties operated along the Atlantic, Gulf, and Pacific coasts and in Alaska during the year, collecting basic data for the compilation and revision of nautical charts. This work included inshore hydrographic surveys, as well as electronically controlled oceanographic surveys.

The work in Alaska was given first priority because of its importance to national defense. Electronic-controlled hydrographic surveys were extended in Bering Sea to include the vicinities of Nunivak, St. Matthew, and St. Paul Islands; and combined operations were carried on in the Aleutians, along the south coast of the Alaska Peninsula, in southeast Alaska, and along the Arctic coast. More extensive use was made of the electronic position indicator system for control of hydrography in Bering Sea, where bad weather and fog persist throughout much of the working season. Combined operations were closed along the Arctic coast at the end of the 1953 season upon completion of Shoran-controlled surveys in the vicinity. This successfully completed a project begun in 1945. As part of a continuous Bureau program, deep-sea sounding lines were run in the Pacific and across the Gulf of Alaska by Survey ships en route to and from their Alaskan working grounds. Seamounts were discovered during the running of these lines.

Aerial photographs, taken primarily with the Survey's nine-lens camera, furnished basic data for the compilation of topographic maps by photo-

grammetric methods for sections along the Atlantic, Gulf, Pacific, and Alaska coasts. In addition, a large number of single-lens photographs were taken for chart-revision work and for showing low-tide conditions. Along the Atlantic coast alone 7,000 such changes were photographed. In furtherance of the airport obstruction plan program, photographs were taken of 97 airports in the United States and 5 airport parties completed original or revision surveys of 86 airports. Thirty-four new airport obstruction charts were published and 54 were amended.

The tidal program continued to furnish basic data for hydrographic operations, for prediction of tides and currents, and for other engineering and scientific uses. A network of 92 control tide stations was maintained to provide basic long-period tide records along the coasts of the United States and Alaska and in the Pacific Islands. Shorter series of tide observations were obtained at 104 additional places in connection with hydrographic surveys and other projects.

Special current surveys were completed for Delaware Bay and River, Narragansett Bay, Buzzards Bay, San Francisco Bay, New London approach, Portsmouth Harbor approach, and Key West Harbor. Records of current surveys were obtained for 44 locations from hydrographic parties. Processing of records was completed and reports prepared on the special current surveys of Boston Harbor and Narragansett Bay-Buzzards Bay. Tidal current charts are being compiled for Charleston Harbor, S. C., and for lower Chesapeake Bay, and those for San Francisco Bay, Puget Sound, and Delaware Bay and River are being revised.

Tide Tables (in four volumes) and *Current Tables* (in two volumes), containing predictions for the year 1955, were prepared. More than 120,000 copies of these tables are issued annually. The format for the table of tidal differences in the volume for the west coast of North and South America was revised to improve its usefulness and readability.

The program of collecting data on temperature and density of sea water at tide stations was continued. Data were obtained at each control tide station as well as at numerous hydrographic stations occupied by ships, a total of 127 stations. The result of these observations are released in a series of four publications, one of which is revised each year.

Geodesy, Magnetism, and Seismology

The basic network of horizontal and vertical control was extended to various parts of the United States and Alaska. Major emphasis was placed on the projects in Alaska to meet the needs of the Department of Defense. The work of previous years was continued in western Alaska, and was extended this year farther into the interior. Elevations of mountain peaks and triangulation stations were determined by trigonometric leveling in connection with triangulation work. In the United States the principal effort was directed toward providing the survey control in various priority areas required for the Federal mapping program and Federal agencies and

others in their engineering work. One scheme of triangulation in California was reobserved in connection with investigations of earth movement as indication of possible seismic activity. A considerable amount of releveling was accomplished in California and Texas to determine the amount and rate of change in subsidence areas where large amounts of water are being removed from the ground for irrigation purposes or for city use. A commercially developed distance-measuring instrument, the Geodimeter, is being tested for application to the Survey's geodetic work. This instrument makes use of the speed of light to determine distance, and, if successful, should be able to effect appreciable savings in that phase of the Bureau's activities.

Astronomic observations to determine latitude, longitude, and azimuth were made at selected stations in the United States and Alaska to orient triangulation work and make required adjustments. The adjustment of the networks of triangulation in foreign countries was continued as a cooperative undertaking with the Army Map Service and the Inter-American Geodetic Survey.

Gravity observations in the United States were extended, and records from a number of new stations were added to those already acquired. This information is becoming increasingly important to guided missile experiments and other scientific undertakings.

Study of the earth's magnetism was continued. The magnetic survey of the United States provides information on the magnetic elements for navigation, for surveyors and engineers using compasses, and for various scientific purposes. During the year magnetic field observations were made at 7 observatories and 29 stations distributed in 6 States and Alaska. Of these, 5 were part of the "repeat station" net and 24 were stations not previously occupied. The results of these investigations are distributed in the form of isogonic charts, magnetic components of nautical and aeronautical charts, and compilations of data from magnetic observatories. The general design for the projected observatory at Fredericksburg, Va., was completed. This station will carry out important functions of research and instrument development in which the country is lagging because of the lack of necessary facilities. Preliminary planning was done for the geomagnetic program of the United States in the forthcoming International Geophysical Year, and a limited amount of accurate experimental and developmental work was accomplished.

In the work of earthquake investigation, seismographs were operated by the Survey at 8 stations and cooperatively at 15 other stations. Approximately 825 earthquakes were located shortly after their occurrence, using instrumental reports from cooperating stations in this country and abroad, and the pertinent information was distributed to over 350 seismologists and interested scientific organizations. Seventy-one strong-motion seismographs were operated in areas where strong earthquakes are most likely. Only

minor damage was caused during the past year by earthquakes in the United States.

The system for seismic sea-wave warning in the Pacific area was continued. Honolulu is the center of the system which includes a network of 9 seismological stations, 16 tide stations, and a rapid communication service provided by the military services and the Civil Aeronautics Administration. A seismic sea-wave detector was established at Attu Island in the Aleutians during the past year. The realization of the value of this system is spreading, as evidenced by the cooperation of centers in Peru and the requests by the States of California, Washington, and Oregon to be included as recipients of the warnings. The Japanese earthquake of November 25, 1953, was considered by the Analysis Center at Honolulu to be sufficiently dangerous to warrant alerting local civic and military authorities. An approximate location was known about 38 minutes after it occurred, and an alert was put into effect immediately. A constant vigilance is maintained by the system against a real and omnipresent danger.

Nautical and Aeronautical Charts

To meet the varying needs of the navigator the Bureau was called upon to produce during the past year a volume of charts greater than in any other year in its history. Over 42 million charts of all categories were distributed during the year, an increase of over 1½ million charts from the previous year. The increased demand was largely for aeronautical charts, in connection with the current expansion in aviation.

At the end of the fiscal year a total of 803 nautical charts were on issue. The program of reconstructing and modernizing the nautical charts of the Survey, to meet the more exacting demands of present-day navigation, was carried forward. The series of 34 charts of the Gulf Intracoastal Waterway, from Carrabelle, Fla., to Brownsville, Tex., was completed during the year.

Approximately 2 million copies of nautical charts were distributed, requiring over 9 million hand corrections to bring the charts up to date for essential information. The program of supervision over distribution agencies to prevent the selling of obsolete charts was continued. The project for adding Loran lines of position to some of the nautical charts of all coasts of the United States and Alaska was completed. This will provide an additional safeguard for the navigator equipped with the new electronic devices.

Over 40 million copies of aeronautical charts were printed and distributed during the year for civil and military use. A total of 1,470 such charts are now on issue to meet the different needs of the aviator. The demand for instrument flight charts alone increased 13 percent during the year. Among other innovations a local aeronautical chart was published for the first time with pictorial representation of the terrain to give a three-dimensional effect, and the first of a new series designed to facilitate air navigation in congested areas was issued. Constant revision of all charts was maintained

to keep pace with new developments in aviation, such as the very-high-frequency omnirange system.

Technical Improvements and Cooperation

The Bureau's program of research and development to improve its instruments, equipment, and operating techniques was advanced during the year. Because of the specialized nature of the Survey's work, much of its instrumentation and equipment is not produced commercially and is therefore a product of research and development by its own staff. Improvements were made in the instruments used in nearly every branch of the Bureau's activities. Among these were the development of a new portable survey-type depth recorder for more accurate scaling of depths over a greater range, the construction of a better pivot base for the 100-foot electronic position indicator mast to simplify the raising and lowering of the mast, development of a differential magnetograph to be used in the geomagnetic program of the United States in the International Geophysical Year, the design of an electronic vibration meter for seismological work, and the development of an automatic recorder for use with the radio current meter.

Among the cartographic developments were the making of a superior form of subdivider for more accuracy in the preparation of map drawings, the development of a revised formula for the Bureau's engraving ground for plastic, the devising of a new method of producing duplicate negatives on coated vinylite permitting the combination of type and line work on the same negative, and the development of an Ozalid process method for reproducing planimetric maps.

The Survey continued its cooperation with national agencies and with foreign governments and international organizations through new and continuing arrangements. Under provisions of existing international cooperation acts, 6 training grants for periods of 1 year were awarded to 5 foreign countries, 37 trainees of previous awards reported for training, 9 guest workers were given consultation and instruction lasting from 1 to 9 months, and 19 visitors from 15 countries received instruction in Bureau methods for periods of 1 to 30 days. A technical mission was maintained in Liberia to direct a surveying and mapping program and to establish a cartographic service.

PATENT OFFICE

Patent Examining Operation

The Patent Office received 75,077 applications for patents for inventions, excluding applications for design patents, during the fiscal year 1954, nearly 5,000 more than were received during the preceding year. Except for the extraordinary postwar years of 1946 and 1947, this is the largest number of applications received in any 1 year since 1931 and exceeds by 20 percent the average annual receipts for the preceding 20-year period.

During the latter months of the fiscal year, applications continued to reach the Office in large numbers and there is nothing to suggest or indicate a falling off in the rate of filings.

Application disposals on the other hand were fewer. With 37,744 applications allowed and 25,928 abandoned in fiscal 1954, the total number of disposals declined nearly 8,500 from 1953. The decrease in production resulted from a smaller number of examiners than in the preceding year.

The examining corps was at its lowest level since 1947, and the total patent examining workload, which had been decreasing year by year since 1948, again began to increase. Receipts exceeded disposals by nearly 12,000 applications, so that the total number of applications on hand increased from 182,650 to 194,620 during the year.

One measure of Patent Office activity is the number of invention patents granted. During 1954 there were 38,750 such grants, nearly 4,000 fewer than during the preceding year and the smallest issue since 1950.

About the same general conditions prevailed with reference to the design-patent application workload. With the receipt of 5,501 applications, which was a greater number than was filed during the preceding year, and the disposal of 4,850 applications, the number of pending applications increased. The Patent Office granted 2,573 design patents during fiscal year 1954. This was the third lowest annual issue in the past 20 years, and the fourth successive year in which the number of grants declined.

The activity of the Classification Group during the past year was devoted largely to reclassification and resulted in establishing 4 new classes, creating 900 new subclasses in 37 existing classes, and abolishing 3 entire classes and nearly 400 subclasses in 29 existing classes. The 4 new classes, which involve about 20,000 original patents all dealing with mechanical inventions, brought together patents formerly scattered in a number of different classes in improved groupings and class subdivisions.

In abolishing portions of classes and establishing new replacement subclasses, spot relief was provided for particularly troublesome areas of patent searching where the greatest benefits could be immediately realized. These changes involved the reclassification of almost 22,000 patents.

As a measure to increase the effort applied to improving the classification of patents, classification examiners were relieved of the task of reviewing for accuracy the classification of allowed applications tentatively assigned by the examining divisions. This was accomplished by restoring this responsibility to the examining divisions.

Recognizing that the need for modernization of the classification is regarded as one of the most important problems confronting the Patent Office, consideration was given to formulating a practicable reclassification program. One proposed treatment of this problem was to increase the staff of classification examiners for a period of perhaps 6 years, so as to reduce to manageable size the huge backlog of patents in active arts which have never been reclassified according to modern needs. Thereafter a force not

much larger than the present staff could maintain up-to-date reclassification as the need arose.

The possibility of making use of mechanical aids to searching as an avenue toward more efficient examination of applications, and to facilitate reclassification as well, has been and continues to be explored. A committee of high level examiners of the Patent Office, technically expert in the field of classification, was appointed to give this matter further intensive study during the ensuing year.

Trade-Mark Examining Operation

The volume of work received in the Trade-Mark Operation has shown a steady increase during the last 4 fiscal years. Receipts during the past year included 19,715 new applications for registration, 3,887 applications for renewal of registration, and 1,626 applications for publication under section 12 (c) of the Trade-Mark Act. The number of new applications for registration was the largest received since fiscal year 1949.

Disposals for the year totalled 24,023, which comprised 15,197 marks registered; 4,429 applications abandoned; 1,383 marks published under section 12 (c); 2,918 registrations renewed; and 322 corrections, amendments, new certificates, and surrenders for cancellation made under section 7 of the Trade-Mark Act. This was 1,734 fewer disposals than in the preceding year, a condition associated with a reduction of the total examining corps from 57 to 46 examiners.

With disposals failing to match receipts of new work, the Trade-Mark Operation experienced the first increase in total workload since 1949. The inventory of applications for registration pending on June 30, 1954, amounted to 20,063. In addition, there were 990 renewal applications and 328 applications for publication under section 12 (c) on hand. All examining divisions were acting on both new and amended applications within less than 6 months from date of receipt, which was approximately 1 month behind the condition as of June 30, 1953.

During the year 26,717 affidavits were processed under section 8 and section 15 of the Trade-Mark Act. The Patent Office makes no examination and merely acknowledges the receipt of affidavits received under the latter section of the act. Action was taken to cancel 1,324 registrations for which no affidavit under section 8 was filed in time or was found to be unacceptable.

Special consideration continued to be given to applications still pending under the acts of 1905 and 1920. There were 18 marks registered under the act of 1905, and at the end of the year only 7 applications, of which 2 have been published for opposition, were pending under this act. Only 1 application remained pending under the act of 1920.

Other Activities and Accomplishments

PRACTICE AND PROCEDURE.—The Patent Office Committee on Trade-Mark Law and Practice considered a number of suggestions to simplify

practice and facilitate the prosecution of trade-mark applications. Upon its recommendation the recording of Articles of Incorporation and the practice of accepting prima facie showings of abandonment were discontinued.

The adoption of 10 changes to the Rules of Practice in Patent Cases clarified situations arising under the Patent Laws effective January 1, 1953, or imposed definite conditions necessitated by practical administration of the Patent Laws.

The *Manual of Patent Examining Procedure* was completely revised to incorporate changes in practice and procedure brought about by revision and codification of patent laws and was issued as a second edition.

PRINTING.—Considerable attention was focused on printing because of the appreciable part of the Patent Office appropriation expended for this purpose. As a result a number of changes were made, including elimination of the lists of invention, reissue, design, and plant patents in the *Official Gazette* and *Annual Index*; the reduction of printed lines representing unessential information in trade-marks and in reissue, design, and plant patents; and the planning of changes to be made in the typography of patents.

PROPOSED INCREASE IN PATENT FEES.—Fees of the Patent Office from which the greatest proportion of revenue is received were fixed in 1932 and have not been changed since. Great increase in cost, due to successive increases in the salary rates by Congress and corresponding increase in other items since that time, has resulted in a wide divergence between the expenditures in the Patent Office and the receipts. Steps were taken toward increasing the fees of the Patent Office in view of those factors and the Administration's policy of providing fair and equitable fees which, taking account of the value to the recipient and the public policy or interest served, should recover to the greatest extent possible the aggregate cost involved. A bill which would have the effect of approximately doubling the receipts from the application filing and final fees, and to make changes in some of the other fees of the Patent Office, was introduced in the Congress. It contained provisions which would require U. S. Government agencies to pay most patent fees on the same basis as private individuals and firms. In the absence of such express provisions in law, the Comptroller General had ruled that Government agencies were not authorized to pay the fees prescribed for items and services furnished by the Patent Office.

RECORDS.—A comprehensive records-control schedule was formulated to provide for the orderly and appropriate disposition of records which no longer warranted filing or storage in Patent Office space.

SECURITY.—A number of measures were taken to tighten security pursuant to the more stringent requirements of the President's Security Program under Executive Order 10450 and Executive Order 10501.

SPACE.—Further progress was made in grouping divisions on the basis of related arts and in achieving better working conditions for examiners as a result of acquiring appreciable additional space in the north end of the Commerce Building. At the end of the year only four patent examining divisions remained in the south end of the building at some distance from related divisions.

Management Improvements and Economy

A number of actions were taken during the year to reduce costs in conducting various activities of the Patent Office. Some of them are briefly described below:

A system was put into operation to level off the volume of the weekly issue of patents. This established a more even flow of work and eliminated the unpredictable variations in requirements for manpower and machines in the Patent Office and Government Printing Office. The beneficial results of this change include better control of funds available for printing and greater economy of manpower and equipment.

Arrangements were made to obtain bindery services from commercial sources at rates of from one-third to one-half those previously paid.

It was found possible to abolish three additional Patent Examining Divisions and to transfer the personnel and the workload thereof to other divisions.

The payroll operation was converted from solely manual to partially mechanized procedures with a resultant saving to the Patent Office and somewhat lower cost for the Treasury Department in preparing salary checks.

Expense for new filing equipment for storing printed copies of patents was avoided by withdrawing stock copies on hand for which there was slight demand.

Maintenance of the examiner production reporting system was simplified with a resultant reduction in cost to the Office.

Improvements in the Manuscript and Lithographic Branch made possible a substantial reduction in the number of employees while at the same time reducing the amount of time for filling orders, despite an increased workload. A substantial decrease in cost was also realized from the better utilization of photographic paper in producing copies of records.

As economy measures, proofreading of patents in the Patent Office was discontinued; the Register of Patents Available for License or Sale was terminated; the printing of "jumbo" size patents for replenishment of stock was discontinued; and the Patent Office ended selling its publications which were also available through the Superintendent of Documents.

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards was established by Act of Congress in 1901 to serve the Federal Government as a scientific laboratory and to provide basic standards for science and industry. Essentially the Bureau is a service laboratory in the physical sciences—physics, mathematics, chemistry, and engineering. Within these areas it is engaged in fundamental and applied research, development, calibration and testing, and a variety of scientific services.

The custody, maintenance, and development of the national standards of physical measurement constitute a primary and highly important function of the Bureau. Uniformity and precision of measurement are needed

for mass production, quality control, and other features of our modern technologic economy. Progress in science is largely dependent upon measurement, and measurement demands accurate, reliable standards. Even medicine and biology have come to depend upon fundamental standards in the physical sciences for safe and effective utilization of radioactive isotopes and X-radiation.

This responsibility for basic standards requires the continual development of new and improved standards to meet the demands of science and industry, and the development of associated methods of measurement and instrumentation. It also involves the rendering of calibration services to science, industry, and commerce. In addition, the Bureau determines fundamental physical constants and the basic properties of materials, develops improved methods for testing materials and equipment, develops specifications for Federal purchasing, undertakes specific research and development programs for the Government, and serves the Government and the scientific institutions of the Nation in an advisory capacity on matters relating to the physical sciences.

Administrative Activities

The program of the Bureau during the fiscal year 1954 may be classified into two major budgetary divisions: First, the basic program concerned with fundamental standards, measurement, and properties of matter, which was supported by direct appropriations from the Congress; second, various projects undertaken for other Government agencies, which transferred the necessary supporting funds to the Bureau. During 1954 the total funds obligated for both areas of activity, including construction and facilities, were \$25,152,900—48 percent below the 1953 level. Of this amount, \$6,490,718 came from direct appropriation for the basic program. Transferred funds constituted 70 percent of the total, as compared with 83 percent in 1953. This marked shift in the total program level and in the relative proportion of transferred funds was largely the result of the transfer of the Bureau's weaponry development projects, involving obligations of over \$20,000,000 a year, to the Department of Defense.

Prior to 1954, the Bureau's contributions to defense activities in emergency periods had brought about the assignment of a high proportion of its total effort to applied research and development in ordnance and guided missiles. To evaluate this and other aspects of the Bureau's program in relation to national needs, the Secretary of Commerce in April 1953 established an ad hoc evaluation committee under the chairmanship of Dr. Mervin J. Kelly, president of Bell Telephone Laboratories. The members of the committee were nominated by nine leading scientific and engineering societies. After making a comprehensive review, the committee reported in October 1953 that the Bureau's statutory functions were well conceived and its operations generally sound. Concluding that the Bureau is of vital importance to national strength and that its services are essential to our industrial society,

the committee made a number of significant recommendations which have been or are being put into effect. These recommendations were directed mainly toward improved balance in the general program.

The first recommendation to be implemented was the transfer of the Bureau's weapon development work to the Department of Defense. Four major divisions, including about 40 percent of the Bureau's personnel, were involved. Another transfer took place at the end of fiscal year 1954, when the Institute for Numerical Analysis, until then a section of the NBS Division of Applied Mathematics, became a part of the University of California at Los Angeles. This latter activity had been supported by the Office of Naval Research and the United States Air Force.

The committee recommended more adequate appropriations for the basic program as the most important step toward improving program balance at the Bureau. Appropriations for basic programs had been declining gradually for several years and were 25 percent less for 1954 than for 1953. The committee also recommended that the Bureau's staff be built back within 2 years to its 1950 level, and this was reflected in the budget presented to the Congress in 1954. However, only 12.5 percent of the increase requested by the administration was appropriated for 1955.

Establishment of a number of technical area advisory committees was another recommendation of the ad hoc committee. Ten such committees have now been formed. Eight scientific and engineering societies represented on the ad hoc committee have nominated advisory groups. Included are recognized authorities in physics, chemistry, mathematics, metallurgy, and electrical, radio, civil, and mechanical engineering. In addition the American Ceramic Society and the National Conference on Weights and Measures have designated groups at the Bureau's request to advise in their areas of special interest. Nominations have also been invited from the American Society for Testing Materials and the American Standards Association. These special advisory committees, supplementing the Bureau's statutory visiting committee, should prove a valuable source of consultation and stimulation and should strengthen the ties of the Bureau with the Nation's scientific and technological effort.

During this period, the Secretary of Commerce also requested the National Academy of Science to appoint a committee to review the Bureau's work on battery additives, a topic that had assumed a controversial status. Under the chairmanship of Dr. Zay Jeffries, vice president (retired), General Electric Co., this committee thoroughly evaluated the tests made by the Bureau over a long period. The committee concluded that the quality of the work had been excellent and that the Bureau was correct in its findings.

Three new research facilities were completed during 1954. One, a specially designed radioactivity (gamma-ray) laboratory, places the Bureau in a stronger position to meet increasing scientific and technical

demands growing out of advances in the uses of atomic energy. Another was a major addition to the Bureau's betatron laboratory which permits greater safety and efficiency in the operation of the betatron and synchrotron. The third was a radio research laboratory in Boulder, Colo. By the end of 1954, after several years of planning and preparation, the NBS Central Radio Propagation Laboratory was moved to the Boulder site to provide a more favorable environment for its work. The NBS Boulder Laboratories also include the NBS-AEC Cryogenic Engineering Laboratory, which has been engaged primarily in low-temperature work for the Atomic Energy Commission since its establishment in 1951.

Research and Development

FUNDAMENTAL STANDARDS.—Much of the scientific program was concerned with fundamental standards and methods of measurement. Improved equipment was assembled for the convenient and accurate measurement of standard electrical resistors of extremely high (multimegohm) values required by recent developments in atomic physics. To meet the requirements of modern industry, the range of the piston gage used as a primary standard of pressure was extended from 50,000 to 200,000 pounds per square inch. Apparatus was designed and installed for more rapidly determining the rates of standard watt-hour meters. A standard method was set up for calibrating the small, intense sources of beta radiation used in treating eye diseases. Two new pieces of equipment which improve the precision and decrease the time required for the calibration of standard temperature measuring instruments were placed in operation. The first of these, an aluminum sulfur boiler, permits the realization of the sulfur melting point with the highest precision and stability ever attained. The second, a device for comparing thermocouples and resistance thermometers with standard instruments, has reduced the calibration time per thermocouple from 3 hours to 20 minutes. An accurate secondary standard of complex permeability, the radio-frequency permeameter, was developed by the Bureau, made available for commercial manufacture, and adopted by a large segment of industry. An extension of this instrument, capable of measuring the temperature coefficient of the best commercially available ferrites and nearly all other high-frequency magnetic materials, was also placed in operation.

MATTER AND MATERIALS.—A special ceramic coating material was developed for high-temperature protection of alloys in nuclear reactors. This material has an extremely low thermal neutron absorption coefficient and withstands temperatures in excess of 1,000° C. Methods were worked out for the synthesis of 10 additional "tracer" sugars labeled with radioactive carbon 14 in specific molecular positions. Since 1952, when the Bureau's first results with radioactive sugars were announced, methods of synthesis have been developed for over 40 compounds, which are now being made available to research workers in biology, medicine, and chemistry.

By reducing certain substances to temperatures within a few thousandths of a degree of absolute zero, the Bureau was able to align the nuclei of radioactive elements. This result, which can actually be observed by examining the gamma-ray emission pattern, promises to provide a new tool in nuclear physics for studying the processes of nuclear disintegration.

The process for impregnation of leather with natural rubber, originally developed by the Bureau in 1949, was modified to permit the use of polyisobutylene as an impregnant. The treatment reduces water absorption by about half and increases wear by about 80 percent. In addition, polyisobutylene has a distinct advantage over rubber as an impregnant in that it eliminates the milling operation previously required. It also results in large savings of time, labor, and materials in the tannery.

COMPUTERS.—The Bureau continued its program of research, development, and applications analysis in the field of electronic digital computing. Two high-speed computers—SEAC in Washington and SWAC in Los Angeles—were operated continuously for the solution of problems in physics, mathematics, and engineering as well as certain management-type problems. A third high-speed digital computer—DYSEAC—was completed and delivered to the Signal Corps for a special application. DYSEAC was designed to serve as the nucleus of a complex data processing network. The flexibility with which this machine controls and responds to a variety of external devices—which may include one or more full-scale computers of similar design—should enable scientists to explore diverse new areas of interest. Examples include the automatization of industrial and commercial operations, such as the “automatic factory” and the “automatic office,” or any fields where rapid information-processing and real-time control systems are necessary. DYSEAC is a portable machine, installed in a trailer van to facilitate its movement to the site of an experiment.

Improvements in memory systems also pointed the way to future advances in the capacity and flexibility of electronic data processing. For example, an information storage device was developed which utilizes diodes and capacitors as basic storage units. This device, known as the diode-capacitor memory, operates at extremely high speed and, because of its simplicity, is expected to provide greatly increased reliability. The Bureau developed an experimental high-speed memory of the Williams (cathode-ray tube) type as well as improved matrix memories.

In recent years the construction of many large-scale electronic computers has brought about an increasing need for equipment to bridge the gap between the machines and their sources of information. NBS collaborated with the Bureau of the Census in developing an instrument that provides rapid, automatic processing of information into a form suitable for direct input to large-scale computers. Named FOSDIC (Film Optical Sensing Device for Input to Computers), the machine reads marks on microfilmed copies of documents that have been marked with an ordinary pencil or pen,

and then processes the information into electrical pulses which are recorded on magnetic tape for direct input to an electronic computer such as the Census Univac. This machine is expected to reduce considerably the massive amount of paper work entailed in summarizing census information on the entire population. FOSDIC may also be applied to the processing of other types of information that must be handled in large quantities.

SPECIAL DEVELOPMENTS.—Several devices having broad potential applications were developed to meet the needs of the Government. One of these, which was sponsored by the Veterans' Administration, is an electronic instrument (the NBS Physiological Monitor) that automatically detects changes in the physiological condition of a patient under anesthesia throughout the course of an operation. At the request of the Department of the Treasury, a fully automatic machine was designed that can weigh and sort 18,000 coins per hour. The Bureau also developed a remote-control system that automatically measures radiation intensities and weather conditions in the vicinity of an atomic explosion and transmits the data by radio to a centrally located headquarters. Though designed at the request of the Atomic Energy Commission for use in nuclear tests, the system can be used with a wide variety of detectors to report many types of information.

Technical Services

CALIBRATION AND TESTING.—The calibration and testing services of the Bureau, stemming from its development, custody, and maintenance of the national standards of measurement, involved the performance of approximately 200,000 calibrations and tests during the year. In addition, about 16,000 standard samples of certified chemicals, metals, and alloys were issued.

The calibration services, rendered to both Government and the public, involve thousands of instruments and devices sent to the Bureau by industry, private and university laboratories, and the Government. Some of these are standard laboratory devices; others are master instruments used by industry to calibrate such production tools as shop gage blocks. Typical calibrations were as follows: 440 photographic lenses, 71 base-line invar tapes and wires, 216 steel tapes, 1,293 haemacytometer chambers, and 47,206 clinical thermometers.

Testing at the Bureau is concerned primarily with materials—usually raw materials like cement—purchased by the Government. For example, 12,500,000 barrels of cement were sample-tested during the year. Another example of testing for the Government was the life-testing of 7,000 lamps, a sample from over 7,000,000. Some 2,000 samples of such materials as paints and varnishes, soaps and detergents, metals and alloys, carbon paper and typewriter ribbons, and reagent chemicals were analyzed or tested, largely for compliance with specifications for Government purchase.

COOPERATIVE AND CONSULTING ACTIVITIES.—Requests for technical information and advice are continually received from other Federal agencies,

State and local governments, universities, and industrial plants and laboratories. Continuous and more extensive service is provided through various scientific and technical committees. The Bureau is represented on numerous committees, panels, and commissions of other Government agencies. These include the National Research Council, the Interdepartmental Committee on Scientific Research and Development, the Federal Fire Council, the Interdepartmental Radio Advisory Committee, the National Advisory Committee for Aeronautics, the Interdepartmental Screw Thread Committee, the Building Research Advisory Board, and a number of similar groups, including advisory committees to the Department of Defense.

By participating in the activities and projects of professional societies and standardizing bodies, the Bureau plays an active role in the development of test methods and criteria, in the application of scientific discoveries, and in fundamental research programs of a national nature. In this way the Bureau assists in developing and improving engineering standards, purchase specifications, and building and safety codes. NBS staff members participated in over 100 national groups such as the Acoustical Society of America, American Physical Society, American Society for Testing Materials, American Standards Association, American Institute of Electrical Engineers, American Society of Heating and Ventilating Engineers, American Society of Mechanical Engineers, Institute of Radio Engineers, Instrument Society of America, American Petroleum Institute, American Chemical Society, and National Association of Corrosion Engineers.

The National Bureau of Standards is also active in many international groups. These societies deal largely with the establishment and maintenance of international scientific standards and the establishment of values for scientific constants. Another phase of international cooperation involves a program whereby scientists or diplomatic representatives from other countries are accepted at NBS as guest workers or visitors. Both aspects, which are important to the United States in terms of commerce and trade as well as the international policies of the Government, are coordinated on the diplomatic level by the State Department. The Bureau also renders services to foreign countries in the form of calibrations, tests, and exchange of standards and publications.

Publications

In general, the output of the Bureau's technical program is embodied in its reports and publications. During 1954 these totaled over 1,100 exclusive of calibration and test reports and general administrative documents. Results of the Bureau's work are available through three monthly periodicals (*Journal of Research*, *Technical News Bulletin*, and *Basic Radio Propagation Predictions*) and a series of nonperiodical publications.

Office of the Under Secretary for Transportation

The authority, responsibility, and basic objectives of the Office of the Under Secretary of Commerce for Transportation were outlined in the last annual report. Reference was also made therein to initiation of detailed policy evaluation in the fields of the merchant marine, highways, and aviation. Developments in connection with these broad studies and other major activities during the past fiscal year are described below.

Water Transportation

A report evaluating United States maritime subsidy policy in the light of national defense and economic needs for a merchant marine and shipbuilding industry, prepared cooperatively by the Office of the Under Secretary for Transportation and the Maritime Administration, was published in April 1954. This study represents the most comprehensive examination of national policy on subsidies to shipping ever undertaken by the Executive Branch.

The report concluded, among a number of important findings, that a shipbuilding program of 60 vessels a year is required to maintain in peacetime a nucleus shipbuilding industry capable of expansion to meet estimated mobilization requirements and to overcome the approaching block obsolescence of the merchant marine fleet. A number of recommendations were made involving changes in maritime legislation and the administration of subsidy programs to correct the deficiency in shipbuilding and other deficiencies brought to light in the study.

Motivated in large part by the Department's recommendations in this study, Congress recently approved a record peacetime merchant ship construction and repair program aggregating \$411.7 million. The Government's share—now estimated at \$173.6 million—will be kept to a minimum by encouraging private financing and private participation wherever possible. For the first time, shipping lines are privately financing their share of the cost of vessels built under subsidy laws.

St. Lawrence Seaway

Passage of the St. Lawrence Seaway Act by Congress on May 13, 1954, represented a major accomplishment of the present Administration in the field of transportation. That act assures American participation in a project long advocated by the Department—a waterway for oceangoing ships to ascend to the Great Lakes. The Seaway will bring to ports and industries on the lakes the benefits of ocean transportation.

The construction of the Seaway will make possible the development of great hydroelectric energy resources, which will be developed on a self-

liquidating basis by the Power Authority of the State of New York and the Province of Ontario.

Aviation

The Office undertook a comprehensive review of airline subsidy policy and examined the Department's air navigation and airport programs, with recommendations for necessary changes in the scope, character, and timing of these programs. The purpose of the former review was to appraise the present program for subsidizing air transport development, and to determine whether existing policies are sound in relation to the present stage of aviation development, overall transportation objectives, and the general fiscal policy of the present administration. The Office's review of the Department's air navigation and airport programs in conjunction with the CAA resulted in: Submittal to Congress of a plan for airways user charges which would return to the Government an appropriate part of its expenditures for airways facilities; recommendations for changes in legislation designed to increase the effectiveness of Federal participation in the airport construction programs of local governments; and a proposal for an increased Federal-aid airport program.

With respect to the last-named proposal, the Department, after careful study of airport requirements and the ability of local governments to finance such improvements, requested an appropriation of \$22 million for airports in fiscal year 1955. This request, subsequently approved by Congress, is the largest Federal-aid airport appropriation since 1951. Funds are being allocated in accordance with the national need for airports as measured by such factors as passenger traffic volume and the number of civil aircraft permanently based at each airport.

The Department also participated in a comprehensive review of United States civil aviation policy undertaken by the Air Coordinating Committee at the request of the President. The Under Secretary of Commerce for Transportation, in his capacity as Chairman of the ACC, transmitted the completed review to the White House on May 1, 1954; and on May 26 the President, in releasing the study, announced his intention to use it as a guide in the future consideration of questions related to civil aviation and in making appropriate recommendations to Congress.

Highways

The Federal-Aid Highway Act of 1954 increased Federal aid to highways by 50 percent from \$575 million to \$875 million per year, and authorized a comprehensive investigation of methods of financing the Nation's road needs. The amount authorized in the 1954 act for the first time provided Federal highway funds roughly equivalent to the revenue from the Federal gasoline tax.

In addition the administration gave a boost to new toll road construction, a contrast to previous policy of discouraging this development. The Office of the Under Secretary for Transportation and the Bureau of Public

Roads estimated in their joint study of toll-road potential that more than 10,000 miles of new toll routes costing about \$8 billion could be financed on a self-liquidating basis. This represented the first recognition by the Federal Government that active toll highway development can contribute materially to the solution of the Nation's highway problems.

Other Activities

Under the leadership of the Office of the Under Secretary for Transportation, the Department, in cooperation with other Federal agencies, was completing a study of navigational clearances for highway and railroad bridges which is aimed at strengthening the relationship between overland and water transportation and reducing transportation costs borne by the public. Information developed thus far tends to show that sizable savings may be realized in the cost of constructing, operating, and maintaining bridges for accommodation of navigational needs without seriously interfering with waterway commerce.

Another important activity of the Office is its cooperation with Executive commissions in work of mutual interest. It developed for the Commission on Intergovernmental Relations basic data relative to Department transportation programs, and prepared tentative recommendations regarding the appropriate Federal-State-local roles in highway development. Similarly the Office prepared for the Department a number of recommendations concerning transportation functions with respect to the work of the Commission on Organization of the Executive Branch. Special reports were prepared for the Council of Economic Advisers concerning obstacles in the field of transportation which impede economic progress, and the Federal role in remedial actions.

The Office prepared analyses of several proposed decisions of the Civil Aeronautics Board referred to the Department by the Bureau of the Budget. These decisions, requiring Presidential approval, involved several highly significant issues concerning United States policy in the field of international air routes.

Services to the Congress included analysis of a large number of legislative proposals in the transportation field and preparation of testimony or statements on numerous important bills. The Office also supplied various congressional committees examining the need for changes in legislative policy basic data relating to the field of transportation under their jurisdiction.

Other important activities included participation in work by the Department on the need and feasibility of a census of transportation; review of reports prepared for the Department by its Transportation Council; cooperation with the Office of Defense Mobilization and the Federal Civil Defense Administration in transport mobilization planning activities; and informational services to industry, Government, and the general public as required.

CIVIL AERONAUTICS ADMINISTRATION

The 1954 fiscal year was one of real accomplishment in CAA programs and was marked by organizational improvements and significant economies.

Economies were realized in many ways, including consolidation and reorganization of regional offices, discontinuance of a number of airport and aviation safety district offices, the combining of some airways facilities, the placing of more responsibility on safety agents and industry, and the curtailing of less essential services. CAA obligations in fiscal 1954 totaled \$114,-162,606, compared with \$137,791,513 in the previous year.

Federal Airways

The Federal Airways programs during the year were designed to implement further the common system of air navigation, communication, and traffic control. Particular emphasis was placed on very high frequency omnidirectional radio ranges (VOR), distance measuring equipment (DME), and radar. The Victor Airways, based on VOR, were increased by 9,500 miles to 62,000 miles of primary and by 1,500 miles to 22,000 miles of alternate airways. Eight new omniranges were commissioned, bringing the total number in operation to 383.

The program for establishing and commissioning DME facilities at VOR and ILS (instrument landing system) installations was accelerated. During the year 151 were placed in operation, making a total of 167 DME facilities in operation. In addition, 16 ASR's (airport surveillance radar) were commissioned, bringing the total number in operation to 27, and 24 ILS installations were commissioned, bringing the total in operation to 147.

A further decrease in length and number of delays in aircraft arrivals and departures was achieved. This was accomplished through wider use of direct controller-pilot radio communication facilities, ground radar installations, and low-altitude control procedures. A total of 28 air-traffic control facilities now provide radar control of either inbound aircraft, outbound aircraft, or both. At some locations where maximum utilization of radar is made, on a number of occasions traffic has been handled at a rate approximating that which is possible in VFR (visual flight rules) weather. Low altitude control procedures are now in effect over 27 short and extremely congested segments of the Federal airways system.

Joint CAA/USAF air defense planning activity continued at a steady pace throughout the year. The CAA continued to supply Aircraft Movement Information Service (AMIS) to all domestic air defense facilities, and the service was extended to include Anchorage and Fairbanks, Alaska. The CAA participated in extensive tests of the Multiple Corridor Identification System (MCIS) on the east coast and has agreed to assist in the establishment and operation of special long-range navigational aids on the east and west coasts, preparatory to the establishment of multiple corridors to serve these areas.

The first joint CAA-Air Force Radar Approach Control Center (RAPCON) was commissioned at MacDill Air Force Base, Tampa, to serve five fields in the vicinity. Similar installations are to be operated by CAA for 18 locations.

Aviation Safety

Basic changes were made in the administration of the safety program to make it more efficient, effective, and economical. Greater authority and responsibility for final action was delegated to the safety agents who work directly with industry in the field. The new policy stressed the need for the agents to work with responsible management officials to encourage the industry to undertake company-wide safety improvements on their own initiative and to assume more responsibility for detailed procedures and practices. Arbitrary frequency schedules for CAA inspection of air operators were eliminated and the agents were directed to concentrate their efforts where they would yield the greatest safety results.

Special emphasis placed on improved safety of the irregular air carriers produced good results. Efforts to raise the operational safety level of the C-46-type aircraft were stressed. In addition to studying aircraft design improvements, CAA's Aeronautical Center in Oklahoma City provided a course, in collaboration with the industry, to develop a better understanding of the performance capabilities of the airplane. Chief pilots of the irregular carriers and CAA agents profited greatly by this course. The Aircraft Engineering Foundation, which represented industry in sponsoring the program, reported that as of July 1 there had not been a fatal C-46 accident since the inception of the program.

Highly important studies were completed on technical problems encountered in the development and certification of turbine-compound powered transports such as the Douglas DC-7 and Lockheed Super Constellation, the turbine-jet powered Boeing 707, and the first ram-jet powered helicopter, as well as many other large and small conventional and unconventional aircraft. CAA engineering specialists worked with industry engineers in devising safety standards for testing and refining these modern aircraft.

A new commercial-pilot written examination which presents realistic true-to-life flight situations as test items was developed, field tested, and placed in use.

A new Civil Aeronautics Manual 20, *Pilot Certificates*, provides better procedures and standards, and is expected to improve the quality of pilot training and provide a much higher degree of uniformity in flight testing.

The Civil Aeronautics Board has delegated to the Administrator complete accident-investigation functions with respect to all accidents involving fixed-wing aircraft of 12,500 pounds or less except those operated in Alaska under a certificate of public convenience and necessity. A special course in investigative techniques was given to selected agents who in turn will indoctrinate other personnel in the field.

A comprehensive report on turbine-powered transports was completed during the year. The result of a year of study, discussion, and travel by CAA aviation safety specialists, it is intended to facilitate discussion leading to sound decisions on specific proposals and to provide a fundamental basis for eventual establishment of civil air regulations for turbine-powered transports.

The Civil Aeronautics Medical Research Laboratories were established at Ohio State University, where university-owned equipment will be made available for use by CAA to develop medical knowledge essential to aircraft design and operation. In association with the university, a program for the instruction of civilian physicians and research investigators in aviation medicine was undertaken.

Airports

No new construction funds were available for airport projects in fiscal 1954 under the Federal Aid Airport Program. Five new projects were placed under grant agreement representing \$360,011 from funds previously appropriated. Construction was completed during the year on 259 projects representing \$28,984,018 in Federal funds. There are approximately 131 continuing projects, amounting to \$18,303,831, which will be under construction during the fiscal year 1955. In addition to these active projects, there remain 380 projects where final payment must be made.

A complete revision of the Federal Aid Airport Program was undertaken during the fiscal year. This reappraisal resulted in basic changes in the policies for administering the program. It was concluded that continued Federal participation in airport improvement is justified, but should be concentrated upon airports which are important from an overall national aviation standpoint. It was further concluded that Federal funds should be concentrated upon types of improvement contributing most directly to safety and efficiency of aviation operations, and to the national defense. Such types of improvement include principally runway construction, approach clearances, lighting, and removal of hazards. In keeping with this objective, it was further concluded that improvement of airport terminal buildings should be excluded from Federal-aid participation.

Consistent with these conclusions, the Department took steps to reactivate the Federal Aid Airport Program and received an appropriation of \$22 million for fiscal year 1955 for this purpose.

The first formal approval of a lighted taxi-guidance sign, manufactured in conformity with CAA airport lighting specification L-829, was issued during the year. Signs conforming to this specification were installed at the Greater Pittsburgh, New York International, and Newark Airports. Evaluations of the operating performance of these signs have been made and are being continued by airport engineers of the Washington office in cooperation with the local airport authorities and the CAA regional office.

At the CAA-operated Washington National Airport, scheduled airline passenger volume of 2,870,075 established a new peak volume for the sixth consecutive year, while the total of 199,661 aircraft movements set a new peak for the third consecutive year. The passenger traffic reflected an increase of 8.8 percent over the previous year with a corresponding increase of 5.8 percent in total aircraft movements. The principal variation in aircraft categories was an increase of 8.6 percent in itinerant movements resulting from the increased volume of executive aircraft. A new record high of 68 aircraft movements in 1 hour was also established. Expenditures for the year were held to \$1,341,626 despite the increased activity and aging of the plant and structures. Revenues received from the airlines, concessionaires and tenants exceeded the operating expenditure total by \$461,357, but no attempt is made in the accounts to show amortization of capital investment.

International Operations

CAA continued its effort to strengthen inspection and service to United States flag carriers in their international operations. Included in this program during the year were: Certificate responsibility for 55 air carriers authorized to operate over 215,512 unduplicated route miles and use 657 airports of all categories; and 1,742 pilots, 291 navigators, 662 flight engineers, 233 dispatchers, 5,205 mechanics, and 136 radio operators. In the field of maintenance, 14 main bases, 12 sub-bases, 7 repair stations, and 19 foreign repair stations were serviced. Aircraft in the program totaled 960 (444 United States aircraft), mostly multiengine types. The required inspectional services for this large operation were accomplished by 68 aviation safety technicians.

Important accomplishments in the development of CAA/FOA (Foreign Operations Administration) missions included the agreement to assign a mission to Spain which provides for the modernization of its airways system at an approximate cost of \$2,000,000, and to train Spanish nationals to keep it in operation. Another important agreement was one with India covering an air navigational aids project involving an expenditure of \$1,950,000 for equipment. Completion of this project will remove one more restricted area in the operation of United States air carriers on their round-the-world routes. Missions were also established in Taiwan (Formosa) to assist in the establishment of a modern airways system, and in Chile to develop modern air navigation aids and communications services and plan a national airport program. There are now a total of 11 CAA Technical Assistance Missions operating in foreign countries.

Training

At the CAA Aeronautical Center at Oklahoma City, the powerplant laboratory has been equipped with radial- and axial-flow and turboprop engines which are representative of types of engines in operation. The improved material and visual aids in the powerplant courses will more fully

prepare CAA personnel for certification, operation, and maintenance responsibilities in connection with projected turbojet and turboprop air-transport operations.

The use of the Curtiss-Wright Dehmel flight simulator of the Boeing Stratocruiser was started during the year. The courses in crew coordination, heavy aircraft systems, instrument flying, and emergency procedures, in which the Dehmel simulator can be utilized even better than the airplane, have proved very valuable.

A total of 421 persons attended various Aviation Safety courses during fiscal 1954. Of this total, 17 were foreign nationals, 13 were airline pilots employed by large nonscheduled air carriers, 2 were from other Government agencies, and the rest were CAA Aviation Safety agents.

During the year 542 persons received instruction in the several major areas of Federal Airways operations. Of this total, 266 were CAA personnel, 239 were United States Air Force personnel, and 37 were foreign national trainees.

Technical Development

The CAA's Technical Development and Evaluation Center in Indianapolis undertook an extensive engineering and flight evaluation of the military short-range tactical navigation system, TACAN, to determine its suitability for use in the common civil-military navigation system. Tests and studies for the establishment of minimum requirements for cockpit visibility were completed and final recommendations covering the sizes of windows and windshields in the cockpits were made.

An ingenious method by which pilots can establish their own traffic separation was successfully tested at the Center. Under the system, pilots broadcast a flight plan by radio. The plan is automatically rebroadcast by a ground station so that it can be picked up by any other aircraft operating within the area and pilots work out their own landing sequence, or other traffic-separation problems.

The Center's dynamic air traffic control simulator was used to develop improved arrangements of navigation aids for the Washington, D. C., terminal area, including Andrews Air Force Base. Similar studies were conducted in connection with the complex Dallas-Fort Worth traffic problem.

A magnetic drum for the storage and processing of messages was installed and placed in operation on a test basis for system evaluation of the storage and transfer of traffic control and weather data.

Fire tests on the Convair 340 and the B-45 were completed, and recommendations based on the tests were adopted to improve the fire protection of these aircraft. Previous evaluation of an instrument for determining the effectiveness of an aircraft fire extinguishing system in flight enabled the Center's engineers to apply the test to the Super Constellation and the C-46 airplanes with resultant improved fire extinguishing systems.

Planning Activities

The Air Commerce Traffic Pattern, covering the calendar year 1953, was published. This booklet supplies facts on air commerce traffic by location and relates the air transportation hub pattern to other aeronautical indices and aviation requirements. *The Airplane at Work for Business and Industry in 1952*, published during the year, was based on the results of a survey of general aviation flying, with particular emphasis on specialized work uses for aircraft in industry and agriculture.

A study made of the changes in the air carrier fleet between June 1950 and June 1953 indicated that, while the number of aircraft had increased by 17 percent, the available lift capacity had increased by 42 percent in the 3-year period, this gain amounting to more than 1 billion ton miles annually.

In fiscal 1954 civil aircraft manufacturers shipped 3,685 aircraft, weighing 12,212,000 airframe pounds, valued at almost one-third of a billion dollars. This volume represented an increase of 60 percent in dollar value over fiscal 1953, and is the largest dollar output for civil aircraft produced for any single year.

Studies by interested groups in the aviation industry, CAA, and the military led to the decision that the lagging interest of the youth of America in aviation careers was largely responsible for the poor progress record of private and instructional flying and for continuing shortages in supply of skilled aviation personnel for the armed forces and the aviation industry. As a result, CAA formulated and is in the process of implementing the Aviation Incentive Movement (AIM) which is designed to capture and hold the interest of American youth in careers in aviation. This it is proposed to do through local and national competitions in the building and operation of models and full-scale airplane kits, geared to certain age groups, with prizes, trophies, and awards given for superior accomplishment. Many organizations, including the National Junior Chamber of Commerce, have pledged their active cooperation.

Legal Problems

As the enforcer of the Civil Air Regulations, the CAA processed 2,056 violations during the year. Regulations were prepared outlining the policies which the CAA will follow with respect to the release of surplus airport property from what now appear to be unreasonable terms, conditions, and limitations placed on these airport properties at the time they were conveyed to non-Federal public agencies under the Surplus Property Act of 1944.

Personnel

At the close of the year the CAA had 15,067 employees. The departmental service consisted of 1,130 permanent employees and 91 temporary and indefinite employees. The field staff consisted of 13,846 employees. The peak employment during the year was in July of 1953, when there were 16,018 employees on the rolls.

Information

During fiscal 1954, the Office of Aviation Information inaugurated publication of an internal bulletin to keep CAA employees better informed on agency policies and programs. Another step in this direction was preparation of a booklet entitled *CAA Facts* especially designed for use in training new employees and answering requests from the public for general information. As an economy measure, film libraries were transferred by the Washington and regional offices on revocable license to nearby universities, which agreed to make them available to schools, clubs, and other groups for educational purposes.

DEFENSE AIR TRANSPORTATION ADMINISTRATION

It is the responsibility of the Defense Air Transportation Administration to plan, and in the event of war direct, the mobilization of civil aviation resources and facilities.

During the past year, as a part of the Air Coordinating Committee's Review of Civil Air Policy, DATA led in the preparation of a comprehensive statement of mobilization planning policy for civil aviation facilities. This policy, adopted by the ACC, provides a clear statement of defense readiness concepts which have been evolved in recent years, and spells out the architecture for a high level of readiness to be built into civil aviation on a permanent basis.

The Civil Reserve Air Fleet, composed of long-range, four-engine aircraft representing one-third of the total United States airline capacity, has been brought nearer to the ultimate objective of assuring that this commercial lift capacity can be converted on a moment's notice to augmentation of the strategic airlift of the Military Air Transport Service on over-sea routes. Over 80 percent of the aircraft which DATA has designated by registration number for the CRAF operation have now been modified for immediate installation of certain military equipment in the event the fleet is activated. Detailed operational plans and spare parts stockpiles have been established as a result of the joint efforts of DATA, MATS, and the airlines.

The military requirements for direct support from the airlines must be balanced against equally important requirements of the war-supporting economy for air transportation on the War Air Service Pattern. This balance is maintained by DATA and is subject to continuing review. Solutions to the problem of reallocation of airlift capacity on the War Air Service Pattern, involving interchange of lift between the airlines, are being perfected by the Civil Aeronautics Board with the help of DATA and an industry advisory group.

A standby Air Priorities System, to apply on a worldwide basis to civil and military wartime air transport, has been developed by the Departments of Commerce and Defense, together with a manual of operation. Pending

the formation of the permanent standby administration of this Air Priorities System, DATA has established an interim domestic system which would function with the aid of airline personnel.

Skilled aviation manpower is recognized as an especially critical factor in the mobilization of civil airlift capabilities. DATA has worked out in detail the manpower requirements for the Civil Reserve Air Fleet operation, and has completed a survey of airline manpower requirements for the War Air Service Pattern operation. DATA has been working with the airlines and the military on an urgent basis to find ways to assure that a shortage of skilled aviation manpower will not become a limiting factor on wartime air transport operations. DATA's work in this field is being used as part of a broader approach to the aviation manpower problem being taken in the Interdepartmental Aviation Manpower Committee established this year by the Office of Defense Mobilization.

DATA, in cooperation with the Federal Civil Defense Administration, maintains a plan under which the fleet of noncarrier, transport-type aircraft may be utilized through the National Emergency Defense Airlift (NEDA) Plan to meet civil defense requirements in the event of a civil defense emergency. In addition to this, such civil defense requirements would also be met by airline and military transport capabilities through the Air Priorities System.

DATA makes recommendations to ODM regarding accelerated tax amortization necessity certificates for expanding air transportation facilities. The interim goal for 600 transport aircraft, to be delivered between January 1, 1950, and June 30, 1955, was attained in September of 1954.

An interim binder program, which would provide standby aviation war-risk insurance to become effective immediately upon outbreak of war, has been completed by DATA, and is being presented for approval by the next Congress.

MARITIME ADMINISTRATION

The fiscal year was marked by greater emphasis on providing aid and encouragement designed to foster private ship operation and shipbuilding instead of continued heavy reliance on expenditure of Government funds for these purposes. Several important legislative and administrative steps were taken in that direction, while the Federal Maritime Board and Maritime Administration continued to discharge their responsibility to further the development and maintenance of a well-balanced American merchant marine to promote the commerce of the United States and aid in the national defense.

In conjunction with the Under Secretary of Commerce for Transportation, the staff of the Maritime Administration completed the first comprehensive survey of maritime subsidies and related problems since passage of the Merchant Marine Act, 1936. Study was given to such problems as

determining the size of the operating merchant marine required as a defense nucleus; determining the size, character, and readiness of the national defense reserve fleet for mobilization requirements; preparation of a mobilization readiness program covering construction of oceangoing ships and shipyards; and encouragement of private enterprise in the financing and development of new ship construction. Significant changes in organization were accomplished, designed to facilitate the changes in emphasis and programs which were undertaken.

Construction and Operating Aid

Applications of two operators for construction-differential aid on two ships each were approved in principle by the Federal Maritime Board. In addition, negotiations were underway with a third operator for the construction of two ships under subsidy. Legislation was requested to permit the Government to sell to the American President Lines the SS. *President Cleveland* and SS. *President Wilson*, which were under charter to the company.

A reduction in the trade-in age of tankers was proposed to encourage the construction of modern, fast tankers and the lay-up in reserve of tankers suitable for defense purposes. Three operators applied for authority to trade in old tankers and construct new ones.

Two operating-differential subsidy contracts were awarded to companies not previously subsidized. The operating subsidy contract of one company expired and the company decided not to request an extension. Excellent progress was made in clearing up the backlog of operating-differential rates applicable to the postwar period. A total of \$209,117,664 in net advance subsidy payments had been made for subsidized operations through calendar year 1953.

The number of construction reserve funds of nonsubsidized shipowners and operators declined from 18 to 12 and the balances in these funds were reduced from more than \$4 million to approximately \$2½ million.

Abridged trade route reviews were completed on 8 trade routes and were nearing completion on 15 others. Reports on the extent of foreign-flag competition encountered by subsidized operators in calendar year 1952 were completed and were well underway for calendar year 1953.

During the year United States-flag participation in the Nation's overall foreign commerce continued to decline. A review of foreign aid movements for a period of nearly 5 years indicated that United States-flag participation was only 35 percent.

Operation of Ships

The operation of ships for the Government by general agents for defense purposes continued the substantial decline evident in the prior fiscal year. At the end of fiscal 1954 there were 26 ships in general agency operations as compared with 141 at the beginning of the year. In addition, 63 Maritime Administration ships were in the custody of other Government agencies,

including State maritime academies. Government ships under bareboat charter showed a similar decline, from 49 to 32. This decline in the number of general agency ships and ships under charter reflected the reduction in defense requirements and the increased availability of privately owned ships.

Another grain-storage program was initiated at the request of the Department of Agriculture, and the Maritime Administration made a total of 317 ships available for storage of approximately 72 million bushels of surplus wheat on both the Atlantic and Pacific coasts.

Ships laid up in reserve fleets increased by 135 to 2,067. The major movement of reserve ships was withdrawal and reentry of ships for grain storage. Extension of the program for cathodic protection of the underwater surfaces of hulls resulted in complete installation at the Hudson, James, Wilmington, and Suisun Bay fleets, covering 1,227 ships. Conservative estimates are that the cathodic method saves approximately \$3 million per year over traditional methods of underwater protection.

Construction of Ships

In the course of the year, the Mariner cargo ship construction program reached substantial conclusion. All but 5 of the 35 ships in the Mariner construction program had been completed and delivered. Of the remaining ships, one was being converted to a Navy attack cargo ship and three were being converted for operation by a subsidized operator. In addition, two refrigerated stores ships were being constructed for Navy account. In total, therefore, there were 7 ships being constructed under Maritime Administration contracts at the close of the fiscal year.

A program was initiated for modernization of Liberty ships, which comprise 85 percent of the reserve fleet, by hull modifications and new propulsion units to increase their speed. Initially, four Liberty ships will be converted and in addition will have new cargo handling gear installed experimentally. Two of these ships will be fitted with propulsion machinery of very advanced design. The performance of these ships will be carefully studied, and may have wide effects on subsequent merchant ship design. If successful, these conversions will provide a production type for mass conversion under emergency conditions.

Ship Sales and Transfers

As a result of investigations of illegal purchases of ships by noncitizens, one group of corporations in a settlement with the Government agreed to surrender 19 ships, to pay the Government \$4 million, and to dismiss all claims against the Government arising from the purchase. Other cases were awaiting trial and additional investigations were conducted.

In the course of the year, applications were approved to transfer 78 ships of 1,000 gross tons or over to foreign ownership or registry. The Maritime Administration policy on transfers was modified to permit, under certain conditions, privately owned Liberty-type tankers to be transferred

to the flags of Liberia, Panama, or Honduras, ownership remaining with United States citizens. Under the modified policy, 25 tankers were approved for transfer.

Training

A comprehensive survey was made of the need for Federal merchant marine training in the light of current conditions, as a result of which it was concluded that the United States Merchant Marine Academy at Kings Point, N. Y., should be continued. The Kings Point Academy graduated 242 officers and the four State maritime schools graduated 213.

Also as a result of this survey it was determined that the vocational phases of Federal maritime training should be discontinued. Accordingly, the active training stations at Alameda, Calif., and Sheepshead Bay, N. Y., were closed, including the United States Maritime Service Institute at Sheepshead Bay, which conducted correspondence courses.

Property and Supply

The maintenance and security program was continued at the four Government-owned reserve shipyards and permits were granted or continued for the use of substantial portions of the land, structures, and equipment of the shipyards. Redesign of the North Carolina shipyard into a six-way yard for building large, fast tankers was completed.

Custody of the marine terminals at Boston, Mass., and Philadelphia, Pa., was returned to the Department of the Army after having been used by the Maritime Administration for commercial operations since 1922. The warehouse at Hoboken, N. J., was moved to the Navy's reserve shipyard at Kearny, N. J.

A permit was granted to the city of St. Petersburg, Fla., for the use of the inactive training station in that city. Certain other inactive training properties were declared to the General Services Administration as excess to the needs of the Maritime Administration.

Financial Activities

All work was completed for implementation of the standby war-risk insurance program. The last phase was providing for war-risk cargo insurance.

The number of claims arising primarily from the wartime activities of the former United States Maritime Commission and War Shipping Administration was further reduced to 2,118, with a claimed value of more than \$19 million. In addition, there were claims with the Department of Justice for litigation in the amount of almost \$350 million.

Legislation and Litigation

Important legislation sponsored included a bill to provide a national defense reserve of tankers and promote the construction of new tankers. Other legislation was introduced to further amend provisions of the Merchant Marine Act of 1936 to facilitate the private financing of new ship

construction and to provide permanent 50-50 cargo preference provisions for transportation of Government-financed cargoes in United States-flag ships.

Litigation with respect to the sales price of the superliner SS. *United States* was finally settled by the agreement of the company to pay \$4 million in addition to the contract sales price in consideration of dismissal of the suit and release of accrued subsidy funds.

Other Activities

Activities in the regulatory field indicated that reduced cargo offerings in the face of high operating costs had resulted in the abandonment of some services or consolidation of carriers. Competition for freight was intensified in overtonnaged trades.

The Maritime Administrator served as the United States representative on the NATO Planning Board for Ocean Shipping. Close liaison was maintained with the Department of State with respect to discriminatory actions of foreign governments against American-flag ships. The Maritime Administration also continued to provide assistance in port training for officials of foreign countries as a part of the technical assistance program of the Foreign Operations Administration.

BUREAU OF PUBLIC ROADS

As the principal roadbuilding agency of the Federal Government, the Bureau of Public Roads is concerned with many aspects of highway transport. Among other functions it supervises the expenditure of funds authorized to aid the States in highway construction. It also supervises highway construction in National forests and parks and furnishes highway engineering assistance to other Federal agencies.

The primary and continuing objective of the Bureau has been to assist the States in devising and providing an adequate system of highways for the Nation. While the basic pattern for such Federal aid is fixed by law, close contact with highway problems in all States enables the Bureau to carry on a broad program of research dealing with essential phases of highway improvement and traffic control.

During the 1954 fiscal year the Bureau cooperated with the States in planning a wide variety of improvements on rural and urban highways. Both the Federal-aid program and other highway construction reached new high levels. Both the dollar volume and the actual physical construction showed a substantial increase over the preceding year.

The number of motor vehicles, the volume of traffic, and highway congestion all continued the rapid growth that began at the end of the war. Motor vehicle registration increased by 3 million in the calendar year 1953. A gain of 1.8 million in 1954 was expected to bring the total to over 58 million. Mileage traveled on all streets and roads increased 3.3 percent in the 12-month fiscal period.

The most significant trend of the year was the increasingly strong and widespread demand that steps be taken to make the highway systems adequate within the shortest possible period. Reflecting the character of today's traffic stream, particular emphasis was laid on the need for improved main arteries between urban areas and for expressways in cities. Few proposals of public policy have won such strong and universal support as this proposal for an enlarged highway program.

As a result, the Federal-aid Highway Act of 1954 authorized the largest Federal-State cooperative program in history—\$875 million in each of the fiscal years 1956 and 1957, an increase of 52 percent over any previous year. The act contains several new features designed to improve administration. It provides broadened authority for research programs. The Secretary of Commerce is directed to draft a bill for a Federal Highway Act to include such provisions of existing law and such changes as he may deem advisable.

Faced with the largest Federal-aid highway program in history, the Bureau took several steps to improve the efficiency and economy of its operations. Thanks to these revised procedures, the additional workload was handled with a reduction in administrative expenses. The number of permanent employees of the Bureau was reduced by 128.

Federal-Aid Program

All classes of Federal and Federal-aid highway projects completed during the year had a combined total length of 20,989 miles. Although this was 2,637 miles or 11 percent below the all-time record of the previous year, a greater volume of work in high-cost urban areas is included. The total cost of projects completed during the year increased by \$23 million; 2 percent over the previous year.

Projects completed during the year included 4,488 miles of highways and 995 bridges on the Federal-aid primary highway system outside of cities, 767 miles of highways and 453 bridges on urban sections of the Federal-aid primary system, 14,995 miles of highways and 1,631 bridges on secondary or farm-to-market roads, and 739 miles of highways in National forests, parks, parkways, and flood-relief projects. Nearly 200 railway-highway grade crossings were eliminated, and improved safety devices were installed at 315 crossings.

Federal-aid urban funds again were substantial with some \$166 million programmed during the year. Expressway-type projects continued to absorb about two-thirds of these funds. Several cities experienced notable relief of traffic congestion as significant elements of their new arterial street systems were opened to business and industry. Among them were Atlanta, Detroit, Los Angeles, Oakland, Seattle, and the Allentown-Bethlehem area in Pennsylvania.

The country's most vital highway network is the 37,600 mile National System of Interstate Highways linking business and industrial centers from coast to coast. Projects on this system, established in 1947, have been

numerous. Sections of four-lane divided highways have been completed in practically every State and construction of expressways has begun in almost all of the large cities on the system. Built to high standards, these improvements have been financed largely with regular Federal-aid primary or urban funds matched by State funds. The States fully recognize the importance of this system: Witness the fact that 27 percent of the primary funds and 45 percent of the urban funds since World War II have been used to improve the Interstate System. Even so, progress has been far below the rate required if the system is to be completed within 15 or 20 years.

Research Activities

The Bureau carried forward its studies of highway finance, highway transport, and the many physical problems that arise in highway construction. Like previous research programs, the objectives were dictated by the practical needs of modern highway construction and use.

In developing highway improvement programs for urban areas, more consideration was given to the overall needs of the municipality. This was especially true of routes on the Interstate System, which often cannot be developed to suitable standards on locations penetrating the heart of the city. Traffic congestion through these focal points sometimes can best be relieved by improved belt routes. Special emphasis was laid on control of access.

Section 13 of the Federal-aid Highway Act of 1954 directed the Secretary of Commerce to make "a comprehensive study of all phases of highway financing," including a determination of the costs of completing the highway systems in the several States as well as an intensive study of the toll-road movement. This study was set in motion toward the end of the fiscal year.

Motor-vehicle-use studies being conducted in cooperation with State highway departments were underway or completed in 20 States and Hawaii at the close of the fiscal year.

The movement of flood water has great significance for highway engineers and users. Last year about \$750 million was spent for highway drainage structures. Culverts alone took some 15 percent of the highway construction dollar. The hydraulic research of the Bureau, as in previous years, was conducted largely in cooperation with States and universities.

The Bureau continued its program of physical research involving soils and related problems directly affecting improved pavement construction and lower costs.

WEATHER BUREAU

The functions of the Weather Bureau are to observe, record, report, and forecast the conditions of weather and climate and the stages of rivers and floods that affect the safety of life and property or are vital to the basic economy and security of the United States.

The inherent variability of weather and climate with both time and place makes their reporting and forecasting a large and complex undertaking. Weather and climate vary significantly within relatively short distances in mountainous regions and on sea coasts, and they change from day to day, and often from hour to hour, sometimes very large changes. On days when the storminess is about average, the different kinds of weather in the United States in a 24-hour period number several thousand; on days of unusual storminess there may be 10,000 or more different kinds. These figures give an indication of the magnitude and importance of the problem of reporting and forecasting the weather; it takes a separate report and usually a separate forecast to adequately describe each of these different kinds of weather.

Forecasts and Warnings

Forecasts, warnings, and advisories of severe weather and floods are used extensively by the public and by almost all segments of the business community. They are broadcast several times each day by about 500 commercial radio stations and 200 TV stations, and this widespread dissemination contributes greatly to protection of life and property and to conservation of resources.

To strengthen the local severe-storm warning service, war-surplus radar equipment, originally designed for aircraft use, has been acquired and converted for use in storm detection, and these radar units have now been installed at about 30 Weather Bureau offices. This equipment scans an area which extends 100 to 200 miles around the locality and helps in observing the location, extent, rate, and direction of movement of rain areas, storms, and squall lines. Eleven of these installations have been made in the State of Texas as a result of cooperative agreements between the Weather Bureau and Texas A. & M. Research Foundation and 11 cities, where the conversion and installation costs were assumed by the municipalities.

Further assistance in storm detection and reporting is received through severe local storm networks numbering 171 in 43 States for the 1954 season. These networks are manned by volunteers in local communities who report to the Weather Bureau as soon as a tornado or other severe storm is observed. These aids have proven extremely valuable in storm detection, and they have made possible more definite local forecasts for the areas to be affected.

Several other plans for improving weather forecasting were field tested. For example, at Raleigh, N. C., a State forecast center was established to test further the advantages of assigning forecast responsibility for one State to an office within the State. The advantages to be gained by decentralizing forecasting to smaller areas are that greater attention can be given to the sections of States having topographic differences. Thus forecasts can be more localized, detailed, and useful to the individual needs of agriculture, industry, and the general public.

In cooperation with the military services, progress was made in developing numerical methods of weather prediction for use with the electronic digital computer. The establishment of a numerical prediction unit to be jointly operated and staffed by the Weather Bureau, United States Air Force, and United States Navy has been completed, and delivery of a computer for operational use is expected by spring of 1955.

Dissemination of Weather Information

Rapid dissemination of the forecasts and warnings to the public is of no less importance than is accurate forecasting if the weather service to the public is to be effective. For this purpose, local weather teletypewriter circuits were established in 12 additional cities, increasing to 22 the number of locations where this service is available. These local weather circuits are used to transmit forecasts, warnings, State and National weather summaries, and other weather information to news wire services, newspapers, radio and television stations, and general business concerns subscribing to the service. The forecasts and other data transmitted are not designed for any particular subscriber, but are transmitted for general public use. Thus, radio and television stations and the press can keep their listeners and readers fully informed of the latest weather developments.

Arrangements were made with the telephone company to test an automatic telephone answering service for the distribution of aviation weather advices. Special equipment for this service was installed in the Weather Bureau Office at Washington National Airport, where in a few months the forecast service proved to be exceptionally useful to aviation interests.

In cooperation with the Civil Aeronautics Administration, a pilot project was inaugurated providing continuous broadcast of aviation weather over a CAA radio range station in the vicinity of the Washington National Airport. This service is designed primarily to enable the airman in flight to keep apprised of current flying weather conditions. If this service proves satisfactory, it may be possible to extend it to almost nationwide coverage through utilization of the approximately 80 to 90 low/medium frequency stations that are to be retained as a secondary navigation system.

Automatic radio broadcasts of aviation weather information were continued in New York and Chicago where the demand for such information was greatest. Further installations of this type will depend on the success of the experimental project with the CAA, mentioned above, as the cost of equipment will be lower if the CAA range stations are used.

River Forecasting and Flood Warnings

Expansion and modernization of the Bureau's flood forecasting service was continued by expanding areas of development to the Red River (North Dakota and Minnesota), the upper Missouri River, and the lower Mississippi River Basins. New forecast procedures were also developed for use at 10 river district offices. A low-cost but dense cooperative reporting network and communications relay system was established in the Floyd and

Little Sioux River basins in northwest Iowa after the June 1953 flood, and this project thoroughly demonstrated its value during the floods in Iowa of June 1954. Accurate and timely forecasts were made for the record-breaking Rio Grande flood by the Brownsville River District Office. Through comprehensive basin reports for the New England-New York area and the Arkansas-White-Red River Basins, the Bureau secured acceptance of flood forecasting as a flood-control measure. These reports will show that in some cases flood forecasting is the only economically justifiable protection against flood damage under the existing basin developments.

In the field of hydrologic investigations, studies on evaporation continued on an interagency project at Lake Mead, Nev., with Stanford University at Felt Lake, Calif., and at Silver Hill, the Bureau's observational research center near the city of Washington. The analysis of rainfall intensity-frequency-duration in the Western States was completed to the 105th meridian; and for overseas areas, with sparse recording networks, a derivation from more common climatological data was developed.

Completion of a pilot project demonstrating the extension of flood frequency records by application of rainfall-runoff forecast relations to the longer rainfall records led to assignment of a full-scale project for the Bureau of Public Roads. A report generalizing probable maximum precipitation on the Sierra slopes of the Central Valley in California, in terms of climatic and physiographic parameters, was completed for the Bureau of Reclamation. Final reports were issued analyzing and synthesizing hurricane wind patterns over Lake Okechobee, in Florida, for use in levee design by the Corps of Engineers.

Field Station Consolidations and Other Improvements

The Weather Bureau continued to place emphasis on adjustments in its operating practices to bring about increased efficiency while at the same time permitting some reduction in operating costs. The most important of the program adjustments are described in the following paragraphs.

The climatological section center consolidation plan which began a year ago was modified to obtain greater centralization of the processing of records while retaining the advantages of having a climatological center in each State. Cooperation with State and agricultural universities increased as these institutions made their resources available to analyze and publish climatic data of use to agricultural and business interests. To make numerous climatological tabulations and summaries available to possible users, the *Inventory of Unpublished Climatological Tabulations* was printed and its availability advertised.

In locations where the Weather Bureau has maintained offices both in a downtown area and at an airport, it has been the practice to consolidate at the airport as soon as sufficient office space could be obtained and program adjustments could be satisfactorily made. Nine such consolidations were completed during the year and plans were made for consolidation at eight additional locations during the next year.

In accordance with a "mutual assistance" program between the Civil Aeronautics Administration and the Weather Bureau, CAA stations assumed either full- or part-time weather observing duties at 6 locations and made plans to take over these duties at 8 additional locations. The Weather Bureau in turn assumed certain communications duties formerly performed by the CAA at 17 locations. This program showed significant savings in operating costs for both agencies.

Arrangements were made for the Superintendent of Documents to take over the distribution of all Weather Bureau publications. This change in the handling of publications produced savings for the Bureau, both in personnel and storage space.

An automatic observer that codes and transmits reports by teletypewriter was completed and tested and two such automatic weather observers were placed in operation at somewhat remote locations. This equipment will eventually be a substitute for a staff of observers at many small airports.

Successful experiments at Washington National Airport with automatic, remote reading "end-of-runway" equipment for recording ceiling and visibility values for aircraft landings led to the installation of this observational equipment at the Idlewild, N. Y., and Newark, N. J., airports. Plans have been completed for about 10 additional installations within the next year.

The Weather Bureau project on artificial cloud nucleation was terminated in May after completing a total of 58 seeding and exploratory flights in migratory storms over western Washington. A majority of the test flights were made between September 1953 and May 1954. Of the surveyed cloud systems, 34 were considered seedable based on the existence of at least traces of supercooled water. Of these, 23 were treated with dry ice; the remaining cases were used as control data. The control and test cases were determined at random. Although the program was designed to test the statistical reality of any induced rainfall anomalies over a predetermined target area, observations of cloud and storm structure are considered of major importance in assessing the "seedability" of the storm. The use of high-powered radar and airborne cloud-sampling techniques for establishing the makeup of clouds provides important basic information for evaluating the natural precipitation-producing mechanisms in storms and clouds. These data are being incorporated in the continuing analysis program for assessing whether or not artificial seeding methods may be a promising means of modifying rainfall and snowfall on a practicable scale.

A spherical chamber, 60 feet in diameter, designed to make artificial clouds under controlled conditions, was put into operation near Hitchcock, Tex. Important measurements of the properties of clouds are under way at this facility. Results already obtained show that conditions in this chamber will approximate those encountered in nature and that much useful information can be obtained. Many of the data obtained so far are negative in character but are extremely valuable in guiding future work. The

electrical properties of clouds are currently under investigation and important new results have been found.

The Bureau prepared a number of information bulletins on aviation weather with particular emphasis on the use of weather knowledge to increase efficiency and safety of aircraft operations.

Office of the Assistant Secretary for Domestic Affairs

The Assistant Secretary of Commerce for Domestic Affairs is the Secretary's principal assistant in fostering, promoting, and developing the domestic industry and commerce of the United States. Under the Secretary, his function is to assure that the domestic program and activities of the Department result in the fullest contribution to a sound economy.

The Assistant Secretary of Commerce for Domestic Affairs serves the business community in gaining proper representation of the latter's views, opinions, and problems in governmental affairs. Thus, the stability and growth of the national economy is promoted to insure a sound policy of free competitive enterprise.

BUSINESS AND DEFENSE SERVICES ADMINISTRATION

The Business and Defense Services Administration, which was established on October 1, 1953, made substantial progress in carrying forward the Department's responsibilities in connection with current defense production, mobilization readiness, and services to American business and industry. The new agency succeeded the National Production Authority, which had been created in September 1950 to carry out the Department's responsibilities under the Defense Production Act of 1950 during the Korean War.

During the past year, emphasis was placed on priorities actions and the allocation of materials in support of the currently authorized military and atomic energy programs under the provisions of the above act as amended, and on the industrial mobilization preparedness program under assignments from the Office of Defense Mobilization. In the area of business services, activity centered in launching a coordinated program designed to foster and promote the domestic commerce of the United States.

Defense and Mobilization Preparedness Activities

Pursuant to the recommendations of the Joint Committee on Defense Production, the policy of the President, and the objectives of the Congress as contained in the Defense Production Act amendments of 1953, BDSA continued materials and production controls with respect to scarce critical items essential for national defense. This job was accomplished through the new

Defense Materials System (DMS), which greatly simplified action on the part of Government and proved less burdensome to industry. The special assistance caseload decreased from about 1,000 cases per month in the fourth quarter of 1953 to slightly over 500 cases per month during the second quarter of 1954. This was the result of general cutbacks in defense spending during the past 6 months, and to the completion of certain atomic energy projects. However, as of the end of the fiscal year on June 30, it appeared that the need for special priorities assistance will continue for some time in order to provide for new AEC projects. Areas of tight supply requiring assistance continued to be tools, general industrial and heavy power equipment, components, electronics, scientific instruments, and high-alloy metals.

PRODUCTION AND MATERIAL CONTROLS FOR PARTIAL OR FULL MOBILIZATION.—Progress was made in developing machinery to achieve rapid and effective mobilization of our industrial resources in the event of full mobilization. The establishment of the simplified Defense Materials System, made effective on April 1, provides assurance that military and atomic energy production and construction programs can be increased rapidly with minimum dislocation of the remainder of the industrial economy. The DMS regulations and procedures could be expanded after an M-day to permit the programming of the civilian economy to meet wartime needs.

The new DMS will serve as a readiness measure in the event that the cold war situation continues without important change. Should it be necessary to engage in a limited war accompanied by a moderate increase in military requirements, it is not likely that the DMS regulations will need to be supplemented by additional control orders. Overall orders designed to achieve stabilization of production and materials use levels have been prepared and are available for issuance in the event of mobilization short of all-out war. These same actions can be taken in the initial phase of an all-out war with the expectation that a more detailed set of controls would be needed in subsequent months. Work on these orders has been initiated and will continue as rapidly as possible.

MOBILIZATION REQUIREMENTS.—The feasibility test which compares estimated wartime requirements for steel, copper, and aluminum with supply of these basic metals was initiated early in 1953. Considerable progress has been made since that time by BDSA with respect to civilian requirements and by the military with respect to military requirements. This continuous review of major segments of a total wartime program promises to have the effect of reducing the level of manufacturing and construction to a point where the Nation's total resources would not be fully used, at least in the weeks and months immediately following an M-day. The results of the full feasibility test will be useful in determining how best to use our total resources as between military, war supporting, and civilian programs.

MOBILIZATION BASE DEFICIENCY STUDIES.—A series of studies have been started to identify gaps in the mobilization base and to recommend steps for

filling them. These studies fall into two general groups: First, those relating to the basic materials, including their forms and shapes and types; and second, those relating to components, including such items as valves, turbines, and the like. While the exact magnitude of the gaps cannot be fully determined until full mobilization requirements are known, we can, from our past experience and knowledge of existing capacity, identify and act on gaps as a preparedness measure. Industry task groups are being widely utilized in connection with this work.

INDUSTRIAL DEFENSE.—In the field of industrial defense, work has gone forward with respect to continuity of production, plant dispersion, and the identification and rating of facilities by the Industry Evaluation Board. With respect to the latter, the IEB has evaluated and rated for protective and other purposes, a majority of our key industrial facilities which would be vital to survival in the event of attack or all-out war.

In the area of continuity of production, BDSA has initiated a program of consultation with the top management of companies who have facilities rated as critical in order to stimulate and guide company efforts to develop their own emergency plans. Here, we rely heavily on confidence that the traditional initiative of private industry can and will find the best practical solution to the problem of industrial security. Several companies have already done outstanding jobs along these lines. The BDSA is assisting others to do the same.

Studies have been made indicating serious concentration of certain key industries in critical target areas. Many practical economic factors make for difficulty in dispersion of plants as a solution to this problem. The granting of accelerated amortization may assist in stimulating the location of some facilities in safer areas.

ACCELERATED AMORTIZATION.—The number of applications for certificates for accelerated amortization submitted to BDSA for review tapered off sharply during the year. This reflects not only the relatively small number of expansion goals still open, but also the fact that open goals cover products for which the foreseeable commercial demand is far below estimated mobilization requirements. Attention was focused on those materials and facilities which would be needed for extraordinarily high levels of production during an emergency.

STOCKPILE ACTIVITIES.—The Government's new stockpile policy and program resulted in an increase in BDSA responsibilities for the development of estimated requirements and supplies for the areas assigned to the agency. Over 30 studies were undertaken on the development of estimates for commodities which were a part of, or an addition to, work required on stockpile items which have not been reviewed recently. In addition, the Office of Defense Mobilization assigned to BDSA special stockpile problems requiring industry advice on technical matters, such as specifications, storage, and rotation.

Business Service Activities

Both large and small business has benefited during the year from a variety of activities performed by BDSA. These services were carried out by the agency's 25 Industry Divisions, Office of Small Business, Office of Distribution, and Office of Technical Services.

The 25 Industry Divisions are largely directed by industry executives borrowed from private concerns, without compensation from the Government, on a rotating basis. They are bringing to Government up-to-the-minute knowledge of individual industries and, in turn, they take back to business an understanding of the problems that are peculiar to Government. Since Government is an important factor in the economy, business is thus participating in helping officials in their effort to maintain stability, to develop practical defense programs, to provide for rapid expansion in an emergency, to encourage efficiency in distribution, and to disseminate technological information.

As a means of exchanging views between business and Government, a series of industry conferences has been held during the year. Altogether, more than 30 such conferences were held and attended by more than 850 key executives from large, medium, and small businesses, and from trade associations. Conferees thus represented a good cross section of a given industry, with due consideration for such factors as size and geographic distribution. Mutual benefits from these conferences have come to both business and Government on common problems relating to the national security and to the domestic and foreign commerce of the United States.

In furtherance of this Government-industry relations program, wide use was also made of industry advisory committees, special conferences, and task groups, which are authorized under the Defense Production Act of 1950, as amended. All such meetings were concerned in whole or in part with BDSA's operations in connection with current defense production and the long-range mobilization readiness program. Typical of the subjects considered and on which the advice of industry was sought were the following: The new Defense Materials System; pre- and post-attack planning; stockpiling; expansion goals; mobilization requirements; industry evaluation of facilities and plant-protection measures; scrap and salvage; mobilization base deficiencies; accelerated amortization; mobilization readiness statistical data; and conservation practices.

During the year industry has brought to BDSA's attention a wide variety of Government activities which appear to be unfairly in competition with private industry. These are being referred to the proper authorities for appropriate consideration. The BDSA is also cooperating with the Department of Defense in a program for the disposal of Government surpluses, which is designed to recover the maximum return to the Government and create as little disturbance as possible to private business.

Special services have been rendered the distribution trades and small business through the preparation and issuance of special data and aids to business.

In all of these activities, BDSA works closely not only with industry itself, but with other Federal agencies to coordinate effort and achieve maximum efficiency in the performance of useful services to the business community.

OFFICE OF BUSINESS ECONOMICS

While the 1954 fiscal year as a whole set a record for national output, the second half was characterized by a "topping-off" process which was analyzed closely throughout the period. By the use of its business indicators—national income, national product, and the balance of international payments—the Office of Business Economics was able to inform the business community of the nature of the adjustment and to measure the extent of the varied performance in particular segments.

Businessmen were able to chart the course of the downtrend in the first half of fiscal 1954, and the period of relative stability which marked the second half of the year, through the pages of OBE's monthly *Survey of Current Business*, a magazine which has given similar guidance for more than 30 years. Included in this magazine regularly are not only the basic national accounts and 40 pages of business statistics showing 2,500 individual series, but also surveys of business intentions to invest in new plant and equipment, analyses of growth trends, reports on business inventories and sales, data on income by States, and vital statistics on the business population including the number of business births and deaths.

Notable among the other products of the Office of Business Economics is a family of publications which are sold separately and, while keyed to the material furnished in the magazine, have individual status as economic documents both in the United States and throughout the world. The latest of these, the new 1954 *National Income* supplement to the *Survey of Current Business*, was prepared during the year. It traces and evaluates the flow of current income and its use, and the distribution of goods and services among their final markets. It shows the transactions of each of the three major parts of the economy—business, Government at all levels, and consumers—with each other and with foreign nations. The text material in the 1954 report includes a review of economic developments over the span since 1929, based on the more than 50 tables of annual, quarterly, and monthly data shown. Also provided are detailed, up-to-date explanations of the definitions, sources, and methods underlying the official national income statistics.

With such tools, private business is equipped to evaluate shifts in demand, by product lines and by customer types. Individual companies can relate past results of sales efforts to the potential that then existed, and use this knowledge in allocating future sales effort among types of customers. On

this basis can be examined not only the circumstances of a specific business or industry, but the situation of its principal markets, the well-being of which are so vital to the individual enterprise's future prosperity. From this in turn stems the ability to adjust to shifting economic trends, not only in the country at large but in particular industries, and in localities dependent upon particular industries.

Foreign economic developments are reflected in the United States balance of international payments, a basic tool for analyzing the United States position in world trade which has been maintained since 1922. In a series of quarterly reports OBE presents the facts as to the amounts the United States is paying to and receiving from other nations. Current account transactions included are merchandise trade, transportation, travel, income on investments, private and governmental services, and the various foreign grant and credit programs. Capital movements and the exchange of gold are also recorded.

The balance of international payments provides essential information for use in determining the impact of international transactions on the domestic economy. Together with other measures, such as national income and product, these accounts also present basic data necessary for evaluating the extent and character of any existing international disequilibrium and of cumulative progress toward stabilization. Revised statistics for the entire period 1919-53 were recently published to bring up to date OBE's previous definitive volume on methods and sources.

In addition to the major supplementary volumes, a weekly statistical supplement is sent regularly to subscribers, to keep them posted on the movements of the more frequently issued business indicators. Through a press release series entitled "Business News Reports," the essential material prepared in OBE is made available quickly for widespread reproduction in newspapers, business magazines, and trade journals.

The range of economic materials available from the Office of Business Economics is indicated by the following list of titles selected from issues of the *Survey of Current Business* published during fiscal 1954:

- Investment Programs and Sales Expectations in 1954.
- The Recent Pattern of Consumption.
- The International Investment Position of the United States.
- Size Characteristics of the Business Population.
- Manufacturers' Orders and Inventory Position.
- Agricultural Marketing and Income.
- Changes in Public and Private Debt.
- Rental Income and Outlay in the United States.

An index to the contents of each annual volume is provided on the back cover of the December issue. The February issue each year is devoted to a review of activity in all sectors of the economy during the previous year.

OBE cooperates extensively with other agencies of the Federal Government such as the Council of Economic Advisers, and with staff groups

of the Congress such as the Joint Committee on the Economic Report, in providing essential economic information necessary for evaluation of the progress of the national economy. During any period of intensified interest in the course of business activity—like that which prevailed throughout fiscal 1954—the resources of the Office of Business Economics are heavily taxed to provide material for other agencies, commissions, and fact-finding bodies designated to make particularized studies of business developments.

BUREAU OF THE CENSUS

The past year was noteworthy for the number of improvements made by the Census Bureau in carrying out its objective of providing statistical and technical services to business, industry, Government, research groups, and the general public. Notable gains were made in time schedules for the release of data. The continued use and extension of scientific sampling methods and the application of quality control techniques have resulted in more reliable statistics without increase in costs. New techniques for processing data have been developed. As the result of a special appropriation for spot checks in lieu of censuses, information has been provided in important fields not heretofore covered.

Certain unfavorable developments must also be noted. The elimination of all funds for the major censuses required a large reduction in force and led to the curtailment of some services which otherwise would have been provided. These and related matters are discussed in the report *Appraisal of Census Programs* issued in February 1954. This report was prepared by the Intensive Review Committee, a group of distinguished experts appointed by the Secretary to review the programs and policies of the Bureau of the Census.

The Current Program

The current program of the Bureau, consisting of the compilation of data on population estimates and characteristics, employment and unemployment, industrial production, the distributive trades, cotton ginning, production, and distribution, United States foreign trade, State and local government finances and employment, and other subjects, was carried out with improvements in timeliness and in techniques.

An important change in technique put into effect during the year was a new and improved sample design for the collection of retail trade data, employment and unemployment statistics, and other information. The new sample includes 230 areas in all parts of the United States as compared with 68 in the former design. This change substantially improves the reliability of the data and makes it possible to publish regularly regional data from sample surveys for the first time.

Use of a high-speed electronic computer installation has brought increasing benefits to the Bureau's programs, in the direction of improving the

accuracy and reliability of the data, tabulating more detail without increasing costs, and reducing publication time lags. Among the programs benefited to date are the monthly reports on employment and unemployment and on retail trade. The necessary detailed procedures are now being perfected for converting the compilation of foreign trade data to the electronic computer. The Census Bureau and the National Bureau of Standards have jointly developed a pilot model of a new device which is able to read completed questionnaires photographically and produce computer tape automatically without hand operations. Use of this device is expected to effect further savings in costs, time, and manpower.

The following is a brief summary of the current statistics made available by the Bureau of the Census during the year.

BUSINESS STATISTICS.—The 1953 annual surveys of retail, wholesale, and service trades, made possible under the "spot-check" program, provide valuable economic data and have given the Bureau experience useful in planning the 1954 Census of Business.

Monthly reports on retail and wholesale trade and on inventories of and storage capacity for petroleum products, quarterly reports on the reconditioning of steel barrels and drums, and seasonal reports on canned food stocks were issued.

By utilizing a special retail trade reporting panel (approximately 1,500 respondents), the Bureau has produced an advance report on retail trade 10 days following the close of the month covered, beginning with data for October 1953. A scientific probability sample was developed to provide each month national totals of wholesale sales and inventories. The new sample makes possible a considerable improvement in the kinds and quality of the data presented in the monthly wholesale trade report.

A new kind of retail trade census in Dallas, Tex., financed in part by interested local groups, was taken in January 1954. This census, providing information on shifts in trading centers within the metropolitan area, has attracted considerable interest and may be undertaken also in other metropolitan areas. A survey to provide figures on inventory of passenger cars held by used-car dealers was conducted for the first time, as of the end of 1953. Also for the first time, the Bureau has been testing the collection of selected retail end-of-month inventory figures.

COTTON STATISTICS.—The Bureau continued its release of data on cotton ginning on dates during the ginning season specified by law. In cooperation with the Agricultural Marketing Service of the Department of Agriculture, the Bureau issued the consolidated cotton report providing data on ginnings, indicated yield per acre, and indicated total production. The annual bulletins on cotton production and distribution were also issued.

FOREIGN TRADE STATISTICS.—The Bureau continued the compilation of data on United States foreign trade, issuing reports on total trade; trade by commodity, by country, and by customs district; vessel entrances and clearances; bunker coal and oil loadings; and waterborne foreign commerce.

Approximately 150 different special reports on foreign trade were prepared at the request and expense of interested persons or organizations. As an example of increased timeliness in the release of data, preliminary estimates of the total value of United States exports and imports are now released monthly about 15 days in advance of the appearance of the summary report on total trade.

GOVERNMENTS STATISTICS.—In addition to the regular compendia of State and city government finances (published for 1953 and 1952, respectively), the results of five special studies on activities of governments were made available. A revised summary of State government finances provided comparable figures for 1942–50 for the first time. Textual reports were issued on special district governments, on local government structure, and on local government in metropolitan areas. A statistical study of State payments to local governments in 1952 was released. The Bureau continued its quarterly series on public employment with the companion annual reports on State distribution of public employment and on city employment.

INDUSTRY STATISTICS.—The 1953 annual survey of manufactures, taken for the fifth consecutive year, makes available valuable statistics on the Nation's resources and provides part of the underlying information as to the country's industrial structure that will be drawn upon in taking the 1954 Census of Manufactures. The 1953 sample survey of manufactures included for the first time a question on industrial water use, a factor of increasing importance in the economic picture.

The *Facts for Industry* series of 67 monthly, quarterly, or annual reports continued as a current gage of the Nation's industrial activity. New approaches have been employed to maintain this program at the highest possible level under the reduced appropriations. This has been accomplished by obtaining the cooperation of participating industries wherever feasible in the collection of data and the sharing of costs, by converting the surveys of some of the smaller industries to a less frequent basis, and by cooperating with the Business and Defense Services Administration in the compilation of needed data not elsewhere available. The timing of the *Facts for Industry* program on the production and shipments of important commodities has been improved by such means as utilizing shuttle-type reporting forms and combining and simplifying forms.

POPULATION STATISTICS.—The Bureau prepared and published monthly provisional estimates of the total population; estimates by age, color, and sex, 1950 to 1953; estimates for States as of July 1, 1953; estimates for the Territories and possessions, 1950 to 1952; illustrative projections of the population by age and sex, 1955 to 1975; and projections of school enrollment, 1953 to 1965. Reports on population characteristics included household and family characteristics; school enrollment, educational attainment, and illiteracy; marital status, year of marriage, and household relationship; internal migration; and fertility. In addition to the

monthly report on employment and unemployment, data were published on labor force characteristics, including part-time workers, employment of students, marital status of workers, educational attainment and literacy of workers, and work experience of the population. Family and individual income figures were issued. The series of international population statistics reports was continued, with a detailed study of the population of Poland.

In addition to the benefits resulting from the new 230-area sample design, improvements in the monthly labor force reports have resulted from refinements in estimating procedures. Further improvements in techniques, concepts, and content are expected on the basis of recommendations from the Secretary's Special Advisory Committee on Employment Statistics, and from an interdepartmental Committee on Review of Concepts. The Bureau is now collaborating with the Department of Labor in the issuance each month of an integrated report presenting summary statistics on employment and unemployment. The full detail available in the Bureau's own series, the *Monthly Report on the Labor Force*, continues to be published in that series.

Defense and Other Special Work

The Bureau of the Census continued to act as the principal collecting and compiling agency for the Business and Defense Services Administration and to assist in special projects for other agencies under the Defense Production Act. These services included 12 repetitive or single-time special surveys, modification of 12 existing current industrial surveys, and numerous special tabulations of data already on hand to provide detailed information not otherwise available. In addition to work under the Defense Production Act, special tabulations were prepared from data on hand, or supplements were added to regular survey questionnaires, to furnish information for various agencies. Numerous special tabulations of data from census records were prepared at cost for business organizations, trade associations, and individuals.

At the request and expense of the local communities concerned, special censuses were conducted for 138 cities and towns, representing an increase in this activity over the preceding year.

The ability of the Bureau of the Census to provide the special services for defense and other agencies, in addition to the performance of its regular programs and operations, demonstrates a standby reserve capacity of technical know-how and facilities capable of meeting future emergency requirements. Among the resources available in the Bureau of the Census are its field organization, capable of conducting nationwide or local surveys; special mailing lists; extensive machine tabulation facilities, including a high-speed, high-capacity, electronic computer; a competent technical staff; and extensive files of earlier publications and unpublished underlying detailed tabulations.

International Statistics Program

The Bureau of the Census continued its technical assistance to foreign governments in the improvement of their census and statistical services, with overseas operations and Washington training activities conducted in cooperation with the Foreign Operations Administration. During the year, 52 foreign technicians representing 24 countries received instruction in census and statistical methods at the Bureau. A special 5-week program was presented for a group of French industrial statisticians. Five groups of top-level market-research and industrial management personnel from private industry in Denmark, France, Germany, and Italy were given orientation on the uses of census and other statistical data in the analysis of business conditions and the improvement of productivity. The Bureau received a total of 252 foreign visitors from 50 countries during the year, in addition to the 52 technicians mentioned above.

Ten Bureau of the Census experts were assigned to foreign posts during the year under the technical assistance program of the Foreign Operations Administration. These technicians supplied census and statistical guidance to the Governments of Pakistan, Iran, Jordan, Saudi Arabia, Liberia, Uruguay, Paraguay, Honduras, and Cuba. The Bureau exchanged census and statistical publications and technical materials with some 250 statistical offices in 65 countries. A special series of releases on urban populations in selected Latin American countries was prepared and distributed through the *Business Information Service* of the Department of Commerce.

Other Activities

SPECIAL PUBLICATIONS.—Another supplement to the *Statistical Abstract of the United States*, now in its 75th edition, was published during the year. This was the *Continuation to 1952 of Historical Statistics of the United States, 1789-1945*. A working paper, *Raw Materials in the United States Economy, 1900-1952*, was also published. This paper, which to some extent is an outgrowth of the work of the President's Materials Policy Commission, presents annual production and consumption data for raw materials for the period 1900-1952. A series of procedural studies of the 1950 censuses was begun with the publication of an evaluation of the special problems of enumeration of infants. A series of technical papers, the first of which related to the sample survey of retail stores, was initiated. A report of the test survey of truck inventory and use resulted from the small-scale survey undertaken principally to test specific forms and procedures for future use in a large-scale survey of the transportation field.

PERSONAL CENSUS RECORDS.—Applications for personal information from the census records to establish proof of age and citizenship continued at about the same level as for the previous year. The number of cases handled amounted to 115,314. Mail received in connection with this service amounted to 170,457 letters.

Personnel

On June 30, 1954, the Bureau had a total of 2,470 employees (including 707 part time), of whom 1,671 were departmental and 799 field employees. The total compared with 3,133 (including 814 part time) on June 30, 1953, and 4,439 (including 745 part time) on June 30, 1952.

OFFICE OF FIELD SERVICES

The Department maintains field offices in 33 cities throughout the United States for the purpose of providing a local point of contact between the following units of the Department and the business public in the areas of activity indicated:

Business and Defense Services Administration—Facts on domestic industry and trade.

Bureau of Foreign Commerce—Foreign trade information and services.

Office of Business Economics—Data on national income, gross national product, and economic trends.

Bureau of the Census—Basic statistics on population, housing, agriculture, business, and foreign trade.

National Bureau of Standards and Office of Technical Services—Technological and scientific studies and reports.

Foreign Trade Activities

Dealing directly with exporters, importers, banks, and trade groups, the field offices serve as the outlets for the information gathered throughout the world by the American Foreign Service, the statistical data on export-import trade compiled by the Bureau of the Census, and the reports and publications of the Bureau of Foreign Commerce. The services are many and varied, ranging from market prospects abroad for specific products to trade and exchange controls in effect in world markets. Duties assessed against American products as well as competitive conditions to be met are among the items of information in constant demand. Information on potential distributors and reports on their standing in the trade are also available as well as current procurement opportunities financed by the Foreign Operations Administration.

Of special importance are the facilities made available through the field offices on export control regulations including the latest information on items subject to control, amendments and extensions to validated licenses, and emergency service in special cases.

Service to Domestic Industry and Trade

Maintaining direct relationships with manufacturers, wholesalers, service trades, and other business groups, the field offices provide a wide range of services in the field of marketing and distribution and in the solution of technical production problems. Using reports, statistical data, and pub-

lished material supplied by the Business and Defense Services Administration, the Office of Business Economics, the Bureau of the Census, the National Bureau of Standards, and the Office of Technical Services, the offices provide ready access to the trade-development facilities of these Commerce units. Of special interest to many businessmen was the daily publication *Synopsis of U. S. Government Proposed Procurement and Contract Awards* issued by the Office of Field Services and providing information on Federal procurement opportunities and awards made to prime contractors by the Government. At the close of the fiscal year plans were under way for inclusion of proposed sales of surplus personal and real property.

Cooperative Offices

Further progress was made during the year in the cooperative arrangements with local chambers of commerce and similar groups in more than 900 commercial and industrial communities throughout the country. Under this plan the Department provides copies of its reports, publications, and releases to the cooperating groups to assist them in servicing their business communities. A series of publication aids have been provided to further the use of this material. The basic resources of the Department are thus utilized to strengthen the local economy served by the cooperative offices. This service has won the commendation of the business public.

OFFICE OF TECHNICAL SERVICES

During fiscal 1954, the following three divisions, formerly constituting the Office of Industry and Commerce, were brought into the Office of Technical Services: Area Development Division, Commodity Standards Division, and Trade Association Division. This consolidation with the Technology Division and the National Inventors Council under a single administrative unit has permitted a closer liaison between the five divisions in which the business services offered by each can supplement and complement each other to the general benefit of American industry.

Technology

The Technology Division of OTS serves as the clearinghouse between Government and industry for the vast amount of nonconfidential technical information stemming from Government and Government-sponsored research. This tax-supported technical research continued during fiscal 1954 at the rate of more than \$2 billion annually, well over half of the national total. The Technology Division took positive steps this year not only to expand the acquisition of new Government research reports, but to broaden publicity efforts concerning their availability to industry.

Twelve thousand five hundred and seventy-eight technical research reports were received by OTS and made available to the public for the first time—a 32-percent increase over 1953. Fifty-five thousand three hun-

dred and fifty-seven requests for information were completed, 4,000 of which were placed either by telephone call or personal visit, both requiring immediate answers. One hundred and eighty-nine thousand seven hundred and fifty-three new and previous reports were sold for a total of \$316,966.70.

The basic medium used to inform the public of new reports available was the *Bibliography of Technical Reports*. The monthly issues of this publication list all reports processed during the preceding month (300 to 400) and classify them according to some 20 industrial and scientific categories. In an effort to increase the circulation of this publication, plans were made late in fiscal 1954 to change the name to the more descriptive title *U. S. Government Research Reports*. At the same time, a design was created for a more modern and colorful cover that symbolizes OTS's role as a link between industry and the Government research laboratories.

The establishment during fiscal 1954 of more personal contacts with industrial editors and association executives has resulted in a substantial increase in publicity through the trade and association press. Review copies of outstanding research reports have been made more readily available to the trade press, which has resulted in more detailed and generally longer notices. Plans were also made during this year to step up OTS participation in industrial exhibitions and trade shows. Press releases continue to be the major medium for notifying the trade press of new research reports. The monthly *Technical Reports Newsletter*, a subscription publication, continued to inform small and medium-sized businesses of those reports of immediate practical value.

In addition to the domestic program, the Technology Division continued to provide, under contract, technical information to the Foreign Operations Administration for its program of global technical assistance. These services included providing of industrial films, books and literature, as well as answering specific industrial production inquiries. Because of the heavy demand, most of these problems were handled under OTS sponsorship and contract by nine of the country's leading research institutions.

Area Development

At the direction of the President's Advisory Board on Economic Growth and Stability, OTS's Area Development Division was strengthened during the year to serve as a single point in the Federal establishment for bringing to bear on area problems promptly and without confusion all of the resources available in Washington. This unit works with and supplements the efforts of State and local organizations; it neither duplicates nor displaces them.

During the fiscal year the Division concentrated its efforts in helping areas of local distress. This help has been of two kinds: (1) That bringing some immediate assistance, and (2) that assisting the communities

to work towards a more stable kind of economic base over a longer period of time. The primary role of the Division has been that of a two-way information conduit between the communities themselves and the public and private agencies and companies that are contemplating purchases or investment in new plant, facilities or other activities having positive local effects. In all of this work the Division has cooperated and worked closely with the pertinent offices of the Federal Government.

The Division, on request, has gone to the field with representatives of private and public groups to help local people find solutions to their problems. For instance, survey reports and visits were made in a number of areas: Kentucky, Virginia, West Virginia, Ohio, Indiana, Massachusetts, and northeast Pennsylvania. In the latter case the efforts of all Washington agencies were mobilized in response to a specific request for assistance.

Through publications the Division brought information to labor surplus and other areas on how to take advantage of various State and Federal programs and new technological and market developments. Plans were made for an area development periodical giving special attention to ways in which communities are meeting their problems and highlighting information on labor surplus areas.

The Division prepared and distributed details of improvement programs on which local communities might embark. These included a self-help kit on *Industrial Development*, which suggests how communities can collect, collate, and exploit the kinds of information about local assets that industrialists will need before selecting sites for new plants. Several thousand copies of this kit were supplied to communities requesting them. Among other materials were a *Community and Area Development Checklist*, which specifies the steps recommended to stimulate local development, and *Expanding Industries: A Source of Industrial Prospects*.

A significant step was the cooperation between the Society of Industrial Realtors and the Area Development Division in launching a test program in one city to determine the kind of action needed to attract industry to areas of labor surplus. The Division brought the problem to the attention of top industrial executives attending the various industry conferences held in the Department and asked them to consider these areas when planning plant expansions.

The Division continued to carry out the industrial dispersion functions assigned under the National Industrial Dispersion program. The Division served 92 metropolitan area industrial dispersion committees by providing technical assistance on methods of survey preparation, by reviewing and certifying the local survey reports, and by maintaining a central file of dispersion maps and data developed by the local committees. In June 1954, the Department sponsored a Conference of Local Industrial Dispersion Committees. It is noteworthy that the local industrial dispersion committees serve voluntarily and at no expense to the Federal Government.

In addition to conducting the several and specific programs aimed directly at solution of the problems of the labor surplus areas, the Division continued its primary function of service to organized State and local development groups.

Commodity Standards

This Division, the predecessors of which were the Division of Simplified Practice, established in 1921, and the Division of Trade Standards, established in 1927, became part of the Office of Technical Services on October 1, 1953.

The Division assists, cooperates with, and coordinates the efforts of groups of producers, distributors, or consumers, technical organizations, and others in the voluntary establishment, maintenance, recording, promulgation, and promotion of a nationwide program for the elimination of avoidable waste through the formulation of simplified practice recommendations which identify and list the sizes, types, dimensions, and varieties of manufactured articles that are in national demand.

The Division similarly collaborates with industry in establishing commercial standards as nationally recognized bases for testing, grading, labeling, marketing, guaranteeing, or accepting staple manufactured commodities moving in domestic trade.

The procedures and objectives of the Division, as originally defined, have remained unchanged, except in one respect. Sponsoring groups in industry when placing bulk orders for printed standards now defray the cost by submitting remittances in advance of printing instead of afterward. This results in a distinct economy for the Department, with no real disadvantage to the purchasers, in the opinion of affected industries.

Nine simplified practice recommendations were printed during the year, of which four were new and five were revisions of existing programs. Among the new is one concerning the practical packaging of frozen foods and vegetables. Included in the list of five is a modernization of a recommendation for softwood lumber which was initiated in 1921. Twenty-two additional projects, proposed voluntarily by industry, are in various stages of development.

Five new commercial standards were made available to the public in printed form. Two of these, on the subjects of vinyl film and the flammability of clothing textiles, are notable for their having been considered by the 83d Congress, 1st session, as suitable bases for Public Law 88, Flammable Fabrics Act, effective in June 1954. Four existing commercial standards were brought up to date through amendment, and work advanced on 23 additional projects as requested by industry.

The vitality of the so-called simplification movement in the United States of America has attracted the notice of Western European countries, because they recognize variety-reduction as an aid in increasing productivity.

Trade Associations

The basic objectives of the Trade Association Division are: (1) To serve as the Federal Government center of information on the Nation's organizations of businessmen, (2) to promote constant liaison between associations and all agencies within the Department of Commerce. Its first survey was made in 1913.

The growth of such organizations in number and breadth of services has been especially rapid in the past 25 years. They are now active in 4,000 cities and towns.

In 1954, the majority of the 4 million business enterprises in the United States were affiliated with some type of mutual-aid, nonprofit organizations. These include the 12,000 trade associations, 4,000 chambers of commerce, and 10,000 businessmen's luncheon clubs.

During the past year, to encourage liaison between Government and nonprofit associations, the Trade Association Division prepared a wide variety of reports and participated in numerous conferences. Many of its reports were for Government use only, such as those on individual or specific groups of associations, on scheduled conventions of associations, or on contemplated Government programs in which associations could be a major factor.

Other activities included: (1) A 1953 supplement to the Division's 700-page book, *National Associations of the United States*, for use in field offices; (2) a report on the origin and development of trade associations, delivered at the annual Summer School for Associations at Yale University; (3) a report on outstanding services of associations, for the annual convention of the American Trade Association Executives; (4) a survey of all 1,600 national trade associations in preparation for a new directory; and (5) a survey of over 5,000 organizations of businessmen, to assist the National Science Foundation in the congressional study of the technical research facilities of larger associations as a vital part of the national defense program.

National Inventors Council

The Council continued to serve as the focal point for inventions submitted for use by the Government. During fiscal year 1954 the Council received more than 4,000 inventions voluntarily submitted for study. In addition, the Council, working in conjunction with the armed services, assembled a large listing of military requirements which may lend themselves to solution by invention, research or development. By use of appropriate notification media these will serve to direct the efforts of manufactures, research laboratories and inventors into areas of development which may be particularly remunerative.

Office of the Assistant Secretary for International Affairs

The Office of the Assistant Secretary of Commerce for International Affairs is the focal point within the Department on all international matters. In addition to his responsibilities as principal advisor to the Secretary on foreign economic affairs, the Assistant Secretary provides policy direction to the activities of the Bureau of Foreign Commerce.

He is also responsible as the Secretary's alternate, or as the Commerce representative, for assisting through participation in various interagency committees in the appraisal and formulation of Government policy in the international field.

Within such broad responsibilities a number of particular activities, some representing major problems, were singled out for special attention in 1954.

East-West Trade and Export Control

Problems of security export controls and East-West trade were among the more important issues with which the Office of the Assistant Secretary for International Affairs was concerned in 1954.

During the 1954 fiscal year there was a twofold intensive reevaluation of the security export control system involving both the U. S. controls and the controls of the cooperating foreign governments. This involved a joint review by the Advisory Committee on Export Policy with the Assistant Secretary as Chairman and by the Economic Defense Advisory Committee of all commodities under control to Soviet bloc areas except Communist China and North Korea. Resulting U. S. controls and the international controls agreed upon at Paris and announced in August 1954 provided for a smaller list of commodities to be controlled for security reasons to the European Soviet bloc, as well as an improved basis for tighter and more effective enforcement. Existing U. S. and international embargoes of goods to Communist China and North Korea remained unchanged.

Foreign Trade and Financial Policy

The Assistant Secretary served on a White House interagency committee which coordinated the preparation of the President's foreign economic-trade program stemming from the recommendations of the earlier Randall Commission, for presentation to Congress.

Extensive discussions to establish a U. S. position in the formulation of an agreement with representatives of the Philippines took place, preparatory to proposals to Congress for modification of the 1946 Trade Agreement governing trade relations between the Philippines and the United States.

Discussions with representatives of the Government of Japan have led to the clarification of proposed policy with regard to Japanese trade and investment.

Under the direction of the Assistant Secretary, the Department of Commerce participated in the interdepartmental review of the organization and framework of the General Agreement on Tariffs and Trade (GATT) preparatory to the general renegotiation sessions at Geneva, where a Department adviser was to participate.

The Assistant Secretary, serving on a White House interagency committee, assisted in framing policies in the disposal of agricultural surplus commodities which would make greatest use of private trade channels, avoid interruption of normal world trade, and protect national security.

Economic policies, reflecting U. S. position on international commodity agreements for tin, cotton, and other commodities were determined in interagency conferences. Commerce was represented at international meetings to discuss commodity agreements.

Serving on the President's Minerals Policy Committee, the Assistant Secretary aided in the formulation of policy to encourage the production, utilization, and conservation of minerals and metals in best national interests.

As advisor to the Secretary, and as his alternate on the National Advisory Council on International Monetary and Financial Problems, the Assistant Secretary actively took part in the formulation of United States foreign financial policy. Noteworthy progress was made during the past year toward the establishment of the proposed International Finance Corporation and the approval of a more liberal program of exporter financing by the Export-Import Bank.

Commerce Support in Technical Assistance

The Department had in previous years committed its resources, under agreements with the Technical Cooperation Administration and the Mutual Security Agency, to assist in providing foreign technical assistance in business, industry, aviation, roads, and so forth, where Commerce activities and its specialized personnel could be best utilized for program support. The establishment of the Foreign Operations Administration as successor agency called for a review of accomplishments and a reappraisal of Commerce participation.

A new agreement in June 1954 committed the Department to help in FOA program planning, active operation of several specialized projects overseas, assistance in recruitment by FOA of technical specialists for certain overseas assignments, and the responsibility of providing training services for foreign nationals coming to the U. S. to acquire specialized skills.

During fiscal 1954, the Department of Commerce provided technical assistance in 18 foreign countries and accommodated 643 foreign nationals who came to the U. S. for technical or specialized training.

Varied Activities

FOREIGN SERVICE TO BUSINESS.—Continuing discussions took place with State Department and the Foreign Service to emphasize the urgent need for

better commercial facilities at foreign posts to provide aggressive and timely reporting on business developments abroad and to afford more effective assistance to American businessmen abroad. Agreement has been reached and progressive improvement in foreign service to business is expected.

INTERNATIONAL TOURISM.—The Assistant Secretary established a Travel Advisory Committee and a smaller working group to assist him in the formulation of a program whereby the Department could reactivate the promotion of international travel and serve as the Government focal point for service to the travel industry. The President's executive order and the delegation of MSA funds later in the year made it possible to bring these early plans into active operation. The Commerce Department was represented at three major travel meetings: A United Nations Conference on Tourism in New York, Fifth Inter-American Travel Congress in Panama, and the General Assembly of the International Union of Official Travel Organizations (IUOTO).

FOREIGN-TRADE ZONES.—An analysis of the survey made in 1953 of the U. S. foreign-trade zones indicated that the many advantages of such free zones were not being fully exploited. Therefore, an intensive program of promotion was undertaken. The advantages in the use of the foreign-trade zones for manufacturing and exhibition were emphasized. Business enthusiasm has already resulted in some quarters, and other developments appear to be in the offing.

Reductions in administrative expenses were achieved in all zones and requirements for statistical reporting were simplified.

PRIVATE FOREIGN INVESTMENT.—Continuing efforts were directed at the analysis of obstacles to the natural flow of private investment capital abroad, especially to underdeveloped areas. Ways to encourage the elimination of such impediments and, more positively, means of stimulating the flow of private investment occupied both Commerce and other interested agencies. Meantime, continuing discussions were undertaken to clarify the overlapping activities of several agencies in this field and provide a basis for more concerted effort.

BUREAU OF FOREIGN COMMERCE

Acting in accordance with the expressed desire of Congress, and enabled by the increased appropriation Congress afforded, the Bureau of Foreign Commerce during the 1954 fiscal year undertook expansion of its services to American business.

Following the elevation of the Office of International Trade to bureau level through the establishment of the Bureau of Foreign Commerce in October 1953, many of the programs were improved or entirely revamped. More important, new services—tailored to the expressed needs of business—were introduced. Among the activities undertaken were these:

1. A program of participation in international trade fairs and aid to

American business to sell more products abroad, expand foreign trade, and thus to increase the level of United States employment.

2. Introduction of the *World Trade Information Service*—a streamlined publication series primarily of direct assistance to U. S. businesses engaged in foreign trade.

3. Extensive decontrol of nonstrategic materials, made possible by changing considerations in national security, thereby further freeing the flow of American commerce with friendly countries.

4. Notable revisions in the export control program.

5. Development of new channels for world business information, thereby increasing the flow of world trade news; widespread favorable reaction from business resulted.

6. Intensified exploration and appraisal of foreign investment opportunities; several of a series of country investment handbooks were published and others were in preparation.

7. Reporting of relevant information, as new and potential foreign markets were uncovered, to interested segments of the American public.

Over the past several years there had been a serious decline in the overall capacity of OIT to promote American foreign trade, and it was therefore necessary to restore strength to basic functions. Much was accomplished in fiscal 1954 subsequent to a careful appraisal to determine the stake of United States business interests in individual foreign countries and dependence of the business community on governmental activities to promote trade with those areas and private investment therein.

Response to Business Interest

The inquiries which business directed to BFC in fiscal 1954 reflected three trends—an intensification of efforts to find, maintain, or expand overseas markets; a growing interest in the feasibility of and opportunities for the investment of capital abroad or in the establishment of licensing arrangements; and efforts to locate foreign sources of raw, semifinished, and finished products.

With the shift to a buyers' market, increasing numbers of traders have turned to the Department for advice and assistance. BFC services in response to this demand have ranged from providing information to individual exporters on such specific matters as licensing and exchange controls, tariff and tax rates, and business laws in particular countries, or furnishing the names of dealers abroad in particular commodities, to appropriate representations on behalf of the business community whenever proposed action by foreign countries would be detrimental to United States business interests there. As the only source of information in the United States Government for index numbers of average prices and volume of United States exports and imports, as well as for international trade statistics of foreign countries, the Bureau received many requests for material of that nature.

Growing competition for foreign markets has led to a noticeable rise in the number of requests for information on export credit insurance facilities, the protection of American industrial property rights abroad, the character and extent of foreign transportation services and the rates, and encouragements or hindrances to new capital investments.

BFC handled more than 60,000 specific requests for information about, or help in locating or identifying, foreign buyers, sources of supply, or other types of commercial connection. More than 19,000 detailed descriptions of individual firms (World Trade Directory Reports) and close to 38,000 copies of trade lists of foreign firms, most of them classified by commodity or industry, were supplied. In fiscal 1954, BFC prepared 848 trade lists from new material received from the Foreign Service.

Thousands of specific trade opportunities to buy, sell, or invest were brought to the attention of businessmen under a broader system of publicity. Also, BFC relayed, through news releases and *Foreign Commerce Weekly*, pertinent information about military construction projects opened to United States bidders under the international competitive bidding procedure of the North Atlantic Treaty Organization.

The Bureau continued to cooperate with the Department's field offices in channeling foreign trade information to all sections of the United States and it aided these offices in their collation of foreign trade services.

The visits to the American market of approximately 400 businessmen from overseas were widely publicized and were facilitated by advance arrangements through the field offices and introductions in areas of interest. Similarly, visits abroad of more than 500 United States businessmen were aided through cooperation between BFC and the Foreign Service.

In response to the markedly increased interest of American firms in international trade fairs as a means of advertising and selling their products abroad, the Bureau at the close of fiscal 1954 began expanding its services to business in this field.

Technical Assistance

The Bureau's marketing specialists arranged and conducted separate study programs for 18 groups of nationals of Western European countries, in accordance with the Department's agreement with the Foreign Operations Administration for the management of technical assistance projects in the field of distribution. Subjects of study included the distribution of food, shoes, hardware, building materials, textiles, paper, and meat; market research; promotion of consumer interests; and installment credit for consumer durables.

At the close of fiscal 1954, 30 employees of the Bureau were serving overseas in points as widely separated as Ecuador and Indonesia, supplying technical assistance. Their objectives were to introduce new ideas and methods helpful to local leaders in serving their countries. Commercial

and industrial development, textiles, chemicals, metals, glass, food products, ceramics, and hotels were among the business fields represented by these technicians, as well as railroad, bus, and truck transport.

More than 60 individuals were chosen by some 20 countries to be trained in the United States in these same fields. Their programs were arranged by BFC in cooperation with public and private organizations, universities, and United States business firms.

Representations on Behalf of Business

The Bureau participated in the continuing negotiations for the conclusion of treaties of friendship, commerce and navigation with Germany, the Netherlands, Haiti, Paraguay, India, Pakistan, and Israel, and in preparations for the year's sessions of the Contracting Parties to the General Agreement on Tariffs and Trade. It helped in formulating the United States position on the proposed redrafting of the General Agreement and, also in the trade agreement field, took part in adjustment negotiations between the United States and India.

BFC administered the China Trade Act, as well as the British Token Import Plan through which scrip in the amount of about \$3,258,000 was issued in fiscal 1954 to some 320 American firms. It worked closely with the Treasury Department in formulating the administration bill on customs simplification and in drafting amendments to meet the views expressed at congressional hearings.

Bureau personnel helped in assembling material for use by the President's Commission on Foreign Economic Policy and prepared information, relating to insurance, needed by the Government in representations to other countries regarding insurance legislation or practices objected to by United States business. It was concerned particularly with problems resulting from foreign insurance restrictions on the purchase of marine insurance covering exports and imports.

The Bureau was represented on the Office of European Economic Cooperation committee on United States investment abroad and worked together with United States business representatives on the problem of attracting United States capital participation.

In addition to preparing many position papers for the use of United States delegations at international conferences, BFC provided representation at a number of meetings in fiscal 1954. These included, among others, sessions of the United Nations Economic Commission for Asia and the Far East, at Kandy, Ceylon, and ECAFE's Committee on Industry and Trade; the Caribbean Trade Promotion Conference, Port of Spain, Trinidad; Tenth Inter-American Conference, Caracas; Inter-American Travel Congress, Panama City; Congress of the Permanent International Association of Navigation Congresses, Rome; Pan American Highway Congress, Caracas; Pan American Railway Congress, Washington, D. C., and Atlantic City; and sessions of the United Nations Economic and Social Council.

Improved Publications Service

The Bureau improved and expanded its publications schedule to provide a balanced coverage and to broaden the field of direct trade promotion. Plans were under way at the close of fiscal 1954 to begin printing the *World Trade Information Service*, incorporating five series of publications—economic, operations, statistical, utilities, and trade fairs.

These series include, among other items, economic reviews for particular countries, analyses of basic economic data, and reports dealing with such subjects as preparing shipments, establishing a business abroad, foreign exchange and licensing requirements, and utilities and transport services abroad.

The redesigned *Foreign Commerce Weekly* achieved a broader scope, and subscriptions have nearly doubled since 1952.

BFC issued, in fiscal 1954, 16 short reports directed specifically to the problems of foreign investment and, in addition, published studies covering Colombia and India in a programmed series of country investment handbooks. Two others, covering Pakistan and the Union of South Africa, were in press at the year's close.

BFC also published the *Summary of Preliminary Findings and Recommendations* and Part I, *Survey of Factors in Foreign Countries*, of the study of impediments to the United States private investment abroad, which was undertaken at the request of the Congress. Part 2, giving business views on the United States Government's role in influencing American private investment abroad, was in press.

New editions of *Channels for Trading Abroad* and *Electric Current Abroad* were issued in fiscal 1954, and a revised list of foreign trade practice-reference sources was released. Circulars on preparing gift packages for shipment to foreign countries were issued for the Christmas trade.

Developments in Export Control

An intensive review of United States strategic commodity lists and control techniques, which followed policy revisions in mid-1953 directed toward increasing the overall effectiveness of United States security export control, was virtually completed by the end of fiscal 1954. One of the important results of the review was the removal of export licensing requirements and other administrative restrictions on many commodities exported from the United States to friendly countries. This has placed American exporters on a more competitive basis with foreign exporters. A fuller description of this review is contained in the Twenty-Seventh and Twenty-Eighth Quarterly Reports to the President and to the Congress on Export Controls.

The reevaluation of commodity lists and of techniques was accomplished by an interagency committee which advises the Secretary of Commerce on his export control responsibilities under the Export Control Act. By reason of the interrelationship of these responsibilities with those of the Director of the Foreign Operations Administration under the Mutual Defense Assistance Act of 1951, the initial review was carried out in cooperation with

FOA through a joint operating committee which makes recommendations both on United States controls and controls which might be advocated by the United States in international discussions.

In further cooperation, FOA transferred to the Bureau of Foreign Commerce funds for the salaries of 40 commodity analysts and supporting personnel whose duties included the preparation of technical documentation leading to a determination of the strategic importance of commodities.

United States security export controls remain, after the review and re-evaluation, somewhat more comprehensive than the international "East-West" export controls—which were reviewed concurrently—principally with respect to those commodities in which the United States possesses unique technological or production knowledge or on which United States unilateral export controls would be effective. While both sets of lists were considerably shortened by the elimination of commodities of lesser strategic importance, there were added to both some items which could now be identified as strategic as the result of new technological developments or the latest information concerning Soviet bloc needs and capabilities.

In reducing the United States and international security export control lists, the cooperating nations committed themselves to institute measures for stricter enforcement and for the prevention of unauthorized diversions and transshipments. A substantial beginning had been made in this direction by the end of fiscal 1954.

The year was marked throughout by continuing close cooperation between BFC and the Treasury Department's Bureau of Customs. The two agencies, working through liaison officers, have measurably improved both working relationships and quality of the job done. United States customs officials made 415 seizures of goods, valued at \$236,226, for violations of the Export Control Act.

Among important decontrol developments in fiscal 1954 other than those specifically related to the review of United States strategic commodity lists and control techniques was the virtual elimination of short supply as an important consideration in BFC's export licensing; as of June 30, 1954, only 10 commodity groups were on the Positive List for supply reasons, compared with more than 200 groups during the war in Korea.

Also, the Department removed validated license requirements for 254 Positive List entries for export to Western Hemisphere destinations; added 727 commodity entries to the Positive List group of items exportable to Western Hemisphere countries without a license if the value of a given shipment is less than \$500; and provided a general license to Hong Kong for items of no strategic importance comprising about one-third of the commodities normally moving in international trade.

BFC, as a result of decontrol developments and its success in cutting down on paperwork and in improving internal operations, reduced the personnel engaged in export control operations from 489 at the beginning of fiscal 1954 to 310 at the end of the year.