



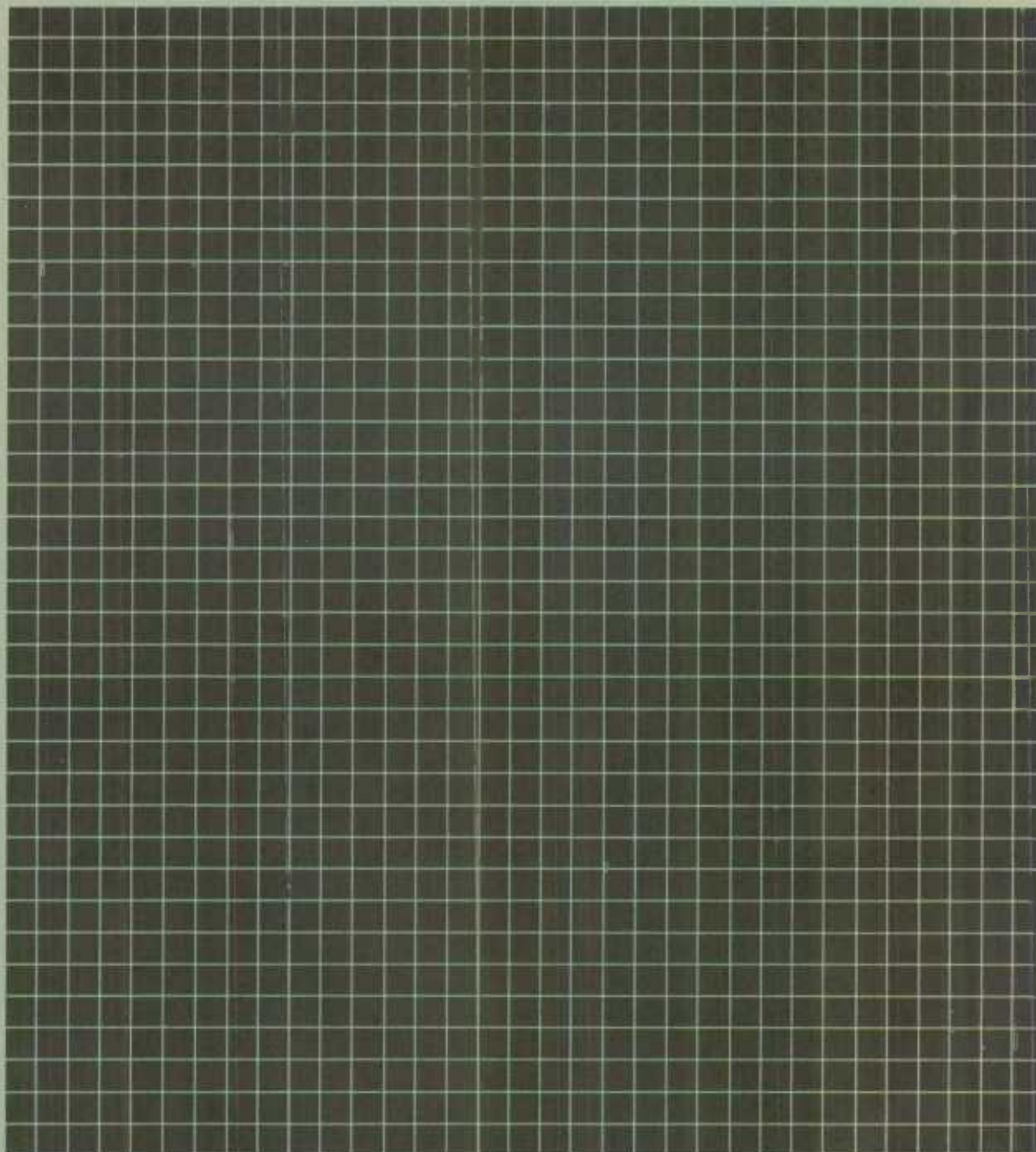
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Dominion Bureau of Statistics

Annual Report

For the Fiscal Year ended March 31, 1969



CATALOGUE No.

11-201



ANNUAL REPORT
OF THE
DOMINION BUREAU OF STATISTICS

FOR THE FISCAL YEAR
ENDED MARCH 31, 1969

March 1970
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The Queen's Printer, Ottawa

THE HONOURABLE JEAN-LUC PEPIN, P.C.,
MINISTER OF INDUSTRY, TRADE AND COMMERCE,
OTTAWA, CANADA.

Sir:

I have the honour to submit the Annual Report of the
Dominion Bureau of Statistics covering the operations and
services rendered during the fiscal year ended March 31, 1969.

Respectfully submitted,

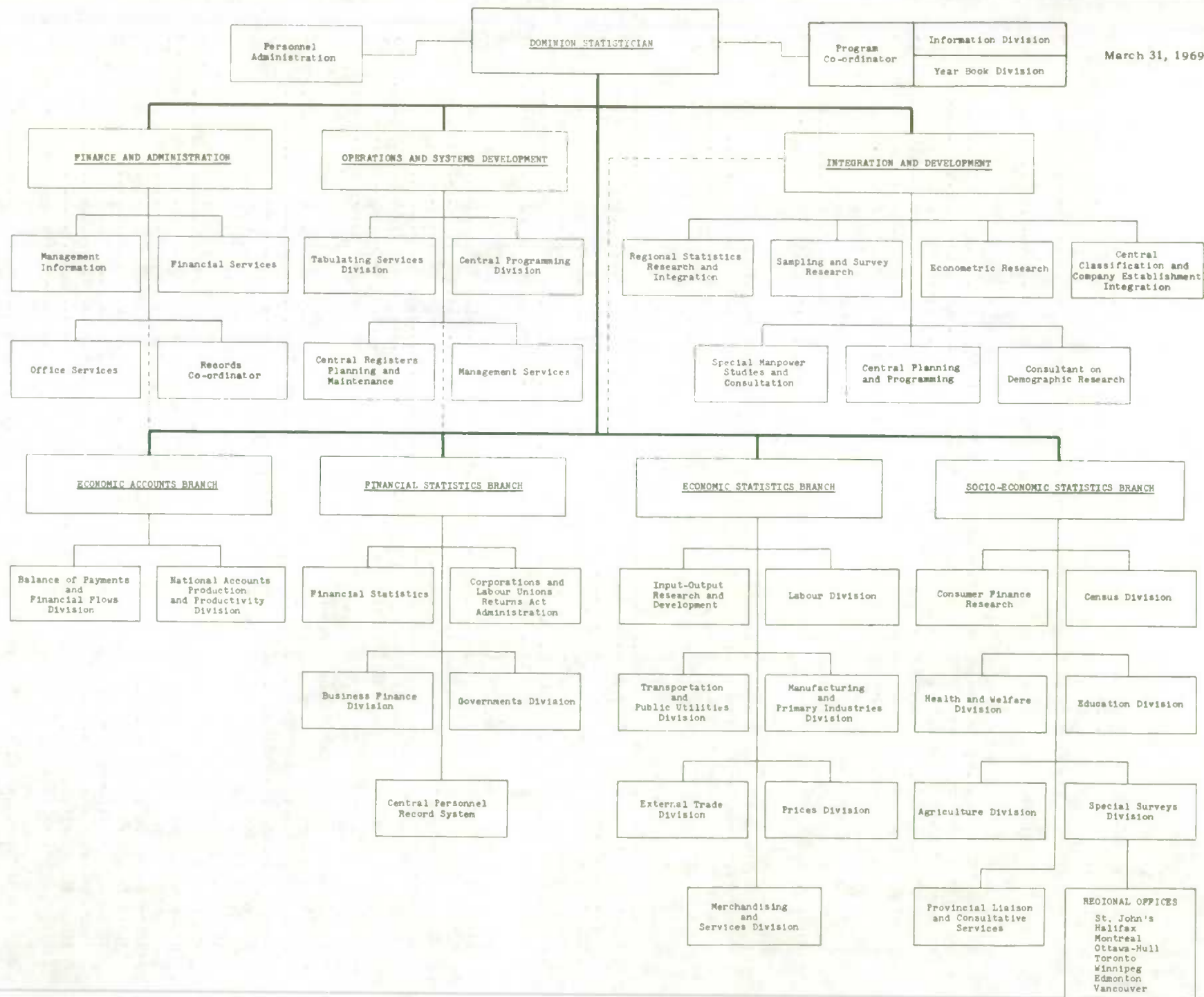
Robert E. Duffett.

Dominion Statistician.

Ottawa, Canada.
March 1970.

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GENERAL ACTIVITIES

The Dominion Bureau of Statistics celebrated the 50th anniversary of its foundation on May 24, 1968. Although Canadian censuses have been carried out regularly since 1666-67, when the Intendant of New France, Jean Talon, undertook the first Census of Canada, and following Confederation vital information had been compiled by several government departments, the establishment of a centralized coordinated and integrated statistical organization did not take place until the Statistics Act was passed in 1918. The Act was revised in 1952 and further revisions are now being reviewed.

On July 19, 1968, the Dominion Bureau of Statistics was honoured by the presence of the Prime Minister, Pierre Elliott Trudeau, who unveiled the Canada Population Clock, situated in the lobby of the main DBS building. This clock graphically records the estimated population change and the four basic elements influencing the growth of the nation's total population - births, deaths, immigration and emigration. About every 82 seconds, the clock registers the addition of one person to the population. In mid-March 1969, it recorded a population of 21,000,000 persons in Canada.

Significant progress in the collection of the broad national statistical systems has been made by DBS, reflecting the economic, financial and social growth of the country, but increasing demands continue for additional reliable statistical information, stimulated by the pressing needs of federal, provincial and regional governments as well as those of the business world, royal commissions, parliamentary committees and task forces. Continuous studies are being made to further enlarge and improve the statistical system in order to keep abreast of changing times. In this respect, DBS is devoting important resources to improving its efficiency and productivity in order to meet the new needs as economically and effectively as possible.

The use of modern technology and automated electronic data processing equipment has accelerated to some degree the release of statistical material, while at the same time broadening the scope and range of possible questions for which quantitative answers are required. The addition of a fourth DBS computer in the Operations and Systems development Branch - a large general purpose IBM 360/65 computer - soon to be installed will

further advance the timeliness of the existing statistical series and other projects still in the planning stages. In addition, the use of outside computers and of expert consultants under contract have proved helpful in meeting the shortage of personnel for special tasks.

In order to promote the most effective utilization of resources and to assist the DBS management in setting priorities, schedule systems and implement programs with current and long-range needs, a planning system, an information system as well as a project and cost accounting system (PRACAS) are in the course of development. In addition, a major long-term project is being developed within DBS and is known as the Canadian Socio-Economic Information Management System (CANSIM). The first stage of this large, fully automated national data bank is now nearly operational and will contain a large number of publishable time series at all levels of aggregation.

Preparations are progressing for a more comprehensive decennial Census of Population, Housing and Agriculture in 1971. Field tests have been carried out in both urban and rural areas. A geographically referenced data storage and retrieval system is being designed and it is hoped will be developed in time to use the 1971 Census and other data. This will make it possible to retrieve specific data on both national and small geographic areas quickly.

Changing social and economic conditions in Canada, with costly education and welfare, income maintenance and area development programs are demanding more and more statistical information. To meet these needs, and as resources permit, DBS is endeavouring to extend its coverage in all fields, particularly in prices, education, the service industries and in construction.

In order to keep attuned to recent developments in technology, a career development program is underway within the Bureau. In addition to language courses, training in mathematics, computer science and management are now available.

As at March 31, 1969, the staff numbered 2,868 persons, housed in four widely-separated buildings in Ottawa, and in the eight regional offices across Canada. Plans are underway for a new DBS building to be completed in time for the 1971 Census of Canada to accommodate all the DBS staff stationed in Ottawa.

Among staff changes during the year was the loss through retirement of Mr. C. Douglas Blyth, Director General of the Economic Accounts Branch and Mr. M.J. Mahoney, Director of Company-Establishment Integration, and Mr. J.L. Forsyth, former Acting Director of the Census Division. Mr. Frank Denton, Director of Econometric Research left to join the staff of McMaster University. Their counsel and contribution to the efficient operation of the Bureau were greatly appreciated. At the same time DBS welcomed the appointment of Mr. E.B.

Carty, the new Director General of the Economic Accounts Branch; Dr. Paul Rubinyi, Director of Programming and Planning and Dr. T.J. Vander Noot, Associate Director General of the Operations and Systems Development Branch. In a period of continued pressure, the staff of DBS has responded with splendid co-operation and effort. The maintenance and growth of a quality statistical program has been possible only through the dedicated and willing efforts of the DBS staff at all levels.

YEAR BOOK DIVISION

The program of the Division includes the planning, compiling, editing and publication annually of the English and French language editions of two official compendia of information on the Canadian economy, the *Canada Year Book* and the handlook *Canada*, the revision of material relative to Canada for a score of national and international yearbooks, and the maintenance of a suitably stocked library with appropriate services for statistical research and study. Both the English and French editions of the *Canada Year Book* for 1968 were released in November 1968, and those of the handbook *Canada 1968* were released in January 1969. In addition, work on the Spanish edition of *Canada One Hundred 1867-1967 (Canada Un Siècle 1867-1967)* neared completion and its publication is planned for 1969.

A special inquiries unit, focused around the *Canada Year Book* coverage of authoritative Canadian data, supplies regular series of statistics for the United Nations Statistical Monthly Bulletins, the United Nations Statistical Yearbook and for the International Labour Office. In addition, it provides up-to-date revisions of Canadian statistical and textual material for many standard national

and international reference works and dispenses current and historical data in response to multi-subject inquiries received by the Bureau.

The library of the Dominion Bureau of Statistics maintains a large stock of books, periodicals, documents and reports for the use of the DBS staff, research workers and the general public. It also has an extensive collection of statistical publications. Because of the greatly increased requirements for new publications and increased funds allowed for purchase, a thorough review of the Library and of its organization is planned for 1969. The purpose of this review is to provide the guidelines for whatever increases and improvements are required in existing services, and for the creation of new services where necessary. It is expected that, in due course, the Library will augment its present services with indexing, descriptive abstracting, and establishment of branch and satellite libraries in the subject divisions. Also under consideration is the application of punched card systems to certain basic library operational records with a view eventually to adopting computer operations.

INFORMATION DIVISION

Growing public awareness of the value and usefulness of statistical information was both a cause and an effect of the division's promotional activities in 1968-69. Advertising, publicity and information campaigns helped to create a wider interest in the uses

of statistics and public response to them increased demands on the Division's service. This general trend was reflected in each of the four operating sections of the division--Publicity Services, Statistics Use Development, Publications Section and Inquiries.

The *DBS Daily Bulletin* and its sister publication, *DBS Weekly*, continued to gain readership during the year. Originally produced as a service for Canadian news media, the two bulletins have since found a much wider audience. Of the *Daily Bulletin's* 1,950 recipients today, the great majority are users of statistics rather than the news media. Similarly, users of statistics represent by far the greatest part of the *DBS Weekly's* circulation of 4,900 copies which go to individuals, government officials, publications' editors and business executives across Canada.

The value of the *DBS Daily Bulletin* as an information medium for press, radio and television has been underlined by a Canadian news agency, which estimates that some 50 news reports a week, emanating from its Ottawa bureau, are based on DBS information, provided principally by the *DBS Daily*. The same survey showed that many recipients of the *Bulletin* use information directly from it in practical applications rather than waiting for the statistical report itself to arrive.

The Fiftieth Anniversary of the establishment of DBS occurred in 1968 and a limited publicity campaign was undertaken to make the event known, especially to users of DBS statistics and suppliers of information. This publicity took the form of posters, anniversary stickers on outgoing mail and use of post office cancellation dies. Also, the Bureau constructed the Canada Population Clock which was installed in the lobby of the main foyer of the DBS building. The clock, which was inaugurated on July 19, 1968 by the Prime Minister in a public ceremony, shows the estimated growth of the population of Canada on the basis of the DBS quarterly population estimates. It also simulates the rate of change in each of the main population determinants - births, deaths, immigration and emigration.

The Publicity Services Section continued its developing program to establish a closer bond between respondents to DBS questionnaires and the statistical branches and divisions charged with responsibility in the relevant field. As new DBS surveys were approved, the Information Division worked closely with the subject divisions involved to ensure rapport with the respondents who would be asked to supply information needed. Modern publicity techniques were employed in these projects, with good success. Initial response in many cases was above expectations and much higher than levels achieved previously.

In the initiation of the survey of census of mechanical contractors, identification of 85 per cent of the industry's gross volume was achieved. The cattle on feed survey for

Alberta was inaugurated with publicity support and brought a 35 per cent response, when 25 per cent has been considered a good target percentage. The Livestock Section of the Agriculture Division reports that publicity techniques have almost doubled response rates compared to those areas where they have not been employed. In the various census tests held by the Census Division, direct mail and other publicity support has been credited with playing a significant role in achieving a voluntary return of 51 to 85 per cent of census questionnaires.

Census tests were conducted in Toronto and four agricultural areas across Canada during 1968. For these, the Information Division developed publicity support along lines established during the London test census the previous year. Self-enumeration methods were being used with a view to applying them nationally in the 1971 decennial census.

In the 1968 tests, direct mail promotion was augmented by news releases, pamphlets, posters and personal contact with local radio, television and newspaper staffs.

As a further stage in the development of communications between the Bureau, its suppliers of statistical information and the users of statistics, the Information Division installed and staffed special displays at meetings of business and professional associations where special, reciprocal interest appeared to exist. Exhibits were developed during the 1968-69 fiscal year for presentation at meetings of the following organizations: the Canadian Food Processors Association in Montreal; the Canadian Plastics Association in Ottawa; the Canadian Learned Societies in Calgary; the Canadian Manufacturers' Association Conference in Toronto; the Canadian Library Association in St. John's, Newfoundland; and the Canadian Hospitals Association in Ottawa. The latter two meetings were not scheduled to be held until after the beginning of the 1969-70 fiscal year, but material for the exhibits was planned and prepared in the year now under review.

The Division also co-operated with other branches of DBS in three seminars held under the sponsorship of the Canadian Manufacturers' Association. The seminars, given the working title of "Statistics for Manufacturers" were held in Toronto on September 18, 1968; Moncton, N.B. on March 12, 1969; and St. John's, Newfoundland on March 14, 1969.

The Statistics Use Development Section operates in three basic areas: research into who uses DBS information and how they use it; development and extension of the uses of information, particularly by business, through

industrial visits, seminars and courses, so that the body of statistics produced by the Bureau can be given wider application; and elaboration of the methods of reaching users so that DBS information may be made more accessible such as through manuals or information booklets.

During the year under review, an officer of this Section was established in the Toronto region. A Statistics Use Development Officer has also been active in the Montreal region since 1967.

During the year, the Section completed a survey of DBS replies by mail to inquiries to DBS which disclosed that nearly 42 per cent of these came from business, 27 per cent from governments or their agencies, 21 per cent from professors, students and researchers in schools and universities, and 9 per cent from miscellaneous users. It also showed that the largest business use of DBS information was for marketing (43 per cent) followed by share of market and similar comparisons (16 per cent) and business location (10 per cent). Other important business uses were for product research, investment, internal operating ratios and collective bargaining. The users came from every industrial classification and geographical region of Canada and from businesses large and small.

The section encourages increased use of statistics through seminars to trade associations and businesses. During the year it also launched an industry-by-industry group scheme of contact in Montreal and Toronto, to provide business with assistance in putting DBS information to use. The response from businessmen has been good.

Statistics Use Development personnel also carried out other kinds of direct business liaison work. Many business statistical information problems are referred by the Section direct to a DBS subject division for additional information or for special compilation. These referrals have led to improved uses of available information and as the responsibility of the subject division involved, development of

changes in DBS reporting and surveys. The Section also works closely with DBS divisions in searching out business response to surveys and in assisting divisions by developing an awareness of business informational needs. While the Section places major emphasis on its role with the business community, it also gives substantial assistance to government agencies and other departments, particularly at the regional level.

The Inquiries Section had another active year, handling some 1,600 inquiries a month by mail, telephone and personal visits. The figures themselves do not reveal the whole extent of the workload nor the value of the service rendered. Some of the more complex inquiries required many man-hours of research as well as the preparation of special tabulations to meet the inquirer's specific needs. Data were assembled from a variety of sources, mostly within DBS, but frequently from other governmental and private sources. Most inquiries originated in Canada, but a growing number were received from foreign countries.

The development of a new advertising campaign by the Information Division, urging individuals and business firms to make more use of statistical information available from DBS, produced a good response. Advertisements in the "Dear DBS" series carried coupons to facilitate requests for information. Returns from this source alone amounted to more than 3,000 and placed a further workload on the Inquiries Section.

The Section compiled and published a new 356-page catalogue of DBS publications, the first revised edition of the catalogue since 1964. The 1968 catalogue contained, for the first time, a section on data files and the availability of unpublished information.

The Inquiries Section also published a 20-page special catalogue during the year, listing all publications based on data from the 1966 Census of Merchandising and Services. It was similar to that produced in 1967-68, dealing with the Censuses of Population and Agriculture.

INTEGRATION AND DEVELOPMENT STAFFS

The following professional staffs are attached to the office of the Assistant Dominion Statistician for Integration and Development: Central Classification and Company-Establishment Integration; Sampling and Survey Research; Econometric Research; Regional Sta-

tistics, Research and Development; Special Manpower Studies and Consultation; Consultant on Demographic Research. A review of the activities of these staffs during the fiscal year follows:

Central Classification and Company-Establishment Integration Staff

The Company-Establishment Integration Staff and the Central Classification Staff were combined during the year.

Work continued on the development of a Canadian Classification and Dictionary of Occupations. It is a joint venture between DBS and the Department of Manpower and Immigration. The Department of Manpower and Immigration continued its work on occupational definitions while the staff in DBS concerned itself with classifying occupations and developing indexes. The structure of the new classification, including definitions for major, minor and unit groups, was settled in the fall of 1968. Industrial definitions were developed for use in association with the occupational definitions. These industrial definitions are a condensation of the classes shown in the 1960 edition of the Standard Industrial Classification Manual. To relate the 1961 Census Occupational Classification to the new occupational classification, it was necessary to fit the former occupational terms into the new structure and this project is about half finished. Research is also continuing toward expanding the index of occupational terms and such sources as the Labour Force Survey, Job Vacancy Survey, Applications for Unemployment Insurance, a sample of 1,000 enumeration areas from the 1961 Census and the 1971 Census Test material are being examined. An interim manual will be prepared for testing in the Census Test of October 1969 and the final classification manual will be ready for the 1971 Census.

During the year, a committee of DBS officers began a review of the Standard Commodity Classification. About one-half of the classes have been reviewed to date. Work has also continued during the year on the Standard Geographical Classification, the Standard Industrial Classification and on classification research.

The prime objective of the Company-Establishment Integration staff is to co-ordinate the financial and production statistical segments of the Bureau into a comprehensive and integrated set of statistics that will allow a more flexible response to surveys within a more consistent and detailed framework than now exists. The first stage of the study is with the large individual corporation where the firm is contacted, consulted and co-operation requested. Six of the largest and most complex firms, whose operations reflect a wide range of the economic and financial statistics collected in the Bureau, have been selected for detailed study and investigations

are currently in process. The results of this study should lay the foundation for the research required for the balance of the larger corporations. This study has been influenced by the increasing development in the use of electronic data processing equipment by both industry and government.

The second stage of this approach is the research into the utilization of existing administrative records such as the corporate income tax return for the small and medium-sized corporation which is available under the Corporations and Labour Unions Returns Act. The increase over the years in the number of tax provisions calls for more detailed information and has greatly expanded the statistical productivity of the tax return. However, because of conceptual differences, much of the data from the tax returns are found to be at odds with the data collected by conventional means in the Bureau and much challenging research is required in this area before a full reconciliation and integration can be accomplished.

Two additional research projects began during the year. One was a comparison of financial statistics on wholesalers (based on companies) with statistics from the annual census of wholesalers (based on establishments). The other was aimed at incorporating the full universe of companies reporting financial data into the Central Register of Companies and Establishments. Research also continued on the effect on statistics by industry of using the company or the establishment as the reporting unit. Employment data was used in the analysis.

Sampling and Survey Research Staff

The prime responsibility of the staff is to work on the methodology of DBS surveys, design new surveys or redesign existing ones, and advise and participate in their implementation. The objective of such work is to achieve through the application of sampling, improved survey methods or automation, one or more of the following: increase the reliability of statistics; improve their timeliness; and/or reduce the cost of compiling them. Most of the work of the staff can, therefore, be grouped around the projects of the different subject-matter divisions.

Census Division Projects. - Further progress was made during the year on the projects undertaken to measure the coverage errors of the 1966 Census of Population. A report was produced on the coverage errors associated with the Agriculture Census and this was published by the Census Division.

The survey designed to evaluate the coverage errors associated with the Census data collected during the London mail-out/mail-back Test Census was completed and two reports were published. A third is pending and will be completed during 1969.

Analytical studies were designed during the year to make additional use of the data collected for evaluation purposes. These studies were concerned with problems such as inter-and intra-provincial migration, with the economic characteristics of persons not enumerated in the Census.

The staff also initiated two feasibility projects to be undertaken during 1969 in preparation for the 1971 Census Evaluation Program. It is hoped that one of these projects will make a substantial contribution towards the improvement of the timeliness of coverage evaluation data while the other is designed to test the feasibility of new methods of evaluation.

A report was written describing the weighting procedure for the sampled data collected in the London Census Test. A motivational study was carried out to investigate the effect of publicity and the reasons which motivate people to complete census questionnaires and a report has been published.

The problem of whether to sample or to take a complete coverage was extensively studied with respect to the 1971 Census. A detailed report explaining the pros and cons of each potential method as well as providing rough estimates of root mean square errors was prepared in collaboration with other Bureau personnel. The mean square error compared with the cost of sampling versus complete coverage was studied utilizing cost values estimated from 1961 Census and recent test censuses.

Quality control plans were devised for the listing and editing operations in two Census Tests (for London in 1967 and for Toronto in 1968). The quality control of the census of population has been extended for the 1969 Trial Census and plans have been devised for the first three of the following:

- (1) quality control of printing of census questionnaires;
- (2) quality control of enumeration;
- (3) quality control of coding;
- (4) quality control of document readers and other associated operations.

From the results of the above procedures in the 1969 Trial Census, and the results of a Work Measurement Program and the Computer Diary System for the 1969 Trial Census pre-

pared by the Census Division, detailed analysis will be performed on costs and corresponding qualities that can be achieved. Then adequate quality control plans will be devised within the budget for the 1971 Census of Population.

Labour Force Survey. - The monthly variance estimation program pertaining to the Labour Force Survey was extended to permit variance estimates of over 30 additional characteristics in any particular month for surveys taken in conjunction with the Labour Force Survey.

Tables of monthly estimates, standard deviations, and coefficients of variation are produced for over 40 characteristics for each province and region, and for Canada. These tables include descriptive titles of the characteristics so that the computer output of the titles and pertinent figures may be reproduced directly without any manual copying. Similar tables are now produced for month-to-month difference and year-to-year differences as well as weighted averages for any number of consecutive months up to a full year. These tables are automatically sent to the Special Surveys Division and are available upon request. A by-product of the above is that of a study of unusual observations for editing purposes. Another by-product is that it provides raw material for a study of the deterioration of the sample design over time.

Agriculture Division. During the year under review the staff designed a number of surveys, in collaboration with the Agriculture Division, which were carried out by that Division. In connection with the cattle surveys in Alberta, semi-annual surveys (one in January and one in July) on a new probability basis were initiated in January 1968. The sampling design is based on stratification by area and size of farms. It is designed to facilitate the estimation of sampling errors. Response in these surveys, estimated by areas, varied from 30 per cent to 47 per cent. A field survey of the non-responding units will be carried out in August 1969 in order to estimate the impact on reliability of the non-response.

A design similar to that described above has been utilized for the hogs survey in Ontario. In addition, advice on sampling design and estimation procedures has been given on field surveys for various fruit and forage crops carried out in the provinces of Ontario, British Columbia and Alberta.

Domestic Travel Survey. - In September 1968, Treasury Board had approved in principle a comprehensive Domestic Travel Survey for 1970-71 which had been proposed at the 1966 Federal Provincial Tourist Conference and had received unanimous endorsement at that time. The objectives of the survey are to identify

the patterns and to quantify the values of inter- and intra-provincial travel, in such locality depth as is practicable.

DBS recognized the need for more adequate statistics in this field and endorsed the idea of a Domestic Travel Survey but no space survey capacity was available. It was therefore decided that the field work should be carried out by a private firm under contract to, and under the supervision of, the Dominion Bureau of Statistics, and there should be a Domestic Travel Team set up in DBS to be financed originally by the Office of Tourism. The Domestic Travel Team would be responsible for designing a pilot study in 1969 costing approximately \$50,000, and a Domestic Travel Survey costing approximately \$1,000,000 dollars. This team would also be involved in supervising the implementation of these surveys by a private firm. By the end of 1968, a new section called the Domestic Travel Section had been approved for the Sampling and Survey Research Staff. Recruiting of two statisticians for this project was underway and the section began operating on January 1, 1969.

Merchandising and Services Division Projects. - The new design of the Retail Sales Survey, referred to in previous annual reports, has been developed for implementation in the latter months of 1969 in conjunction with the Merchandising and Services Division. This new design had been tested in a pilot study carried out in Prince Edward Island. The survey will embody two different samples: the first, a sample drawn from a master list that has been created and is to be updated on a continuing basis from lists presently available within the Bureau; the second, a supplementary set of locations listed in a sample of areas drawn from across Canada that will estimate the relevant characteristics of location either missing from the master list or recently come into existence. The survey will be orientated to systematized computer processing to an optimum degree and critical path methods have and will be used to keep the survey on schedule. The system will be designed to be flexible enough to extend to the wholesale and service sectors of the Merchandising Division and other facets of retail trade area, e.g., the estimation of credit statistics. In fact, preliminary discussions for a redesigned credit survey have already taken place.

For the 1969 Test Census of the Census of Merchandising, a form was designed for drop-off by the Census enumerator and mail-back by the contacted location. Although this format may not be used in the 1971 Census, it is hoped that the data gathered from the test will provide a basis for the design of the procedures for the 1971 Census. In addition, regular discussion and work sessions have been initi-

ated with the subject-matter division to plan and control the 1971 Census of Merchandising.

The Sampling and Survey Research Staff were responsible for the design and selection of the sample for the 1968 Retail Commodity Sales Survey using the 1966 Census of Merchandising as the sampling frame, for appropriate program specifications and volume tests, and also for the design of a network diagram for the control of the project up to the mailing in February 1969.

The staff designed the 1968 Annual Sales Estimate for Wholesale Merchants Proper. The purpose is to provide annual statistics for Wholesale Merchants proper based on a sample rather than on a census in order to reduce the amount of work. The updated 1966 Census list was used as a frame for the selection of a stratified sample.

External Trade Division Projects. - The IBM 1287 Document Reader was tested to determine its reading capability with respect to the direct transferral of handwritten data on code sheets to magnetic tapes in the computer system. Comparisons were made with the present system, which incorporates coding information on code sheets from which cards are first key-punched and then read into the computer and put onto magnetic tape. Many detailed comparisons on accuracy, timeliness and costs were made. A report entitled "IBM 1287 Document Reader Test" issued in November 1968 gives an account of the methodology used, the results and the recommendations. The test showed that this document reader, at the stage of development when the test was carried out, was not suitable for the input of handwritten characters to a computer system.

The sampling of Small Value Import Entries from the United States (where the total of imports shown on an entry is less than \$1,500) was devised and tested by the External Trade Division over a period of several months and then implemented in January 1969. Samples of small value American entries are selected independently from each of nine broad commodity groups, with a sample fraction of one in ten. Sampling fractions will be reviewed to ensure accuracy, based on data currently gathered on the reliability of the resulting estimates.

This sampling reduced the staff resources used in processing import statistics in the External Trade Division by a significant margin while making available some positions for improved quality control. There should also be a corresponding reduction in the number of keypunched cards and keypunch operator man-years associated with the processing of the External Trade Division's import statistics.

Labour Division Projects. - Preliminary specifications were written for three sub-systems which together make up an advanced package for the mail-out, follow-up, edit, imputation, and tabulation of the Employment and Payrolls Survey -- large firms (ES 1). Further refinement of these specifications in collaboration with the Central Programming Division and the Labour Division staff was going on prior to programming and implementations planned for 1969-70.

Work continued on the new system of the Employment and Payrolls Survey -- Small Firms (ES 2), which became operational during the year. However, a proposal was made by Sampling and Survey Research Staff, to combine the collection of data on employment and current job vacancies for the small firm sector. According to this proposal, which was accepted in principle, the collection vehicle would be the Job Vacancy Survey (JVS). The processing of employment statistics would not be done under the JVS system, however, for technical reasons, and the staff has undertaken to provide specifications for a new ES 2 system to be implemented in 1969-70. Significant improvements with respect to the quality and cost are anticipated.

The Job Vacancy Survey, a twice monthly survey of current job vacancies became operational, at least for the large-firm manufacturing sector and was expected to achieve the same status in the remaining sectors during the first half of 1969-70. Research on methods of increasing the statistical efficiency of the complex design used in the JVS, delayed to some extent by pressure to become operational, will continue.

Manufacturing and Primary Industries Division Projects. - Testing of the developing computer systems for the Current Shipments, Inventories and Orders Survey and the preparation of historical data for keypunching continued through the year. Problems with programming the computer systems delayed their scheduled introduction on an operational basis this year. Some preliminary work was done in connection with the contribution to be made by the staff to a project for the complete automation of the processing of the Censuses of Manufactures, Mining and Logging.

Transportation and Public Utilities Division Projects. - Detailed plans were prepared for the initiation of two new surveys in the transportation area. The first of these is really a new version of the discontinued Motor Transport Traffic Survey and involves the collection, by mail, of inventory type information from a sample of truck registrations drawn from provincial motor vehicle registration files. Owing to the non-standard nature

of provincial registration systems this survey involves some difficult technical problems connected with the unduplication of files and the reduction of vehicle types to a common classification system.

The second survey, for which a pilot survey is planned for 1969-70, involves a multi-stage sampling process with individual shipping documents (waybills or bills of lading) as the ultimate sampling unit and statistics on commodity movements by origin and destination as the end product. The universe consists of shipping documents for all shipment carried by for-hire carriers in one calendar year.

Central List of Business Units. - Some basic conceptual work on the structure and uses of, and maintenance systems for, an extended Central List was carried out and incorporated in a paper which has provided a starting point for the extension project to be undertaken beginning in 1969-70. Many of the concepts and techniques were worked out in the development of the Job Vacancy Survey master file systems.

Data Processing Operations Division - Quality Control of Key punching and Keytaping. There are three surveys (Imports, Employment and Payrolls Surveys, ES 1 and ES 2) which are currently being keypunched under quality control sample verification plans instead of 100% verification. Other surveys are being investigated for transferral to sample verification. Investigations have commenced on quality control of string keypunching, quality control of keytaping and on the design of an overall quality control system for use in Data Processing Operations Division.

Geocoding Project. - This project has been described in previous annual reports. The programs used to create and maintain area master files for urban areas, having been tested and run on the Ottawa-Hull area files, were placed on an operational status. The programs are currently operating to create and maintain files for Vancouver and Calgary. During the year agreement was reached with several municipalities to participate in the work of preparing area maps and coding streets for preparation of area master files. Members of the Geography Section, Census Division, held training sessions for clerks and supervisors of participating municipalities.

The first Geocoding Bulletin was published. The second bulletin is being edited, and will be published in September 1969. The forthcoming bulletin is designed to answer a number of questions posed by potential users of the system on the mechanics of the system itself and the way the system will operate to their benefit.

The procedures and processes for handling rural geocoding have been chosen and coding for test areas has been completed. The important program to store and retrieve data is currently being tested. These programs were the basis of demonstration seminars held for staff and management personnel of the Bureau on the system design and use. Contracts were let for a generalized street map plotting program and for address conversion programs.

In preparation for the 1969 Trial Census in St. Catharines and Sherbrooke, the staff associated with the geocoding project is embarked on a speeded-up endeavour to geocode St. Catharines in advance of the test, so that a system simulation of the 1971 Census can be run and checked out in 1969. In this way, the interaction of geocoding with the operations of the Census Division may be evaluated and timed.

Studies were carried out on rural geocoding concepts and procedures; storage estimates and requirements for 1971 Census Data; handling of addresses and preparation of addresses and preparation of address registers from the 1971 Census; and of retrieval by means of graphical description of query areas. A report was written on the London geocoding test run in 1967-68.

Other projects and assignments. - The first number of the Quarterly Bulletin of the Sampling and Survey Research Staff, designed to acquaint interested non-technical persons with its activities, was issued in April 1969. This Bulletin reports projects underway or successfully completed. Brief accounts of theoretical researches now in progress will be reported in future issues.

During the year under review, forty-one advanced lectures were given to selected professionals and forty-eight introductory lectures were given to subject-matter statisticians including members from the Agriculture, Education, Vital Statistics and Census Divisions.

As in previous years, the staff provided significant consulting services with respect to survey design and methodology to a large number of federal and provincial departments.

Econometric Research Staff

During the fiscal year considerable emphasis was placed on the use of econometric and related techniques to improve the timeliness and/or the quality of various series produced by DBS. In particular, members of the Econometric Research Staff served on task forces which were formed to improve the time-

liness of the quarterly national accounts and to explore the possibilities of improving the quality of construction price indexes.

The development of a non-linear regression program was initiated and earlier developmental work was continued on the application of econometric techniques to the estimation of commodity by commodity input-output tables and the evaluation of DBS capital stock estimates. In order to expedite the evaluation of the capital stock estimates, staff members also assisted members of the National Wealth and Capital Stock Section of the Business Finance Division with extending the estimates of fixed capital flows and stocks in manufacturing beyond 1969; a by-product of this combined effort was the completion of the extension of these estimates early in the fiscal year.

Considerable progress was made on two analytical studies started earlier, hospital costs in Ontario and the labour force participation rate of married women, using both census and survey data.

Staff members continued to devote much time in offering consultation services to personnel inside and outside the Bureau and a major portion of the time of one member of the staff was devoted to staff training.

Regional Statistics, Research and Intergration Staff

A major project, designed to develop the methodology of producing annual estimates of population for counties and census divisions, utilizing data from a variety of sources has been completed and the report describing the methodology developed and estimates for 1967 has been published.

Another project aimed at developing indicators of growth patterns in manufacturing employment by counties and census divisions for the periods 1949-1959 and 1961-1965 has also been completed. The report that shows indices of regional shifts in manufacturing employment and the methodology applied is in print.

The staff worked out proposals for a new set of census divisions in Saskatchewan. A report containing the research results and the new boundaries was submitted as a DBS proposal to the Province of Saskatchewan.

Work has been started to develop annual estimates of labour force by counties and census divisions. The staff provided assistance to the Consumer Finance Research Staff to develop aggregate money income estimates

for counties and census divisions and also participated in the project of producing unemployment estimates for sub-provincial areas.

Special Manpower Studies and Consultation Staff

The research program of the staff continued in 1968-69 with studies on various aspects of the Canadian labour market. These included the following *Special Labour Force Studies*: Labour Force Characteristics of Post-war Immigrants and Native-born Canadians: 1956-67; the Educational Attainment in Canada: Some Regional and Social Aspects; Women Who Work: Part II; Some Methods of Analysing Cross-Classified Labour Force Participation Rates (not yet published); and the following *1961 Census Monograph Studies*: The Female Worker in Canada; Geographic Composition of the Canadian Labour Force (not yet published); and Working Life Estimates of Canadian Males (not yet published).

Two studies in the course of preparation are concerned with the utilisation of manpower in Canada. The first will identify the sources of under-utilisation as measured against a reasonable goal; the second will attempt to explain variation in labour supply in response to fluctuations in the economic climate, *i.e.*, labour demand.

Developmental research by the staff, during the year 1968-69, was again primarily concerned with the continuing development of the concepts employed in, and operational procedures used in, the new Job Vacancy Survey. The staff was also concerned with the finalisation of concepts to be used in the 1971 Census and the planning of the subsequent program of tabulation and analysis.

Consultant on Demographic Research

During the year under review, work completed included: a special chapter on population movement written for the *1969 Canada Year Book*; research on the delineation of Census Metropolitan Areas for the 1971 Census Metropolitan Area Committee; a special 1961 census bulletin on migration to Census Metropolitan Areas; revisions of parts of 1961 census monograph on internal migration; and a check and revision of the French translation of the 1961 census monograph on urbanization. In addition, the Consultant served on several Census Division Committees concerned with the planning of the 1971 Census, and chaired inter-divisional committees concerned with projections and research on vital statistics, and acted as Assistant Director of Research in the Census Division.

ECONOMIC ACCOUNTS BRANCH

This Branch, in its general responsibilities, is concerned with a wide range of economic statistics which include the principal comprehensive statements and indicators relating to the Canadian economy. The preparation of these statistics for the publications which are described below is carried out in the Balance of Payments and Financial Flows Division and the National Accounts, Production and Productivity Division. The scope of information covered by the Branch extends over the whole ambit of the organized output of the Dominion Bureau of Statistics and beyond, providing a set of macro-economic data relating to the Canadian economy. The data are used by economists and others concerned with observing the course and performance of the Canadian economy and advising on policy.

Balance of Payments and Financial Flows Division

The Balance of Payments and Financial Flows Division is concerned with the construction, analysis and publication of statis-

tics and reports related to two important sets of economic and financial relationships. The first of these involves estimates of the balance of payments covering economic and financial transactions between Canada and other countries, estimates of Canada's international investment position and measuring and exploring the country's external assets and liabilities. The second set of relationships is embodied in a comprehensive set of financial flow accounts, setting out intersectoral claims and revealing the process by which real and financial resources are transferred within the Canadian economy.

The current publication program of the Division includes quarterly and annual reports on the balance of payments; monthly reports on sales and purchases of securities between Canada and other countries; and monthly and annual reports covering travel between Canada and other countries. It was not possible to produce an annual report on the balance of payments during 1968 but the principal series covered in the annual report were published as they became available in the regular quarterly

reports. At the end of the year the first report on the financial flow accounts, a further development of the general system of national accounts, was in the press. This report contains quarterly and annual series for the years 1962 through 1967.

Unsettled conditions in the international exchange and money markets and balance of payments difficulties in some of the principal countries of the world were again characteristic of much of the year. Balance of payments statistics continue to attract close attention from the public and from officials in Canada and abroad. A rising balance of unidentified transactions raised considerable concern, and efforts of the staff were directed to the exploration and reduction of this problem. Further progress was also made in the joint efforts of balance of payments statisticians in the United States and Canada to explain apparent inconsistencies in the data collected in the two countries.

In addition to the close co-operation with the Office of Business Economics of the United States Department of Commerce, staff participated, on the invitation of the International Monetary Fund, in a meeting of balance of payments technicians held in Paris under the auspices of the Fund. Canadian experts also participated in a meeting called by the Committee for Invisible Transactions of the Organization for Economic Co-operation and Development to discuss the program of work on capital markets, as well as meetings of the Ad Hoc Group of Financial Statisticians, which is chaired by a member of the Branch. Additional work was involved in the preparation of technical material for OECD statistical expert groups in the fields of international aid and tourism.

National Accounts, Production and Productivity Division

The National Accounts, Production and Productivity Division co-ordinates, processes and analyses information from a variety of sources. This encompasses responsibility for the income and expenditure accounts, the work on gross domestic product by industry in both current and constant prices, (the latter includes the index of industrial production), and the development of measures relating to the aggregate productivity performance of the Canadian economy and its major sectors. The Division is also responsible for the production of the *Canadian Statistical Review* and the concomitant production of monthly articles for this publication as well as further development and research of seasonally adjusted data.

Regular publications of the division include the following: quarterly and annual - *Income and Expenditure Accounts*; the monthly publication of the *Indexes of Industrial Production* and the *Quarterly Indexes of Real Domestic Product* as well as the annual publication of the *Survey of Production* which deals with the output of commodity producing industries on a provincial basis. In the area of productivity, indexes of output per person employed and per man-hour are published annually for the commercial economy and its major components. The available detail now includes separate measures for the commercial goods-and service-producing industries as a whole. At the individual industry level, the study on the pulp and paper industry was updated.

In addition to the provision of day-to-day assistance to many businesses, academic and government users, considerable material was furnished to such government agencies as the Department of Finance, the Economic Council of Canada, the Department of Industry, Trade and Commerce, and the Bank of Canada for the preparation of their reports and for their needs in fulfilling their obligations as economic advisers to the government.

Of special interest during the past fiscal year has been the work to rebase the industry of origin real domestic product system (including the index of industrial production) to a 1961 weight base and to incorporate revisions to the Standard Industrial Classification which was completed and published. The quarterly real domestic product data have also been rounded out this year to regularly include the agriculture industry.

In collaboration with the Economic Council of Canada, further development work on the improvement of a time series data bank was carried on during the past fiscal year. The existing data bank was used intensively by other federal government departments and agencies and the use of such a data bank will be made available to the public at large in the new fiscal year.

The Division also continued to participate actively in the international deliberations and conferences which are taking place in connection with the proposed revision of the United Nations International System of Standard National Accounts. In this connection, a member of the staff attended a conference of a working group of the Conference of European Statisticians in Geneva.

FINANCIAL STATISTICS BRANCH

The Divisions of the Financial Statistics Branch produce a wide range of financial statistics on business and governments. During the past few years there has been a particularly lively interest in how well the financial markets are succeeding in bringing borrowers and lenders together, and how the existing statistical series and the new series being developed are helping to measure their role. Some important work is also being done with respect to the nature and extent of services rendered by governments and the intergovernmental flow of funds. The Branch plays a leading role in seeing that the financial series produced within the Bureau are consistently defined, and that the needs of the users are met. Important non-financial series, such as capital expenditures and scientific expenditures, are also produced within the Branch.

Business Finance Division

The Business Finance Division is responsible for the development, collection, compilation, analysis and publication of data on a variety of subjects, such as profits, assets and liabilities, capital expenditure intentions and realizations, construction activity, statistics of the construction industry, housing, building permits, scientific research and development, commercial failures and bank debits. The Division also is responsible for the development of estimates of financial flows for the corporate sector of the economy, as well as estimates of flows and stocks of capital goods in the economy.

The financial Institutions Section was formed in 1967 to deal specifically with the task of developing surveys of financial institutions. During 1968-69, the Section continued the collection and publication of quarterly balance sheet data of trust companies, mortgage loan companies, sales finance and consumer loan companies, investment dealers, mutual and closed-end investment funds, and fire and casualty insurance companies. In the third quarter of 1968, data for credit unions were added to the regular quarterly publication *Business Financial Statistics*. This publication was issued in bilingual format beginning with the fourth quarter of 1968.

A new annual publication *Credit Union Statistics* was released for the first time in June 1968, containing annual credit union statistics for 1966. The second annual publication, containing data for 1967, is to be released in May 1969, and this second report will utilize for the first time a standardized format for credit union statistics in Canada.

The publication of these new data follows two years of extensive development work with various provincial government officials and members of the credit union movement.

Another significant development during the year was the commencement of publication, starting in the fourth quarter 1968 edition of *Business Financial Statistics*, of statements of revenue and expense, retained earnings and sources and applications of funds for each of the groups covered by the quarterly surveys. In the long run, the objective is to collect, compile and publish similar data (including balance sheets) for all categories of financial institutions, including those groups not presently covered, such as chartered banks, life insurance companies, holding and management companies, business finance companies and real estate operators and development companies.

The Division has continued to publish quarterly reports on commercial failures in Canada. These reports are based on material supplied to the Bureau under the provisions of Bankruptcy and Winding-up Acts. The number of failures and the amount of liabilities involved at the time of bankruptcy are published by region and by industry. Reports have also been issued monthly and annually on the total value of cheques cashed in fifty-one clearing centres in Canada from material supplied by the Canadian Banker's Association.

The Financial Statements Section, which conducts quarterly financial statements surveys of industrial corporations, continued publication of its quarterly *Corporation Profits* series. In addition, development work on other financial statements continued, and in 1969 the Section will publish for the first time data on balance sheets for each major industry group for each quarter since 1962.

During the year extensive efforts were devoted to developing computer-oriented operations in all phases of work, from bench-mark revisions through current survey procedures. The up-dating of bench-mark data and the revision of historical series from 1962 will be completed as soon as computer procedures and programming are finalized.

Increased efforts also were devoted to studies of concepts and measurement techniques related to the estimation of corporate profits, and a number of studies and projects were undertaken with the objective of improving the timeliness of the quarterly estimates.

Both the Financial Institutions Section and the Financial Statements Section continued development work related to the production of

financial flows in the corporate sector of the economy, and publication of a set of financial flow accounts including data developed by the Sections is expected early in the 1969-70 fiscal year.

In the Capital Expenditures Section, existing annual surveys are being continued to provide national, regional and industry estimates of intentions for the year ahead and realizations for the past year on capital and repair expenditures on new construction and on new machinery and equipment. Investment intentions by industry, by province, are published in *Private and Public Investment in Canada, Outlook* at the beginning of each year. The results of the mid-year survey of revised intentions are published in *Private and Public Investment in Canada, Mid-Year Review*. In 1967, for the first time the coverage of the mid-year survey of revised intentions was expanded to provide provincial data comparable to those published earlier as a result of the original intentions survey. However, owing to the substantial increase in workload such provincial detail could only be published at the end of the year. In 1968 it was possible to improve timeliness to the point of making available the provincial result at the same time as the national results and in the same publication. Prior to 1967, the coverage of the mid-year survey did not permit the estimation of revised intentions by province.

A new questionnaire for the mining industry (excluding oil and gas mining), which was developed in 1967 with the co-operation of representatives of the industry, provincial government officials and other federal government officials, was used in 1968 and the resulting capital formation data were compiled for publication in *Private and Public Investment in Canada, Outlook 1969*. The new questionnaire meets the requirements of the DBS, the federal and provincial Departments of Mines and other prime users, and provides improved data for the various users with elimination of substantial duplication in reports. Some difficulties were encountered with the new questionnaire and survey procedures, but most of the problems have been eliminated in time for the next annual survey.

Substantial progress was achieved during the year in the development of the quarterly survey designed to provide measures of capital investment for all sectors of the economy on a forecast and realization basis. Following extensive studies of the conceptual and operational problems involved in establishing such a survey, which is being conducted with the company rather than the establishment as the reporting unit, an initial set of questionnaires and supporting introductory

material was mailed in November 1968, to 36 companies based in Montreal and Toronto. Follow-up visits were made to each of these companies to discuss reporting problems and to reconcile lists of establishments which would be covered in the company reports. In February and March of this year, a similar approach was used with 50 companies having their head offices in the western provinces, and in April at least 60 companies will be added to the survey without a personal interview follow-up. The survey will be expanded further during 1969, with the objective of covering by 1970 about 500 companies responsible for approximately 60 per cent of annual business investment.

Other work during the year included the continuing program of improvement of existing surveys, including work on the development of a new approach for the electric power industry. Work was also continued on a project which is an attempt to measure capital spending by foreign-owned firms in Canada as compared with firms controlled by Canadian residents. This project, which was begun late in 1967, uses information already existing in the Business Finance Division and in the Corporations and Labour Unions Returns Act Division.

In addition to the construction data provided in the investment reports, which show expenditures on new and repair construction as reported by organizations paying for the work done, another report, published in June of each year and entitled *Construction in Canada*, provides information on value of work put in place by type of structure along with overall estimates of the labour and material content of this work. This report, issued by the Construction Section of the Division, also provides separate estimates for value of work performed by construction contractors and that performed by others engaged in construction work on their own account, as well as an estimate of the equivalent man-years necessary to carry out the annual program of construction. Information on types of structure is derived from the capital expenditures surveys mentioned earlier, which also obtain information on the labour and material content of own-account construction. The labour and material content of the construction contractors is derived from the results of a sample survey of construction firms conducted annually by the Construction Section.

During 1967, the Construction Section undertook a study aimed at determining the feasibility of a Census of the Construction Industry, the objective of such a census being to provide data on the organization and operational characteristics of the industry and to provide detailed industrial statistics to enable more accurate measurement of the industry's real output and productivity. As a result of

the feasibility study, the decision was made to implement such a census in a progressive series with each portion covering a construction industry sub-group or combination of sub-groups. The Mechanical Contracting Industry was selected as the first group to be surveyed, and following extensive discussions and negotiations with industry associations and company representatives across Canada, the census questionnaires were mailed in August, 1968. In terms of the broad goal of determining the feasibility of undertaking a whole series of projects towards the elaboration of a complete system of construction statistics, the Census of the Mechanical Contracting Industry is considered to be a success. It is expected that results of the census will be released in July 1969.

The Housing and Building Permits Section publishes a monthly report on building permits, which provides data on the number and value of housing units by type and the value of industrial, commercial, institutional and government building construction in more than 1,400 municipalities in Canada. The Section also issues a monthly report *New Residential Construction* containing the results of a nationwide survey conducted by the Central Mortgage and Housing Corporation, providing data on dwellings started, under construction and completed. These physical measures of housing are translated into values for the purpose of estimating quarterly and annual residential capital formation.

In addition to the production of current housing and building permit statistics, the Section, during 1968, completed work on a revised series of housing investment for the period 1951 to 1967. In this revision, a new method based on the systematic use of administrative records of the Central Mortgage and Housing Corporation was implemented, replacing a global method which contained many weaknesses and shortcomings. The Section also undertook a study of construction costs, designed to improve the cost factor required for calculating future investment estimates. In addition to being useful for investment estimates purposes, the project is intended to provide data on cost movements for various types of dwellings and different regions.

The Scientific Activities Survey Section has two regular surveys on scientific research and development: one of the Federal Government's activities and one of Canadian industry. In February, the analysis and statistical compilations resulting from the Federal Government Survey were released in *Federal Government Expenditures on Scientific Activities, Fiscal Year 1966-67*. The survey for 1967-68 was carried out during the year, and preliminary data will be available early in the 1969-70 fiscal year. During the year, the survey of

industrial research and development also was carried out and by the end of the year the compilation phase had begun. Preliminary data will be released early in 1969-70.

As in previous years, the Section has been heavily involved with other agencies interested in the field of scientific activities. Besides continuing its close co-operation with units such as the Science Secretariat and the Department of Industry, the Section has been actively engaged in preparing material for the Senate Special Committee on Science Policy.

Since 1963 the Division has worked with the Directorate for Scientific Affairs of the Organization for Economic Co-operation and Development in its efforts to standardize research and development concepts and practices for facilitating international comparisons and to promote further refinements in measurement of research and development and its implications. In December, 1968 the Section Chief participated in the conference held in Frascati, Italy, to discuss a proposed revision of the O.E.C.D. manual of standard practice for research and development surveys. Many valuable proposals were considered and work will continue during 1969-70 to achieve common standards in this area.

The National Wealth and Capital Stock Section continued development of estimates of fixed capital flows and stocks. During the year, preliminary estimates for the manufacturing sector covering the period 1961-1967 were made available, supplementing the 1926-1960 estimates published in 1967. Preliminary estimates for non-manufacturing sectors of the economy (excluding housing) also were completed during the year, and work is continuing on the improvement of these preliminary data and on the preparation of reference material describing the sources and methods underlying the estimates.

The Section provided a considerable amount of information to the Economic Council of Canada during the year, especially data for use in forthcoming Council studies relating to investment projections to 1975.

In connection with supplying information to the Economic Council and other researchers, efforts were made during the year to develop information files in the form of punched cards and magnetic tape, in addition to computer print-outs and standard tabular formats. Further development of data files in machine-readable form is planned for the current year.

Corporations and Labour Unions Returns Act Division

The Corporations and Labour Unions Returns Act was passed by Parliament in April,

1962 and is administered by the Dominion Statistician under the authority of the Minister of Industry, Trade and Commerce. The purpose of the Act is to collect financial and other information on the affairs of corporations and labour unions carrying on activities in Canada. Such information was considered necessary to evaluate the extent and effects of non-resident ownership and control of corporations in Canada and the extent and effects of the association of Canadians with international labour unions.

The information required of corporations is divided into confidential and non-confidential sections. The non-confidential section of the return includes information on the incorporation, officers and directors, and ownership of the corporation's issued share capital. The confidential section of the return includes financial statements of the corporation and a schedule of selected payments to non-residents for dividends, interest and certain business services.

Labour unions affected by the legislation are required to provide similar kinds of information, also divided into two parts. In the non-confidential section, the union furnishes a copy of its constitution, names of its officers, number of members and certain information on locals, trusteeships and collective agreements. The confidential section of the return includes the union's financial statements and information on the dues and assessments received by international unions from members of those unions resident in Canada.

The passage of this Act in 1962 created an additional requirement for the reporting of financial data by a substantial number of corporations in Canada and the necessity to duplicate, to a considerable extent, tabulations of corporation financial data being carried out by the Department of National Revenue. In order that this duplication might be avoided, legislation was passed by Parliament which eliminated the filing of one corporation financial statement and enabled a joint statistical operation to be undertaken in this area.

The amendment to the Corporations and Labour Unions Returns Act, passed in 1965, accomplished these objectives by relieving a corporation from the obligation of filing a financial statement under the Act if the corporation had filed a financial statement under the Income Tax Act. At the same time, access to corporation income tax returns was made

available to the Dominion Statistician. A joint program of corporation financial statistics was developed that provides the Department of National Revenue with statistical information on the taxation of corporate income and, at the same time, provides data for the purpose of the Corporations and Labour Unions Returns Act and for other statistical purposes.

The publication *Corporation Financial Statistics*, released in October 1968, is the first publication based on this joint statistical program that was developed following the amendment to the Corporations and Labour Unions Returns Act. This publication is based on the information contained in the accounting records of the corporation and provides information on the operations of corporations, including income, expenditures and profits, and on the financial position of the corporation including details of the assets, liabilities and the equity and a statement of retained earnings indicating the disposition of current earnings. A second publication, *Corporation Taxation Statistics*, deals with the taxation of corporation income, including the industry earning the income on which the income tax is based, the province in which that income was earned and the size of the firms paying income taxes. In addition, a detailed reconciliation of company book profit with taxable income is provided that indicates the magnitude of the main provisions of the Income Tax Act as well as the magnitude of the main items of income and expenditure which are treated differently in the Income Tax Act than in company books.

The Corporations and Labour Unions Returns Act requires that the Dominion Statistician prepare an annual report summarizing both the confidential and non-confidential information submitted by corporations and labour unions. The first report was released in July 1965 covering fiscal periods of corporations and labour unions ending in 1962. Subsequent annual reports under the Act are released in two parts - Part 1 relating to corporations and Part 2 relating to the labour unions.

The amendment to the Corporations and Labour Unions Return Act passed in 1965 has affected the statistics contained in the annual report under the Act relating to corporations in two important ways. The access to financial statements of all corporations, and the integrated statistical program that was undertaken, had permitted a compilation of statistics for corporations exempt from the reporting provisions of the Act but subject to the provisions of the Income Tax Act. This additional information has provided more complete measures of the magnitude of business in Canada and has permitted a better assessment of the importance of foreign-owned corporations in the industries in which they

operate. A number of classes of corporations are exempt from the reporting provisions of the Act and it was therefore more difficult to assess the magnitude of the operations of these firms. It has now been possible to determine the magnitude of the exempt firms and information has been included in the publications. The inclusion of these figures provides an improved assessment of the relative magnitude of foreign-owned firms in Canada. The other major area of business activity not included in these publications involves provincial and municipal government enterprises.

The second important aspect of the 1965 amendment is that the additional information available from the corporation income tax statement has provided assistance to many corporations in Canada in the determination of the reporting status under the Corporations and Labour Unions Returns Act. The resulting review of corporations reporting liability has indicated a misunderstanding of the reporting requirements of the Act, particularly amongst small and medium-sized firms. In the initial stages of the implementation of the legislation, 25,000 corporations submitted complete returns, while more than 100,000 established their exempt status under the Act. In the absence of a complete list of corporations in Canada, it was not possible to identify and contact each corporation until after the 1965 amendment.

The extended program that was undertaken in 1966 to acquaint corporations with their reporting responsibilities under the Corporations and Labour Unions Returns Act for the year 1965 resulted in 11,017 additional corporations filing returns under the Act. Some of these corporations would be new in 1965 as the number of corporations incorporated in Canada is growing every year. An additional number of corporations which had been in business in earlier years would have become reporting corporations because of increases in either assets or sales. The balance, the largest group, would have been in business in previous years and become aware of the reporting responsibility under the Act for the first time.

The non-confidential information required under the Act of corporations provides information for the linking of corporations through inter-corporate ownership of share capital. Each corporation reports the classes of shares, authorized and outstanding, the voting rights attaching to each class of share, and the numbers of shares issued and outstanding to shareholders with addresses in Canada, outside Canada and with no address of record. In addition corporations report the name and address of each corporation owning 10 per cent or more of any class of issued share. In the

publication *Inter-Corporate Ownership*, released in January 1969, corporations which had common ownership by another corporation or were linked together in ownership relationships were grouped together to form ownership complexes. These corporations were grouped when there existed inter-corporate ownership of voting rights of 10 per cent or more. The inter-corporate ownership complex begins with a holding corporation in which no reporting corporation owns more than 10 per cent of the voting shares. This group of corporations includes a number of foreign-incorporated companies which are not reporting corporations but are corporations holding more than 10 per cent of the voting shares of a reporting corporation. This publication makes available to the public non-confidential information required under the Corporations and Labour Unions Returns Act and indicates to some extent the magnitude of inter-corporate relationships in Canada.

Central Personnel Record System

The Central Personnel Record System for the Public Service of Canada was established by Treasury Board Minute 654427 dated April 12, 1966. The principal responsibilities of the System are: the servicing requirements of the Treasury Board and the Public Service Staff Relations Board for information relative to collective bargaining; providing the Treasury Board Staff with data to support the development and assessment of policies and standards for personnel management in the Public Service; developing information for Treasury Board use in determining manpower requirements and for Public Service Commission use in planning its staffing programs; supporting the management of departments and agencies of the Public Service with information enabling them to develop and assess their personnel administration policies and standards; servicing DBS with data required to support its statistical program and reports; and through the Personnel Records Coding and Co-ordinating Committee, establishing and controlling the code system used in automated personnel record system in the Public Service.

During the year under review the CPRS has increased its computer file coverage of employees to approximately 90 per cent of the Federal Public Service. Data for the remainder presently continue to be obtained by use of statistical questionnaires. The Personnel Action Forms Study has progressed more slowly than had been hoped but should be completed in the coming fiscal year. A Benefit Usage Survey for the Operational Category of employees was completed and surveys for the Scientific and Professional, Administrative and Foreign Service, Technical and Administrative Support

Categories were initiated. A system to support collective bargaining requirements of the Treasury Board and the Pay Research Bureau was planned and will be completed soon. A considerable number of tables and lists containing data of use to departmental personnel administrators were programmed.

The CPRS has been handicapped during 1968-69 as a result of the enormous volume of paper transactions resulting from the Classification Revision Program, Collective Bargaining Agreements, and extensive departmental reorganizations. Significant progress, however, has been achieved in improving the timeliness of some parts of the computer file.

The Treasury Board, which is responsible for the policy control and general direction of the CPRS, has decided to transfer the CPRS from the Dominion Bureau of Statistics to the Department of Supply and Services effective April 1, 1969. This move results in a closer organizational relationship between CPRS and other major planning and production units associated with the overall information systems relating to pay, personnel and employee benefits.

Governments Division

In the 1968-69 fiscal year the Governments Division entered a period of program consolidation which it is expected will continue through to 1970-71. No new projects were initiated during the year under review. However, some considerable resources were devoted to projects commenced in earlier years but which are not yet fully operational.

The Division continued its major role in the Interdepartmental Coding Committee. The Committee's recommendation respecting the classification of federal expenditures coded by economic objects was implemented as of April 1, 1968 and the first computer print-outs by economic object became available in August. As with most major projects of this nature, a great deal of editing has been required and is still being conducted by this Division. It is hoped that by mid-1969 the system will be working at an acceptable level, *i.e.* that the print-out will constitute a reliable base for the economic analysis of federal government expenditures. Concurrently, the Division has made substantial contributions to the development of a classification and coding system for federal non-tax revenue. It is expected this phase of the overall program will be ready for implementation as from April 1, 1970. The final phase of this program, *i.e.* the classification and coding system for federal tax revenue, assets and liabilities, is to be undertaken upon the completion of the proposals for

non-tax revenue. Three meetings were held with officials of the Government of the Province of Ontario to assist them in developing a coding and classification system similar to that being developed with the federal government.

During the year under review, considerable time was spent on the twenty-year historical revision of the government sector of the national accounts covering the years 1947-67 inclusive. This revision was required because of improved data, amended concepts and especially in order to bring the past compilations into closer conformity with the standards set out for national accounts by the Statistical Commission of the United Nations Economic and Social Council.

Considerable progress was made during 1968-69 in the development of the "Financial Flows" series of statistics. In the federal and provincial government areas, financial flows were compiled on an annual basis for the years 1962-1966 and quarterly flows were completed for the period from April 1, 1962 to date. The financial flows for provincial government enterprises were compiled on a quarterly basis for 1966-1968 inclusive and for the federal government enterprises were kept up on a current basis. All of the above flows work will be continued on a quarterly basis and is scheduled for publication by the Balance of Payments and Financial Flows Division commencing in the summer of 1969. In the local government area, financial flows are still under development.

The Eighth Federal Provincial Conference on Municipal Finance Statistics which was convened in April, 1967 as a continuing conference has held four sessions to date, three of which were in 1968-69. It has substantially completed its deliberations on the Division's proposals for a new classification of revenue and expenditure, and is currently considering the asset, liability and equity proposals. Three or four more sessions will be required to complete the current program. The classification on coding system being developed will provide a common framework for reporting on financial transactions by all municipalities and this will be compatible with the systems employed by the federal and provincial governments, thus making for sound intergovernment comparisons.

During the year, the Division organized a DBS Advisory Committee of Users of municipal finance statistics. This committee, comprised of representatives from all levels of government and certain of their agencies and associations, certain research organizations and

universities, as well as other bodies, held its inaugural meeting in October 1968. Further meetings will be held from time to time. It is intended that this committee examine the complete range of user requirements in the field of municipal finance, and advise DBS and other Canadian statistical agencies on the best ways and means of satisfying demand through co-ordinated effort.

With the view to improving its reports on provincial debt, the Division prepared comprehensive formats for use in the presentation of the provincial debt statistics. These have been referred to the provinces for comment. It is hoped that, with the aid of provincial response, a generally acceptable and a much improved presentation will be developed in the near future.

ECONOMIC STATISTICS BRANCH

As the name of the Branch implies, the majority of its activities are concerned with the production of statistics related to the economy of the nation and designed to be of assistance in the formulation of policies and programs that affect its condition and growth. The Branch directs the operations of six divisions and an "Input-Output" research and development staff. Branch activities are principally concerned with the collection, processing, analysis and publication of statistics derived from business establishments. These consist, in general, of production, sales and service "units" in contrast to the reporting universe of the Financial Statistics Branch which, so far as the private sector is concerned, deals with companies.

For the most part the collection of the information is carried out by means of hundreds of monthly, quarterly and annual "mail type" surveys of varying sizes although a number of "enumeration type" surveys are also involved. The Branch tends to concentrate on production or sales of commodities and services, materials used, employment, prices and imports and exports of commodities.

During the past two years, the total number of man-years allocated to this activity had declined while the increases in financial requirements have generally been to meet uncontrollable expenses, e.g., economic salary revisions. Despite these constraints the Branch has found it possible to pursue its major objectives of maximum resource utilization, the timely release of all statistical series and the development and maintenance of a statistical program which will meet the requirements of statistical users.

The necessary staff to meet uncontrollable increases in work-load in certain areas have been found by the introduction of more efficient methods and by reducing or suspending lower priority projects. Further progress has

also been made in the areas of timeliness and automation, as well as in the development of the Branch statistical program, with special emphasis in the areas of prices and the service industries.

External Trade Division

The External Trade Division is responsible for planning the content of Canada's commodity trade statistics and for their production, analysis and publication. Monthly, quarterly and annual reports and special tabulations provide data on trade by commodity, by country, by province of customs clearance for exports and imports, as well as by mode of transport, by region of lading for exports, and by tariff item by country for imports.

A complete reorganization of work methods employed and of the professional, technical and administrative responsibilities of the Division has largely been completed. As a result of the addition of several commodity officer specialists and other technical staff, many far-reaching improvements in classification have been initiated. The facilities for continuous and regular review of the commodity classifications to accommodate expanding and changing needs of international commodity trade have been improved. In addition, an historical index of the dates to which any import class can be traced was developed and published.

The addition of qualified professional staff has resulted in an improvement in the ability of the External Trade Division to produce more interpretative and analytical commentary concerning its statistical output, such as articles prepared for the *Canada Year Book*, the *Canada Handbook*, and for *Foreign Trade* which is published fortnightly by the Department of Industry, Trade and Commerce. A quarterly commentary on leading developments in Canada's trade entitled "The Quarterly

Review of International Trade Trends" will appear regularly as a *DBS Daily Bulletin* release during 1969, based on a requisite number of seasonally-adjusted commodity series.

With the objective of improving the timeliness and accuracy of the monthly *Trade of Canada - Imports*, while at the same time reducing costs, a sampling procedure for processing low value import from the United States was adopted in January 1969. Improvements in timeliness of monthly reports continue to be made with monthly exports gaining one full month over one year ago compared with a gain of two weeks in the release of import data over last year. Commencing with January 1969 the monthly deseasonalization of Canada's exports and imports by major trading areas is being done in the External Trade Division for publication and to serve as inputs for the balance of payments and national accounts.

Continuous efforts are being made to clear up the backlog of basic annual publications and considerable progress in this direction has been achieved. During the fiscal year the *Trade of Canada, Volume I (Summary)* 1960-1964 edition, *Volume II (Exports)* 1965-1966 edition, and *Volume III (Imports)* 1962-1964 edition, were prepared and published, and further editions are under preparation and scheduled for release during 1969. The *Review of Foreign Trade* for 1960-1963 and 1964-1966 are also expected to be published during 1969.

Preliminary and developmental stages of a new quarterly tabulation of Exports by United States Census Subdivision of consignment have been completed with the first quarterly tabulation expected during the second half of 1969.

The Division has begun to devote considerable research and study to valuation problems, particularly those related to Canada-United States automotive trade, as part of a broad program of quality improvement and an overall reconciliation of counterpart trade statistics of the two countries.

Efforts continue to be made towards more improved timeliness and quality of its total publication program as well as special compilations and tabulations produced for government and industry, which are required more and more for quota surveillance and anti-dumping investigation.

Input-Output Research and Development Staff

During the year the compilation of preliminary data for the 1961 Input-Output Table was completed. These data give information on the production and disposition of goods and

services among 187 industries and various sectors of final demanders. Due to the confidentiality of some of the information available in the most detailed tabulations it will not be possible to release these data to the public. This information, however, will be used for statistical tabulations and analyses at DBS. To facilitate public data requirements and the needs of a variety of users, the detailed tabulations were aggregated into four sizes of Input-Output tables. Three of the aggregate tables will be published shortly. The most detailed will distinguish 110 industries and 197 commodities.

These tables and various associated data have been used in the construction of analytical models which may, on certain assumptions, be used to analyze the interrelationships among industries. The effects of changes in the demand for particular commodities by final consumers can be assessed in terms of their impact on various industries and on the incomes they generate. Planning commenced on a study of the feasibility of establishing more complex models of the Canadian economy to assess the usefulness of such models as a major tool in economic analysis.

The Input-Output Staff continued its work on a project designed to provide detailed information on the goods and services purchased by each level of government. During the year, preliminary results were obtained for federal and municipal government expenditures and considerable work was completed in the analysis of provincial government expenditures. The staff also provided assistance in the designing of a questionnaire to obtain data on the inter-provincial shipments of goods by manufacturers.

Technical advice, assistance and data were given to a number of government departments and agencies at both the federal and provincial level. The departments of Finance, Industry and Forestry and the Atlantic Development Board participated in discussions on the uses of Input-Output tables and associated analyses. The staff continued its work on an up-dating of four Input-Output tables for the Atlantic Provinces under a contract with the Atlantic Development Board. Work on this project, which relates to 1965 data, was nearing completion at the end of the fiscal year though a considerable amount of analysis of these tables will have to be done this coming year.

Labour Division

The Labour Division is concerned with production of a broad and varied program of establishment surveys and administrative statistics. The subject matter covered includes

statistics of labour input and labour cost, occupational job vacancies, pension plans, and data relating to the operation of the Unemployment Insurance Commission and the Canada Manpower Service of the Department of Manpower and Immigration.

The fiscal year 1968-69 for the Employment Section was characterized by improved timeliness in the release of statistical data, the complete automation of the small establishment survey, and advanced planning for a completely automated large establishment survey. To facilitate the introductions of computerization and to smooth the way for future developments in this area, the clerical staff in the Section attended an elementary course in electronic data processing. Major changes in the physical layout were carried out to reflect the introduction of the new functional organization of the Section.

During the year, the preliminary results of the first comprehensive survey of selected employer labour costs in Canada were published. The purpose of this survey is to quantify the various elements in the total wage package and to relate supplemental pay to total remuneration in the various manufacturing industries.

In May 1968 preliminary employment, hours and earnings data for large establishments were released one full month earlier than the former advance statement, as a result of refined programming, intensive follow-up and streamlined processing methods. Also with January 1969 data, 32 urban areas were added to the geographical coverage of the large establishment program bringing the total to 88 centres for which data are published.

The complete automation of the small establishment survey, in addition to ensuring improved timeliness, allowed for the publication of increased industrial and geographical detail in the *Estimates of Employees by Province and Industry*. Beginning with January 1969 data, the coverage of the latter publication was increased to the full spectrum of industries and data were published for the four largest urban areas in Canada.

In May 1968 a publication entitled *Seasonally-Adjusted Employment Indexes* was issued to replace what had heretofore been a restricted document. For all employment index series seasonally-adjusted data, prior adjustment factors, final seasonal adjustment factors, and the final seasonally-adjusted series were shown.

To conserve resources and to further spread the reporting burden among respondents, the Annual Survey of Earnings and Hours of

Work in Manufacturing was converted to a sample basis and an additional sample of small establishments in manufacturing was included. It is hoped that the results of this experiment will be to show for the first time adequate earnings and hours data for small establishments.

The Unemployment Insurance and Manpower Section compiles and publishes statistics reflecting operations of the Unemployment Insurance Commission and the Canada Manpower Service of the Department of Manpower and Immigration. In conjunction with the UIC and the Department of Insurance, a special survey of claimants was conducted, to record and analyze the pattern of contributions and claims. This survey will be used by the Department of Insurance as a basis for recommendations to the UIC.

The Chief of the Section participated in a DBS-UIC Committee established to review and assess information provided to the UIC by DBS in the light of changing operations of the Commission. Planning has been initiated to develop claims statistics directly from magnetic tapes produced in connection with mechanized claims pay operations to be gradually introduced into UIC offices across the country.

Substantial staff savings were achieved in the Section by mechanization of a number of clerical operations formerly performed manually. Revised sampling arrangements introduced in co-operation with the DBS Sampling and Survey Research Staff also contributed to these economies.

The Pensions Section initiated negotiations with Provincial Pension authorities to establish a co-operative uniform statistical program using administrative records as the primary data source. The arrangement will eliminate multiple requests to respondents for identical information and achieve economies by a division of responsibility for collection and production of statistics between provincial pension bodies and DBS, respectively.

During the year a small pilot survey was developed to test the feasibility of a quarterly survey of trustee pension funds to provide current financial flow data. On the basis of the results of this pilot project, a sample survey of the larger pension plan is being developed to provide publishable data.

During the year professional staff of the Pensions Section participated in a symposium on housing organized by the Central Mortgage and Housing Corporation. At this Conference the DBS representative presented a report on pension funds as a source of mortgage money available for investment in housing.

In the Job Vacancy Survey Section a major development involved the completion of the structuring of multi-establishment firms into sets of units for reporting job vacancies. A program of intensive experimentation, testing and evaluation of concepts, definitions, procedures and questionnaires was carried out. This involved small-scale test surveys, field workshops and head office conferences. As a result of the above activities the final design and content of mail and interview questionnaires were determined and implemented by September 1968. During the same period, a large-scale computer program involving many unique features was completed. This program included the following major components: a system which maintains a master file of all reporting units; provides for sample selection; print-out of labels for automated mail-out and follow-up; a basic record-keeping system for field operations; and a flexible data output system incorporating estimates of reliability of data for all output.

By the end of 1968 monthly estimates of job vacancies by occupations for large firms in the manufacturing industry were being produced regularly for internal evaluation purposes. The program is, therefore, well advanced towards providing the Department of Manpower and Immigration with data to meet their requirements in 1969.

In the Analysis and Development Section an investigation of duplication in the collection of labour data by federal government departments was undertaken during 1968 at the request of Treasury Board. This investigation involved review of the collection activities of eight federal departments operating some 90 surveys which were primarily concerned with labour data or obtain such data in conjunction with other statistics. A report was prepared containing recommendations for action to reduce response burden and elimination of duplication.

Manufacturing and Primary Industries Division

The responsibilities and the organization of the Division have remained basically the same over the past year. The major change of interest is the transfer of responsibility for mining statistics to the new Energy and Minerals Section. Emphasis has continued to be placed on timeliness and quality of data and additional steps have been taken to re-assess the utility of projects, to remove duplication of enquiry and to introduce more appropriate data processing systems.

Project re-assessment has given rise to a number of changes in the annual industry

reports including the deletion of a number of tables of marginal utility. In addition, a review of special services to users resulted in the cancellation of 24 special statements which could not be justified in relation to other priorities of the Division. It is also of interest to note that the Division has been successful in introducing a formal work improvement program in the operational area as well as instituting a divisional records system.

Further results of re-assessment of priorities and more efficient operations are that the Division has been able to expand its activities in a number of areas without any increase in manpower. The following examples are illustrative:

- (1) The current shipments, inventories and orders series now includes monthly data for all twenty major industry groups, and seven major economic use groups are being published with and without seasonal adjustment; in addition, the series was adjusted to the most current benchmark.
- (2) Special tabulations on containers are now being published annually.
- (3) The survey of metropolitan sales of gasoline has been expanded to include more geographical data.
- (4) A new survey on production and disposition of tobacco products has been implemented.
- (5) A new survey dealing with brewery products has been initiated.
- (6) Preliminary work has been completed in connection with the survey of interprovincial and foreign shipments of selected commodities. Although it was stated in last year's report that the survey would be implemented during this fiscal year, problems at both the provincial and federal level required that it be deferred until 1969.
- (7) A continuing annual project involving tabulation of selected financial and commodity data is in process on behalf of the Emergency Measures Organization.
- (8) Extensive tabulations were undertaken on behalf of: the Combines Investigation Branch to permit the study of concentration in Canadian industry; the provinces of British Columbia and Saskatchewan for the development of economic atlases; the Area Development Agency of the Department of Industry in relation to a study of economic growth in the Georgian Bay area.
- (9) An increase in the number of *ad hoc* enquiries to well over 15,000.

The Division was able to make further gains in timeliness through the use of preliminary industry bulletins and changes in editing procedures. For example, preliminary data for 68 industries (1967 Census of Manufactures) have been released as compared to 37 industries (1966 Census of Manufactures); in the previous fiscal year. Availability of data from the monthly survey of shipments, inventories and orders has been improved by about two weeks; and finally the availability of data from monthly commodity surveys for use in the index of production have shown a further improvement of about one or two days.

Regrettably, the Division continues to experience difficulties in the timeliness of the general reports on the Manufacturing Industries of Canada. Although some gains have been achieved through preliminary bulletins, significant improvements will not be obtained until additional professional resources are available and computer programs have been updated and converted to the new computer. It is hoped that such improvements will begin to have an effect on this series in the latter part of 1969.

In an attempt to improve the quality of data and decrease the response burden, the Division has participated actively in inter-divisional working groups engaged in: (a) the use of administrative records to replace or supplement industry surveys; (b) the study of employment statistics to examine and, where practical, remove duplication; (c) the study of co-operatives to plan, develop and implement a co-ordinated system of reporting; and (d) the study of company accounting systems to develop co-ordinated reporting procedures for company-establishment statistics for multi-unit companies.

Again this year, the Division was unable to complete the implementation of the Industrial Commodity Classification. It is now planned that it will be introduced with the 1970 Census of Manufactures.

Although not directly measurable in terms of quality and timeliness, the extensive divisional training program is important in this respect as well as in terms of career development. Approximately 1300 man-days were devoted to training during the year, of which 20 per cent comprised language training. The remainder was taken up by courses on management training, records management, communications, organization theory and practice, data processing, economics, accounting, statistics, systems and procedures, secretarial training and work improvement. The Division also participated in the training of a foreign student who was attached for a period of seven months.

Finally, although only in the initial stages, the Division is in the process of planning a completely automated data processing system for the annual Census of Manufactures, Mining and Logging. This is a joint project involving personnel of other divisions as well as participation by personnel of interested provincial statistical offices. Because of its complexity and scope it is not expected that the system will be operative before 1973-74.

Merchandising and Services Division

The function of this Division is to collect and publish data on the retail, wholesale and service sectors of the economy, as well as to undertake numerous special studies and surveys in areas related to the movement of goods from the manufacturing level to the final consumer.

In general, the Division is organized into eight sections: administration, retail, wholesale, service, special projects, quinquennial census, research and development, and operations. One major change in the structure of the Division during the past year was the creation of a computer unit within the Operations Section. The function of this unit will be to assist in the development of a systematic program to convert many of the Division's manual operations to computer systems, as well as to co-ordinate the activities of the Division and the Sampling and Survey Research Staff in the development of new sampling methodology.

All editing and coding of the returns received from the 1966 Census of Retail and Service Trades (including approximately 250,000 retail businesses and service outlets) were completed during the fiscal year. Two advance bulletins on retail trade and the first advance report on the service trades were released. By September 1969, all planned reports on the 1966 Census of Retail and Service Trades should be available to the public. Prior to actual publication of these data, the Division devoted a significant proportion of time to meeting the numerous requests for special tabulations on retail trade from market research agencies, planning boards and business concerns.

Serious conceptual difficulties continued to plague the 1966 Census of Wholesale Trade during the past year. However, significant progress was made in resolving many of these problems and it is now expected that the data will be completely edited by July 1969, barring additional unforeseen difficulties. Further, because of the reallocation of some divisional staff to other activities, it was necessary to cancel the annual Wholesale Trade survey for 1967.

For the 1968 survey of Wholesale Trade, a major innovation has been introduced. Because of serious limitations on staff resources, it was decided not to undertake a complete census of wholesale merchants for 1968 but to select a sample representing about one-quarter of their total number of 20,000 for survey purposes. Other types of wholesalers, however, such as agents and brokers, manufacturers' sales branches, assemblers of primary produce and co-operatives, are being surveyed on a full coverage basis. In order to increase the reliability of the data obtained, three different questionnaires have been designed to suit the individual requirements of each type of operator, replacing the previous uniform questionnaire. The questionnaires were mailed out towards the end of the fiscal year.

To replace the depleted 1951-based monthly sample of wholesale merchants a new sample was designed and implemented. The new sample makes possible a more refined breakdown of sales by kind of business. For purposes of historical continuity, the monthly and yearly wholesale trade series during the period 1952-1968 have been revised on the basis of the results of the 1961 Census of Wholesale Trade and are expected to be available shortly.

A new survey of construction machinery and equipment covering the year 1967, was completed early in 1969. The results provide an account of the Canadian market for over 70 major commodities in terms of units and dollar sales.

During the year, plans were completed for a sample survey of some 30,000 retail businesses in order to measure the sales of specific classes of commodities during 1968. This study was formerly an integral part of the decennial Census, but was separated in order to expedite the completion of the new quinquennial Census program which commenced in 1966. Henceforth, retail commodity surveys will also be undertaken on a quinquennial basis rather than decennially as in the past--in each case, two years following the census year. It is expected that the results of the 1968 commodity survey will be available by approximately March-April 1970.

During the past twelve months, much of the activity in the area of retail trade has centred around the development of a new retail trade sample. The design of this new sample is based on almost total mechanization of the system used to collect the raw data each month, including mail-out, editing, imputation, follow-up and tabulation of data on a "direct-to-printing" basis. The much larger sample size which is contemplated will make possible the publica-

tion of data for major metropolitan areas and for approximately 30 kinds of business, as contrasted with the 18 trades shown at present. It is also expected to increase substantially the quality of the data through improvements in the measurement of retail "births" and "deaths".

It is planned to introduce the new sample in January 1970 along with an early estimate of retail trade, which will be published 10 to 14 days earlier than the regular retail trade report. In mid-1968, mechanization of the existing retail trade survey was undertaken to improve the timeliness of the series pending implementation of the new design.

Efforts to improve timeliness were carried on in other directions as well. The timing of all monthly publications was examined, improvements introduced where possible and target dates set. This timeliness study has proven very satisfactory and has resulted in the publication of reports on predetermined dates with no appreciable decline in quality. As this is written, a similar study is being undertaken for all annual publications. Due to the extent of planning and control necessary for these more elaborate surveys, it is planned to make use of the "critical path" technique. The application of this concept of network analysis is expected to shorten the completion time of annual retail trade and other surveys.

In other areas of retail trade, there have also been several new developments. One of these was the planning and design of a new annual survey of department store firms which, together with an extension of the annual chain store survey of the general merchandise trades, will make possible the publication of a revised annual series on department stores. In addition, this study will enable DBS to assess the impact of "births" and "deaths" on the department store universe.

A number of annual surveys, which had been interrupted because of the 1966 Census of Merchandising and Services, were reinstated during 1968 for the 1967 calendar year. These included the surveys of shopping centres, chain stores and voluntary group stores. The shopping centre survey was extended, for the first time, into the service trade area, in an attempt to measure the influence of such trades on the rapid growth of shopping centre sales during the past decade.

During the year, work was completed on the 1969 edition of the *Market Research Handbook*. It contains demographic, economic, manufacturing, merchandising and marketing data compiled from dozens of diverse DBS publications. This new *Market Research Handbook*, which will be published in May 1969, has been substantially expanded over previous editions.

At present the staff of the Research and Development Section is engaged in developing the terms of reference for a study on the economic effects of suburban shopping centres on downtown shopping areas. It is hoped that some preliminary results of this study will be available by the fall of 1969.

Reports on the 1965 surveys of operating results of independent drug stores, automobile dealers, fuel dealers, jewellery stores, book and stationery stores, camera and photographic supplies stores and sporting goods stores were published during the 1968-69 fiscal year. During this year, also, the manuscripts for the 1966 surveys of operating results of independent and chain food stores were prepared and the reports published.

The manuscript for the 1967 annual report on *Farm Implement and Equipment Sales* was prepared and its publication is expected very shortly. In the interim, all monthly reports in this series were released on schedule.

The survey of Destination of Manufacturers Shipments for 1967 has proceeded according to schedule during the year and it is expected that the results will be available during the last half of 1969. This survey will measure, in total value terms and by industry, the movement of merchandise from manufacturing plants to each province and region of Canada and to destinations outside Canada.

The mail-out for the 1968 survey of Funeral Directors was undertaken during February 1969. This survey is very similar to the one carried out during 1965 for the year 1964.

Preliminary data resulting from the annual survey of direct selling--which covered two years, 1966 and 1967--were released in December 1968. Future annual surveys will be expanded to incorporate the direct sales of wholesalers and service establishments.

In the area of credit statistics, a major effort was made to improve timeliness in the monthly publication. The release date for data in the monthly bulletin *Credit Statistics*, was reduced from around 10 to 12 weeks following the survey month to approximately 6 weeks, in an effort to meet advanced target dates. A major undertaking affecting the consumer credit series will be the move to a new benchmark and the design of a new sample in order to improve the series on retail credit outstanding through department stores, furniture and appliance stores, motor vehicle dealers and other retailers. Current statistics are based on modified 1951 Census data and consequently require revision based on both the recently

published 1966 Census and selection of a new reporting sample in conjunction with the proposed new sample for retail trade. Substantial gains in quality and timeliness can be expected from the fully automatic and computerized system which will be put into effect not only for the retail credit series but also for other contributors to these series, such as sales finance companies and consumer loan companies. On completion of current intercensal revisions in the consumer credit series, a special publication will be released, treating its concepts and development in depth and providing consolidated historical statistics.

It is anticipated that the implementation of the new retail trade sample will concomitantly also make available regular periodic statistics on retail inventories. These data will be published in a new quarterly series for department stores, chain stores and independent stores, by kinds of business at the Canada level. Provided sufficient need exists, efforts will be made to publish inventory data at the provincial level as well.

A task force, centred in the Merchandising and Services Division, was established early in 1969 to review the existing statistical program in the retail, wholesale and service trades as part of the preparation for the 1971 Census, and in particular to develop a long-range program for expanding collection and publication of data in the service field.

Prices Division

The function of the Division is to collect, compile and publish data on prices and consumer expenditure. The Division is divided into three subject areas--Retail Prices and Living costs, Industrial Prices, and Central Research. In the first group are included the measurements of retail price movements and price differentials as they relate to changes and differences in the cost of living and real incomes of population groups within Canada and between Canada and other countries. Included also are family budget surveys and studies providing statistics on family expenditure for various types of families. Industrial Prices, on the other hand, cover measurements of price movements in the production and distribution of commodities and services in which the primary focus is on the prices of the outputs and inputs of individual industries within the standard industrial classification. The Central Research group co-ordinates research and analysis in prices in areas common to the other subject areas, including the treatment of quality change, analytical techniques and price index methodology.

The regular monthly issues of *Prices and Price Indexes*, which includes all price statistics published by the Division and the earlier released monthly issues of *Price Movements* in which sensitive indexes are selected for early release, continued to be published during the year.

The main emphasis during the year was in preparing the base for an expansion of the statistical program for the Prices Division. This preparation included a considerable staffing campaign and the maintenance of the credibility of existing statistics through extensive revision projects.

In the field of retail prices and living costs the Consumer Price Index was brought into sharper focus for current analyses through its conversion and publication, in early 1969, on a 1961, rather than a 1949, time reference base. The index is thus more readily comparable with associated economic indicators such as indexes of wages and salaries and of employment which are likewise published on a 1961 base. A study of the concepts, coverage and content of the national and regional city consumer price indexes was begun at the end of the period under review with the aim of updating the basket of consumer goods and services in the light of current family spending patterns and of reviewing the characteristics of the population groups to which these indexes refer. The results of this revision program, including some broadening of the number of separate cities for which consumer price indexes are prepared, are expected to be introduced during 1970.

The recently established Comparative Living Costs Section published a study of interurban retail price differentials covering about three-quarters of the consumer budget for a selection of seven major Canadian cities during 1968. Plans call for these place-to-place retail price comparisons to be broadened in scope so as to include shelter price differentials and also to be extended in terms of wider geographic coverage. The Section has also been carrying out exploratory studies aimed at measuring differentials in living cost conditions in relatively isolated northern Canadian communities. In this connection, during the year under review, staff members visited settlements in the Eastern Arctic as well as in the Mackenzie River region of the Northwest Territories for the collection of price and living cost data.

The Family Expenditure Section published complete results of the 1964 eleven-city general expenditure survey, showing detailed expenditure patterns in terms of a number of family characteristics including city, family

income, family type and age of head of household. The processing of a similar recall survey, involving 2,000 urban family records, carried out early in 1968 and referring to the calendar year 1967, also constituted an important activity of the Section during this period. Analysis and publication of the results of this survey are planned for the latter part of 1969. A detailed food expenditure survey involving each month approximately 1,000 urban and rural household in the completion of two-week food diaries commenced in January 1969 and will extend through the calendar year. In addition to providing information on food purchasing patterns, this survey will also yield expenditure data on a range of non-food items normally purchased in supermarkets. Planning has also commenced for a large-scale full-budget family expenditure survey, covering both urban and rural families, to be conducted early in 1970 and covering the year 1969 on a recall basis. It is anticipated that this latter survey will yield approximately 15,000 usable household schedules and that detailed tabulations will allow for classification of spending patterns by a large number of family characteristics.

In providing the statistical support to the Canadian Government's system of allowances for civilian and military personnel serving outside Canada, the International Prices Section analysed full budget surveys of comparative retail prices and living costs at 47 foreign locations. Additionally, during the year a continuous review of the validity of existing indexes was maintained in the context of foreign and domestic price movements and exchange rate movements, through use of a broad range of world-wide economic and statistical indicators. In connection with this work, officers of the Section visited posts in West and North Africa, and a number of locations in the United States where Canadian Armed Forces personnel are serving.

In the industrial prices field, development of price indexes relating to capital goods continued throughout the year. This included the pricing of new single-family dwellings erected by large builders and the specifications of important items of production machinery and equipment purchased by industry, including the collection of prices of some of the items. Exploration of new methods and sources of data for production of in-place price indexes for non-residential construction has resulted in planning of a pilot survey to test a particularly promising alternative. Experimental pricing of commodities for which there is no regular production of identical items for period to period (unique goods) continued in the areas of equipment for the generation of electricity, the fabrication of structural and plate steel and the fabrication

of pre-cast concrete. Development of a Highway Construction Price Index for Quebec is almost completed and will provide estimates of price movement from about 1963. Similar data are already available for most other provinces from 1956.

Priorities have been explored in the area of pricing outputs for service industries. This work has been done as part of a paper prepared with the Division for an international conference in 1969 dealing with the framework and classification systems for pricing service outputs; preliminary work has been undertaken in connection with developing indexes for part of the transportation industry.

A comprehensive revision of the Industry Selling Price Index relating to manufacturing industries in Canada was completed during the year, covering the period 1956-1967. The revision is the first major updating of the commodities and industries represented in the index and features: (i) the introduction of the year 1961 as the time and weight base for the index; (ii) the switch to the 1960 Standard Industrial Classification from the 1948 standard; and (iii) the introduction of an increased number of commodity indexes into the system. The revised set of indexes will also include some gross weighted indexes at the major manufacturing group level, *e.g.*, foods and beverages. A reference paper containing the revised data and an outline of the methods used in constructing the index will be available by mid-1969.

Transportation and Public Utilities Division

This Division has the responsibility to produce a comprehensive statistical program covering the fields of rail, road, water and air transport, telecommunications, other utilities and related services and industries. The Division has the additional responsibility to act as a collection agency and to provide comprehensive statistical services to many federal and provincial regulatory agencies including the Rail, Road, Water and Air Transport Committees of the Canadian Transport Commission, the Department of Transport and the Canadian Radio-Television Commission. In addition the Division has a number of co-operative collection arrangements with provincial motor carrier regulatory boards and public utility commissions.

As of April 1, 1968 the Air Transport Committee Statistics Unit, with a staff of ten, was transferred to the Aviation Statistics Centre of DBS. The Unit is gradually being integrated into the appropriate parts of the Aviation Statistics Centre, and its work is

being fully analyzed with a view to computerizing both its continuing program and predictable *ad hoc* compilations.

The Air Passenger Origin and Destination survey has been redesigned into an integrated computer system, and will be fully operative in time for the data analyses which will form the basis of the 1969 bilateral negotiations with the United States concerning the granting of international scheduled air routes. The Centre has assumed responsibility for the comparison of data exchanged with the United States Civil Aeronautics Board, since the Canadian system has facility for such analysis while that of the United States does not. Redesign of the Centre's other surveys is in progress and will be accelerated as soon as completion of the Origin and Destination system frees staff for other work.

At the end of October, a Service Bulletin was introduced to provide a much needed information service on aviation statistics. It has been well received by both the Air Transport Industry and services related to aviation.

The Centre's efforts to improve the timeliness of all its surveys have already shown good results. Reports on Level I Airports are now distributed within 45 days of month-end, with preliminary totals available through the Service Bulletin by the 20th of the month. Publication of a new Airport Activity report containing data for the period 1963 to 1968 inclusive is in preparation and release is planned for July 1969. The time-lag in the publication of the Civil Aviation monthly report has also been reduced substantially. Negotiations are now in progress to further advance the due date of returns for carriers.

A major review of the reporting schedules for *Civil Aviation* has been partially completed. Some of the schedules have been redesigned and simplified in co-operation with the industry and regulatory agencies to ease the reporting burden on respondents and additional work is continuing in this area.

In the Transportation Section considerable progress has been made in planning a new truck survey to replace the Motor Transport Traffic Survey. The new plan envisages a two part survey--a Truck Inventory and Use Survey and a Survey of Truck Fleets. The former will provide information on trucking activity generally:- total number of trucks classified by type, area of operation, annual mileage and fuel consumption. The Fleet Survey will attempt to obtain commodity origin and destination data by sampling waybills.

Major reviews of the *Passenger Bus Statistics* report and the *Warehousing* report were

initiated in conjunction with advisory committees in both industries. During the year, the feasibility of initiating an Index of Railway Freight Rates was studied with the co-operation of the Prices Division.

An important extension of the Division's coverage of water transport will be implemented this year. This is a survey of vessels operated by Canadian firms. This "inventory" survey, planned to yield details of physical dimensions, capacities, and manning, is being developed in co-operation with the Department of Transport and the Canadian Transport Commission. The basic source of shipping traffic statistics is a DBS return, completed by masters of vessels on arrival at Canadian ports. These returns yield both traffic flow and part activity statistics. The processing of these returns has now been computerized, thus enabling not only greater efficiency to be achieved but also widening the scope for further analysis of the data.

A major review of passenger-mile and ton-mile statistics published by DBS was undertaken during the year. These series are generally considered an important source for inter-modal transportation comparisons. Work so far has yielded significant improvements in the quality of both the Water and Road Transport ton-mile estimates.

Research is also being undertaken into a study of transportation as part of total Canadian expenditure on goods and services. This study will cover private and commercial expenditures on passenger and freight transportation.

On April 1, 1968, as a result of the new Broadcasting Act, the Public Utilities Section undertook a major review of joint reporting schedules for radio and television stations in co-operation with the Canadian Radio-Television Commission (formerly the Board of Broadcast Governors). These reporting schedules are being revised to conform with a uniform classification of accounts produced and distributed by the Canadian Association of Broadcasters and endorsed by the Commission. A uniform system of reporting at year-end was also established. The schedules have also been expanded to accommodate the needs of the regulatory agency which, under the new Broadcasting Act, has considerably greater responsibilities. In addition, a glossary of technical terms for the broadcasting industry was published during the year.

During the year, the results of a survey covering operating and financial statistics on the community antenna television industry were published for the first time. As the Canadian Radio-Television Commission also assumed regulatory responsibility for this industry in 1968, a co-operative collection system similar to the one for broadcasting stations is being arranged and, as the Commission's statistical needs are comparable to that for broadcasting, a major review of expansion of the reporting schedule was necessitated. For this purpose a DBS National Advisory Committee on Community Antenna Television Statistics was organized and is now in the process of developing a new questionnaire and a uniform classification of accounts to meet the needs of both agencies.

SOCIO-ECONOMIC STATISTICS BRANCH

The Socio-Economic Statistics Branch is responsible for the production, analysis, evaluation and dissemination of a broad cross-section of demographic, sociological and economic statistics derived from the households, institutions and farms of the nation. The following areas of responsibility are included: agriculture yields, production, finance and resources; censuses of population, housing and agriculture; consumer income, assets and liabilities; teachers, students, finances, facilities and services for all levels of formal education, and adult and vocational training, as well as statistics on libraries and museums; health and welfare data on births, deaths, marriages, hospitals, mental institutions, illness, crime, police, courts and penitentiaries; employment, unemployment, occupational and industrial distributions of the labour force and other national household surveys. The Branch

is also responsible for the eight regional offices of DBS and for carrying focal responsibility for provincial liaison and tourist statistics.

Agriculture Division

The Agriculture Division is responsible for development, operation and co-ordination of statistical systems which provide intercensal estimates of producing units--acres and livestock numbers, production, utilisation, value and prices of farm commodities, farm wage rates, farm expenditures and receipts, farm capital and debt, physical volume of output, domestic consumption of food, farm inputs and physical productivity factors, farm practices and indexes of farm prices. Data are

collected directly from farmers and agricultural industries, chiefly by means of mail questionnaire surveys on a sampling or partial coverage basis. Arrangements are also made to secure data from administrative sources.

The agricultural statistical systems is conducted in close co-operation with provincial government departments with which the Division has joint surveys and other work-sharing arrangements. There is also close collaboration with agencies such as the Canada Department of Agriculture from which administrative statistical data are procured.

Besides maintaining a flow of data related to agriculture, the Division is active in devising improved data collection procedures to meet the rapid changes in the structure of agriculture and allied industries and to fulfil demands for new, more timely and better quality data. Major stress is also being placed on efficiency of data handling and storage. To achieve these improvements, the Division is undergoing a reorganization in which more emphasis will be given to electronic data processing and improved methodology in collection of data. At present, the Division is organized into the following four sections: Crops, Livestock and Animal Products, Farm Finance, and Special Projects and Research.

The Crops Section conducts regular and special purpose surveys and publishes timely statistics and market information on field and horticultural crops for Canada, and by provinces. In the Crop Reporting Unit much of the data on the principal grain and oilseed crops is collected largely by means of mailed questionnaires from a special corps of volunteer farm correspondents, seeking information on such topics as growing conditions, acreages to be planted, fertilizer use, probable yields, farm-held stocks of grain, prices received by farmers and crop production. These statistical systems are designed to meet the information requirements of farmers, marketing agencies and allied industries; in addition, the annual field crops program provides a vital year-to-year link with the decennial and quinquennial Census of Agriculture benchmark statistics. Although published reports usually refer to provincial totals only, the data for many items are tabulated by smaller geographic areas and made available to provincial authorities.

Data obtained from these farm surveys are integrated with a vast array of statistics emanating as by-products of the operations of the Canadian Wheat Board, Board of Grain Commissioners, trade groups such as the National

Millers' Association and several government departments to provide continuous studies of the supply movements and trade of Canadian cereals, feed grains and oilseeds. An agriculture reporting program relative to world trade in grain and oilseed crops is maintained through the co-operation of the Canadian Trade Commissioner Service in order to provide a better assessment of Canada's position in the international trade of these commodities as well as of new and changing policies affecting this trade. Recent steps have been taken to improve and expand this program of foreign crop reporting. The reviews based on the analysis of domestic and foreign markets for grains and oilseeds are set forth in two comprehensive publications *The Wheat Review* and the *Coarse Grains Quarterly*. Monthly surveys of the grain milling and oilseed crushing industries are carried out as part of the overall domestic situation for grains and oilseeds. Expansion of data in the area of oilseeds and fats and oils has continued. A complete review of all aspects of Canada's grain trade is set forth in the annual publication *Grain Trade of Canada*.

In addition to an extensive publication program, numerous research studies were carried out to meet the economic and statistical requirements of both the government and private sector. The monthly survey of seed processors, established in 1967, was contrived to collect data in regard to seed purchases, and inventories on hand. This series provides an indispensable check on production of these crops as well as a picture of marketing patterns. In an effort to obtain more information at the farm level, an enumerative sample survey was carried out by direct contact and a random point system in the Peace River area to establish acreages of the different crops grown. The Seed Unit also initiated a special survey of mustard seed growers along with continuing the regular survey of seed corn sales.

The Special Crops Unit is responsible for statistical and subject-matter output systems relating to horticulture crops, honey and maple products on a national and provincial basis. The area covered ranges from the most extensive form of agriculture, *i.e.* beekeeping, to the most intensive form, *i.e.*, the greenhouse industry. In the Unit, large volume mail questionnaire surveys form an essential part of the data collecting systems. However, mail questionnaire surveys do not provide unbiased data that can be used for testing the objectivity of the response on the part of the respondents. Accordingly, systems to test quality are necessary and are being designed. In recent years, objective random sample surveys involving statistical and biological variables have been used in forecasting the peach, grape and sour cherry crop in Ontario and the

apple crop in British Columbia. Results obtained from these objective estimating surveys show that, for the most part, the techniques are quite satisfactory. However, some changes are always necessary so that maximum efficiency can be obtained. At the present time research is under way in these estimating areas and the operating procedures will be varied somewhat in 1969.

The Survey Research Unit is associated with most of the development work undertaken in the Crops Section involving the application of probability sampling methods. During the year 1968-69 the existing regular programs in this field were expanded and some have become part of the operating tools of the Division. The Survey Research Unit has been active also in fostering the interchange of statistical information with provincial agricultural statistical offices; a one-week course of lectures and seminars was arranged for the staff members of the Ontario Department of Agriculture's Statistical Branch, during the late summer of 1968.

The regular operating program of the Livestock and Animal Products Section includes the publication of a series of monthly, quarterly, semi-annual and annual reports related to the Canadian livestock industry. Monthly reports provide data on stocks of principal food commodities in storage in Canada, the output of dairy plants and estimates of farm value and production of milk and eggs. Quarterly reports are limited to the swine industry showing quarterly estimates of farm inventories, farrowings and expected farrowings. The semi-annual reports cover farm inventories for all livestock except fur-bearing animals for June 1 and December 1. Production, disposition, trade and other related data for all livestock and animal products are covered in the annual reports of the Section. Efforts during the year have been directed toward improving quality, timeliness, and extending the scope of existing projects. In the area of cold storage statistics, an evaluation of output was undertaken and will continue throughout the coming fiscal year. Results to date have permitted the Section to discontinue publishing series on stocks of shell eggs and stocks of all commodities in transit and in nine cities. Economies effected have allowed the Section to undertake an intentions survey to meet the changing needs of the produce trade. The intentions survey will be quarterly and will provide data on quantities of whole turkey carcasses in cold storages being held for further processing. The first survey will be conducted early in the coming fiscal year.

Preliminary estimates of farm inventories and pelt production of ranch-raised mink were released six months prior to the publication

of the final report. The preliminary estimates differed from the final estimate by approximately one per cent. During the past fiscal year, Newfoundland was included in the monthly survey of egg production for the first time and monthly estimates have been available since October, 1968. Studies have been undertaken to devise methods to extend survey coverage to the swine and dairy industries of Newfoundland. Exploratory work in the application and integration of probability sampling into regular estimating procedures continued throughout the year. The Alberta cattle on feed survey, which was undertaken on a pilot project basis in January 1968, was repeated in July 1968 and January 1969. The technique used for generating estimates has been tested to the Division's satisfaction and plans are well developed to extend the survey to the remaining major cattle-feeding areas of Canada during the coming fiscal year. The same technique used for generating estimates for the cattle on feed survey was tested for hog farm inventory and farrowing estimates in Ontario and for numbers of laying hens and egg production in Nova Scotia. The samples for these surveys were randomly selected from list sample frames; the collection vehicle was the voluntary response mail questionnaire. It is planned to field test the impact of non-response on this estimating procedure.

Feasibility studies conducted during the past year indicate that the application of electronic data processing methods will permit the integration of this estimating procedure into the regular estimating program. Plans are well advanced to introduce electronic data processing to the Section's regular data handling problems which will facilitate the integration of new and conventional estimating techniques.

During the fiscal year 1968-69, the Farm Finance Section continued its regular program of activities dealing with development and operation of a statistical system for the collection, compilation, analysis, evaluation and publication of provincial statistics on farm income, expenditures, prices, capital investment, productivity, land values and wage rates. This system was developed to provide regular detailed estimates of financial and economic developments within the agricultural sector of the economy for use in measures of the total economic activity of the nation for governmental and industrial planning and policy decisions and economic research.

Non-current activities during the year included the revision of farm income and expenditure estimates for the intercensal period 1961-1966. These will be published in the spring of 1969 as part of the regular farm income releases and will serve to up-date the

present handbook of farm income. The conversion of the index numbers of farm prices of agricultural products from a weight and time base of 1935-39=100 to a weight base of 1960-62=100 and a time base of 1961=100 was continued during the year with completion now scheduled for mid-1969. A special mail questionnaire survey was conducted in the Prairie Provinces in June to provide basic data required for estimating farmers' seed costs for wheat, oats, barley and forage crops. During the year, the Farm Finance Section became involved with the Regional Statistics staff in a project designed to provide farm income and expense data on a small area basis. Many problems were encountered and it is expected it will be some time before satisfactory results are obtained. Over a year ago, a special survey was conducted to collect farm land values to supplement data collected by means of a regular annual survey taken in December. At the present time, the results from this special survey and the regular survey are being correlated and analysed in the light of information collected by the Census of Agriculture, with a view to developing data of sufficient quality for publication.

An experimental program was launched in the latter part of the year to develop more timely estimates of farm income for inclusion in the estimates of National Accounts and Industrial Output. These experiments have been successful in producing results within one-half of the normal time required for their production. Further experimentation will be carried out in the coming year in an attempt to reduce still further the time required to produce these estimates.

The Special Projects and Research Section has been involved in developing improved sampling frames for divisional surveys and participation in pilot surveys in the field to test new methods of collection and planning for computerization of divisional data. Pending reorganization of the Division, the Chief of the Section has been given responsibility for the development of questionnaires and tabulation of the major June and December crop acreage and livestock surveys. The Section works closely with the Operations and Systems Development Branch and is the focal point for computer jobs originating in the Division. During 1968-69 swine and poultry surveys in several of the provinces were redesigned. This involved selection of probability samples from the master computer list of farmers' names. The Section also took an active part in developing methods to computerize the data from livestock surveys. A study to place the major surveys of the Division on computer is continuing. Field work for a test project in

area sampling for crop, livestock and financial data was under the direction of an officer of the Section during 1968-69.

A major review of the questionnaires for the major crops and livestock surveys was undertaken in 1968-69, which resulted in deletion of some questions. Associated with this review was a study of editing procedures. New simplified procedures will go into effect in 1969-70 and, together with partial automation, improvement in timeliness and overall efficiency is expected. These developments of procedural standardization and simplification will facilitate the eventual computerization of survey results.

Census Division

During the year, increased emphasis was placed on the planning and preparations for the decennial Censuses of Population, Housing and Agriculture in 1971. To this end, the Division itself was undergoing an extensive reorganization during the year to be better equipped to plan and manage this vast operation which reaches into every Canadian home and employs at its peak period an army of some 40,000 workers. Briefly, this realignment of functions within the Division has been undertaken with the primary objective of creating organizational units specifically responsible for each of the major components of the statistical process and for ensuring their co-ordination. Thus, for example, operational pressures and responsibilities on professional subject-matter staffs are being reduced by the creation of a Systems and Operations Subdivision, thereby enabling the former group to exert a much larger role in the analysis and interpretation of census statistics and in the research and study essential to the development of concepts, content, and tabulations. In summary, the reorganization is one which attempts to clarify and separate responsibilities for administration, systems and operations, subject matter, the co-ordination of research activities, and the provision of more direct support to the Director of the Division.

Perhaps the most far-reaching developments in the plans for the 1971 Census advanced during the year were those concerning the introduction of new field methods and techniques, as well as the provision for more extensive sampling in the collection of the basic data from householders. The degree to which sampling can be employed in a national census has a direct bearing on efforts to reduce cost and to produce more timely results. The introduction of new field methods has as its main objective the provision of data of

better quality through the use of "self-enumeration" techniques. While some loss of quality due to sampling is inherent for small-area data, the use of self-enumeration questionnaires will compensate for this factor by reducing the amount of response error found in earlier censuses. Thus, taken together, they appear to offer the best combination for achieving the basic aims of the Census in terms of cost, quality, and timeliness of the data.

The series of Census field tests starting with a small pre-test in Ottawa in December 1966, and an ensuing complete test enumeration of the City of London in September 1967, was followed up by a rural test in four representative localities across Canada in October 1968. All were designed to investigate the merits of new field methods and techniques for the 1971 Census. In the first two tests, use was made of new techniques along lines similar to those developed earlier in the United States to obtain the advantages of self-enumeration by mailing out the questionnaires to all householders for their completion and mailing back to a central processing office. In the rural test of 1968, a combination of direct interview methods and enumerator "drop-off" and "pick-up" of questionnaires was employed.

As a result of the testing program to date, the final "dressrehearsal" test of methods and questionnaires planned for the fall of 1969 will employ in all areas a uniform system of household listing and drop-off of questionnaires by enumerators as the method of getting the Population and Housing documents into the hands of householders ahead of the Census date. The most feasible plan of return appears to be for householders in the larger urban centres to mail back their completed questionnaires under a decentralized approach, while in rural areas the enumerators will pick up the completed forms. Enumeration of the large agriculture questionnaire will be included in this "drop-off-pick-up" method in order to obtain the benefits of self-enumeration in so far as possible from farming enterprises.

One of the first decisions which must be made in the planning of a Census involves the content (inquiries, concepts and definitions) to be included in its coverage. Subject-matter subcommittees and work groups have been engaged in this aspect of the 1971 plans since the first field tests began. In addition, a special test of content was held in Toronto in May 1968 when alternative drafts of proposed Census questions (particularly relating to labour force inquiries) were tried out using two small samples (each of approximately 3,000 households). Both the testing

program and the investigations of the various subject work groups were designed to elicit information not only as to the usefulness of various proposed subjects of inquiry, but such considerations as their relative costs, the work loads imposed on respondents, and their ability to provide meaningful answers to complex inquiries, had to be taken into account as well.

Leading up to their final recommendations on the content of the population and housing questionnaires for the 1969 "dress-rehearsal" test, Census work groups worked closely during 1968 with representatives of other federal departments and agencies. Submissions were canvassed and received from provincial statistical agencies. Briefs and suggestions were received also from a number of non-governmental groups and agencies drawn from such sectors as the business and industrial community, universities and town-planning agencies. For the Census of Agriculture, content plans began in 1967 with the formation of a federal interdepartmental committee. During early 1968, meetings were held with provincial representatives in each province and some university users. Further meetings were held with the federal Department of Agriculture and the Statistical Committee of the Farm Equipment Institute. All suggestions were reviewed by the interdepartmental committee, and a questionnaire was drawn up for the testing program in the four rural areas across Canada in October 1968. It is expected that this questionnaire will be substantially the one used for the "dress-rehearsal" test in 1969.

Changes in content planned for the 1971 Census as compared to the previous decennial Census of 1961 result mainly from demands for more details within the framework of existing subject fields rather than for new areas of inquiry. On population, for example: the questions on education have been expanded to include vocational and occupational courses in addition to those on academic schooling; net income of persons operating farms has been added to round out the data obtained from persons receiving income from non-farm sources; a question on language commonly spoken, recommended by the Royal Commission on Bilingualism and Biculturalism, has been added to those of mother tongue and official language; transportation agencies and town planners have emphasized the importance of a question on address of place of work to determine relationships between where people work and where they live. On the housing questionnaire, changes include: more detailed questions on the subject of rents, particularly on the extent of subsidized rentals; the types of fuels used for cooking and water heating, in addition to home heating; the incidence of vacation or second homes.

In the Census of Agriculture, one general questionnaire is planned for 1971 rather than four as in 1961 (*viz.*, the general questionnaire, an irrigation questionnaire, a questionnaire for forest products on farm woodlots, and one for the enumeration of agriculture on non-farm holdings). Irrigation questions will form part of the general questionnaire in 1971, as will forest products on a reduced basis. The questionnaire on non-farm holdings will be dropped since their importance is now negligible. New items will include basic information relating to the use of fertilizers and sprays, while additional farm machinery and equipment items will be listed. Included in the testing program are questions which attempt to classify the part-time work of farm operators by kind of work done, and to classify paid agricultural labourers as either paid by the week, day, hour, or piece rates.

At the close of 1968, planning activities for 1971 relating to the vast array of tabulations and cross-tabulations involved in a national Census had only just begun. For this purpose, the tabulation program of the previous Census is first evaluated in the light of its adequacy based on such factors as known deficiencies resulting from unfulfilled demands of users in relation to their requirements for special data, and suggestions received in the intercensal period for enlargement or broadening of various aspects of the tabulation program. For the 1971 Census, a great deal of emphasis will again be placed on meeting the increasing needs for small-area data, while at the same time recognizing the ever-widening scope of research requirements for more complex tabulations on the part of social and economic planners.

The Geography Section continued preparations for the 1971 Census cartography by implementing the Census Rural Official Map program (CROM), with completion data scheduled for mid-1970. Verification of municipal boundaries on topographic maps has been performed and extensive correspondence was carried out with municipal and provincial authorities in order to clarify particular boundary problems. In co-operation with the provincial authorities of British Columbia and Newfoundland, revision of the census division boundaries is being carried out. The Geography Section, with the Census Metropolitan Area Subcommittee, are revising the Census Metropolitan Area concept to approximate the labour-market area. Included in the 1971 Census will be a question on place of work. A Place-of-Work Subcommittee was created and a survey was taken of the censuses of other countries as to their methods of asking the question.

Mention should be made in this latter connection of the experiments conducted during 1968 in the field of geographical reference

systems or geocoding. This refers to the assignment of geographic location codes to computer tape records by which each code is essentially a co-ordinate which identifies a well-defined spatial location. Based on geocoding, computer program may be written which will retrieve data for any combination of such locations. Thus, data can be retrieved automatically for a variety of specified areal units, and the user need not be constrained by a pre-determined set of areal units which may not suit his special needs. It is hoped that this facility, now in its experimental stages, will be operational for certain key cities in the 1971 Census based on the assignment of codes to individual street addresses, and an alternative form of geographical referencing based for the most part on the assignment of a geographic co-ordinate identification to enumeration areas (EA's) for all areas not included under the 'street address' conversion program.

Another important development which was further advanced in 1968 involved the possibilities for linkage of the population and agriculture questionnaires of the 1971 Census. Traditionally, the Census of Agriculture provides agricultural data for census-farms, and only a limited amount of data for the farm operator and family. In recent years, agriculture policy has been aimed more at the commercial sector of agriculture and there has been a growing awareness that these policies have not provided much help to the small non-commercial operator. The result has been that the census organization has not only had a continuing demand for agricultural data for commercial farms, but a growing demand for population-type data for non-commercial farms. For example, information regarding age, education and source of income, of the operators of small holdings has been urgently required to plan and administer the numerous rural poverty programs that are now in operation or are being planned. With the advent of computer processing, it is now possible to link the records of the two censuses, and despite a number of operational problems, an attempt will be made to provide a good deal more useful population data regarding farm people than has been provided in the past. It will also be possible to utilize important information relating to the economic characteristics of farm people that will be enumerated on the population document, *e.g.* non-farm income and the occupations of part-time farmers.

In addition to the detailed planning for the 1971 Census as described in the preceding paragraphs, numerous routine activities of the Census Division continued throughout the year. The number of requests for evidence of proof-of-age by reference to early census and national registration records amounted to 52,000. Extensive correspondence was carried on with

departments of governments, universities, commercial concerns, and individuals across Canada, in answer to requests for census data. Current statistics on citizenship, immigration and hospital medical insurance were processed and updated to meet needs and requests arising in the Population Estimates and Projections Section. The revised population projections were made available to several government departments, and consultative services regarding projection work were provided to federal and provincial government departments. The regular series of quarterly and annual population estimates and of Canadian citizenship were prepared for publication. Significant progress was made in the new population projections program. National and provincial projections were revised in the light of the 1966 Census and the new DBS 1969 population projections were initiated.

The processing and production of 1966 Census reports continued with the release of four reports on population characteristics, six on household and family classification, five on geographical characteristics, and twenty-eight in the Census Tract Series. Monographs based on the 1961 Census were published on the following subjects: *Provincial Differences in Labour Force Participation*, *Unemployment in Canada*, *The Female Worker in Canada*, *Tendances et facteurs de la fécondité au Canada*, and *Incomes of Canadians*. Further, the Division edited and issued nine Census Technical Memoranda.

Detailed comments and suggestions on the final draft of the *Canadian Classification and Dictionary of Occupation* (CCDO), which will reflect the latest changes in occupational structure and will permit interdepartmental comparisons of occupational data, were provided to the Central Classification Research and Development Staff of DBS and the Occupational Research Division of the Department of Manpower and Immigration. The CCDO will be used by this Division to classify occupational responses in the 1971 Census.

Various members of the professional staff represented the Division and the Bureau at a number of international and national meetings held throughout the year. These included the Population Association of America, Canadian Economic Association and the Canadian Conference on Housing. Numerous meetings were held with various "user groups" representative of federal, provincial and municipal government departments, professional and academic associations and planning boards to discuss 1971 Census plans, particularly on matters of questionnaire content and tabulation.

Consumer Finance Research Staff

During the 1968-69 fiscal year, the 1961 Census monograph *Incomes of Canadians* was published by the Queen's Printer in English. A French translation has been made of the monograph but it has not as yet been submitted to Queen's Printer.

The report of the results of the 1966 Survey of Consumer Finances was published. Farm households and farm income were included for the first time in this series of surveys so that income distributions were published for all families and individuals, and not restricted to the non-farm population as in previous surveys. However, the report also contained statistics on the non-farm incomes so that users could make comparisons with earlier survey data on a consistent basis.

The 1968 Survey of Consumer Finances was conducted in April 1968. Statistics on income and on other economic and demographic characteristics such as age, labour force status, occupation, industry, education, and work experience were collected from five-sixths of the April Labour Force Survey, or from approximately 30,000 households. This was the largest such intercensal survey undertaken by DBS. Preliminary results of the survey are expected to be released by mid-summer 1969, and the full report in the latter part of the 1969-70 fiscal year.

Since four-fifths of the income sample were also included in the annual Household Facilities and Equipment Survey, the data in the two surveys are being linked and a special report may be issued on housing characteristics.

A questionnaire has been designed for the April 1970 Survey of Consumer Finances and the survey itself will be pre-tested in May, 1969. This survey will be one of two major household surveys to be carried out in 1970, the other being a Family Expenditures Survey which will be undertaken in March, 1970. Both surveys will be national in scope and will include farm households as well as non-farm households. The Consumer Finance Survey will interview 12,000 households. Although the two surveys will not sample the same households, both questionnaires will contain a common core of questions - amount and sources of income received in 1968 as well as information on the demographic and other characteristics of the family unit. The Family Expenditures Survey will focus on income and expenditures while the Survey of Consumer Finances will collect statistics on income, balance sheets and net worth. Discussions are being held with interested users within the federal government, in provincial governments and elsewhere, such as the universities, to solicit comments on the contents and analysis of the data. Questionnaires will be finalized by mid-year.

A historical report on family and individual income statistics was completed for selected years from 1951 to 1965. The report has gone to printing and is expected to be released within two or three months. In addition to income distribution statistics for family and individual characteristics such as age, and employment status on a current dollar basis, the report will contain constant dollar series expressed in 1961 dollars as well as statistics on the quintile composition. The report will be entitled *Income of Non-Farm Families and Individuals in Canada, Selected Years, 1951-1965*. A translation of the report will make income distribution statistics available in French.

A number of research papers were worked upon during the year. A paper on *Problems of Defining Low Economic Status for Poverty Studies* by G. Oja was published in the September 1968 *Canadian Statistical Review*. A paper comparing Canadian-American income distributions has been nearly completed and will be presented at the International Conference on Income and Wealth to be held in Israel, August, 1969. Work progressed on a number of evaluations of census and survey statistics and papers are expected to be completed within the coming year.

Work progressed on income estimates for counties and census divisions. The work has been held up because of staff vacancies but it is hoped that results for a number of years starting with 1961 may be available during the coming year.

The staff participated very actively in the planning of the 1971 Census of Canada and the various census tests as well as the evaluative studies. The staff participated in other DBS internal working groups such as the committee considering the historical revision of labour income estimates and was represented at a number of federal-provincial conferences. The staff provided specialized data and consultative services to a number of other government departments, such as the Department of National Health and Welfare. The Co-ordinator assisted the Economic Council of Canada in the preparation of its Fifth Annual Review. She also represented the Government of Canada at a meeting of technical experts held by the Organization for Economic Co-operation and Development in Paris in April 1968, called to discuss the measurement of changes in national levels of living.

Education Division

The Education Division is responsible for the collection, interpretation and analysis of statistics on education, both public and private, at all levels. It gathers and publishes data and information on pre-school

kindergartens, elementary and secondary schools, universities, other post-secondary institutions and on adult education. In addition, the Division accounts for the costs of education and the sources of income.

Since education is a provincial responsibility, the Division works through the provincial departments of education in the collection of data on public elementary and secondary education and on the provincially-controlled community colleges of various types as well as the provincial trade schools. In general, the Division collects data directly from private schools of all kinds and from universities and colleges.

In addition, the Division acts as a service bureau for some of the smaller provinces providing them with tabulations on schools, teachers and pupils as required for administration and for publication in their reports.

During the post-war period, education enrolments in Canada have increased more rapidly than in any other industrialized country in the world. Since 1951-52 elementary and secondary school enrolment has more than doubled, university enrolment has more than quadrupled, and new post-secondary non-university institutions have developed, enrolling about 75,000 full-time students.

One quarter of the population of the nation is involved in education either as students, instructors or ancillary staff. The total student population of nearly six million approaches the total number of persons in the labour force and the total expenditures of \$5.9 billion is 9 per cent of the Gross National Product. Expenditures have more than doubled since 1962.

At their meeting in September 1964, the then Standing Committee of Ministers of Education (now the Council of Ministers of Education), agreed to the appointment of an *ad hoc* Ministers Information Systems Committee (MISC) made up of a representative appointed by each Minister plus a representative from the Dominion Bureau of Statistics. Its purpose was to proceed toward the development of a national information network for education, an education data system using modern electronic data processing equipment, to serve the needs of the federal, provincial, and municipal authorities.

Limiting itself first to public elementary-secondary education the *ad hoc* committee aimed at the creation of data banks on administrative personnel, schools, teachers, pupils and financial data. Sub-committees were appointed to agree on and propose lists of items to make up the record for each one of these units. Members of the Education Division were

represented on MISC and actively participated in the work of these subcommittees. This phase of the project was accomplished by the summer of 1968.

In September 1968 the Council of Ministers asked the Dominion Bureau of Statistics to take over and develop the project from there on, in co-operation with the provinces. This task was accepted and it is expected that the work of further development will begin in the coming fiscal year.

During this last year the association of presidents of the Ontario Universities appointed a committee of university officials involved with student registration to study and report on the possibility of a data bank on university students. Quebec universities under the leadership of the provincial Department of Education are headed in the same direction. The Education Division is keeping in direct touch with this movement in both provinces.

Heretofore data collected by Dominion Bureau of Statistics on the public school teachers of the eight co-operating provinces has been largely, and in most cases, exclusively what Dominion Bureau of Statistics required. During this last year, for three provinces, a detailed teacher record has been designed to serve the data needs of the department of education, teachers' and trustees' associations and Dominion Bureau of Statistics. For two of the provinces, New Brunswick and British Columbia, these records will be processed in the Bureau but computer output in the form of duplicate tapes, print-outs and frequency distributions will be made to the departments of education and the associations involved. As for the third province, Alberta, the teacher records will be maintained and processed in the department of education and duplicate computer records will be transmitted to the Dominion Bureau of Statistics.

In the previous year, individual reporting on pupils withdrawing from school was in operation in four school systems - Nova Scotia, New Brunswick, Indian schools and schools in the Northwest Territories. During this last year this was extended to include Prince Edward Island. In all cases the returns are being processed by the Education Division.

With the appointment of a new chief of the Higher Education Section has come some reorganization of the personnel and work of the Section together with some increase in staff. As a first priority every effort has been made to bring the publications up to date. This has been successful to the point where 1967-68 surveys are either already published or are with the printer and 1968-69 surveys are all in preparation.

At the request of the Science Secretariat of the Privy Council, a survey of university teachers was undertaken. This included such information as institution and province, sex, discipline taught, rank and highest degree held. The data covered a series of years. The survey was completed and the information transmitted to the Secretariat.

Vocational education at the post-secondary level is increasing by leaps and bounds. Community Colleges, under various names, are being established in all provinces. For example, the eleven *collèges d'enseignement général et professionnel* (CEGEP) existing in Quebec in 1967 increased to twenty-three in 1968 and seven more are projected. Not only are the community colleges offering technical courses but many of them are also offering academic courses leading to university. Enrolments are rapidly increasing. Trimester systems or modified trimester systems are being adopted. The schools are assuming responsibility for training, formerly given elsewhere, such as teacher training and nurses' training, and agreements are being worked out to share programs with other institutions.

During the year agreement was reached with all provinces except Quebec for the Dominion Bureau of Statistics to collect statistics directly from the institutions and provide the provincial authorities with duplicate reports. In Quebec, the Department of Education collects directly from the schools and passes on summarized information to DBS. Also, meetings began with the Canadian Commission for Community Colleges to agree on an expanded program of statistics to be collected from the institutions. During the year a brochure was prepared listing the institutions and the courses offered in each. This brochure has enjoyed a strong demand from counsellors and prospective students.

In collaboration with the Canadian Nurses' Association, the Vocational Section carried out a survey of the qualifications and salaries of the teaching staffs of nurses' training institutions and was requested to carry out a survey of characteristics of nurses holding university degrees.

In co-operation with the Census Division in preparation for the 1971 census a code for vocational courses offered was drawn up, so that the courses can be meaningfully related to occupational groupings.

New working arrangements for the reporting of annual statistics on apprentices were developed with the provincial directors of apprenticeship, and at the annual meeting of the Canadian Vocational Association, a committee, including a representative of DBS was appointed to devise a classification system for

designated apprenticeship trades for interprovincial use.

Due to staff vacancies over an extended period, data on adult education is incomplete for 1965-66, 1966-67 and 1967-68. It is the intention to prepare a combined issue of data collected on these three years. During the last three quarters of the year there has been a reassessment of the work of the section in the light of an obvious need to extend coverage to include areas of adult education which have been developing significantly over the past few years.

Consultations have been taking place with officials of community colleges, university extension, professional continuing education, basic adult education, agriculture and health education as well as community and voluntary associations.

Despite lack of an officer in charge, library statistics have been kept up-to-date. At the end of the year, consultation was in progress with the Statistics Committee of the Canadian Library Association with a view to revising the statistics collected on public libraries.

In view of the quadrennial international conference on correspondence education to be held in Paris in May, 1969, a survey of correspondence education in Canada was undertaken. A preliminary release is in preparation for the Paris meeting and a final report will follow.

A very important element in the education system is the training of teachers for elementary and secondary schools. This training is provided by university facilities of education in all provinces, by teachers' colleges in three provinces and as part of the *collèges d'enseignement général et professionnel* of Quebec. A survey of characteristics of the teaching staffs of these institutions was undertaken during the year. The characteristics include, among others, age, sex, marital status, country of birth, academic rank, tenure, academic and professional degrees, country where trained, teacher certificate and work experience. All data has been collected and almost all print-outs of tabulations have been received but preparation of the report has been deferred because of a more important study.

In 1967-68 government loans to university and other post-secondary students amounted to \$57.3 million and has been increasing for the last three years at an average of over \$10 million. It is obvious that expenditures of this nature and size should be based on a background knowledge of the income and expenditures of all post-secondary students. No such study had been made since 1965 and this was limited to university students.

In the fall of 1968 the Bureau was asked by the Department of Finance and the officials of the provincial governments responsible for student loans to carry out a study of the income and expenditures and related information of post-secondary students. The related data included such items as study program, citizenship, age, sex, marital status, mother tongue, home residence, transportation, some information on parents and, where applicable, on spouse. A sample of 31,500 students was selected, one tenth of the total student population. Questionnaires were sent out in February. Print-outs of the first tabulations are expected in the fall of 1969.

Growth and development in education are vital to the future development of the nation. Consequently, it is necessary to forecast the future, given the trends of the past and considering the probable effects of present policy and future plans. At the request of the Economic Council of Canada, the Estimates and Analysis Section of the Division spent the last six months of the year assembling historical data on enrolments at all levels of education, analysing these data and projecting the various enrolments on to 1975 and 1980 and showing the changes that are expected to take place in the relation between enrolments and relative population age groups. This study will continue for some time into the next fiscal year. The Estimates and Analysis Section also prepared, for the Department of Finance, projections of the cost of post secondary education to 1972 by type of institution and by province.

In an effort to provide statistics that are as current as possible estimates of numbers of schools, teachers and enrolment for all types of schools and all levels of education, were prepared for the academic year 1968-69 and published the first week in September. This proved so popular that a reprint was necessary.

Special reports on education finance were prepared for UNESCO and for OECD. The latter required historical data for a 15-year period.

For the first time, the form for the financial report of private schools was divorced from the section requiring non-financial data on the grounds that they are filled in by different individuals. As a result, reports on teachers and enrolment came in very well, while the response on financial data has been less than satisfactory.

The basis for financial data on universities and colleges are the reports of the institutions represented by the Canadian Association of University Business Officers (CAUBO).

In November 1968, the Dominion Bureau of Statistics participated in a meeting of a committee of CAUBO which initiated major changes in university financial reports and in definitions and instructions. In addition, discussions have begun on the possibility of collecting budgets in order to markedly improve on the timeliness of data on university finance.

Considerable time and effort are being devoted to the development of a reporting system of financial statistics of post-secondary non-university institutions. Many of these institutions come directly under provincial government control. Agreement in principle has already been worked out with the responsible provincial officials in Ontario and Quebec to secure consolidated figures on the Colleges of Applied Arts and Technology in Ontario and the *collèges d'enseignement général et professionnel* in Quebec.

Special enquiries for financial data requiring special tabulations increased by close to 30 per cent over those of the previous fiscal year.

Health and Welfare Division

This Division is responsible for the production of statistics on the state of health of the Canadian people, on the enforcement of law and on the administration of justice in Canada. Four sections share the responsibility for producing statistics on health. The Vital Statistics Section is concerned with the events of birth, death, marriage and divorce. In particular, it carries out studies on natality, fertility and life expectancy. The Institutions Section is concerned with the services, facilities, staffing and finances of general and special hospitals and of mental and tuberculosis institutions. The Public Health Section is concerned with the individual conditions and the personal characteristics of patients in general and special hospitals and in tuberculosis institutions. It is also concerned with the incidence of a number of communicable diseases. The Mental Health Section, which was formed last year, is responsible for patient characteristics and patient movement as these relate to mental disorders and psychiatric facilities. The fifth section, the Judicial, is responsible for the production of criminal and judicial statistics based on information supplied to it by police departments, courts, correctional institutions, the Penitentiary Service and the National Parole Board. The Division also conducts non-repetitive special investigations, e.g. medical care. It also plans to extend economically its coverage of the areas assigned to it; in the past year officials of the Division, separately and in company with an officer of the National Cancer Institute of Canada,

visited the provincial cancer registries to make arrangements for a modest program (capable of expansion) to report particulars of each new case of cancer commencing on January 1, 1969.

The Division met its statutory obligations in the field of Vital Statistics by preparing and publishing the regular series of reports, and by supplying the provinces with basic tabulations for births, still-births, marriages and deaths, as required under federal-provincial agreements. Throughout the year demands for information continued at the high level that has been reached for the past few years. These demands have come from public health officials, education authorities, individuals engaged in medical research, manufacturing and distribution firms, market research agencies and other government departments, as well as from the public at large. Many of these demands represent requests for detailed analyses of current and historical records. More frequent this year than ever before have been requests for intensive investigations of the patterns of nuptiality and fertility. These latter requests have been occasioned by the recent drastic changes in the birth and marriage rates in recent years. New developments in hospital and medical care have added to the already considerable flow of demands for information on mortality due to particular causes. Most of these varied special requests required special calculations and compilations, as the information demanded was not available in any published form.

To meet these and a number of other demands at once, as well as at the same time satisfying special interest groups, several analytical studies have already been published and others planned. These studies relate to cancer, accidents, heart disease, foetal and infant mortality, nuptiality, fertility and life expectancy, and deal with the latest trends in these areas, seeking to elucidate factors associated with the direction and magnitude of the trends. Besides a planned special life expectancy study, a series of annual life tables is being initiated, to serve as a general reference for those interested in survivorship, and for government and other bodies responsible for long-term projections and planning. These reports and studies have been supplemented by a series of technical reports which deal with methodological techniques of life-table construction, statistical measures of trends, and techniques for projections of births, marriages and deaths. In addition, calculations on 15-year projections of births, marriages and deaths were initiated as the base for population projections for demographic and economic planning purposes. The division also collaborated in methodological

studies relating to inter-censal estimates of population.

In order to meet the needs of subject-matter specialists and epidemiological researchers, and to accelerate the publication of current data, the release of three separate annual reports, each dealing with births, marriages and deaths to replace the present combined report, was planned.

Since 1945, the Division has been preparing alphabetic registers of births, marriages, and deaths on behalf of the provinces and the Family Allowances Administration. Since this is not a purely statistical function some consideration is being given to having these functions carried out by some other body, or alternatively reviewing the need and method for some alternative verification system.

Processing of vital records in the Bureau is an expensive and lengthy process. Economies have already been realized by making arrangements with the five largest provinces to share with them the cost of producing basic statistical records, thus necessitating standardization of certain statistical procedures. Further economies, and even more complete co-operation with provincial authorities are being effected through computerization. To advance publication dates, to provide accelerated service to the provincial governments and to meet pressing demands for new statistics, the complex and detailed series of annual death tabulations are being fully computerized. Pending the availability of additional computer resources and the preparation of new computer programs a general-purpose program is being utilized in the meantime for some statistical series, notably births and marriages.

Negotiations and discussions with provincial authorities are progressing regarding standard classification of local geographic areas so as to permit grouping of local area statistics for population projection and short- and long-term planning for such other purposes as education, economic, market- and social-research.

Arrangements were made with the Department of Justice for the collection and compilation of statistics on divorce under the new Federal Divorce Act which came into effect July 2, 1968. In addition to new information on grounds for the divorce action, the system will provide much more extensive information regarding the characteristics of the parties to the divorce, the number of dependants involved and other statistics than has been possible to compile in the past.

A new decennial revision of the International Classification of Diseases, which

is sponsored and published by the World Health Organization, was put into effect in Canada for the classification and publication of the official statistics on causes of death effective January 1, 1969. The introduction of the new classification necessitated intensive training of provincial medical coding personnel and the resultant modification of mechanical tabulation and other procedures.

Massive punch-card record files covering births, marriages and deaths registered since 1925 are progressively being converted to computer tape for convenience of security storage, the preparation of verification listings, if required, for Family Allowances or provincial administrative purposes, for the preparation of special statistical tabulations and for record-linkage purposes.

Each year the Division provides the Vital Statistics Council for Canada with its secretariat service. In addition to work immediately associated with meetings of the Council or of its committees, the secretariat service is usually involved in the examination of a number of problems designated by the Council. Some of these problems relate to legal and administrative features of the vital statistics system, while others extend to the general sphere of social statistics. As an illustration, the Secretariat made arrangements, on behalf of the Council, for a full investigation and redesigning of the present registration forms used by the provinces, involving collecting views, summarizing opinions, and circulating results to all Council members. One of the objectives of this investigation was the standardization of content, size and format of the records used by all the provinces, subject to local legal requirements where some variation is inevitable. Since the records serve both legal and statistical purposes, provision must therefore be made for meeting both requirements. The anticipated benefits will be both administrative and statistical: - cost economies, a new convenience in processing, a new ease of record exchange, economies in storage of the forms, and other advantages for the provincial administrators. At the same time, the statistical usefulness of the schedules will also have been thoroughly reviewed.

The Institutions Section is responsible for the production of a national hospital statistics series covering such topics as facilities available, services provided, personnel employed and finances. It includes all general and allied special hospitals (including mental institutions and tuberculosis sanatoria) whether they be public (no restrictions on the admission of patients), private (profit-making businesses) or federal (owned by the federal government and operated by the

Department of National Defence, Department of Veterans Affairs or the Department of National Health and Welfare).

During this period senior officers of the Section have completed the task of revising the Annual Return of Hospitals to account for and keep abreast of the changing scene in Canadian hospitals. Hospitals will be reporting their 1969 data on the revised questionnaire. In conjunction with the revision of the financial part of the annual return, the Canadian Hospital Accounting Manual, commonly referred to as CHAM, was also revised by the Canadian Hospital Association, which had engaged a firm of management consultants to carry out this assignment. Section officers spent much time with this firm in their deliberations to assure statistical consistency in any revision, and later attended provincial and regional institutes making the revisions known to the hospitals in association with the provincial hospital insurance plan authorities.

Section officers met on numerous occasions with the provincial hospital insurance authorities and representatives of the Canadian Association of Pathologists in the revision of the Schedule of Unit Values for Clinical Laboratory Procedures. Statistical measurement in this area of hospital activity required revision due to the advancement of automation and semi-automation, new procedures and new methods of carrying out procedures in the hospital laboratory. Hospitals will record their laboratory activity according to this revised schedule on the 1969 Annual Return of Hospitals.

The work-up of a new program under the heading Quarterly Hospital Information System was begun in close conjunction with the Canadian Hospital Association. At the time of writing, computer programming was approaching completion. The type of statistics are similar to those collected on an annual basis but of necessity are much more restrictive and selective. It is anticipated that in the future the report for the period ending fourth quarter will suffice for the Preliminary Report of Hospital Statistics. This will further reduce the time lag of this important publication to about four months from the present nine months. This has been a most time-consuming task for the Section and has been carried out in response to a genuine need for administrative tools of hospital management, and more current estimate of the hospital activity component within the national economic indicator system.

Results of the second annual hospital nursing staff salary survey (1968) were received towards the end of this period. This survey classified graduate nurses according to their employment category, academic qua-

lifications, and the type of public hospital in which the nurse was working. Salaries for qualified nursing assistants were also collected. Publication plans are underway to present these survey findings with comparable data from the first survey which took place in 1967.

In addition to what has already been stated, the section in its regular program, published the eleven annual reports covering the hospital industry in Canada. An unusually heavy demand for additional data has been experienced in this period, requiring the drawing together of information from numerous sources. This will in all likelihood continue with the implementation of the task force on health expenditure in Canada as a prime user of hospital statistics.

The Public Health Section of the Division collected and processed annual information on morbidity in general and special hospitals, including tuberculosis sanatoria, monthly information on incidence of tuberculosis sanatoria, monthly information on incidence of tuberculosis and weekly information on new cases of certain specified notifiable diseases. These latter diseases are either communicable in nature or of a type to be of particular and immediate public health concern. A number of special inquiries were answered, especially in the area of hospital morbidity, with emphasis on particular conditions and particular age groups; one study related hospital, birth and death records.

The Division was represented on a Committee, appointed at the Third National Tuberculosis Conference in 1966, and working under the auspices of the Canadian Tuberculosis and Respiratory Disease Association prepared *Classification and Reporting of Tuberculosis in Canada*, a manual for use in chest clinics, hospitals, sanatoria and Departments of Health.

Respecification of the notifiable diseases reportable to DBS in terms of the new International Classification of Diseases (Adapted) was made and two diseases - measles and rubella - were added to the list. This evaluation of the adequacy of the list was carried out by the Epidemiology Division, Department of National Health and Welfare, with the collaboration of members of the division and representatives of the Advisory Committee on Epidemiology.

The Division prepared and published a French version of the International Classification of Diseases (Adapted), prepared and distributed in preliminary form a French version of the Classification of Surgical Operations, and prepared and distributed Interim Indexes to ICDA in both French and English. A seminar on the use of the new classifications for morbidity coding was held in

October 1968 and was attended by over ninety persons from the ten provinces and the United States.

The Mental Health Section produces national statistics on mental patients treated in psychiatric in-patient facilities, in terms of patient characteristics and patient movement as it relates to mental disorders. Tabulations organized in terms of type of psychiatric institution were published in *Volume I - Institutional Admissions and Separations* and *Volume II - Patients in Institutions*. A new *Manual for the Classification of Psychiatric Diagnoses, Based on the International Classification of Diseases, Adapted (ICDA-8)*, was prepared for use in all psychiatric in-patient facilities reporting to DBS.

A special analytical report, *The Expectation of Admission to a Canadian Psychiatric Institution*, presents data showing the expectation of admission on the basis of the first admission and mortality rates prevailing in 1965. These joint expectancy measures are shown by province, sex and single years of age. They thus reflect the expectation that a person of a given age and sex would have of becoming an in-patient in a Canadian psychiatric facility. The study, which employs standard life table methods, expresses these expectations for all psychiatric diagnoses combined and separately for mental retardation.

Program directors of the provincial alcoholism foundations were visited with the intention of bringing these institutions into the mental health reporting system. Provincial directors of Mental Health Services were visited to study provincial programs and requirements in order to improve our statistical reporting system. Planning continued for the inclusion of all psychiatric patients in general and allied hospitals (estimated at over 65,000 or almost 50 per cent of separations) not now covered by this reporting system. Preliminary discussions were continued for the inclusion of out-patient centres in the national reporting system. Special tabulations requested by research specialists, government departments or agencies and other organizations in the field of mental health were many and varied.

The Judicial Section is responsible for national statistics on law enforcement, the administration of justice and corrections, including crime, delinquency, traffic enforcement, police administration, adult courts at the trial and appeal levels, juvenile courts, penitentiaries, prisons and reformatories, training schools, parole and such continuing special studies as murder statistics. All annual reports for 1967 were published except *Statistics of Criminal and Other Offences* (1966).

The preliminary report on Police Administration, Crime and Traffic Enforcement Statistics for 1967 was released April 19, 1968. This is the earliest date preliminary police figures have ever been released. For the first time two of the Section's annual *Police Reports, Administration and Crime*, were released before similar data were available in the United States.

Work continued on the development of statistical series which permit the integration of information from each of the agencies involved in the administration of justices - the police, the courts and the correctional and after-care services.

In one province a system developed jointly by provincial and Bureau personnel has been in operation since January 1, 1968, linking police, courts and institutions. This system has been designed to meet the administrative requirements of the provincial authorities and to permit studies on the efficiency of each agency and the effectiveness of the process of justice as well as providing the Bureau with statistics. The first years' data have been received and coded and plans for computer processing are nearing completion.

In a second province another program has been developed for the courts to facilitate the administration of justice and provide complete and accurate statistical data. This program was field-tested in late 1968 and has been in operation since January 1, 1969.

These integrated criminal statistics programs were explained by provincial officials and officers of the Judicial Section in five papers presented at the American Congress of Corrections. Another province has entered into preliminary discussions with Bureau officers regarding such an integrated system.

A new reporting system for juveniles has been jointly developed and tested in a third province. A fourth province has expressed strong interest in a similar system.

Special reporting arrangements, made necessary to accommodate changes in provincial legislation in several provinces, were developed and put into effect in the Uniform Crime Reporting Program. In one province, these include the scoring and clearing of offences involving juveniles who are no longer to be formally charged by the police with violations of provincial statutes and/or municipal by-laws. In the same province, some offences under the highway traffic act for which offenders had been routinely charged are now classified as a violation of a rule for which charges cannot be laid. In this and another province, charges which were formerly laid

under the provincial liquor control act in connection with intoxication in public places can no longer be laid by the police. These changes will have a considerable impact on provincial statute data for both Canada and the provinces in the annual crime and traffic enforcement statistics for 1968 and subsequent years.

It was decided to discontinue publication of statistics relating to traffic accidents with property damage \$100 or less, in the annual report *Traffic Enforcement Statistics*. This decision was taken when it became apparent reported statistical data relating to this kind of motor vehicle traffic accident were not realistic either because persons involved were not required to report the accident or, because of variations in police policy and practice as to whether to accept reports or investigate accidents of this nature.

At the request of and in co-operation with the Canadian Association of Chiefs of Police, the first of a two-year special study of robberies by type of establishment was undertaken. This is the first study of its kind in Canada and the information, which is in preparation for publication as an appendix to *Crime Statistics 1968*, will be useful to the police in analysis and planning in connection with this type of crime.

A special survey was made, under contract to the Department of the Solicitor General, of police education and training standards in Canada. This survey is part of the preliminary planning for a Canadian Police College. Statistical tables were developed and presented for internal use in the analysis and planning work within that Department. Some general data from this survey will be published in the 1968 report on *Police Administration Statistics*.

Redevelopment of the statistical system for the National Parole Board has been completed and converted to computer. The Section was provided with clerical resources for a continuing recidivist study to cover all persons released from penitentiaries. The Training School Reporting Manual was revised and distributed to respondents.

One hundred and thirty-two visits were made to police departments in six provinces under the Section's respondent review program, implemented in 1966, in which departments are visited, on a priority and a provincially rotating basis, from year to year. The main objective is to improve the quality of police statistics. A seminar on reporting methods was also conducted for police personnel in a Western province.

In addition, officers of the Judicial Section attended the annual conferences held by national, regional and provincial Associations of Chiefs of Police where they presented papers or gave talks, and served on Uniform Crime Reporting and Advisory Committees. The installation of Telex facilities at the Bureau provided an additional means of communicating with many police respondents, and was useful in improving timeliness of reporting.

Many requests for a wide variety of statistical information were received from respondents, Members of Parliament, government agencies and departments, universities, the news media and other organizations, and from individuals with varying interests in police, court and correctional statistics. An increasing number of these requests were for data on murders, narcotic and controlled drug offences, and crimes of violence. Several requests concerning the use of firearms in the commission of offences, such as murder, were received from agencies of the United States Government. Inquiries from the United States were also made on behalf of members of the U.S. Senate and Congress interested in obtaining statistical data from other Western Countries to be used in connection with new gun control legislation introduced both in the Senate and the Congress following the assassination of a Civil Rights Leader and a United States Senator during 1968.

Provincial Liaison and Consultative Services

The main functions of the staff are to strengthen the Bureau's liaison and communication arrangements with the provinces, and to provide or arrange for consultative services to the provinces and others. New co-ordinating responsibilities were added in the field of travel, tourism and recreation statistics in September 1968 and a new Co-ordinator for the staff was appointed at that time.

Consultative services were rendered to federal departments, provincial governments and agencies, private organizations, associations and universities. A housing survey of the Whitehorse Metropolitan Area was conducted on behalf of the Yukon Territorial Government. Many new contacts were established and meetings between officials of DBS and provincial departments and agencies were organized. The Co-ordinator visited all the provinces.

During the year, the report of the Sixth Federal-Provincial Conference on Economic Statistics, held in May 1967, was issued in bilingual format. Members of the staff participated in internal, interdepartmental and federal-provincial committees and subcommittees.

Meetings of the following Committees of the Federal-Provincial Conference on Economic Statistics were held in the 1968-69 fiscal year:

- (1) Working Committee on Statistical Legislation
- (2) Advisory Committee of the Federal-Provincial Conference on Economic Statistics
- (3) Committee on the 1971 Census
- (4) Committee on Retail Prices
- (5) Committee on Labour Statistics.

Activities in the field of travel statistics involved direct participation by the Co-ordinator in various national committee meetings, the Annual Convention of the Canadian Tourist Association and the Federal-Provincial Conference on Tourism. The Co-ordinator was also involved in the preparations for a major household Domestic Travel Survey which is scheduled to be carried out by DBS in 1970-71.

Special Surveys Division

This Division is responsible for all field survey activities of the Dominion Bureau of Statistics. It administers 8 regional offices located in St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver. These offices have a variety of functions including the conduct of the monthly Labour Force Survey, monthly Consumer Pricing Surveys, a continuing Job Vacancy Survey, and numerous special surveys. They service other DBS divisions by collecting a variety of reports from local business establishments. They foster and promote the fullest use of DBS statistics by providing a local reference library and by giving assistance to users in satisfying their statistical needs.

The monthly Labour Force Survey involves the employment of some 750 part-time interviewers who obtain information by personal interview each month from a scientifically selected sample of 29,000 households located in some 400 different locations across the country. Questions on labour force activity are asked each month and the resulting monthly bulletin *The Labour Force* presents details of employment and unemployment for Canada and the five regions of the country.

In conjunction with these monthly surveys, special questions are usually included relating to other matters of current interest. During the current year, these questions dealt with rents paid, education, work history, house-

hold facilities and equipment, medical care, smoking habits and work patterns. These supplementary surveys are usually conducted at the request of other divisions within the Dominion Bureau of Statistics and of other federal government departments.

Another important activity of the regional offices is the collection of monthly data on retail prices of commodities and services used in the compilation of the Consumer Price Index. This index is largely based upon prices for some 300 commodities which are collected by regional office staff in representative retail outlets in 30 of the larger cities of the country. In January 1969, a national Food Expenditure Survey was started which will involve the interviewing of approximately 1,200 households each month throughout the calendar year 1969. These households will be requested to maintain a diary of their food expenditures over a two-week period to provide the Dominion Bureau of Statistics with detailed information concerning the quantities and values of food items purchased.

Substantial progress was made in the development of a continuing Job Vacancy Survey. The initial development of this survey was started during the previous fiscal year. "Profile Interviews" for most sectors of the economy have now been largely completed. The purpose of these interviews is to determine those officers within a firm who are closely associated with staffing functions and to clearly define those particular occupational groups or units within the firm for which each can report. So called "reporting units" are thereby defined within each firm. The survey methodology, now almost completely developed, involves mailing questionnaires at periodic intervals to all such reporting units and interviewing a sample of the reporting units to determine reporting errors. The results of these interviews will permit the application of correction factors to improve the accuracy of the resulting job vacancy estimates. This survey is being conducted primarily for the use of the Department of Manpower and Immigration for policy and program development.

The regional offices have other functions such as the collection of business reports for almost all subject-matter divisions of the Bureau. A number of regional offices were involved in Census tests of various kinds which were carried out at different locations during the year. These tests play an important role in determining the specific procedures to be followed in conducting the 1971 Censuses of Population and Agriculture.

OPERATIONS AND SYSTEMS DEVELOPMENT BRANCH

The Operations and Systems Development Branch exists to service the needs of the statistical and administrative branches of DBS for certain equipment and professional and technical skills which can not economically be decentralized to individual divisions and branches. Mechanical and electronic data processing services are provided by the Tabulating Services Division, the professional skills and advice required to use computer methods are provided by the Central Programming Division, advice on the organization and use of office staffs by the Management Services Section, and a central list of establishments covered by DBS surveys with the industrial and geographical classification codes for each by the Central Registers Section. The branch also includes a small headquarters staff concerned with overall branch administration, co-ordination and development.

Most of the work which involves branch headquarters staff also involves officers of various divisions and sections. The most important such project in 1968-69 was the evaluation of the tenders received for the supply of a new large computer system to DBS. This work was completed in July, a recommendation sent to the Treasury Board early in August, and in September authority was received to acquire an IBM 360/65 computer system.

During the balance of the year all staffs were heavily involved in preparing to implement the new computer system. In particular, the Tabulating Services Division undertook the task of site preparation (which included the temporary relocation of the existing computer room and extensive involvement with the Department of Public Works and contractor personnel), and the Central Programming Division the task of modifying computer systems and programs to run on the new equipment. Extensive training for the staffs of both divisions in the use of the new equipment was planned and initiated.

The organization of the branch was further modified in line with apparent requirements of the new computer system, and further modifications were planned. Among the more important decisions reached were to build a small group of operating system programmers into the Tabulating Services Division, and to transfer responsibility for running maintenance of developed computer systems to that division. These changes were intended both to ensure that full operating responsibility could be assigned to the Tabulating Services Division and also to free the Central Programming Division to concentrate on the task of developing new and modified computer systems required by emerging statistical needs. It was also decided to reorganize the latter

division on a functional basis as soon as the initial pressure of program conversion work began to relax.

There were further tests of optical character recognition equipment during the year with particular reference to the apparent needs of the 1971 Census, but no decisions were reached. A major background study of available optical character recognition equipment and its possible value in DBS work was also initiated.

Tabulating Services Division

Most of the equipment used in processing DBS statistics in 1968-69 has been in use for some time. The equipment installed in DBS included:

- (1) the IBM 705-111 computer originally acquired in 1960-61;
- (2) the IBM 1401 computer originally acquired in 1961-62;
- (3) the IBM 360/30 computer acquired in 1966-67 and substantially upgraded in 1967-68;
- (4) more than 100 key punch/key verify machines;
- (5) a wide variety of unit record equipment including sorters, collators, reproducers, interpreters, card processing machines and a mark-sense reader;
- (6) some 35 comptometers, desk calculators and similar machines;
- (7) a terminal providing a link with a Univac 1108 computer system.

New equipment introduced during the year included four Honeywell Keytape units. Instead of producing punched cards these machines enter data directly on computer tape.

Throughout the year the computer centre operated on at least a 3-shift, 24-hour day, 5-day week basis. Early in the year it was necessary to include some weekend work to maintain schedules and meet target dates, and from October the centre was on a full 24-hour day, 7-day week bases. A growing amount of DBS work had to be processed outside.

The organization of the division was modified during the year in preparation for the introduction of the new 360/65 computer system expected in June, 1969. Computer-related operations (including key punching and unit record equipment) were grouped under the senior assistant director, and liaison and scheduling activities grouped under a second assistant director. These changes should facilitate actual operations while improving the division's ability to monitor work flows and maintain close contact with its clients.

Central Programming Division

There was a heavy turnover of staff during the year which meant an active campaign of recruiting was required throughout the whole year to maintain the previous year's level as well as fill additional positions. There were 20 separations from the division exclusive of those transferred to other areas within OSD Branch. Of the 20 resignations, 15 went to private industry and consulting firms. There were 32 additions to the staff. The division has been assigned overall responsibility for meeting all needs of the OSD Branch for programmer and computer analyst recruitment.

A total of 3,160 days training was provided. This was larger than in previous years because of the pending introduction of a new third generation computer.

Resources were provided from the division for preparation of specifications, bench-mark programs, evaluation criteria, manufacturer's demonstrations, evaluation and selection of new equipment to be installed in mid-1969. Resources were also provided for testing of Optical Character Recognition equipment suitable for the 1971 Census and other DBS surveys.

Conversion of continuing systems from the IBM 1401 and 705 computers to the 360/65 to be introduced in 1969 was started during the year. Analysis and, to a lesser extent, programming has been started for the 1969 Census Test and the 1971 Census.

Manpower was provided for Manpower Inventory Boards and for Personnel Selection Boards in Europe, Western Canada, Montreal and Ottawa as required by the Public Service Commission.

Trips were made to Montreal, Washington, Minneapolis, New York, Hartford and Los Angeles in connection with equipment evaluation and selection. Personnel attended seminars and training courses in Ottawa, Kingston, Carleton Place, Tarrytown, N.Y., New York and Washington.

A total of 818 programs were written during the year for use on DBS computers and on the Central Data Processing Service Bureau, University and commercial service centre installations.

Management Services Section

This section provides a departmental consultative service to assist officers of the Bureau in improving the efficiency of their operating staffs. The increase in electronic data processing in the Bureau has caused much of the work of the section to be concerned with

feasibility studies and those administrative and organizational problems which are particularly associated with rapidly changing technology.

DBS was one of three federal departments which participated in a pilot work simplification program at the invitation of the Management Improvement Policy Branch of Treasury Board. The Management Services Section provided the liaison between the Bureau and Treasury Board during the planning stages of the project. The section continued to monitor the ongoing work simplification program in the Bureau throughout the year.

Comprehensive time and method studies of census test operations were conducted in Toronto in June and in four rural areas in October. These studies have resulted in considerable changes to both enumeration and office procedures which will result in substantial savings during the 1971 Census. A revised basis of payment of Census enumerators was also developed which will speed up payments and reduce office checking procedures.

A basic EDP familiarization course was developed for junior clerical staffs whose duties are being altered by changes in or the introduction of automated processing.

Detailed studies were made of processing procedures in a number of subject-matter areas as part of a general program of increased or improved automated processing. These areas include the Governments Division, the Transportation Division, the Labour Division, the Prices Division, and the Corporations and Labour Unions Returns Act Administration.

Work was started on planning accommodation and service requirements in the new building which is proposed for the Bureau.

Work was also started on an interdivisional study of the factors which tend to delay the processing and publication of DBS statistical reports.

Central Registers Section

The Central Registers Section administers and develops the DBS Central List of Companies and Establishments, which provides the basic vehicle for standardizing the classification of companies and their subdivision into standard reporting units for individual DBS surveys. During the year the Central List framework was applied to additional DBS surveys bringing the total to 30 surveys entered in this record. The Department of Industry and the Department of Labour adopted the Central List classification and numbering system to identify businesses with which they are in

contact, and two large business firms applied the system to their internal records. Individual businesses as well as business associations continued to examine this record as a possibility for establishing a standard "vendor code" system.

Investigation and resolution of inconsistencies in the Central List continued. During the year 516 such problem cases were cleared. In addition, regular maintenance of the record required 30,500 additions, 15,140 deletions and 38,000 revisions of existing records due to changes in name, location, activity or establishment breakdown.

By year-end, the computer tape record had been expanded to show full company name, location address, standard industrial and geographical classification codes and unique "life-time" identification number. Accomodation was also made on the tape record to show additional information which will allow the reconstruction of the list as of any previous point in time.

During the year, Central Registers Section was the focal point of a small working committee comprising representation from DBS, the Unemployment Insurance Commission and the Taxation Division of the Department of National Revenue. The task of the committee was to elaborate the proposal of the Interdepartmental Committee on Socio-Economic Statistics that the DBS Central List form a nucleus for the development of a "Common Employer Numbering System" comprising all businesses in Canada, to accommodate the needs of all users in government departments. The work of the committee resulted in tentative plans for the co-opera-

tion of the three represented departments to develop such a list.

Paralleling the efforts of the interdepartmental working committee but with emphasis on immediate needs of DBS, plans were under way by year end to expand the Central List to full coverage of all businesses in Canada. This expansion will increase the present record from 150,000 to 600,000 entries. The full record is required for the 1971 Census of Population and Census of Distribution and with accommodation for categorizing each entry by size (based on value of assets or revenue), will afford a frame for sample selection as required for DBS surveys. Preliminary to expansion of the full record, plans were being finalized to secure full coverage of all businesses in the St. Catharines, Ontario, and Sherbrooke, Quebec, areas as pilot efforts to meet the needs of a census test in these areas in September, 1969.

The co-operative arrangement with the Unemployment Insurance Commission was continued, whereby their local offices collect a Nature of Business Report from all new registrants. This has proven to be the major source of information necessary to keep DBS survey lists up-to-date. It results in the semi-annual publication *New Manufacturing Establishments in Canada*. During the year additional special tabulations of new businesses in the Atlantic Provinces were prepared for the use of the Atlantic Development Board in an economic study of that area. Special tabulations covering the birth and death of manufacturing establishments in Manitoba were also prepared to meet the needs of the Manitoba Department of Industry and Commerce.

ADMINISTRATIVE SERVICES

Under this general heading are found a series of functions serving the Dominion Bureau of Statistics as a whole, including administration, staff organization and relations, classification, training and development, bilingual development, records management, financial control, publications distribution and office services such as printing liaison, the addressograph unit, stenographic pools, drafting, forms design, supplies, copying, mail and messenger services.

Staff Organization

Although the recruitment freeze, ordered by Treasury Board at the beginning of the year has an effect, the department was able to

maintain its level of staff resources and following the removal of the freeze, increase its resources marginally. A net increase of 51 in continuing staff was realized by the fiscal year ending March 31, 1969. The continuing staff on that date numbered 2,868. Changes during the year included a net increase of 30 professionals, resulting from the hiring of 74 persons offset by 44 separations. An increase of 75 was also achieved in the Administrative and Executive categories, with decreases of 54 in the Technical and Administrative Support categories.

Promotions of professional statisticians and economists and other centrally controlled groups, such as Computer Systems Administration,

Personnel Administration, Financial Administration, and Organization and Methods, were effected in the main through appraisal boards. Additionally, some 125 promotional competitions were administered during the fiscal year. Thirteen appeals were lodged against the results of these competitions with two appeals being allowed by the Public Service Commission Appeal Board. During the year, over 400 man-years of casual employment were effectively utilized.

The problems encountered in the application of the language tests prescribed by the Public Service Commission led to the development and use by the department of its own tests, with the concurrence of the Public Service Commission.

Additional responsibilities were assumed by the Staffing Section with the acceptance of delegation of staffing authority for the Administrative Support and Operational Categories, and with the agreement to work-share staffing authority for the Statistician and Economist class for levels 2 to 5 inclusive.

Staff Relations

Two of the first contracts negotiated by the Treasury Board as employer with the employee associations were introduced into the Bureau in the latter part of the year. These covered a small number of employees in the General Labour and Trades Group and the General Services Group of the Operational Category.

Extensive preparatory work and consultations took place during the year in anticipation of bargaining for the Social Science Support Group, the Economics, Sociology and Statistics Group, and the Computer Systems Administration Group, for which DBS is a major user department.

The Section continued its advisory and monitoring role in the area of grievances, complaints, and discipline generally. Some counselling work was also performed to help employees with problems.

During the year, the Chief of the Section has continued to administer employee appraisals for the Economist, Statistician and Technical Officer classes. This function is now being transferred to a new Manpower Planning Section.

Classification

During the year, 329 jobs were documented and evaluated by the Classification Staff within the limits of the classification authority delegated to the Bureau. In addition, 166 other

programs in the fields of supervisory and management development, professional development, computer training and a variety of other skills. The staff operated as consultants to line managers in initiating general surveys of training needs and in developing the framework of a program to satisfy these needs.

In the area of supervisory and management training, 66 selected employees at the junior and intermediate management levels were given theoretical and practical training in effective supervision and management principles and techniques. The selection and assignment of candidates for specialized Public Service Commission courses, university extension courses, and courses offered by other educational institutions were also co-ordinated and administered by the training staff. Six employees in the professional category were granted educational leave to improve their educational qualifications so as to better perform their present or anticipated duties.

The computer training programs were co-ordinated with a view to training management in understanding the benefits and limitations of the computers in their respective fields. Data processing courses for supervisors were administered by the Bureau for 128 of its personnel while 195 non-supervisory personnel participated in other computer courses primarily offered to acquaint them with computer operations in the government and to give them a basic understanding of the theory of computers as well as its practical applications.

This Section also conducted induction and orientation sessions for new DBS employees. About 100 personnel are currently at various cases were documented and submitted to the Bureau of Classification Revision during the same period. At the time of the report, there were 230 outstanding cases awaiting action.

The conversion of over 400 positions to the Economics, Statistics and Sociology Group and of 280 positions to the Social Science Support Group were processed during the year. A number of anomalies were identified, described anew and re-evaluations were requested. This supplementary process produced results which ensured full acceptability and support from top departmental management for the classification conversion for the groups affected.

A course in job analysis and job evaluation attended by 25 employees was completely planned, organized and conducted by the classification staff for line officers of the department.

Training and Development

This Section continued to carry out basic

levels of training in a second language training program. Special training was organized for 16 Foreign Aid students referred to DBS by the Canadian International Development Agency. Statistical and mathematical courses now have 53 personnel in attendance as part of a professional development program. Accounting training for the clerical and technical staff is in progress to meet the specific needs of this department. Also, an employee's handbook is in the final stages of translation and will be available soon for all employees.

Professional development has been given a great deal of attention this year and plans are now being formulated for a more comprehensive and attractive program for these employees.

Incentive Awards

Of 46 suggestions carried over from the 1966-67 fiscal year, 30 were rejected during the year, 4 received approval and granted awards valued at \$120; 5 are pending implementation and 7 are still under investigation. During the 1968-69 fiscal year, 29 new suggestions were received, of which 11 have been rejected, 1 has been approved and granted an award of \$275 and 17 are still under investigation.

Bilingual Development

On August 15, 1968 the office of the Advisor, Bilingual Development, was established in order to implement the government's policy on bilingualism in the Public Service. Administration of the language courses remain with the Training Section.

An inventory of the linguistic capacities of all employees of the Bureau was made and the information was computerized for the purpose of assisting in the designation of bilingual positions, meeting the requirements of service to the public and in internal communications.

During the period under review, 65 DBS officers undertook French training in total and partial immersion courses, while 17 others followed semi-weekly classes and 5 officers took the English courses.

A program of follow-up to language training aimed principally at students of French was developed. Part of the program consists of the use of a study room equipped with audio-visual equipment where language students can practise and improve on their language skills between training sessions and practise conversational French with a group of selected French-speaking officers. A program of unilingual luncheons between students and their French speaking tutors was also organized. Of the

total number of 186 past and present language students, 143 are participating in the follow-up program in one way or another.

The publication of a bulletin addressed to the language students was undertaken, for the purpose of advising students of activities and events conducted in French which are taking place in the National Capital area.

A start was made in assessing the need to designate positions where bilingualism is an essential requirement or a desirable circumstance. Work on this program was delayed pending passage of the Official Languages Act.

A survey of all publications requiring conversion to French was made and work is progressing towards the objective of having all regular publications bilingual within a reasonable time.

Records Management

Records management co-ordination is a new function established during the year. A Records Manager and two assistants have been assigned and studies have been made of records and records management procedures in three large divisions. Inventories of the records being retained were completed, assessments of the records operations were made, and reports containing recommendations were submitted to the divisional heads. Plans for the expansion of this central function were formulated.

Financial Services

This Section has two main functions which are performed by the Accounts Unit and the Publications Distribution Unit.

The Accounts Unit is concerned with the overall financial operation of the Bureau including the co-ordination of the program review and estimates. The Unit examines and controls expenditures, audits travel claims and commercial accounts, interprets financial regulations and maintains a financial management reporting system.

The Publications Distribution Unit is concerned with the sale and distribution of DBS publications. During the 1968-69 fiscal year 1,819,769 pieces of mail were dispatched and 21,942 mail orders were received. The subscription mailing list is currently made up of 204,743 addressograph mailing plates.

Office Services

As of March 31, 1969, Typing and Transcribing Services were composed of six Typing Units. The new system of work measurement

(based on predetermined standards) introduced April 1, 1968 in all Typing Units is proving satisfactory and is providing much needed data for assessing the relative efficiency of operators, total staff requirement, as well as composition costs. During the fiscal year 164,960 pages were produced.

The Printing Liaison Services Unit, in addition to maintaining liaison with the Vari-type and Printing Sections of the Canadian Government Printing Bureau situated at DBS, is responsible for examining manuscript of DBS publications being submitted for composition and advising on layout, format, standards, stock and binding of publications. During the year 12,651 pages of copy for printing were processed.

The Drafting Unit planned, organized and prepared a total of 2,705 economic charts, diagrams, maps, displays, publication covers and pamphlets, for the divisions of the Bureau and other departments and agencies of the Government.

In the Forms Design Unit continuing liaison was maintained with departmental officials to advise on printing schedules, priorities, technical specifications and designs for proposed new forms and on other aspects of forms management. The past year showed a continuing

trend in the increasing use of specialty forms, the introduction of additional bilingual forms and the conversion of more questionnaires to computer application.

In the Addressograph, Mail and Supplies Unit 16,560,911 forms were addressed for the various divisions of the Bureau. In addition 235,883 plates were embossed, 110,206 corrected and 561,908 deleted. There were 9,988 pieces of mail enveloped by hand and 3,576,715 by machine. A second heat transfer machine was acquired which will permit more addressing jobs based on computer-originated address listings, and in the period under review, 2,784,676 forms were processed by this method.

During the year 23,403 bags of mail were deposited with the Post Office and 9,676 were received, in addition to 26,539 pieces of registered mail, 21,570 air mail, 1,813 special delivery, 6,962 parcel post and 61,934 foreign mail. This includes 1,673 bags dispatched for the Department of Agriculture.

The Supplies Unit submitted 1,925 printing and stationery requisitions to the Department of Defence Production and other sources for an estimated value of \$910,705. The supplies inventory as at March 31, 1969 was \$52,606; the annual stock turnover rate, therefore was 17.3.

DOMINION BUREAU OF STATISTICS SENIOR OFFICERS

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Director General (Economic Statistics Branch) V. R. Berlinguette

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