

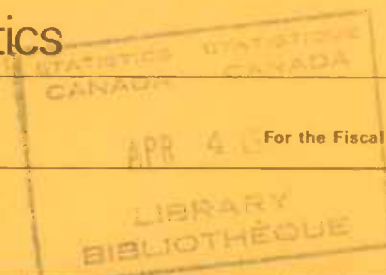


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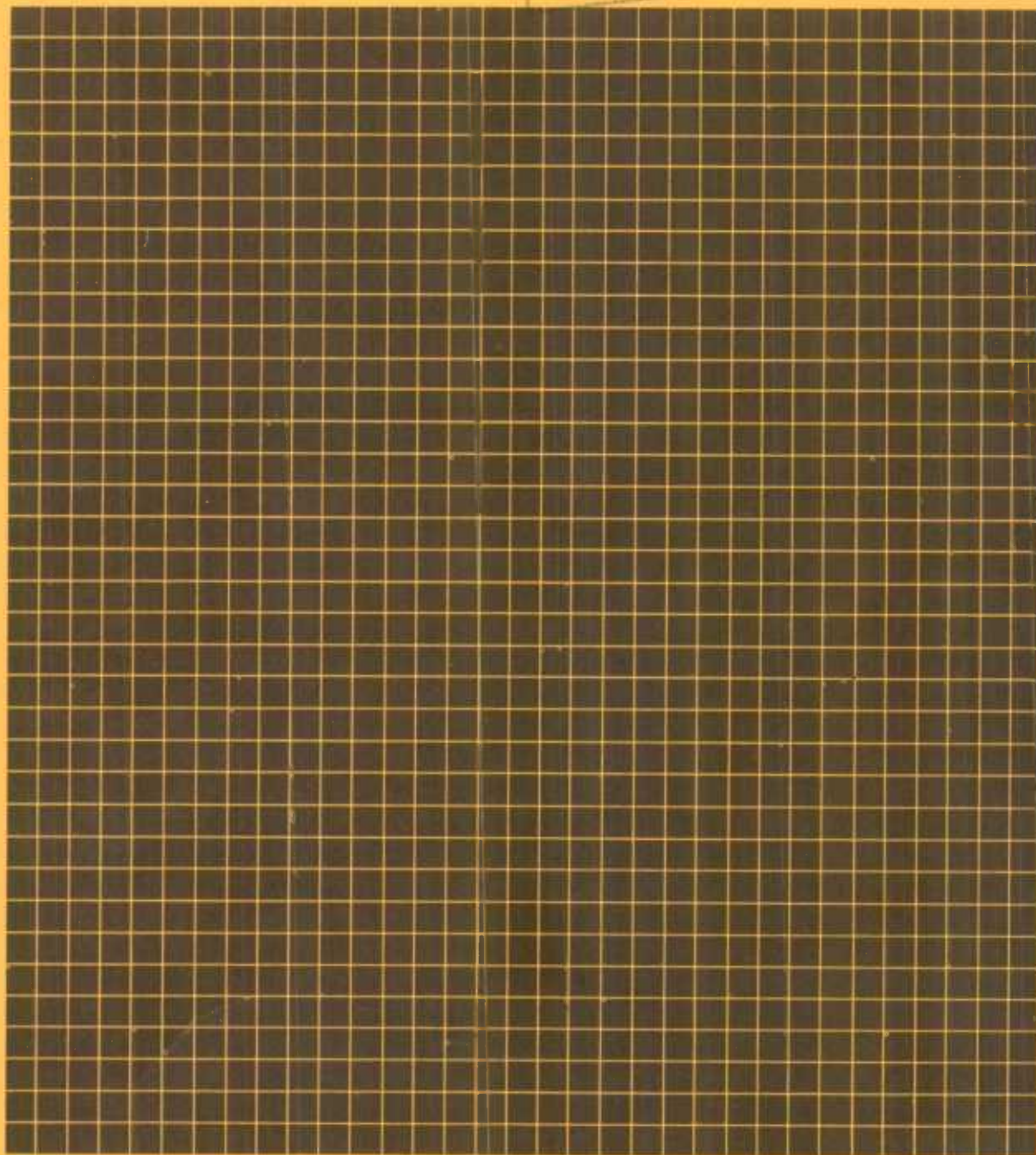
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Dominion Bureau of Statistics

Annual Report



For the Fiscal Year ended March 31, 1970



CATALOGUE No.

11-201



ANNUAL REPORT
OF THE
DOMINION BUREAU OF STATISTICS

FOR THE FISCAL YEAR
ENDED MARCH 31, 1970

November 1971
0001-502

Information Canada
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, 1970.

Respectfully submitted,

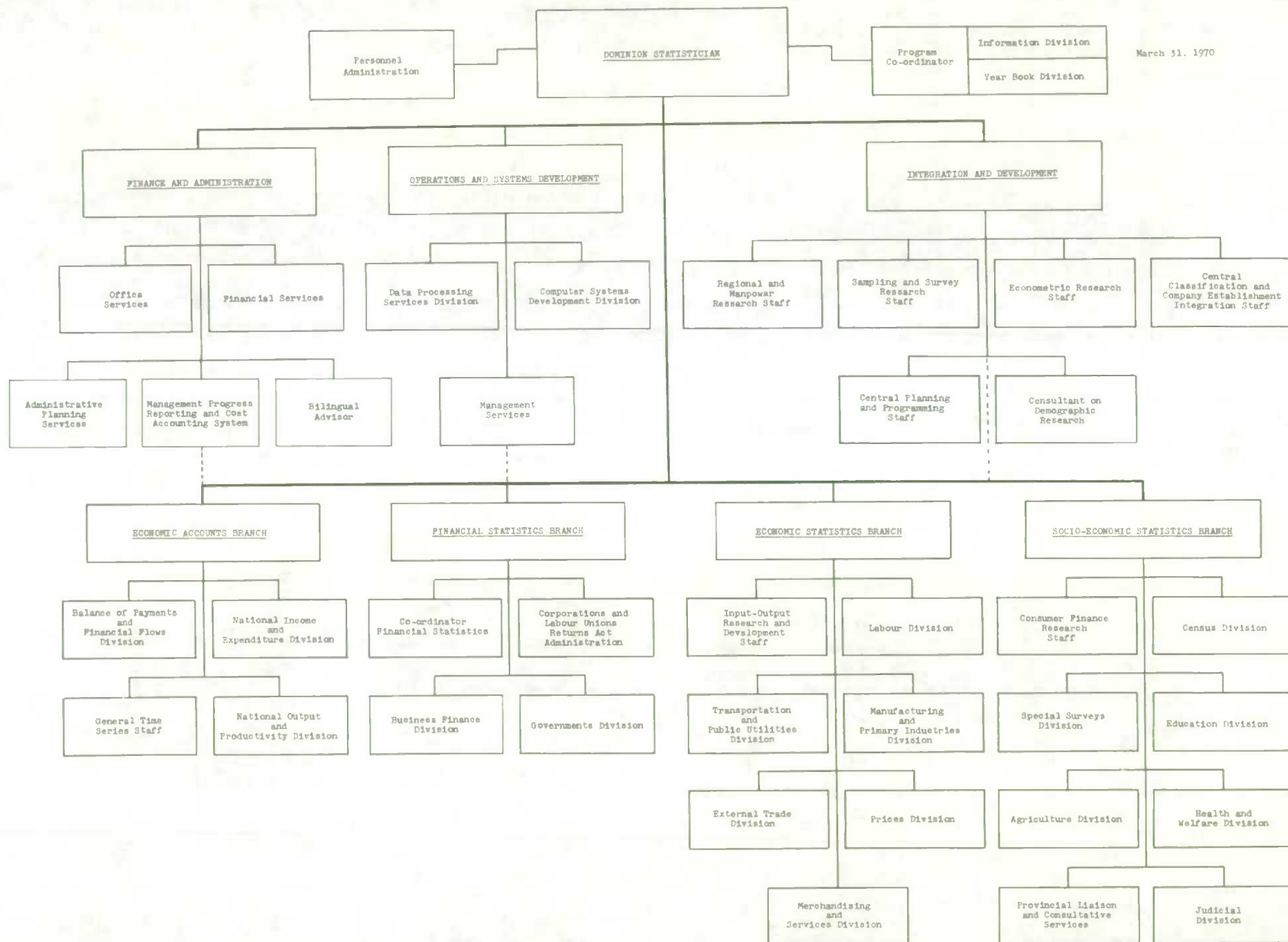
Robert G. Duffett.

Chief Statistician of Canada

Ottawa, Canada
November 1971.

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GENERAL ACTIVITIES

While all Divisions of the Dominion Bureau of Statistics were active within their own spheres during the year, two important long-run activities were of particular interest. The first was preparation for the 1971 Census, involving lengthy consultations with users, planning of a long questionnaire form, the development of new technical features such as self-enumeration and a unique data retrieval system, and the final large-scale census tests. The other major DBS activity worthy of special attention was work on a new Statistics Act, seeking improved co-operation with the provinces and the possibility of access to income tax data for statistical purposes. While the development and drafting of the new legislation involved much work during the year under review, the bill was not submitted to Parliament until the autumn of 1970.

A general review of DBS structure and programme was undertaken for the Senate Committee on Science Policy, and a comprehensive report was prepared which was of general interest to persons interested in DBS in Canada and abroad. The Committee had not reported at the year-end.

Considerable attention was denoted to the development of possible procedures for the formal planning of the DBS programme within the context of the planning, programming, budgeting philosophy, which was being increasingly used in Canadian Government budgetary procedures. A comprehensive cost and progress reporting system was close to completion by the year-end; and a good deal of thought was denoted to the possible use of

cost-benefit techniques in setting programme priorities. This poses great difficulty in statistical programmes where the product is an intermediate one, designed to facilitate good decision-making elsewhere in the economy. A paper on this subject was prepared by the Dominion Statistician for the Conference of European Statisticians, following discussions with some of the principal European and North American statistical offices.

The Bureau continues to take an interest in the statistical needs of the developing countries. Plans were finalized, in co-operation with the Canadian International Development Agency, for the provision of a computer, and accompanying programmes and training facilities, to the West Indies for the processing of the 1970 Census in that area. Preparations were made for the seventh Conference of Commonwealth Statisticians to be held in India in the autumn of 1970. Since India had not been represented at the previous conference (held in Ottawa in 1966), Canadian assistance played a significant part in planning the conference.

Statistical programmes are largely dependent on the skill of those immediately responsible for them and retirements and staff turnover require constant attention to recruitment. A new Director of the Education Division was appointed during the year, and a series of important new projects were initiated. Here, as everywhere in the Bureau, the statistical system is dependent on the faithful and imaginative work of the staff, which is gratefully acknowledged by the Dominion Statistician.

INFORMATION AND YEAR BOOK GROUP

The responsibilities of the Information and Year Book Group include development and extension of the uses of statistics in Canadian society, the compilation and publishing of a comprehensive reference volume, the *Canada Year Book* and the handbook, *Canada*, improvement and maintenance of good relations with respondents to DBS surveys, publicity, public relations and information activities for the Bureau and the operation of a departmental library.

Canada Year Book Division

The programme of the Division includes the planning, compiling, editing and publication annually of the English and French language editions of two official basic reference reports on Canada, the *Canada Year Book* and the handbook *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. The English and French editions of the *Canada Year Book* for 1969 and of the handbook *Canada 1970* were released in March 1970. The Spanish edition of *Canada One Hundred 1867-1967*, *Canada Cien Años 1867-1967*, was published in February 1970. During the year, personnel of the Canada Year Book Section also edited six census monographs and special labour force studies.

A special inquiries unit supplied a 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 provided up-to-date revisions of Canadian statistical and textual material for many standard national and international reference works and dispensed 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.

Information Division

Development of publicity, public relations and advertising programmes for the 1971 Census assumed top priority in the Division's promotional activities in 1969-70. Effective promotional support, always a critical factor in a given census year, takes on added significance in respect of the 1971 Census operation for which new, individual self-enumeration methods of taking the census are to be used (see Census Division).

Three full-scale trial censuses in September 1969 employing self-enumeration methods (in Sherbrooke, Quebec; St. Catharines, Ontario; and Souris, Manitoba) provided the opportunity for pretesting under field conditions, a variety of modern techniques for generating the high degree of public participation and individual co-operation called for in the self-enumeration method.

In Publicity Services, work for the trial censuses involved preparation of mailing pieces, posters, newspaper advertising, and other publicity materials such as radio and TV tapes and information kits for press, radio and TV, in addition to on-the-spot liaison with census officers, the media and community leaders, both before and during the actual taking of the trial censuses.

In statistical activities other than the Census, the Art and Design Section filled requests from 14 subject-matter Divisions for

modernization of cover format for their principal publications.

The Division continued, and in some cases expanded, its operations in promoting greater public awareness of the value and usefulness of statistical information and in developing a closer rapport between respondents to DBS surveys and the Bureau's divisions responsible for conducting them. Direct mail promotion to individual respondents continued to prove the most effective publicity means of maintaining and improving response rates in terms of both volume and promptness and response. New releases and feature articles in selected trade and business publications provided useful support to this activity.

The Division was again active in staffing exhibits highlighting DBS Services at meetings of various business and professional associations. These included: the Canadian Hospital Association in Ottawa; the Canadian Library Association in St. John's, Newfoundland; the Municipal Finance Officers Association in Toronto; the Air Transport Association of Canada in Montreal and the Canadian Horticultural Association in Ottawa. The American Statistical Association also invited the Bureau to exhibit at the ASA annual conference in New York in September. This exhibit was planned by the Division to highlight the centralized nature of the Bureau, Canada's statistical system.

For the third successive year, the Division conducted an advertising campaign in the business pages of leading dailies and the business and labour newspapers, to promote wider use of the statistical information available. Reply coupons inserted in the advertisements inviting requests for free packages of information relating to the inquirer's specific field of interest resulted in 3,306 replies over the period January 10 to March 31.

In the dissemination of statistics and information about the availability of statistics both the *DBS Daily* and its sister publication, the *DBS Weekly*, continued to gain appreciably in readership. At the end of the fiscal year 1969-70, circulation of the *DBS Daily* had increased to 2,800 from 1,950 in 1968-69, while circulation of the *Weekly* rose to 7,850 from 4,900 in the same period. Originally designed almost exclusively as vehicles for providing summary information to the Canadian news media, both bulletins now have a much wider audience among users of statistics in both the public and private sectors of business.

The Statistics Use Development Section continued to operate within the framework of three broad objectives: (1) research into who uses DBS information and how it is used;

(2) development of additional uses of statistical information, particularly by the business community, through industrial visits, seminars, lectures and courses, so that the output of DBS can be given wider application; and (3) elaboration and extension of the methods of reaching users and potential users so that DBS information may be made more accessible.

Numerous visits were made to individual business firms, industry associations, municipal boards of trade, professional associations, and other organizations during the year, mainly in the Montreal and Toronto areas where Statistics Use Development Officers are stationed. Some of the larger groups to which presentations were made included the Institute of Canadian Bankers, the Canadian Library Association, the Montreal and Toronto Boards of Trade, the McGill University Management Certificate Course, and the Quebec Association of Certified General Accountants.

During the year, work was begun on the research and writing of two instructional-type booklets illustrating practical applications of DBS statistics. These booklets will be published during 1970.

Plans were made during 1969-70 to place two additional Statistics Use Development Of-

ficers in the field in the coming year (in the Winnipeg and Vancouver Regional Offices) and to add to the Ottawa Headquarters staff to establish the operation on a continuing and more viable basis.

The Inquiries Section, the Bureau's central point of contact with the public, handled a monthly average of some 1,600 inquiries by mail, telephone and personal visits. The more complex queries involved a good deal of research in addition to the preparation of special tabulations -- mostly from within DBS -- but often from other governmental and private sources.

The bulk of the inquiries originated in Canada, but a considerable number were received from foreign countries.

During the year, the Section published two supplements to the *Catalogue of Publications*. The supplements are designed to keep users of DBS statistical information up to date on the volume of information available from DBS and include new titles issued, titles discontinued, and titles changed. Heavy demand for the catalogue resulted in a reprint of some 6,000 copies. Revisions of the 1968 Catalogue and the title, subject and commodity index for the next issue of the Catalogue were started during the year.

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 and Manpower Research Staff; and Consultant on Demographic Research. A small planning group has been added this year. A review of the activities of these staffs during the fiscal year follows:

Central Classification and Company-Establishment Integration Staff

The main effort in classification work during the year has been directed toward the publication of revised industrial and occupational classification manuals for use in coding 1971 Census data. The 3-digit codes and classes of the *Standard Industrial Classification Manual* have been revised and revision of the index is now under way. Publication of the manual is expected in January 1971.

The census edition of the *Canadian Classification and Dictionary of Occupations*,

which is due about the same time has reached a similar stage of development. The structure of the classification to be used for census and other statistical surveys (major, minor and unit groups) is now complete and the index is well under way. The classification and index are being prepared for printing from magnetic tape which will then be available for rearrangement of the occupational material to suit particular requirements. An interim edition of the manual was tested on the October Test Census.

This is the first "standard" occupational classification to be prepared for use in Canada. It is the result of joint work of DBS and the Department of Manpower and Immigration. It is expected to be useful not only for the statistical and operational purposes of the sponsoring departments, but by many other governmental and private organizations. The complete classification and dictionary, including detailed occupational definitions, will be published by the Department of Manpower and Immigration.

The work on geographical classification during the year consisted mainly of bringing

the main file up to date, answering enquiries and producing special manuals for coding vital statistics records.

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 subunits into standard reporting units for individual DBS surveys. During the year the Central List coverage was extended to include the Job Vacancy Survey, bringing the total to over 30 surveys now entered in this record. This, together with growth in survey coverage, increased the total number of records from 150,000 to approximately 200,000.

Investigation and resolution of inconsistencies in the General List continued. During the year, 487 such problem cases were cleared. In addition, regular maintenance of the file required 46,100 additions, 17,260 deletions and over 48,000 revisions of existing records due to changes in name, location, activity or subunit composition.

A major project for expansion of the Central List to cover all businesses in Canada got under way this year. The expansion and development of the Central List record, including a permanent identification number for each unit, forms an essential part of the Bureau's programme for survey development and integration, including better use of computers and related advanced technology. In preparation for expansion of the Central List, all records on the tape file were reviewed for completeness and correctness and an additional entry made for all records to facilitate alphabetical sorting. Procedures were finalized for geographical coding and entry into the file of some 200,000 employers not now in the Central List. This work is to commence immediately after year-end and will extend the Central List to cover all businesses in Canada with employees. Preliminary work was also undertaken in co-operation with other government departments to secure lists of proprietorships and partnerships with no employees for further extension of the Central List. Finally, basic identification information on all incorporated businesses was recorded to ensure that the Central List is complete for all corporations. When these phases have been completed, the list will cover all businesses in Canada, numbering some 600,000 records.

At mid-year, complete lists of all employers in the St. Catharines, Ontario and Sherbrooke, Quebec, areas were prepared for a test census conducted in October. Further plans were being developed in co-operation with the Census Division for the preparation of lists of employers required for industrial coding on the 1971 Census of Population.

The co-operative arrangement with the Unemployment Insurance Commission continued, whereby information on new businesses and revision of information on existing ones is obtained from UIC registrations. This has proven to be the major source of information necessary to keep DBS survey lists up to date. It also provides information for the semi-annual publication *New Manufacturing Establishments in Canada*.

The Company-Establishment Integration Section - is responsible for research into the relationship between statistical records obtained from companies and those from their constituent establishments. The principal objective is to develop means by which data from the two kinds of reporting units can be related and used in a co-ordinated fashion for economic analysis. Most companies consist of one unit engaged in one main activity but the relatively few complicated companies operating more than one unit tend to be the larger ones. Thus, the companies that report separately for their establishments have a disproportionate influence on the statistics for the industries affected.

With the growth in the Bureau's coverage of financial statistics in recent years, the problem of relating company and establishment statistics has become more acute. The Bureau's traditional surveys of employment, etc., use the establishment as the reporting unit to attain more precise industrial distributions of data. Financial statistics such as those of assets, liabilities and profits, are available only for companies because financial statements are prepared on that basis.

The work of integrating statistics from these two principal sources is approached in a variety of ways:

(a) Information is extracted from the file of company financial statements and supporting schedules submitted under the Corporation and Labour Unions Returns Act, for comparison with statistics obtained on the Census of Manufactures, Census of Wholesale Trade, etc. Results became available this year from a major study of wholesale trade undertaken for 1967. It provided financial and operating ratios for industries within wholesale trade, by province and by sales size category of businesses covered. In addition, detailed information was obtained for various expense items. This study, along with one of Funeral Directors, indicates that some data now collected from establishments could be obtained from the financial statements. A similar study of manufacturing returns is being undertaken this year in co-operation with the Manufacturing and Primary Industries Division.

(b) The record-keeping practices of large corporations have been under study for some time. A small number of large companies was selected for this study and the report is nearing completion. It is expected that the results of this detailed analysis of the companies' procedures will provide a basis for development of conventions which will improve the present procedures for linking establishment and company data.

(c) A study is presently under way with the Financial Statistics Branch on the relationship between the financial returns submitted to DBS on its various surveys. In some cases, current financial data are available only for groups of related companies whereas less frequent returns are submitted for the separate constituent companies. Continued examination is required to provide satisfactory links between these series. At the same time, these studies provide information about company financial records which assist in linking them with establishment data.

(d) Studies are undertaken in co-operation with the various industrial censuses and related surveys to facilitate the linking of establishment data obtained from different sources. If the information obtained from the establishments of each company on different surveys are not additive for the company as a whole, then the task of comparing establishment and company returns is rendered very difficult, if not impossible. Examination of the design of questionnaires and of tabulating procedures is undertaken with a view to improving intersurvey comparability. In this connection, the section has participated in a review of the schedules of various Bureau Divisions with continuing advice from the Canadian Institute of Chartered Accountants.

(e) A study was made this year of the practices followed by various annual DBS surveys with respect to compiling data for company fiscal years that do not correspond with the calendar year. As a result, a procedure has been recommended to standardize the handling of such returns in order to render the data from various surveys more comparable with respect to the time period covered.

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, advise and participate in their implementation and devise general computer systems capable of carrying out a particular aspect of the processing of several surveys. 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 - During the year, the Staff participated in the final determination of the methodology to be used for the 1971 Census. A decision was reached, after extensive studies and consultation, that most of the census information will be collected on the basis of a 1 in 3 sample. A decision was also reached to confirm earlier plans with respect to the use of self-enumeration with follow-up: in most areas of the country, households will be asked to complete their own census questionnaires (which will be followed up by the Census field staff wherever necessary). A trial census was carried out in three areas of the country which confirmed the practical feasibility and soundness of this method for which the original impetus was based on theoretical considerations.

One of the main innovations of the 1971 Census will be the extensive application of quality control designed to control and reduce the errors accumulated during the processing of the census data. Four areas of the census operation will be subject to formal methods of quality control: (1) printing of census questionnaires; (2) enumeration (the quality control plan here will primarily concentrate on ensuring that all the essential information that is supposed to be collected is, in fact collected); (3) quality control of office coding; (4) quality control of document readers and other associated operations. The second and third of these plans were tested out during the 1969 Trial Census and proved to be generally successful. The fourth plan was also tried out during 1969 but, due to general problems encountered with the document reader, it could not be adequately tested. The application of quality control to the 1969 Trial Census indicated that several minor modifications should be incorporated into future quality control plans of this kind. Many of these will be included in the final plans for the 1971 Census.

Much of the work of the Staff during the fiscal year was concentrated in the area of planning a detailed programme of evaluation for the 1971 Census. The three largest evaluation projects are the Reverse Record Check project, designed to estimate the coverage errors (number of people missed) in the 1971 Census; the Response Variance Study, designed to estimate the contribution to census errors of errors of response; and the Agriculture Quality Check project, designed to estimate the errors of the Census of Agriculture.

The Reverse Record Check project has previously been carried out in connection with the 1961 and 1966 Censuses. It is planned again, with some significant modifications, for 1971. The project is based on a sample of persons from sources independent of the 1971 Census (primarily from the 1966 Census updated by a sample of records of births and immigrants). During 1971, the address as of the census date of each selected person will be determined, using an extensive tracing operation, involving several waves of mailing and field follow-up; then the 1971 Census records will be searched to ascertain the proportion of persons missed by the census. Three new features of the study (in comparison with 1961 and 1966) will be the following: the sample will be increased fourfold so as to permit the estimation of the proportion of missed persons broken down by age and by province; some substantive information will be collected for persons who appear to have been missed by the 1971 Census, in order to permit the analysis of the characteristics of people missed by the census and to estimate the impact of coverage errors on substantive Census tabulations; and a new method of tracing the current address of selected persons have been devised which is expected to result in a considerable reduction of the cost per selected person (in fact, most of the additional cost of increasing the sample size for the project in comparison with 1961 and 1966 will be financed through this reduction in unit costs). The new method of tracing current addresses was tested during the 1969 Trial Census and was found to be successful. A complete network diagram for the scheduling of the activities involved in this survey has been prepared and the outline of the processing system was begun.

During the 1961 Census, a pilot project was carried out to measure the response errors of census statistics in a local area and this study, together with theoretical considerations, had a determining impact on the methodology of the 1971 Census. The study conclusively showed that response errors can be significantly reduced through the use of self-enumeration techniques. The 1971 Response Variance Study will be the first attempt in Canada to measure the response errors of census statistics at a national level. A random sample of areas will be selected in which the measurement of response errors will be carried out. This study is therefore designed to confirm (or otherwise) the correctness of the decision to use self-enumeration. In addition, it is also designed to provide further insights into the sources of response errors (which might be used to further improve the methodology of future censuses) and to provide users of census data with estimates of the reliability of census statistics. During the last year the sample design for

this study and the methods that will be used to estimate the response variance have been determined. Work to outline the manual and computer processing of the data has begun.

The 1971 Agriculture Quality Check project is designed to provide a coverage check on the 1971 Census of Agriculture, i.e. to provide estimates of underenumeration of the number of farms and of acreages under major crops. This will be achieved through the selection of a sample of areas which will be enumerated using more intensive methods than those that can be used in a national census. The estimates derived from the survey will be compared with the census estimates to determine the errors of the census. This survey is also used to collect additional information not collected as part of the census but required at national and provincial levels by our users. In fact, without this survey the additional information would have been collected as part of the 1971 Census of Agriculture, which would have significantly increased its cost and the burden placed on respondents. A detailed network diagram is being produced to facilitate control of all aspects of this complex project. Work has begun on the outline of the manual and computer systems required for the processing of the survey.

A new project was begun during the year to test the feasibility of establishing and currently updating a register of urban addresses. A register of urban addresses can be established in machine-readable form as a by-product of the 1971 Census. The project is designed to test the feasibility of updating such a register intercensally. It appears that updated information with respect to new construction might be obtained from the Central Mortgage and Housing Corporation; and with respect to demolitions, through occasional field checks using postal carriers in co-operation with the Post Office Department. If an urban address register could be established and maintained after 1971, it could be used to mail out census questionnaires in 1976 and in subsequent censuses, thereby significantly reducing the field costs of the census; it could also be used as the sampling frame in urban areas for Labour Force Survey and other current household surveys; and, finally, it could be used as a substantive information system by itself concerning the changes in our housing stock. The present pilot project is designed to test the feasibility of this approach and is carried out in five areas: Sherbrooke, St. Catharines, Montreal, Toronto and Vancouver. The first two areas were locations of the 1969 Trial Census which is therefore used as the source of the initial Address Register. The latter three cities were sampled for the purposes of this project and a register of addresses established in the selected areas, using a special field

enumeration. Liaison with the Central Mortgage and Housing Corporation and the Post Office Department has been carried out and their co-operation has been secured. Work has begun on the establishment of a detailed network diagram for the control of this project and the clerical and computer processing systems are currently being outlined.

Labour Force Survey - The ongoing programme of producing variance estimates for 40 characteristics estimated by the Labour Force Survey, by province, region and for Canada, has been continued. These variance estimates are used to provide users of Labour Force Survey data with an indication of the reliability of the published estimates and they are also used to provide a continuing feedback into the survey concerning the errors incurred.

Work has begun in a thorough examination and analysis of the sources of coverage errors (non-response, failure to include in the survey people who should be included, etc.).

Agriculture Division - During the year under review, the Staff continued to give advice on the improvement of estimation procedures for cattle surveys in Alberta and hog surveys in Ontario. In both these surveys, the sample design, based on stratification by area and size of farms, has been found to provide estimates with adequate sampling error for major inventory items. The main source of errors for these surveys might be, however, the high level of non-response. In order to check on the impact of non-response on the reliability of these surveys, field follow-ups were carried out in Ontario and Alberta to collect information from farmers who were non-respondents in the original mail survey. Due to the relatively small budget available for the field follow-up, the sample size was small and, hence, no firm conclusions could be drawn; the problem still requires investigation on a larger scale.

During the year under review, the Staff also collaborated with the Agriculture Division in designing sample surveys for estimating poultry numbers (laying hens) in Nova Scotia and Quebec. These surveys are carried out by mail and are still under experimentation. Advice on sampling design and estimation procedures has been given on a field survey for forage crops which was fully implemented in Alberta and for a survey of rapeseed stocks held by farmers in the Prairie Provinces which is now in progress by mail.

Domestic Travel Survey - As reported in the previous *Annual Report*, 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. The objectives of the survey would be to identify the patterns and to quantify the values of inter- and intra-provincial travel in such locality depth as is practicable.

As part of the plan for this survey a Domestic Travel Section was established within the Sampling and Survey Research Staff, charged with designing the survey (to be carried out in 1970-71); drawing up, in consultation with the Provincial Liaison Staff and the Office of Tourism, specifications for a private firm to carry out the field work for this survey under contract to DBS; and providing supervision for the contractor on behalf of DBS.

During the year under review, plans had been drawn up for carrying out a pilot survey for the main Domestic Travel Survey. Specifications have been established for tendering the field work. Tenders were called for and evaluated, and the successful bidder was determined. Under the supervision of the Domestic Travel Section and using the sample design established by it, the successful bidder carried out the field work for the pilot survey. The results of the pilot survey were analysed by the Staff and the final plans for the main survey have been established.

Unfortunately, the federal-provincial arrangements for the financing of the main survey did not materialize as expected. Consequently, the survey has been cancelled. Plans are currently under way, in consultation with the Office of Tourism, to draw up specifications for a new survey on a smaller scale.

Merchandising and Services Division - The new design of the monthly Retail Sales Survey, referred to in the last *Annual Report* was completed, along with enough of the underlying computer systems work to make firm plans to implement the new design in June 1970. The new survey will be run in parallel with the old one for the remainder of 1970 and the Staff will be involved, along with subject-matter personnel, in evaluation and analysis of the results with a view to replacing the old survey.

The Staff has continued to be involved in planning the methodology and systems for the next Census of Merchandising. This involvement will increase as plans become more detailed.

The Staff assisted in implementation of the design referred to in the previous *Annual Report* for the 1968 Retail Commodity Sales Survey and in the management of the survey in accordance with the network diagram also referred to there.

Prices Division - A new project was launched during the year designed to accomplish the automation of the Industrial Selling Price Index and to provide further experience in general concerning the automation of surveys. Members of the Staff participated significantly in the work of an interdivisional team charged with the responsibility for developing computer systems for the collection and processing of data for the production of the ISPI. This team was also asked to evaluate and report on the team approach to this kind of project. It is expected that the automation of this survey will significantly increase the ability of Prices Division to service user requests for special tabulation, will enhance the analytical capability of the Division through the provision of new types of tabulations not currently produced and will improve the timeliness of the published price statistics.

Labour Division - Employment and Payrolls Survey - Large Firms (ES 1): Firm, detailed specifications were written for the automation of this survey and the Staff continued to be involved with the systems analysis of these specifications, subsequent programming, and with development and supervision of the network diagrams designed to control the activity. The new ES 1 system will be operational in the first half of 1970-71. It contains a number of technically interesting innovations, primarily aimed at improving the timeliness of the published statistics, which will be watched and analysed in 1970-71.

Employment and Payrolls Survey - Small Firms (ES 2): The last *Annual Report* stated that Sampling and Survey Research Staff had proposed the collection of these statistics as part of the Job Vacancy Survey. This proposal was accepted and in 1969-70 the methodology and systems requirements were worked out and specified in detail. The new systems will be implemented in 1970-71.

Job Vacancy Survey: This survey became fully operational in 1969-70, although much remains to be done in the way of increasing both its statistical efficiency and its operational efficiency. The Job Vacancy Survey organization will be the vehicle for the collection, during 1970-71, of statistics on training in industry. This will be a large and complex survey, the methodological groundwork for which was laid in 1969-70 with the intensive participation of Sampling and Survey Research Staff.

Manufacturing and Primary Industries Division - The project for automating the Census of Manufactures was the subject of extensive planning during 1969-70. The Sampling and Survey Research Staff is currently involved in drawing up the logical framework for

the edit and imputation modules, and it is expected that initial specifications for these modules will be ready in late 1970-71.

Transportation and Public Utilities Division - Preliminary testing of procedures for a Survey of For-Hire Truck Commodity Traffic was carried out in early 1969-70. This testing affirmed that the concepts and procedures were workable, so a major pilot study was designed and launched. This pilot study was designed to provide information which would facilitate making decisions with respect to a possible main survey. The information from the pilot survey would be available in time for the main estimates in September 1970. The decisions would be (a) whether ongoing studies should be undertaken starting in 1971, and (b) what sample sizes and design would provide optimum information in relation to costs.

CALURA - Some preliminary analysis of automation requirements was carried out. This work was suspended to await decisions by the Department of National Revenue on more direct availability of tax return data in machine-readable form.

Central List Extension Project - Much of the fundamental systems analysis for this project has been completed, and a start made on the detailed analysis of the first component. Concurrent with this, experiments have been undertaken leading towards the development of an effective record linkage facility for matching the identities of business units. In the coming year it is anticipated that the manpower attached to this project will be increased, with a resulting more rapid progress towards completion.

Geographically Referenced Data Storage and Retrieval System (GRDSR) - The immediate objective of this project is to enable the Census Division to provide population and housing tabulations from the 1971 Census by any user-specified area. This will be achieved by assigning to each household the geographic co-ordinates of the blockface centre points in which the households are located, in the 12 largest metropolitan areas; and by assigning to each household the geographic co-ordinates of the appropriate enumeration area centre points in the rest of the country. Users will be permitted to delineate the query areas for which tabulations are requested on a suitable map, the co-ordinate points of the specified boundaries will be determined, and the requested retrieval and tabulation will be performed for all blockface and enumeration area centre points within the specified area.

This project can be described in three major phases. In the first phase, Area Master

Files are developed describing every blockface in terms of street names, blockface address range and blockface centroids, etc. in the urban areas, and in terms of enumeration area numbers and corresponding centre point co-ordinates for the rest of the country. A versatile street map plotting programme has been developed within the context of this phase to produce street maps to different scales and with different amount of details from the Master Files produced for the metropolitan areas. The metropolitan areas in which blockface geocoding is expected to be available in 1971 are as follows: Halifax, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, St. Catharines, Winnipeg, Calgary, Edmonton and Vancouver. As to the extent of the coverage within a metropolitan area, this will always include the core areas, while the inclusion of the outlying areas will depend on the availability of accurate maps, the presence of civic addresses and the availability of DBS resources to handle the initial clerical work to produce an Area Master File.

Phase 2 of the GRDSR system provides for accepting the census file or any other survey of administrative data file with addresses and for providing the appropriate blockface or enumeration area centre point co-ordinates either through blockface address ranges or through enumeration area codes with the aid of the corresponding Area Master Files. Addresses which are in free format are first standardized by an address decoding programme which has a better than 90 per cent resolution power. Work is currently going on to provide for verification of municipality and street names and to correct automatically keypunching and misspelling type errors in the decoded addresses. A special procedure to assign geographic co-ordinates was developed for the 1971 Population Census in order to eliminate the need for keypunching some 3 million addresses from the Visitation Record. A system with properly balanced manual and machine intervention permits us to reduce the input to keypunching a blockface identifier and the corresponding enumerated Household number ranges. Upon having assigned the appropriate co-ordinate values to the address, a generalized programme transfers the co-ordinate values to the appropriate record in the census or survey data file. The geocoded data file is then compressed, segmented, converted and stored on a random access storage device.

In Phase 3 of the GRDSR project a flexible data retrieval and tabulation system has been developed. This system is simple enough to permit non-computer programmers to specify their data retrieval and tabulation requests. It performs these requests efficiently. It permits the specification of summaries of data, and cross-tabulations of data in any combination. It also permits the

specification of any combination of contiguous and non-contiguous areas in the queries.

Prototypes, or working models, of the above-described programmes and system have been developed and tested. The work currently going on is aimed at the final implementation of the individual programme elements in Phases 2 and 3, and at the integration of the entire GRDSR system to create a smooth production environment. DBS has now approved the concept to make the entire GRDSR system, or parts of it, available to the three levels of government, if so requested. The interest in assigning geographic co-ordinates to address-data files to facilitate retrievals by arbitrary specified areas appears to be gaining momentum, and by DBS making available this system, the duplication in development work is avoided and thereby the financial and manpower resources become better utilized.

Development of Generalized Programmes -

Hundreds of different surveys are conducted by DBS annually. The data processing for many of these surveys is now performed on computers. Most of these data processing operations can be classified into broad functional categories. Within these categories, editing and imputation, updating, sample selection, questionnaire labelling, retrieval and tabulation, etc. are typically performed. In each of these functional categories the data processing and manipulation operations can be performed in many different ways, although it is practical now to specify a number of options and facilities to perform the majority of the potential applications. The concept behind the development of generalized programmes is that the specification that needs to be performed be permitted to be written in either a problem oriented format or in the form of control cards by non-programmers. The advantage of this arrangement would be that after having produced a file design by a computer systems analyst, a suitably trained person could specify the required data processing actions within the scope of the generalized programme without the knowledge of computer programming. This arrangement would significantly reduce programming development time and in addition would permit various experimentations to test different ideas and approaches.

The first operational versions of two generalized programmes, one which performs editing and imputation, and the other one retrieval and tabulation, have been implemented to date. In the edit programme for a declared file format a list of possible values which any or each field could contain may be specified, data fields within a record may be checked for internal consistency, specification can be given to replace values in fields by pre-specified or computed quantities and records can be omitted under specified conditions. A manual instructing non-programmer

users on making edit specifications has been produced and the understanding and use of this can be learned within a few hours time. This generalized programme has been tested by writing edit specifications and performing editing work on several files and it has been demonstrated that the time period between the conception and completion of the editing work can be greatly reduced. The first version of the other generalized programme performs retrieval and tabulation from files consisting of fixed record lengths. A manual has been produced to instruct the non-programmer user on the use of this generalized programme. This generalized programme permits the access, retrieval and tabulation of any combination of data fields and also the performance of various arithmetic operations, such as, multiplication of a field with a weight, or calculation of average, etc. This generalized programme has also been tested by retrieving from several files; it performs efficiently, can be used by non-programmers and in many cases has produced the desired tabulations on an overnight turnaround.

Other Projects and Assignments - During the year the Sampling and Survey Research Staff issued four numbers of a Quarterly Bulletin designed to acquaint interested non-technical persons with its activities. The Bulletin reports on projects under way or successfully completed. It is widely distributed within the Bureau and also to interested personnel in statistical offices of other countries.

Advanced lectures on sampling theory and introductory lectures to subject-matter statisticians coming from many divisions of the Bureau continued to be given during the year under review.

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. Due to the increasing interest in this kind of service, a special unit has been created within the Staff, charged with responsibility for providing consulting advice in survey design and methodology to federal and provincial departments. The work of this unit is expected to be financed through the arrangements of the revolving fund.

Econometric Research Staff

The Econometric Research Staff conducts research and provides consultative services to various DBS subject-matter divisions on the application of econometric and related techniques to the production, analysis and improvement of DBS data. In addition, it works in close co-operation with some of the research groups in other government departments.

During the 1969-70 fiscal year continued emphasis was placed on the use of econometric and related techniques to improve the timeliness and/or the quality of various series produced by the DBS Staff members who worked on projects which included the earlier estimation of various components of the quarterly national accounts, the analysis of the quality-timeliness trade-offs involved, and the writing of computer programmes to automate the production of these accounts. Considerable work was also done on streamlining the national accounts methodology so as to facilitate the production of monthly estimates of these accounts on a continuing basis, and an improvement in the timeliness of the quarterly national accounts.

A programme was developed to produce several analytical measures of industrial structure by Standard Industrial Classification group and market area for different units of organization and concepts of size. This programme helps to meet current pressing demands for information on industrial structure and facilitates the production of the various measures on a continuing basis.

Much progress was made on projects which were started prior to the 1969-70 fiscal year. KEARS (KWIC Economic Article Reference System) was completed. This system was designed to provide quick reference to titles of journal articles on specific econometric problems and applications. It currently includes articles from eleven of the leading economic journals for the eleven-year period 1958-68, and there is provision to have it updated and expanded to include more journals.

Most of the data required for making an assessment of the usefulness of "hedonic" price indexes in the development of construction price indexes have been assembled; and, three other projects: an evaluation of DBS' capital stock estimates for manufacturing, an analysis of the determinants of hospital costs in Ontario, and the development of methods for estimating and updating the coefficients of input-output tables, are in the final stages of completion.

Towards the end of the fiscal year the Medium Term Interdepartmental Simulation (METIS) Model Project was initiated. Some staff members are being involved in the systems design as well as in the specification and estimation of the model.

Regional and Manpower Research Staff

Two previously separate staffs - Regional Statistics, Research and Integration and Special Manpower Studies and Consultation - have been brought together to form Regional and Special Manpower Research Staff. The

Regional Staff is responsible for developing, or co-ordinating research programmes designed to improve and extend subprovincial statistics to serve the needs of various federal, provincial and municipal governments. The Special Manpower Staff carries out analytical and development work in the area of manpower and labour markets.

The extension of subprovincial statistics is achieved by suggesting conceptual and procedural changes required to make the results of national surveys and censuses available on a small-area basis, by investigating the statistical content of administrative files and by undertaking programmes of data estimation for small areas based on available sources. Improvement of existing small-area series is pursued by carrying out research of concepts used and by automating procedures wherever desirable in order to improve accuracy and timeliness.

The Staff is currently engaged in the development of population, migration, labour force, employment and unemployment estimates for small areas.

On the manpower side, main efforts have been concentrated on the programme of analytical studies utilizing household survey data. Studies initiated or completed during the year include such topics as underutilization of manpower, labour mobility, multiple-job holders and overtime work, and cyclical variation in labour force participation rates. Developmental research has taken new directions as its focal point, the Job Vacancy Survey, approaches the operational stage. Some preparatory work has begun on developing measures of current employment by occupation: a necessary complement to the occupational data on job vacancies. At the same time, a long-run

project has been instituted to analyse, evaluate and interpret the job vacancy statistics in close collaboration with the Labour Division.

Central Planning and Programming Staff

To assist in the implementation within DBS of the Treasury Board's planning-programming-budgeting approach to resource allocation, a small central planning and programming staff was appointed early in 1969. Under the general direction of the Assistant Dominion Statistician (Integration and Development), and in close collaboration with other senior officials, this Staff is responsible initially for developing systematic approaches for the clarification of over-all DBS objectives and developing planning procedures to ensure their attainment.

Consultant on Demographic Research

During the year under review, the Consultant on Demographic Research conducted research on the delineation of Census Metropolitan Areas for the 1971 Census Metropolitan Area Committee and served on several Census Division Committees concerned with the planning of the 1971 Census. He chaired interdivisional committees concerned with projections and with research on vital statistics. He has also acted as Assistant Director of Research in the Census Division. He completed and published the 1961 Census monograph on internal migration, completed revision of the French translation of the 1961 Census monograph on urbanization and provided consultation on various demographic matters to several governmental and private agencies.

ECONOMIC ACCOUNTS BRANCH

This Branch 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, the National Income and Expenditure Division, the National Output and Productivity Division and the General Time Series Staff. 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 macroeconomic 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 responsible for the construction, analysis and publication of statistics and reports related to two important sets of economic and financial relationships. The first of these involves estimates of balance of payments covering economic and financial transactions between Canada and other countries and estimates of Canada's international investment position measuring 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. In addition, the Division is concerned with the publication of statistics on international travel, covering both Canadians travelling abroad and non-resident visitors to Canada.

The publication programme of the Division included the quarterly 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. Although an annual report on the balance of payments was not published, the principal series of international investment and foreign ownership and control of Canadian industry were published as they became available in the regular quarterly reports.

During the year the first report on the financial flow accounts was published, covering the years 1962-1967, and subsequent quarterly reports updated these to the third quarter, 1969. These accounts show the net changes in assets and liabilities of about 35 sectors and subsectors of the Canadian economy broken down into approximately thirty transaction categories. In many cases the surveys which provide the material for these accounts, and which are undertaken in other Divisions of DBS, were designed with the specific requirements of the financial flow accounts in mind.

In line with the general Bureau policy of improving the timeliness of release of key statistical series, commencing in the third quarter of 1969, first estimates of the Canadian Balance of Payments in summary form were released approximately six weeks after the end of the reference period and five weeks before the release of the detailed report. It is planned to continue the release of this advance information in the DBS Daily.

There was continuing close co-operation with the Office of Business Economics of the United States Department of Commerce particularly concerning the joint efforts to explore and explain apparent inconsistencies in the data collected in the two countries.

In 1969, at the invitation of the International Monetary Fund and the Organization for Economic Co-operation and Development, experts from the Division participated in meetings covering new developments and changes in balance of payments statistical reporting, the preparation of a collection of internationally comparable financial statistics and the measurement of aid to developing countries.

The International Travel Section of the Division increased its coverage of the flow of international travellers by survey of those people entering Canada by pleasure craft -- a small but growing segment of the international travel scene. Unsettled conditions in the international exchange money markets, balance of payments problems in some of the principal trading nations of the world and the continuing fight against inflation focussed particular attention on both balance of payments statistics and financial flow accounts during the year.

National Income and Expenditure Division

Organizational changes within the Economic Accounts Branch resulted in the change of the National Accounts Section into a Division called the National Income and Expenditure Division.

The Division is responsible for the construction, development, analysis and publication of the quarterly, annual and historical National Income and Expenditure Accounts including National Income, Gross National Product and Gross National Expenditure aggregates. This system of information also includes such supporting sets of economic statistics as sector accounts, value of production at constant price, geographic distribution of personal income and others. The economic statistics generated in the Division are widely used by both public and private sectors in evaluating the national, regional and sectoral economic performance and developments. They are also used in various areas of economic research, for forecasting and for policy formulation in practically all segments of the economy.

In addition to the ongoing activities of the Division, there have been two major accomplishments during the fiscal year under review -- the introduction of a speed-up in the release of reports and the historical revision of the National Income and Expenditure Accounts.

Increased efficiency in information analysis accomplished through automation and the research efforts of a small group of experts who have been entrusted with speeding up the release of reports has resulted in a significant gain in the timely release of major economic indicators. From the third quarter of 1969, the Income and Expenditure Accounts have been published approximately 45 days after the reference quarter, a gain of about 30 days compared to the old system.

After a period of several years of intensive effort, work has been completed on revised National Income and Expenditure Accounts from 1926 to 1968 on an annual basis. Work towards the completion of the historical

revision of the accounts covering 1947 to date is well under way and the estimates are expected to be published in the next fiscal year. The historical revision incorporated statistically revised data as well as certain conceptual improvements, particularly those designed to bring the Canadian National Accounts System closer to the United Nations Standard System of National Accounts.

Close collaboration with the statistical office of the United Nations was maintained and the Branch also actively participated in the work of the International Association for Income and Wealth.

National Output and Productivity Division

Within the newly formed National Output and Productivity Division, which is responsible for the construction, analysis and publication of output data by industry in constant prices as well as measures of productivity, the Productivity Research and Analysis Section continued its work on developing and establishing output per labour input measures for the Canadian economy, its main sectors and selected individual industries. In the series *Productivity Trends and Industry*, Report No. 2 covering *Iron and Steel Mills* for the period 1959 to 1968 was released. The Industrial Output Section made major timing gains in the release of the *Quarterly Industry of Origin Real Domestic Product* series during 1969-70. Major progress was also made in the development of monthly RDP Indexes and these more timely series will be published during 1970.

This Section also undertook a number of research pilot studies within Federal Govern-

ment Departments during the year as a first step in developing more meaningful output measures for non-commercial service industries.

General Time Series Staff

The General Time Series Staff is responsible for the publication of the Canadian Statistical Review, general times series research and CANSIM, the computerized time series data bank.

During the fiscal year, emphasis was on the implementation of Phase I of CANSIM. Essentially Phase I consists of the conversion of existing tape files to the new disc-oriented system. In July, jointly with the Economic Council, DBS announced public sale of machine-readable data. At the year-end there were approximately 14,000 series in the base. Part of CANSIM Phase II development also started was the development of specifications for an integrated, simplified English-type language for data manipulation.

The publication programme of the *Canadian Statistical Review* weekly and annual supplements continued. Editorial changes, reflected in the January issue were made to improve the readability and usefulness of the publication.

The volume of seasonal adjustment in DBS continued to expand throughout 1969 with a resulting growth in the training and advisory role played by this staff. This role has also expanded to cover support and advice on data manipulative computer routines related to seasonal adjustment and to CANSIM.

FINANCIAL STATISTICS BRANCH

The Financial Statistics Branch consists of the Director General, the Co-ordinator of Financial Statistics Staff, the Business Finance Division, the Corporations and Labour Unions Returns Act Division and the Governments Division.

The Financial Statistics Branch is responsible for the production of financial statistics dealing with both the public and private sectors of the economy and, in addition, for a number of non-financial statistical series having a closely related bearing on the over-all financial statistics programme.

The Co-ordinator of Financial Statistics includes among his responsibilities, advising on the development of new financial statistics and the integration of new and existing series

within DBS and between DBS and the other parts of the federal and provincial government structures. The objective is to meet the demands of the users of financial statistics as efficiently and completely as possible.

It should be noted, however, that a number of important financial series are located elsewhere -- in the Balance of Payments and Financial Flows Division of the Economic Accounts Branch, and in the Co-ordinator, Consumer Finance Research Staff of the Socio-Economic Statistics Branch.

Business Finance Division

The statistical programme of the Business Finance Division centres around three related

but widely diverse areas: Statistics of investment intentions and related activities have been in existence the longest of these three areas. These statistics include capital and repair expenditures, as reflected in business intentions as well as actual expenditures, residential housing starts and completions as well as value put-in-place, building permits, the construction industry and statistics on the stock of capital in the form of fixed assets. The profits earned from and the financing of economic activity, -- the second area while holding considerable interest for economic analysts, has not been represented in the statistical programme to any significant degree until recently. The third area has to do with scientific research and development, an activity that leads to economic and industrial advancement.

In the area of capital investment, annual surveys of capital and repair expenditures are being continued and provide national, regional and industry estimates of capital formation as well as repair expenditures made to the existing stock of fixed assets. Investment intentions are published by industry and by province in *Private and Public Investment Outlook*, early each year, to provide information on construction plans as well as intended expenditures on machinery and equipment. A second survey of spending intentions is carried out during the middle of the year and these revised intentions are published in *Private and Public Investment, Mid-Year Review*. This survey was expanded in 1967 to permit the publication of spending intentions by industry by province. With this information now available for several years, it is possible to assess the ability of businessmen to provide spending plans by province, that can be reliably converted into realization. If the spending plans are not realized with some degree of certainty, the value of the plans as statistical information is in doubt.

The quarterly survey of investment intentions and realizations of spending plans, initiated in 1968, is progressing favourably. The implementation of the basic sample was continued during 1969 and is expected to be complete during 1970. Additional units added to the sample in future years will be more selective, to provide improved representation in specific industries and geographic regions.

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 *Construction in Canada* published in June of each year provides information on value of work put in place by type of structure, along with over-all estimates of the labour and material content of this work. This report also provides sepa-

rate estimates for value of work performed by construction contractors and that portion performed by others engaged in construction work on their own account. Also included are estimates of the equivalent man-years necessary to carry out the annual progress 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 is derived from the results of a sample survey of construction firms conducted annually.

The detailed investigation of the construction industry begun in 1967 is being continued. The first publication in this series *The Mechanical Contracting Industry* was released during the year. A second group is being developed, *The Electrical Contracting Industry*.

Reports on building permits issued by municipalities in Canada are published monthly with an annual summary. These publications provide 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. A monthly report, *New Residential Construction*, contains the results of a nation-wide survey by the Central Mortgage and Housing Corporation, providing data on dwellings started, under construction and completed. These physical measures of housing construction activity 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, development work has been undertaken to improve the quality of housing statistics provided for past periods. In addition to improvements in the physical count of housing units, an improved measurement of the expenditures made for housing, by quarter, has been developed. This measure not only provides a measure of housing activity but indicates the volume of construction activity involved in residential construction.

Development work has continued in the improvement and extension of the estimates of fixed capital flows and stocks. The basic publications in this series were released by the Dominion Bureau of Statistics in 1967 and regular issues have not been considered necessary since that time. Efforts have continued, with interested users of these data, to develop a basic information file of punched cards and computer tapes. This form of information distribution has proved to be advantageous to the user. The fixed capital stocks data are now largely available for all

sectors of the economy, in current, constant (1949, 1957 and 1961 time basis) and original cost dollars for the period 1926 to date.

Surveys of the financing plans and structure of financial and non-financial corporations in Canada have been continued. The publication *Financial Institutions* provides information on the major financial intermediaries in Canada. Development work is continuing to provide data for the groups not available currently. Development of financial statistics of industrial corporations including income and expenditures, profits, dividends and balance sheet information, was continued.

Regular surveys on scientific research and development are carried out: one of the federal government's activities, and one of industry. The objective of these surveys is to provide information on the resources (money and people) devoted to science in Canada. These surveys have been confined to the physical and life sciences. However, there has been a growing interest in recent years in comparable information in the social sciences. Accordingly, an investigation into this area has been initiated to determine the problems, costs and benefits involved in surveys of the social sciences.

Corporations and Labour Unions Returns Act Division

The Corporations and Labour Unions Returns Act Division is responsible for the annual compilation and analysis of corporation financial statistics for the Canadian economy including operations, balance sheet, profit, income taxation and statistics relating to the ownership of a group of the larger corporations. The passage of the Corporations and Labour Unions Returns Act in 1962 required the establishment of a new programme within the Dominion Bureau of Statistics to examine the extent and analyse the effects of non-resident ownership of larger corporations in Canada and the extent and effects of the association of organized labour in Canada with international unions. The magnitude of these international associations has been established in broad terms in the annual reports required under the Act.

In 1965, amendments to the Corporations and Labour Unions Returns Act permitted the extension of the analysis of corporation financial activity to all corporations in Canada. The programme developed and implemented for corporation fiscal years beginning in 1965, was an extension of the corporation financial statistics programme carried out by the Department of National Revenue for some years and published in *Taxation Statistics*.

An extensive programme to integrate the compilation and analysis of corporation financial, taxation and ownership data resulted, during the fiscal year 1969-70, in the release of eleven reports, and brought the Division's publication programme to a more timely basis. These reports were as follows: *Corporations and Labour Unions Returns Act Report - Part I, Corporations - 1965, 1966, 1967; Inter-Corporate Ownership 1967; Corporation Financial Statistics 1966, 1967; Corporation Taxation Statistics 1965, 1966, 1967; Corporations and Labour Unions Returns Act Report - Part II, Labour Unions 1967*.

The latest publications, *Corporation Financial Statistics* and *Corporation Taxation Statistics*, contain an expanded and more detailed statistical analysis of corporation financial structure and corporate taxation than previously available. The Corporations and Labour Unions Returns Act Reports analyse 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 report "Inter-Corporate Ownership - 1967" indicates the holdings of more than 10 per cent of the voting shares of a corporation by another corporation, the percentage of shares so held and the country of incorporation of the holding corporation.

Governments Division

During 1969-70 the Governments Division continued its efforts toward the consolidation of its position in respect to its already established programme. No new activities as such were undertaken and the main emphasis was on timeliness and quality improvement in output and on the continuation of developmental work to improve reporting of basic inputs. The principal achievements were as follows:

Early in the year, the feasibility of compiling the quarterly income and expenditure statements on the Government sector for national accounts purposes was carefully researched and subsequently these compilations were completed regularly on a significantly accelerated schedule in keeping with the Bureau's objective of publishing the National Accounts Income and Expenditure series some five weeks earlier than heretofore.

In this connection, prior years' work on the classification of Federal government expenditures by economic objects (see report on the Governments Division for 1968-69) proved to be very valuable. The computer print-outs now available as a direct result of this earlier work allow for the analysis of federal expenditures within thirty days of the end of the reference period.

Another significant accomplishment in this area was the completion of the historical revision (on an annual basis) of this series for the years 1926-1968 and on a quarterly basis for the years 1947-1969.

While no major developments were realized in the area of Financial Flow Accounts, timeliness of the Division's compilations of financial flows for the three levels of government and for Federal and Provincial enterprises was improved by about three weeks and work continued toward the closer reconciliation of this series with the National Accounts Income and Expenditure series. Late in the year considerable resources were assigned to develop ways and means of improving the quality, which is currently lacking in municipal flows series. It is hoped significant improvement will materialize in this area within a year.

During the year under review the production time of five of the Division's twelve annual publications on finance and employment was cut considerably. Time cuts ranged from 170 days to over 300 days. Efforts to improve the timing of the other publications are continuing.

New publication formats for Government revenue and expenditure statements were implemented for the Federal, Provincial and Municipal levels to show more clearly revenues raised from own sources and revenues otherwise derived, and to show more accurately the cost of services provided by government. The publication *Municipal Government Finance* was expanded to include regional financial data, i.e. that on Census Metropolitan and Major Urban Areas.

Plans for 1970-71 include the development of reconciliations between Government

expenditures on a functional basis and those on an economic or national accounts basis.

During the year, the Eighth Federal-Provincial Conference on Municipal Statistics met in two sessions (its 5th and 6th) and concluded the initial phase of its work, i.e. the basic standard systems for classifying local government financial transactions. A manual is now in preparation by the Division and it is hoped this will be available for distribution by mid-1970. This Conference plans to continue its meetings to deal with other urgent matters such as standard reporting forms, terminology, and measures of performance and of efficiency.

As required pursuant to the Federal-Provincial fiscal arrangements, the Division supplied the Minister of Finance with detail on the Provinces' "net general revenue" and on provincial "natural resource revenue". In this connection also, it supplied for "revenue base" purposes detail on provincial sales of alcoholic beverages. This exercise which was concluded during the year in respect of the 1967-68 fiscal year will now comprise part of the Division's regular programme.

Representatives of the Governments Division along with the Director General of the Financial Statistics Branch of the Bureau, at the request of the British Columbia Department of Municipal Affairs, met with officials of all B.C. municipalities to explain to them the work of the Bureau and particularly that of the Governments Division; to help introduce municipal finance representatives to the classification systems developed by the above-mentioned Conference; to explain to the officials the needs for statistical information, and to enlist their co-operation directly or through their Department of Municipal Affairs. The success of this meeting has prompted the Division to consider seriously the feasibility of similar liaison work in the other provinces.

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 programmes 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.

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 continues. The addition of several commodity officer specialists and other technical staff made possible many far-reaching improvements in commodity classifications. The facilities for continuous and regular review of these classifications to accommodate expanding and changing needs of international commodity trade have been improved.

In the last annual report, reference was made to an improvement in the ability of the External Trade Division to produce more interpretative and analytical commentary concerning its statistical output due to the addition of qualified professional staff. This improvement has continued during 1969-70 which saw a significant increase in the Division's analytical output.

Additional professional staff required for a comprehensive redesign of the entire production system are being sought. External Trade Division computer programmes are now outdated and contain few if any safety features with the result that they are very vulnerable to operating errors. With the objective therefore of improving not only the timeliness and accuracy of Canada's international trade statistics but also the efficiency of the operation, the professional planning and development function is being strengthened.

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, 1964-1966 edition, Volume II, 1966-1968 edition and Volume III, 1960-1962 edition were prepared, and further editions are under preparation and scheduled for release during 1970. The *Review of Foreign Trade* for 1960-1963 and 1964-1966 will also be published during 1970.

The Division is continuing to devote considerable research and study to valuation problems, particularly those related to Canada/U.S. automotive trade, as part of a broad programme of quality improvement and an over-all reconciliation of counterpart trade statistics of the two countries.

Further efforts are being made by the Division towards more improved timeliness and quality of its total publication programme as well as special compilations and tabulations produced for government and industry, which are required increasingly for quota surveillance, anti-dumping investigation, import substitution, export promotion, etc.

Input-Output Research and Development Staff

In 1969 the Input-Output Staff published two volumes which contained the *Input-Output Structure of the Canadian Economy, 1961*. Some of the data published were preliminary in the sense that final reconciliation had not been made with the revised National Income and Expenditure Accounts. Work on the reconciliation is now complete and will be published in a forthcoming volume. In addition, information concerning detailed breakdowns of the final expenditure categories will be made available.

The publication of the 1961 input-output tables, the description of the methodology and the associated analytical models represents the culmination of an extensive research effort. In order to ensure that the maximum benefit from the effort is realized, the Input-Output Staff is increasing its efforts in two new directions.

On the one hand, the Input-Output Staff is participating in a number of projects all of which are designed to improve the quality of economic statistics at DBS.

On the other hand, the Staff is becoming engaged in more analytical work and is providing more user-oriented services. A considerable effort is being devoted to the development of a medium term simulation and projection model which is being constructed through an interdepartmental project involving the Economic Council of Canada, the Department of Manpower and Immigration, and the Department of Regional Economic Expansion as well as the Dominion Bureau of Statistics.

The Department of Finance has also been invited to participate. As well, technical advice and special data tabulations have been made available to large corporations, researchers at universities, and provincial and federal government agencies.

The Input-Output Staff has also continued its activities related to the construction of input-output tables. During the year a programme for updating input-output tables was initiated. This programme consists of annual updating and deflation of input-output tables by means of extensively automated procedures which involve large amounts of annual data. Plans are now being made for the construction of a new base year table for 1971.

The Input-Output Staff is continuing its work in the area of regional input-output studies in co-operation with the provinces and the Department of Regional Economic Expansion including the updating and analysis of the four Atlantic Provinces' input-output tables.

Labour Division

The Labour Division is concerned with production of a broad and varied programme 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.

During the fiscal year 1969-70, the Employment Section introduced a computerized method of imputing data for delinquent reporters to the monthly survey of employment, payrolls and hours in larger firms making possible the provision of more detailed preliminary data, the production of seasonally adjusted advance statistics, and the release of advance estimates of total employment and of labour income. As well, the development work connected with the complete automation of the survey continued to the stage of large-scale parallel runs in January 1970. The survey should be completely automated early in the next fiscal year. A significant addition to the survey in 1969 was the collection, for the first time, of the full range of monthly payroll data from educational establishments.

During the fiscal year, estimates of labour income were revised to the 1960 Standard Industrial Classification. The revised series, which are available from 1951 on, incorporate several new sources of data. Revised monthly estimates of employees by province and industry were published giving data from 1961 on. The revision involved extending the industrial coverage of the estimates to the entire non-agricultural sector of the economy.

The results of the second comprehensive survey of selected manufacturing employer labour costs in Canada were published, with a considerable improvement in timeliness from

the similar survey conducted the previous year. These first two surveys have provided a solid, conceptual and operational framework for the collection of national labour cost statistics. It is now planned to obtain data on the components of the wage package in other industries on a cyclical basis. Thus the 1970 survey (relating to 1969 data) covered the mining industry.

The Unemployment Insurance and Manpower Section compiles and publishes statistics reflecting the operations of the Unemployment Insurance Commission and the Canada Manpower Service of the Department of Manpower and Immigration. The fiscal year has been marked by steady progress in computerization. Research has begun on the characteristics of long-term unemployment insurance beneficiaries.

During the year, the Pensions Section negotiated with federal and provincial pension commissions resulting in agreements with Quebec, Ontario, Saskatchewan, Alberta and the federal Department of Insurance for a joint co-operative statistical programme for private pension plans. These agencies will extract data from their administrative records which DBS will use to create a master file of pension data from which tabulations can be run to meet the requirements of the participating agencies. The data are supplemented by surveys in those provinces where co-operative arrangements have not yet been obtained. This use of administrative records as a substitute for surveying employers will reduce response burden on the business community and will provide more comprehensive and timely data.

The fiscal year has seen the Job Vacancy Survey Section develop into a full-scale operational system. The industrial coverage was expanded from manufacturing to the entire non-agricultural sector, the computer programmes were made operational, and a comprehensive staff training programme was developed. The complete system of this twice-a-month survey, including all mail and field interview phases, became operational late in 1969. Since that time, data have been produced for the Department of Manpower on a regular schedule. A start has also been made in assessing the data for technical adequacy and analytic value.

In the Analysis and Development Section, the study of duplication in the field of labour statistics, which had been requested by the Treasury Board, resulted in a report which has formed the basis for a programme to reduce duplication in the collection of labour data by federal departments and agencies. Using the data obtained from the original study, the first official guide to labour statistics was produced. This should be of considerable assistance to researchers and others using labour data.

During the year a study related to the possible development of a programme of industrial accident statistics was completed. This will form the basis for a pilot study planned for next year.

Manufacturing and Primary Industries Division

The primary objective of the Division is to provide useful, timely and accurate statistics in the fields of manufacturing, mining, forestry, fishing and energy. To this end, the Division carries out several hundred surveys of an annual or more frequent nature as well as a quinquennial survey of the primary fishing industry. Results of these surveys are made available to users in the form of publications, special statements, bulletins or special tabulations.

During the past year, emphasis has been placed on the continuation and intensification of efforts to reduce the burden of response, to remove duplication of enquiry and to improve the quality and timeliness of data. In this context, specific reference can be made to the following:

(1) The joint study undertaken by DBS officers and representatives of the Canadian Institute of Chartered Accountants directed towards restructuring of the Census of Manufactures questionnaires so that they will be more in keeping with accounting records. To date, a revised short form for use of "small" establishments has been developed for implementation in the 1970 Census of Manufactures.

(2) The intensive study by a divisional work group of tax returns filed under the Corporations and Labour Unions Returns Act to determine the suitability of the information for use as a supplement to or a replacement for sections of the Census of Manufactures questionnaires. To date, some 6,000 company statements have been reviewed for the tax year 1969. Some benefits have already been experienced in that the information in a number of cases has provided an acceptable base for imputation of missing data or the correction of erroneous data.

(3) The joint study by officers of this Division and those of the Labour Division of the possibility of using monthly employment and payroll statistics as a substitute for similar data collected annually in the Census of Manufactures. To date, approximately one third of the matched computer runs of census and employment questionnaires have been examined and reasons for differences in data established.

(4) The interdivisional study of multi-establishment accounting records to develop a co-ordinated and integrated reporting system

suitable for the provision of (a) establishment and company statistics and (b) statistics of co-operatives.

(5) The study by a multidisciplinary team of the automation of the Census of Manufactures, Mining and Logging. Good progress has been made in developing the system with one module (mailing) scheduled for implementation with the 1970 Census and a second (photoprint) scheduled for the 1971 Census. Finally, some preliminary work has been done on one aspect of the geocoding system: geocoding of manufacturing establishments to permit retrieval of data on user-specified areas for such studies as urban renewal, industrial shifts and geographic concentration of industries.

(6) The development of a probability sample and semi-automated processing of the monthly shipments, inventories and orders survey. Substantial progress has been made and publishable output is scheduled for December 1970.

(7) Active participation by divisional officers in the development of a progress reporting and cost accounting system and a system of planning for DBS. Substantial contributions were also made to the revision of the Standard Industrial Classification, and the development of units of measure for standard use in all DBS publications. Although the interdivisional working group concerned with the development of the commodity classification is nearing completion of its work, the implementation unfortunately must be deferred until the 1971 Census of Manufactures. This is because the 1970 questionnaires had to be printed during the fiscal year due to the impact of the Decennial Census of Population and Agriculture on central services such as forms design and printing.

Despite a decrease in authorized strength of the Division from 202 to 198 and additional demands on existing staff due to more extensive training and heavier work loads, further progress can be reported in timeliness. For example, as of March 31, 1970, 25 publications related to the 1968 Census of Manufactures had been released as opposed to only one for the 1967 Census as of March 31, 1969. Improvements have also been experienced in the release of preliminary data in the DBS Daily. At March 13 of this year, summary information had been provided on 55 industries as opposed to 52 industries as at March 13, 1969. In the case of monthly and quarterly surveys the improved timeliness of published data achieved in recent years has been maintained. Further progress will now depend on improvement in collection patterns and resolution of problems connected with the printing and release of publications.

In relation to the general publications of the Division, i.e. the *Manufacturing Industries of Canada*, additional advance data were released in the DBS Daily this year, but the timeliness of the final publication is still below acceptable standards. It is expected that the situation will improve with the implementation of the revised photoprint programme. Until this is achieved, the Division will concentrate on the early release of preliminary data in special bulletins.

Liaison with industry continued to form an important part of the Division's activities particularly in relation to improvements in timeliness, quality and data requirements. Meetings of many of the existing divisional industry committees were held. In addition, several new committees were initiated in the fields of machinery, energy and foods and beverages; of particular interest is the National Advisory Committee on Petroleum Statistics. This committee of senior industry officials and senior officials of the appropriate federal and provincial government departments has been initiated to develop a co-ordinated and integrated system for all petroleum statistics (production, marketing, distribution).

Reference should also be made to the relationships which the Division has with its users. This can best be expressed in terms of the number of enquiries which are handled. During the year, the Division handled approximately 15,000 requests for information ranging from requests from school children to sophisticated tabulations required by government or industry organizations.

Finally, officers of the Division participated actively in working with and supplying information to international organizations such as the United Nations Statistical Commission, OECD, ECE and the Conference of Commonwealth Statisticians. This ranged from the supply of statistical data to participation in working groups and recommendations related to statistical concepts and definitions.

Merchandising and Services Division

The function of the Division is to collect, process and publish data on the retail, wholesale and service sectors of the economy, as well as to undertake special studies and surveys in areas related to the distribution of goods and the provision of services from primary and secondary sources to the final consumer.

During this fiscal year, virtually all retail and service bulletins for the 1966 Census of Merchandising were released. Many special tabulations of census data were com-

plied for use in answer to specific requests. In spite of continued efforts, it was not possible in this year to publish the 1966 Census of Wholesale Trade. The final computer run is expected to be available in the first half of 1970 and it is hoped that the bulletin will be published in the fall of 1970.

Planning for the 1971 Census proceeded with the organization of a main committee and two subcommittees. The main group reviewed all retail, wholesale and service kind-of-business classifications; revised and rewrote many of them. It also reviewed, with users of the statistics, concepts, definitions and coverage of the various fields, and determined the nature of the data to be collected in the 1971 Census of Merchandising. Final preparation of the questionnaires was also begun. One of the subcommittees on planning the 1971 Census reviewed work procedures, aiming for optimal computerization. The second subcommittee studied the advantages and problems attendant on using a central registry of firms as a possible source of lists to be used as a supplement to field enumeration. All three committees are working to a time schedule to permit adequate time for programming and testing before the census begins.

A complete review of all surveys undertaken during 1969-70 was undertaken and the statistical programme (excluding census) was planned for the coming decade. The review was designed to determine whether each survey should be continued, modified or eliminated. As a result, certain savings in manpower were effected and reallocated to new survey operations, increasing operational efficiency. Another aspect of the statistics programme of the Division concerned quality control. A committee of subject-matter and operations officers was formed in order to devise and implement a formalized quality control system. It is expected that quality control methods will be further modified in the coming year and will result in improved accuracy and data and, possibly, improved timeliness.

Due to the problems experienced in the 1966 Census of Wholesale Trade and the attendant delay in the publication of the Census Bulletin on Wholesale Trade, no annual surveys covering this field will be taken for 1969 and 1970 and all resources were and will continue to be concentrated on the preparation of the 1971 Census. After the 1971 Census, it is planned to revise the wholesale survey programme; the total universe will be divided into two internally homogeneous sections along operational lines and each part will be surveyed in alternate years.

For purposes of historical continuity, the monthly and annual wholesale trade series for the period of 1952-1968 have been revised on the basis of the results of the 1961 Census

of Wholesale Trade and the 1964 (unpublished) annual survey. The publication, *Wholesale Trade, 1951-1968* (Cat. No. 63-515), appeared in April 1969.

The first *Construction Machinery and Equipment* survey (Cat. No. 63-516) was published during the year measuring the 1967 market for about 70 major commodities in quantitative and dollar terms. Because of the lively interest of government departments and business firms it was decided to make this survey an annual feature, starting with the 1969 reporting year.

The monthly *Wholesale Trade* (Cat. No. 63-008), the monthly and annual *Farm Implement and Equipment* (Cat. Nos. 63-009, 63-203) and the monthly *Steel Warehousing* (Cat. No. 63-010) surveys, are the other regular publications prepared by the Wholesale Trade Section of the Division. Apart from continual minor improvements, these surveys have remained unchanged.

The 1969 edition of the *Market Research Handbook* (Cat. No. 63-514) was published towards the end of the 1969-70 fiscal year. The scope of the book has been substantially enlarged over previous editions; it contains a wide array of marketing information based on the data collected by many divisions of DBS and some other federal statistical sources and contains over 640 pages of statistical tables, charts, maps and definitions of terms.

Much of the activity in the area of retail trade centred around the developmental stages of the new monthly retail trade survey, which is expected to become operational towards the latter part of the coming fiscal year. The first of the new monthly retail trade survey bulletins is expected to be the January 1971 report.

Work also commenced on the revision of the existing monthly retail trade estimates, calculated on a new (1966) Census base, and a report on the first phase, covering 1961 to 1966, was published in the September 1969 issue of the *Canadian Statistical Review*. Revisions for the 1966-1969 period are being completed and the entire series, from 1961-1969, will be published shortly (Cat. No. 63-517). Results of the 1968 survey of retail sales by commodity classes should be published in early summer 1970.

Other reports released during the year (excluding monthly publications) were *Voluntary Group Stores, 1967* (Cat. No. 63-215); *Shopping Centres in Canada, 1966-67* (Cat. No. 63-214) including, for the first time, a section on service trades operating in shopping centres; *Vending Machine Operators, 1967* (Cat. No. 63-213); and *New Motor Vehicle Sales, 1968* (Cat. No. 63-208). The monthly survey,

Chain Store Sales and Stocks (Cat. No. 63-001) was expanded to cover all known chain organizations commencing with January 1970 results. The only weekly survey carried on by the Division, *Department Store Sales by Regions*, was discontinued at the end of 1969 due to a serious deterioration in the quality of the data reported by respondents.

As mentioned earlier, a review of all retail trade surveys was carried out in the latter part of 1969. As a result of this review, decisions were made to alter the methodology and content of various annual surveys, commencing with the 1969 survey year. These changes as far as retail trade is concerned, can be summarized as follows:

(1) The shopping centre survey will be undertaken on a full-coverage basis only every second or third year (but always coinciding, every fifth year, with a census); in the intervening years, the first being 1969, the survey will be carried out on a simplified basis.

(2) The vending machine operators' survey will be undertaken on a full-coverage basis only every second year; in the intervening years, starting with 1969, the survey will be carried out using a preselected panel of large firms and a sample of new firms to ascertain 'births'.

(3) The voluntary group survey will be expanded to include franchised service trade establishments and, although remaining on a full-coverage basis, will be spread out over a three-year period rather than the present one year. Each one of three sectors: retail stores affiliated with food wholesalers, retail stores affiliated with other than food wholesalers, and service trades, will be covered in successive years. However, the survey will be suspended during a census year.

It is hoped that, with this change in methodology, early estimates of annual results can be made available approximately 5-6 months after the survey year, instead of the 12-14 months necessary for full-coverage surveys. If this proves to be successful, the sample approach will be carried through every year, including full-coverage years, in order to yield early estimates.

For most of the 1969-70 fiscal year, the major efforts in the service trade area were concentrated at bringing the publications programme up to date. Manuscripts for two publications covering the advertising field, *Advertising Agencies, 1968* (Cat. No. 63-201), and *Advertising Expenditures in Canada, 1967* (Cat. No. 63-216), were completed and are being printed. In the area of motion pictures, two surveys were conducted covering the year

1968: *Motion Picture Production* (Cat. No. 63-206), was released this year; *Motion Picture Theatres and Film Distributors* (Cat. No. 63-207), is in the manuscript stage. The *Power Laundry and Dry Cleaning Plants* surveys (Cat. No. 63-205) for 1967 and 1968 are also in the final manuscript stage and will be released in the coming fiscal year, as will the 1968 survey of *Funeral Directors* (Cat. No. 63-511). The monthly survey of *Restaurants* (Cat. No. 63-011), and the semi-annual survey of a sample of larger hotels, reported in the *DBS Daily Bulletin*, have been kept on schedule. The 1969 survey of laundries and dry cleaning plants will be a sample survey only; a full-scale survey, it was felt, should only be conducted every other year.

The annual *Hotels* survey (Cat. No. 63-204), and its publications programme has encountered numerous problems during the past few years which are being overcome and, as a result, the coming fiscal year will see the publication of the 1966, 1967 and 1968 surveys. For 1969 the programme has been expanded to include motels, tourist courts, tourist homes and tourist camps, and the publication will change its name to *Accommodations Survey*; co-operation to assemble a comprehensive mailing list is being obtained from provincial sources.

A new sample of restaurants which will be more representative of the various kinds of restaurants than the old sample, was selected for the monthly survey, *Restaurant Statistics* (Cat. No. 63-011). Tests and evaluation will be carried out over a period of months before the revised series is published.

The *Destination of Shipments Survey*, 1967 is being tabulated and it is hoped that tables showing total value of shipments originating in each province and broken down by province of first destination will be ready in time for the Federal-Provincial Conference at the end of May 1970.

Plans to replace the collection of retail store credit data (published in the monthly bulletin *Credit Statistics* - Cat. No. 61-004) by a newly designed, updated sample associated with the new retail trade sample from the present census-data-linked sample, were delayed awaiting the design and tests of the new retail trade sample. Although current estimates of retail store credit are based on modified 1951 Census data, quality control checks with subsequent census results show only a moderate divergence in aggregate. However, the shift to the new sample is expected to improve the quality of these statistics within the various kinds of business groupings. Particular attention is being given to the whole field of service credit and credit card issuance and usage.

In the area designated 'special projects' is the programme to provide essential statistics for the whole field of 'non-store' retailing in Canada. These data are required to supplement the role of retail trade statistics in the bureau-wide scheme of a fully integrated statistics framework of the national economy. The results of the first annual survey of Direct Selling in Canada (Cat. No. 63-218) were published in July 1969, but plans to expand coverage in the next survey to include the 'direct sales' of wholesale and service establishments were postponed pending the availability of computer print-outs of the 1966 Census of Merchandising and additional staff resources to handle an expanded programme. Coverage was extended to another segment of 'non-store' retailing with the first survey of Campus Book Stores (Cat. No. 63-219), the results of which were published in July 1969.

Developments in statistics on merchandising stocks and inventories have been retarded by delays in the full implementation of the new retail trade sample. As with retail credit statistics, a special new independent updated sample for inventories is contingent on the successful launching of the new fully computerized retail trade sample survey.

During the 1969-70 fiscal year, the Research and Development Section of the Division began a study of the influence of suburban shopping centres on the central business districts of large urban areas. This subject has generated considerable interest among town-planners, municipal governments, real estate developers, and retailers. A pilot study is being carried out in Toronto and Ottawa and a preliminary report will be submitted in the next fiscal year. After that, it is expected that the study will be expanded to other Canadian cities.

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. 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 are included in the first group. Also included 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.

In the field of retail prices and living costs, price surveys were considerably expanded to provide full coverage of consumer baskets in cities for which consumer price indexes are being developed, and to amplify coverage of important components of budgets in other urban locations. For example, production of monthly consumer price indexes for Quebec City and Thunder Bay, on a 1969 time base, will be completed by the Retail Prices Section during 1970. The increased coverage of other urban centres will be reflected in the Consumer Price Index for Canada. A thorough review and documentation of the processing operations involved in the production of the monthly Consumer Price Index is well underway, primarily to facilitate the forthcoming automation of this series. As well, rescheduling of price collection in the field is also in progress. Updating of the Consumer Price Index basket of goods and services has been delayed due to the unavailability of required family expenditure tabulations. Thus, revision is now expected to be completed in 1971. The portion of medical care available through government supported medicare plans was deleted from the baskets relating to the Canada and the relevant regional city consumer price indexes because changes in premiums by consumers do not necessarily reflect changes in the price of the medical services provided.

The "Canadian Inter-City Retail Price Comparisons" relating to May 1968 were updated to May 1969 and expanded by the Comparative Living Costs Section to include eleven urban centres in total. The study provides measurements for about three quarters of the consumer budget in nine cities, forty-five per cent in one, and food items only in the remaining city. These indexes were published in the November 1969 issue of *Prices and Price Indexes*. Work on the development of comparative price differentials for shelter items was continued throughout the period. For example, inter-city price indexes of domestic fuel and utilities relating to eight major urban centres across Canada were completed and will be released in 1970. The

section continued developmental work aimed at measuring differentials in living cost conditions in relatively isolated northern Canadian communities. In this connection, staff members visited settlements in Northern British Columbia and the Yukon, Northern Ontario and Quebec, and Labrador to collect relevant living cost and price data. Comparative Living Cost Indexes were produced for thirty-one locations in four regions in 1969-70. The section also made plans to expand the coverage of locations through the use of mail surveys of living costs and prices. Though the primary purpose of these measurements of comparative retail price and living costs in remote areas in Canada is to establish appropriate allowance levels for federal government personnel serving in such areas, other prospective users have been advised of their availability since it was felt that the survey results might be of use in a wider context.

The detailed National Food Expenditure Survey carried out in 1969 by the Family Expenditure Section involved approximately 1,000 urban and rural households in each month. In addition to providing information on food purchasing patterns, the survey will yield expenditure data on a range of non-food items normally purchased in supermarkets. The field collection of monthly two-week dairies was carried out in 1969-70 and the coding of items and editing of returns are nearing completion. Some computer tabulations of results are expected in 1970. The planning, preparation of documents and enumerator training respecting the 1969 full-budget family expenditure survey was also carried out in the period. It is expected that this survey will yield 15,000 usable schedules. The field interviews relating to both urban and rural families and covering the year 1969 on a recall basis, started in January and continued through March 1970. Manual editing of returns, coding of items and keypunching of data will be completed by September 1970. It is anticipated that the detailed tabulations will allow for classification of spending patterns by a large number of family characteristics and will be available in 1971. Computer tabulations relating to the 1967 full-budget annual recall survey involving 2,000 family and individual records in eleven cities have been delayed but will be available in 1970.

The International Prices Section continued to provide the statistical support required to regulate the allowances of Canadian Government civilian and military personnel serving outside Canada. During the period, full-budget surveys of comparative retail prices and living costs for forty-five foreign cities were analysed, while abbreviated surveys were analysed for seventeen additional locations. Throughout the year, a continuous review and updating of the validity

of existing indexes was maintained by reference to foreign and domestic price movements, exchange rate changes, and a broad range of world-wide economic and statistical indicators. A full survey of shelter costs for military personnel serving in Europe was completed. A world-wide family expenditure survey amongst Canadian government personnel abroad, contemplating returns from some twenty-five hundred respondents, was launched with the analysis planned for 1970-71. During the year under review, section officers visited twelve locations in Western Europe where civilian and armed forces personnel are serving.

In the industrial prices field, revised Industry Selling Price Indexes relating to manufacturing industries in Canada were introduced in January 1970 in a reference publication entitled *Industry Selling Price Indexes, 1956-1968* (Cat. No. 62-528). The primary features of the revised price indexes include the introduction of a 1961 time base, revised commodity content and weights based on 1961 industry shipments, and classification of industries according to the 1960 Standard Industrial Classification. Revised price indexes for subsequent time periods are available in the monthly publication, *Prices and Price Indexes* (Cat. No. 62-002). Developmental work continued throughout 1969-70 to expand the number of manufacturing industries for which price measurements are available.

The development of capital goods price indexes continued throughout the period. With respect to residential construction, the field work was begun to collect prices for single family dwellings from a sample of large builders in five urban centres across Canada. In addition, planning of a pilot project was undertaken for production of experimental price indexes for single family dwellings using regression methods. In the area of non-residential construction, plans were completed for model pricing of a commercial office building and a composite high school. Plans and specifications of the buildings selected were translated into quantities of in-place components. The quantities for the office building will be priced for the first time in April 1970 in four cities. A pilot survey was begun relating particularly to the construction of electrical distribution systems and transmission lines, to determine the feasibility of calculating unit installation costs for a number of finely specified construction projects. Developmental work continued respecting pricing of commodities for which there is no regular production of identical items from period to period, i.e. unique goods. This work is concentrated presently in the fields of electrical utility equipment, railway rolling stock, precast concrete, fabricated steel, laminated timber and prefabricated housing. The review of

price indexes of machinery and equipment purchased by industry, including selection of appropriate specifications and collection of prices, continued throughout the period. Machinery and equipment price indexes relating to the foods and beverages industries and to construction are close to completion.

In the service industries area, planning and initial negotiations respecting the development of indexes measuring the movement of prices of rail transportation were undertaken in 1969-70. With respect to the distributive trades, a study was begun to determine the conceptual basis for pricing distributive margins and to identify the statistical problems likely to be encountered in the development of price indexes of distribution.

A project to automate the production operations for industrial price indexes was initiated in 1970 and is being carried out by a special team of subject-matter, survey research and computer specialists. A preliminary design of the system was completed in 1969-70 and the detailed systems analysis was begun in February 1970.

Transportation and Public Utilities Division

During the year, a reorganization of the Division was initiated. With the appointment of an Assistant Director, an Operations Section was established with responsibility for all aspects of collection, compilation and production of all publications, special tabulations, etc. in the area of Transportation and Public Utilities.

The Director chaired the first session of the Sub-Committee on Transportation and Communications Statistics of the Inter-American Statistical Institute in Washington, D.C.

After extensive study and negotiations, the Dominion Bureau of Statistics, effective January 1970, implemented a completely revised programme of railway freight commodity statistics in the Transportation Section. This programme is divided into two main areas, namely:

(a) A commodity conversion project - In an effort to make railway commodity statistics compatible with those for other modes of transport as well as with other commodity series published by the Bureau, the *Railway Freight Traffic* publication has been converted from the old 267 commodity series to a new series of 320 commodities, based on the Standard Commodity Classification or SCC. Involved was the development of a commodity conversion system to convert each of the railways' 13,000 commodities, based on a different commodity structure, to the new 320 SCC-based codes.

(b) Railway carloadings statistics - Beginning in 1970 the *Railway Carloadings* series was expanded to show a 70-commodity breakdown in place of the previous 48-commodity split. This expansion also permits the segregation of commodities which have been gaining in economic significance such as potash, sulphur, lead and zinc ores, and plywood among others.

In addition, the new series will show tons loaded. This should provide a more effective as well as stable measure of traffic volume overcoming the problem resulting from the introduction of larger equipment. The frequency of this publication has been changed to monthly from four times monthly. However, total carloads and tons along with piggyback carloads and tons for Eastern and Western Canada will continue to be published on a four-times-monthly basis in the *DBS Daily*.

After some study the Prices Division and the Transportation Section have arrived at preliminary proposals for the development of a railway freight rates index. Negotiations are currently proceeding with the Canadian Pacific Railway to gain access to computer print-outs to obtain the required information.

The shipping series, which covers over one hundred and fifty thousand commercial vessel arrivals and departures, has been fully computerized for the production of monthly and annual data. Annual output has been expanded considerably to generate full origin and destination data for all Canadian ports and commodity categories, to satisfy the demand for this information both in industry and government.

The monthly canal series has realized a significant improvement in timeliness due to the adoption of new tabulation and publication printing procedures, while the annual report *Water Transportation* has been broadened to include private carriers, that is those which essentially comprise a branch of a firm established to transport the goods of the parent company. A special paper entitled *Trucking in Canada 1957-1967* was prepared and presented to the Annual Meeting of the Canadian Trucking Associations.

This paper effectively closed out the Motor Transport Traffic Survey as estimates were made to cover those years during which

the survey was conducted but no information published.

Considerable progress was made in planning a new survey to replace the Motor Transport Traffic Survey. Originally a two-part survey was proposed: (1) a Truck Inventory and Use Survey, and (2) a Commodity Origin and Destination Survey.

Planning for the former was completed in mid-year and a series of meetings arranged with officials of the Department of Transport, Canadian Transport Commission, Trucking Associations and various interested groups and individuals to determine the usefulness of this type of survey. There was general consensus that the information from the proposed survey would only have limited value and further planning was abandoned. In its place a complete revision of existing motor carrier series was initiated. This review is almost complete and is expected to lead to a substantial improvement in the coverage of both financial and operating statistics of the for-hire motor carrier industry in Canada.

Plans have continued with respect to the development of the Commodity Origin and Destination Survey. Field work has been completed and the feasibility of the proposed methodology established. The essential feature of the proposed survey involves the use of individual company waybills or probills in an attempt to obtain detailed estimates of the origin and destination of commodity movements by truck. A pilot study is shortly to be undertaken of a selected number of for-hire motor carriers through the Regional Offices.

During the year a *Transportation Service Bulletin* was introduced, designed both for the quick release of routine transportation statistics and also for the release of special material not normally published.

The Division continued to provide a large measure of assistance to the Canadian Transport Commission in the initiation and resolution of a number of important studies and projects. Notable in this regard was the advice and assistance given to the Research Division of the Canadian Transport Commission with respect to a major study of containerization in Canada through the development of an entirely new approach to the estimation of commodity flows to, from and within Canada.

SOCIO-ECONOMIC STATISTICS BRANCH

The Socio-Economic Statistics Branch is responsible for a wide range of demographic, sociological and economic statistics which deal predominantly with information about persons and families derived from household and institutional sources. They include the following: censuses of population, housing and agriculture; statistics on elementary, secondary, higher and adult education, vocational training and school finance; agricultural statistics; health, vital and judicial statistics; family income, assets and liability statistics. The Branch is also responsible for the field operations of DBS including the labour force survey, and eight Regional Offices, as well as for provincial liaison and consultative services.

The organization of the Branch comprises the following units: a small Branch headquarters staff; Agriculture Division; Census Division; Consumer Finance Research; Education Division; Health and Welfare Division; Judicial Division; Provincial Liaison and Consultative Services; and the Special Surveys Division.

Agriculture Division

The Agriculture Division is responsible for development, operation and co-ordination of statistical systems which provide intercensal estimates of producing units -- acreages and livestock numbers, production, utilization, 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 system 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.

The Division is presently organized into the following 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 are collected largely by means of mailed questionnaires from a special corps of volunteer farm correspondents. Information is published on 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 programme provides a vital year-to-year link with the decennial and quinquennial Census of Agriculture bench-mark statistics. Most of published data refer to provincial totals only. However, 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 programme 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 programme of foreign crop reporting. The review 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 programme, 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, inventories on hand, and so on. 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 by a random point system in the Peace River area to establish acreage of the different crops grown. This was supplemented by a special post-harvest mail survey in 1969. The Seed Unit also conducts a special survey of mustard seed growers along with 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. bee-keeping, 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. Results obtained from these objective estimating surveys show that, for the most part, the techniques are quite satisfactory for these crops.

The Survey Research Unit is associated with most of the development work undertaken in the Crops Section involving the application of probability sampling methods, which are now part of the operating tools of the Division, an example of this is the special March 31, 1970 survey of farm held stocks of rapeseed in the Prairie Provinces. The Survey Research Unit has been active also in fostering the interchange of statistical information with provincial agriculture statis-

tical offices and has co-operated with the Canada Department of Agriculture in the Canadian Plant Disease Survey.

The regular operating programme 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 as of 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.

During the past year, work in the area of probability sampling has been carried a stage further by the introduction of non-response surveys. These were carried out in Alberta (cattle-on-feed) and in Ontario (hogs) to test the hypothesis that those producers who do not respond are not different, as producers, from those that do respond. These surveys were introduced in the summer using a subsample of areas. Probability of selection of areas was in proportion to the number of hogs or cattle on feed in that area. Farmers selected were visited and enumerated. Results indicated that in general the hypothesis held, although the sample was too small to be able to make definitive statements of this nature for all subareas. Lack of funds prevented larger samples at this stage.

In the previous annual report a more detailed summary of the probability sampling method used was presented. The method is entitled Replicated Sampling and is employed to derive laying hen and egg estimates for Nova Scotia, hog inventory and farrowing estimates for Ontario, and cattle-on-feed inventory estimates for Alberta. The method is proving successful, but maintenance of a current mailing list is proving to be the most formidable part of the process.

Electronic data processing has been introduced to some of the Section's surveys, but unfortunately shortage of programmers, reorganization of the Computer Branch, introduction of new computers, have all helped to slow down the process. Considerable exploratory work has been done, however, with the Computer Systems Development Division.

Further evaluations of output were made during the year in consultation with users and suppliers of statistics. As a result, several changes to content matter were made.

Collection of fresh, cured and uncured meat inventories was discontinued from January 1, 1970, and also for lard, tallow, and margarine except that in the case of the latter cessation commenced March 1, 1970. Poultry inventories are presently being evaluated relative to eliminating fresh stocks and collecting the frozen product only. Savings to date, however, have allowed taking on publication of intentions regarding stocks of turkey meat in cold storage.

Starting with April 1, 1969, the Poultry Division of the Canada Department of Agriculture became completely involved in the collection of stocks of poultry products in the four Western provinces, and similarly for the Eastern provinces commencing April 1, 1970.

Preparation of a Dairy Industry Handbook is reaching its final stages to be released some time early in 1970.

The feasibility of collecting dairy and cold storage statistics for Newfoundland was explored and a decision was reached not to do so.

Hatchery placements and other associated data have reached such a stage that only an end-of-year Turkey Survey is now required. Previously this Survey was conducted also on June 1, and August 1, as well as on December 31, but these two earlier surveys have now been dropped.

During the fiscal year 1969-70 the Farm Finance Section continued its regular programme of activities dealing with the 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, policy decisions and economic research.

During the past year, the Farm Finance Section was involved in the general improvement in timeliness of the preparation of statistical series for inclusion in the National Accounts. This involved the preparation of quarterly estimates of farm cash receipts and value of changes in farm inventories of crops and livestock 35 days after the close of the accounting period instead of the former 60 days. Most of the statistical series prepared by the Farm Finance Section were stored in the Bureau's data bank (CANSIM) and considerable effort was devoted to the development and testing of retrieval methods. The revision

of the index of farm prices of agricultural products was completed and the results published. These revisions included a conversion 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, and, since 1957, an increase in the number of commodities included.

The Special Projects and Research Section was assigned a major responsibility in the planning and development of computer systems for the processing, storage and retrieval of data collected in surveys conducted by the Agriculture Division. These activities involve co-ordination of the work by commodity statisticians in the Agriculture Division and technical specialists in the Operations and Systems Development Branch. The Section also participates directly in defining the requirements for data processing and in specifying the contents and format of data input and output. During 1969-70, attention was centred on the initial planning associated with computer processing systems for (1) the Central Register of Farms and (2) the June and December Surveys of Crops and Livestock.

The general requirements have been determined for some major changes in the computer processing system which was developed for the 1966 Farm Mailing List. The new system, designated as the Central Register of Farms, is intended to extend and add to the capabilities of the current system. Increased flexibility and efficiency in the system are expected from extending the use of generalized programmes for data retrieval which would provide several options for the contents and format of address labels and lists of farms for survey operations.

Plans for additional capabilities provide for the selection of samples for commodity surveys from the master tape file, and the creation of secondary tape files containing the mailing lists and other relevant information for commodity surveys. Consideration will also be given to the development of an integrated operation for the correction of data records on the secondary files for commodity surveys and the master file for the Central Register of Farms.

The June and December Surveys of Crops and Livestock provide for the collection and processing of primary data on the operation of farms in a semi-annual mail survey with reference dates of June 1 and December 1. These surveys consolidate the collection of data for several agricultural commodities on one questionnaire. The data are used in calculating statistical indicators required to derive the official estimates for several basic series in the present integrated system of agricultural statistics. In terms of the volume of questionnaires and the input of

personnel resources required by the manual system of data processing, the June and December Surveys qualify as the largest project in the programme of the Agriculture Division.

The development and application of an electronic data processing system for the June and December Surveys of Crops and Livestock is directed toward achieving four objectives:

(1) An improvement in the quality of survey data output and the statistical estimates is expected from the completely consistent application of editing and other processing procedures.

(2) A gain in timeliness for release of the statistical estimates derived from the survey data can be obtained through an anticipated reduction in elapsed time for the data processing operations.

(3) Satisfying the demands from the agricultural sector of the economy for new series of statistics and for greater detail in existing series of statistics becomes more feasible with the increased capability provided by an electronic data processing system.

(4) Research projects which require extensive data manipulation to examine data characteristics, reporting errors, memory bias and response habits will be facilitated by storage of the survey data in a form that is appropriate for the application of computer processing methods.

Census Division

Activities in the Census Division during the past year have been directed toward the finalization of plans in preparation for the 1971 Censuses of Population, Housing and Agriculture. The September 1969 Trial Census was the last in a series of tests which began in 1967 during which the merits of self-enumeration and mailing techniques for the distribution and return of the questionnaires were investigated. The localities selected for this final test were the cities of St. Catharines and Sherbrooke together with their surrounding areas, and the rural area encompassing Souris, Manitoba. As a result of this extensive testing programme, almost all aspects of the full-scale 1971 operation are now in their final stages.

The response rates from these tests have indicated the feasibility of the proposed techniques. In 1971, therefore, a system of enumerator "drop-off" self-enumeration questionnaires will be employed for the majority of the population. In the larger urban centres, the questionnaires will be completed

by the householder and returned by mail. In the smaller centres and rural areas, the questionnaires, including the Agriculture Questionnaire where applicable, will be retained for "pick-up" by the enumerator. The traditional canvasser enumeration will be employed for only a small percentage of the population residing in certain remote areas such as outposts in Newfoundland and the Northwest Territories.

The lists of questions to be included in the Censuses of Population, Housing and Agriculture which have been under study for the past three years, were given final approval by the Governor in Council in January 1970. Development of the computer edit specifications and the tabulation programmes are approaching completion. Both the content and the tabulations have been discussed with federal and provincial agencies and consideration has been given to briefs submitted by non-governmental statistical users such as universities and urban-planning concerns.

While self-enumeration techniques are expected to improve the quality of the census product, the use of sampling in the 1971 Census is expected to reduce costs and provide more timely data. The tests and studies that have been undertaken since early 1967 indicate that a 33 1/3 per cent self-enumeration sample for all but a few basic Population and Housing questions, will not adversely affect the quantity of small-area data that can be provided, as compared with earlier censuses. It is planned, therefore, that two of every three households will complete a questionnaire containing only basic questions about age, sex, marital status, mother tongue, and a few housing items such as tenure, type of dwelling, number of rooms, and sanitary facilities, while every third household will complete a questionnaire containing the full range of approved socio-economic interests.

Meetings were held with principal statistics users in an effort to inform them of the proposed tabulation and publication programmes which have assisted in the plans for the dissemination of the 1971 Census results. The methods and procedures that will be required to handle the expected heavy increase in requests for both standard and special census tabulations have been studied. A lexicon of census terms and definitions has been initiated for the benefit of the users.

In anticipation of an ever-increasing demand for small-area data, a series of maps for such users is under development. Research has been conducted into the definition and criteria for the delineation of urbanized areas and the coding of the question on place of work is being studied with particular attention being given to the level of the coding.

Experiments have been carried out to examine methods to extend the range of tabulations, and in particular, the speed with which both publications and access to tabulations will become available to the user. As a part of this programme, there has been continued participation in the development of a "geocoding system" which will provide rapid and economical access for special tabulations of non-standard areas. Twelve urban centres have been designated for "geocoding" and at present, area master files are essentially completed for five of these centres. Plans are well under way to link the Population and Agriculture Questionnaires thus providing considerably more useful population data for farming interests than has been available in the past.

The Division has continued to release the regular series of reports on estimates of population and families. Current statistics on citizenship, immigration, and migration were updated and processed, and mid-month estimates for vital statistics rates were initiated. A new series of population projections by age and sex up to 1984, based on 1969 post-censal estimates was prepared for all of Canada. The two volumes of the 1961 Monograph, *Internal Migration in Canada*, were published.

Members of the staff represented the Division and the Bureau at national and international meetings which included the Population Association of America, Ontario Institute for Studies in Education, and the Association of Canadian Map Libraries.

Consumer Finance Research Staff

A special historical report, *Incomes of Non-Farm Families and Individuals in Canada, Selected Years, 1951-65* (Cat. No. 13-529) was released in 1969. In addition to income distribution statistics for family and individual characteristics such as age, and family size on a current dollar basis, the report contained statistics on constant dollar income series expressed in 1961 dollars as well as statistics on the quintile composition.

The 1970 Survey of Consumer Finances was pretested in May 1969 by two methods of enumeration - self-enumeration and enumeration by interviewers. After analysis of the results, the decision was taken to use interviewers to collect the data. A special report has been completed on the test *Consumer Finance Research Pilot Survey 1969: An Evaluation of Enumeration Methods*.

The planning of the 1970 Survey of Consumer Finances was completed and the field work for the survey will take place in May 1970. Approximately 12,000 households will be interviewed in this survey which will collect

data on balance sheets as well as income. Similar surveys were carried out for the years 1955, 1958 and 1963 but this is the first such survey to include farm households. Further, the questionnaire has been expanded to obtain much more comprehensive coverage of assets and debts. For example, data will be collected on equities in businesses. The major assets excluded from the survey are equities in insurance and pension plans but data will be collected on premiums and contributions.

The staff collaborated with the Prices Division on the planning of the national Family Expenditures Survey which took place in February - March 1970. Both surveys have a common core of questions and concepts so that when data become available from both surveys they can be integrated to maximize the usefulness of statistics collected.

Programming delays have held up completion of the 1968 Survey of Consumer Finances. However, preliminary results were released in the fall of 1969 along with some updated estimates of the population in poverty and their characteristics. Programming was almost completed at year-end so that tabulations should be available early in 1970-71 with the final report released in the summer or fall of 1970.

The 1968 Survey of Consumer Finances and the 1968 Household Facilities Survey interviewed almost the same set of households. A linkage of these surveys has been planned and an analysis developed of the data. Programming of the tabulations has been contracted out and should be completed by mid-1970. A special report will be issued later in 1970. It is hoped that such linkage will be a regular feature of future surveys.

The methodological problems of developing small-area income estimates are nearing solution and estimates should be ready in 1970-71. A preliminary release will be made in the *DBS Daily Bulletin* with publication following later. As part of the development of estimation procedures, special analyses were made of the coverage of income tax statistics which will be used as projectors in the series. Reports are being prepared on the taxation statistics studies and will be made available to users on request.

A paper was prepared on *Some Comparisons of the Canadian - U.S. Income Distributions* for the International Conference on Income and Wealth held in Israel, September 1969. This paper will be published in the *Journal of the Association*. A study was completed on the problems of measuring the self-employed labour force on labour force surveys. A report was prepared on the study and this will be a background paper for evaluating the present concepts. The planning of a number of new research studies has been started.

The Co-ordinator represented Canada in Geneva at the Conference of European Statisticians Working Group on a System of Demographic and Social Statistics while another staff member participated in the Working Group on Income and Expenditures Statistics. The staff provided special assistance on a number of government white papers such as that on social security. The staff participated actively in all subject-matter aspects of the planning of the 1971 Census of Canada. The staff provided consultative services to other government departments as well as to outside users.

Education Division

The Education Division reports on all aspects of education in Canada. Data are collected on kindergartens, elementary, secondary schools, colleges, universities, adult education, and on trade and technical education. Reports are published on enrolments, staffs, and finance at all levels of education.

The vast majority of education is carried out under the authority of provincial governments and thus the bulk of the data required to create a portrait of the national educational effort is solicited from provincial departments of education. In general, information on private schools and post-secondary institutions is obtained directly from the institutions concerned.

The magnitude of the education system, and the rapidity with which changes are being introduced, has created a need for serious reassessment of existing statistical programmes and the initiation of new programmes to meet new demands for a wide range of information. Education has become the country's leading industry in terms of the percentage of the population involved, and in terms of its demands on available revenues. Some thirty per cent of the entire population of Canada is directly involved in education either as students or as staff members of educational institutes. The total cost of operating this vast enterprise is about seven billion dollars per year. In other words, twenty per cent of all tax revenues derived from all sources by all levels of government is dedicated to education.

The Elementary and Secondary Education Section of the Division provided important information on this largest of all segments of education, during the year under review. The following publications were made available: *Enrolment and Staff in Schools for the Blind and Deaf, 1969-70*, released February 1970; *Statistics of Private Elementary and Secondary Schools, 1968-69*, released November 1969;

Private Kindergarten and Nursery Schools, 1968-69, released July 1969; and *Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools, 1967-68*, released May 1969. The difficulty encountered in securing data from certain provinces has delayed the publication of national enrolment statistics. Initiatives were taken during the past year which should result in an improvement of the timeliness of publications on elementary and secondary enrolments. Included among these initiatives is a projected series of regional publications.

The most important development during the year under review was the initiation, on a pilot project basis, of permanent update records and reports for teachers in the public schools of New Brunswick. The project involves the creation of a basic file on each teacher, and update of the master file.

A co-operative effort was set up with the province of Nova Scotia in processing teacher data: the teachers' documents were edited and coded in the province; DBS did the keypunching and editing; DBS provided the Department of Education with a duplicate tape and some other output in the form of listings and tabulations.

In an attempt to obtain some estimates of teacher characteristics earlier than is now possible through our regular survey, the Section undertook to draw a ten per cent sample of schools and make estimates on the basis of the sample data. At this point in time it is too early to judge the success of the venture. However, preliminary results for two provinces indicate that it is possible to estimate, with an acceptable degree of precision, certain characteristics of the teaching staff.

The Higher Education Section succeeded during the course of the past year in putting all of its publications on a current basis. The co-operation of all the universities and colleges which are included in the surveys deserves mention.

A Higher Education Advisory Committee was established during the past year. This relatively small, though representative group, has provided important advice and assistance in deciding upon priorities and programmes.

The following publications of the section represent only a part of the service which is rendered to the community: *Salaries and Qualifications of Teachers in Universities and Colleges 1968-69*, released September 1969; *Salary Scales for Teachers at Canadian Universities and Colleges 1969-70*, released June 1969; *Survey of Higher Education - Part I: Fall Enrolment in Universities and Colleges*

1968-69, released September 1969; *Survey of Higher Education - Part II: Degrees, Staff and Summary*, 1967-68, released May 1969; *Tuition and Living Accommodation Costs at Canadian Degree-Granting Universities and Colleges*, 1969-70, released August 1969; and *Awards for Graduate Study and Research*, 1969, released August 1969. Close contacts are maintained with the Canadian Association of University Teachers, the Association of Universities and Colleges of Canada, the Canada Council, and other bodies to whom information is supplied.

In the Research Section, most of the 1969-70 fiscal year was taken up with the planning, conducting, and producing of the *Post-Secondary Student Population Survey*, 1968-69. This was done on behalf of the Federal Department of Finance, Department of Secretary of State, and all the provincial government departments involved in Student Aid. Delivery of 1,557 pages of tables to the agencies involved was made in September 1969 and a general publication was produced for public release in April 1970. Other activities included the preparation of a Reference Paper on Canadian Education for the Department of External Affairs and a chapter on Education for the Canada Handbook.

The year under review saw the publication of the following library surveys in the Adult Education Section: *Survey of Libraries, Part II: Academic Libraries*, 1966-67, July 1969; *Survey of Libraries, Part I: Public Libraries*, 1967, August 1969; and *Preliminary Release, University and College Libraries, Academic Year, 1968-69*, January 1970. In order to meet the changing needs of the library community, work was started on the revision of all questionnaires and the creation of new collection documents for both provincial and regional libraries. These activities are being carried out in close collaboration with the Statistics Research Committee of the Canadian Library Association. The design of two new surveys in the field of adult education was undertaken during the year. One covers the field of adult education at the elementary and secondary levels, and the other deals with the extension work carried on by universities. The latter survey has received considerable support and assistance from the Canadian Association of Departments of Extension and Summer Schools. It is expected that two new publications will appear in 1970.

The survey, *Canadian Education Through Correspondence* covering the academic year 1967-68 was completed in 1969 and release is expected before the end of April 1970. For the first time correspondence courses either offered or sponsored by business and industry were included, and the area proved to be of considerable size. A preliminary release was prepared in April 1969 and 250 copies taken

to the Eighth International Conference on Correspondence Education, held in Paris, May 19-23, 1969. Over 200 delegates attended, with representatives from every continent. That the Canadian government sent an official representative, Mrs. Cameron, Chief of the Adult Education Section, seemed to be much appreciated by the officials in charge. She was asked to chair one plenary session, when the Japanese delegation (over 20 members) made its presentation. (Its spokesman has been in educational television for 20 years.) She was also made a member of the Nominating Committee, composed of representatives from each continent. After the conference, a visit was arranged with Mr. Bellis in London, in charge of adult education statistics for England and Wales, and discussions were held with several other adult education officials.

A grant from the Canada Council made it possible to engage the services of Mr. Walter Herbert as an expert consultant in the field of cultural statistics. Under his guidance and with considerable assistance from practitioners in the field, preparations are being made to survey professional drama and other related activities. A fresh survey was prepared to cover Museums and Art Galleries which have not been reported on since 1964.

Demands on the resources of the Vocational Training Section for the collection and publishing of statistics on education at the post-secondary, non-university level were increased substantially during the year due to the continued expansion of the community college system, a further extension in the number and variety of programmes offered and a consequent growth in enrolment. As a result of the increased importance of these institutions, a project was approved in January 1970 to publish a statistical report on *Canadian Community Colleges and Related Institutions - Full-Time Fall Enrolment and Other Information, Academic Year 1969-70*. One objective of this publication - apart from providing data on a more timely basis - is to report, for the first time, all enrolments at this level including university transfer students. Previous reports on education at this level presented data on enrolments in vocational programme only.

There were incipient developments in the collection of data from post-secondary institutions in Ontario. The Ontario Department, in planning the computerization of records at the CAAT's, has initiated discussions with a view to preventing duplication of effort in the acquisition of data. Their preliminary suggestion is to provide them with the types of data required so our needs can be incorporated into their planning.

With the introduction of semester and trimester system, as well as full-time summer

sessions into post-secondary institutions, the point was reached where consideration must be given to the collection of flow statistics instead of conducting a single survey each fall.

The problem of classifying vocational high school students as such became more acute during the year as more schools experienced difficulty in reporting this type of information. While an attempt was made following the expiry of Programme 1 of the TVT Act to maintain statistical continuity, it had become increasingly more evident that changes in education systems were weakening the distinction between vocational students and those in general programmes. Consequently, data provided by schools were becoming more and more meaningless.

As a way out of this situation, new policy was formulated that, beginning with the 1970-71 school year, enrolments would be classified by grade according to the particular programmes of the various provinces instead of by vocational course by grade. An analysis of enrolments within this context should provide a more useful picture of the numbers who will be entering the labour force, at certain periods, from high schools, and a more meaningful assessment of the degree of preparedness with which they do.

The only significant development in the collection of trade-level data was the making of an informal agreement with the Alberta Department for the provision of computer print-outs in lieu of quarterly, hand-compiled reports.

The Vocational Training Section released the following publications during the 1969-70 fiscal year: *Statistics of Private Trade Schools, 1968*; *Statistics of Private Business Colleges, 1968*; a twenty-page brochure on post-secondary vocational courses in publicly operated institutions in Canada, 1969-70; *Survey of Vocational Education and Training, 1966-67*; and *Survey of Vocational Education and Training, 1967-68*, was completed during the year, and is expected to be released by the end of April, 1970.

A high rate of attrition continued to be suffered by the private business college community throughout the year. The number of schools now involved (circa 85) raises the question of whether a separate survey of these institutions each year is still warranted. It may now be more realistic to include these colleges as a subclassification of private trade schools.

The following surveys were published by the Finance Section: *Survey of Education Finance, 1966*, February 20, 1970; *Canadian Universities, Income & Expenditures, 1966-67*,

January 19, 1970; and *Preliminary Statistics, Chapter V, Education Finance*. Also, the following special reports were released: *UNESCO Report on Education Finance, 1967*, forwarded in July 1969; and *Salaries and Wages in Education, 1967*, forwarded to the Labour Division and the National Accounts Division, in November 1969.

Professional members of the Finance Section attended the annual conference of the Canadian Association of University Business Officers (CAUBO) at the University of Western Ontario in June 1969, and the annual conference of AUCC which was held in Ottawa in November 1969.

During the past year the Projections Section devoted considerable effort to completing a special project for the Economic Council of Canada which presented and analysed enrolments at all levels of education from 1951, and projected them to 1980-81. A report was prepared, in collaboration with H.S. Tjan, on the possibility of constructing an educational model which would serve the needs of the Economic Council and other agencies concerned with educational and manpower planning.

Advance Statistics of Education 1969-70 was published well before the beginning of the academic year; variances between actual enrolments and those forecast were less than one-half of one per cent. Considerable time was devoted to studying the feasibility of making projections of educational expenditures based on the enrolment projections prepared for the Staff Study of the Economic Council.

The implementation of the interprovincial information system on education continued to be a matter of major concern during the year under review. Meetings and discussions were held with each of the provincial departments with the result that substantial advances were made toward the creation of teacher files with three provinces; additional developments are planned.

Discussions on a new structure for the Division were initiated in October, when the Director assumed office. The need for a more flexible organization has become apparent as the dynamics of education make themselves evident in the development of new administrative arrangements, the growth of new institutions, and changes in legislation affecting education. The pattern which is emerging is taking the form of interdependent sections: Students, Staff, Facilities, Finance, and Cultural Activities. It is expected that a higher degree of integrated output will result from this new structure, and that more effective use of resources will be made. The development of a series of surveys on Community Colleges, for which the planning was carried

out during the latter half of the year, will provide a first test of the effectiveness of the new organizational structure.

In addition to the reorganization of existing sections, a new section was created which will concern itself with the problems of the economics of education. Labelled Economics, this new section was not operational during the year under review. It is expected that it will be staffed during the year 1970-71.

The year under review is difficult to assess in view of the fact that the new Director assumed office in October 1969. The tasks of maintaining existing statistical programmes, responding to new demands, and attempting to reorganize the Division, have all combined to present what may appear to be a lack of sense of direction. However, there is emerging a new orientation for the Education Division which will be more in tune with the universe of Canadian education.

Health and Welfare Division

The Division is responsible for the production of statistics on the status of health of the Canadian people, the occurrence of illnesses, and the distribution, cost and availability of health care and treatment. (In the past the Division was also responsible for statistics of law enforcement and the administration of justice but these two functions were transferred during the year to the newly created Judicial Division.) Four sections share the responsibility for producing divisional statistics. The areas of birth, death, marriage and divorce are the concern of the Vital Statistics Section. In addition to carrying out general surveys of these events, the Section conducts special studies such as, for example, of mortality, fertility and life expectancy. The measurement of patient characteristics and patient movement, as these relate to mental disorders and the use of psychiatric facilities, is the responsibility of the Mental Health Section. The Public Health Section has been assigned the investigation of individual conditions and personal characteristics of patients in general and special hospitals and in tuberculosis institutions, the volume of newly discovered cases of malignant neoplasms and the incidence of communicable diseases. The following statistical areas come under the Institutions Section: services, facilities, staff and finances of general and special hospitals and mental and tuberculosis institutions; also the operations of bodies providing related health services or types of related domiciliary care; and, as well, the supply of and the demand for health manpower. These last three named Sections also carry out special studies, as the opportunity and

occasion arise. All four sections integrate their current with their previous output, as much as possible, to facilitate the elucidation of trends, and also seek to make their various series as compatible with one another as the separate circumstances of their origin permit. The Division, on occasion, conducts non-repetitive special investigations. Besides this, the Division also plans continually to extend economically, both in broad and in restricted terms, its coverage of the areas assigned to it. The Division also answers each year a number of special requests, and regularly revises its incoming documents and its outgoing reports, the better to reflect current events - this year, for example, making arrangements to obtain records of therapeutic abortions as these are defined by the Criminal Law Amendment Bill passed in 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 of births, stillbirths, marriages and deaths, as required under Dominion-Provincial Agreements. In addition the Division has been preparing alphabetic registers of births, marriages and deaths on behalf of the provinces and the Family Allowances Administration for certification and verification purposes and provided under these 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 distributing 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, suicide, heart disease,

foetal and infant mortality, nuptiality, fertility, and life expectancy, and deal with the latest trends in these areas and seek to elucidate factors associated with the direction and magnitude of the trends. A series of annual life tables is being initiated in addition to the official quinquennial life tables around Census years, 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 intercensal 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 3 separate annual reports, one each dealing with births, marriages and deaths, to replace the present combined report, was planned.

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 birth, death, and marriage tabulations are being fully computerized.

Negotiations and discussions with provincial authorities are progressing regarding the adoption of a geographic classification so as to permit grouping of individual 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 than it has been possible to compile in the past, including the characteristics of the parties to the divorce, dependents involved, and other statistics.

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 tabulations and other procedures. In addition plans are under way for extending the present series of statistics on causes of death to include all medical diagnoses reported on death certificates. The objective is to provide extensive epidemiological information not previously available, which will give an insight into the etiological processes and interaction of diseases which lead to premature death. At the same time some economies in the production of the present conventional cause-of-death statistics will be realized, as a by-product, through computerization.

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; there will be 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 Mental Health Section is responsible for producing national statistics on admissions, separations and population on books of psychiatric in-patient facilities. These statistics are presented in the form of two annual reports: *Mental Health Statistics - Volume I, Institutional Admissions and Separations* and *Volume II, Patients in Institutions*.

A preliminary report on Mental Health Statistics was introduced during the year under review. This brief publication summarizes data on patient movement for all reporting psychiatric in-patient facilities by type of institution, province and sex. The over-all number of institutional respondents, for all of Canada, increased by 21 during 1969 to a total of 254.

Conversion of diagnostic tables to the *International Classification of Diseases, Eighth Revision, Adapted* and the proposed use of computer print-outs for photocopy were some of the important considerations that guided the planning of revised annual reports during the year.

Exploration was continued into the feasibility of including in annual statistics data on psychiatric patients treated in non-psychiatric wards of general and allied special hospitals.

Active study was initiated into the possibility of producing on an occasional basis separate reports on (i) psychiatric units of general hospitals, and (ii) treatment centres for emotionally disturbed children.

The Section answered numerous special requests originating with governmental and non-governmental organizations and private persons for information in many areas of mental health. In some cases special tabulations and bibliographies were prepared.

The Public Health Section, in carrying out its functions of measuring morbidity treated in general and tuberculosis hospitals and of enumerating the circumstances of the patients cared for, and also of following the course of certain specified diseases, has had to accommodate itself to a variety of reporting and social circumstances. Hospital morbidity is both general and comprehensive and covers millions of persons each year, so there has to be economy in processing and presentation. Reports of communicable diseases form the statistical basis of national

and comparative provincial and local surveillance systems, so speed in distribution of the aggregated figures to public health authorities is essential. Tuberculosis, an insidious disease, has always had a great potential epidemic capacity. For this reason, tuberculosis morbidity statistics combine prevalence, treatment and incidence into one series. Malignant neoplasms, which constitute a major health problem, and which are the focus of great deal of research, attack all body sites, sometimes in succession, and are often the subject of a combination of treatments. To begin to provide more specific statistical information about this disease group than that available from general hospital morbidity, the Section has just begun an incidence reporting system, with emphasis, in the beginning, on purification of a limited body of incoming data. The change in legislation for therapeutic abortions under Section 18, Criminal Law Amendment Act, 1969, led to establishment of a reporting system on numbers of abortions performed in the general and allied special hospitals. This arrangement, undertaken at the request of the Department of Justice, has been made in co-operation with the provincial hospital insurance commissions.

The Section has been represented on a federal "Working Party" on revision of hospital morbidity statistics and hospital admission/separation records. The Working Party was convened at the request of the Advisory Committee on Hospital Insurance and completed its deliberations with the recommendation of a new 188 category Canadian Hospital Morbidity List. This list represents an abridgement of the International Classification of Diseases, adapted for special application in Canadian hospital utilization studies. This group also considered matters relating to the standardization of definitions in use in hospitals.

In order to facilitate the meeting of special requests, the Section has tabulated a good deal of reference material, especially in the area of hospital morbidity, where the available information covers the whole range of diagnosed illnesses. This material is used to answer as many special enquiries as possible; other requests do necessitate individual compilations. The main thrust of the request has been on particular disease conditions and on the most affected demographic groupings. The requests have come from researchers into the cause, prevention and treatment of disease, and from administrators, policy-makers and members of the public. Inquiries, for example, have come from government departments and agencies, including hospital commissions, from Members of Parliament, from medical workers, from students engaged in research, from the news media and from individuals. Diseases that have figured prominently in the requests include the venereal

group, cancer, tuberculosis, endocrine disorders, chronic respiratory ailments and condition resulting from accidental causes. There have also been a number of enquiries from other countries.

The Section also undertook developments and expansions of its own output. It is collating morbidity information in areas such as chronic respiratory, and diabetes, where requests have indicated a strong demand for this type of specifically defined output. The Section also compiled information on venereal diseases to be used in a special report to be issued by the Department of National Health and Welfare. Another addition is the tabulation of hospital morbidity treated in the Yukon and in the Northwest Territories. This expansion is now in production with Indian, Eskimo and other origins being identified.

During the fiscal year the Public Health Section prepared the French manuscript for the "Classification internationale des maladies, adaptée" (Volume 1). One thousand five hundred copies of this reference book have been printed. The companion Volume 2 (Index) has been translated into French, all the medical terms having been converted to machine-readable form in preparation for computer sort and photoproof production. Both these Volumes will be distributed nationally as well as internationally by the Queen's Printer.

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

Annual meetings of this group are held to consider and propose changes in regard to the tuberculosis reporting system.

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, DNHWS, with the collaboration of members of the Health and Welfare Division and representatives of the Advisory Committee on Epidemiology.

This group meets annually to consider new developments and needs in the field of notifiable diseases. In 1970 a new list of reporting cities was established for national reporting purposes, as well as several revisions in disease entity inclusions, particularly in regard to venereal diseases.

The twelve months ending March 1970 were ones of expansion and improvement in existing programmes and introduction of new programmes in the Institutions Section. A new series of computerized data tabulations based on the 1969 revised Annual Returns of Hospitals (HS-1 and HS-2) was developed, incorporating widespread use of direct photocopy methods, thereby reducing the time interval between survey and user availability. Section officers spent considerable time in formulating a new series of hospital indicators (ratios describing all aspects of hospital facilities, utilization services, staffing and finances), which will provide hospital administrators and others with a set of management and research tools that have kept abreast with the changing scene in Canadian hospitals.

Fundamental to the presentation of Annual Hospital Statistics was the creation of a new hospital classification (or breakdown), which again reflects more recent trends in hospital organization by presenting separately, for the first time, data on teaching and non-teaching hospitals and hospitals with or without long-term units, in addition to the established or customary arrangement by type of service. Size-groupings of hospitals according to their bed complement were also reorganized on the basis of an in-depth study.

During the year, considerable time was spent on the development in co-operation with the Canadian Association of Pathologists of a revised Canadian Schedule of Unit Values for Clinical Laboratory Procedures (1970). Additionally, each individual laboratory test was given a 5-digit number to be used across Canada as a common method of identification. Preliminary meetings with counterparts in the United States indicate that the Schedule and its concepts will be adopted for use by the United States hospital system.

Talks continued during the year with representatives of the Canadian Association of Physiotherapists and the Occupational Therapists on the joint development of a unit of measurement for physiotherapy and occupational therapy.

It was also the first full year for hospitals reporting to DBS on the Quarterly Hospital Information System. From correspondence and contacts with participating hospitals and other users (federal and provincial government associations, etc.) it appears that the programme has filled an otherwise serious gap in the availability of timely and meaningful hospital statistics in the form of indicators, necessary for good management and planning. In connection with the Quarterly Programme, the Section has introduced a bilingual publication using photocopy computer output. This will provide users with quarterly data on a

national, provincial and regional basis, shortly after the close of each quarter.

The year in review saw the Institutions Section enter further into the area of Health Manpower Statistics. A need for data on Public Health Nurses' salaries and academic qualifications as expressed by the Canadian Public Health Association and supported by the Canadian Nurses Association, led to the establishment of a Survey similar to that conducted annually for hospital nurses. A set of definitions and a questionnaire were designed by officers of the Section together with the Canadian Public Health Association, the Canadian Nurses Association and the Chief Nursing Consultant in Nursing Advisory Service of the Department of National Health and Welfare. For the first survey only official public health agencies (i.e. Department of National Defence, Department of National Health and Welfare, provincial and municipal departments of health, etc.) were surveyed, covering approximately 3,500 nurses. Computer outputs were received towards the end of the fiscal year and analysis is now proceeding. First publication of data showing salary ranges and averages by a cross-classification of category and training, by type of agency, should be available early in 1970.

The years 1969-70 saw the Section develop the Health Manpower Survey series with the first being on Registered Nurses, as a further step in the development of an over-all Health Manpower Programme. This was developed in consultation with the Canadian Nurses Association and is designed to integrate the requirements of the Departments of National Health and Welfare, of Manpower and Immigration, and the DBS Labour Division, as well as other appropriate national and provincial government agencies and associations. Based on approximately 150,000 individual annual registration forms, the first survey will provide annually such information as numbers, geographic locations, place and type of employment, academic qualifications and other employment characteristics. The design of the programme will allow in depth studies of the supply, educational levels and attrition rates of this major group of health manpower. Longitudinal studies on the geographic mobility, etc. through cohort studies of the groups will assist administrators in developing employment practices to retrieve those who have left the field for non-nursing activities. The programme, to be operational for the year 1970, should see its first publication early in 1971. The system has been designed to accommodate a number of other professional and technical health manpower groups. Arrangements are under way to introduce several other large groups into the system for the 1971 data year.

During 1969, another survey in the Health Manpower area was introduced by the Section, entitled "Survey of Educational Facilities for Health Occupations". This was formulated in conjunction with the Health Resources Directorate of the Department of National Health and Welfare, to assess the present and future potential supply of trained personnel for the health occupations in Canada. Included in the survey were hospitals, universities, community colleges, trade schools, regional schools of nursing, etc. Data are at present undergoing analysis and a report on significant findings will be forthcoming during the 1970-71 period.

Plans have been developed to automate the production of the annual list of Canadian Hospitals and Related Institutions and Facilities. The method would allow for continual updating of the list to account for closures, openings, changes in bed capacity, classification, etc.

Discussions were held with officials of the Canadian Council on Hospital Accreditation and other agencies on the definition and categorization of nursing homes in Canada, an area into which the Section will soon be expanding, as well as the Welfare Institutions field. Section officers were engaged in revising the Classification of Health and Welfare Organizations in the Standard Industrial Classification Manual, to ensure that definitions and classifications had kept pace with the changing scene in this area. Liaison was maintained with officers of the Public Health Section, Health and Welfare Division, towards the eventual production of a "melding" programme between hospital utilization, activities and costs and selected morbidity categories.

In addition to the aforementioned activities, the Section in its regular programme published the eleven annual reports on the hospital industry in Canada and the analysis is nearing completion on the 3rd Annual Salaries of Hospital Nursing Personnel. Many varied requests were handled from a wide cross-section of users of the Section's data, including those originating with management consultant firms. The Section during the past year contributed several original articles to a leading hospital journal.

Officers of the Section were also involved in a number of training seminars or institutions for hospital administration personnel to explain reporting requirements and the use and interpretation of data from the various programmes. Additionally, in concert with the Department of National Health and Welfare and the Canadian Hospital Association, Section officers participated in the development of uniform hospital terminology through a special working party with representatives from the hospital and health fields.

Judicial Division

The Judicial Section became a division on July 1, 1969. The principal objective of the Division is to measure the effectiveness of the judicial process: law enforcement, judicial procedures, rehabilitative services.

New programmes stress reduction of respondents' work load by devising reporting systems based on either "administrative-statistical" or "legal-statistical" forms which provide complete and accurate operational data, various means of feeding back to the respondents information for administrative or social research, and the integration of statistical series within provinces.

In connection with the adult courts statistical programme with Quebec, tabulation and relevant listings were made available to the Quebec Department of Justice. A probation reporting form, linked to the court and prison systems, was tested. Systems development was commenced for the adult court statistics programme with Alberta.

With regard to the Manitoba juvenile reporting programme, codes, coding and key-punch instructions as well as edit specifications were designed and tabulation requirements defined. An agreement was reached with British Columbia to process juvenile court statistics by means of a somewhat similar system. However, because of revisions to their Provincial Act such a system would increase the work load on respondents. An administrative statistical system is now being discussed and considered.

The Division responded to a request for technical discussions on a prison and probation reporting system for Nova Scotia. Detailed points of view on suitable form content and procedures to control such a form were exchanged.

Several studies have been undertaken or were in progress during the fiscal year 1969-70, notably the studies on penitentiary recidivism, robbery and crime rates. The penitentiary recidivism study was implemented at the request of the Department of the Solicitor General and the Chairman of the National Parole Board. It is the first survey of its type in Canada. The resulting trends, tendencies and projections will assist the Department of the Solicitor General in future planning.

The first listing of data derived from the revised national parole statistical programme was transmitted to the National Parole Service.

The two-year study on robbery ended in 1969. It extended the Uniform Crime Reporting

Programme to cover, by province and metropolitan area, all robberies and attempted robberies committed in various types of establishments. Its object was to facilitate analysis and co-operative planning at the local level with regard to this type of offence. Resulting annual data appeared in a supplement to Crime Statistics (Police).

The RCMP agreed to report all statistics for offences under the Narcotic Control Act and Controlled Drugs of the Food and Drugs Act, notably LSD, and to score them in conformity with the national system of uniform crime reporting.

Quarterly, semi-annual and annual tabulations on crime and traffic enforcement statistics were forwarded to Provincial Departments of the Attorney General, the UCR Committee of the Canadian Association of Chiefs of Police and the Quebec and Ontario Police Commissions. A Police Records Manual, prepared at the request of the Canadian Association of Chiefs of Police was approved by a work group of serving specialists in records and statistics, at a meeting held in December 1969. The manual, which is being prepared for publication, provides guidelines for records systems to ensure better statistical reporting.

Discussions took place with the President and Members of the Quebec Police Commission regarding the provision of extra copies of Uniform Crime Reporting forms to police respondents in Quebec for completion and submission directly to the Commission offices in Quebec City.

Under the Respondent Review Programme, field trips were made to police departments and courts. The objective of this programme is to encourage good reporting practices.

A time series analysis of crime rates in Canada was completed. This publication, the first of its kind, is based on the population sixteen years of age and over. It contains a description of the component movements present and aims at studying the secular, cyclical or seasonal element of the series in isolation with a view to estimating short-range forecasts of the number of persons convicted of indictable offences.

Provincial Liaison and Consultative Services

This Staff co-ordinates and initiates the Bureau's contacts with Provincial government departments, particularly in their capacity as producers and users of statistics, and responds to their requests for general or specific assistance. In addition, the Staff performs a co-ordinating role in the area of Travel, Tourism and Recreation Statistics.

The Co-ordinator and members of the Provincial Liaison Staff visited provincial officials in all the Provinces, participated in a variety of formal and informal meetings outside the Bureau, and organized meetings between provincial officials and appropriate staff in other DBS Divisions. Members of the Staff participated in a variety of internal Committee meetings which involved policy and programme developments affecting the Provinces. Consultative work was undertaken for some provincial departments. The major project undertaken by the Staff was a survey of all Co-operative Agreements between DBS and each of the Provinces.

In order to improve its liaison and consultative responsibilities, two Provincial Liaison Officers were appointed at the end of the year to operate from the Bureau's Regional Offices in Halifax and Edmonton.

As the Secretariat for the Federal-Provincial Conference on Economic Statistics, the Staff began preparations for the Seventh Conference to be held in Banff, Alberta, in May 1970.

The Co-ordinator and other members of the Staff were extensively involved in the preparation of a Bill to amend the Statistics Act.

The Staff is now the focal point in the Bureau for statistics in the field of travel, tourism and recreational statistics. An Assistant Co-ordinator (Travel) was appointed in January 1970. He acts as an alternate to the Co-ordinator as DBS representative on various committees concerned with travel statistics and research. He is reviewing the recommendations of a Consultant's Report on travel statistics commissioned by DBS, with a view to its implementation or rejection in some cases, and further study in others. The Assistant Co-ordinator (Travel) is a member of a Committee, with representatives from other DBS Divisions, which is looking into ways of improving travel statistics at the Bureau, initially concentrating its efforts on travel by air.

The Co-ordinator participated in the Federal-Provincial Conference on Tourism and in all meetings of its Technical Sub-committee, the First Canadian Travel Trade Congress, and in the annual meetings of the Canadian Tourist Association and the Western Council on Travel Research.

Plans have been well advanced by a variety of agencies for a major household survey on travel by Canadians. Members of the Staff contributed to the development of these plans. The Co-ordinator has also participated in the planning and execution of a series of

experimental interview surveys of tourists from the United States. The results of these surveys will assist in the planning for improved methods of data collection on a continuing basis in the future.

Special Surveys Division

The Special Surveys Division together with the support of eight Regional Offices located throughout the nation is responsible for all field survey activities within the Dominion Bureau of Statistics. Under the Division's direction, the Regional Offices engage in a wide range of activities to provide the nation and interested DBS Divisions with statistical information. Data are gathered in both report form from local business and through monthly surveys. The returns from the Labour Force Survey, the Consumer Pricing Surveys and the Job Vacancy Survey are important measures employed to satisfy the needs of statistics users while simultaneously directed to promote the use of statistical products.

The monthly Labour Force Survey involves 750 part-time interviewers who obtain information through personal contact each month with a sample of nearly 30,000 households scientifically selected as representative of all the geographic and economic regions across the country. These questions pertaining to labour force activity provide information for a monthly bulletin entitled "The Labour Force" which concerns itself with details of employment and unemployment in Canada and in the five major regions of the country. Special questions relating to matters of current interest are included in such monthly surveys. During the 1969-70 fiscal year, questions dealing with rents paid, household facilities and equipment, smoking habits, hours worked, paid workers, immigration and education were incorporated at the request of other divisions within DBS and of other Federal Government Departments. Similarly, special surveys were conducted. During 1969, 1,200 households were contacted monthly in the National Feed Expenditure Survey. Over 600 interviewers were employed in early 1970 by the Regional Offices to interview a sample of 22,000 Canadian households for the Family Expenditure Survey. This survey represents the second phase of a national expenditure survey programme and is at present, the most ambitious programme of its kind to be undertaken in Canada, covering the rural non-farm and farm as well as the urban population. Preparations have also been made to carry out the eleventh household Consumer Finance Survey at the beginning of the 1970-71 fiscal year. Previous questions were largely limited to the collection of income data, however, 1970-71

respondents will be interviewed on a wider range of financial topics to obtain complete records of family income, assets and indebtedness. Together the Family Expenditure and Consumer Finance Surveys will provide the most comprehensive record of family income, expenditure patterns, assets and debts ever compiled by the Dominion Bureau of Statistics.

During the year, the Job Vacancy Survey continued to develop its coverage of all economic sectors excluding agriculture and by

the fiscal year-end, the Job Vacancy Survey master files were virtually completed. As the initial profiling stage was concluded, manpower resources in the field were diverted to the increasing work loads of the follow-up interview phase.

The manpower commitment was similarly adjusted as the Regional Offices became involved in the numerous Census tests and trials which will considerably determine the specific procedures to be employed in the 1971 Census.

OPERATIONS AND SYSTEMS DEVELOPMENT BRANCH

The function of the OSD Branch was to provide the statistical and administrative branches of DBS with professional and technical skills and equipment services which could not economically be decentralized. The Data Processing Services Division provided both mechanical and electronic data processing services, from peg-board additions and other desk calculator work through data conversion to modern computing. The Computer Systems Development Division provided the professional advice and skills to permit users to determine whether projects were suitable for computer processing, and how the computer system should be designed, and to programme systems for the computer in use. The Management Services Section provided advice on the organization and use of office and field staffs, and the development of administrative systems. The development and administration of these activities were directed and co-ordinated by a small-branch headquarters staff.

The year 1969-70 was a year of introduction of new equipment and adaptation to its use. The principal change was the installation of the IBM S/360-65 computer in June 1969. This change required the conversion or adaptation of all the ongoing computer work of DBS from the IBM 705-III and IBM S/360-30 computers to run on the S/360-65, which placed a very heavy strain on systems and programming resources and hampered the development of new applications for an extended period. With the help of a 7080-705 emulator installed on the new computer, it was possible to take the 705-III out of service at the end of September 1969, and the S/360-30 machine was substantially free of DBS work by the end of 1969.

The introduction of the S/360-65 required extensive retraining of the computer operating staff in the Data Processing Services Division and of the analysts and programmers in the Computer Systems Development Division. This training actually commenced towards the end of 1968, and continued throughout 1969-70, with heavy reliance on the courses and facilities

available from IBM without charge or at nominal charge. The limitations of this type of training soon became evident and this, together with the IBM "unbundling" announcement, led to consideration of alternative and potentially more effective training techniques. A contract was let to Kates, Peat, Marwick for the development of a systems analysis course tailored to DBS needs (no suitable course was available on the market), and a decision was taken to use the new video-tape training technique to meet much of the need for orientation, programmer and operations training. Many suitable tapes were obtained from Advanced Systems Incorporated, a firm specializing in video-tape production, and a start was made on outlining the supplementary needs of this programme for in-house or contract development.

The basic training and education for use of the S/360-65 was further supported by development of a comprehensive standards and procedures manual, an informal reference library for staff of the Branch, and by a number of organization changes designed to improve and monitor the improvement of necessary technical skills. An Advisory Services Group was established in the Computer Systems Development Division in May 1969, to assist user divisions in developing initial project specifications and estimates and to monitor the development of computer projects. The establishment of this group also made it possible to start an experimental programme of "contracting out" specific programming tasks. Although this programme was on a relatively small scale in 1969-70, it produced satisfactory results and proved very cost-effective. Plans were made for its expansion in 1970-71.

In October 1969, responsibility for programming and for systems analysis was assigned to different groups within the Computer Systems Development Division, and responsibility for programme maintenance transferred to the Data Processing Services Division

(though this group was still manned by Computer Systems Development Division Staff on a rotation basis). This provided a framework for the further training of selected staff in systems analysis techniques and approaches, and for careful monitoring of the development of skills in this area, and also for reviewing the adequacy and the documentation of "completed" computer programmes and systems. The initial need for this monitoring was confirmed by experience; during the latter months of 1969-70 few analyses and almost no sets of programmes were accepted without modifications or improvements in documentation being made at the "review" stage. By March 1970, this situation showed significant improvement.

Although the new computer was the focus of most work during 1969-70, this was not the only equipment change. Experience with the Keytape machines introduced in January 1969, was encouraging, but not without some difficulties in the DBS large volume environment. Early in 1969-70 a multiple keyboard key-to-tape device was announced by Consolidated Computer Services, a Canadian firm, and it was decided to replace the Keytape units and some additional keypunches by a 16 keyboard Key Edit unit. This machine was installed in March 1970, and was expected to improve cost-effectiveness in the data conversion area. A second IBM 1032 optical mark reader was also acquired during the year to permit processing of the Labour Force Survey on newer equipment than the 1951 Census Document Punch, which was

becoming increasingly difficult to maintain. Improvements were also made in other unit record and desk calculating equipment.

Staff of the Branch also supported two important external projects. In October and November 1969, the Director of the Data Processing Services Division participated as the Data Processing Advisor on a six-member World Bank Statistical Mission in Pakistan. In December 1969, the Canadian International Development Agency purchased the S/360-30 computer which had been in use at DBS for shipment to the West Indies where it will be used to process their 1970 Census. DBS kept this machine in operation in the latter part of the fiscal year to aid in the training of selected operators and programmers from the West Indies, so that some experienced staff would be available when the machine was installed.

The work of the Management Services Section was again largely outside the data processing area in 1969-70. Among the more important projects handled during the year were the development and planning of operational procedures for the DBS Progress Reporting and Cost Accounting System, and a methods study and work measurement programme during and after the October 1969, Census tests. The staff also remained involved in several aspects of planning for the new DBS tower, and participated in the initial systems analysis training courses in January-March, 1970.

ADMINISTRATIVE SERVICES

Under this general heading are found a number of functions which serve the Dominion Bureau of Statistics as a whole, including personnel administration, management progress reporting and cost accounting, bilingual development, administrative planning, records management, financial control, publications distribution and office services such as the addressograph unit, stenographic pools, supplies, mail and messenger services.

Personnel Administration

Staffing Section

The Staffing Section accepted delegated authority for staffing positions in the Administrative and Foreign Service Category at the junior and intermediate levels. Coupled with last year's acceptance by the Bureau of delegated authority for the Administrative Sup-

port Category, the Bureau is now responsible for staffing 80 per cent of its positions, under delegated authority.

This year saw the introduction of selection standards for all occupational groups in the Administrative and Foreign Service Category. Added to the already existent standards for the Administrative Support Category introduced in 1968, and those anticipated within a few months in the Economist, Statistician, Sociologist Group and the Social Science Support Group, all selections within the Bureau will be done against formal and scientifically prepared guidelines.

A total of 1,127 employees were hired during the year, 110 of which were Statisticians or Economists. In addition, 574 term employees were hired. During the same period, 748 employees terminated their services, 67 of which were Statisticians or Economists. There were 3,150 continuing employees on staff at the end of March, and 519 casuals. During the summer of 1969, 289 students were employed.

The Staffing Section conducted 269 closed competitions and two interdepartmental competitions which resulted in the promotion of 381 employees of the Bureau. In addition, 348 employees were promoted without going through the formal competition process, for a total of 729 promotions. During the year, 18 employees exercised their rights of appeal; 11 appeals were registered in closed competitions; one in interdepartmental competition; and 6 against recommendations for promotion without competition. Of these, nine were dismissed; six were allowed and three were withdrawn by the employees.

Classification Section

The Classification Section evaluated 1,509 positions during the fiscal year 1969-70, compared to 495 in the previous year. This startling increase resulted primarily from the introduction of a more flexible system of manpower control. The 810 new position files created during the year brought the total classification files to 3,900. Of this number, however, only 3,150 are filled. In addition, all casual positions must now be classified with 200 having been evaluated during the year.

The conversion phase of the classification programme is now complete with the exception of a few Librarian positions and a number of Statistician positions slated for the Mathematics Group.

Two Job Analysis and Job Evaluation courses were conducted. Each course was of a one-week duration with a total of 80 people receiving the course. On-the-job training was provided for six apprentice classification officers. This training lasted from 4-6 weeks per student.

Twenty-eight classification grievances were handled during the fiscal year. In addition, a considerable number of man-days were expended in representing the department in Classification Division Review Boards.

Staff Relations

Fourteen collective agreements covering DBS employees in the Professional and Scientific, the Administrative and Foreign Service, the Technical, and the Administrative Support Categories were introduced during the 1969-70 fiscal year bringing the total to sixteen in the Bureau.

Incentive Awards

During the year, 22 new suggestions were received from DBS employees of which one was

rejected; the balance are under investigation or waiting implementation. Two suggestions from the previous fiscal year were implemented and given cash awards amounting to \$1,800.

Manpower Planning and Utilization Section

A formal manpower planning unit was formally established during the year to provide an increased capability in this vital field with an initial focus on manpower forecasting and analysis. The development of a departmental manpower inventory is now well under way and planning for the introduction of a comprehensive employee appraisal programme has commenced.

The manpower utilization planning and monitoring activities performed during the year were quite successful, as indicated by the fact that over 99 per cent of the 3,585 man-years allocated to the department were utilized.

Staff Development and Training

During the fiscal year 1969-70, all training available through this section was reviewed and organized into four Development Programmes: professional, technical/clerical, management, and data processing. In the area of professional development, a full series of seven mathematical courses and an orientation programme for professionals was developed. They will be in full operation next year.

After less than two years of conducting its own management training, DBS has now progressed to almost full autonomy where even course materials are all prepared and reproduced in the Bureau. This training has received full endorsement by senior professionals of the Bureau through their active participation as course lecturers. There is great demand for the management/supervisory courses. Positive steps are now being taken to evaluate this training.

The Technical/Clerical Development Programme is now well established in terms of elementary statistics and accounting courses. In this area, current demand exceeds available resources and a priority system of selection had to be established. At present, the section is participating in the evaluation of a programmed instruction statistics course which, if proven satisfactory, could ease the load considerably.

A major data processing training programme is currently under way. Video-tape equipment has recently been purchased and is being used in relation to this training.

Enrolment in language training was almost twice as large this year as last and

the intake ceiling will increase considerably again in the next fiscal year.

University extension courses during off-hours have become a major part of the employee development plan with 170 participating in the fiscal year 1969-70.

Management Progress Reporting and Cost Accounting System

For some time senior Bureau managers have realized that more detailed management information was required to provide an improved base for control, analysis and planning, including a relation between cost and end product. It was also considered that matters of progress reporting and timeliness should be approached in a co-ordinated and comprehensive manner. As a result of these considerations and in view of the fact that Bureau activities, which cover virtually every aspect of Canadian life, are increasing in scope and complexity, it was decided to adopt a systems approach to the provision of management information.

The System which is to be introduced April 1, 1970 consists of three main modules of resource utilization, progress reporting and timeliness of publication release, as these were identified as the major areas of concern. The main objective of the System has been identified as the provision of detailed information to the various levels of management as an aid to improved planning, control and analysis. It was further considered that these increased capacities would assist in the achievement of multi-project control and the optimum utilization of resources. The System which is fully automated, including the optical scanning of all employee Weekly Work Reports, was designed and developed, based on the principles of simplicity for ease of introduction and flexibility, to facilitate future development.

While the possible immediate and potential uses of the System have not been fully identified, some of the major possible benefits would be: to provide a basis for improved planning in which resources utilized will be related to end products; to supply a portion of the basic data required for cost benefit analysis and priority setting; to compare resources as expended and progress and timeliness as achieved by project, operation and organizational unit with plans to indicate deviations; to permit detailed analysis of the types of work performed which could indicate areas for automation, sampling, etc., which might be introduced or increased; the production of predictive models and review of alternative methods of conducting statistical projects; and, to supply the basic data for a system of recovering fees from outside users.

The System is based on the elements of projects, operations and organizational units. These three elements will permit the output of the System to be accumulated into what is considered to be the most meaningful combinations. Of these elements, the 500 statistical projects that have been identified are the foundation of the System. Each statistical project in itself consumes significant resources, can be identified with an end-product or benefit and the sum of all statistical projects represents the approximate statistical output of the Bureau. In addition to the projects, seven standard types of work, or operations, performed within the Bureau have also been identified - plan/develop, co-ordination, collection, edit/code, compilation, analysis and publishing. This additional dimension when applied to individual projects will permit further detailed analysis of Bureau undertakings. The third element of the System is the association of projects and operations with organizational units.

The System is to be introduced in a simplified form April 1, 1970 with the remaining modules being introduced gradually over a number of months. By April 1, 1971 all modules of the System should be operational.

Bilingual Development

During the 1969-70 fiscal year, 242 DBS employees were slated for Language Training with the Language Bureau of the Public Service Commission. Eleven are either beginning or have completed their fourth level, 58 students are at the third level, 70 at the second level and 103 at the first level of the programme.

Despite the fact that the Advisor on Bilingualism resigned from the Department on June 2, 1969, and a successor was brought on staff on January 5, 1970, retention activities within the Department, although reduced, were carried on by the monitor librarian at a continuous rate of 35 employee-period every week. A number of bilingual employees also act as tutors for small groups of language trainees when they return from the language schools.

In February 1970, the Department undertook the inventory of bilingual proficiency on staff. Three casual test administrators underwent specialized training at the Public Service Commission before starting the test administration to 1,200 DBS employees who claim some proficiency in their second language. This phase is expected to be completed by July 31, 1970.

Efforts are being made to staff some sections of the Bureau with as many bilingual

employees as to ensure services in both languages to the public. The Ottawa and Montreal Regional Offices have been completely staffed by bilingual employees and the Staffing Section of Personnel Administration is offering its services in both languages.

At the present time approximately forty per cent of the DBS statistical publications are issued in bilingual form. The objective is to issue 100 per cent of the publications in both languages as soon as possible.

Administrative Services Planning

Accommodations

Plans for the new 25 storey DBS Tower to be located south of the existing building are nearing completion. The building will go out to tender in May 1970.

Renovations of the second floor of the existing building will be completed in June 1970 at which time the Census Division is expected to occupy part of the space. Twelve floors of the General Purpose Building were occupied in January by the staffs displaced from the 2nd floor of the existing building.

Records Management

The Records Management Section established a programme to install and operate standard filing systems in all divisions throughout the Bureau. It is estimated that this programme will take three years to complete. A competent supervisory nucleus was recruited and clerical staff assigned to divisional records units as these were set up. Records of each division are inventoried and evaluated to facilitate the establishment of retention periods as each divisional records unit is created. Eight records units were set up during the year.

Financial Services

This section has two main functions which are performed by the Financial Unit and the Publications Distribution Unit.

The Financial Unit is concerned with the over-all financial operation of the Bureau, including the co-ordination of the Programme Review and Main Estimates and the maintenance of a Financial Management Information System. The unit examines and controls expenditures, audits travel claims and commercial accounts, interprets financial regulations and serves as adviser in the area of finance to line man-

agers. During 1969-70 the responsibility for full pre-audit, allotment and commitment control was transferred from the Comptroller of the Treasury (Department of Supply and Services) to DBS.

The Publications Distribution Unit is concerned with the sale and distribution of DBS publications and maintains current mailing lists for distribution of publications and subscription statistical reports. During the fiscal year 1,998,428 pieces of mail were dispatched and 39,060 mail orders were received. The subscription mailing list is currently made up of 223,744 addressograph mailing plates.

Office Services

During the fiscal year, 620 requisitions were issued to the Department of Supply and Services for furniture and equipment, and building services for which they are responsible, and 562 were completed.

In the same period 334 requisitions were issued to the Government Telephone Service of Treasury Board for telephone service and 307 were completed. As of February 28, 1970 the total number of locals in use by the Bureau, including the Ottawa Satellites was 445, with 778 extensions. Existing key systems now number 115.

During the same period Office Services was responsible for the major moves and relocation of subject-matter divisions both within the Main Building and to the General Purpose Building. These moves entailed considerable planning, space layout, consultation, co-ordination and movement of entire staffs, with the minimum of work stoppages.

The Supplies Unit submitted 2,259 printing and stationery requisitions to the Department of Supply and Services and other sources for an estimated value of \$1,381,244.54. The Supplies inventory at March 31, 1970 was \$52,960.41; the annual stock turnover rate, therefore, was 26.08. Replacement value of DBS office machines and equipment based on original cost was \$1,136,057.

The Addressograph Unit addressed 15,968,648 forms for various Divisions of the Bureau. In addition, 199,232 plates were embossed, 147,618 corrected, and 576,504 plates were deleted. Also, 4,453,898 pieces of mail were inserted by machine and 6,896 were inserted by hand. Forms processed by Heat Transfer Media increased from 2,784,676 for the previous year to 6,912,869 for the current year, a difference of 4,128,193.

The Mail Unit deposited 27,814 bags of mail with the Post Office and received 13,659 bags during the year. In addition to mail for delivery in Canada, 33,797 pieces of registered mail, 20,236 air mail, 2,966 special delivery, 5,342 parcel post and 14,509 foreign mail were despatched. Also included in mail despatched were 3,148,115 pieces of mail for the Department of Agriculture. Mail received included 7,252 pieces of registered mail.

During the year a third vehicle was added to the DBS Truck Fleet to handle the increased volume of departmental trucking. This vehicle has travelled 4,772 miles since it went into operation. Transportation of DBS employees between No. 5 and 8 Temporary and Main DBS Buildings amounted to 2,143 passengers.

During the period under review, the Xerox Unit completed work on 36,588 jobs for a total of 1,254,134 copies. This does not include the Xerox facilities located in Central Registers Section, Operations and Systems Development Branch, Library, Personnel Administration, Administration, Census Division, Economic Statistics, Air Statistics, and Central Planning and Programming Staff.

The Drafting Unit prepared 2,652 graphic illustrations by means of charts, maps, publication covers, pamphlets, for the Divisions of the Bureau, other Departments and Agencies of the Government. In addition, the Unit completed a series of charts for the Royal Commission on the Status of Women. The colour art work prepared by the Unit of the Armorial Bearings and Floral Emblems of the Provinces and Territories was used by the Secretary of State Department for reprint and world-wide distribution. Colour maps of foreign and coastwise movements of the eight most significant commodities, which were prepared by the Unit, were used by the Department of Industry, Trade and Commerce for publication.

Typing and Transcribing Services include six Typing Units as follows: two located in DBS, one in No. 5 Temporary Building, one in No. 8 Temporary Building, one in the Congill Building and one now located in the General Purpose Building.

The new system of work measurement (based on predetermined standards) introduced April 1, 1968 in all Typing Units is proving quite satisfactory and is providing more realistic and much needed data which are valuable in assessing the relative efficiency of each operator as well as total staff requirement, produce accurate figures of composition costs and many other data on which reliable estimates are based. During the fiscal year under review, 168,887 pages were produced, broken down as follows: original letters typed: 66,321; form letters addressed: 60,997; pages of publications (partial preprints): 20,626; complete pages of publications: 20,943.

During June 1969, a second Telex machine was installed for incoming messages only in order to increase the availability of the first machine for transmittal purposes. Increased volume, accompanied by increased efficiencies of operation, are proving an asset to the Bureau. During the fiscal year under review, 8,089 messages were transmitted.

Printing Liaison Services examined, processed and prepared for printing, 14,957 pages of copy of publications.

In the Forms Management Unit, the 54 per cent increase in the number of pages of forms and questionnaires processed during the past year was accomplished, with the co-operation of the Manufacturing & Primary Industries Division, by having 1970 schedules reprinted with only minor changes. This "hold-the-line" decision was made so that Industry requirements would not conflict with the 1971 Census of Canada printing deadlines.

A Forms Analyst was again assigned to the Census Division to provide technical assistance for the 1969 Census tests. Upon completion of these tests, two Analysts were engaged for six months on the study, layout, testing and production of the 1971 Census of Canada questionnaires (long and short) designed exclusively for the "FOSDIC" type optical scanner. This is the first time these documents have been designed and produced in Canada.

Specialty forms have again shown an annual increase in usage with a trend to the more sophisticated computer print-out types of forms.

DOMINION BUREAU OF STATISTICS SENIOR OFFICERS

(As of March 31, 1970)

Dominion Statistician Walter E. Duffett

Assistant Dominion Statistician (Integration and
Development) S.A. Goldberg

Assistant Dominion Statistician (Finance and
Administration) H.L. Allen

Assistant Dominion Statistician (Socio-Economic
Statistics Branch) L.E. Rowebottom

Director General (Operations and Systems Develop-
ment Branch) L.A. Shackleton

Director General (Economic Accounts Branch) E.B. Carty

Director General (Financial Statistics Branch) G.A. Wagdin

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

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