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STATISTICAL OBSERVER

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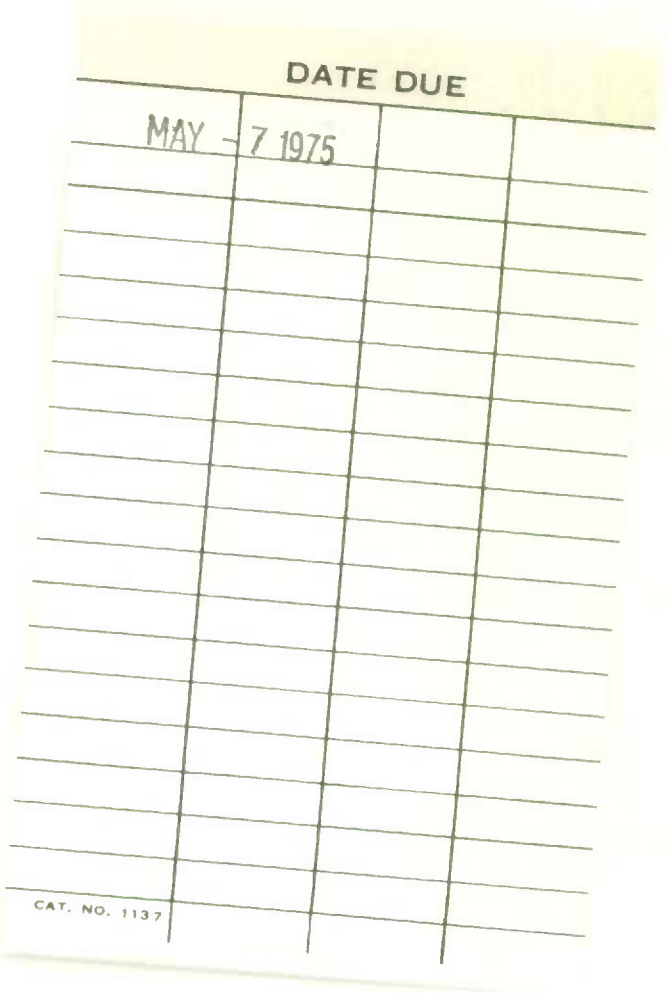

STATISTICAL OBSERVER

VOLUME 4/NUMBER 2/JULY 1971

The Statistical Observer is a publication designed to contribute toward informing economists, statisticians and related professionals throughout Canada about selected statistical and research developments undertaken in DBS, in other federal departments and agencies, in provincial departments, in universities and in business and independent research organizations.
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The 1971 Census Data Access Program

The Census Division of the DBS Socio-Economic Statistics Branch is developing a comprehensive program for the dissemination of the data gathered in the 1971 Census. This program, called the Census Data Access Program (CDAP), is designed to satisfy a large volume of requests for data in several forms.

The CDAP may be divided into three interrelated components: 1) the data available, in its many forms; 2) the documentation needed to identify and obtain the data; and 3) the data management system.

The Data and the Media of Dissemination

The data collected from the 1971 Census questionnaires will be available to users already aggregated for various groups and areas. In addition to these standard data, users may request "special" data – classified into other categories, cross-classified with different variables or aggregated for non-standard areas. The CDAP is designed to facilitate users' access to both the standard and special data.

One aspect of the CDAP that will allow users to obtain data grouped on the basis of non-standard areas (one kind of special data) is the use of the GRDSR system. GRDSR – Geographically Referenced Data Storage and Retrieval – consists of a set of data processing operations (using a technique called geocoding and a software package, STATPAK) and the storage and retrieval of corresponding data on randomly accessible storage devices. Using this system, any combination of census data can be retrieved and tabulated for any user-specified area, provided that the confidentiality constraints of the Statistics Act are not violated. (More information about GRDSR is available in the *Statistical Observer*, Volume 2, Number 1, June 1969.)

Another aspect of geographically-based retrieval of Census data is the use of a software package called SYMAP. With SYMAP, information can be taken from a tabulation or series of tabulations and reproduced in map form. This technique is especially useful for showing density of population in certain areas.

These are examples of retrieval of only one kind of special data. Although the increased scope and number of user summary tapes planned for the dissemination of 1971 Census data will increase the amount of detailed information being offered as standard data, it is still expected that there will be many requests for special data.

Information gathered in the 1971 Census will be available to users in three media – hard copy (publications and computer prints-outs), microform and computer tapes (called user summary tapes). Both standard and special data will be offered in one or all of these forms.

One important mechanism of Census data dissemination is the exchange of information and views between DBS and data users. For this purpose, there will be a series of workshops held across Canada to inform provincial governments, universities, industry and other data users about existing data, its uses – particularly the potential use of data in machine-readable form – and user services.

Documentation

Because of the vast quantities of information that the Census will provide, users must have some way of identifying and specifying which parts of the information they need. The comprehensive documentation of all Census data makes this possible.

All the documentation is linked by a system of statistical methodology developed by Y. de Jocas, Special Advisor to the CDAP. This system rests on the fact that four basic types of terms may be used to convey any statistical information. Any applied statistical information, whether in the form of a table or a data cell, is composed of these four terms which make up the descriptors of the information. The four terms are called, P, V, S, T, and are defined as follows:

- *Population (P)* or "field of information" terms identify the statistical population to which the data belong. An example of a P term is "labour force".
- *Variable (V)* terms define information within a field. For example, age and sex would be V terms within the labour force "field of information".

  There are two types of V terms – V(Q) terms and V(R) terms. V(Q) terms relate to the information collected at the initial stage, and V(R) terms are the responses to the V(Q) terms. For example, "age" and "sex" are V(Q) terms and "20" and "female" are V(R) terms.
- *Space (S)* terms define the area to which the P and V terms relate.
- *Time (T)* terms specify the time to which the P and V terms apply. For the 1971 Census, the time factor is constant, but the P, V and S terms may vary; therefore, the operational definition of each of the P, V and S terms includes a reference to the time (T) term to which it relates.

Although all applied statistical information is, by definition, a particular combination of P, V, S and T terms, these factors may have been generated at various stages of the statistical operation. The stages at which terms are generated are referred to as the "order" of the term. There are three such "orders" identified for 1971 Census data.

First Order Terms are those that appear initially at the collection stage; therefore, the questionnaire determines the number of first order terms. For the 1971 Census, there are 285 first order terms. All possible census information is related to or generated from a first order term.

Second Order Terms are generated from first order terms at either the editing or tabulation stage. An example of a second order term is "family". This term does not appear on the Census questionnaire but is generated at the tabulation stage from the "relationship to head of household" information. Second order terms always presuppose reference to a first order term, and their number is unlimited. (However, the first issue of the Census Data

Dictionary, which will be available in October of 1971, will contain only those second order terms for which tabulations were designed before June 1, 1971. Terms which may arise later will be included in revised editions of the Dictionary. Users may, of course, generate additional second order terms in their work with Census data.)

Third Order Terms are those derived from first or second order terms by mathematical or statistical operations. Examples of third order terms are percentages, ratios, averages, etc.

Data Descriptors and Codes

These four factors (P,V,S,T) can be called data descriptors because they can fully describe any statistical table or data cell. Therefore, to obtain specific Census data, a user can identify the tabulations required with the data descriptors. Two distinct code systems are used for the data, one for P and V terms, and one for S terms. P terms have 3-digit codes, with each major field of information assigned a separate block of numbers. Since V terms exist only in relation to P terms, V terms are coded by adding a second series of digits to the P term code to which the V term relates. Codes for S terms are designed to take into account the level of spatial breakdown. Four such levels are recognized for Census data: 1) provincial, 2) intraprovincial and intermunicipal, 3) municipal and 4) intramunicipal. Within each level, a distinction is made between those units delineated by administrative corporations and those delineated expressly for Census purposes.

All Census concepts can be identified, indexed (coded) and defined using this methodology as a basis. The two basic documents designed to do this are the Census Data Dictionary and the Census Data Directory.

Census Data Dictionary

The Dictionary will supply 1971 operational definitions of Census concepts and a comparison with the corresponding definitions used in the 1966 and 1961 Censuses. There will be two parts to the Dictionary: the first part is an alphabetical listing of all census terms (with a coded reference number), an indication of the type and order of term, the Census year in which the term was used and the sampling ratio that applied in each case. Included also are cross-references, known synonyms and equivalents, and any other terms that are part of an operational definition. Part II contains the actual operational definition of each term, listed in numerical order of their codes, which closely parallel the major fields of census information. Each such field of information makes up one section of Part II, beginning with a general methodological note describing the main features of the field.

The Dictionary can have a number of uses. Parts I and II form a basic search document. Users could consult Part I to determine if a specific concept has been included in the 1961, 1966 and 1971 Censuses and then find the definition of this concept in Part II. Part II also provides a general reference document for the 1961, 1966 and 1971 Censuses. In addition, the dictionary may serve as a code manual, for both data access and data management, because of the unique code system to identify data descriptors.

The existence of a term in either part of the dictionary indicates that some information does exist on that particular subject, but the dictionary gives no indication of the extent or nature of this information. To find this, users would consult the classification manuals.

Census data classification manuals are an extension of the Dictionary and will give, for V and S terms, the various breakdowns used in the Census Data Tabulation Program. The manuals are structured to provide an alphabetical listing of all these terms and a numerical listing by their code numbers. The specific breakdowns used are coded by appending two additional digits to the V(R) or S terms. The V(R) and S breakdowns will also be listed in the classification manuals.

Census Data Directory

The Directory is an index of all Census data tabulations by Census data descriptors (P-V-S-T). The medium of dissemination of the information and where it may be obtained will also be listed in the Directory.

The Directory may be produced in various sections – indexed either according to P terms (P-V-S-T, that is, by field of information) or by S terms (S-P-V-T, providing a numerical sequencing indexed geographically). It can also be segmented to cover specialized fields of interest or specific media of dissemination, and will be available in either microform, when the full Directory is required, or in hard copy, for a limited part of the Directory.

There will be two interrelated forms of documentation for summary tapes. One provides an index of summary tapes contents for use by the subject-matter specialist and the other, a table indicating tape layout for use in retrievals by the computer specialist. This documentation is also included in the Directory.

A microfilm file of tabulations will be established to alleviate storage problems and to provide an economical method of rapid retrieval. Part of the documentation project will be a list of the data available on microfilm and the codes needed to describe specific data.

Data Management

An important part of the Census Data Access Program, especially from the DBS point of view, is a data management project for the purpose of recording and analyzing user requests. The information to be collected in this project is: who is requesting the Census data; what is requested; and how the request is handled, in terms of medium of dissemination, method of retrieval and time and cost involved. The results of this analysis can be used to help plan more effective dissemination programs in the future.

NEW PROJECTS

This comprehensive data access program is only one step in the dissemination of information gathered in the Census. Subject-matter divisions within DBS will publish studies based on Census information. Other federal departments and agencies will use Census information in developing policies and programs.

Provincial governments, universities, businesses and independent researchers will also use Census data in their research and some of their work will also be published. However, before any of these organizations can use the data, they must be able to obtain it, quickly and in the required form. This primary dissemination is the role of the Data Access Program.

More information about the Census Data Access Program may be obtained from Mr. B.J. Giles, Manager, Census Data Access Program and Dr. E.M. Murphy, Chief, Data Dissemination Section, Census Division, Socio-Economic Statistics Branch, DBS, Ottawa.

Canadian Travel Survey

It is estimated that Canadians will spend one billion dollars on travel and associated expenses in 1971. Where this money is being spent and for what purposes are some of the questions to which answers are being sought in the Canadian Travel Survey. This survey is sponsored by the Office of Tourism, Department of Industry, Trade and Commerce. It was designed by the Travel Surveys Section of the DBS Methodology and Systems Branch, and the field work is being conducted by the DBS Field Division. The purpose of the survey is to provide factual up-to-date information, in order to plan new travel and tourist facilities and to evaluate existing facilities.

There is information available about the travel patterns of visitors to Canada, but there is a serious lack of data on the travel habits of Canadians within their own country. This survey is the first step in filling this gap. During 1971, 12,500 Canadians from all across the country will be interviewed in this survey. At the end of each quarter, these respondents will be asked a series of questions about their trips of 100 miles or more. (Some provinces have sponsored an extension in the definition to include trips of 25 miles or more.) The questions include: beginning date of trip, number of nights spent away from home and the type and cost of accommodation used, destination, number of household members on the trip, purpose of trip, mode and cost of transportation, stopovers, meals, activities during the trip and total expenses.

Because of the great volume of data generated from these questionnaires, the survey was designed for fast and efficient processing by the DBS computer. The results will be about 600 tables of new information on all aspects of travel by Canadians. This bank of basic information will be useful to many people and organizations for many purposes. Transportation companies can use these data to analyze their route structures, terminals and equipment; provincial governments, for the re-evaluation of construction plans for highways, parks and recreation areas; tourist bureaus, for the assessment of existing recreation and camping areas, motels, and other facilities used by tourists, and for planning future developments; tourist accommodation and food service industries, for the study of investment prospects and seasonal travel patterns by regions; and regulatory agencies of government, for evaluation of services provided by transportation companies.

It is anticipated that a full report and analysis of the information from this survey will be published by the Office of Tourism late in 1972.

Input-Output Research and Development

The input-output tables for Canada, 1961 have been fully reconciled with the National Income and Expenditure Accounts and the Indexes of Real Domestic Product by Industry. As well, they have been expanded in the area of final demand. Approximately 130 categories of final demand have been distinguished: these include consumer expenditures by category of expenditure, government expenditures on health, education, defense and other

current expenditures by level of government, and capital expenditures on machinery and equipment and structures by approximately 40 industrial sectors and government. These revised and expanded input-output tables are now available in machine-readable and printout form, and will be published in the coming year.

In the fiscal year 1969-70, a project for the annual updating of the Canadian input-output tables was initiated. The project involves the construction of input-output tables for the years 1962 to 1967 in both current and constant (1961) dollars. Tables for subsequent years will be constructed as data become available. The procedures for the annual updating are extensively automated and are designed so that as much new data as possible can be incorporated.

The target date for the completion of the current dollar series is the end of 1971. Detailed publication plans have not been made at this time.

Plans are being made for the construction of input-output tables for Canada, 1971. These tables will be "base-year" in the sense that new classifications of both industries and commodities will be employed.

The DBS Input-Output Staff has constructed input-output tables for the four Atlantic provinces, 1965. These tables will be incorporated in a publication which is being prepared by Professor Kari Levitt of McGill University. This publication will include a discussion of the accounting methodology as well as some analytic models based upon the tables. At this time, there are no plans for the construction of Atlantic Provinces tables subsequent to 1965.

The Input-Output Staff is engaged in a wide range of activities associated with analysis and the provision of customer services. These activities are a natural extension of the activities associated with the construction of input-output tables in that the expertise and information accumulated in the construction activities is disseminated to researchers who require input-output data or analysis. Of course, there is also an important feed-back from the analytical activities to the construction of input-output tables.

Two general purpose models based upon the most detailed input-output tables have been constructed and made operational by the DBS Input-Output Staff – an output determination model and a price determination model. At the present time, these models are of the fixed coefficient variety based upon 1961 data. Subsequent versions of these models will incorporate more recent data and improved methodology. These models are general-purpose in the sense that they are designed to satisfy the requirements of a variety of users. Typically, these models are useful for impact analysis; for example, to study the effect of a final demand or a change in final demand on industry activity levels, labour income, imports, etc., or to study the effect of a change in wage rates or import prices on industrial prices. Although the data base of the models is to a large extent confidential, in most cases the results of calculations based upon them are not. The operation of these models makes available results which could not be duplicated outside of DBS and, at the same time, achieves economies of scale in computer programming.

New methodology is being designed for incorporation in the general purpose models. This includes methodology for making the coefficients of an input-output model vary with activity levels in the model and certain exogenous variables, for regionalization of a national input-output model, and for the simultaneous solution of interdependent price and output determination models.

Operation of the general purpose models, the provision of data in machine-readable form, and other customer service work are provided by the Input-Output Staff on a cost-recovery basis.

Inquiries should be directed to Mr. R.B. Hoffman, Input-Output Research and Development Staff, Economic Statistics Branch, DBS, Ottawa.

An Econometric Model for the Ontario Economy

Although there are several statistical models available for the Canadian economy, few attempts have been made to construct models for regional economies because of the lack of adequate statistical data. However, in 1968, the Economic Analysis Branch of the Ontario Department of Economic Affairs initiated an econometric research program to provide an integrated system of analytical tools for medium- and long-term forecasting and for the evaluation of alternative economic policies. The first two parts of this research program, an input-output table for Ontario's economy and a set of provincial economic accounts, provided the data base for the next project, an econometric model for Ontario's economy.

This model is described in detail in the *Ontario Economic Review*, Special Supplement, March 1971. The first part of the report outlines the basic concepts and methodology of econometric model building. Part II reviews six econometric models designed for regional economies in the United States and Canada during the past 15 years. Part III deals with the specifications of the Ontario model and outlines the methodology adopted in designing the model, and its major characteristics. The final chapter presents the parameter estimates and evaluates the statistical and predictive properties of the equation system.

Policy makers can use the model to evaluate policies relating to a proposed change in any of the variables by tracing the changes in all parts of the model that result from that change in one variable.

For use in forecasting, the model can be reduced to a smaller size to give greater flexibility in meeting the requirements of a specific analysis. A collapsed version of the model, aimed specifically at forecasting, is currently under development in the Economic Analysis Branch and will appear in a future issue of the *Ontario Economic Review*.

Copies of the Special Supplement and subscriptions to the Ontario Economic Review may be obtained, free of charge, from the Economic Analysis Branch, Economic and Statistical Services Division, Ontario Department of Treasury and Economics, Frost Building, Queen's Park, Toronto 182, Ontario.

Survey of Commodity Movements by Truck

A major new survey of commodity movements by trucks is being carried out by the Transportation and Public Utilities Division of DBS. Designed to collect information on the origin and destination of commodities transported by for-hire trucks in Canada, the new survey results from the successful completion of a pilot survey of trucking companies' shipping documents carried out by the Division last summer. (An item on the pilot survey appeared in the *Statistical Observer*, Volume 4, Number 1, April 1971.)

In recent years, trucking has become a major factor in the distributive process in the Canadian economy. Yet, despite its importance and in contrast to other modes of surface transportation, almost no information is available concerning the flow of goods by trucks in Canada, except in very general terms. Consulting firms, market research organizations, various government departments (both federal and provincial), transport organizations, commissions, and in particular, recent federal-provincial economic conferences have all strongly urged the Bureau to attempt to fill this large gap in commodity flow statistics.

In the past, one of the major problems in obtaining statistics of this kind was finding the raw data required. The Pilot Study established the feasibility of surveying trucking firms' shipping documents which contain all the basic information required – nature of shipment, weight, rate and origin and destination. As a result, a much larger survey is presently being undertaken. Approximately five hundred motor carrier companies are being covered and it is expected that more than 150,000 individual records of actual truck shipments will be collected from this new survey. Among other things, the information will be useful in assessing comparative volumes of goods handled by each mode of transport, determining the nature of goods carried, where freight originates and where it is destined. The statistics can also be used in estimating the movements of goods between provinces and regions, in highway planning, to provide estimates of revenues earned and ton-miles performed between specific points, and to assist in the production and adjustment of tariffs.

One of the features of the new survey is that all of the work is being done by Bureau staff with a minimum of interference in terms of both time and effort to the companies involved. Representatives from the eight regional offices of DBS across Canada have been specially trained to sample the shipping documents of each of the trucking firms involved in the survey. This work is scheduled to be completed by mid-summer, and the Division expects that preliminary national aggregates of tonnage, revenues and ton-mile data will be available by the end of the summer: final results of the survey should be available by the end of 1971.

Further inquiries should be directed to Mr. P.T. Crosby, Project Manager, Transportation and Public Utilities Division, Economic Statistics Branch, DBS, Ottawa.

Regional Estimates of New Brunswick Labour Force

A recent study by the New Brunswick Office of the Economic Advisor attempted to produce sub-provincial annual estimates of the labour force in that province. Provincial labour force data are available on a monthly basis but the most recent sub-provincial statistics are from the 1961 Census.

A series of estimates for counties, urban areas and economic regions of New Brunswick were made for various years and compared with other indicators. Those estimates which most closely met the criteria set for the study were chosen as representative of the labour force.

Despite the experimental nature of the exercise, it is hoped that the results will be useful especially for government policy makers and businesses interested in locating in certain areas. However, the authors of the study point out that these estimates should be considered only as general indicators of the actual labor force in the areas concerned.

The complete study is described in a paper "Progress Report and the Feasibility of Estimating Labour Force Annually by Sex for Counties, Urban Areas and Economic Regions". *For more information, readers are invited to contact Mr. George Fox, Office of the Economic Advisor, Fredericton, New Brunswick.*

British Columbia Surveys of Imports

During the past decade, there has been, in British Columbia, a great demand for a multitude of commercial products which were unavailable from sources within the province. In recognition of this, the Economics and Statistics Branch of the B.C. Department of Industrial Development, Trade and Commerce has undertaken to survey specific groups of import commodities in an effort to inform the business community of the extent of this potential market. An important objective of these surveys is to provide an analysis of commodity movements as, in many cases, the value of these imports accounts for a significant portion of the provincial market.

The surveys are designed to indicate such factors as the recurring requirement for the product, its prospective use and the magnitude of the potential domestic market. It is felt that the surveys will point to areas of additional opportunity for British Columbia manufacturers and thereby contribute to the growth of industrial productivity in the province.

PROJECT PROGRESS REPORTS

Statistics on Electrical Contracting Industry Available Soon

The electrical contracting industry was the second industry to be studied by the DBS Business Finance Division in the census of the construction industry. Contractors are providing some financial as well as operating information for 1969, such as volume of business, payrolls, materials purchased, sub-contracts and overheads and profits. Other questions asked in this census relate to principal type of construction, manpower utilization and organization.

The publication containing statistics collected for 1969 is to be released in the fall of 1971. The data in this report will enable the contractor to assess his operations; the trade associations to study the industry; the suppliers to have a more complete basis for planning; and the governments to conduct improved industry analyses for the formulation of economic and business programs and policies.

Standard Industrial Classification Revised

Canada's Standard Industrial Classification, the oldest and most widely used of our existing standard classifications has recently been revised. The SIC manual was first published in 1948 and revised in 1960.

Although revision of the classification creates problems of continuity in the analysis of time series, periodic revision is essential. The Canadian economy is dynamic, and the classification, if it is to be useful, must reflect the changes in the economy. The present revision is not as extensive as that of 1960. The main divisions of the classification are unchanged, and few major groups have been altered.

Revisions are timed to coincide with the decennial census of population. The English version of the classification was released in February and the French version in June. Copies of the *Standard Industrial Classification Manual* (catalogue number CS12-501) are available from Information Canada for $6.

The Canadian Classification and Dictionary of Occupations

A coding manual entitled, *Occupational Classification Manual, Census of Canada, 1971*, based on the *Canadian Classification and Dictionary of Occupations* (CCDO), was released in two volumes during the period from April to June 1971. Volume I, in English and French versions, provides definitions for the groups which make up the classification. Volume II, in English and bilingual versions, contains lists of occupations arranged in both alphabetical and classified order.

The CCDO is new and unique. It provides, for Canada, a multi-purpose instrument for use in manpower research, in the formulation of manpower policies, in support of employment and educational programs, for statistical survey purposes (including census taking) and for operational activities such as employment placement, employment counselling, immigration and promoting mobility of workers within the country. It is anticipated that the CCDO will result in more comparable occupational data of improved quality. This is expected to come about through the standardizing of occupational categories used in different programs and consequently, the occupational statistics and other information derived from them.

Traditionally, the census occupational classification manual used in the immediately preceding census is revised to take account of changes in the occupational composition of the labour force resulting from industrial and technological developments in the decade. In order to achieve a standard occupational classification, a fundamental departure from the past was indicated. Thus, since 1965, the new classification inherent in the CCDO has been developed through a co-operative project of the Department of Manpower and Immigration and the Dominion Bureau of Statistics under the joint direction of Messrs. J.E. Andoff and Neil L. McKellar. These same two men had worked together in the past on the development of the International Standard Classification of Occupations (ISCO) and, because of this, were able to shorten considerably the time required to complete a project of such massive detail.

The dictionary will not be published before the end of 1971, although working copies will be used for census purposes. However, since the classification was completed to the unit group level about a year ago, it was possible to compile a coding manual based on the CCDO in time for the 1971 Census.

Alberta Bureau of Statistics Projects

Census of Post-Secondary School Students – The Alberta Bureau of Statistics is currently carrying out a census of post-secondary school students below university level in co-operation with the Alberta Human Resources Research Council. The school census will be compared with the 1971 Canada Census to determine whether or not the population of these schools represents a cross-section of the Alberta population of similar age groups.

Propane Market Maximization Study – This study was done jointly with the Alberta Freight Bureau. It is divided into two sections. Section I comprises a historical picture of propane production and consumption in North America by province and state between 1959 and 1969 and then projects these volumes into 1978. Section II traces the development of liquid propane gas transportation in North America and points out possible solutions for problem areas.

CONFERENCES

Proposed System of Construction Price Statistics Outlined at Recent Conference.

At the 15th annual meeting of the American Society of Cost Engineers, held in Montreal, C.M. Jones (Head, Capital Expenditures Prices Section, Prices Division, Economic Statistics Branch, DBS) presented a paper on Canadian construction price statistics.

Mrs. Jones began her presentation by describing the present DBS program to expand statistical coverage of the construction industry and the progress made in carrying out this program. She invited those present at the meeting to comment on the DBS program and thereby help the Bureau determine needs and priorities.

Mrs. Jones went on to explain her views of the requirements for a system of construction price statistics, the uses and users of the system, the agencies that would need to become involved in producing such a system, and then gave a hypothetical example showing the format such a program of statistics could take. In summary, the strengths, weaknesses and omissions of the proposed system were pointed out.

In Mrs. Jones' view, a complete system of construction price statistics requires data on:
1) Construction inputs (materials, wage rates etc.);
2) contractors' selling prices; and
3) estimated selling prices for the main types of structures – houses, apartments, schools, hospitals, commercial buildings roads, pipelines, refineries, water and sewer construction, and utilities (electric, telephone and railways). The kinds of data needed are price indexes, showing both time and place comparisons, average unit costs and costs per some unit of measure such as a square foot.

Another requirement is that the data provide detail on metropolitan areas. This aspect is important for both users and producers of construction price statistics. Users most frequently request statistics pertaining to a metropolitan area. Also, because of the nature of the construction industry in Canada, with its relatively small volume and the heterogeneity of the construction work done, the use of metropolitan area information as a data base is the easiest and least expensive way to produce meaningful statistics.

Some of these requirements for a complete system of construction price statistics, are now being met. In the field of construction inputs, DBS publishes manufacturers' selling prices for materials, union wage rates, and purchase prices of capital used. Collection of data has begun on a modest basis, for some elements of contractor's selling prices and on estimated selling prices for single-unit houses and office and industrial buildings. DBS also publishes estimated selling prices for roads, and electrical utilities. Price data is now being collected for telephone utilities.

Construction price statistics have many and varied uses. Some users, such as statisticians and economists, require the complete system of statistics for the preparation of measures of real output, national expenditures and productivity, and for economic analyses. On the other hand, purchasing institutions require mainly indexes of structures' selling prices and contractors' selling prices. The cost and price data needed to produce the statistics are used by architects, engineers, surveyors etc. to prepare project proposals and construction estimates.

Mrs. Jones pointed out that production of a complete system of construction price statistics requires the co-operation of many agencies and organizations, in addition to the contractors themselves; for example, provincial and federal government departments and agencies, contractors' associations, municipal works departments, professional organizations of engineers and architects, etc. Participating groups need to discuss their requirements, review available data and help decide how to proceed with producing the required statistics.

The hypothetical statistics system outlined in the paper points out the great quantities of detailed data needed to produce a good set of construction price statistics. Proposed techniques and survey areas were also included in the example.

In Mrs. Jones' view, the strength of this proposed system lies in the amount of detailed statistics that would result. Such detail allows the user to assess the validity of the system for his needs and also permits the aggregation of the statistics into many special purpose indexes. This system also provides information on changes in inputs (both qualitative and quantitative), thereby giving greater insight into productivity changes.

The greatest weakness seen in the proposed program is that a complete system of construction statistics will be costly. Another deficiency is that the metropolitan area sample omits many small areas where construction prices are required. Also, the use of hypothetical models rather than real world prices in producing the statistics is seen as a weakness; however, Mrs. Jones outlined ways in which this deficiency can be offset.

Canadian Economics Association 1971 Annual Meeting

Economists from universities, federal and provincial government departments, businesses and research organizations met at Memorial University, St. John's, Newfoundland from June 2 to June 5, to discuss current problems and new developments pertaining to economics.

A wide variety of subjects – public finance, monetary economics, economic development, health economics, regional economics, price theory, etc. – were covered at the 1971 conference. In addition, there was a special session on statistics to which Mr. G. Garston of the DBS National Output and Productivity Division and Mr. H. Adler, DBS Senior Advisor on Integration, contributed.

Other conference participants from DBS included D. Gower, Labour Division and J.R. Podoluk, Consumer Finance Research Staff.

A more detailed report on the 1971 Canadian Economics Association meeting will appear in the October issue of the *Statistical Observer.*

Forestry Statistics Conference

The 1971 Federal-Provincial Conference on Forestry and Forest Product Statistics, held in Ottawa on March 18 and 19, was the fourth in a series of meetings which began in 1963. The purpose of these conferences is to provide a vehicle for consultation, with respect to forestry and forest product statistics, between the Dominion Bureau of Statistics and other federal departments, provincial governments and industry. Meetings have been held at intervals of two to three years. The Dominion Statistician is the chairman of the Conference, and the Secretariat is provided by the Forestry Statistics Section of the DBS Manufacturing and Primary Industries Division.

Provincial delegations to the Conference are responsible for representing the interests of their government and of the industries in their province concerned with this area of statistics. The provincial delegates are also responsible for the preparation and presentation of provincial briefs dealing with statistical requirements and priorities. At the March 1971 Conference, all provinces, except Saskatchewan, were represented.

In recognition of their national status, the Canadian Pulp and Paper Association and the Canadian Lumbermans' Association were invited to participate in the Conference independently of the provincial delegations. Federal government departments, other than DBS, who participated in the Conference were: the Department of Fisheries and Forestry, represented by the Forest Economics Research Institute; the Department of Industry, Trade and Commerce, represented by the Wood Products Branch; and the Department of Regional Economic Expansion, represented by the Natural Resource Planning Division.

A most valuable by-product of these Conferences has been greatly increased contact and communication, on an ad hoc basis, between DBS and provincial agencies interested in forestry and forest products statistics. As a result of one of the recommendations of an earlier Conference, DBS now employs a liaison officer for the forest industries in British Columbia. This liaison officer is located at the Regional Office of DBS in Vancouver as an extension of the Forestry Statistics Section of the Manufacturing and Primary Industries Division in Ottawa. It is intended to employ such liaison officers in other areas as soon as resources permit.

The briefs submitted at the 1971 Conference dealt mainly with the statistical requirements of the participating government departments and industries. The Conference resulted in the formulation of a number of recommendations which set out the priorities agreed upon. The following are the recommendations that were adopted:

1) that DBS, either directly or through a consultant, take the leadership in organising a federal-provincial working group to review the entire system of forestry statistics for the express purpose of improving the utility of the data for all types of users;
2) that the Forest Economics Research Institute survey all the provinces to determine the need for and best means of collecting data concerning the recreational use of forest land;
3) that high priority be given by DBS to the employment of liaison officers for the forest industries in appropriate regions with duties similar to those of the liaison officer for the forest industries in British Columbia;
4) that DBS contact each of the provinces to determine their views as to the format and timing of the next Conference.

Federal-Provincial Meeting Discusses Agricultural Statistics

Representatives of the provincial governments, farmers, farm organizations, DBS, the Canada Department of Agriculture, other federal government departments and the United States Department of Agriculture gathered in Ottawa on March 3 and 4, 1971 for the twenty-second Federal-Provincial Conference on Agricultural Statistics. Mr. L.E. Rowebottom, in his address of welcome to the delegates, stated that one of the main purposes of the Conference was to develop better communication among the gatherers, users and suppliers of agricultural statistics. W.L. Porteous, Director of the Agriculture Division, pointed out, in his opening remarks, the great and very rapid structural changes taking place in the agricultural industry and the need for more and better statistics for the planning and policy-making required to meet the new situations.

Five speakers (representatives of farmers, farm organizations, agribusiness and financial institutions) presented their views on the present and future statistical needs of farmers and farm organizations. Although many different suggestions were made, the main requirements were seen as improved timeliness and more market information.

The Conference then discussed the dissemination of economic and commodity statistics to farmers for decision-making purposes. At the 1970 Conference, it was recommended that the DBS Agriculture Division, in co-operation with the Information Divisions of DBS and the Canada Department of Agriculture, should take special steps to deal with information dissemination. During the past year, radio tapes and press releases were prepared and issued in response to this recommendation. However, because of the increasing demand for more information of this type, the topic was discussed again at the 1971 Conference. The three speakers generally agreed that the most important aspects of information dissemination are access and immediacy. The ways in which the Ontario Department of Agriculture and Food and the United States Department of Agriculture meet these requirements in their statistical dissemination programs were outlined by representatives of these two organizations.

The second day of the Conference began with a presentation describing the Agriculture Division's expanded program for forecasting farm income. In the fall of 1970, provincial farm income forecasts were made for the first time. The methodology and some of the difficulties encountered in this process were outlined. It was also reported that work is being done to determine the feasibility of forecasting farm cash receipts on a quarterly basis.

The Bureau's plans for the development of a general purpose

enumerative sample survey for agriculture were outlined for the Conference. The present methods of collecting agricultural statistics are not compatible with the structure of today's agriculture. With an enumerative sample survey, data on farm numbers, acreages and income distributions could be obtained on a regular basis. It was proposed that the Bureau launch an annual full-scale enumerative probability sample survey in 1972.

Another topic discussed at the Conference was the use of electronic data processing within the Agriculture Division of DBS. A system is being devised to transfer the data gathered in the June and December crops and livestock surveys from survey forms to magnetic tape. Computers can then be used for editing, matching with previous surveys, summarizing and cross-tabulating the data. A central register of farms is also being established which, in addition to providing a mailing list for current surveys, can be used to help design special-purpose surveys.

The Conference closed with statements by DBS and provincial government delegates, and with the presentation of recommendations. The following are recommendations approved by the Conference.

1. It is recommended that the "Feedback Committee" continue to study and develop improved methods of disseminating statistical information to farmers. For example, it was suggested that study be given to the possibility of setting up a new type of statistical reporting service which would supply information on a frequent, flexible and timely basis. Also proposed was a monthly digest of key facts assembled by DBS for distribution to farmers.
2. It is recommended that a committee be formed to study means of speeding up collection and dissemination of statistical information. This committee should report its findings to the 1972 Federal-Provincial Conference on Agricultural Statistics.
3. It is recommended that the reference date for livestock inventories be December 31 rather than December 1. Reference dates for other quarters of the year should then be shifted accordingly.
4. The delegates recognized the need for an annual probability sample survey and recommended that every effort should be made to promote its implementation.

Federal-Provincial Committee on Classifications

The first meeting of this committee was held in January 1971. In attendance were representatives from seven provinces and from DBS.

Discussion ranged over the present state and future development of standard classification work with emphasis on the existing standard classifications for industries, occupations, commodities and geographical areas, and the need to work closely together in the development and early stages of revision of existing classification systems.

A second meeting was planned for the autumn of 1971.

Public Finance Statistics

In November 1970, the first federal-provincial conference of users of public financial statistics was held in Ottawa. The Governments Division of DBS played a major role in convening the conference and in preparing discussion papers to stimulate the deliberations of the delegates. All provincial governments (except British Columbia) and several departments and agencies of the federal government were represented at the meeting.

The Conference chairman, Mr. G.A. Wagdin, reviewed the reasons for calling the conference and stated that the main objective of the meeting was to examine user requirements and hear the delegates' views on the existing public finance statistics program and the areas for improvement. Other topics discussed were: project priorities, timeliness, possible expansion of "balance sheet" information, especially on a provincial level, and regional data needs.

Various recommendations and proposals were made at the Conference. In response to these recommendations, the Governments Division has accelerated the release of some publications and is investigating the possibility of quarterly reports for certain data. Another project undertaken as a result of a Conference proposal is the new format of the publication on provincial government debt. (See **New Reports**, p.14.)

Metric System Discussed at ASA Meeting

Dr. Arthur Smith, Chairman of the Economic Council of Canada, addressed the April meeting of the Ottawa chapter of the American Statistical Association. The topic of his speech was "Canada in a Metric World". A summary of his remarks follows.

Most Canadians have spent the largest part of their lives in a "non-metric" world. Only when travelling abroad or working in the world of science do we encounter the full range of the logical and simple system of measurements known properly as the *Système International d'Unités* (SI), commonly referred to as the metric system.

However, the importance of the metric system in Canada is bound to increase in the future. In January 1970, a White Paper entitled "Metric Conversion in Canada" was released by the federal government. Taking into account the breadth of the use of the metric system throughout the world, and the views of industry, consumer associations and other groups in Canada, this White Paper recognized and accepted three basic principles for guiding future government policy in this area.

(1) The eventual adoption in Canadian usuage of a single coherent measurement system based on metric units should be acknowledged as inevitable and in the national interest.

(2) This single system should come to be used for all measurement purposes required under legislation, and generally accepted for all measurement purposes.

(3) Planning and preparation in the public and private sectors should be encouraged in such a manner as to achieve the maximum benefits and minimum costs to the public, to industry, and to government at all levels.

No specific time limit was set in the White Paper for the conversion, but the paper noted that information on the metric system should be made readily available to the public, and that

the introduction of the system should be encouraged wherever the benefits are clear and the costs minimum.

This White Paper did not receive wide publicity, but it could have profound and far-reaching effects on our society.

The desire to measure and classify physical objects and forces is one of those fundamental aspects which distinguishes a civilized society. As man's knowledge of the world has become more sophisticated, his interest in refining the measures by which he defines the height and length and weight and intensity of things has increased.

Numerous measures and systems of measures evolved throughout time: many have passed into history but, even today, there remains an array of measures of striking variety and incompatibility. In Canada, we have a complex set of legally recognized non-metric units, based largely on the British system. In spite of the fact that these units make up our official system, many Canadians would find some of them quite unfamiliar, such as the gill (1/32 of an imperial gallon), the link (.22 of a yard) and the fluid dram (1/1280 gallon). Even for more familiar measures, the conversion factors are far from common knowledge.

In the past, Western society could live comfortably with a variety of disparate measures and systems of measures. But as our society has become more technologically oriented, and as trade has grown to large dimensions, the importance of having compatible and accurate physical measures has increased considerably.

With respect to compatibility, there are considerable problems both within systems and between systems. For example, the gallon in the United Kingdom is 10 parts per million smaller than the Canadian gallon.

The complexity of the conversion factors between the major systems makes compatibility awkward and a high degree of accuracy between systems difficult.

All these factors have combined to make the necessity for a common and universal system of measurement apparent, particularly as our technological sophistication continues to grow. The metric system is in the process of becoming that common system because of its directness and simplicity. Since its introduction in the late eighteenth century, it has spread, first throughout the domain of science, and then to common usage in the majority of countries in the world.

The major alternative to the metric system remains the inch/pound system, but it is becoming a narrowly based alternative. For many years, the main users of this system have been the United States and the British Commonwealth nations. However, newly emerging nations tended to opt for the metric system because of its simplicity, its scientific basis, and its widespread usage. Moreover, the number of those countries using the inch/pound system and other non-metric systems has decreased. India enacted a law in 1958 which made the metric system the only legal system after 1968; although the metric system had been legal in India since the 1870's, it was not in common usage. Japan has virtually completed a lengthy conversion to the metric system, and South Africa, Australia, New Zealand and Ireland are in the process of converting. Significantly, the United States is on the verge of completing a lengthy study on the subject of metric conversion. This study is scheduled to be released during 1971, and could well have a large impact on Canadian thinking with respect to conversion.

The United Kingdom decided, in 1965, to convert to the metric system by 1975. The pressure behind this change came, to a large degree, from British industry. The probability that the United Kingdom would enter the European Economic Community, and the fact that more than 50 per cent of the foreign trade of the United Kingdom is with metric countries, obviously lay behind the industrial sector's assessment of the situation.

Thus, the use of the metric system has been spreading gradually throughout the world. At present, about 90 per cent of the world's population lives in countries which use the metric system as their primary system of measurement, or in countries in the process of metric conversion. Sixty-five per cent of world trade occurs between metric countries. So Canada now finds itself part of an inch/pound North American island in a basically metric world.

In actual fact, the metric system has already made considerable practical inroads in Canada. Three of the six basic SI units are in full use, namely, the ampere, the candela and the second, leaving only the introduction of the metre, kilogram and degree Kelvin. Additionally, we use a decimal currency. Metric units are used almost exclusively in scientific work and in much technological work. The pharmaceutical industry (in both Canada and the United States) has converted entirely to the metric system, and other industries are moving in this direction. For instance, our optical, photographic and electronic industries are partially or mainly oriented to the metric system. All these are significant movements in the direction of "metrication". Nonetheless, we have a long way to go before we become a metric nation.

Metrication is a multi-stage process, not one that occurs in a single step. But within these stages, there are four broad levels of acceptance of the system which can be distinguished. First, there is legalization – the recognition of the metric system as a legitimate system of measures. The metric system is legal in both Canada and the United States – and has been legal in Canada since 1873.

The next level is adaption, in which the metric system and another system are used side by side. This is usually a transitory stage. The units of the older system are "translated" (on labels, in documents, etc.) into the equivalent metric units, but the basic "language" of measurement is still founded in the older system.

Conversion is the third level of acceptance of the system. This level has considerable economic implications, because it implies not only the use of metric units for all measures, but it also implies, because of our propensity to use (and the convenience of) round numbers for common weights and dimensions, that the dimensions and weights of many consumer goods, industrial products, etc. will have to be changed. The trade with metric nations and the need for international standards

would tend to channel these changes in specific directions. In other words, after conversion, not only are the units metric, but the basic language of measurement would be founded in the metric system.

The final stage is compulsory usage. At this point, the use of other systems is essentially forbidden, except in particular situations.

In Canada, we passed the first stage almost a century ago, but we have not, on the average, advanced very much further, except in particular sectors and in our scientific activities. Great difficulties have to be overcome, and these are magnified by the nature of our relationship with our major trading partner, the United States.

In a sense, we face a difficult dilemma. We cannot convert to the metric system at a rate which far outstrips any U.S. moves in this direction. The magnitude of our trade with the United States, the existence of a great many U.S. subsidiaries in Canada (some of which are closely integrated with their parent company's operations), and the related commonality of many of our capital and consumer goods would make this exceedingly difficult, if not impractical.

On the other hand, Canadians cannot afford to ignore the implications of the basic world-wide trend toward the metric system, and, indeed, an awareness of the inevitability of this trend comes through clearly in the government's White Paper. The degree of dependence of our economy on foreign trade underlines the importance to us of the actions of other countries in this area. Most of our other major trading partners use the metric system, or are in the process of conversion. Further, we must be prepared for the possibility of significant moves toward metrication in the future by the United States, so that we are not left behind.

There are certain relatively simple actions which could be taken immediately in Canada that would move us measurably along the road to metrication. One of these would be to start on the replacement of the Fahrenheit scale with the Centigrade scale.

With respect to the more general aspects of metrication, conversion should be expedited where the costs are minimal, or where there are obvious economic advantages to be gained. As will be indicated later, the rate of conversion in the more difficult sectors should be phased to avoid the excessive costs which could well be associated with a mandatory once-and-for-all change over a short time period. In line with this, much more serious consideration than is being given at present should be directed to uncovering the magnitude and range of the economic and social costs and benefits of conversion.

What are some of the costs or disadvantages of conversion, and what are some of the economic and social benefits? First of all, countries which have recently carried out complete conversion, such as India and Japan, have found that the costs of conversion, on the whole, were less than had been estimated. Nonetheless, there will be substantial initial costs involved, even though these can be mitigated by phasing.

In general, with respect to the cost and benefits of conversion, the movement to the metric system by Canada will undoubtedly be beneficial over the longer term to both our export and import trade, since it will constitute the removal of what is essentially a nontariff trade barrier. The results for Canadian industry will be increased productivity (partially because of the greater simplicity of the system and the rationalization involved in adopting it), lower prices for materials and equipment (because of the improved access for foreign suppliers to Canadian markets and increased specialization and efficiencies among Canadian producers), and improved general competition (which will also lead to increased productivity). The introduction of the metric system would undoubtedly have a positive effect on our economic growth.

More specifically, the costs and benefits of metrication can be broken into two categories, those associated with "software" conversion and those associated with "hardware" conversion. The problems associated with software conversion are less difficult to solve, partially because their economic impact is less severe, or can be more easily attenuated than the problems of hardware conversion of things. Conversion with respect to software is to a large extent a problem of "translation" and of the education of the public. Real conversion with respect to the hardware side of things often means redesign and replacement.

Typical software-oriented problems that would be encountered during conversion include the reorientation of certain aspects of the field of education, the familiarizing of workers with the metric system, the retabulation of existing data, the rewriting of certain computer programs and the revision of some legislation, regulations, and standards.

On the hardware side of matters, however, the problems are more formidable. The initial costs incurred during the period of conversion could be quite large, although no detailed estimates have been made for Canada. If the conversion is properly planned in the various industrial sectors, in consultation with related industrial sectors and with their customers, and if it is phased over a realistic time period, many of the expenses could not be categorized as additional since they would be for the replacement of obsolete equipment which would have to be replaced in any event. At the same time, in many situations there are recognizable medium- and long-term benefits associated with the hardware aspects of conversion. Principally, these come in the form of increased opportunities for trade with other metric countries, as indicated earlier, and the rationalization of production made possible by a more coherent and simpler system of measures.

Major initial costs may be experienced by those industries which have considerable investments in capital equipment, such as machine tools. Again, however, these costs can be minimized by proper planning and co-ordination in the program of metric conversion. Benefits can also be derived from metrication if the conversion is accompanied by new standards which reduce the irrationally large collections of sizes found among such goods as twist drills, fasteners, and paper products (especially paper and envelope sizes).

Retail packaging will considerably change with metrication,

and this will involve sizeable initial costs to industry. On the benefit side, however, metrication, and the simpler standards that will undoubtedly accompany it, will enable the consumers to determine more readily than at present exactly how much they are getting for a certain price.

On the other hand, it is important to remember that there are extra expenditures for many Canadian industries which result from being part of the last inch/pound stronghold in a metric world. These expenditures arise, in part, as a consequence of the necessity in many cases to maintain double inventories. As long as North America remains inch/pound-oriented, our industries will be at a competitive disadvantage, a disadvantage which will vanish once the metric system is adopted by Canada and the United States.

In general, those industries which are significantly involved in the importing and exporting of goods should take a closer look, if they have not already done so, at the pros and cons of conversion.

Canada has recognized in principle that it will eventually become a metric country; there are significant costs and benefits involved in the conversion, but the costs are mostly in the short term while the benefits extend to the longer term; and there may be considerable advantages to moving somewhat more rapidly than the United States towards metric conversion. In Canada, we should be studying this matter carefully so that the conversion may take place as smoothly and inexpensively as possible, so that we understand the real costs and benefits involved, and so that we are not unprepared to keep pace (at the very least) with the actions the United States may take in this area. Presumably, this will be one of the concerns of the new Standards Council of Canada.

New Publication for Air Carrier Financial Statistics

A new report, *Air Carrier Financial Statements* (catalogue number 51-206), scheduled for release in June 1971, contains 1970 data, representing an improvement in timeliness of approximately two years from its predecessor, *Civil Aviation Annual*. This achievement is made possible through the co-operation of the air carriers and by not waiting until all carriers have been visited by the CTC (Air Transport Committee) audit division. By this means, the composite financial statements of the industry, as well as the individual reports of the transcontinental and regional carriers are available early enough to be of current use rather than of historical interest only.

The release of the new report marks the end of a series of publications entitled *Civil Aviation*, published since 1937 in monthly, preliminary annual and annual editions. The other two publications which combine with *Air Carrier Financial Statements* to fully replace the *Civil Aviation* series were released previously. The first issue of the quarterly report, *Air Carrier Operations* (51-002) was released in October 1970 and the first issue of the monthly *Transcontinental and Regional Air Carriers* (51-001), in April 1970.

Air Carrier Financial Statements, catalogue number 51-206 is available from the Publications Distribution Unit, DBS, Ottawa.

Changes in Business Finance Reports

Financial Statistics of Industrial Corporations – In 1970, the quarterly publication, *Industrial Corporations* (catalogue number 61-003), was expanded to include the complete financial statements of the industries instead of only an abbreviated profit statement. In 1971, this publication will be expanded further to include seasonal adjustment of a much larger selection of items. (Seasonal adjustment of financial data is, to a large extent, experimental and exploratory, until the significance of such adjustment in this area can be established.) The publication will also provide more analysis as well as financial indicators such as the financial position, short- and long-term liquidity, various aspects of profitability and cash flow. These additions are expected to improve the usefulness of the data for analysis of corporation finance.

Fixed Capital Stocks and Flows – The fixed capital stocks and flow data for manufacturing (catalogue numbers 13-522 and 13-523), published in 1967, used the 1948 Standard Industrial Classification and covered the period from 1926 to 1960 only. The conversion of this series to the 1960 SIC and updating to include 1969 data has now been completed. The material has been reworked, and now provides fixed capital stocks and flows information for the 20 major manufacturing groups for the years 1926 to 1969 inclusive.

New Format for Provincial Government Finance Report

The Governments Division of the Financial Statistics Branch,

DBS, is bringing out a greatly expanded version of its publication on provincial government finance. The new report, entitled *Provincial Government Finance, Assets, Liabilities, Sources and Uses of Funds* (catalogue number 68-209), replaces the previous bulletin on this subject, *Provincial Government Finance, Debt.*

The format of the new publication features a full balance sheet presentation of the financial data, sources and uses of funds statements, and reconciliation of the information with the financial flows series. Each issue will also contain notes on economic development in the provinces, by quarters.

The first issue is expected to be available in November 1971, and will contain actual data for 1968-69 and preliminary data for 1969-70.

Provincial Government Finance, Assets, Liabilities, Sources and Uses of Funds, catalogue number 68-209, annual, will be available from the Publications Distribution Unit, DBS, Ottawa. Price: $.50.

Service Bulletins Introduced for Each Transportation Mode

Each subject matter area of the Transportation and Public Utilities Division will now issue service bulletins to meet the demands of both government and non-government users for more timely release of information and for the various types of information beyond the scope of existing publications. The bulletins are also intended to serve as a vehicle for advance release of key statistics from regular series, as well as any special tabulations of interest to users.

The following is a list of the service bulletins and their catalogue numbers.

Aviation Statistics Centre – Service Bulletin (51-004)
Railway Transport Service Bulletin (52-004)
Road Transport Service Bulletin (53-006)
Water Transport Service Bulletin (54-003)
Communications Service Bulletin (56-001)

The bulletins are bilingual and are for circulation to all major users and respondents. Subscriptions, priced at $5 each, may be obtained by writing to the Publications Distribution Unit, DBS, Ottawa.

Plans for a Statistical Digest of Tourism Information

The Provincial Liaison and Consultative Services staff are compiling a digest of statistics on travel, tourism and outdoor recreation in Canada. This report will bring together related data from many DBS publications and also incorporate some information from other sources.

The main purpose of this publication is to enable DBS to answer more efficiently the many enquiries received about this subject. Also from this publication, users will be able to describe their requirements for more detailed information or special-purpose data.

The report is planned for release early in 1972.

Preliminary Estimates of 1969 Income Distributions Now Available

Income Distributions By Size in Canada, 1969, Preliminary Estimates, catalogue number 13-542, was released in March 1971. Data in this preliminary report are based on a survey of 12,000 households taken in the spring of 1970. The survey inquired into aspects of family finances other than income: data on financial and selected other assets and debts were also collected.

According to figures in the preliminary report, family incomes increased by 17 per cent from 1967 to 1969. In 1969, average family incomes varied from $6,881 in the Atlantic Provinces to $9,793 in Ontario. Unattached individuals, persons living alone or in a household where they are not related to anyone, reported an average income of $4,003 in 1969.

The preliminary estimates also include some analysis of low income families and unattached individuals. Using the low income cut-offs adopted by the Economic Council in its Fifth Annual Review and adjusted for the increase in the Consumer Price Index, the preliminary estimates indicate that the proportion of families in the low income group dropped from 18.6 per cent in 1967 to 17.3 per cent in 1969, and the proportion of unattached individuals in that group decreased from 39 per cent to 35.5 per cent during the same two years.

After a complete edit of the data, a full report, entitled *Income Distributions by Size in Canada, 1969,* will be published. The report, which will be similar in content to *Income Distributions by Size in Canada, 1965* (catalogue number 13-528), will be released in the fall of 1971.

Data collected in the spring of 1970 on assets and debts of Canadian families will be the subject of another report. Percentage distributions by size of various types of assets and debts will be shown by family income and other socio-demographic characteristics. It is expected that this report will be published by the end of 1971. The last similar report was *Incomes, Assets and Indebtness of Non-farm Families in Canada, 1963* (catalogue number 13-525); however, the reports differ in that the 1969-70 data include farm families.

Income Distributions by Size in Canada, 1969, Preliminary Estimates (catalogue number 13-542) is available for $.50 from the Publications Distribution Unit, DBS, Ottawa. Inquires should be directed to Mr. B. Mazikins, Assistant Chief, Surveys of Consumer Finance Research Staff, DBS, Ottawa.

Regional Development and Public Finance in the Atlantic Provinces

A recent report by the Atlantic Provinces Economic Council examines financial activities in the Atlantic Provinces in comparison with other Canadian provinces for the fiscal years 1959-60 to 1967-68.

The first part of the report deals with the provincial and municipal expenditures and revenues during the study period. It shows that total expenditures and revenues rose as rapidly in the Atlantic Provinces as in all Canadian provinces. However, own-

source revenues in this region did not increase as rapidly as those in Canada as a whole and, by 1967-68, the Atlantic Provinces had come to depend even more on revenues from the federal government. In addition, the Atlantic Provinces relied heavily on borrowing to finance expenditures, and in this region the costs of borrowing are very high

The final section of the report shows that the inadequacy of the region's own-source revenues is related directly to the area's relatively low income levels. An attempt is made to show that a development program for the Atlantic Provinces would raise income levels in the region which would in turn increase provincial and municipal revenues.

Regional Development and Public Finance, Pamphlet No. 17, Atlantic Provinces Economic Council, Fredericton, New Brunswick.

Detailed Statistics for Newfoundland and Labrador

The Economics and Statistics Division of the Newfoundland and Labrador Department of Finance has produced a comprehensive volume of statistics on all aspects of life in this province. The publication, entitled *Historical Statistics of Newfoundland and Labrador,* is intended to be a foundation document: supplements will be issued annually to up-date the data and to incorporate new series.

There are 23 sections in the report dealing with a wide range of socio-economic, financial and business statistics. The tabular material in each section is prefaced by a brief statement giving definitions and explanations of the terms used, the sources of data, and comments on the section's contents.

Much of the information in this first issue of *Historical Statistics* was obtained from DBS publications: some previously unpublished DBS data was also used. A limited amount of published and unpublished material was also obtained from other federal government departments and agencies and from provincial government sources.

In spite of the difficulties presented by changing statistical concepts and classifications, inconsistencies in data, and lack of reliable source material, efforts were made to have the statistics in this report cover as long a time period as possible. However, to facilitate the use of this information in economic analysis and forecasting, time series are given on a seasonally adjusted basis (wherever possible) as well as in the unadjusted form.

Historical Statistics of Newfoundland and Labrador is available from the Department of Supply and Services, Government of Newfoundland and Labrador, St. John's, Newfoundland.

Economic Forecasting and Travel Research in Alberta

Two recent publications of the Economic Research Branch of Alberta's Department of Industry and Tourism deal with economic forecasting and travel research.

Executive Report – 1971 reflects the opinions of more than 290 senior executives representing prominent Alberta business enterprises. In total, Alberta business executives predict a substantial upturn in the province's economic performance during 1971. Not only is the economy in general expected to make considerable gains this year, but each major industry – manufacturing, mining, agriculture, forestry, construction, wholesale and retail trade, recreation and travel – is forecasting substantial growth.

Another publication recently completed by the Economic Research Branch deals with one of Alberta's major industries – tourism. *The Economic Analysis of Vacation and Pleasure Travel in Alberta* will be an integral part of the Alberta Recreation Plan. In this report, tourism's contributions to business volume, income, employment and provincial government revenues are reviewed and analyzed.

Information about Executive Report – 1971 and Economic Analysis of Vacation and Pleasure Travel in Alberta can be obtained by writing to D.H. Sheppard, Senior Economist, Economic Research Branch, Department of Industry and Tourism, Government of Alberta, Edmonton 15, Alberta.

Alberta Labour Statistics

Two major labour statistics reports were prepared by the Alberta Bureau of Statistics during 1970: *Fourteenth Annual Report of the Alberta Salary and Wage Rate Survey, 1 August 1970* and *Working Conditions Survey, Alberta, 1 August 1969.*

The former report contains data obtained from a community pay survey of 185 occupations which involved 1,200 firms in Alberta. Data were compiled and published by type and size of firm for six major cities and for the province as a whole.

The latter, a supplement to the 1969 pay survey, presents a statistical summary, by type of firm, of standard work week arrangements, vacation-with-pay plans, paid statutory or public holiday policies, pay period frequencies, and daily rest or coffee break periods in a cross-section of Alberta industry.

Copies of these reports are available from the Alberta Bureau of Statistics, Edmonton 15, Alberta.

British Columbia Publications

Mobile Homes in British Columbia – A Socio-Economic Study – The study surveys the mobile home environment in British Columbia, providing a comprehensive description of mobile home parks, a characterization of mobile home owners and an analysis of the demand for mobile homes and their manufacture in British Columbia. The study was undertaken in response to the growing interest in the subject and because of the lack of current information.

A survey conducted in August 1970 forms the conceptual basis of the report. Copies of the questionnaires used are included in the appendix.

British Columbia Manual of Resources and Development – This manual deals with the resources – human, forest, mineral, agricultural, fish and water – of British Columbia. Its purpose is to present a concise and convenient description of the current and historical development of resources and economic activities

of the province. It also contains sections regarding the physiography, climate, geology, recreation and other aspects of British Columbia.

Establishing a Business in British Columbia – An Outline of Government Regulations and Services – The purpose of this brochure is to provide a general picture of the part played by the three levels of government – federal, provincial and municipal – in regulating and assisting business and industry in British Columbia. The booklet stems from the growing number of requests for information concerning the procedures involved in establishing a business in British Columbia. References are made to official sources for further information that potential investors may require on government regulations, facilities and services.

More information on these reports may be obtained from J.R. Meredith, Director, Economics and Statistics Branch, Department of Industrial Development, Trade and Commerce, Victoria, British Columbia.

Consolidation of Manpower Research and Labour Analysis Sections

The Special Manpower Studies Section of the DBS Regional and Manpower Research Staff was transferred from the Integration and Development Staffs to the Labour Division of the Economic Statistics Branch, and consolidated with the Analysis and Development Section of that Division.

The new section formed by this regrouping is called Manpower Research and Development and is headed by Mrs. Helen Buckley, formerly with the Special Manpower Studies Section.

Mrs. Irene Johnson, who was Chief of the Labour Division's Analysis and Development Section has moved to the Program Branch of Treasury Board.

Science Statistics Section Transferred

On April 1, 1971, the Science Statistics Section was moved from the Business Finance Division of the Financial Statistics Branch to the Education Division of the Socio-Economic Statistics Branch of DBS. This transfer was made as a result of the increasing importance of the DBS science statistics program in areas in which the Socio-Economic Statistics Branch already carries out many activities. For example, the Education Division now collects a significant amount of data on university research activities. The relocation of the Science Statistics Section will facilitate the further development of such programs and allow easier co-ordination of a comprehensive science statistics program. However, there will still be close collaboration with the Financial Statistics Branch to ensure maximum compatibility with regard to financial statistics.

Mr. H. Stead continues in his position as Chief of the Science Statistics Section.

Three Sections Integrated to Implement Census Data Access Program

The DBS Census Division has brought together several organizational components to facilitate implementation of the Census Data Access Program. Three sections – Data Dissemination, Computer Applications, and User Inquiry Service – are now integrated for this purpose. Mr. B. Giles has been designated as overall manager of the program.

Mr. E.M. Murphy has been seconded from the Research Subdivision to become Chief of the Data Dissemination Section, and Mr. K.P. Ellis continues as Chief of the Computer Applications Section. The responsibility for the User Inquiry Service has been assumed by Mr. Giles until a chief for that section is appointed.

Mr. W. Saveland and Mr. D.N. Nagnur from the Research Subdivision, and Mr. L. Roubillard of the Demographic and Social Characteristics Section have also been seconded to the Data Dissemination Section. Additional staff to work in this important program will be provided from the Research Subdivision, as they are needed.

Appointments

H. Adler has been appointed Senior Advisor on Integration, reporting to Dr. S.A. Goldberg, Assistant Dominion Statistician (Integration and Development). Mr. Adler previously was Assistant Director General of the Economic Accounts Branch.

W.S.C. Boswell joined the DBS Statistics Use and Information Services Group as a Publicity Officer. Mr. Boswell came to the Bureau from Vickers and Benson Advertising Ltd. in Toronto.

D. Buxton has moved from his position as Chief of the Planning and Analysis Section, CALURA to become Assistant Director of Analysis and Integration in CALURA.

I.B. Carruthers has been appointed Assistant Director, Statistics, Systems and Publications, CALURA. He comes to the Division from the DBS Central Classification and Company Establishment Integration.

H. Dowsett was appointed Chief of Integration in the Systems and Development Section of the DBS Education Division. Mr. Dowsett was formerly with the Department of Transport.

E. Kassirer, formerly with the Social and Human Analysis Branch of the Department of Regional Economic Expansion has been named Chief of Publications and Special Studies, under the Co-ordinator of Systems and Development in the Education Division.

S. Kayes has joined the Capital Expenditures Section of the Business Finance Division, Financial Statistics Branch for a one-year term, under the Career Assignment Program (CAP). Mr. Kayes comes to DBS from the Department of Regional Economic Expansion.

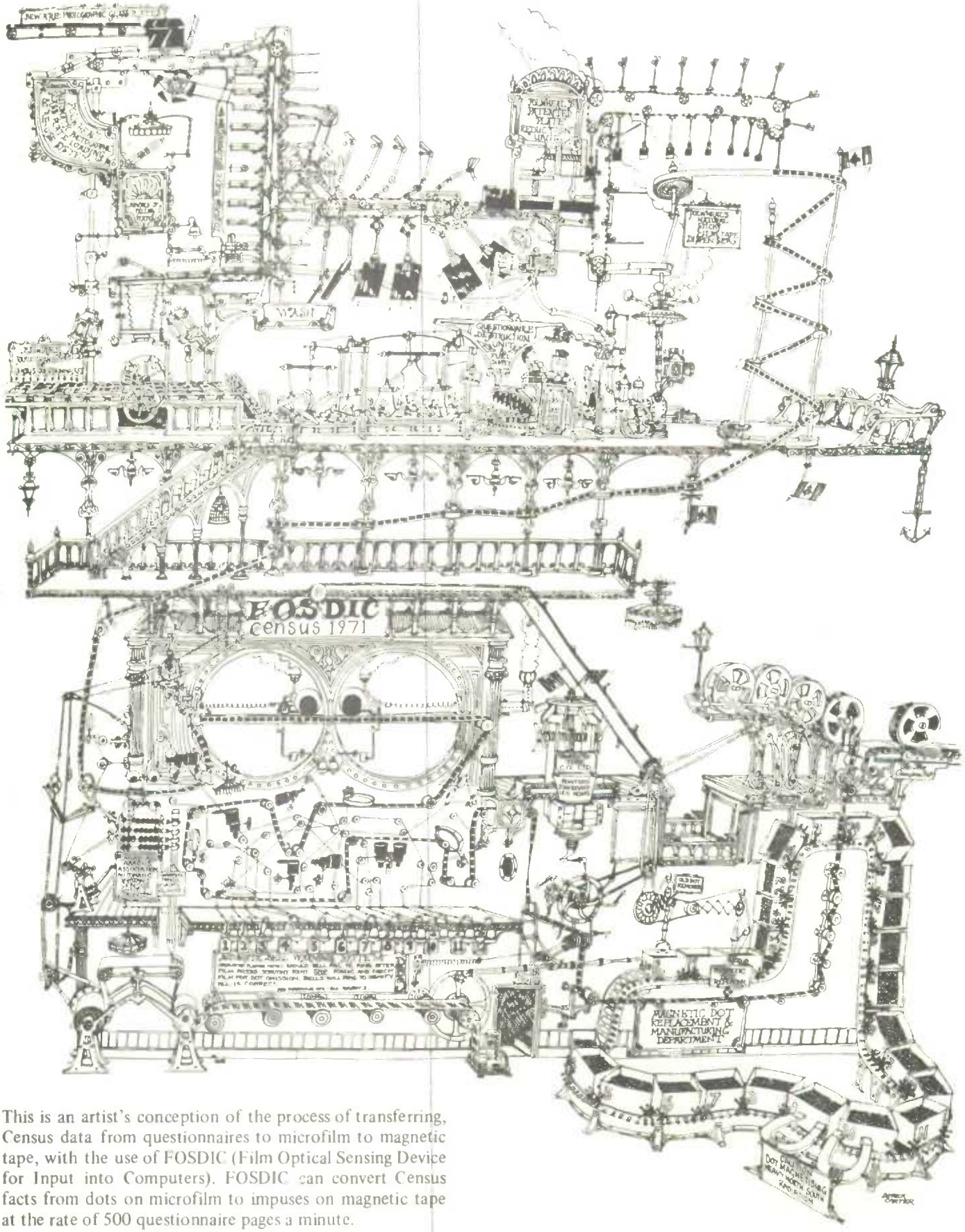
G.R. Labossiere has been named Acting Director General, Administration, with responsibility for DBS administration, finance, personnel, the bilingual program and management services. Before accepting this position, Mr. Labossiere was Director of Personnel Administration with the Bureau.

W.C. MacIver has been appointed Acting Director of DBS Financial and Administrative Services. Mr. MacIver was previously Acting Director of Administration.

D.B. Murray has assumed duties as Assistant Director of the Socio-Economic Computer Systems Subdivision with the DBS Methodology and Systems Branch. Before joining DBS, Mr. Murray had several years experience in computer systems development and operations with the British Columbia Telephone Company and Bell Canada.

J.G. Stinson has been appointed to the DBS Statistics Use and Information Services Group as a Statistics Use Development Officer in Vancouver. He comes to the Bureau from AVG Management Science Ltd., where he was manager of systems and EDP.

D.A. Worton has been appointed Director of the Central Planning Staff of the DBS Integration and Development Staffs. Mr. Worton joined the Central Planning Staff in July 1969, and has served as Acting Director since October 1970.



This is an artist's conception of the process of transferring, Census data from questionnaires to microfilm to magnetic tape, with the use of FOSDIC (Film Optical Sensing Device for Input into Computers). FOSDIC can convert Census facts from dots on microfilm to impuses on magnetic tape at the rate of 500 questionnaire pages a minute.