

## THE TABULATION PROGRAMME FOR THE 1961 CENSUS OF CANADA

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Someone has suggested that the Census could be described as being second only to a war in the demands it makes on a government's organizational resources. Perhaps the best measure of the value of this decennial project is the ever-increasing demand by the public for the resulting data. It is in an attempt to satisfy this demand within a reasonably short period after the actual count that each Census sees new procedures and new equipment brought into operation. While it has not been possible or even practical to try to meet every request, the Census of Canada has undertaken in 1961 what is probably its most ambitious tabulation programme. In this regard, the addition of a high-speed computer to the Canadian Census scene has played an important role.

Time will not permit a detailed examination of each set of tabulations. Instead, this paper will attempt to summarize the programme planned for the Census of Population and Housing, pointing out the geographic areas for which the principal tables will be available, and noting, also, the principal areas in which the computer has affected the results.

Provincial data

In planning the tabulation programme, the significance of any detailed data had to be considered in deciding the size of the geographic areas for which the distributions should be provided. Thus, while most of the tables will provide counts for areas below the provincial level, a relatively small number are restricted to Canada and the provinces. Such tables as (a) the distribution of normal families showing age of husband classified by age of wife, and (b) the cross-classification of the experienced labour force by sex, showing detailed occupations by detailed industries, are examples of the kind of tabulations planned at the provincial level only.

Counties and Census divisions

Within the provinces, counties or census divisions are the largest geographic areas. In addition to tabulations for most of the basic population and housing characteristics, cross-classifications at this level will include tables showing such characteristics as sex, marital status, religion, language, and education classified by (a) age, and (b) origin. Basic labour force distributions for these areas will include a count of the experienced labour force classified by marital status and sex.

Municipal subdivisions

The next largest geographic areas, the municipal subdivisions, range from the largest metropolitan areas to the smallest incorporated villages. They include other forms of municipal organization such as the parishes in New Brunswick, municipalities in Quebec, townships in

Ontario, municipal districts in Alberta, and so on. The Census will not provide the same amount of information for each of the several thousand such subdivisions across Canada. However, certain very basic characteristics will be made available for each of these areas, regardless of size. These will include population counts distributed by the characteristics of age, sex, marital status, origin, religion, years of schooling, language, and birthplace. Not all of these characteristics will appear in the published reports, but they will be made available for particular communities or other subdivisions on request.

For cities, towns, and incorporated villages of 1,000 population and over, population distributions by broad occupation and industry groups will be available, as well as basic facts concerning household and family composition. For rural types of subdivisions, these same data will be combined for the balance of the county in which they are located.

At the 5,000 population level, certain basic housing characteristics from the 20 p.c. sample will be tabulated, but the full range of distributions for the housing subjects of inquiry will be compiled for rural and urban subdivisions of 10,000 population and over. At this same level, more detailed distributions of population characteristics will be produced, as well as the full occupation and industry distribution of the working force for the cities and towns of 10,000 and over. For Canada's major cities and metropolitan areas of 100,000 and over, these occupational distributions will be extended to include various cross-classifications such as (a) occupations, and (b) industries by age groups and sex, marital status, and earnings of wage-earners. Cross-classifications of general population characteristics such as age groups by marital status and sex, origin groups by religious denomination, and birthplace by period of immigration, will be compiled for individual centres and municipal subdivisions of 30,000 population and over.

In addition to the data already noted for the Census metropolitan areas of 100,000 and over, detailed cross-classifications for all metropolitan areas will be included for most of the population and housing subjects. The component parts of the M.A.'s will be included in the basic counts of such characteristics as age, sex, marital status, birthplace, religion, language, and education and of the total labour force. For these same areas, the 20 p.c. sample of Housing will provide counts of the number of dwellings classified by such characteristics as type of dwelling, tenure, and residential use.

Census tracts

For most purposes, the establishment of Census tracts in Census metropolitan areas and cities of 50,000 and over has fulfilled the needs

of a widespread demand for statistics which would isolate areas of change within a community. Not only do they provide a meaningful and useful criterion for the publication of a wide range of census statistics. For municipal authorities, they provide, also, a means of assembling local data which can be viewed against the background of census information compiled on the same basis.

The 1961 Census tract reports will provide again basic population and housing distributions for each Census tract in Canada's major cities. These will include such basic population characteristics as age, sex, marital status, origin, religion, and years of schooling. Household data will show the number of persons and families per household, as well as the number of households with lodgers. The main classifications of family information will relate to the number of children in families and the ages of children.

Housing data will include distributions by types of dwellings, rooms per dwelling, tenure, median rent and year of occupancy. The number of dwellings which possess such household facilities as home freezers, television sets, and passenger automobiles will be shown also. The labour force population will be classified in the Census tract reports by employment status during the week preceding the Census date of June 1, 1961, as well as by such characteristics as class of worker, broad occupation groups, and earnings of wage-earners.

#### Enumeration areas

To meet the needs of users who urgently require population or housing characteristics for city blocks or other units smaller than those covered in earlier censuses, the 1961 Census is prepared to offer them on the basis of the slightly larger-sized "enumeration area". An Enumeration Area (or E.A.) is the territory covered by one enumerator. In a city, one E.A. usually comprises several city blocks. For 1961, it was planned that the populations of these areas should range from 400 to 800, and in some cases, were even smaller.

The Bureau is not planning to publish Census results by E.A.'s, but does plan to have machine tabulations prepared at cost for basic distributions that may be required to meet the specialized requests for this information. These tables are planned for the intercensal period.

#### City blocks

The city block is the smallest geographical entity which could be expected to provide a basis for the issuance of census statistics. Because of the tremendous costs involved, however, and the relatively small number of users who would be in a position to make full use of the masses of small figures on this basis, the Canadian Census has never provided block statistics. A cautious step in this direction was taken in 1961, when the enumerators in cities of 50,000 population and over were required to identify the households in each individual block so

that counts of total population and households could be assembled on a block basis.

Because of the specialized nature of this material and the relatively small but insistent demand, such counts would have to be made available to users on a cost basis. This, of course, can only be done when the main census results have been compiled and released to the public. Any further steps, such as the provision of population and housing distributions by age, sex, or type of dwelling for city blocks, were not planned, since this would have required block identification on the actual enumeration document, complicating the enumeration processes. The use of expensive tabulating equipment for the compilation of such extremely small sums would not seem to be justified.

#### Unincorporated villages, etc.

Another type of small area which is recognized by the Census relates to the many thousands of small villages, settlements, and hamlets scattered across Canada which are not municipally organized or incorporated in any way. The populations of such places and their characteristics are included with the particular municipal subdivisions in which they are located. However, a special report is issued at each Census which gives the name, location, and population of each such place which appears to have a population of 50 persons or more. For example, the special report of the 1956 Census contained some 10,000 such place names, their localities, and approximate populations. The word "approximate" is used to qualify these counts, since there are no legal or official boundaries to unincorporated settlements, and identification of a particular community is not always possible.

#### Changes since 1951

What are some of the additions since 1951 and what has been the contribution of the computer toward extending and facilitating the programme?

Perhaps the most significant addition to the 1961 programme is the inclusion of tabulations for migration, family size, and income data from the 20 p.c. Population (Sample) Questionnaire. Family size and migration inquiries were included in the 1941 Census but were not repeated in 1951. Changes in the patterns of these characteristics during the past decade, however, seemed to indicate the need for their inclusion again in 1961. Total income, on the other hand, is completely new to the Canadian Census.

In each of these fields, a fairly comprehensive tabulation programme has been set up, but decisions as to the tables to be published will be made only after examination of the material. It is intended, however, that a number of tables from each series will be included for publication.

From the migration data, it is expected that information will be available to show the in- and out-migration of the population for various

geographic units from which it will be possible to examine the gross movement as well as the direction and pace of migration. Tabulations are planned, also, which will classify the migrant population by type of movement (i.e., intraprovincial and interprovincial migration, movement from contiguous and non-contiguous provinces, movement from rural to rural, rural to urban, etc.). Cross-tabulations of these data with such characteristics as age, sex, marital status, schooling, origin, place of birth, labour force status, occupation, and income will throw some light on the implications of population movements for different parts of the country.

On the basis of tabulations planned for the family size inquiries, the facts about the fertility trends in the past and some of the factors operating in the observed changes and variations in the family formation pattern may be brought to light. Furthermore, the growth potential of local populations as well as the national population may be appraised more realistically than from annual birthrates.

From the income tabulations it is planned to publish three series of tables: (1) income of individuals by selected characteristics; (2) family income by selected family characteristics; and (3) selected household characteristics cross-classified by the income of primary family or the family head. In addition, it is planned to carry out a number of other studies for special release after the main volumes, and to probe into other areas such as the analysis of the population in the older age groups.

Probably the most substantial increase in the volume of data is planned for the employment and economic characteristics from the 100 p.c. count. Data which were available, in some cases, for major industry divisions in 1951 will be available for groups within these divisions in 1961. For example, for certain geographic areas in 1951, data were provided for the number employed in the manufacturing division as a whole. In 1961, the numbers employed in the major manufacturing groups such as the Food and Beverage industries, the Textile and Clothing industries, and the Primary Metal industries, will be provided for these areas. More employment data will be available for married women and for older workers. For the unemployed, such characteristics as their level of education in relation to age, marital status in relation to age, and the period of immigration for the foreign-born unemployed will be compiled. The computer has made possible a considerable number of four-way classifications of labour force data, something not considered in the past. An example of such a table is the classification of detailed industries by detailed occupations by class of worker and sex. The addition of the variable "Class of worker" in this table, incidentally, will provide, for the first time, a distribution of occupations through industry for "paid workers". The computer will provide aggregate and average income for specific geographic areas, as well as for male and female employees in detailed occupations and industries.

Basic counts of family, household, and housing characteristics have been available in the past only down to the level of municipalities of 10,000 and over. In 1961, these counts will be extended to the smallest municipality. In each of these fields, the computer has made possible more detailed cross-classifications and has allowed for an increase in the number of these tables. Classifications of families, for example, will include a considerable volume of data for husband and wife families classified by age, labour force status, and earnings of wife, a tabulation that is new to the Canadian Census and one that should provide interesting information to users interested in working wives. In 1951, household characteristics were tied in with housing characteristics of the household head. In 1961, in addition to similar data, cross-classifications based on household data alone will be run. Cross-classifications of data from the 20 p.c. Housing sample will be extended, also, and, in addition, the computer will make possible a mechanical blow-up of the sample, a task that was carried out manually in 1951.

In spite of the increased volume of tables, it is expected that most of the data required for the reports and volumes will be available earlier than in the past. In the field of general population, for example, it is expected that the cross-classifications by age, origin, and period of immigration will be available from one to four months earlier than in 1951. Similar advances are expected for the other groups of tables based on the 100 p.c. Population count and the 20 p.c. Housing sample.

#### Unpublished data

It should be pointed out that, although the bulk of data from the tabulations is intended for publication, a considerable amount of material will be available for research, monographs, and other special studies. For example, a set of tables is planned for studies of educational data that will combine population, family, and housing characteristics with schooling and school attendance. Housing tables are planned for the use of such agencies as the Central Mortgage and Housing Corporation, for example, cross-tabulations by gross and contract rent, value of single-detached non-farm homes, condition, number of rooms, etc. Tabulations to meet the needs of the Department of Labour have been incorporated into the labour force programme. For example, a four-way classification will provide them with data (1) by age by years of schooling by marital status and sex, and (2) by age by years of schooling by age and sex. This same table will provide the number of male and female wage and salary earners (1) by age by years of schooling by weeks, and (2) by age by years of schooling and hours.

It should be noted that some of these unpublished data will be provided on a non-priority basis after the tables required for publication purposes have been run. Others will be provided in the intercensal period.

### Dates for release of publications

Part of the planning of the tabulation programme included the establishment of priorities to ensure that the tables planned for the reports and volumes would be available when required.

To satisfy the demands of the many users who are interested in summary data and to make such information available as soon as possible, the Census office plans to release an advance series of Population, Housing, and Agriculture reports. The Population reports in the series will include summary data on a number of basic population characteristics for counties and urban centres of 5,000 and over. Summary Housing data will be provided for these same areas. It is expected that most of the Population and Housing reports in this series will be released by mid-1962. The material in the Agriculture reports will be identical to that to appear later in the Agriculture volume but will be available considerably earlier, probably before the end of 1962. (The Agriculture volume (Volume V) is planned for 1963.)

The procedure adopted in 1951 of releasing volume tables as individual reports will be continued in 1961. Volume I, the general population volume will be divided into three parts. It is expected that Part I, the geographic distributions of the Population, and Part II, the counts of the various characteristics, will be completed by the end of 1962. Release of the tables in Part III, the cross-classifications of the Population characteristics, will begin late in 1962. Data on housing and household characteristics will form Part I of Volume II, and families and family characteristics will constitute Part II of this volume. Release of the reports for each part is expected to begin late in 1962 and continue through 1963. Part I of the labour force volume will include occupation data, Part II industry data, and Part III earnings and employment data for wage and salary earners. Issue of each of these series is expected to begin toward the end of 1962.

Since the 20 p.c. Sample Population Questionnaire was not a mark-sense document, a considerable amount of clerical work was required (e.g., preparation of punched cards) before

tabulations could begin on the subjects of fertility, migration, and total income. Therefore, it is not expected that release of the reports on these subjects (Volume IV) will begin before 1963.

Volume V, the Agriculture volume, will cover such subjects as the number of farms, areas, tenure, crops, and livestock. As noted previously, release of these reports is planned for the early part of 1963. Reports dealing with the Census of Distribution will constitute Volume VI, release of which is planned to begin in 1963.

The final volume, Volume VII, will include the Administrative Report of the methodology of the 1961 Census as well as a review of the various subjects covered by the Census. Release dates for these reports will probably begin sometime in 1963.

A third series of reports is planned to cover some basic materials not included in the volume series, which will relate to more detailed geographic areas. Included in this special series will be data on specified age groups, origins and religious denominations for census subdivisions, as well as the report presenting the population of unincorporated villages and settlements. This special series will include, also, an Agriculture report giving the number and area of farms for counties and census subdivisions. For the most part, this series cannot be made available before the regular reports in the Volume series.

The remaining group of reports planned to date, the Census tract series, will be issued for 23 cities and Census metropolitan areas, release of which is expected to begin in the latter part of 1962.

In concluding, it should be pointed out that the dates of release of the Census data are subject to some change. It is possible, also, that additional reports of a specialized nature will be planned. A brochure, presenting a complete list of all reports and the tables to be included in each series with their expected date of publication, will be available in the near future.