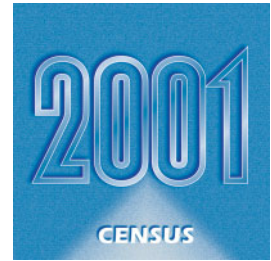




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Occupation

2001 Census Technical Report



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2001 Census Technical Report

Occupation

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Introduction

The 2001 Census required the participation of the entire population of Canada, i.e. some 30 million people distributed over a territory of 9 million square kilometres. An endeavour of this magnitude represented a tremendous challenge. Although there are high quality standards governing the collection and processing of the data, and in spite of efforts aimed at reducing non-response, for example through the use of communications, it is not possible to eliminate all errors. While this term does not necessarily imply any mistake as such, some element of error is bound to result in view of decisions to control census costs.

Statistics Canada is committed to explaining the methods and concepts used to collect and process its data and to providing users with information on the quality of the data produced, as well as other data characteristics which might limit their usefulness or interpretation. This report is aimed at informing users on the complexity of the data and on any difficulties that could affect their use. It explains the theoretical framework and the definitions used to gather the data, and describes unusual circumstances that could affect data quality. Moreover, the report touches upon data capture, edit and imputation, and deals with the historical comparability of the data.

The **2001 Census Technical Reports Series** includes 16 reports covering the variables of the 2001 Census of Population, as well as *Coverage* and *Sampling and Weighting*.

This report deals with occupation based on the 2001 National Occupational Classification for Statistics (2001 NOC–S). It has been prepared by Sandra Swain from the Labour Statistics Division, with the support of staff from the Census Operations Division and the Social Survey Methods Division.

Users will find additional information on census concepts, variables and geography in the *2001 Census Dictionary* (Catalogue No. 92-378-XIE), and an overview of the complete census process in the *2001 Census Handbook* (Catalogue No. 92-379-XIE).

1. Data Collection and Coverage

This stage of the census process ensures that each of the 11.8 million households in Canada is enumerated. The census enumerates the entire Canadian population, which consists of Canadian citizens (by birth and by naturalization), landed immigrants, and non-permanent residents, together with family members who live with them. Non-permanent residents are persons living in Canada who have a Minister's permit, a student or employment authorization, or who are claiming refugee status, and family members living with them.

The census also counts Canadian citizens and landed immigrants who are temporarily outside the country on Census Day. This includes federal and provincial government employees working outside Canada, Canadian embassy staff posted to other countries, members of the Canadian Armed Forces stationed abroad, and all Canadian crew members of merchant vessels. Because people outside the country are enumerated, the Census of Canada is considered a modified *de jure* census.

1.1 General

1.1.1 Collection Methods

To ensure the best possible coverage, the country is divided into small geographic areas called enumeration areas (EAs). Each census representative is responsible for at least one EA. The optimal number of households in an EA ranges from 175 in rural areas to 600 in urban areas. In the 2001 Census, there were 42,851 enumeration areas in Canada, and 38,000 people were engaged in collecting the data.

In 2001, approximately 98% of households were self-enumerated. Self-enumeration requires that a census representative drop off a questionnaire at each household during the two weeks before Census Day. An adult or responsible member of the household is asked to complete the questionnaire for all members of the household, and then mails the questionnaire in a pre-addressed envelope.

Approximately 2% of households were enumerated in the 2001 Census using the canvasser enumeration method. In this case, a census representative visits the household and completes a questionnaire for the household by interview. This method is normally used in remote and northern areas of the country, and on most Indian reserves. The canvasser enumeration method is also used in certain urban areas where it is considered highly possible that respondents would be unlikely to return a questionnaire.

1.1.2 Special Coverage Studies

Since 100% coverage is virtually impossible with such a large survey, a number of checks are performed on the collection of data. These studies measure the extent of coverage errors that occur when dwellings or individuals are missed, incorrectly included or double-counted. These checks are the Vacancy Check, the Reverse Record Check and the Overcoverage Study. These studies are discussed in the 2001 Census Technical Report on *Coverage* (Catalogue No. 92-394-XIE), planned for release in December 2004.

1.2 Questionnaire and Instructions

For census purposes, the term "occupation" refers to the kind of work persons were doing during the reference week, as determined by their description of their work or occupation and the main activities in their job. Data are available for persons 15 years and over, excluding institutional residents. If the person did not have a job during the week prior to enumeration, the data relate to the job of longest duration since January 1, 2000. Persons with two or more jobs were to report the information for the job at which they worked the most hours.

It should be noted that the wording of the questions on occupation was revised slightly for the 2001 Census. In the first question, the phrase "kind of work" was changed to simply "work or occupation". The wording of the second question was changed from "most important duties" to "main activities". The following shows the occupation questions as they appeared on the 2B questionnaire and the instructions for completing the questions from the 2B guide.

<p>42 What was this person's work or occupation?</p> <p>Please be specific. For example:</p> <ul style="list-style-type: none"> • <i>legal secretary</i> • <i>plumber</i> • <i>fishing guide</i> • <i>wood furniture assembler</i> • <i>restaurant manager</i> • <i>secondary school teacher</i> <p><i>(If in the Armed Forces, give rank.)</i></p>	<p>Occupation</p> <p>05 <input type="text"/></p> <p><input type="text"/></p> <p><input type="text"/></p>
<p>43 In this work, what were this person's main activities?</p> <p>Please give details. For example:</p> <ul style="list-style-type: none"> • <i>prepared legal documents</i> • <i>installed residential plumbing</i> • <i>guided fishing parties</i> • <i>made wood furniture products</i> • <i>managed operations of a restaurant</i> • <i>taught mathematics</i> 	<p>Main activities</p> <p>06 <input type="text"/></p> <p><input type="text"/></p> <p><input type="text"/></p> <p>07 <input type="text"/></p> <p><input type="text"/></p> <p><input type="text"/></p> <p><input type="text"/></p>

Question 42 - Occupation

Give specific descriptions of the work done. For example:

Rather than:	A more complete response would be:
maintenance	electrical equipment maintainer
repair work	electrical motor repairman
office work	typist, general office work
engineering	industrial engineering
engineering	industrial engineering technician
inspecting	electronic equipment inspector
supervising	aircraft assembly supervising
consulting	health-care consultant

Question 43 - Main Activities

Report the main activities this person does in his or her job. Be sure to indicate supervisory or management responsibilities if they apply. For persons who are members of a religious order engaged in teaching or nursing, report these activities rather than the religious activities

2. Data Processing

This part of the census process involved the processing of all the completed questionnaires, from the data capture of the information through to the creation of an accurate and complete retrieval database. The final database was transferred to the Data Quality Measurement Project to determine the overall quality of the data, and to the Dissemination Project for the production and marketing of the 2001 Census products and services. A new objective for 2001 was to create an image retrieval system giving access to the images (pictures) of all the census questionnaires and visitation records, so that subsequent processes requiring access to original census forms would not have to handle the thousands of boxes and paper documents, as in previous censuses.

2.1 General

2.1.1 Regional Processing

Regional Processing was responsible for the manual coding of the industry and occupation responses and the data capture of the questionnaire information into a machine-readable format for subsequent processing systems. Given the enormous volume of census questionnaires and information to be captured (representing over 4 billion keystrokes), Regional Processing has been contracting this work out since 1981 to the Canada Customs and Revenue Agency (CCRA), formerly called Revenue Canada. By using the trained staff and infrastructure already in place at CCRA, the census realized cost savings by partnering with another government agency. For the 2001 Census, approximately 2,800 CCRA employees were sworn to secrecy under the *Statistics Act* to perform the census work, under the same rules and regulations as those which apply to the employees of Statistics Canada.

When the collection activities for a specific enumeration area (EA) were completed, the questionnaires, along with their maps and visitation records, were shipped in EA boxes from the field collection units to one of eight designated CCRA tax centres across the country.

The first step was to prepare the completed questionnaires for data capture. This traditionally included the manual assignment of codes to written answers that were provided by the respondents. For 2001, most of the written responses were converted to codes using automated systems (see Section 2.1.4). The only written responses that had to be manually coded for the 2001 Census were the questions on industry and occupation contained in the long-form questionnaires. Research into the automation of the coding of these questions has begun, and it is expected that an automated system will be operational for the 2006 Census.

The industry responses were coded at CCRA according to the North American Industry Classification System (NAICS), which was introduced as a standard within Statistics Canada a few years ago. NAICS is designed to provide a common framework for Canada, the United States and Mexico, which will enable the production of industry statistics under the North American Free Trade Agreement (NAFTA). This meant a change for industry coding - in 1996, industry was coded using the 1980 Standard Industrial Classification (SIC). In order to allow longitudinal comparisons, the 2001 industry question was also coded using the 1980 SIC during the Automated Coding phase (see Section 2.1.4). This phase was carried out with more automated means than in previous censuses.

The classification used to code occupation responses was the 2001 National Occupational Classification for Statistics (2001 NOC-S). This classification is a revision of the 1991 Standard Occupational Classification (1991 SOC) used to code occupation responses in the 1991 and 1996 Censuses. For a summary of the differences between the 2001 NOC-S and the 1991 SOC, see Chapter 5 on Historical Comparability.

Once the questionnaires were received and registered at one of the CCRA tax centres, and the industry and occupation codes assigned, the next step was to sort, label and batch the questionnaires in

preparation for data capture. The labels affixed to each questionnaire contained a unique sequence number that was used to control the movement of the questionnaire throughout the CCRA operations. For the first time, the label also included a bar code to facilitate the scanning of the questionnaire in the imaging operation (see Section 2.1.2).

Data capture was then performed by traditional manual keying at mainly mainframe terminals. Verification of the accuracy of the data capture operation was done by selecting a sample of questionnaires that were already key-entered and capturing the information from the questionnaires in this sample a second time. Quality control statistics were produced by comparing the two sets of captured information.

As the data were keyed, they were transmitted in real time over dedicated communication lines to the CCRA computer in Ottawa. Within 24 hours, the data were then transferred to tape cartridges and transported by bonded carrier to Statistics Canada, where they were loaded into the mainframe computer. Questionnaires were reassembled into their EA boxes for shipment to Statistics Canada's 2001 processing site in Ottawa.

2.1.2 Imaging

In previous censuses, the remaining processing steps that required access to the questionnaires and visitation records used the paper documents. For 2001, the need to handle the paper was eliminated by imaging (scanning) all the questionnaires and visitation records as soon as they arrived at the 2001 processing site from the CCRA tax centres. Subsequent operations then had access to the questionnaires and visitation record images, using an image retrieval system, rather than using the paper documents.

As the EA boxes arrived at the 2001 processing site, they were registered. Then, the documents were prepared for imaging. Since the questionnaires and visitation records were in booklet format, they had to be cut into separate sheets in order to be run through the scanners. Following the cutting, since the 2A questionnaire was actually two booklets glued together (one English and the other French), the unused portion had to be separated from the completed portion. Extra material that was included with the questionnaires was removed (e.g., paper clips and notes). The questionnaires were then batched by EA for imaging.

The 13 million documents were imaged using 15 high-volume scanners running five days a week, two shifts per day. The geographic identifier that was required to identify each document image was automatically assigned using the bar code on the label affixed during the data-capture operations at CCRA (see Section 2.1.1). Quality control was performed to ensure that each document contained the right number of pages, and that the number of questionnaires by form type was correct for each EA. A problem-resolution operation resolved any problems that arose. The images were then written to optical platters for subsequent access and archiving. As the questionnaires were scanned, their images were also kept in magnetic storage for immediate access by the Interactive Verification activities (see Section 2.1.3).

The images on the optical platters are being kept in a secure location and are only accessible to authorized Statistics Canada employees from within the secure location.

2.1.3 Interactive Verification

The main objective of Interactive Verification was to identify and correct errors in the data, for which proper resolution required reference to the images of the questionnaires and/or visitation records. A detailed set of edits was applied to the captured data to identify possible errors, such as households with missing or duplicate persons, incorrect enumeration of foreign or temporary residents, questionnaires assigned to the wrong household, or misclassification of households as occupied or unoccupied. A thorough review of the information on all relevant census forms was conducted to determine the

appropriate corrective action for each edit failure. In some cases, this required adding and/or deleting persons or dwellings; consequently, this process had an impact on the census counts.

As the census data arrived on cartridges from CCRA, they were loaded into Statistics Canada's computers, ready for the Interactive Verification activities. A series of automated "structural" edits were performed, mainly to verify the information filled out by the Census Representative on the front cover of the questionnaire. These edits included, among other things, matching questionnaire and household types, cross-checking the number of questionnaires and people enumerated, and verifying that the geographic identifiers were unique. Some edits were also performed on the income information, so that anomalies could be extracted and examined by income subject-matter experts.

All edits were done by EA. Errors were flagged, and then corrected by referring to the images of the questionnaires and visitation record for that EA. The corrections were made to the electronic data using an interactive PC-based system. Some of the corrections were also noted on the questionnaire images, using a process commonly called "annotation".

Once the EA edits were completed, automated and manual processes were used to verify the block number that the Census Representative had copied from the EA map onto the questionnaire and visitation record.

A National Block Program has been implemented for the first time in 2001. A "block" is basically the smallest area bounded by streets or roads, lakes and rivers. In urban centres, "blocks" are generally recognizable city blocks. In rural areas, "blocks" are much larger areas, but are still bounded by identifiable features, with no significant feature splitting an area. These blocks are added together to create the EAs for data collection purposes, and the dissemination areas (DAs) for the dissemination of census products and services.

During the field collection operations, as census representatives delivered a questionnaire to each dwelling within their EA, they wrote the person's name (if possible) and the address in their visitation records (VRs). At the same time, they copied the VR line number from the VR onto the questionnaire, to uniquely identify the questionnaire for that dwelling. As well, they identified the block number for the dwelling from their EA map and copied the number into the VR and onto the questionnaire. These block numbers were data-captured, so that all the dwellings in Canada could be identified as belonging to a particular block.

As a final step in the Interactive Verification process, the data were reformatted and forwarded for the final processing steps, namely Automated Coding and Edit and Imputation.

Interactive Verification also performed some special processing to ensure that Canadians living outside Canada on Census Day (people aboard coast guard and Canadian Armed Forces vessels, Canadian-registered merchant vessels, and diplomatic and military personnel) were enumerated.

2.1.4 Automated Coding

Automated coding matched the write-in responses that were "data-captured" from the long-form questionnaires during Regional Processing (see Section 2.1.1) to entries in an automated reference file/classification structure containing a series of words or phrases and corresponding numerical codes. Although a large percentage of write-in responses can be coded in a purely automated manner, a series of responses always remains unmatched. Specially trained coders and subject-matter experts reviewed all unmatched responses and, with the assistance of PC-based interactive coding systems, assigned the appropriate numerical code after examining responses to other questions and from other members of the household. Automated coding was applied to write-in responses for the following questions on the long form (2B):

- relationship to Person 1;
- home language;
- non-official languages;
- first language learned in childhood (mother tongue);
- language of work (new in 2001);
- place of birth;
- place of birth of parents (new in 2001);
- citizenship;
- ethnic origin (ancestry);
- population group;
- Indian Band/First Nation;
- place of residence 1 year ago;
- place of residence 5 years ago;
- major field of study;
- religion (last asked in 1991);
- place of work;
- industry according to the 1980 SIC (first time for automated coding in 2001).

As the responses for a particular variable were coded, the data for that variable were sent to the Edit and Imputation phase.

3. Edit and Imputation

3.1 General

The data collected in any survey or census contain omissions or inconsistencies. These errors can be the result of respondents answering the questions incorrectly or incompletely, or they can be due to errors generated during processing. For example, a respondent may be reluctant to answer a question, may fail to remember the right answer or may misunderstand the question. Census staff may code responses incorrectly or may make other mistakes during processing.

Prior to Edit and Imputation, the questionnaires underwent some basic manual edits during collection. Field staff reviewed the questionnaires for missing responses or unacceptable multiple responses. Such problems were resolved by contacting the respondents and obtaining the required information. Following collection, Interactive Verification (see Section 2.1.3) performed some basic structural edits, where the images of the questionnaires and visitation records were referenced as necessary.

The final clean-up of the data was done in Edit and Imputation and was, for the most part, fully automated. It applied a series of detailed edit rules that identified any missing or inconsistent responses. These missing or inconsistent responses were corrected most of the time by changing the values of as few variables as possible through imputation. Imputation invoked "deterministic" and/or "minimum-change "hot deck"" methods. For deterministic imputation, errors were corrected by inferring the appropriate response value from responses to other questions. For minimum-change "hot deck" imputation, a record with a number of characteristics in common with the record in error was selected. Data from this "donor" record were borrowed and used to change the minimum number of variables necessary to resolve all the edit failures.

Two different automated systems were used to carry out this processing.

The **Nearest-neighbour Imputation Method (NIM)**, developed for the 1996 Census to perform Edit and Imputation for basic demographic characteristics such as age, sex, marital status, common-law status and relationship to Person 1, was expanded for 2001 and implemented in a system called **CANCEIS (CANadian Census Edit and Imputation System)** to include Edit and Imputation for such variables as labour, place of work, mode of transportation and mobility. As in 1996, CANCEIS continued to allow more extensive and exact edits to be applied to the response data, while preserving responses through minimum-change "hot deck" imputation.

SPIDER (System for Processing Instructions from Directly Entered Requirements) was used to process the remaining census variables, such as mother tongue, dwelling and income. This tool translated subject-matter requirements, identified through decision logic tables, into computer-executable modules. SPIDER performed both deterministic and "hot deck" imputation.

3.2 Dwelling Classification Study (DCS)

The Dwelling Classification Study takes a sample of dwellings declared either unoccupied or absent during the collection process. Later, the DCS returns to these dwellings to determine if, on Census Day, they were occupied, unoccupied or should not have been listed because they did not meet the definition of a census dwelling. If a dwelling was occupied, one of two separate adjustments is made to the census database. If the dwelling was listed as vacant in the census, then a technique, called "random additions", was applied to add households and persons to the census database. In the 2001 Census, 111,626 households and 222,720 persons were added to the database to account for the estimated number of persons living in vacant dwellings. The second adjustment was concerned with absent households. These were adjusted by creating a new household size for all such dwellings on the census database. A total of 143,684 households with 317,587 persons were added to the census database through this adjustment.

3.3 Weighting

Data on age, sex, marital status, common-law status, mother tongue and relationship to Person 1 were collected from all Canadians. However, the bulk of the information gathered in the census came from the 20% sampling of the population. Weighting, applied to the respondent data after Edit and Imputation, was used to adjust the census sample to represent the whole population.

The weighting method produced fully representative estimates from the sample data. For the 2001 Census, weighting employed a methodology known as calibration (or regression) estimation. Calibration estimation started with initial weights of approximately 5 and then adjusted them by the smallest possible amount needed to ensure closer agreement between the sample estimates (e.g., number of males, number of people aged 15 to 19) and the actual population counts for age, sex, marital status, common-law status and household size.

Once invalid and non-response data were corrected, they were transferred to the final national retrieval databases for subsequent data quality studies and dissemination.

3.4 Occupation – Processing

3.4.1 Edit and Imputation

Load Stage Review

The load stage review provides the first opportunity to compare the respondent's written response with the code assigned in regional processing (RP). The process is labour intensive, as corrections are generally made on a record-by-record basis. Records targeted for correction at this stage were those with invalid occupation codes, because they were easy to identify and correct. The next stage involved the verification of problems known to have occurred in previous censuses, as well as of issues which arose during the current census.

The source of data for this review was a file containing all the written responses to the industry and occupation questions, with the codes assigned during the census coding operation. This was the first census where subject-matter had access to the write-in information to both occupation questions. With this file, it was possible to examine the quality of the coding at the individual record level.

"Hot Deck" Imputation

CANCEIS was the imputation method used to assign a valid occupation code to records that had a non-response or invalid code and that were determined to be in the "Worked since January 1, 2000" universe. The characteristics used to find a donor for imputation were: NAICS code, sex, age, highest level of schooling, class of worker, document type, hours worked, presence of farm income and number of weeks worked in 2000.

In addition to non-response and invalid records, two special codes created specifically to handle certain response problems during coding were also subject to "hot deck" imputation. These codes were imputed to a more restricted set of valid occupation codes. The special code E130 was assigned whenever the coders did not have enough information to distinguish between Secondary and Elementary Teachers. Records coded initially to E130 could only be imputed to E131 – Secondary School Teachers or E132 – Elementary School and Kindergarten Teachers. The second special code, J399, was assigned when the respondent was determined to be a labourer, but there was insufficient information to code directly to one of the many labouring codes. Imputation of these cases was restricted to occupation unit groups within broad categories H through J, plus minor groups G93 to G98 and unit group G731. In total, about 51,000 records (weighted) were originally assigned to E130 and 81,000 records were originally assigned to J399.

Table C1 shows the results of the "hot deck" imputation of non-response and invalid records. The distribution of the Occupation variable remained largely unchanged before and after imputation, although a small number of codes received a disproportionate number of imputed records. For example, after imputation, about 18% of code F153 and 15% of code G624 consist of imputed data. On the other hand, it is to be expected that codes E131, E132 and those in categories H through J would have higher proportions of imputed data because of the special codes E130 and J399.

3.4.2 Finalization

Deterministic Edits

At the final stage of processing, a set of standard deterministic edits was done to address inconsistent or improbable combinations of the following: (a) occupation and industry; and (b) occupation and age and level of education. For example, a person with an occupation of "fisherman" should have an industry code in fishing as well. Likewise, to be coded to the professional occupation "chemist", a person should have a minimum of three years of university education. The majority of these edits have been in place since the 1986 Census.

See Appendix B for a list of these edits.

4. Data Quality Measurement

4.1 General

Throughout the census-taking process, every effort was made to ensure high-quality results. Rigorous quality standards were set for data collection and processing, and the Public Communications Program assisted in minimizing non-response. A Data Quality Measurement Program was established to provide users with information on the quality and limitations of census data.

Although considerable effort is made throughout the entire process to ensure high standards of data quality, the resulting data are subject to a certain degree of inaccuracy. To assess the usefulness of census data for their purposes and to understand the risk involved in drawing conclusions or making decisions on the basis of these data, users should be aware of their inaccuracies and appreciate their origin and composition.

Within the **2001 Census Technical Reports Series**, users will find detailed 2001 Census information on *Coverage* and *Sampling and Weighting*. These two reports are scheduled to be released in November and December 2004 respectively.

4.2 Sources of Errors and Evaluation Studies

Non-response

Table 1 presents 1991, 1996 and 2001 non-response rates for males and females for Canada, the provinces and territories. Non-response was calculated by dividing the number of persons who should have answered the occupation questions, but left them blank, by the number of persons who should have given a response. Invalid responses are not considered as non-responses, because an invalid code could have been caused by a coding or keying error.

In general, non-response has increased for almost all subject-matter areas for the 2001 Census. At the Canada level, the weighted non-response rate for occupation was 7.0%, up over 2 percentage points from 1996. The rates varied from a high of 8.1% in the Yukon to a low of 5.7% in Prince Edward Island and Nova Scotia. The rates for women were consistently lower than the rates for men across all provinces.

Lack of response to the occupation questions is attributed to several factors. Response burden is a factor for all questions but is likely more acute for the occupation questions, since these require written responses and appear near the end of the questionnaire. The coding of occupation responses is complex. Respondents may feel that they have provided responses, but those responses may be too vague to be coded. Uncodable responses are a component of non-response.

Table 1. Non-response Rates by Sex, for Canada, Provinces and Territories, 1991, 1996 and 2001 Censuses

	Both Sexes			Males			Females		
	1991	1996	2001	1991	1996	2001	1991	1996	2001
Canada	4.9	4.6	7.0	4.7	4.6	7.1	5.2	4.6	6.9
Newfoundland	4.0	4.8	5.8	3.9	4.9	5.9	4.1	4.7	5.7
Prince Edward Island	4.0	4.6	5.7	3.6	4.7	6.0	4.4	4.5	5.6
Nova Scotia	3.7	4.9	5.7	3.5	5.1	5.9	4.0	4.7	5.5
New Brunswick	4.3	4.8	6.4	4.1	5.1	6.6	4.5	4.4	6.3
Quebec	5.2	4.1	6.6	5.0	4.1	6.8	5.4	4.0	6.5
Ontario	5.1	5.0	7.5	4.9	5.1	7.4	5.3	5.0	7.5
Manitoba	4.9	3.6	5.8	4.6	3.5	5.9	5.3	3.7	5.8
Saskatchewan	5.7	4.2	6.3	5.1	4.0	6.4	6.5	4.5	6.2
Alberta	4.6	4.1	6.6	4.1	3.9	6.7	5.1	4.4	6.5
British Columbia	4.7	4.8	7.8	4.4	4.8	8.0	4.9	4.8	7.6
Yukon	7.4	5.6	8.1	7.9	6.0	8.4	6.8	5.1	7.7
Northwest Territories	3.7	3.4	7.6	3.6	3.4	8.1	3.9	3.4	7.1
Nunavut			6.6			6.3			7.0

Outgoing Error Rate Study (OERS)

The quality of census industry and occupation coding was evaluated by means of the Outgoing Error Rate Study (OERS). This was the second census for which a study of this nature was conducted.

To carry out the study, a sample of about 7,000 industry and occupation write-ins was recoded by subject-matter experts. The subject-matter code was compared with the production code assigned by CCRA coders. Discrepancies between codes were counted as errors in production. For more information on how the outgoing error rates were calculated, refer to the OERS industry and occupation 2001 Census Regional Processing Evaluation Report, prepared by Steve Rathwell and Stephanie Bonnell, methodologists with the Social Survey Methods Division.

The results of the OERS found that the outgoing error rates for occupation increased over 1996. The national figures are provided below.

Table 2. Outgoing Error Rates for Occupation, 1996 and 2001 Censuses

	Outgoing Error Rate, 1996	Outgoing Error Rate, 2001
Broad Category	8.7	11.2
Major Group	14.6	17.3
Minor Group	17.0	19.5
Unit Group	19.8	21.7

It should be noted that these error rates measure the quality of data coming directly from the coding operation before any data processing or correction could take place. Many errors were identified and corrected during the edit and imputation phase of processing. However, it is not known how much these corrections have reduced the overall error rate.

Refer to Appendix Table C2, for the outgoing error rate by broad category.

Comparison With Previous Censuses and the Labour Force Survey

To evaluate the quality of the 2001 Census Occupation variable, data are compared with occupation data from the 1991 and 1996 Censuses and with data from the Labour Force Survey.

Census data are compared at the four-digit unit group level (the lowest level of classification) for the "Experienced Labour Force" universe for Canada. Adjustments to the classification structures of both the 1991 SOC and the 2001 NOC-S were necessary in order to compare the 1991 and 1996 data with those from 2001. (See Chapter 5 on Historical Comparability for a summary of differences between the classifications.) Refer to Appendix Table C4 for census occupation data at the four-digit level.

Comparison with the Labour Force Survey is based on the experienced labour force and is done at the two-digit major group level. In order to be comparable with the Labour Force Survey, the census estimates were adjusted by removing the Yukon, the Northwest Territories, Nunavut, persons in the Armed Forces and Aboriginal persons living on reserves. Other differences between the census and the survey exist that must be taken into consideration when comparing the two data sources. For example, the census is completed by self-enumeration while the survey is conducted by experienced interviewers. There is a difference in the reference period. The 2001 Census took place on May 15 and the reference period was the previous week. The survey reference week was the third week in May. There are also differences in sample size, weighting, and processing procedures.

Comparison with the Labour Force Survey data focuses on similarity of estimates for 2001 only. It should be noted that the figures reported are not adjusted to account for the difference in the estimate of the experienced labour force for the Census and the Labour Force Survey.

Refer to Appendix Table C3 for Census and Labour Force Comparison.

Table 3. Labour Force 15 Years and Over by Occupation Broad Categories, 1991, 1996 and 2001 Censuses

	Number			% Change		
	1991	1996	2001	1991-2001	1991-1996	1996-2001
Total labour force	14,474,945	14,812,700	15,872,075	9.7	2.3	7.2
Occupation - Not applicable	254,715	495,160	295,505	16.0	94.4	-40.3
All occupations	14,220,230	14,317,545	15,576,565	9.5	0.7	8.8
A – Management Occupations	1,383,410	1,289,125	1,620,900	17.2	-6.8	25.7
B – Business, Finance and Administrative Occupations	2,689,620	2,687,660	2,768,375	2.9	-0.1	3.0
C – Natural and Applied Science and Related Occupations	707,515	743,090	1,003,810	41.9	5.0	35.1
D – Health Occupations	713,790	729,340	812,200	13.8	2.2	11.4
E – Occupations in Social Science, Education, Government Service and Religion	917,835	975,385	1,068,810	16.4	6.3	9.6
F – Occupations in Art, Culture, Recreation and Sport	337,355	386,315	435,680	29.1	14.5	12.8
G – Sales and Service Occupations	3,466,520	3,714,545	3,813,750	10.0	7.2	2.7
H – Trades, Transport and Equipment Operators and Related Occupations	2,199,370	2,018,355	2,193,090	-0.3	-8.2	8.7
I – Occupations Unique to Primary Industry	734,515	680,685	667,550	-9.1	-7.3	-1.9
J – Occupations Unique to Processing, Manufacturing and Utilities	1,070,300	1,093,045	1,192,395	11.4	2.1	9.1

The source of the data is table 97F0012XCB01023.

Table 3 shows the percentage change in occupation groups at the broad category (one-digit) level for the 1991, 1996 and 2001 Censuses. Adjustments have been made to the data to account for changes in the classification structures of the 1991 SOC and the 2001 NOC–S.

Between 1996 and 2001, the Experienced Labour Force grew almost 8.8%. This is a significant increase over the 0.7% growth rate of the previous five-year period.

Fuelled by the growth in information technology occupations, category C – Occupations in Natural and Applied Sciences and Related Occupations showed the highest rate of increase between 1996 and 2001 at 35.1%. The second highest rate of growth occurred in category A – Management Occupations at 26.4%. The only category to decline between 1996 and 2001 was category I – Occupations in Primary Industries (-1.9%).

Comparison with the labour force survey data found similar trends for categories C and I, although at 50.2% and -9.1%, the increase and decrease are larger than those recorded by the census. Over the

longer term (1991 to 2001), the rates of change for these two categories are more similar between the two surveys.

On the other hand, there is a large difference in trends between the two surveys for category A. The LFS shows almost no change (-0.58%) in the "Management" category between 1996 and 2001, despite the fact that the experienced labour force increased 10.3%. Comparing the two survey estimates for 2001 only, the census estimate is higher than that from the LFS (1,592,240 versus 1,357,000). The discrepancy in the estimates for management occupations was also a problem in the 1996 Census.

In addition to the management occupations, the census and the LFS show a large difference in the 2001 estimates for broad category J – Occupations in Manufacturing and Utilities and broad category G – Sales and Service Occupations. In these cases, census estimates are much lower than those based on the LFS.

Detailed Review by Broad Occupational Category

Broad Category A – Management Occupations

Management Occupations increased 26.2% between 1996 and 2001. At the major group level, A0 – Senior Management Occupations and A1 – Specialist Managers saw significant increases of 42.6% and 40% respectively while A2 – Managers in Retail Trade, Food and Accommodation Services and A3 – Other Managers increased 18.4% and 18.2% respectively.

As already mentioned, there continue to be significant differences between the census and the Labour Force Survey in the estimate of management occupations. Two major groups in particular account for these differences. The census estimate for A0 is almost three times larger than the LFS estimate: 202,400 versus 70,600, while the census estimate for A1 is higher than the one for the LFS: 393,035 versus 290,900. It must be noted that the LFS shows absolutely no change in the size of major group A0 between 1996 and 2001. The census, on the other hand, shows a 42.6% increase.

The OERS estimates a 17.6% (+/- 4.1%) coding error rate for category A (based on a sample size of 632), the highest error rate of all the broad categories.

Clearly, there are differences between the LFS and census coders when it comes to the assignment of a management occupation code. For 2001, it appears that the LFS coded more frequently to the supervisor level than did the census. As evidence, the census estimates for the major groups for supervisors (B4, G0, H0 and J0) are all substantially lower than those of the LFS by as much as 39% or more. (In contradiction, however, the census estimate for major group A2, that is, the management-level occupations which correspond to G0, is lower than the LFS estimate.)

A major factor contributing to these differences in coding is the quality of the census responses. The write-in file shows that respondents use the words "manager" and "supervisor" interchangeably, e.g., "kind of work = warehouse manager, main activities = supervisor".

Some other reasons why management occupations remain difficult to code correctly are:

- Vague or conflicting responses such as "manager, managing" or "administrator" are difficult to code to the appropriate area of specialization within management, or make it difficult to determine whether the respondent is, in fact, a manager.
- Titles such as "program manager", "project manager" and "account manager" continue to confuse coders because they contain the word "manager", but are not considered titles of management occupations.

- There continue to be problems coding store managers and restaurant managers. The classification intends for those who are on-site managers, i.e. shift managers or swing managers, to be coded as supervisors. Often there is not enough information to make this determination. At other times, coders simply forget. (As a partial remedy to this problem, respondents aged 15-19 coded to restaurant or sales manager occupations in category A were recoded to G011 – Retail Trade Supervisors and G012 – Food Service Supervisors.)
- The self-employed and owner/operators of a business can also represent coding problems which affect management occupations. The classification maintains that owners, proprietors or the self-employed are not to be coded as managers except in a limited number of cases. However, many respondents report "owner, running business"; "owner, doing everything", etc. The descriptions of the supervisor categories, particularly in categories G, I and J, do not fit the job descriptions given by the self-employed or owners of businesses. Many of these cases are coded to management by default.

To address the ongoing concerns of the quality of coding for management occupations, a data quality note was prepared to appear with all occupations within broad category A.

Review of unit groups

Among management groups showing significant change between 1996 and 2001, the group A013 – Senior Managers – Financial, Communications and Other Business Services, increased 82.1%. However, this growth is consistent with the growth experienced by the financial and telecommunications industries between 1996 and 2001.

One management group experienced over 100% increase between 1996 and 2001: A122 – Computer and Information Systems Managers (125.4%). As noted elsewhere, this is an area that experienced large growth over the previous five years.

Other management groups experiencing strong growth that were verified for quality were: A141 – Facility Operation and Maintenance Managers (70.7%), A373 – Transportation Managers (52%) and A334 – Other Managers in Public Administration (65.2%).

Both A141 and A373 were found to be of acceptable quality. On the other hand, the review found that group A334 was very poorly coded. Within the minor group A33 – Managers in Public Administration, coders generally had trouble identifying the appropriate area of specialization of the various government departments, i.e. social vs. economic policy administration, when assigning the four-digit code. Corrections using the NAICS code were made to A333 – Government Managers, Education Policy Development and Program Administration that resulted in a decrease for this group between 1996 and 2001. A data quality note was prepared specifically for A334.

A211 – Retail Trade Managers grew by almost 54,000 workers between 1996 and 2001. Numerically, this was the highest increase of all unit groups, although in percentage terms, it represented only an 18.4% increase. A211 is the second-largest occupation unit group behind G211 – Retail Salespersons and Sales Clerks.

Broad Category B – Business, Finance and Administrative Occupations

Business, Finance and Administrative Occupations increased about 3% between 1996 and 2001. At the major group level, B0 – Professional Occupations in Business and Finance and B3 – Administrative and Regulatory Occupations showed strong increases at 46.8% and 42% respectively. On the other hand, B2 – Secretaries continued to decline (-9.2%).

At the broad category level, the census and LFS estimates differ, by about 91,000 persons. At the major group level, there are some larger discrepancies: the census estimate for B2 – Secretaries is larger than the LFS, while the estimate for B4 – Clerical Supervisors is substantially lower than the LFS.

The error rate for broad category B is 11.7% (+/-2.69).

Review of unit groups

A number of unit groups within category B saw significant growth between 1996 and 2001. Within major group B0, B012 – Financial and Investment Analysts and B014 – Other Financial Officers increased 93.2% and 67.2% respectively. Again, this is consistent with general growth in finance and investment activities.

Unit group B312 – Executive Assistants increased 122.6% although the size of this group is relatively small (26,390). Unit group B413 – Supervisors, Library, Correspondence and Related Information Clerks saw a huge increase between 1996 and 2001. At 140.1%, this was the largest percentage increase of any unit group, although, in actual size, this group is quite small (13,410). There are probably two reasons behind this strong growth: the addition of titles for two census-related occupations "census commissioner" and "census area manager", and the growth of call centre occupations. Call centre occupations probably also account for a sizeable portion of the 43.3% increase seen for unit group B553 – Customer Service, Information and Related Clerks.

B576 – Transportation Route and Crew Schedulers increased 82.3% from 2,085 to 3,800 workers. Review of the write-in file did not reveal any particular coding biases.

One unit group in particular saw a sizeable decrease between 1996 and 2001. Group B531 – Accounting Clerks and Related Occupations dropped by almost 87,000 workers (32.7%). Numerically, this represents the largest decrease of all the unit groups.

Broad Category C – Natural and Applied Sciences and Related Occupations

As already mentioned, broad category C showed the highest increase – 35.2% – between 1996 and 2001 due to the growth in information technology occupations over this period. At the major group level, C0 – Professional Occupations in Natural and Applied Sciences increased by 57%, while C1 – Technical Occupations Related to Natural and Applied Sciences increased by 7.3%.

Estimates for major group C0 compare very well with those from the LFS, while the estimates for C1 are lower by about 58,000 workers.

The error rate for this category is 12.44% (+/-4.52%).

Review of unit groups

One of the main revisions of the 2001 NOC–S was to increase the number of unit groups related to information technology from three to eight separate unit groups. (See Appendix B for details.) Because of these changes, it is not possible to compare data for these occupations with that from previous censuses, except at a highly aggregated level.

Among unit groups that increased significantly between 1996 and 2001, C152 – Industrial Designers increased 93.2% (about 5,000 workers). Investigation of this unit group noted some over-coding due to problems with vague responses, i.e. "designer, design". In these cases, the industry information is needed to determine the kind of product designed. Quite often, the product cannot be determined. Other times, there is confusion with different types of engineering design, i.e. "mechanical design".

C133 – Industrial Engineering and Manufacturing Technologists and Technicians went from 7,840 to 14,630 workers, an increase of 86.6%. Again, vague responses make the quality of the coding of this group hard to evaluate, but there is evidence of confusion among different types of engineering.

Broad Category D – Health Occupations

Health occupations increased 11.3% between 1996 and 2001. Only major group D1 – Nurse Supervisors and Registered Nurses declined during this period (-2%).

The census estimates for health occupations compare relatively well with those from the Labour Force Survey.

The coding error rate for this category was estimated at 8.27% (+/-3.74).

Review of unit groups

Two unit groups experienced a large increase between 1996 and 2001: D023 – Other Professional Occupations in Health Diagnosing and Treating and D213 – Animal Health Technologists.

In particular, D023 increased 108.6%, from 1,335 to 2,785, between 1996 and 2001. Over the 10-year period, this group increased 257.1%. The growth in popularity of alternative medicine practices, such as naturopathic medicine, accounts for part of this significant increase.

Both D023 and D213 were found to be fairly well coded.

Broad Category E – Occupations in Social Science, Education, Government Service and Religion

Broad category E increased 9.6% between 1996 and 2001. The growth rates at the major group level varied substantially. E0 – Judges, Lawyers, Psychologists, Social Workers, Ministers of Religion and Policy Program Officers increased 15.3%, E1 – Teachers and Professors increased by 1.2%, while E2 – Paralegals, Social Services Workers and Occupations in Education and Religion, n.e.c. increased by 36.4%.

The census and LFS estimates compare extremely well for this category. According to the OERS, the error rate was among the lowest of the broad categories at 7.73% (+/-3.17%).

Review of unit groups

Unit group E037 – Program Officers Unique to Government shows a 111.9% increase between 1996 and 2001. Unfortunately, as was the case with the other government occupation groups, this group was extremely poorly coded. As a result, a cautionary note was prepared.

E215 – Other Instructors increased 117.8% (12,090 workers) between 1996 and 2001. The transfer of the occupation title "tutor, elementary and secondary education" from G812 – Elementary and Secondary School Teachers Assistants to E215 is partly responsible for this growth.

Broad Category F – Occupations in Art, Culture, Recreation and Sport

Broad category F increased 12.8% between 1996 and 2001. Major group F0 – Professional Occupations in Art and Culture increased 12.5% while F1 – Technical Occupations in Art, Culture, Recreation and Sport increased 13.1%.

The LFS estimates compare fairly well at the major group level: the census estimate for F0 is about 27,000 persons, below the LFS estimate; the census estimate for F1 is only 5.4%, or 14,135, lower than the LFS.

However, according to the OERS, the error rate for category F is the second highest after that for managers: 14.67% (+/-7.53%). It should be noted that this rate is based on a sample of only 188 responses.

Review of unit groups

F022 – Editors grew 60.7% between 1996 and 2001. There did not seem to be any major problems in the coding of this group.

F127 – Support Occupations in Motion Pictures, Broadcasting and the Performing Arts increased 60.6%. Some of this increase is due to a movement of titles from F126 – Other Technical and Co-ordinating Occupations in Motion Pictures, Broadcasting and the Performing Arts to F127. As a result, F126 increased only 9.1%. There was also a small amount of miscoding of responses between F127 and F126. Many of the example titles are quite similar between the two groups. For example, "key grip" is coded to F126, while "grip" is coded to F127.

Broad Category G – Sales and Service Occupations

Broad category G – Sales and Service Occupations is the largest of the 10 broad categories accounting for almost 25% of the "Experienced Labour Force". Between 1996 and 2001, this category grew only 2.9%. At the major group level, G0 – Sales and Service Supervisors experienced the highest growth at 40.9%. The only other major group to show a strong increase was G7 – Occupations in Travel and Accommodation Including Attendants in Recreation and Sport, at 18.9%. On the other hand, G1 – Wholesale, Technical, Insurance, Real Estate Sales Specialists and Retail, Wholesale and Grain Buyers experienced a relatively large decline of -13.4%.

When compared with the LFS estimates, two major groups stand out as problematic: the census estimate for G0 is 46%, or 101,235, lower than the LFS estimate (despite the relatively large growth between 1996 and 2001); likewise, the estimate for G1 is 37%, or 196,825, lower than the LFS estimate.

It was speculated during the review of management occupations that the LFS may tend to code more often to the supervisor groups than the census. This could have explained the reason why census estimates were so much lower for G0, if not for the fact that census estimates are also lower for major group A2, that is, the management-level occupations that correspond to the supervisor occupations in G0.

On the other hand, the difference in estimates for G1 seems to be indicative of a coding problem with sales representatives in the census. Both G111 and G121 declined between 1996 and 2001. Some of these occupations were miscoded to G211 and A131.

Again, vague or ambiguous responses are at least partly responsible for the confusion between G111, G121 and G211. Ideally, to distinguish between wholesale and retail sales occupations, one would be looking for titles such as "sales rep" or "sales agent" (which would be coded to G111 or G121) versus "sales clerk" (which would be coded to G211). Unfortunately, many respondents report only "sales" as their work or occupation.

Another problem title that led to miscoding was "sales account manager" (or more often "account manager") in the sales department of a business. Many of these responses were miscoded to A131 – Sales, Marketing and Advertising Managers.

Review of unit groups

Among the unit groups which saw relatively large increases between 1996 and 2001 were the following: G012 – Food Service Supervisors (87.8%), G411 – Chefs (40.5%), G732 – Other Attendants in

Accommodations and Travel (61.3%), G813 - Early Childhood Educators and Assistants (59.6%), G922 – Estheticians, Electrologists and Related Occupations (52.8%) and G924 – Other Personal Service Occupations (53.7%). Generally, no particular coding biases were found for these groups.

Between 1996 and 2001, G931 – Light Duty Cleaners increased by 37,170 workers or 24.8%. In direct contrast, G933 – Janitors, Caretakers and Building Superintendents experienced a large decrease of 66,820 workers, representing a -24.7% decline for this group. The possibility of coding errors arising from confusing these two groups was investigated.

In 1996, it was found that coders had difficulty distinguishing between G931 and G933. During Load Stage Review, persons coded to G931 who responded "janitor", "concierge", "custodian" or "caretaker" were changed to G933. Due to lack of time, this correction was not implemented in 2001. Examination of the write-in file found that a relatively small number of records would have been affected if this edit were repeated. Thus, this edit alone does not account for the trends observed for either G931 or G933.

Further to the coding problems between G931 and G933, there is evidence that some respondents use the words "janitor" and "cleaner" interchangeably, or that they give contradictory responses, such as "kind of work = janitor" (code G933) along with "main duties = office cleaning" ("office cleaner" is a title in G931).

Another group to show a relatively large decline was G814 – Babysitters, Nannies and Parents' Helpers. This group fell by -34.3% or 48,390 persons. Numerically, this was the third-largest decline of all unit groups. Some babysitters were miscoded to G813 – Early Childhood Educators and Assistants, probably due to confusion brought on by the NAICS code. Babysitters who sit in their own home are coded to the day care industry. Again, the number of cases involved was not large enough to account for this huge drop.

In 1996, a correction was made to unit group G982 – Ironing, Pressing and Finishing Occupations that moved persons who worked in the clothing manufacturing industry and reported "garment pressing" as their occupation to J319 – Other Labourers in Processing, Manufacturing and Utilities. (G982 is intended for persons working in laundry and dry-cleaning establishments.) Unfortunately, this correction was not done in 2001.

Broad Category H – Trades, Transport and Equipment Operators and Related Occupations

Between 1996 and 2001, broad category H increased 8.8%. Major group H3 – Machinists, Metal Forming, Shaping and Erecting Occupations experienced the highest growth in this category at almost 23.7%. Only one major group, H0 – Contractors and Supervisors in Trades and Transportation, declined by -11.8% (or 16,450 workers) between 1996 and 2001.

With the exception of H0, the census estimates for the major groups within category H compare fairly well with those from the LFS. The census estimate for H0 is significantly lower than the LFS estimate (122,740 versus 233,600).

The OERS error rate for category H is 9.19% (+/-2.8%).

Review of unit groups

Very few unit groups showed any significant change between 1996 and 2001. H434 – Motorcycle and Other Related Mechanics increased 91.2% (from 1,820 to 3,480 workers). There were no major problems in the quality of coding for this group.

In 1996, a problem was noted with H512 – Tailors, Dressmakers, Furriers and Milliners. Some of the responses should have been coded to J161 – Sewing Machine Operators. This problem – mostly due to

confusion with the word "couturiere" – has existed for several censuses. Unfortunately, due to time constraints, this error was not addressed for 2001 during Load Stage Review. It was also not possible to use the NAICS code to identify miscoded records, as these two occupations can now share the same industry code. Correction of these records would have resulted in a lower increase between 1996 and 2001 for H512 than of the 16.5% shown.

Broad Category I – Occupations Unique to Primary Industry

Broad category I was the only category to decline between 1996 and 2001. It fell by -1.8% (or 12,290 workers). Within category I, both I0 – Occupations Unique to Agriculture Excluding Labourers and I1 – Occupations Unique to Forestry Operations, Mining, Oil and Gas Extraction, and Fishing, Excluding Labourers showed small declines of -4.2% and -5.4% respectively. Only major group I2 – Primary Production Labourers showed an increase, growing by 10.7% (or 12,620 workers).

The census estimate for category I is slightly larger than the LFS estimate: 657,180 versus 625,900. At the major group level, there is much more fluctuation between the two survey estimates. The census estimate for I0 is higher than the one for the LFS by 26,870 persons; the estimate for I1 is lower by 28,955 persons; finally, I2 is higher by 33,365 persons.

The OERS error rate for category I is 9.67% (+/-4.99%).

Review of unit groups

At the unit group level, all occupation unit groups within I1 and I2 related to the oil and gas industry consistently showed increases between 1996 and 2001. On the other hand, unit groups related to the mining industry all showed declines.

Occupations in the fishing industry also declined, with the exception of I171 – Fishing Masters and Officers. This group shows an increase of 9.1% (or about 220 people). There is some evidence of miscoding between this group and I172 – Fishing Vessel Skippers and Fishermen. I171 is one-tenth the size of I172 (2,645 versus 28,610 workers). A small amount of miscoding is enough to make the difference between an increase and a decline for I171, yet will barely have an impact on I172.

Broad Category J – Occupations Unique to Processing, Manufacturing and Utilities

Category J increased 9% between 1996 and 2001. At the major group level, only J0 – Supervisors in Manufacturing declined slightly by -0.3%; J1 – Machine Operators in Manufacturing increased by almost 5.7%; J2 – Assemblers in Manufacturing showed the strongest growth for the category at 20.5%, while J3 – Labourers in Processing, Manufacturing and Utilities grew by 9.6%.

With the exception of major group J2, the census estimates for category J do not compare well with those from the LFS. For J0, the census shows 58,780 fewer workers than the LFS does. The census estimate for J3 is 36% higher than the LFS estimate, representing a difference of about 75,275 workers. The largest discrepancy occurs for J1. The census estimate is 546,960 compared to 681,300 for the LFS, a difference of 134,340 workers.

According to the OERS, this category tied with category F as having the second-highest error rate, at 14.66% (+/-4.34%). Although the sample size of the OERS was not large enough to produce estimates below the one-digit level, an examination of discrepancies between the coding done by the subject-matter experts and the general coders showed problems distinguishing between major groups J1 and J3.

The occupations in category J are difficult to code for several reasons. Many occupation responses in this category tend to be vague, e.g., "labourer", "machine operator", "production worker", where the industry must be used to determine a code. Even then, there may be more than one possible code as the

classification further differentiates these occupations between multifunction and single-function machine operators. Auto parts manufacturing was a particularly difficult area to code because often the information needed to determine the code, such as what the parts being made were, or whether the parts were plastic or metal, was not given. In cases where two codes were possible, coding consultants were instructed to select a code rather than let the record go to imputation.

Responses also tend to be conflicting. A number of respondents report their work or occupation as "labourer", only to describe a more skilled occupation as their main duty, e.g., "kind of work = labourer" (J3), "main duty = mill operator" (J1).

Even when the respondent provides a relatively clear response, the same occupation title can have more than one occupation code, again depending on the respondent's industry. For example, there are 10 possible occupation codes for the title "grinder operator".

As mentioned earlier, the special code J399 – Labourers, Industry Unspecified was created to handle cases where the respondent gave incomplete information (such as "labourer" or "odd jobs") and the industry code could not be determined. As in 1996, this code was over-used during general coding. In many cases, the industry was reported by the respondent and a more specific code could have been chosen. In other cases, the information suggested a more skilled occupation than labourer. This problem was discovered midway through the coding operation for 2001 and an amendment was sent to all processing centres clarifying the use of this code. During processing, persons coded to J399 were imputed through "hot deck" imputation to a valid four-digit code. The donor pool for this code was restricted to broad categories G, H, I and J. (See Section 2.2.2.2 for information on the imputation of J399.)

Review of unit groups

Two groups experienced significant growth between 1996 and 2001: J222 – Furniture and Fixture Assemblers and Inspectors doubled in size from 15,355 to 30,575 workers. J197 – Other Products Machine Operators increased 91.9% to 15,600 workers. An examination of these codes in the write-in file did not reveal any particular coding problems beyond those related to vague responses.

As mentioned during the review of category G, a correction made in 1996 that moved a number of workers from G982 – Ironing, Pressing and Finishing Occupations to J319 – Other Labourers in Processing, Manufacturing and Utilities was overlooked for 2001. As a result, J319 shows a small decline between 1996 and 2001.

5. Historical Comparability

Occupation data from the 2001 Census were coded using the 2001 National Occupational Classification for Statistics (2001 NOC–S). This classification is a revision of the 1991 Standard Occupational Classification (1991 SOC) used to code occupation data in the 1991 and 1996 Censuses. Data coded to the 2001 NOC–S are comparable with those coded to the 1991 SOC, with a few minor exceptions as noted below.

Revisions Between the 1991 SOC and the 2001 National Occupational Classification for Statistics (NOC–S)

1991 SOC		2001 NOC–S	
A121	Engineering, Science and Architecture Managers	A121	Engineering Managers
		A123	Architecture and Science Managers
B511	General Office Clerks	B511	General Office Clerks, Typists and Word Processing Operators
B512	Typists and Word Processing Operators		
B521	Computer Operators	C047	Computer Engineers (except Software Engineers)
C047	Computer Engineers	C071	Information Systems Analysts and Consultants
C062	Computer Systems Analysts	C072	Database Analysts and Data Administrators
C063	Computer Programmers	C073	Software Engineers
		C074	Computer Programmers and Interactive Media Developers
		C075	Web Designers and Developers
		C181	Computer and Network Operators and Web Technicians
		C182	User Support Technicians
		C183	Systems Testing Technicians
C131	Civil Engineering Technologists and Technicians and Construction Estimators	C131	Civil Engineering Technologists and Technicians
		C134	Construction Estimators

1991 SOC		2001 NOC-S	
D313	Other Aides and Assistants in Support of Health Services	D313	Other Assisting Occupations in Support of Health Services
G951	Elemental Medical and Hospital Assistants		
E034	Health and Social Policy Researchers, Consultants and Program Officers	E034	Social Policy Researchers, Consultants and Program Officers
		E039	Health Policy Researchers, Consultants and Program Officers
G731	Attendants in Amusement, Recreation and Sport	G723	Casino Occupations
		G731	Operators and Attendants in Amusement, Recreation and Sport
G813	Early Childhood Educators and Assistants	E217	Early Childhood Educators and Assistants
G961	Food Service Counter Attendants and Food Preparers	G961	Food Counter Attendants, Kitchen Helpers and Related Occupations
G962	Kitchen and Food Service Helpers		
J195	Welders and Soldering Machine Operators	H326	Welders and Related Machine Operators

Conclusion

Despite attempts to improve census coder training and the coding reference materials for 2001, the outgoing error rates for occupation increased over 1996, with an error rate of over 21% at the four-digit unit group level.

Non-response increased for almost all subject-matter areas for the 2001 Census. At the Canada level, the weighted non-response rate for occupation was 7.0%, up over 2 percentage points from 1996.

The "Experienced Labour Force" increased 8.8% between 1996 and 2001. At the broad category level (one-digit), occupations in category C – Natural and Applied Science and Related showed the largest increase at 35.1%, followed by category A – Management Occupations at 25.7%. Broad category I – Occupations in Primary Industries was the only category to decline (-2%).

Comparisons with the Labour Force Survey found a significant difference in the 2001 estimates for broad category A – Management Occupations, with the census showing a much higher number of persons in these occupations. This is a continuation of problems first observed during the 1996 Census. The difficulty of coding management occupations, particularly in the census, is believed to be one source of discrepancy.

In addition to the Management Occupations, the census and LFS show a large difference in the 2001 estimates for broad Category J – Occupations in Manufacturing and Utilities and broad Category G – Sales and Service Occupations. In these cases, census estimates are much lower than those based on the LFS.

Coding of government occupations was particularly problematic in the 2001 Census. This was due in part to vague or ambiguous information provided by the respondent. In other cases, it seemed that coders could not differentiate between the various government occupations. In particular, A334 – Other Managers in Public Administration and E037 – Program Officers Unique to Government were identified as having serious data quality concerns.

Census occupation data coded to the 2001 National Occupational Classification for Statistics was released on February 11, 2003, with the following cautionary notes:

Broad Category A – Management Occupations

Census data for occupation groups in broad category A – Management Occupations should be used with caution. Some coding errors were made in assigning the appropriate level of management, e.g. senior manager versus middle manager, and in determining the appropriate area of specialization or activity, e.g. a manager of a health care program in a hospital versus a government manager in health policy administration. Some non-management occupations have also been miscoded to management due to confusion over titles such as program manager, project manager, etc. Data users may wish to use data for management occupations in conjunction with other variables such as income, age and education.

A334 – Other Managers in Public Administration

Census data for A334 – Other Managers in Public Administration should be used with extreme caution due to a high level of coding error. Coding errors were made in assigning the appropriate management level, e.g. senior manager versus middle manager, and in determining the appropriate area of specialization, e.g. managers in economic and social policy administration have been miscoded to this group. Some non-management occupations have also been miscoded to A334 due to confusion over titles such as program manager, project manager, etc.

E037 – Program Officers Unique to Government

Census data for E037 – Program Officers Unique to Government should be used with extreme caution due to a high level of coding error. Coding errors were made with respect to the appropriate area of specialization, e.g. economic and social policy researchers, and officers have been miscoded to this group. As well, a number of vague responses such as "civil servant" and "fonctionnaire" were wrongly assigned this code.

G111 – Sales Representatives, Wholesale Trade (Non-Technical)

The 2001 Census data are showing an underestimate of persons in G111 – Sales Representatives, Wholesale Trade (Non-Technical). A high number of vague responses has resulted in some of these occupations being miscoded to other sales occupations such as G211 – Retail Sales Persons and Sales Clerks and A131 – Sales Marketing and Advertising Managers.

G121 – Technical Sales Specialists, Wholesale Trade

The 2001 Census data are showing an underestimate of persons in G121 – Technical Sales Specialists, Wholesale Trade. A high number of vague responses has resulted in some of these occupations being miscoded to other sales occupations such as G211 – Retail Sales Persons and Sales Clerks and A131 – Sales Marketing and Advertising Managers.

G982 – Ironing, Pressing and Finishing Occupations

The 2001 Census data are showing an overestimate of persons in G982 – Ironing, Pressing and Finishing Occupations due to miscoding of some workers in pressing occupations in clothing manufacturing. These responses should have been coded to J319 – Other Labourers in Processing, Manufacturing and Utilities. Data users may want to consider excluding persons in industry (NAICS) subsector 351 – Clothing Manufacturing from the estimates for G982.

H512 – Tailors, Dressmakers, Furriers and Milliners

The 2001 Census data are showing an overestimate of persons in H512 – Tailors, Dressmakers, Furriers and Milliners due to miscoding of some responses of "couturier" and "seamstress" in clothing manufacturing to this group.

J111 – Central Control and Process Operators, Mineral and Metal Processing

J121 – Machine Operators, Mineral and Metal Processing

Data for J111 – Central Control and Process Operators, Mineral and Metal Processing and J121 – Machine Operators, Mineral and Metal Processing should be used with caution. There is some overlap of responses coded to these two groups as respondents do not always provide enough information to allow coders to distinguish between them.

J113 – Pulping Control Operators

J142 – Pulp Mill Machine Operators

Data for J113 – Pulping Control Operators and J142 – Pulp Mill Machine Operators should be used with caution. There is some overlap of responses coded to these two groups as respondents do not always provide enough information to allow coders to distinguish between them.

J114 – Papermaking and Coating Control Operators
J143 – Papermaking and Finishing Machine Operators

Data for J114 – Papermaking and Coating Control Operators and J143 – Papermaking and Finishing Machine Operators should be used with caution. There is some overlap of responses coded to these two groups as respondents do not always provide enough information to allow coders to distinguish between them.

J319 – Other Labourers in Processing, Manufacturing and Utilities

The 2001 Census data are showing an underestimate of persons in J319 – Other Labourers in Processing, Manufacturing and Utilities due to miscoding of some workers in pressing occupations in clothing manufacturing to G982 – Ironing, Pressing and Finishing Occupations.

Appendix A. Glossary of Terms

The definitions of census terms, variables and concepts are presented here as they appear in the *2001 Census Dictionary* (Catalogue No. 92-378-XIE). Users should refer to the *2001 Census Dictionary* for full definitions and additional remarks related to any concepts, such as information on direct and derived variables and their respective universe.

Occupation (based on the 2001 National Occupational Classification for Statistics [NOC–S 2001])

Refers to the kind of work persons were doing during the reference week, as determined by their kind of work and the description of the main activities in their job. If the person did not have a job during the week (Sunday to Saturday) prior to enumeration (May 15, 2001), the data related to the job of longest duration since January 1, 2000. Persons with two or more jobs were to report the information for the job at which they worked the most hours.

The 2001 occupation data are classified according to the 2001 National Occupational Classification for Statistics (NOC–S 2001). This classification is composed of four levels of aggregation. There are 10 broad occupational categories containing 47 major groups that are further subdivided into 140 minor groups. At the most detailed level, there are 520 occupation unit groups. Occupation unit groups are formed on the basis of the education, training, or skill level required to enter the job, as well as the kind of work performed, as determined by the tasks, duties and responsibilities of the occupation.

For information on the NOC–S 2001, see the *National Occupational Classification for Statistics, 2001*, Catalogue No. 12-583-XPE.

Appendix B. Edit Rules

Deterministic Edits to Maintain Consistency With NAICS

Incoming Occupation Code		NAICS	Outgoing Occupation Code	
A361 –	Other Services Managers	8121 and Class of Worker is Self-employed without paid help	G911 –	Hairstylists and Barbers
B013 –	Securities Agents, Investment Dealers and Traders	SECTOR 41 – Wholesale Trade	G111 –	Sales Representatives, Wholesale Trade (Non-Technical)
C111 –	Applied Chemical Technologists and Technicians	6215, 6219 or 6220	D211 –	Medical Laboratory Technologists and Pathologists' Assistants
C121 –	Biological Technologists and Technicians	6215, 6219 or 6220	D211 –	Medical Laboratory Technologists and Pathologists' Assistants
C141 –	Electrical and Electronics Engineering Technologists and Technicians	3364, 4811 or 4812	C144 –	Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors
C171 –	Air Pilots, Flight Engineers and Flying Instructors	9111 – Defence Services	A353 –	Commissioned Officers, Armed Forces
C173 –	Deck Officers, Water Transport	9111 – Defence Services	A353 –	Commissioned Officers, Armed Forces
C173 –	Deck Officers, Water Transport	1141 – Fishing Industries	I171 –	Fishing Masters and Officers
C174 –	Deck Officers, Water Transport	9111 – Defence Services	A353 –	Commissioned Officers, Armed Forces
E023 –	Family, Marriage and Other Related Counsellors	6111 – Elementary and Secondary Education	E133 –	School and Guidance Counsellors
F011 –	Librarians	6111 – Elementary and Secondary Education	E131 –	Secondary School Teachers
F033 –	Musicians and Singers	6111 – Elementary and Secondary Education	E131 –	Secondary School Teachers

Incoming Occupation Code		NAICS	Outgoing Occupation Code	
F034 –	Dancers	6111 –	Elementary and Secondary Education	E131 – Secondary School Teachers
F035 –	Actors	6111 –	Elementary and Secondary Education	E131 – Secondary School Teachers
G111 –	Sales Representatives, Wholesale Trade (Non-Technical)	4543 –	Direct Sellers	G973 – Other Elemental Sales Occupations
G111 –	Sales Representatives, Wholesale Trade (Non-Technical)	See below		G121 – Technical Sales Specialists, Wholesale Trade
G611 –	Police Officers (Except Commissioned)	5616		G631 – Security Guards and Related Occupations
G715 –	Hotel Front Desk Clerks	Not Sector 72 – Accommodation Service Industries		B514 – Receptionists and Switchboard Operators
H733 –	Deck Crew, Water Transport	1141 –	Fishing Industries	I181 – Fishing Vessel Deckhands
H736 –	Boat Operators	1141 –	Fishing Industries	I172 – Fishing Vessel Skippers and Fishermen/ women
I121 –	Supervisors, Mining and Quarrying	2111 or 2131		I122 – Supervisors, Oil and Gas Drilling and Service
I171 –	Fishing Masters and Officers	4831 or 4883		C173 – Deck Officers, Water Transport
I181 –	Fishing Vessel Deckhands	4831, 4883 or 4832		H733 – Deck Crew, Water Transport

The following NAICS codes were used in the edit for G111 – Sales Representatives, Wholesale Trade (Non-Technical):

- 2211 – Electric Power Generation, Transmission and Distribution
Subsector 325 – Chemical Mfg.
- 3323 – Architectural and Structural Metals Mfg.
- 3324 – Boiler, Tank and Shipping Container Mfg.

Incoming Occupation Code	NAICS	Outgoing Occupation Code
3329 – Other Fabricated Metal Product Mfg. Subsector 333 – Machinery Mfg.		
3364 – Aerospace Product and Parts Mfg.		
3365 – Railroad Rolling Stock Mfg. Subsector 335 – Electrical Equipment, Appliance and Component Mfg.		
5133 – Telecommunications		
5415 – Computer Systems Design and Related Services		

Deterministic Edits Based on Age and Education

Incoming Occupation Code	Age and Education*	Outgoing Occupation Code
A211 – Retail Trade Managers**	If age < 20 years	G011 – Retail Trade Supervisors
A221 – Restaurant and Food Service Managers**	If age < 20 years	G012 – Food Service Supervisors
B011 – Financial Auditors and Accountants	If age < 25 years and PS_UV < 3 years	B111 – Bookkeepers
C011 – Physicists and Astronomers	If age < 25 years and PS_UV < 3 years	C015 – Other Professional Occupations in Physical Sciences
C012 – Chemists	If age < 25 years and PS_UV < 3 years	C111 – Applied Chemical Technologists and Technicians
C013 – Geologists, Geochemists and Geophysicists	If age < 25 years and PS_UV < 3 years	C112 – Geological and Mineral Technologists and Technicians
C014 – Meteorologists	If age < 25 years and PS_UV < 3 years	C113 – Meteorological Technicians
C021 – Biologists and Related Scientists	If age < 25 years and PS_UV < 3 years	C121 – Biological Technologists and Technicians
C022 – Forestry Professionals	If age < 25 years and PS_UV < 3 years	C123 – Forestry Technologists and Technicians
C031 – Civil Engineers	If age < 25 years and PS_UV < 3 years	C131 – Civil Engineering Technologists and Technicians
C032 – Mechanical Engineers	If age < 25 years and PS_UV < 3 years	C132 – Mechanical Engineering Technologists and Technicians
C033 – Electrical and Electronic Engineers	If age < 25 years and PS_UV < 3 years	C141 – Electrical and Electronics Engineering Technologists and Technicians
C034 – Chemical Engineers	If age < 25 years and PS_UV < 3 years	C111 – Applied Chemical Technologists and Technicians
C041 – Industrial and Manufacturing Engineers	If age < 25 years and PS_UV < 3 years	C133 – Industrial Engineering and Manufacturing Technologists and Technicians
C042 – Metallurgical and Materials Engineers	If age < 25 years and PS_UV < 3 years	C112 – Geological and Mineral Technologists and Technicians
C043 – Mining Engineers	If age < 25 years and PS_UV < 3 years	C112 – Geological and Mineral Technologists and Technicians
C044 – Geological Engineers	If age < 25 years and PS_UV < 3 years	C112 – Geological and Mineral Technologists and Technicians
C045 – Petroleum Engineers	If age < 25 years and PS_UV < 3 years	C112 – Geological and Mineral Technologists and Technicians
C046 – Aerospace Engineers	If age < 25 years and PS_UV < 3 years	C144 – Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors

Incoming Occupation Code	Age and Education*	Outgoing Occupation Code
C047 – Computer Engineers	If age < 25 years and PS_UV < 3 years	C141 – Electrical and Electronics Engineering Technologists and Technicians
C051 – Architects	If age < 25 years and PS_UV < 3 years	C151 – Architectural Technologists and Technicians
C052 – Landscape Architects	If age < 25 years and PS_UV < 3 years	C125 – Landscape and Horticultural Technicians and Specialists
C054 – Land Surveyors	If age < 25 years and PS_UV < 3 years	C154 – Survey Technologists and Technicians
D013 – Dentists	If age < 25 years and PS_UV < 3 years	D311 – Dental Assistants
D014 – Veterinarians	If age < 25 years and PS_UV < 3 years	D213 – Animal Health Technologists
D021 – Optometrists	If age < 25 years and PS_UV < 3 years	D235 – Other Technical Occupations in Therapy and Assessment
D031 – Pharmacists	If age < 25 years and PS_UV < 3 years	D313 – Other Aides and Assistants in Support of Health Services
D032 – Dietitians and Nutritionists	If age < 25 years and PS_UV < 3 years	D219 – Other Medical Technologists and Technicians (Except Dental Health)
D032 – Dietitians and Nutritionists	If PS_UV < 3 years and NAICS = 8121	G921 – Image, Social and Other Personal Consultants
D041 – Audiologists and Speech – Language Pathologists	If age < 25 years and PS_UV < 3 years	D235 – Other Technical Occupations in Therapy and Assessment
D042 – Physiotherapists	If age < 25 years and PS_UV < 3 years	D235 – Other Technical Occupations in Therapy and Assessment
D043 – Occupational Therapists	If age < 25 years and PS_UV < 3 years	D235 – Other Technical Occupations in Therapy and Assessment
D111 – Head Nurses and Supervisors	If age < 25 years and PS_OT < 2 years	D312 – Nurse Aides, Orderlies and Patient Service Associates
D112 – Registered Nurses	If age < 25 years and PS_OT < 2 years	D312 – Nurse Aides, Orderlies and Patient Service Associates
D233 – Registered Nursing Assistants	If age < 25 years and PS_OT < 1 year	D312 – Nurse Aides, Orderlies and Patient Service Associates
E011 – Judges	If age < 25 years and PS_UV < 3 years	B317 – Court Officers and Justices of the Peace
E012 – Lawyers and Quebec Notaries	If age < 25 years and PS_UV < 3 years	E211 – Paralegal and Related Occupations
E021 – Psychologists	If age < 25 years and PS_UV < 3 years	E212 – Community and Social Service Workers
E022 – Social Workers	If age < 25 years and PS_UV < 3 years	E212 – Community and Social Service Workers

Incoming Occupation Code	Age and Education*	Outgoing Occupation Code
E036 – Recreation, Sports and Fitness Program Supervisors and Consultants*	If age < 25 years and PS_UV < 3 years	F154 – Program Leaders and Instructors in Recreation and Sport
E111 – University Professors	If age < 25 years and PS_UV < 3 years	E112 – Post-Secondary Teaching and Research Assistants
E131 – Secondary School Teachers	If age < 25 years and PS_UV < 3 years	G812 – Elementary and Secondary School Teacher Assistants
E132 – Elementary School and Kindergarten Teachers	If age < 25 years and PS_OT < 2 years	G812 – Elementary and Secondary School Teacher Assistants
F011 – Librarians	If age < 25 years and PS_UV < 3 years	F111 – Library and Archive Technicians and Assistants
F011 – Librarians	If age < 19	B551 – Library Clerks
F012 – Conservators and Curators	If age < 25 years and PS_UV < 3 years	F112 – Technical Occupations Related to Museums and Galleries
F013 – Archivists	If age < 19	B551 – Library Clerks
F013 – Archivists	If age < 25 years and PS_UV < 3 years	F111 – Library and Archive Technicians and Assistants
F111 – Library and Archive Technicians and Assistants	If age < 19 years	B551 – Library Clerks
I011 – Farmers and Farm Managers**	If age < 20 years	I021 – General Farm Workers

* PS_UV stands for post-secondary university education; PS_OT stands for post-secondary other non-university education.

** New for 2001.

Appendix C. Tables

Table C1. Distribution of the Detailed Occupation Variable Before and after Imputation by CANCEIS and Proportion of Imputed Records by Code, for Canada, 20% Sample Data

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
A011	0.05	0.05	0.00	10.32
A012	0.15	0.15	0.00	6.02
A013	1.10	1.08	0.03	5.88
A111	0.38	0.37	0.01	6.14
A112	0.21	0.21	0.01	5.12
A113	0.06	0.06	0.00	6.53
A114	0.21	0.20	0.01	5.64
A121	0.10	0.10	0.00	5.09
A122	0.29	0.28	0.01	5.28
A123	0.04	0.04	0.00	5.01
A131	0.88	0.87	0.02	6.04
A141	0.31	0.31	0.00	6.68
A211	2.20	2.16	0.04	6.40
A221	0.82	0.81	0.01	6.90
A222	0.20	0.20	0.00	8.30
A301	0.22	0.22	0.00	5.97
A302	0.38	0.37	0.01	6.48
A303	0.09	0.09	0.00	5.45
A311	0.10	0.10	0.00	6.89
A312	0.03	0.03	0.00	6.53
A321	0.13	0.13	0.00	5.90
A322	0.07	0.07	0.00	5.19
A323	0.19	0.18	0.01	5.46
A324	0.09	0.09	0.00	5.01
A331	0.04	0.04	0.00	5.71
A332	0.05	0.04	0.00	5.89
A333	0.02	0.01	0.00	4.95
A334	0.04	0.04	0.00	6.74
A341	0.03	0.03	0.00	5.62
A342	0.08	0.07	0.00	5.44
A343	0.07	0.07	0.00	6.06
A351	0.02	0.02	0.00	5.77
A352	0.01	0.01	0.00	7.56
A353	0.08	0.08	0.00	7.57
A361	0.18	0.18	0.00	6.48

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
A371	0.35	0.34	0.01	6.24
A372	0.18	0.17	0.00	7.22
A373	0.16	0.16	0.00	6.46
A381	0.08	0.08	0.00	6.67
A391	0.51	0.50	0.01	6.31
A392	0.06	0.06	0.00	7.50
B011	1.12	1.09	0.02	6.07
B012	0.24	0.23	0.01	5.52
B013	0.17	0.17	0.00	5.88
B014	0.35	0.34	0.01	5.70
B021	0.25	0.25	0.01	5.92
B022	0.29	0.28	0.01	6.23
B111	0.68	0.67	0.01	6.72
B112	0.14	0.14	0.00	6.03
B113	0.14	0.14	0.00	5.88
B114	0.08	0.07	0.00	6.00
B115	0.07	0.07	0.00	6.16
B116	0.03	0.03	0.00	5.90
B211	1.79	1.77	0.02	6.94
B212	0.28	0.28	0.00	6.51
B213	0.29	0.28	0.01	6.25
B214	0.04	0.04	0.00	4.90
B311	0.96	0.94	0.02	6.15
B312	0.17	0.16	0.00	6.88
B313	0.12	0.12	0.00	6.20
B314	0.22	0.22	0.00	7.94
B315	0.18	0.17	0.00	6.50
B316	0.08	0.08	0.00	5.53
B317	0.03	0.03	0.00	6.14
B318	0.14	0.14	0.00	6.90
B411	0.12	0.12	0.00	7.30
B412	0.14	0.14	0.00	6.93
B413	0.08	0.08	0.00	5.48
B414	0.05	0.05	0.00	7.73
B415	0.13	0.13	0.00	7.68
B511	1.77	1.76	0.01	7.39
B513	0.18	0.18	0.00	8.10
B514	0.82	0.81	0.00	7.63
B522	0.37	0.37	0.00	7.55
B523	0.04	0.04	0.00	6.40
B524	0.08	0.08	0.00	7.95

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
B531	1.15	1.13	0.02	6.70
B532	0.19	0.19	0.00	7.46
B533	0.59	0.59	0.01	6.94
B534	0.24	0.24	0.00	7.57
B535	0.11	0.10	0.00	7.12
B541	0.44	0.44	0.01	6.54
B542	0.06	0.06	0.00	7.08
B543	0.02	0.02	0.00	7.40
B551	0.07	0.07	0.00	7.17
B552	0.05	0.05	0.00	6.54
B553	1.06	1.05	0.01	7.27
B554	0.20	0.20	0.00	8.18
B561	0.26	0.26	0.00	8.00
B562	0.17	0.16	0.00	6.90
B563	0.21	0.22	-0.01	10.71
B571	0.67	0.68	0.00	8.74
B572	0.23	0.23	0.00	7.96
B573	0.09	0.09	0.00	6.16
B574	0.25	0.25	0.00	7.59
B575	0.18	0.18	0.00	7.76
B576	0.02	0.02	0.00	8.00
C011	0.02	0.02	0.00	6.28
C012	0.10	0.10	0.00	4.76
C013	0.07	0.06	0.00	5.09
C014	0.01	0.01	0.00	3.59
C015	0.01	0.01	0.00	6.71
C021	0.10	0.09	0.00	4.98
C022	0.04	0.04	0.00	5.73
C023	0.03	0.03	0.00	4.53
C031	0.25	0.24	0.01	5.92
C032	0.20	0.20	0.00	6.20
C033	0.21	0.20	0.01	5.47
C034	0.06	0.06	0.00	4.65
C041	0.10	0.10	0.00	4.97
C042	0.02	0.01	0.00	3.69
C043	0.02	0.02	0.00	3.80
C044	0.01	0.01	0.00	5.15
C045	0.04	0.04	0.00	5.09
C046	0.04	0.04	0.00	6.22
C047	0.19	0.18	0.00	5.78
C048	0.05	0.05	0.00	5.46

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
C051	0.08	0.08	0.00	4.74
C052	0.02	0.02	0.00	5.83
C053	0.04	0.04	0.00	3.86
C054	0.06	0.06	0.00	6.61
C061	0.04	0.04	0.00	5.74
C071	0.67	0.66	0.01	6.18
C072	0.09	0.09	0.00	6.89
C073	0.17	0.17	0.01	5.25
C074	0.66	0.64	0.01	6.09
C075	0.16	0.15	0.00	6.29
C111	0.14	0.14	0.00	6.37
C112	0.05	0.05	0.00	6.17
C113	0.01	0.01	0.00	4.81
C121	0.07	0.07	0.00	6.92
C122	0.02	0.02	0.00	6.86
C123	0.07	0.07	0.00	7.55
C124	0.04	0.04	0.00	8.12
C125	0.08	0.08	0.00	6.32
C131	0.06	0.06	0.00	5.81
C132	0.07	0.06	0.00	6.45
C133	0.09	0.09	0.00	6.41
C134	0.08	0.07	0.00	5.91
C141	0.23	0.23	0.00	6.64
C142	0.32	0.31	0.01	6.44
C143	0.07	0.07	0.00	5.44
C144	0.05	0.05	0.00	5.98
C151	0.04	0.04	0.00	6.08
C152	0.06	0.06	0.00	6.55
C153	0.20	0.19	0.00	5.73
C154	0.02	0.02	0.00	5.87
C155	0.04	0.04	0.00	4.71
C161	0.03	0.03	0.00	6.06
C162	0.03	0.03	0.00	8.16
C163	0.09	0.08	0.00	6.25
C164	0.06	0.06	0.00	7.92
C171	0.10	0.10	0.00	5.10
C172	0.03	0.03	0.00	4.40
C173	0.03	0.03	0.00	7.78
C174	0.02	0.02	0.00	6.84
C175	0.01	0.01	0.00	7.76
C181	0.31	0.30	0.01	6.52

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
C182	0.32	0.31	0.01	5.95
C183	0.05	0.05	0.00	5.07
D011	0.15	0.15	0.00	5.78
D012	0.26	0.25	0.01	5.06
D013	0.11	0.11	0.00	4.63
D014	0.04	0.04	0.00	6.12
D021	0.02	0.02	0.00	3.53
D022	0.03	0.03	0.00	4.39
D023	0.02	0.02	0.00	4.62
D031	0.15	0.15	0.01	4.91
D032	0.06	0.06	0.00	5.56
D041	0.04	0.04	0.00	4.24
D042	0.10	0.10	0.00	4.80
D043	0.06	0.06	0.00	3.76
D044	0.03	0.03	0.00	5.41
D111	0.06	0.06	0.00	4.90
D112	1.50	1.46	0.04	5.54
D211	0.11	0.11	0.00	5.63
D212	0.12	0.12	0.00	5.91
D213	0.06	0.06	0.00	5.76
D214	0.04	0.04	0.00	4.75
D215	0.09	0.09	0.00	5.37
D216	0.02	0.02	0.00	4.89
D217	0.01	0.01	0.00	5.06
D218	0.01	0.01	0.00	4.84
D219	0.02	0.02	0.00	5.51
D221	0.01	0.01	0.00	4.82
D222	0.09	0.09	0.00	5.21
D223	0.04	0.04	0.00	7.09
D231	0.04	0.04	0.00	6.31
D232	0.03	0.03	0.00	6.25
D233	0.31	0.30	0.01	6.13
D234	0.10	0.10	0.00	5.30
D235	0.11	0.10	0.00	4.60
D311	0.16	0.16	0.00	5.87
D312	0.86	0.85	0.01	6.84
D313	0.30	0.29	0.00	7.03
E011	0.02	0.02	0.00	6.33
E012	0.41	0.39	0.01	4.92
E021	0.10	0.10	0.00	3.95
E022	0.31	0.30	0.01	5.09

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
E023	0.16	0.16	0.00	6.19
E024	0.18	0.17	0.00	5.84
E025	0.04	0.04	0.00	4.40
E031	0.09	0.09	0.00	5.33
E032	0.06	0.06	0.00	3.95
E033	0.23	0.23	0.01	5.90
E034	0.12	0.12	0.00	5.69
E035	0.09	0.08	0.00	6.28
E036	0.10	0.10	0.00	8.66
E037	0.05	0.05	0.00	6.97
E038	0.03	0.03	0.00	5.54
E039	0.10	0.10	0.00	5.21
E111	0.33	0.32	0.01	4.74
E112	0.31	0.30	0.00	6.96
E121	0.51	0.50	0.01	5.57
E131*	0.92	1.00	-0.09	15.94
E132*	1.40	1.55	-0.14	16.62
E133	0.09	0.09	0.00	5.94
E211	0.18	0.18	0.00	6.36
E212	0.43	0.43	0.01	6.37
E213	0.10	0.09	0.00	5.22
E214	0.15	0.15	0.00	5.84
E215	0.15	0.15	0.00	7.09
E216	0.05	0.05	0.00	7.40
E217	0.89	0.88	0.01	6.94
F011	0.09	0.09	0.00	5.36
F012	0.02	0.02	0.00	5.50
F013	0.02	0.02	0.00	7.10
F021	0.14	0.14	0.00	5.86
F022	0.08	0.08	0.00	5.87
F023	0.08	0.08	0.00	4.98
F024	0.18	0.17	0.00	5.71
F025	0.09	0.09	0.00	5.53
F031	0.12	0.12	0.00	5.62
F032	0.02	0.01	0.00	6.06
F033	0.20	0.20	0.00	5.98
F034	0.04	0.04	0.00	7.07
F035	0.07	0.07	0.00	7.95
F036	0.10	0.10	0.00	6.18
F111	0.10	0.09	0.00	7.06
F112	0.03	0.03	0.00	7.80

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
F121	0.08	0.07	0.00	7.00
F122	0.03	0.03	0.00	5.88
F123	0.05	0.05	0.00	6.15
F124	0.02	0.02	0.00	5.71
F125	0.06	0.06	0.00	6.01
F126	0.06	0.06	0.00	6.09
F127	0.05	0.05	0.00	6.56
F131	0.06	0.06	0.00	6.39
F132	0.03	0.03	0.00	7.81
F141	0.28	0.28	0.01	5.95
F142	0.08	0.07	0.00	5.41
F143	0.06	0.06	0.00	7.76
F144	0.13	0.13	0.00	7.61
F145	0.02	0.02	0.00	5.89
F151	0.02	0.02	0.00	8.76
F152	0.07	0.07	0.00	8.62
F153	0.04	0.05	-0.01	18.28
F154	0.45	0.46	-0.01	10.28
G011	0.36	0.36	0.01	6.70
G012	0.17	0.17	0.00	7.42
G013	0.03	0.03	0.00	8.23
G014	0.01	0.01	0.00	6.41
G015	0.08	0.08	0.00	8.98
G016	0.07	0.07	0.00	7.81
G111	1.01	0.99	0.02	6.48
G121	0.37	0.36	0.01	6.23
G131	0.33	0.32	0.01	5.63
G132	0.31	0.31	0.00	6.84
G133	0.14	0.14	0.00	6.22
G134	0.01	0.01	0.00	5.38
G211	3.92	3.91	0.00	7.99
G311	1.86	1.88	-0.01	8.78
G411	0.20	0.20	0.00	8.21
G412	1.22	1.23	-0.01	8.81
G511	0.13	0.13	0.00	8.83
G512	0.30	0.30	0.00	7.37
G513	1.42	1.42	0.00	8.27
G611	0.38	0.37	0.01	5.79
G612	0.15	0.15	0.00	6.65
G621	0.02	0.02	0.00	6.12
G622	0.11	0.11	0.00	6.08

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
G623	0.04	0.04	0.00	6.58
G624	0.25	0.26	0.00	8.71
G625	0.07	0.07	0.00	6.50
G631	0.51	0.52	0.00	8.94
G711	0.18	0.18	0.00	7.21
G712	0.09	0.09	0.00	6.93
G713	0.09	0.09	0.00	6.64
G714	0.03	0.03	0.00	6.91
G715	0.13	0.13	0.00	7.34
G721	0.06	0.06	0.00	8.76
G722	0.04	0.04	0.00	8.44
G723	0.10	0.10	0.00	6.99
G731	0.15	0.16	-0.01	13.48
G732	0.04	0.04	0.00	8.41
G811	0.59	0.59	0.00	7.69
G812	0.49	0.48	0.01	6.91
G814	0.69	0.70	-0.01	9.95
G911	0.55	0.54	0.01	6.27
G912	0.03	0.03	0.00	6.57
G921	0.02	0.02	0.00	7.41
G922	0.15	0.15	0.00	5.81
G923	0.08	0.08	0.00	7.29
G924	0.01	0.01	0.00	6.82
G931	1.23	1.27	-0.04	11.10
G932	0.22	0.23	-0.01	11.07
G933	1.30	1.35	-0.05	11.32
G941	0.18	0.18	0.00	9.15
G942	0.26	0.26	0.00	9.49
G961	1.99	2.06	-0.07	11.18
G971	0.26	0.26	-0.01	10.29
G972	0.93	0.96	-0.03	11.20
G973	0.43	0.44	-0.01	10.41
G981	0.13	0.13	0.00	10.14
G982	0.05	0.05	0.00	11.47
G983	0.17	0.17	-0.01	11.50
H011	0.04	0.04	0.00	6.49
H012	0.08	0.08	0.00	7.23
H013	0.03	0.03	0.00	6.25
H014	0.05	0.05	0.00	6.68
H015	0.09	0.09	0.00	7.13
H016	0.11	0.11	0.00	6.79

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
H017	0.15	0.15	0.00	7.26
H018	0.04	0.04	0.00	8.04
H019	0.13	0.13	0.00	6.81
H021	0.02	0.02	0.00	6.77
H022	0.05	0.05	0.00	7.09
H111	0.23	0.23	0.00	6.83
H112	0.13	0.13	0.00	6.38
H113	0.03	0.03	0.00	6.74
H121	0.80	0.79	0.00	7.59
H122	0.14	0.14	0.00	7.19
H131	0.10	0.10	0.00	8.35
H132	0.06	0.06	0.00	6.87
H133	0.04	0.04	0.00	9.77
H134	0.14	0.14	0.00	8.15
H141	0.11	0.11	0.00	8.10
H142	0.05	0.05	0.00	6.96
H143	0.05	0.05	0.00	7.50
H144	0.27	0.27	0.00	8.32
H145	0.09	0.09	0.00	7.91
H211	0.39	0.38	0.00	7.05
H212	0.18	0.18	0.00	7.14
H213	0.03	0.03	0.00	4.94
H214	0.07	0.07	0.00	6.96
H215	0.07	0.07	0.00	8.21
H216	0.15	0.15	0.00	7.39
H217	0.04	0.04	0.00	6.91
H221	0.11	0.11	0.00	7.47
H222	0.05	0.04	0.00	5.91
H311	0.33	0.33	0.00	8.36
H312	0.11	0.11	0.00	9.03
H321	0.12	0.12	0.00	7.86
H322	0.03	0.03	0.00	7.73
H323	0.07	0.07	0.00	9.49
H324	0.06	0.06	0.00	8.53
H325	0.01	0.01	0.00	11.27
H326	0.63	0.63	0.00	8.23
H411	0.41	0.41	0.00	8.05
H412	0.26	0.26	0.00	7.53
H413	0.09	0.09	0.00	8.25
H414	0.02	0.02	0.00	9.23
H415	0.10	0.10	0.00	7.06

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
H416	0.03	0.03	0.00	8.36
H417	0.01	0.02	0.00	13.17
H418	0.02	0.02	0.00	7.14
H421	0.80	0.79	0.00	7.53
H422	0.21	0.21	0.00	8.63
H431	0.02	0.02	0.00	8.69
H432	0.05	0.05	0.00	8.25
H433	0.04	0.04	0.00	8.38
H434	0.02	0.02	0.00	7.59
H435	0.04	0.04	0.00	7.86
H511	0.05	0.05	0.00	10.45
H512	0.18	0.18	0.00	9.76
H513	0.02	0.02	0.00	9.29
H514	0.03	0.03	0.00	10.90
H521	0.15	0.15	0.00	8.60
H522	0.01	0.01	0.00	8.29
H523	0.05	0.05	0.00	8.42
H531	0.16	0.16	0.00	9.54
H532	0.03	0.03	0.00	9.63
H533	0.08	0.08	0.00	9.90
H534	0.01	0.01	0.00	9.93
H535	0.08	0.08	0.00	9.62
H611	0.47	0.47	-0.01	9.32
H612	0.11	0.12	0.00	9.95
H621	0.07	0.08	0.00	10.46
H622	0.02	0.02	0.00	7.84
H623	0.01	0.01	0.00	5.58
H711	1.63	1.64	-0.01	8.82
H712	0.45	0.45	0.00	7.79
H713	0.24	0.24	0.00	8.45
H714	0.63	0.63	-0.01	8.98
H721	0.04	0.04	0.00	6.64
H722	0.03	0.03	0.00	6.11
H731	0.01	0.01	0.00	9.45
H732	0.03	0.03	0.00	9.90
H733	0.03	0.03	0.00	9.70
H734	0.01	0.01	0.00	8.90
H735	0.01	0.01	0.00	9.93
H736	0.01	0.01	0.00	7.89
H737	0.06	0.06	0.00	7.15
H811	0.04	0.05	0.00	10.65

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
H812	1.04	1.08	-0.05	11.91
H821	0.74	0.76	-0.03	11.30
H822	0.08	0.08	0.00	10.25
H831	0.18	0.19	-0.01	12.44
H832	0.03	0.03	0.00	10.43
I011	1.41	1.42	-0.01	8.78
I012	0.02	0.02	0.00	7.63
I013	0.06	0.06	0.00	7.40
I014	0.04	0.04	0.00	8.23
I015	0.07	0.07	0.00	9.92
I016	0.05	0.05	0.00	9.66
I017	0.01	0.01	0.00	11.96
I021	0.74	0.76	-0.02	10.16
I022	0.16	0.16	0.00	10.13
I111	0.03	0.03	0.00	7.10
I121	0.03	0.03	0.00	6.77
I122	0.04	0.04	0.00	7.64
I131	0.06	0.06	0.00	8.20
I132	0.05	0.05	0.00	7.65
I141	0.01	0.01	0.00	7.84
I142	0.05	0.05	0.00	7.45
I151	0.09	0.10	0.00	9.98
I161	0.12	0.12	0.00	10.34
I162	0.08	0.09	0.00	11.27
I171	0.02	0.02	0.00	8.60
I172	0.20	0.19	0.00	7.41
I181	0.04	0.04	0.00	8.34
I182	0.01	0.01	0.00	9.60
I211	0.09	0.10	-0.01	14.05
I212	0.59	0.63	-0.04	13.66
I213	0.02	0.02	0.00	9.39
I214	0.02	0.02	0.00	8.25
I215	0.07	0.07	0.00	10.64
I216	0.10	0.11	-0.01	12.29
J011	0.07	0.07	0.00	7.27
J012	0.06	0.06	0.00	7.51
J013	0.08	0.08	0.00	8.53
J014	0.05	0.05	0.00	10.18
J015	0.07	0.07	0.00	8.70
J016	0.02	0.02	0.00	8.56
J021	0.04	0.05	0.00	9.11

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
J022	0.03	0.03	0.00	11.67
J023	0.01	0.01	0.00	10.32
J024	0.03	0.03	0.00	9.17
J025	0.03	0.03	0.00	9.25
J026	0.06	0.06	0.00	8.95
J027	0.04	0.04	0.00	13.41
J111	0.04	0.04	0.00	9.21
J112	0.08	0.08	0.00	7.87
J113	0.01	0.01	0.00	5.69
J114	0.02	0.02	0.00	11.24
J121	0.08	0.09	0.00	11.44
J122	0.06	0.06	0.00	9.27
J123	0.03	0.04	0.00	11.24
J124	0.05	0.05	0.00	10.80
J125	0.03	0.03	0.00	7.44
J131	0.07	0.07	0.00	9.84
J132	0.15	0.15	-0.01	11.94
J133	0.07	0.07	0.00	7.90
J134	0.04	0.04	0.00	8.74
J141	0.10	0.10	0.00	10.04
J142	0.04	0.04	0.00	8.04
J143	0.03	0.03	0.00	8.88
J144	0.05	0.06	0.00	9.84
J145	0.06	0.06	0.00	10.44
J146	0.06	0.06	0.00	8.60
J151	0.04	0.04	0.00	10.73
J152	0.06	0.06	0.00	10.22
J153	0.03	0.03	0.00	9.49
J154	0.02	0.02	0.00	10.14
J161	0.39	0.41	-0.02	12.10
J162	0.05	0.05	0.00	11.72
J163	0.01	0.01	0.00	10.91
J164	0.02	0.02	0.00	10.28
J171	0.18	0.18	0.00	9.55
J172	0.10	0.10	0.00	9.71
J173	0.08	0.08	0.00	9.67
J174	0.01	0.01	0.00	7.92
J175	0.04	0.04	0.00	8.88
J181	0.09	0.09	0.00	11.21
J182	0.03	0.03	0.00	12.15
J183	0.06	0.06	0.00	11.32

Occupation code	Distribution of unimputed data (%)	Distribution after imputation (%)	Difference (a - b)	Proportion of code imputed
J184	0.06	0.06	0.00	8.17
J191	0.10	0.11	0.00	10.37
J192	0.02	0.02	0.00	10.08
J193	0.10	0.10	0.00	10.15
J194	0.10	0.11	0.00	11.04
J196	0.04	0.04	0.00	10.26
J197	0.09	0.10	-0.01	13.75
J211	0.06	0.07	0.00	9.42
J212	0.38	0.40	-0.01	11.20
J213	0.22	0.23	-0.01	11.65
J214	0.10	0.10	0.00	11.13
J215	0.04	0.04	0.00	10.63
J216	0.12	0.13	0.00	11.65
J217	0.02	0.02	0.00	12.51
J221	0.02	0.03	0.00	12.31
J222	0.19	0.19	-0.01	10.81
J223	0.10	0.10	0.00	11.24
J224	0.04	0.05	0.00	10.81
J225	0.09	0.09	0.00	12.06
J226	0.11	0.11	0.00	10.74
J227	0.02	0.02	0.00	10.61
J228	0.09	0.10	-0.01	15.92
J311	0.12	0.12	0.00	10.74
J312	0.14	0.14	0.00	11.30
J313	0.06	0.06	0.00	10.54
J314	0.28	0.29	-0.01	10.89
J315	0.13	0.13	0.00	11.45
J316	0.09	0.09	0.00	11.14
J317	0.43	0.44	-0.01	10.74
J318	0.12	0.12	0.00	10.18
J319	0.46	0.49	-0.03	13.54

Differences are higher due to imputation of special code E130 to E131 and E132.

See section 3.4.1 for details.

Table C2. Outgoing Error Rate Before Edit and Imputation by Occupation Broad Category

	Sample Size	OER (%)	Error Range Limit* (%)
A – Management	632	17.6 +/-	4.10
B – Business, Finance and Administrative	1,089	11.73 +/-	2.69
C – Natural and Applied Sciences	345	12.44 +/-	4.52
D – Health	337	8.27 +/-	3.74
E – Social Science, Education, Government Service and Religion	485	7.73 +/-	3.17
F – Art, Culture, Recreation and Sport	188	14.67 +/-	7.53
G – Sales and Service	1,582	6.75 +/-	1.73
H – Trades, Transport and Equipment Operators	928	9.19 +/-	2.80
I – Occupations Unique to Primary Industries	434	9.67 +/-	4.99
J – Occupations Unique to Processing, Manufacturing and Utilities	480	14.66 +/-	4.34
X – Uncodable	22	22.32 +/-	26.27

* The error range limit (\pm value) is the maximum deviation of the error rate expected with 95 percent confidence due to sampling error. The lower and upper bound confidence limits can be obtained by subtracting and adding, respectively, the error range limit from—to the outgoing error rate estimate.

Table C3. Census and Labour Force Survey Occupation Estimates for Broad Categories and Major Groups, Showing Number and Percentage Difference, 1991, 1996 and 2001 Censuses

Canada – Both Sexes	Census			Labour Force Survey		
	1991	1996	2001	1991	1996	2001
Labour Force	14,291,430	14,607,620	15,665,790	14,442,200	14,964,000	16,385,700
Unclassified	248,335	485,855	285,860	297,100	464,600	394,700
Experienced Labour Force	14,043,095	14,121,765	15,379,930	14,145,100	14,499,400	15,991,000
A Management Occupations	1,357,505	1,261,510	1,592,240	1,278,900	1,364,900	1,357,000
A0 Senior Management Occupations	136,595	141,950	202,410	72,500	70,600	70,600
A1 Specialists Managers	306,745	280,690	393,035	284,600	332,000	290,900
A2 Managers in Retail Trade, Food and Accommodation Services	471,805	421,305	499,030	463,800	522,100	524,200
A3 Other Managers n.e.c.	442,360	417,565	497,765	458,000	440,200	471,300
B Business, Finance and Administrative Occupations	2,673,205	2,669,740	2,748,620	2,747,000	2,635,700	2,839,700
B0 Professional Occupations in Business and Finance	206,630	254,635	373,910	319,300	376,400	429,000
B1 Finance and Insurance Administration Occupations	172,395	172,405	179,325	190,300	194,200	211,400
B2 Secretaries	508,725	399,105	362,420	498,800	385,100	277,200
B3 Administrative and Regulatory Occupations	186,305	207,070	294,535	277,800	278,500	279,700
B4 Clerical Supervisors	107,760	93,200	83,640	109,800	82,200	138,200
B5 Clerical Occupations	1,491,390	1,543,325	1,454,790	1,351,000	1,319,300	1,504,200
C Natural and Applied Sciences and Related Occupations	702,670	738,655	998,540	731,100	713,600	1,072,500
C0 Professional Occupations in Natural and Applied Sciences	383,195	414,365	650,605	425,300	412,000	666,800

Canada – Both Sexes	Census			Labour Force Survey		
	1991	1996	2001	1991	1996	2001
C1 Technical Occupations Related to Natural and Applied Sciences	319,475	324,290	347,935	305,800	301,600	405,700
D Health Occupations	710,545	725,550	807,885	713,600	739,900	813,700
D0 Professional Occupations in Health	124,570	144,065	170,595	122,400	145,100	159,200
D1 Nurse Supervisors and Registered Nurses	248,285	245,485	240,610	224,000	198,800	235,500
D2 Technical and Related Occupations in Health	171,060	161,900	189,985	208,000	206,600	196,400
D3 Assisting Occupations in Support of Health Services	166,630	174,100	206,690	159,200	189,400	222,600
E Occupations in Social Science, Education, Government Service and Religion	906,340	960,175	1,052,080	823,500	937,800	1,072,000
E0 Judges, Lawyers, Psychologists, Social Workers, Ministers of Religion, and Policy and Program Officers	239,820	272,950	314,825	217,100	239,400	303,400
E1 Teachers and Professors	544,385	568,140	574,770	474,400	543,700	597,700
E2 Paralegals, Social Services Workers and Occupations in Education and Religion, n.e.c.	122,135	119,085	162,485	132,000	154,700	170,900
F Occupations in Art, Culture, Recreation and Sport	334,500	382,825	431,860	318,700	399,100	473,200
F0 Professional Occupations in Art and Culture	142,725	164,835	185,390	152,500	195,100	212,600
F1 Professional Occupations in Art and Culture	191,775	217,990	246,465	166,200	204,000	260,600
G Sales and Service Occupations	3,390,485	3,631,610	3,735,870	3,439,600	3,669,000	4,072,600
G0 Sales and Service Supervisors	87,340	85,300	120,165	113,000	130,700	221,400
G1 Wholesale, Technical, Insurance, Real Estate Sales Specialists, and Retail, Wholesale and Grain Buyers	354,030	392,615	339,875	368,600	401,800	536,700

Canada – Both Sexes	Census			Labour Force Survey		
	1991	1996	2001	1991	1996	2001
G2 Retail Salespersons and Sales Clerks	594,285	551,900	588,800	548,800	533,900	575,600
G3 Cashiers	241,785	271,750	273,650	277,000	274,200	312,700
G4 Chefs and Cooks	196,585	219,255	214,200	174,800	217,100	226,300
G5 Occupations in Food and Beverage Service	279,170	284,875	274,785	211,800	210,900	279,000
G6 Occupations in Protective Services	212,560	193,500	198,610	203,900	225,300	213,100
G7 Occupations in Travel and Accommodation Including Attendants in Recreation and Sport	93,620	112,735	134,005	101,600	114,500	133,800
G8 Childcare and Home Support Workers	264,755	349,440	390,435	322,000	389,300	372,100
G9 Sales and Service Occupations n.e.c..	1,066,355	1,170,240	1,201,345	1,118,100	1,171,300	1,201,900
H Trades, Transport and Equipment Operators and Related Occupations	2,175,445	1,992,955	2,167,930	2,274,000	2,227,000	2,353,300
H0 Contractors and Supervisors in Trades and Transportation	213,690	139,190	122,740	247,900	235,700	233,600
H1 Construction Trades	323,435	302,215	344,805	339,800	299,000	334,500
H2 Stationary Engineers, Power Station Operators and Electrical Trades and Telecommunications Occupations	167,395	149,045	171,680	174,600	158,300	187,000
H3 Machinists, Metal Forming, Shaping and Erecting Occupations	106,225	94,080	116,420	99,300	93,400	111,200
H4 Mechanics	339,525	333,535	343,415	353,400	358,900	389,700
H5 Other Trades n.e.c.	118,580	120,705	132,945	134,000	142,600	136,000
H6 Heavy Equipment and Crane Operators Including Drillers	106,070	97,555	106,950	107,200	105,900	102,200
H7 Transportation Equipment Operators and Related Workers, Excluding Labourers	430,330	460,120	502,550	469,900	483,100	527,000
H8 Trades Helpers, Construction and Transportation Labourers and Related Occupations	370,195	296,510	326,420	347,900	350,100	332,100

Canada – Both Sexes	Census			Labour Force Survey		
	1991	1996	2001	1991	1996	2001
I Occupations Unique to Primary Industry	725,340	669,470	657,180	733,500	688,700	625,900
I0 Occupations Unique to Agriculture Excluding Labourers	463,560	423,280	405,370	479,600	442,100	378,500
I1 Occupations Unique to Forestry Operations, Mining, Oil and Gas Extraction and Fishing, Excluding Labourers	134,325	128,745	121,745	148,000	141,100	150,700
I2 Primary Production Labourers	127,455	117,445	130,065	105,900	105,500	96,700
J Occupations Unique to Processing, Manufacturing and Utilities	1,067,040	1,089,230	1,187,725	1,085,200	1,123,800	1,311,100
J0 Supervisors in Manufacturing	76,140	94,325	94,020	119,700	119,200	152,800
J1 Machine Operators in Manufacturing	552,315	517,690	546,960	500,700	520,900	681,300
J2 Assemblers in Manufacturing	194,715	218,210	262,970	214,400	236,800	268,500
J3 Labourers in Processing, Manufacturing and Utilities	243,870	259,005	283,775	250,400	246,900	208,500

Note: Census data have been adjusted to reflect changes for 2001 NOC–S in major groups B5, C0, D3 and G9

Table C4. Occupation - 1991 Standard Occupational Classification (Historical) (707) for Labour Force 15 Years and Over, for Canada only, 1991 to 2001 Censuses - 20% Sample Data

Canada	Census Years		
	2001	1996	1991
Total labour force (1)	15,872,070	14,812,700	14,474,945
Occupation - Not applicable (2)	295,510	495,160	254,710
All occupations (3)	15,576,565	14,317,545	14,220,230
A Management occupations	1,620,900	1,289,125	1,383,405
A0 Senior management occupations	206,290	145,180	139,265
A01 Legislators and senior management	206,290	145,185	139,265
A011 Legislators	7,830	6,715	4,880
A012 Senior government managers and officials	25,865	19,035	20,075
A013 Senior managers - Financial, communications carriers and other business services	52,950	29,075	24,735
A014 Senior managers - Health, education, social and community services and membership organizations	17,935	10,295	9,155
A015 Senior managers - Trade, broadcasting and other services, n.e.c.	46,965	36,190	34,935
A016 Senior managers - Goods production, utilities, transportation and construction	54,745	43,870	45,485
A1 Specialist managers	395,040	282,115	308,390
A11 Administrative services managers	135,535	105,010	126,720
A111 Financial managers	59,945	46,305	62,935
A112 Human resources managers	33,660	26,850	28,715
A113 Purchasing managers	9,060	7,290	9,945
A114 Other administrative services managers	32,865	24,575	25,125
A12 Managers in engineering, architecture, science and information systems	68,475	41,750	50,730
A121 Engineering, science and architecture managers	22,135	21,200	24,220
A122 Information systems and data processing managers	46,340	20,555	26,510
A13 Sales, marketing and advertising managers	140,910	105,995	95,010
A131 Sales, marketing and advertising managers	140,915	105,990	95,010
A14 Facility operation and maintenance managers	50,120	29,365	35,930
A141 Facility operation and maintenance managers	50,120	29,360	35,930
A2 Managers in retail trade, food and accommodation services	502,340	424,100	474,390
A21 Managers in retail trade	346,225	292,535	345,820
A211 Retail trade managers	346,225	292,540	345,820
A22 Managers in food service and accommodation	156,115	131,565	128,565
A221 Restaurant and food service managers	125,725	105,870	103,085
A222 Accommodation service managers	30,390	25,695	25,480
A3 Other managers, n.e.c.	517,235	437,715	461,370
A30 Managers in financial and business services	108,680	97,530	93,150
A301 Insurance, real estate and financial brokerage managers	34,915	29,405	28,705
A302 Banking, credit and other investment managers	59,990	54,250	52,925
A303 Other business services managers	13,775	13,870	11,525
A31 Managers in communication (except broadcasting)	20,570	16,005	16,900
A311 Telecommunication carriers managers	15,915	12,590	12,500
A312 Postal and courier services managers	4,655	3,410	4,400
A32 Managers in health, education, social and community services	78,805	68,715	71,200
A321 Managers in health care	22,440	17,835	18,720
A322 Administrators in post-secondary education and vocational training	12,935	8,740	7,380
A323 School principals and administrators of elementary and secondary education	28,705	27,525	29,130

	Census Years		
	2001	1996	1991
Canada			
A324 Managers in social, community and correctional services	14,725	14,615	15,970
A33 Managers in public administration	19,930	18,480	15,610
A331 Government managers in health and social policy development and program administration	5,765	5,050	5,215
A332 Government managers in economic analysis, policy development and program administration	7,245	7,905	4,120
A333 Government managers in education policy development and program administration	1,150	2,040	1,690
A334 Other managers in public administration	5,765	3,490	4,585
A34 Managers in art, culture, recreation and sport	27,075	23,520	24,400
A341 Library, archive, museum and art gallery managers	4,125	3,965	3,780
A342 Managers in publishing, motion pictures, broadcasting and performing arts	11,865	9,730	12,195
A343 Recreation and sport program and service directors	11,085	9,830	8,425
A35 Managers in protective services	21,005	23,185	23,115
A351 Commissioned police officers	3,765	4,205	2,865
A352 Fire chiefs and senior fire-fighting officers	1,940	1,870	1,410
A353 Commissioned officers, armed forces	15,300	17,110	18,830
A36 Managers in other services	27,625	23,230	36,440
A361 Other services managers	27,625	23,230	36,440
A37 Managers in construction and transportation	109,715	90,265	93,745
A371 Construction managers	55,540	45,395	46,510
A372 Residential home builders and renovators	28,050	27,690	27,445
A373 Transportation managers	26,125	17,185	19,790
A38 Managers in primary production (except agriculture)	12,480	9,815	10,190
A381 Primary production managers (except agriculture)	12,480	9,815	10,190
A39 Managers in manufacturing and utilities	91,350	66,965	76,625
A391 Manufacturing managers	81,900	59,185	66,935
A392 Utilities managers	9,455	7,785	9,690
B Business, finance and administrative occupations	2,768,370	2,687,660	2,689,620
B0 Professional occupations in business and finance	375,430	255,805	207,455
B01 Auditors, accountants and investment professionals	290,185	192,225	160,775
B011 Financial auditors and accountants	171,305	119,270	109,635
B012 Financial and investment analysts	37,350	19,330	14,135
B013 Securities agents, investment dealers and traders	26,080	20,470	14,860
B014 Other financial officers	55,445	33,160	22,155
B02 Human resources and business service professionals	85,245	63,580	46,680
B021 Specialists in human resources	39,815	27,460	23,485
B022 Professional occupations in business services to management	45,435	36,115	23,190
B1 Finance and insurance administrative occupations	180,505	173,580	173,475
B11 Finance and insurance administrative occupations	180,510	173,580	173,475
B111 Bookkeepers	106,825	103,400	100,810
B112 Loan officers	22,105	24,860	29,340
B113 Insurance adjusters and claims examiners	22,720	19,135	18,925
B114 Insurance underwriters	12,010	11,200	11,245
B115 Assessors, valuers and appraisers	11,600	10,220	9,900
B116 Customs, ship and other brokers	5,240	4,750	3,255
B2 Secretaries	365,670	402,690	512,230
B21 Secretaries, recorders and transcriptionists	365,670	402,695	512,225

Canada	Census Years		
	2001	1996	1991
B211 Secretaries (except legal and medical)	271,110	317,275	418,405
B212 Legal secretaries	44,205	36,525	44,060
B213 Medical secretaries	44,650	43,355	44,325
B214 Court recorders and medical transcriptionists	5,710	5,545	5,440
B3 Administrative and regulatory occupations	297,150	209,255	188,070
B31 Administrative and regulatory occupations	297,155	209,255	188,070
B311 Administrative officers	151,395	103,595	103,935
B312 Executive assistants	26,390	11,855	11,565
B313 Personnel and recruitment officers	18,485	13,500	7,690
B314 Property administrators	34,855	30,835	17,995
B315 Purchasing agents and officers	28,015	19,145	19,320
B316 Conference and event planners	12,630	7,650	5,450
B317 Court officers and justices of the peace	4,410	3,395	3,250
B318 Immigration, unemployment insurance and revenue officers	20,970	19,285	18,860
B4 Clerical supervisors	84,140	93,670	108,450
B41 Clerical supervisors	84,140	93,670	108,450
B411 Supervisors, general office and administrative support clerks	19,690	28,365	30,725
B412 Supervisors, finance and insurance clerks	22,010	26,895	40,740
B413 Supervisors, library, correspondence and related information clerks	13,410	5,585	5,715
B414 Supervisors, mail and message distribution occupations	8,320	7,845	15,040
B415 Supervisors, recording, distributing and scheduling occupations	20,720	24,980	16,230
B5 Clerical occupations	1,465,470	1,552,660	1,499,940
B51 Clerical occupations, general office skills	417,815	374,460	412,290
B510 General office clerks	267,465	224,630	250,055
B513 Records and file clerks	27,035	24,965	31,220
B514 Receptionists and switchboard operators	123,315	124,865	131,015
B52 Office equipment operators	73,855	110,640	111,055
B522 Data entry clerks	55,965	89,325	85,950
B523 Typesetters and related occupations	5,725	7,715	8,635
B524 Telephone operators	12,165	13,595	16,475
B53 Finance and insurance clerks	355,565	470,445	467,950
B531 Accounting and related clerks	178,200	264,910	257,610
B532 Payroll clerks	30,190	32,830	31,720
B533 Tellers, financial services	92,100	98,935	101,915
B534 Banking, insurance and other financial clerks	38,425	56,350	60,715
B535 Collectors	16,650	17,415	15,990
B54 Administrative support clerks	81,305	78,830	67,335
B541 Administrative clerks	69,065	67,975	52,555
B542 Personnel clerks	9,170	8,170	11,600
B543 Court clerks	3,070	2,695	3,185
B55 Library, correspondence and related information clerks	210,210	163,375	107,820
B551 Library clerks	11,390	12,545	13,860
B552 Correspondence, publication and related clerks	7,005	7,340	7,680
B553 Customer service, information and related clerks	164,775	114,955	63,305
B554 Survey interviewers and statistical clerks	27,035	28,535	22,980
B56 Mail and message distribution occupations	96,740	115,690	108,280
B561 Mail, postal and related clerks	39,195	41,240	45,395

Canada	Census Years		
	2001	1996	1991
B562 Letter carriers	26,580	27,920	23,680
B563 Couriers and messengers	30,965	46,535	39,205
B57 Recording, scheduling and distributing occupations	229,985	239,220	225,205
B571 Shippers and receivers	106,380	116,165	98,955
B572 Storekeepers and parts clerks	37,100	37,565	44,065
B573 Production clerks	14,595	13,565	16,925
B574 Purchasing and inventory clerks	38,655	44,875	43,995
B575 Dispatchers and radio operators	29,455	24,970	19,935
B576 Transportation route and crew schedulers	3,800	2,085	1,330
C Natural and applied sciences and related occupations	1,003,815	743,090	707,510
C0 Professional occupations in natural and applied sciences	652,935	416,030	385,220
C01 Physical science professionals	31,605	25,405	22,865
C011 Physicists and astronomers	3,130	3,250	1,960
C012 Chemists	15,405	12,110	9,995
C013 Geologists, geochemists and geophysicists	10,135	7,610	8,590
C014 Meteorologists	1,090	1,075	905
C015 Other professional occupations in physical sciences	1,840	1,360	1,410
C02 Life science professionals	26,690	19,220	17,285
C021 Biologists and related scientists	14,585	10,760	8,610
C022 Forestry professionals	6,780	4,750	4,005
C023 Agricultural representatives, consultants and specialists	5,315	3,715	4,670
C03 Civil, mechanical, electrical and chemical engineers	109,255	101,040	100,895
C031 Civil engineers	37,960	32,620	35,220
C032 Mechanical engineers	30,520	26,430	24,855
C033 Electrical and electronics engineers	31,645	33,345	32,880
C034 Chemical engineers	9,135	8,650	7,950
C04 Other engineers	42,235	29,195	30,430
C041 Industrial and manufacturing engineers	14,965	9,750	11,080
C042 Metallurgical and materials engineers	2,315	2,000	2,020
C043 Mining engineers	2,785	2,710	2,675
C044 Geological engineers	1,780	1,620	1,435
C045 Petroleum engineers	6,115	3,925	4,935
C046 Aerospace engineers	5,955	4,085	3,605
C048 Other professional engineers, n.e.c.	8,310	5,090	4,680
C05 Architects, urban planners and land surveyors	29,970	25,465	27,895
C051 Architects	12,800	9,400	9,165
C052 Landscape architects	2,410	1,605	2,125
C053 Urban and land use planners	6,665	6,400	8,475
C054 Land surveyors	8,095	8,065	8,135
C06 Mathematicians, systems analysts and computer programmers	6,445	5,735	6,425
C061 Mathematicians, statisticians and actuaries	6,450	5,735	6,425
C07 Computer and information systems occupations	406,735	209,960	179,420
C070 Computer and information systems occupations	406,735	209,960	179,420
C1 Technical occupations related to natural and applied sciences	350,880	327,060	322,290
C11 Technical occupations in physical sciences	30,925	31,295	39,665
C111 Applied chemical technologists and technicians	21,645	21,710	27,725
C112 Geological and mineral technologists and technicians	8,405	8,670	10,695

Canada	Census Years		
	2001	1996	1991
C113 Meteorological technicians	880	910	1,245
C12 Technical occupations in life sciences	45,065	41,305	36,695
C121 Biological technologists and technicians	10,625	10,155	8,560
C122 Agricultural and fish products inspectors	3,670	4,425	5,170
C123 Forestry technologists and technicians	10,960	10,460	9,570
C124 Conservation and fishery officers	6,470	6,800	6,700
C125 Landscape and horticultural technicians and specialists	13,335	9,470	6,695
C13 Technical occupations in civil, mechanical and industrial engineering	48,980	39,105	39,560
C131 Civil engineering technologists and technicians and construction estimators	22,980	21,250	20,475
C132 Mechanical engineering technologists and technicians	11,370	10,020	9,255
C133 Industrial engineering and manufacturing technologists and technicians	14,630	7,840	9,825
C14 Technical occupations in electronics and electrical engineering	109,385	112,265	96,840
C141 Electrical and electronics engineering technologists and technicians	38,815	36,540	27,305
C142 Electronic service technicians (household and business equipment)	50,105	60,130	57,470
C143 Industrial instrument technicians and mechanics	11,420	8,555	6,700
C144 Aircraft instrument, electrical and avionics mechanics, technicians and inspectors	9,040	7,045	5,365
C15 Technical occupations in architecture, drafting, surveying and mapping	56,920	50,600	56,225
C151 Architectural technologists and technicians	6,165	4,400	4,680
C152 Industrial designers	9,795	5,070	3,455
C153 Drafting technologists and technicians	30,840	32,955	38,175
C154 Survey technologists and technicians	3,995	4,070	5,645
C155 Mapping and related technologists and technicians	6,130	4,095	4,265
C16 Other technical inspectors and regulatory officers	31,120	27,610	27,980
C161 Non-destructive testers and inspectors	4,005	3,350	3,105
C162 Engineering inspectors and regulatory officers	4,315	4,325	4,070
C163 Inspectors in public and environmental health and occupational health and safety	13,640	10,595	11,645
C164 Construction inspectors	9,160	9,340	9,160
C17 Transportation officers and controllers	28,485	24,885	25,325
C171 Air pilots, flight engineers and flying instructors	14,435	11,220	10,830
C172 Air traffic control occupations	5,370	4,330	4,265
C173 Deck officers, water transport	4,385	4,915	4,560
C174 Engineer officers, water transport	2,360	2,140	2,850
C175 Railway and marine traffic controllers	1,925	2,275	2,825
D Health occupations	812,200	729,345	713,790
D0 Professional occupations in health	171,155	144,495	124,965
D01 Physicians, dentists and veterinarians	90,725	81,165	73,295
D011 Specialist physicians	24,090	21,625	18,315
D012 General practitioners and family physicians	41,435	37,715	37,280
D013 Dentists	18,105	15,770	13,245
D014 Veterinarians	7,090	6,055	4,460
D02 Optometrists, chiropractors and other health diagnosing and treating professionals	11,740	8,355	7,295
D021 Optometrists	3,720	3,395	3,075
D022 Chiropractors	5,225	3,630	3,440
D023 Other professional occupations in health diagnosing and treating	2,785	1,335	780
D03 Pharmacists, dietitians and nutritionists	32,605	27,385	22,325
D031 Pharmacists	23,900	20,620	17,625
D032 Dietitians and nutritionists	8,710	6,760	4,700

Canada	Census Years		
	2001	1996	1991
D04 Therapy and assessment professionals	36,090	27,585	22,045
D041 Audiologists and speech-language pathologists	6,020	4,710	3,825
D042 Physiotherapists	15,760	12,925	11,025
D043 Occupational therapists	9,585	6,535	5,825
D044 Other professional occupations in therapy and assessment	4,725	3,410	1,360
D1 Nurse supervisors and registered nurses	241,920	246,800	249,365
D11 Nurse supervisors and registered nurses	241,920	246,805	249,365
D111 Head nurses and supervisors	9,905	14,135	19,155
D112 Registered nurses	232,015	232,665	230,210
D2 Technical and related occupations in health	190,965	162,770	171,870
D21 Medical technologists and technicians (except dental health)	77,235	71,400	75,840
D211 Medical laboratory technologists and pathologists' assistants	18,475	18,225	19,930
D212 Medical laboratory technicians	19,300	21,440	23,855
D213 Animal health technologists	8,890	4,550	3,225
D214 Respiratory therapists and clinical perfusionists	6,500	5,335	4,525
D215 Medical radiation technologists	14,275	13,400	14,555
D216 Medical sonographers	2,505	1,940	1,450
D217 Cardiology technologists	1,745	1,405	1,645
D218 Electroencephalographic and other diagnostic technologists, n.e.c.	1,605	1,435	825
D219 Other medical technologists and technicians (except dental health)	3,935	3,665	5,820
D22 Technical occupations in dental health care	22,390	18,550	17,290
D221 Denturists	2,175	1,630	1,840
D222 Dental hygienists and dental therapists	14,250	11,315	9,555
D223 Dental technicians and laboratory bench workers	5,955	5,610	5,895
D23 Other technical occupations in health care (except dental)	91,340	72,820	78,745
D231 Opticians	5,860	4,755	3,890
D232 Midwives and practitioners of natural healing	5,175	3,155	3,450
D233 Registered nursing assistants	47,170	39,895	53,385
D234 Ambulance attendants and other paramedical occupations	16,170	13,950	12,060
D235 Other technical occupations in therapy and assessment	16,965	11,065	5,965
D3 Assisting occupations in support of health services	208,160	175,270	167,590
D31 Assisting occupations in support of health services	208,165	175,275	167,585
D310 Other aides and assistants in support of health services	46,305	29,615	27,865
D311 Dental assistants	24,825	22,185	21,825
D312 Nurse aides and orderlies	137,035	123,475	117,900
E Occupations in social science, education, government service and religion	1,068,815	975,385	917,835
E0 Judges, lawyers, psychologists, social workers, ministers of religion, and policy and program officers	320,945	278,705	244,135
E01 Judges, lawyers and Quebec notaries	67,050	61,135	55,330
E011 Judges	2,605	2,310	2,255
E012 Lawyers and Quebec notaries	64,445	58,820	53,075
E02 Psychologists, social workers, counsellors, clergy and probation officers	121,770	113,545	88,550
E021 Psychologists	16,055	13,995	10,160
E022 Social workers	46,975	38,875	32,040
E023 Family, marriage and other related counsellors	24,990	30,735	18,525
E024 Ministers of religion	27,105	25,335	24,160
E025 Probation and parole officers and related occupations	6,645	4,600	3,670

Canada	Census Years		
	2001	1996	1991
E03 Policy and program officers, researchers and consultants	132,125	104,030	100,250
E031 Natural and applied science policy researchers, consultants and program officers	13,785	9,870	9,040
E032 Economists and economic policy researchers and analysts	9,990	6,745	5,370
E033 Economic development officers and marketing researchers and consultants	36,330	27,005	26,500
E034 Health and social policy researchers, consultants and program officers	35,345	28,390	29,485
E035 Education policy researchers, consultants and program officers	13,140	13,380	13,035
E036 Recreation and sports program supervisors and consultants	12,180	11,530	11,115
E037 Program officers unique to government	6,920	3,265	2,040
E038 Other professional occupations in social science, n.e.c.	4,445	3,845	3,660
E1 Teachers and professors	581,545	574,805	549,340
E11 University professors and assistants	88,475	79,235	76,355
E111 University professors	46,885	49,795	42,560
E112 Post-secondary teaching and research assistants	41,590	29,445	33,800
E12 College and other vocational instructors	80,115	96,445	83,080
E121 College and other vocational instructors	80,115	96,445	83,080
E13 Secondary and elementary school teachers and counsellors	412,950	399,130	389,905
E131 Secondary school teachers	160,020	156,815	158,395
E132 Elementary school and kindergarten teachers	238,935	230,305	218,980
E133 School and guidance counsellors	13,995	12,015	12,530
E2 Paralegals, social services workers and occupations in education and religion, n.e.c.	166,325	121,870	124,355
E21 Paralegals, social services workers and occupations in education and religion, n.e.c.	166,325	121,870	124,360
E211 Paralegal and related occupations	28,320	20,075	15,970
E212 Community and social service workers	69,535	51,745	61,850
E213 Employment counsellors	14,930	11,945	11,225
E214 Instructors and teachers of disabled persons	23,515	19,590	17,770
E215 Other instructors	22,350	10,260	6,115
E216 Other religious occupations	7,680	8,255	11,430
F Occupations in art, culture, recreation and sport	435,680	386,315	337,355
F0 Professional occupations in art and culture	186,975	166,165	143,965
F01 Librarians, archivists, conservators and curators	16,045	15,580	15,745
F011 Librarians	11,405	11,910	12,830
F012 Conservators and curators	2,325	1,900	1,395
F013 Archivists	2,315	1,770	1,515
F02 Writing, translating and public relations professionals	87,970	77,475	68,665
F021 Writers	21,520	18,585	15,290
F022 Editors	12,480	7,765	6,680
F023 Journalists	12,960	12,655	13,470
F024 Professional occupations in public relations and communications	27,465	27,065	23,780
F025 Translators, terminologists and interpreters	13,545	11,400	9,450
F03 Creative and performing artists	82,960	73,110	59,555
F031 Producers, directors, choreographers and related occupations	19,005	15,905	12,825
F032 Conductors, composers and arrangers	2,370	2,090	1,915
F033 Musicians and singers	30,100	29,270	25,105
F034 Dancers	6,405	5,730	3,835
F035 Actors	9,380	6,815	4,555
F036 Painters, sculptors and other visual artists	15,695	13,305	11,320

Canada	Census Years		
	2001	1996	1991
F1 Technical occupations in art, culture, recreation and sport	248,710	220,150	193,390
F11 Technical occupations in libraries, archives, museums and galleries	19,365	18,775	20,625
F111 Library and archive technicians and assistants	14,835	14,155	16,745
F112 Technical occupations related to museums and galleries	4,525	4,625	3,880
F12 Photographers, graphic arts technicians and technical occupations in motion pictures, broadcasting and the performing arts	52,735	45,370	38,030
F121 Photographers	11,710	11,515	10,285
F122 Film and video camera operators	4,355	3,275	2,945
F123 Graphic arts technicians	8,185	6,955	6,935
F124 Broadcast technicians	3,075	3,255	3,220
F125 Audio and video recording technicians	8,895	7,495	5,685
F126 Other technical occupations in motion pictures, broadcasting and the performing arts	8,790	8,060	5,730
F127 Support and assisting occupations in motion pictures, broadcasting and the performing arts	7,725	4,810	3,230
F13 Announcers and other performers	12,520	12,440	11,890
F131 Announcers and other broadcasters	8,605	8,450	9,165
F132 Other performers	3,915	3,995	2,730
F14 Creative designers and craftspersons	88,115	73,535	67,425
F141 Graphic designers and illustrating artists	44,615	35,310	28,405
F142 Interior designers	11,655	8,175	7,495
F143 Theatre, fashion, exhibit and other creative designers	9,825	9,670	9,090
F144 Artisans and craftspersons	19,515	18,685	20,790
F145 Patternmakers, textile, leather and fur products	2,505	1,695	1,645
F15 Athletes, coaches, referees and related occupations	75,975	70,030	55,420
F151 Athletes	2,595	2,140	1,600
F152 Coaches	9,310	7,030	4,485
F153 Sports officials and referees	4,505	3,845	1,795
F154 Program leaders and instructors in recreation and sport	59,565	57,015	47,545
G Sales and service occupations	3,813,750	3,714,545	3,466,520
G0 Sales and service supervisors	120,860	85,880	87,970
G01 Sales and service supervisors	120,860	85,880	87,970
G011 Retail trade supervisors	60,935	42,430	40,525
G012 Food service supervisors	30,895	16,450	15,105
G013 Executive housekeepers	4,095	3,340	4,030
G014 Dry cleaning and laundry supervisors	1,595	1,865	2,085
G015 Cleaning supervisors	12,705	12,310	20,145
G016 Other service supervisors	10,635	9,480	6,085
G1 Wholesale, technical, insurance, real estate sales specialists, and retail, wholesale and grain buyers	340,445	393,340	354,610
G11 Sales representatives, wholesale trade	148,365	180,525	144,180
G111 Sales representatives, wholesale trade (non-technical)	148,365	180,525	144,185
G12 Technical sales specialists, wholesale trade	67,305	74,505	60,805
G121 Technical sales specialists, wholesale trade	67,305	74,505	60,805
G13 Insurance and real estate sales occupations and buyers	124,780	138,310	149,625
G131 Insurance agents and brokers	51,810	55,820	53,605
G132 Real estate agents and salespersons	49,665	57,170	73,270
G133 Retail and wholesale buyers	22,175	22,720	20,370

Canada	Census Years		
	2001	1996	1991
G134 Grain elevator operators	1,130	2,600	2,380
G2 Retail salespersons and sales clerks	591,065	554,375	596,910
G21 Retail salespersons and sales clerks	591,065	554,370	596,910
G211 Retail salespersons and sales clerks	591,065	554,375	596,910
G3 Cashiers	276,650	274,390	243,605
G31 Cashiers	276,650	274,390	243,610
G311 Cashiers	276,650	274,390	243,610
G4 Chefs and cooks	216,825	221,455	198,400
G41 Chefs and cooks	216,825	221,455	198,400
G411 Chefs	31,355	22,310	19,550
G412 Cooks	185,465	199,145	178,845
G5 Occupations in food and beverage service	276,335	286,535	280,650
G51 Occupations in food and beverage service	276,335	286,535	280,650
G511 Maitres d'hôtel and hosts	19,045	19,125	18,005
G512 Bartenders	45,785	48,325	42,030
G513 Food and beverage servers	211,495	219,085	220,620
G6 Occupations in protective services	241,620	245,820	264,475
G61 Police officers and fire-fighters	83,920	78,005	83,585
G611 Police officers (except commissioned)	59,860	56,060	59,045
G612 Fire-fighters	24,060	21,945	24,540
G62 Other occupations in protective service	78,185	91,375	99,025
G621 Sheriffs and bailiffs	2,525	2,490	2,410
G622 Correctional service officers	17,710	18,335	17,220
G623 By-law enforcement and other regulatory officers, n.e.c.	6,515	6,370	5,760
G624 Other ranks, armed forces	40,390	51,310	64,705
G625 Other protective service occupations	11,040	12,880	8,930
G63 Security guards and related occupations	79,515	76,440	81,870
G631 Security guards and related occupations	79,520	76,440	81,865
G7 Occupations in travel and accommodation including attendants in recreation and sport	136,005	114,340	95,075
G71 Occupations in travel and accommodation	80,185	71,035	60,775
G711 Travel counsellors	28,690	26,385	20,735
G712 Pursers and flight attendants	13,860	10,795	9,900
G713 Airline sales and service agents	13,825	11,170	9,885
G714 Ticket and cargo agents and related clerks (except airline)	4,985	3,900	5,765
G715 Hotel front desk clerks	18,825	18,785	14,485
G72 Tour and recreational guides and amusement occupations	13,520	11,570	11,080
G721 Tour and travel guides	8,605	7,745	7,445
G722 Outdoor sport and recreational guides	4,910	3,825	3,640
G73 Other attendants in travel, accommodation and recreation	42,300	31,730	23,230
G731 Attendants in amusement, recreation and sport	36,675	28,250	19,705
G732 Other attendants in accommodation and travel (except airline travel)	5,620	3,485	3,520
G8 Childcare and home support workers	399,390	356,635	269,755
G81 Childcare and home support workers	399,395	356,630	269,750
G811 Visiting homemakers, housekeepers and related occupations	89,690	69,670	64,070
G812 Elementary and secondary school teacher assistants	80,495	60,280	48,530
G813 Early childhood educators and assistants	136,375	85,450	72,850
G814 Babysitters, nannies and parents' helpers	92,840	141,230	84,310

Canada	Census Years		
	2001	1996	1991
G9 Sales and service occupations, n.e.c.	1,214,560	1,181,785	1,075,070
G91 Technical occupations in personal service	92,855	87,450	83,630
G911 Hairstylists and barbers	88,400	83,710	80,625
G912 Funeral directors and embalmers	4,455	3,740	3,005
G92 Other occupations in personal service	40,545	32,470	25,520
G921 Image, social and other personal consultants	3,450	3,775	3,460
G922 Estheticians, electrologists and related occupations	23,960	15,685	12,455
G923 Pet groomers and animal care workers	11,775	12,130	9,335
G924 Other personal service occupations	1,360	885	270
G93 Cleaners	425,135	455,730	409,140
G931 Light duty cleaners	186,940	149,770	167,220
G932 Specialized cleaners	34,580	35,525	30,920
G933 Janitors, caretakers and building superintendents	203,615	270,435	210,995
G94 Butchers and bakers, retail and wholesale	67,000	65,410	69,420
G941 Butchers and meat cutters, retail and wholesale	26,370	25,925	31,905
G942 Bakers	40,635	39,485	37,515
G96 Food counter attendants, kitchen helpers and related occupations	293,155	253,220	235,615
G960 Food counter attendants, kitchen helpers and related occupations	293,155	253,225	235,620
G97 Other sales and related occupations	243,750	235,225	193,905
G971 Service station attendants	37,925	45,850	52,690
G972 Grocery clerks and shelf stockers	142,425	123,705	103,095
G973 Other elemental sales occupations	63,400	65,665	38,120
G98 Other elemental service occupations	52,110	52,270	57,840
G981 Dry cleaning and laundry occupations	20,035	23,650	26,445
G982 Ironing, pressing and finishing occupations	7,385	7,355	9,745
G983 Other elemental service occupations	24,690	21,265	21,650
H Trades, transport and equipment operators and related occupations	2,193,085	2,018,355	2,199,375
H0 Contractors and supervisors in trades and transportation	123,595	140,280	215,215
H01 Contractors and supervisors, trades and related workers	113,665	129,465	189,935
H011 Supervisors, machinists and related occupations	6,860	6,340	5,950
H012 Contractors and supervisors, electrical trades and telecommunications occupations	12,090	15,220	21,145
H013 Contractors and supervisors, pipefitting trades	4,590	6,195	8,295
H014 Contractors and supervisors, metal forming, shaping and erecting trades	7,700	6,055	13,280
H015 Contractors and supervisors, carpentry trades	14,885	18,930	25,410
H016 Contractors and supervisors, mechanic trades	17,050	23,560	34,075
H017 Contractors and supervisors, heavy construction equipment crews	23,630	21,895	23,655
H018 Supervisors, printing and related occupations	6,660	6,935	8,925
H019 Contractors and supervisors, other construction trades, installers, repairers and servicers	20,200	24,335	49,200
H02 Supervisors, railway and motor transportation occupations	9,930	10,815	25,285
H021 Supervisors, railway transport operations	2,490	2,625	2,640
H022 Supervisors, motor transport and other ground transit operators	7,440	8,185	22,645
H1 Construction trades	351,385	308,340	328,220
H11 Plumbers, pipefitters and gas fitters	61,125	49,960	54,745
H111 Plumbers	36,300	27,955	30,235
H112 Steamfitters, pipefitters and sprinkler system installers	20,125	17,180	20,555

Canada	Census Years		
	2001	1996	1991
H113 Gas fitters	4,710	4,825	3,945
H12 Carpenters and cabinetmakers	147,335	131,815	140,125
H121 Carpenters	125,440	114,325	121,265
H122 Cabinetmakers	21,900	17,485	18,860
H13 Masonry and plastering trades	54,440	47,310	54,550
H131 Bricklayers	16,065	14,005	19,135
H132 Cement finishers	9,460	8,135	9,125
H133 Tilesetters	6,060	4,800	5,720
H134 Plasterers, drywall installers and finishers, and lathers	22,850	20,365	20,570
H14 Other construction trades	88,475	79,260	78,800
H141 Roofers and shinglers	16,825	15,640	14,765
H142 Glaziers	7,795	7,100	9,020
H143 Insulators	7,570	5,835	6,805
H144 Painters and decorators	41,620	37,785	36,385
H145 Floor covering installers	14,670	12,905	11,825
H2 Stationary engineers, power station operators and electrical trades and telecommunications occupations	172,805	150,250	168,570
H21 Electrical trades and telecommunications occupations	148,495	125,905	140,795
H211 Electricians (except industrial and power system)	61,370	46,490	54,810
H212 Industrial electricians	29,445	28,550	22,505
H213 Power system electricians	4,835	4,505	6,165
H214 Electrical power line and cable workers	11,815	11,610	13,475
H215 Telecommunications line and cable workers	10,515	7,275	8,895
H216 Telecommunications installation and repair workers	24,555	23,475	30,910
H217 Cable television service and maintenance technicians	5,965	4,005	4,025
H22 Stationary engineers and power station and system operators	24,305	24,350	27,775
H221 Stationary engineers and auxiliary equipment operators	17,080	18,005	20,415
H222 Power systems and power station operators	7,225	6,340	7,365
H3 Machinists, metal forming, shaping and erecting occupations	116,695	94,255	106,410
H31 Machinists and related occupations	71,420	60,400	63,850
H311 Machinists and machining and tooling inspectors	53,510	45,290	47,625
H312 Tool and die makers	17,910	15,115	16,230
H32 Metal forming, shaping and erecting occupations	45,270	33,855	42,555
H321 Sheet metal workers	19,410	14,385	20,550
H322 Boilermakers	4,030	3,350	4,200
H323 Structural metal and platework fabricators and fitters	10,640	7,375	7,820
H324 Ironworkers	9,985	7,355	8,420
H325 Blacksmiths and die setters	1,210	1,390	1,565
H4 Mechanics	345,355	335,545	341,760
H41 Machinery and transportation equipment mechanics (except motor vehicle)	154,965	142,855	150,480
H411 Construction millwrights and industrial mechanics (except textile)	66,955	62,345	66,945
H412 Heavy-duty equipment mechanics	42,435	39,100	42,070
H413 Refrigeration and air conditioning mechanics	14,535	13,040	10,290
H414 Railway carmen	3,885	3,950	5,245
H415 Aircraft mechanics and aircraft inspectors	15,790	13,865	15,445
H416 Machine fitters	5,525	5,510	4,295
H417 Textile machinery mechanics and repairers	2,485	2,060	2,090

Canada	Census Years		
	2001	1996	1991
H418 Elevator constructors and mechanics	3,350	2,985	4,105
H42 Motor vehicle mechanics	162,540	164,670	159,930
H421 Motor vehicle mechanics, technicians and mechanical repairers	128,905	128,385	124,705
H422 Motor vehicle body repairers	33,635	36,285	35,220
H43 Other mechanics	27,845	28,025	31,360
H431 Oil and solid fuel heating mechanics	3,050	4,175	3,995
H432 Electric appliance servicers and repairers	8,845	8,480	11,110
H433 Electrical mechanics	6,720	6,895	8,780
H434 Motorcycle and other related mechanics	3,480	1,820	1,175
H435 Other small engine and equipment mechanics	5,760	6,650	6,285
H5 Other trades, n.e.c.	133,660	121,360	119,135
H51 Upholsterers, tailors, shoe repairers, jewellers and related occupations	43,710	39,060	56,195
H511 Upholsterers	8,010	7,345	9,550
H512 Tailors, dressmakers, furriers and milliners	28,020	24,060	36,590
H513 Shoe repairers and shoemakers	2,470	3,110	4,785
H514 Jewellers, watch repairers and related occupations	5,215	4,540	5,270
H52 Printing press operators, commercial divers and other trades and related occupations, n.e.c.	33,180	30,460	6,820
H521 Printing press operators	24,120	23,070	-
H522 Commercial divers	935	1,030	840
H523 Other trades and related occupations	8,130	6,360	5,975
H53 Other installers, repairers and servicers	56,775	51,845	56,125
H531 Residential and commercial installers and servicers	25,685	22,680	25,410
H532 Waterworks and gas maintenance workers	4,850	4,185	5,120
H533 Automotive mechanical installers and servicers	12,250	10,135	13,435
H534 Pest controllers and fumigators	1,900	1,810	1,585
H535 Other repairers and servicers	12,100	13,025	10,575
H6 Heavy equipment and crane operators including drillers	109,810	100,060	107,990
H61 Heavy equipment operators	93,085	84,350	89,035
H611 Heavy equipment operators (except crane)	75,270	68,235	71,730
H612 Public works maintenance equipment operators	17,815	16,120	17,310
H62 Crane operators, drillers and blasters	16,730	15,700	18,955
H621 Crane operators	12,150	11,535	13,820
H622 Drillers and blasters - Surface mining, quarrying and construction	3,330	2,835	3,570
H623 Water well drillers	1,250	1,340	1,560
H7 Transportation equipment operators and related workers, excluding labourers	508,155	465,245	434,870
H71 Motor vehicle and transit drivers	472,695	429,445	395,435
H711 Truck drivers	263,510	227,310	204,200
H712 Bus drivers and subway and other transit operators	71,275	69,240	69,415
H713 Taxi and limousine drivers and chauffeurs	37,990	35,490	31,505
H714 Delivery drivers	99,915	97,400	90,315
H72 Train crew operating occupations	11,745	11,205	13,145
H721 Railway and yard locomotive engineers	6,730	5,810	6,615
H722 Railway conductors and brakemen	5,015	5,395	6,525
H73 Other transport equipment operators and related workers	23,710	24,595	26,295
H731 Railway yard workers	1,590	1,995	2,710
H732 Railway track maintenance workers	4,595	5,035	6,160

Canada	Census Years		
	2001	1996	1991
H733 Deck crew, water transport	4,430	5,285	5,425
H734 Engine room crew, water transport	850	990	1,125
H735 Lock and cable ferry operators and related occupations	1,885	1,915	1,980
H736 Boat operators	1,130	1,070	1,220
H737 Air transport ramp attendants	9,220	8,305	7,680
H8 Trades helpers, construction and transportation labourers and related occupations	331,630	303,020	377,195
H81 Longshore workers and material handlers	174,290	139,950	139,245
H811 Longshore workers	6,940	7,700	8,795
H812 Material handlers	167,350	132,250	130,450
H82 Trades helpers and labourers	125,210	120,190	172,615
H821 Construction trades helpers and labourers	112,650	109,890	154,670
H822 Other trades helpers and labourers	12,560	10,295	17,945
H83 Public works and other labourers, n.e.c.	32,130	42,880	65,335
H831 Public works and maintenance labourers	27,570	37,260	58,840
H832 Railway and motor transport labourers	4,560	5,620	6,495
I Occupations unique to primary industry	667,550	680,685	734,520
I0 Occupations unique to agriculture excluding labourers	406,855	424,925	465,150
I01 Contractors, operators and supervisors in agriculture, horticulture and aquaculture	270,115	265,880	286,920
I011 Farmers and farm managers	229,435	229,590	250,490
I012 Agricultural and related service contractors and managers	3,925	3,905	1,585
I013 Farm supervisors and specialized livestock workers	9,075	9,165	10,005
I014 Nursery and greenhouse operators and managers	6,330	5,920	5,775
I015 Landscaping and grounds maintenance contractors and managers	11,265	9,410	8,015
I016 Supervisors, landscape and horticulture	8,370	6,535	9,490
I017 Aquaculture operators and managers	1,720	1,350	1,550
I02 Agriculture and horticulture workers	136,735	159,045	178,225
I021 General farm workers	112,855	132,355	150,375
I022 Nursery and greenhouse workers	23,885	26,695	27,850
I1 Occupations unique to forestry operations, mining, oil and gas extraction and fishing, excluding labourers	127,625	135,475	139,315
I11 Supervisors, logging and forestry	5,335	6,530	8,580
I111 Supervisors, logging and forestry	5,335	6,530	8,580
I12 Supervisors, mining, oil and gas	11,550	11,655	11,025
I121 Supervisors, mining and quarrying	4,625	6,210	6,600
I122 Supervisors, oil and gas drilling and service	6,930	5,445	4,420
I13 Underground miners, oil and gas drillers and related workers	17,525	20,900	22,075
I131 Underground production and development miners	9,705	15,355	18,480
I132 Oil and gas well drillers, servicers, testers and related workers	7,815	5,550	3,595
I14 Mine service workers and operators in oil and gas drilling	10,145	8,330	8,895
I141 Underground mine service and support workers	2,115	2,620	2,560
I142 Oil and gas well drilling workers and services operators	8,025	5,705	6,335
I15 Logging machinery operators	15,045	13,785	12,390
I151 Logging machinery operators	15,050	13,785	12,390
I16 Logging and forestry workers	29,370	34,375	31,860
I161 Chain-saw and skidder operators	17,430	24,610	23,815
I162 Silviculture and forestry workers	11,940	9,765	8,050
I17 Fishing vessel masters and skippers and fishermen	31,255	31,045	33,425

Canada	Census Years		
	2001	1996	1991
I171 Fishing masters and officers	2,645	2,425	3,125
I172 Fishing vessel skippers and fishermen	28,610	28,625	30,305
I18 Other fishing and trapping occupations	7,400	8,855	11,065
I181 Fishing vessel deckhands	6,210	7,045	9,900
I182 Trappers and hunters	1,185	1,810	1,165
I2 Primary production labourers	133,075	120,290	130,055
I21 Primary production labourers	133,075	120,290	130,055
I211 Harvesting labourers	10,945	9,600	10,825
I212 Landscaping and grounds maintenance labourers	88,075	74,645	72,170
I213 Aquaculture and marine harvest labourers	3,330	2,955	2,520
I214 Mine labourers	3,740	3,765	8,310
I215 Oil and gas drilling, servicing and related labourers	11,505	10,140	8,110
I216 Logging and forestry labourers	15,480	19,180	28,115
J Occupations unique to processing, manufacturing and utilities	1,192,395	1,093,050	1,070,300
J0 Supervisors in manufacturing	94,300	94,535	76,295
J01 Supervisors, processing occupations	55,770	57,645	52,625
J011 Supervisors, mineral and metal processing	9,355	10,700	10,955
J012 Supervisors, petroleum, gas and chemical processing and utilities	10,400	12,325	10,530
J013 Supervisors, food, beverage and tobacco processing	12,875	12,225	10,570
J014 Supervisors, plastic and rubber products manufacturing	8,280	6,890	5,815
J015 Supervisors, forest products processing	11,020	11,825	11,310
J016 Supervisors, textile processing	3,845	3,690	3,440
J02 Supervisors, assembly and fabrication	38,530	36,890	23,670
J021 Supervisors, motor vehicle assembling	6,485	7,060	4,415
J022 Supervisors, electronics manufacturing	4,740	3,295	2,405
J023 Supervisors, electrical products manufacturing	2,200	1,915	1,955
J024 Supervisors, furniture and fixtures manufacturing	5,210	3,625	5,100
J025 Supervisors, fabric, fur and leather products manufacturing	4,350	4,560	3,600
J026 Supervisors, other mechanical and metal products manufacturing	9,355	10,815	3,160
J027 Supervisors, other products manufacturing and assembly	6,190	5,615	3,035
J1 Machine operators in manufacturing	549,380	519,975	554,345
J11 Central control and process operators in manufacturing and processing	23,305	24,105	23,325
J111 Central control and process operators, mineral and metal processing	6,550	5,605	-
J112 Petroleum, gas and chemical process operators	12,725	13,215	13,655
J113 Pulp and paper control operators	1,360	2,150	1,805
J114 Papermaking and coating control operators	2,670	3,140	7,865
J12 Machine operators and related workers in metal and mineral products processing	42,255	36,055	40,430
J121 Machine operators, mineral and metal processing	13,985	10,160	13,245
J122 Foundry workers	9,730	8,810	9,860
J123 Glass forming and finishing machine operators and glass cutters	5,565	5,105	6,150
J124 Concrete, clay and stone forming operators	8,395	7,650	6,230
J125 Inspectors and testers, mineral and metal processing	4,580	4,330	4,940
J13 Machine operators and related workers in chemical, plastic and rubber processing	52,300	44,855	37,000
J131 Chemical plant machine operators	11,135	10,485	8,415
J132 Plastics processing machine operators	24,155	18,640	13,055
J133 Rubber processing machine operators and related workers	10,810	10,545	10,935
J134 Water and waste plant operators	6,195	5,180	4,595

Canada	Census Years		
	2001	1996	1991
J14 Machine operators and related workers in pulp and paper production and wood processing	55,840	51,575	46,060
J141 Sawmill machine operators	16,285	16,015	15,500
J142 Pulp mill machine operators	6,960	5,180	5,335
J143 Papermaking and finishing machine operators	4,850	4,910	3,685
J144 Other wood processing machine operators	8,965	7,940	6,475
J145 Paper converting machine operators	8,990	9,250	8,015
J146 Lumber graders and other wood processing inspectors and graders	9,790	8,275	7,050
J15 Machine operators and related workers in textile processing	23,055	22,120	24,710
J151 Textile fibre and yarn preparation machine operators	6,300	5,220	4,465
J152 Weavers, knitters and other fabric-making occupations	9,065	8,485	9,100
J153 Textile dyeing and finishing machine operators	4,140	4,750	6,500
J154 Textile inspectors, graders and samplers	3,545	3,660	4,650
J16 Machine operators and related workers in fabric, fur and leather products manufacturing	73,200	83,575	84,540
J161 Sewing machine operators	61,820	70,170	71,705
J162 Fabric, fur and leather cutters	7,340	8,070	8,305
J163 Hide and pelt processing workers	840	1,085	870
J164 Inspectors and testers, fabric, fur and leather products manufacturing	3,200	4,250	3,665
J17 Machine operators and related workers in food, beverage and tobacco processing	63,150	69,375	86,815
J171 Process control and machine operators, food and beverage processing	27,890	27,810	34,240
J172 Industrial butchers and meat cutters, poultry preparers and related workers	17,410	18,560	15,595
J173 Fish plant workers	11,425	15,735	30,875
J174 Tobacco processing machine operators	780	1,120	1,265
J175 Testers and graders, food and beverage processing	5,645	6,145	4,845
J18 Printing machine operators and related occupations	39,270	37,685	65,645
J181 Printing machine operators	14,725	12,060	38,690
J182 Camera, platemaking and other pre-press occupations	5,215	6,090	6,165
J183 Binding and finishing machine operators	9,440	10,015	9,645
J184 Photographic and film processors	9,895	9,520	11,145
J19 Machining, metalworking, woodworking and related machine operators	177,015	150,640	145,820
J191 Machining tool operators	17,105	15,515	13,225
J192 Forging machine operators	3,480	2,315	2,220
J193 Woodworking machine operators	15,620	11,780	11,880
J194 Metalworking machine operators	17,145	16,135	20,895
J195 Welders and soldering machine operators	101,530	90,880	87,880
J196 Other metal products machine operators	6,520	5,880	4,535
J197 Other products machine operators	15,610	8,135	5,175
J2 Assemblers in manufacturing	263,440	218,530	195,020
J21 Mechanical, electrical and electronics assemblers	154,370	137,400	117,400
J211 Aircraft assemblers and aircraft assembly inspectors	10,550	6,540	7,980
J212 Motor vehicle assemblers, inspectors and testers	63,625	64,665	54,210
J213 Electronics assemblers, fabricators, inspectors and testers	34,800	27,505	24,185
J214 Assemblers and inspectors, electrical appliance, apparatus and equipment manufacturing	15,535	12,875	12,575
J215 Assemblers, fabricators and inspectors, industrial electrical motors and transformers	7,000	5,260	4,805
J216 Mechanical assemblers and inspectors	19,880	18,660	11,830

Canada	Census Years		
	2001	1996	1991
J217 Machine operators and inspectors, electrical apparatus manufacturing	2,985	1,900	1,820
J22 Other assembly and related occupations	109,065	81,130	77,620
J221 Boat assemblers and inspectors	4,020	3,565	4,265
J222 Furniture and fixture assemblers and inspectors	30,575	15,355	15,870
J223 Other wood products assemblers and inspectors	15,550	10,935	9,705
J224 Furniture finishers and refinishers	7,140	6,010	6,345
J225 Plastic products assemblers, finishers and inspectors	14,670	10,995	11,940
J226 Painters and coaters, manufacturing	17,945	16,530	18,115
J227 Plating, metal spraying and related operators	3,735	2,955	2,280
J228 Other assemblers and inspectors	15,425	14,780	9,105
J3 Labourers in processing, manufacturing and utilities	285,280	260,005	244,640
J31 Labourers in processing, manufacturing and utilities	285,280	260,000	244,645
J311 Labourers in mineral and metal processing	18,480	17,210	19,805
J312 Labourers in metal fabrication	22,030	21,030	31,785
J313 Labourers in chemical products processing and utilities	9,970	9,590	13,775
J314 Labourers in wood, pulp and paper processing	44,875	40,425	42,655
J315 Labourers in rubber and plastic products manufacturing	20,465	14,890	11,270
J316 Labourers in textile processing	13,195	10,690	8,780
J317 Labourers in food, beverage and tobacco processing	65,905	58,395	50,370
J318 Labourers in fish processing	17,300	13,340	9,350
J319 Other labourers in processing, manufacturing and utilities	73,055	74,440	56,855

Product Notes

Occupation - 1991 Standard Occupational Classification (Historical) (707), Age Groups (11A) and Sex (3) for Labour Force 15 Years and Over, for Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 1991 to 2001 Censuses - 20% Sample Data - Cat. No. 97F0012XCB01022

General Notes

Cautionary Notes: Occupation

Broad Occupational Category A - Management Occupations

Census data for occupation groups in Broad Occupational Category A - Management Occupations should be used with caution. Some coding errors were made in assigning the appropriate level of management, e.g., senior manager versus middle manager, and in determining the appropriate area of specialization or activity, e.g., a manager of a health care program in a hospital versus a government manager in health policy administration. Some non-management occupations have also been miscoded to management due to confusion over titles such as program manager, project manager, etc. Data users may wish to use data for management occupations in conjunction with other variables such as income, age and education.

A334 - Other Managers in Public Administration

Census data for A334 - Other Managers in Public Administration should be used with extreme caution due to a high level of coding error. Coding errors were made in assigning the appropriate management level, e.g., senior manager versus middle manager, and in determining the appropriate area of specialization, e.g., managers in economic and social policy administration have been miscoded to this group. Some non-management occupations have also been miscoded to A334 due to confusion over titles such as program manager, project manager, etc.

E037 - Program Officers Unique to Government

Census data for E037 - Program Officers Unique to Government should be used with extreme caution due to a high level of coding error. Coding errors were made with respect to the appropriate area of specialization, e.g., economic and social policy researchers and officers have been miscoded to this group. As well, a number of vague responses such as 'civil servant' and 'fonctionnaire' were wrongly assigned this code.

G111 - Sales Representatives, Wholesale Trade (Non-Technical)

2001 Census data are showing an under-estimate of persons in G111 - Sales Representatives, Wholesale Trade (Non-Technical). A high number of vague responses has resulted in some of these occupations being miscoded to other sales occupations such as G211 - Retail Salespersons and Sales Clerks and A131 - Sales Marketing and Advertising Managers.

G121 - Technical Sales Specialists, Wholesale Trade

2001 Census data are showing an under-estimate of persons in G121 - Technical Sales Specialists, Wholesale Trade. A high number of vague responses has resulted in some of these occupations being miscoded to other sales occupations such as G211 - Retail Salespersons and Sales Clerks and A131 - Sales Marketing and Advertising Managers.

G982 - Ironing, Pressing and Finishing Occupations

2001 Census data are showing an over-estimate of persons in G982 - Ironing, Pressing and Finishing Occupations due to miscoding of some workers in pressing occupations in clothing manufacturing to this group. These responses should have been coded to J319 - Other Labourers in Processing, Manufacturing and Utilities. Data users may want to consider excluding persons in industry (NAICS) sub-sector 315 - Clothing Manufacturing from the estimates for G982.

H512 - Tailors, Dressmakers, Furriers and Milliners

2001 Census data are showing an over-estimate of persons in H512 - Tailors, Dressmakers, Furriers and Milliners due to miscoding of some responses of 'couturier' and 'seamstress' in clothing manufacturing to this group.

J111 - Central Control and Process Operators, Mineral and Metal Processing

J121 - Machine Operators, Mineral and Metal Processing

Data for J111 - Central Control and Process Operators, Mineral and Metal Processing and J121 - Machine Operators, Mineral and Metal Processing should be used with caution. There is some overlap of responses coded to these two groups as respondents do not always provide enough information to allow coders to distinguish between them.

J113 - Pulping Control Operators

J142 - Pulp Mill Machine Operators

Data for J113 - Pulping Control Operators and J142 - Pulp Mill Machine Operators should be used with caution. There is some overlap of responses coded to these two groups as respondents do not always provide enough information to allow coders to distinguish between them.

J114 - Papermaking and Coating Control Operators

J143 - Papermaking and Finishing Machine Operators

Data for J114 - Papermaking and Coating Control Operators and J143 - Papermaking and Finishing Machine Operators should be used with caution. There is some overlap of responses coded to these two groups as respondents do not always provide enough information to allow coders to distinguish between them.

J319 - Other Labourers in Processing, Manufacturing and Utilities

2001 Census data are showing an under-estimate of persons in J319 - Other Labourers in Processing, Manufacturing and Utilities due to miscoding of some workers in pressing occupations in clothing manufacturing to G982 - Ironing, Pressing and Finishing Occupations.

Special Note: Historical Comparison of Census Metropolitan Areas and Census Agglomerations, 1991, 1996 and 2001

A few census metropolitan areas (CMAs) and census agglomerations (CAs) have different geographical boundaries in 2001 as compared to 1991 and to 1996. In order to facilitate data comparisons, the 1991 and 1996 CMA and CA data have been adjusted to reflect as closely as possible the 2001 CMA and CA boundaries.

For additional information, please refer to the 2001 Census Dictionary, Catalogue Number 92-378-XIE or 92-378-XPE.

Special Note: Nunavut (1)

Data from the 2001 Census are available for Nunavut, the new territory that came into effect on April 1, 1999.

Standard data products released only at the Canada/Province/Territory geographic levels will not contain data for Nunavut for the census years prior to 2001.

Standard data products released at the Census Metropolitan Area (CMA) and Census Agglomeration (CA) geographic levels will contain data for Nunavut for the 2001, 1996 and/or 1991 Censuses.

The 1996 and 1991 CMA/CA data have been adjusted to reflect as closely as possible the 2001 CMA/CA geographic boundaries. This has been done to facilitate data comparisons using the 2001 geographic boundaries.

For additional information, please refer to the 2001 Census Dictionary, Catalogue Number 92-378-XIE or 92-378-XPE.

Special Note: Population Universe

The Population Universe of the 2001 Census includes the following groups:

- Canadian citizens (by birth or by naturalization) and landed immigrants with a usual place of residence in Canada;
- Canadian citizens (by birth or by naturalization) and landed immigrants who are abroad, either on a military base or attached to a diplomatic mission;
- Canadian citizens (by birth or by naturalization) and landed immigrants at sea or in port aboard merchant vessels under Canadian registry;
- persons with a usual place of residence in Canada who are claiming refugee status and members of their families living with them;
- persons with a usual place of residence in Canada who hold student authorizations (student visas or student permits) and members of their families living with them;
- persons with a usual place of residence in Canada who hold employment authorizations (or work permits) and members of their families living with them;
- persons with a usual place of residence in Canada who hold Minister's permits (including extensions) and members of their families living with them.

For census purposes, the last four groups in this list are referred to as 'non-permanent residents'. For further information, refer to the variable Immigration: Non-permanent Resident found in the 2001 Census Dictionary, Catalogue Number 92-378-XIE or 92-378-XPE.

Footnote(s)

Occupation - 1991 Standard Occupational Classification (Historical) (707) / Total labour force

Kind of work done by persons aged 15 and over. Occupation is based on the type of job the person holds and the description of his or her duties. This variable has been created in order to facilitate comparison of occupation data coded to the 2001 National Occupational Classification for Statistics (NOC-S 2001) with 1991 and 1996 Census occupation data coded to the 1991 Standard Occupational Classification (SOC). Refers to the kind of work persons were doing during the reference week, as determined by their kind of work and the description of the main activities in their job. If the person did not have a job during the week (Sunday to Saturday) prior to enumeration (May 15, 2001), the data relate to the job of longest duration since January 1, 2000. Persons with two or more jobs were to report the information for the job at which they worked the most hours. This variable has been created in order to facilitate comparison of occupation data coded to the 2001 National Occupational Classification for Statistics (NOC-S 2001) with 1991 and 1996 Census occupation data coded to the 1991 Standard Occupational Classification (SOC). The 1991 SOC was used as the basis for the creation of the Occupation (Historical) variable. Wherever possible, the 1991 SOC code has been retained. However, data users should be aware that some adjustments to occupation data coded to the 1991 SOC will still be necessary when making comparisons with the 2001 Occupation (Historical) variable.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / Occupation - Not applicable

Unemployed persons 15 years and over who have never worked for pay or in self-employment or who had last worked prior to January 1 of the census reference year. The census reference years are as follows: 1990 for the 1991 Census, 1995 for the 1996 Census and 2000 for the 2001 Census.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / All occupations

Refers to the experienced labour force population: persons who were employed or unemployed and persons who worked for pay or in self-employment since January 1 of the census reference year. The census reference years are as follows: 1990 for the 1991 Census, 1995 for the 1996 Census and 2000 for the 2001 Census.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / B510 General office clerks

Codes ending in 0, indicate that two or more unit groups from the 1991 Standard Occupational Classification have been combined. For further information about these codes refer to the 2001 Census Dictionary, definition of Labour Market Activities: Occupation (Historical).

Occupation - 1991 Standard Occupational Classification (Historical) (707) / C070 Computer and information systems occupations

Codes ending in 0, indicate that two or more unit groups from the 1991 Standard Occupational Classification have been combined. For further information about these codes refer to the 2001 Census Dictionary, definition of Labour Market Activities: Occupation (Historical).

Occupation - 1991 Standard Occupational Classification (Historical) (707) / D310 Other aides and assistants in support of health services

Codes ending in 0, indicate that two or more unit groups from the 1991 Standard Occupational Classification have been combined. For further information about these codes refer to the 2001 Census Dictionary, definition of Labour Market Activities: Occupation (Historical).

Occupation - 1991 Standard Occupational Classification (Historical) (707) / G960 Food counter attendants, kitchen helpers and related occupations

Codes ending in 0, indicate that two or more unit groups from the 1991 Standard Occupational Classification have been combined. For further information about these codes refer to the 2001 Census Dictionary, definition of Labour Market Activities: Occupation (Historical).

Occupation - 1991 Standard Occupational Classification (Historical) (707) / H Trades, transport and equipment operators and related occupations

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / H5 Other trades, n.e.c.

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / H52 Printing press operators, commercial divers and other trades and related occupations, n.e.c.

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / H521 Printing press operators

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J Occupations unique to processing, manufacturing and utilities

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J1 Machine operators in manufacturing

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J11 Central control and process operators in manufacturing and processing

In 1991, the unit group J111 - Central control and process operators, mineral and metal processing was combined with the unit group J121 - Machine operators, mineral and metal processing due to data quality problems. The combined estimate for 1991 is contained in the unit group J121. In 1996 and 2001, these groups are shown separately. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group and minor group levels.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J111 Central control and process operators, mineral and metal processing

In 1991, the unit group J111 - Central control and process operators, mineral and metal processing was combined with the unit group J121 - Machine operators, mineral and metal processing due to data quality problems. The combined estimate for 1991 is contained in the unit group J121. In 1996 and 2001, these groups are shown separately. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group and minor group levels.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J12 Machine operators and related workers in metal and mineral products processing

In 1991, the unit group J111 - Central control and process operators, mineral and metal processing was combined with the unit group J121 - Machine operators, mineral and metal processing due to data quality problems. The combined estimate for 1991 is contained in the unit group J121. In 1996 and 2001, these groups are shown separately. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group and minor group levels.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J121 Machine operators, mineral and metal processing

In 1991, the unit group J111 - Central control and process operators, mineral and metal processing was combined with the unit group J121 - Machine operators, mineral and metal processing due to data quality problems. The combined estimate for 1991 is contained in the unit group J121. In 1996 and 2001, these groups are shown separately. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group and minor group levels.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J18 Printing machine operators and related occupations

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Occupation - 1991 Standard Occupational Classification (Historical) (707) / J181 Printing machine operators

In 1991, the unit group H521 - Printing press operators was combined with the unit group J181 - Printing machine operators due to data quality problems. The combined estimate for 1991 is contained in the unit group J181. In 1996 and 2001, these groups did not require collapsing. Comparisons of estimates between 1991, 1996 and 2001 are affected at the unit group, minor group, major group and broad category.

Table C5. 2001 National Occupational Classification for Statistics List of Broad Occupational Categories, Major Groups, Minor Groups and Unit Groups

Stub
A Management occupations
A0 Senior management occupations
A01 Legislators and senior management
A011 Legislators
A012 Senior government managers and officials
A013 Senior managers - Financial, communications carriers and other business services
A014 Senior managers - Health, education, social and community services and membership organizations
A015 Senior managers - Trade, broadcasting and other services, n.e.c.
A016 Senior managers - Goods production, utilities, transportation and construction
A1 Specialist managers
A11 Administrative services managers
A111 Financial managers
A112 Human resources managers
A113 Purchasing managers
A114 Other administrative services managers
A12 Managers in engineering, architecture, science and information systems
A121 Engineering, science and architecture managers
A122 Information systems and data processing managers
A13 Sales, marketing and advertising managers
A131 Sales, marketing and advertising managers
A14 Facility operation and maintenance managers
A141 Facility operation and maintenance managers
A2 Managers in retail trade, food and accommodation services
A21 Managers in retail trade
A211 Retail trade managers
A22 Managers in food service and accommodation
A221 Restaurant and food service managers
A222 Accommodation service managers
A3 Other managers, n.e.c.
A30 Managers in financial and business services
A301 Insurance, real estate and financial brokerage managers
A302 Banking, credit and other investment managers
A303 Other business services managers
A31 Managers in communication (except broadcasting)
A311 Telecommunication carriers managers
A312 Postal and courier services managers
A32 Managers in health, education, social and community services
A321 Managers in health care
A322 Administrators in post-secondary education and vocational training
A323 School principals and administrators of elementary and secondary education
A324 Managers in social, community and correctional services
A33 Managers in public administration
A331 Government managers in health and social policy development and program administration

Stub
A332 Government managers in economic analysis, policy development and program administration
A333 Government managers in education policy development and program administration
A334 Other managers in public administration
A34 Managers in art, culture, recreation and sport
A341 Library, archive, museum and art gallery managers
A342 Managers in publishing, motion pictures, broadcasting and performing arts
A343 Recreation and sport program and service directors
A35 Managers in protective services
A351 Commissioned police officers
A352 Fire chiefs and senior fire-fighting officers
A353 Commissioned officers, armed forces
A36 Managers in other services
A361 Other services managers
A37 Managers in construction and transportation
A371 Construction managers
A372 Residential home builders and renovators
A373 Transportation managers
A38 Managers in primary production (except agriculture)
A381 Primary production managers (except agriculture)
A39 Managers in manufacturing and utilities
A391 Manufacturing managers
A392 Utilities managers
B Business, finance and administrative occupations
B0 Professional occupations in business and finance
B01 Auditors, accountants and investment professionals
B011 Financial auditors and accountants
B012 Financial and investment analysts
B013 Securities agents, investment dealers and traders
B014 Other financial officers
B02 Human resources and business service professionals
B021 Specialists in human resources
B022 Professional occupations in business services to management
B1 Finance and insurance administrative occupations
B11 Finance and insurance administrative occupations
B111 Bookkeepers
B112 Loan officers
B113 Insurance adjusters and claims examiners
B114 Insurance underwriters
B115 Assessors, valuers and appraisers
B116 Customs, ship and other brokers
B2 Secretaries
B21 Secretaries, recorders and transcriptionists
B211 Secretaries (except legal and medical)
B212 Legal secretaries
B213 Medical secretaries
B214 Court recorders and medical transcriptionists
B3 Administrative and regulatory occupations

Stub
B31 Administrative and regulatory occupations
B311 Administrative officers
B312 Executive assistants
B313 Personnel and recruitment officers
B314 Property administrators
B315 Purchasing agents and officers
B316 Conference and event planners
B317 Court officers and justices of the peace
B318 Immigration, unemployment insurance and revenue officers
B4 Clerical supervisors
B41 Clerical supervisors
B411 Supervisors, general office and administrative support clerks
B412 Supervisors, finance and insurance clerks
B413 Supervisors, library, correspondence and related information clerks
B414 Supervisors, mail and message distribution occupations
B415 Supervisors, recording, distributing and scheduling occupations
B5 Clerical occupations
B51 Clerical occupations, general office skills
B510 General office clerks
B513 Records and file clerks
B514 Receptionists and switchboard operators
B52 Office equipment operators
B522 Data entry clerks
B523 Typesetters and related occupations
B524 Telephone operators
B53 Finance and insurance clerks
B531 Accounting and related clerks
B532 Payroll clerks
B533 Tellers, financial services
B534 Banking, insurance and other financial clerks
B535 Collectors
B54 Administrative support clerks
B541 Administrative clerks
B542 Personnel clerks
B543 Court clerks
B55 Library, correspondence and related information clerks
B551 Library clerks
B552 Correspondence, publication and related clerks
B553 Customer service, information and related clerks
B554 Survey interviewers and statistical clerks
B56 Mail and message distribution occupations
B561 Mail, postal and related clerks
B562 Letter carriers
B563 Couriers and messengers
B57 Recording, scheduling and distributing occupations
B571 Shippers and receivers
B572 Storekeepers and parts clerks
B573 Production clerks

Stub
B574 Purchasing and inventory clerks
B575 Dispatchers and radio operators
B576 Transportation route and crew schedulers
C Natural and applied sciences and related occupations
C0 Professional occupations in natural and applied sciences
C01 Physical science professionals
C011 Physicists and astronomers
C012 Chemists
C013 Geologists, geochemists and geophysicists
C014 Meteorologists
C015 Other professional occupations in physical sciences
C02 Life science professionals
C021 Biologists and related scientists
C022 Forestry professionals
C023 Agricultural representatives, consultants and specialists
C03 Civil, mechanical, electrical and chemical engineers
C031 Civil engineers
C032 Mechanical engineers
C033 Electrical and electronics engineers
C034 Chemical engineers
C04 Other engineers
C041 Industrial and manufacturing engineers
C042 Metallurgical and materials engineers
C043 Mining engineers
C044 Geological engineers
C045 Petroleum engineers
C046 Aerospace engineers
C048 Other professional engineers, n.e.c.
C05 Architects, urban planners and land surveyors
C051 Architects
C052 Landscape architects
C053 Urban and land use planners
C054 Land surveyors
C06 Mathematicians, systems analysts and computer programmers
C061 Mathematicians, statisticians and actuaries
C07 Computer and information systems occupations
C070 Computer and information systems occupations
C1 Technical occupations related to natural and applied sciences
C11 Technical occupations in physical sciences
C111 Applied chemical technologists and technicians
C112 Geological and mineral technologists and technicians
C113 Meteorological technicians
C12 Technical occupations in life sciences
C121 Biological technologists and technicians
C122 Agricultural and fish products inspectors
C123 Forestry technologists and technicians
C124 Conservation and fishery officers
C125 Landscape and horticultural technicians and specialists

Stub
C13 Technical occupations in civil, mechanical and industrial engineering
C131 Civil engineering technologists and technicians and construction estimators
C132 Mechanical engineering technologists and technicians
C133 Industrial engineering and manufacturing technologists and technicians
C14 Technical occupations in electronics and electrical engineering
C141 Electrical and electronics engineering technologists and technicians
C142 Electronic service technicians (household and business equipment)
C143 Industrial instrument technicians and mechanics
C144 Aircraft instrument, electrical and avionics mechanics, technicians and inspectors
C15 Technical occupations in architecture, drafting, surveying and mapping
C151 Architectural technologists and technicians
C152 Industrial designers
C153 Drafting technologists and technicians
C154 Survey technologists and technicians
C155 Mapping and related technologists and technicians
C16 Other technical inspectors and regulatory officers
C161 Non-destructive testers and inspectors
C162 Engineering inspectors and regulatory officers
C163 Inspectors in public and environmental health and occupational health and safety
C164 Construction inspectors
C17 Transportation officers and controllers
C171 Air pilots, flight engineers and flying instructors
C172 Air traffic control occupations
C173 Deck officers, water transport
C174 Engineer officers, water transport
C175 Railway and marine traffic controllers
D Health occupations
D0 Professional occupations in health
D01 Physicians, dentists and veterinarians
D011 Specialist physicians
D012 General practitioners and family physicians
D013 Dentists
D014 Veterinarians
D02 Optometrists, chiropractors and other health diagnosing and treating professionals
D021 Optometrists
D022 Chiropractors
D023 Other professional occupations in health diagnosing and treating
D03 Pharmacists, dietitians and nutritionists
D031 Pharmacists
D032 Dietitians and nutritionists
D04 Therapy and assessment professionals
D041 Audiologists and speech-language pathologists
D042 Physiotherapists
D043 Occupational therapists
D044 Other professional occupations in therapy and assessment
D1 Nurse supervisors and registered nurses
D11 Nurse supervisors and registered nurses
D111 Head nurses and supervisors

Stub
D112 Registered nurses
D2 Technical and related occupations in health
D21 Medical technologists and technicians (except dental health)
D211 Medical laboratory technologists and pathologists' assistants
D212 Medical laboratory technicians
D213 Animal health technologists
D214 Respiratory therapists and clinical perfusionists
D215 Medical radiation technologists
D216 Medical sonographers
D217 Cardiology technologists
D218 Electroencephalographic and other diagnostic technologists, n.e.c.
D219 Other medical technologists and technicians (except dental health)
D22 Technical occupations in dental health care
D221 Denturists
D222 Dental hygienists and dental therapists
D223 Dental technicians and laboratory bench workers
D23 Other technical occupations in health care (except dental)
D231 Opticians
D232 Midwives and practitioners of natural healing
D233 Registered nursing assistants
D234 Ambulance attendants and other paramedical occupations
D235 Other technical occupations in therapy and assessment
D3 Assisting occupations in support of health services
D31 Assisting occupations in support of health services
D310 Other aides and assistants in support of health services
D311 Dental assistants
D312 Nurse aides and orderlies
E Occupations in social science, education, government service and religion
E0 Judges, lawyers, psychologists, social workers, ministers of religion, and policy and program officers
E01 Judges, lawyers and Quebec notaries
E011 Judges
E012 Lawyers and Quebec notaries
E02 Psychologists, social workers, counsellors, clergy and probation officers
E021 Psychologists
E022 Social workers
E023 Family, marriage and other related counsellors
E024 Ministers of religion
E025 Probation and parole officers and related occupations
E03 Policy and program officers, researchers and consultants
E031 Natural and applied science policy researchers, consultants and program officers
E032 Economists and economic policy researchers and analysts
E033 Economic development officers and marketing researchers and consultants
E034 Health and social policy researchers, consultants and program officers
E035 Education policy researchers, consultants and program officers
E036 Recreation and sports program supervisors and consultants
E037 Program officers unique to government
E038 Other professional occupations in social science, n.e.c.

Stub
E1 Teachers and professors
E11 University professors and assistants
E111 University professors
E112 Post-secondary teaching and research assistants
E12 College and other vocational instructors
E121 College and other vocational instructors
E13 Secondary and elementary school teachers and counsellors
E131 Secondary school teachers
E132 Elementary school and kindergarten teachers
E133 School and guidance counsellors
E2 Paralegals, social services workers and occupations in education and religion, n.e.c.
E21 Paralegals, social services workers and occupations in education and religion, n.e.c.
E211 Paralegal and related occupations
E212 Community and social service workers
E213 Employment counsellors
E214 Instructors and teachers of disabled persons
E215 Other instructors
E216 Other religious occupations
F Occupations in art, culture, recreation and sport
F0 Professional occupations in art and culture
F01 Librarians, archivists, conservators and curators
F011 Librarians
F012 Conservators and curators
F013 Archivists
F02 Writing, translating and public relations professionals
F021 Writers
F022 Editors
F023 Journalists
F024 Professional occupations in public relations and communications
F025 Translators, terminologists and interpreters
F03 Creative and performing artists
F031 Producers, directors, choreographers and related occupations
F032 Conductors, composers and arrangers
F033 Musicians and singers
F034 Dancers
F035 Actors
F036 Painters, sculptors and other visual artists
F1 Technical occupations in art, culture, recreation and sport
F11 Technical occupations in libraries, archives, museums and galleries
F111 Library and archive technicians and assistants
F112 Technical occupations related to museums and galleries
F12 Photographers, graphic arts technicians and technical occupations in motion pictures, broadcasting and the performing arts
F121 Photographers
F122 Film and video camera operators
F123 Graphic arts technicians
F124 Broadcast technicians
F125 Audio and video recording technicians

Stub
F126 Other technical occupations in motion pictures, broadcasting and the performing arts
F127 Support and assisting occupations in motion pictures, broadcasting and the performing arts
F13 Announcers and other performers
F131 Announcers and other broadcasters
F132 Other performers
F14 Creative designers and craftspersons
F141 Graphic designers and illustrating artists
F142 Interior designers
F143 Theatre, fashion, exhibit and other creative designers
F144 Artisans and craftspersons
F145 Patternmakers, textile, leather and fur products
F15 Athletes, coaches, referees and related occupations
F151 Athletes
F152 Coaches
F153 Sports officials and referees
F154 Program leaders and instructors in recreation and sport
G Sales and service occupations
G0 Sales and service supervisors
G01 Sales and service supervisors
G011 Retail trade supervisors
G012 Food service supervisors
G013 Executive housekeepers
G014 Dry cleaning and laundry supervisors
G015 Cleaning supervisors
G016 Other service supervisors
G1 Wholesale, technical, insurance, real estate sales specialists, and retail, wholesale and grain buyers
G11 Sales representatives, wholesale trade
G111 Sales representatives, wholesale trade (non-technical)
G12 Technical sales specialists, wholesale trade
G121 Technical sales specialists, wholesale trade
G13 Insurance and real estate sales occupations and buyers
G131 Insurance agents and brokers
G132 Real estate agents and salespersons
G133 Retail and wholesale buyers
G134 Grain elevator operators
G2 Retail salespersons and sales clerks
G21 Retail salespersons and sales clerks
G211 Retail salespersons and sales clerks
G3 Cashiers
G31 Cashiers
G311 Cashiers
G4 Chefs and cooks
G41 Chefs and cooks
G411 Chefs
G412 Cooks
G5 Occupations in food and beverage service

Stub
G51 Occupations in food and beverage service
G511 Maitres d'hôtel and hosts
G512 Bartenders
G513 Food and beverage servers
G6 Occupations in protective services
G61 Police officers and fire-fighters
G611 Police officers (except commissioned)
G612 Fire-fighters
G62 Other occupations in protective service
G621 Sheriffs and bailiffs
G622 Correctional service officers
G623 By-law enforcement and other regulatory officers, n.e.c.
G624 Other ranks, armed forces
G625 Other protective service occupations
G63 Security guards and related occupations
G631 Security guards and related occupations
G7 Occupations in travel and accommodation including attendants in recreation and sport
G71 Occupations in travel and accommodation
G711 Travel counsellors
G712 Purser and flight attendants
G713 Airline sales and service agents
G714 Ticket and cargo agents and related clerks (except airline)
G715 Hotel front desk clerks
G72 Tour and recreational guides and amusement occupations
G721 Tour and travel guides
G722 Outdoor sport and recreational guides
G73 Other attendants in travel, accommodation and recreation
G731 Attendants in amusement, recreation and sport
G732 Other attendants in accommodation and travel (except airline travel)
G8 Childcare and home support workers
G81 Childcare and home support workers
G811 Visiting homemakers, housekeepers and related occupations
G812 Elementary and secondary school teacher assistants
G813 Early childhood educators and assistants
G814 Babysitters, nannies and parents' helpers
G9 Sales and service occupations, n.e.c.
G91 Technical occupations in personal service
G911 Hairstylists and barbers
G912 Funeral directors and embalmers
G92 Other occupations in personal service
G921 Image, social and other personal consultants
G922 Estheticians, electrologists and related occupations
G923 Pet groomers and animal care workers
G924 Other personal service occupations
G93 Cleaners
G931 Light duty cleaners
G932 Specialized cleaners
G933 Janitors, caretakers and building superintendents

Stub
G94 Butchers and bakers, retail and wholesale
G941 Butchers and meat cutters, retail and wholesale
G942 Bakers
G96 Food counter attendants, kitchen helpers and related occupations
G960 Food counter attendants, kitchen helpers and related occupations
G97 Other sales and related occupations
G971 Service station attendants
G972 Grocery clerks and shelf stockers
G973 Other elemental sales occupations
G98 Other elemental service occupations
G981 Dry cleaning and laundry occupations
G982 Ironing, pressing and finishing occupations
G983 Other elemental service occupations
H Trades, transport and equipment operators and related occupations
H0 Contractors and supervisors in trades and transportation
H01 Contractors and supervisors, trades and related workers
H011 Supervisors, machinists and related occupations
H012 Contractors and supervisors, electrical trades and telecommunications occupations
H013 Contractors and supervisors, pipefitting trades
H014 Contractors and supervisors, metal forming, shaping and erecting trades
H015 Contractors and supervisors, carpentry trades
H016 Contractors and supervisors, mechanic trades
H017 Contractors and supervisors, heavy construction equipment crews
H018 Supervisors, printing and related occupations
H019 Contractors and supervisors, other construction trades, installers, repairers and servicers
H02 Supervisors, railway and motor transportation occupations
H021 Supervisors, railway transport operations
H022 Supervisors, motor transport and other ground transit operators
H1 Construction trades
H11 Plumbers, pipefitters and gas fitters
H111 Plumbers
H112 Steamfitters, pipefitters and sprinkler system installers
H113 Gas fitters
H12 Carpenters and cabinetmakers
H121 Carpenters
H122 Cabinetmakers
H13 Masonry and plastering trades
H131 Bricklayers
H132 Cement finishers
H133 Tilesetters
H134 Plasterers, drywall installers and finishers, and lathers
H14 Other construction trades
H141 Roofers and shinglers
H142 Glaziers
H143 Insulators
H144 Painters and decorators
H145 Floor covering installers

Stub
H2 Stationary engineers, power station operators and electrical trades and telecommunications occupations
H21 Electrical trades and telecommunications occupations
H211 Electricians (except industrial and power system)
H212 Industrial electricians
H213 Power system electricians
H214 Electrical power line and cable workers
H215 Telecommunications line and cable workers
H216 Telecommunications installation and repair workers
H217 Cable television service and maintenance technicians
H22 Stationary engineers and power station and system operators
H221 Stationary engineers and auxiliary equipment operators
H222 Power systems and power station operators
H3 Machinists, metal forming, shaping and erecting occupations
H31 Machinists and related occupations
H311 Machinists and machining and tooling inspectors
H312 Tool and die makers
H32 Metal forming, shaping and erecting occupations
H321 Sheet metal workers
H322 Boilermakers
H323 Structural metal and platework fabricators and fitters
H324 Ironworkers
H325 Blacksmiths and die setters
H4 Mechanics
H41 Machinery and transportation equipment mechanics (except motor vehicle)
H411 Construction millwrights and industrial mechanics (except textile)
H412 Heavy-duty equipment mechanics
H413 Refrigeration and air conditioning mechanics
H414 Railway carmen
H415 Aircraft mechanics and aircraft inspectors
H416 Machine fitters
H417 Textile machinery mechanics and repairers
H418 Elevator constructors and mechanics
H42 Motor vehicle mechanics
H421 Motor vehicle mechanics, technicians and mechanical repairers
H422 Motor vehicle body repairers
H43 Other mechanics
H431 Oil and solid fuel heating mechanics
H432 Electric appliance servicers and repairers
H433 Electrical mechanics
H434 Motorcycle and other related mechanics
H435 Other small engine and equipment mechanics
H5 Other trades, n.e.c.
H51 Upholsterers, tailors, shoe repairers, jewellers and related occupations
H511 Upholsterers
H512 Tailors, dressmakers, furriers and milliners
H513 Shoe repairers and shoemakers
H514 Jewellers, watch repairers and related occupations

Stub
H52 Printing press operators, commercial divers and other trades and related occupations, n.e.c.
H521 Printing press operators
H522 Commercial divers
H523 Other trades and related occupations
H53 Other installers, repairers and servicers
H531 Residential and commercial installers and servicers
H532 Waterworks and gas maintenance workers
H533 Automotive mechanical installers and servicers
H534 Pest controllers and fumigators
H535 Other repairers and servicers
H6 Heavy equipment and crane operators including drillers
H61 Heavy equipment operators
H611 Heavy equipment operators (except crane)
H612 Public works maintenance equipment operators
H62 Crane operators, drillers and blasters
H621 Crane operators
H622 Drillers and blasters - Surface mining, quarrying and construction
H623 Water well drillers
H7 Transportation equipment operators and related workers, excluding labourers
H71 Motor vehicle and transit drivers
H711 Truck drivers
H712 Bus drivers and subway and other transit operators
H713 Taxi and limousine drivers and chauffeurs
H714 Delivery drivers
H72 Train crew operating occupations
H721 Railway and yard locomotive engineers
H722 Railway conductors and brakemen
H73 Other transport equipment operators and related workers
H731 Railway yard workers
H732 Railway track maintenance workers
H733 Deck crew, water transport
H734 Engine room crew, water transport
H735 Lock and cable ferry operators and related occupations
H736 Boat operators
H737 Air transport ramp attendants
H8 Trades helpers, construction and transportation labourers and related occupations
H81 Longshore workers and material handlers
H811 Longshore workers
H812 Material handlers
H82 Trades helpers and labourers
H821 Construction trades helpers and labourers
H822 Other trades helpers and labourers
H83 Public works and other labourers, n.e.c.
H831 Public works and maintenance labourers
H832 Railway and motor transport labourers
I Occupations unique to primary industry
I0 Occupations unique to agriculture excluding labourers

Stub
I01 Contractors, operators and supervisors in agriculture, horticulture and aquaculture
I011 Farmers and farm managers
I012 Agricultural and related service contractors and managers
I013 Farm supervisors and specialized livestock workers
I014 Nursery and greenhouse operators and managers
I015 Landscaping and grounds maintenance contractors and managers
I016 Supervisors, landscape and horticulture
I017 Aquaculture operators and managers
I02 Agriculture and horticulture workers
I021 General farm workers
I022 Nursery and greenhouse workers
I1 Occupations unique to forestry operations, mining, oil and gas extraction and fishing, excluding labourers
I11 Supervisors, logging and forestry
I111 Supervisors, logging and forestry
I12 Supervisors, mining, oil and gas
I121 Supervisors, mining and quarrying
I122 Supervisors, oil and gas drilling and service
I13 Underground miners, oil and gas drillers and related workers
I131 Underground production and development miners
I132 Oil and gas well drillers, servicers, testers and related workers
I14 Mine service workers and operators in oil and gas drilling
I141 Underground mine service and support workers
I142 Oil and gas well drilling workers and services operators
I15 Logging machinery operators
I151 Logging machinery operators
I16 Logging and forestry workers
I161 Chain-saw and skidder operators
I162 Silviculture and forestry workers
I17 Fishing vessel masters and skippers and fishermen
I171 Fishing masters and officers
I172 Fishing vessel skippers and fishermen
I18 Other fishing and trapping occupations
I181 Fishing vessel deckhands
I182 Trappers and hunters
I2 Primary production labourers
I21 Primary production labourers
I211 Harvesting labourers
I212 Landscaping and grounds maintenance labourers
I213 Aquaculture and marine harvest labourers
I214 Mine labourers
I215 Oil and gas drilling, servicing and related labourers
I216 Logging and forestry labourers
J Occupations unique to processing, manufacturing and utilities
J0 Supervisors in manufacturing
J01 Supervisors, processing occupations
J011 Supervisors, mineral and metal processing
J012 Supervisors, petroleum, gas and chemical processing and utilities

Stub
J013 Supervisors, food, beverage and tobacco processing
J014 Supervisors, plastic and rubber products manufacturing
J015 Supervisors, forest products processing
J016 Supervisors, textile processing
J02 Supervisors, assembly and fabrication
J021 Supervisors, motor vehicle assembling
J022 Supervisors, electronics manufacturing
J023 Supervisors, electrical products manufacturing
J024 Supervisors, furniture and fixtures manufacturing
J025 Supervisors, fabric, fur and leather products manufacturing
J026 Supervisors, other mechanical and metal products manufacturing
J027 Supervisors, other products manufacturing and assembly
J1 Machine operators in manufacturing
J11 Central control and process operators in manufacturing and processing
J111 Central control and process operators, mineral and metal processing
J112 Petroleum, gas and chemical process operators
J113 Pulping control operators
J114 Papermaking and coating control operators
J12 Machine operators and related workers in metal and mineral products processing
J121 Machine operators, mineral and metal processing
J122 Foundry workers
J123 Glass forming and finishing machine operators and glass cutters
J124 Concrete, clay and stone forming operators
J125 Inspectors and testers, mineral and metal processing
J13 Machine operators and related workers in chemical, plastic and rubber processing
J131 Chemical plant machine operators
J132 Plastics processing machine operators
J133 Rubber processing machine operators and related workers
J134 Water and waste plant operators
J14 Machine operators and related workers in pulp and paper production and wood processing
J141 Sawmill machine operators
J142 Pulp mill machine operators
J143 Papermaking and finishing machine operators
J144 Other wood processing machine operators
J145 Paper converting machine operators
J146 Lumber graders and other wood processing inspectors and graders
J15 Machine operators and related workers in textile processing
J151 Textile fibre and yarn preparation machine operators
J152 Weavers, knitters and other fabric-making occupations
J153 Textile dyeing and finishing machine operators
J154 Textile inspectors, graders and samplers
J16 Machine operators and related workers in fabric, fur and leather products manufacturing
J161 Sewing machine operators
J162 Fabric, fur and leather cutters
J163 Hide and pelt processing workers
J164 Inspectors and testers, fabric, fur and leather products manufacturing
J17 Machine operators and related workers in food, beverage and tobacco processing

Stub
J171 Process control and machine operators, food and beverage processing
J172 Industrial butchers and meat cutters, poultry preparers and related workers
J173 Fish plant workers
J174 Tobacco processing machine operators
J175 Testers and graders, food and beverage processing
J18 Printing machine operators and related occupations
J181 Printing machine operators
J182 Camera, platemaking and other pre-press occupations
J183 Binding and finishing machine operators
J184 Photographic and film processors
J19 Machining, metalworking, woodworking and related machine operators
J191 Machining tool operators
J192 Forging machine operators
J193 Woodworking machine operators
J194 Metalworking machine operators
J195 Welders and soldering machine operators
J196 Other metal products machine operators
J197 Other products machine operators
J2 Assemblers in manufacturing
J21 Mechanical, electrical and electronics assemblers
J211 Aircraft assemblers and aircraft assembly inspectors
J212 Motor vehicle assemblers, inspectors and testers
J213 Electronics assemblers, fabricators, inspectors and testers
J214 Assemblers and inspectors, electrical appliance, apparatus and equipment manufacturing
J215 Assemblers, fabricators and inspectors, industrial electrical motors and transformers
J216 Mechanical assemblers and inspectors
J217 Machine operators and inspectors, electrical apparatus manufacturing
J22 Other assembly and related occupations
J221 Boat assemblers and inspectors
J222 Furniture and fixture assemblers and inspectors
J223 Other wood products assemblers and inspectors
J224 Furniture finishers and refinishers
J225 Plastic products assemblers, finishers and inspectors
J226 Painters and coaters, manufacturing
J227 Plating, metal spraying and related operators
J228 Other assemblers and inspectors
J3 Labourers in processing, manufacturing and utilities
J31 Labourers in processing, manufacturing and utilities
J311 Labourers in mineral and metal processing
J312 Labourers in metal fabrication
J313 Labourers in chemical products processing and utilities
J314 Labourers in wood, pulp and paper processing
J315 Labourers in rubber and plastic products manufacturing
J316 Labourers in textile processing
J317 Labourers in food, beverage and tobacco processing
J318 Labourers in fish processing
J319 Other labourers in processing, manufacturing and utilities

Appendix D. 2001 Census Products and Services

The census is a reliable source for describing the characteristics of Canada's people and dwellings. The range of products and services derived from census information is designed to produce statistics that will be useful, understandable and accessible to all users. Sources, such as the *2001 Census Catalogue*, the Statistics Canada Web site (<http://www.statcan.ca>) and, specifically, the On-Line Catalogue, contain detailed information about the full range of 2001 Census products and services.

There are several new product and service features for the 2001 Census:

1. Media

- The Internet is the preferred medium for disseminating standard data products and reference products.
- More census data are available to the public free of charge via the Internet.

2. Content

- Data tables for the 2001 Census are released by **topics**, that is, groups of variables on related subjects.
- Wherever possible, the language and vocabulary used in 2001 Census products available on the Internet is simplified to make the information accessible to more people.
- Users are offered various methods of searching and navigating through **census standard products** (including **reference products** on the Internet).

3. Geography

- Geographic units such as dissemination areas, urban areas, designated places and metropolitan influenced zones were added to the standard products line. Some new units, such as dissemination areas, replace others.

4. Variables

- Information on the following new subjects was collected in the 2001 Census: birthplace of parents, other languages spoken at home and language of work. The 2001 questionnaire also included the question on religion, which is asked in every decennial census. The family structure variable was broadened to include same-sex couples.