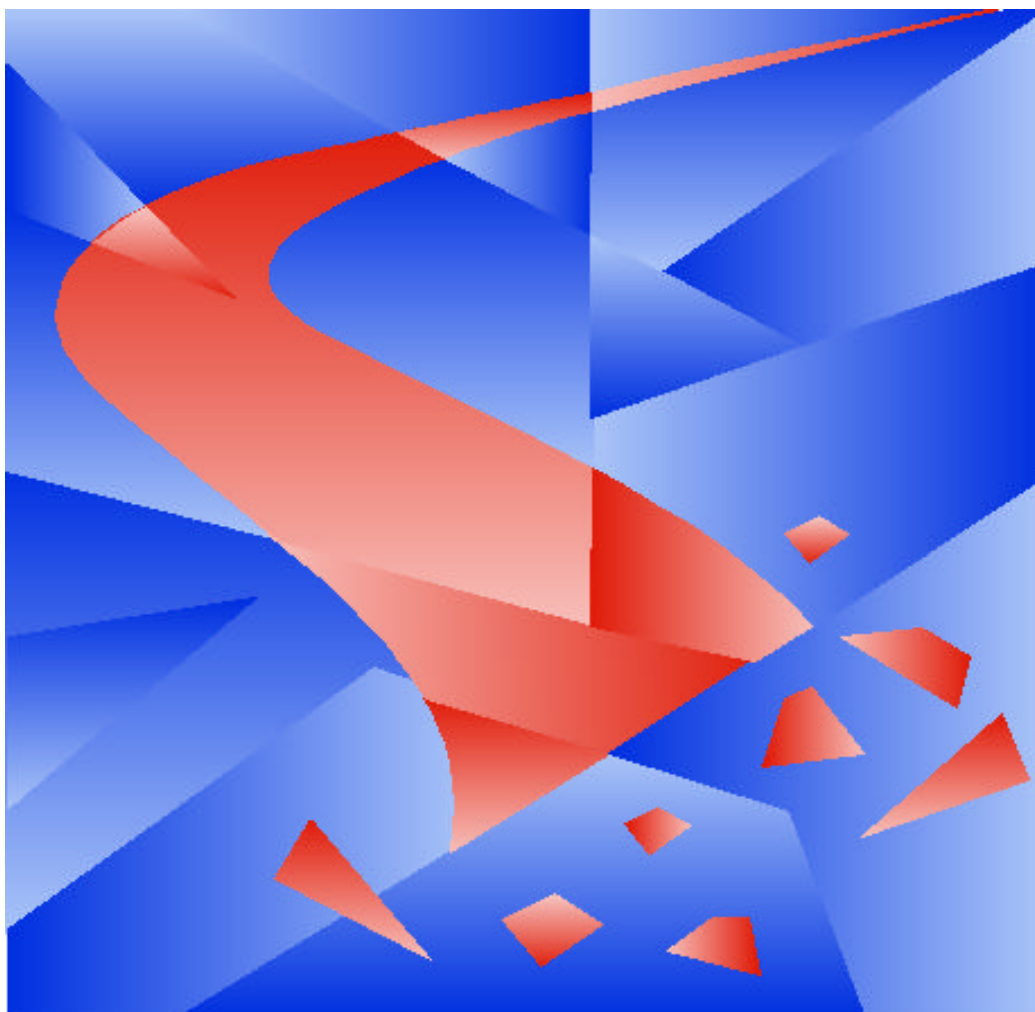


Catalogue No. 84-546-XCB



Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965 - 1991



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Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-1991

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June, 2000

**Catalogue Number 84-546-XCB
ISBN: 0-660-59382-3
Frequency: Occasional**

Ottawa

Note of Appreciation

Canada owes the success of its statistical system to a long-standing co-operation involving Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

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PREFACE

This report introduces a Canadian occupational surveillance system. It includes i) a brief review of the methodology, ii) highlights of selected comparisons between occupations and iii) mortality risks, plus a discussion of the strengths, limitations and quality of the data. Complete results are available in the accompanying ASCII file found on the root of this CD-ROM. The ASCII file record layout and data dictionary showing the contents of this file can be found both on the root of this CD-ROM and also in Appendix 7. Wherever there is at least one death for the specific cause for the occupation, the result is included in the set of prepared FULL TABLES. These FULL TABLES are prepared in two formats which can be viewed both by cause of death (Table 1) and by occupation (Table 2). These tables contain all relative risks whether less than, equal to, or greater than one. In addition, a second set of prepared SELECTED TABLES can also be viewed. The selection criteria used are relative risk > 1 , number of observed deaths ≥ 5 , and p-value < 0.05 . They can be viewed similarly by cause of death (Table 3) and by occupation (Table 4). Both sets of tables are included on this CD-ROM after the appendices. The tables have been prepared in EXCEL and can be downloaded by those with Excel, Lotus and Quatro-Pro. The CD-ROM includes a viewer for those without compatible software.

How to Obtain More Information

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For technical support call: Lucie Desjardins, Manager of the Electronic Products
HelpLine at 1 800 949-9491

Citation Recommendation:

Aronson KJ, Howe GR, Carpenter M, Fair ME. *Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-1991*. CD-ROM (Catalogue no. 84-546-XCB) Ottawa: Statistics Canada, 2000.

ACKNOWLEDGEMENTS

This study was conducted through the collaboration of university researchers, Employment Canada, and Statistics Canada, with additional funding from the National Cancer Institute of Canada, through their Epidemiology Unit at the University of Toronto. This mortality update study was funded by Health Canada through the National Health Research and Development Program (NHRDP), grant number 6606-5027-53. Dr. Aronson was supported in part through a Research Scholar Award, also from NHRDP. She is now supported through a Career Scientist Award from the Ontario Ministry of Health.

Special thanks is given to Pierre Lalonde, Kevin Buzdygan, Trung Dang, Jason Bennett and Russell Wilkins at Statistics Canada; Lucille Poirier at Health Canada; Sevag Serimazi at University of Toronto; Tong Li, Susan Squires, and Tanya Weston at Queen's University. We are especially grateful to Dr. Lorraine Marrett for helpful comments in reviewing the original manuscript.

Finally, we wish to thank the vital statistics registrars in each of the provinces and territories of Canada for their agreement to release their data from the Canadian Mortality Data Base for this important study.

Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

SUMMARY

This CD-ROM product presents information and results of a follow-up study of approximately 700,000 workers (457,224 men and 242,196 women) employed between 1965 and 1971, constituting approximately 10% of the Canadian labour force at that time. The purpose of this study is to identify and show potential associations detected between possible workplace exposures and specific causes of death. It provides an unique and useful occupational surveillance system.

Each individual's occupation was available from a federal labour force survey, and the mortality of the cohort between 1965 and 1991 has been determined by computerized record linkage to the national death file, the Canadian Mortality Data Base. Relative risks and 95% confidence intervals have been determined.

There were almost 116,000 deaths among men and over 26,800 deaths among women. More than 27,000 comparisons between occupations and specific causes of death groupings can be accessed through the ASCII file and the full prepared tables available on the CD-ROM.

Some of the findings presented here may simply be due to chance, since so many comparisons have been investigated. While some of these potential associations confirm earlier work, most have not been the subject of previous study, and thus no earlier evidence is available for comparison. Where excess mortality risk is apparent through the use of this occupational surveillance system, further research should be conducted to confirm it. Ultimately, this work may lead to action to reduce or prevent excess mortality risk associated with specific occupations.

Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

1. INTRODUCTION

Most advances in the understanding of occupational hazards have been motivated by anecdotal reports of extreme risk among workers (bladder cancer in dye workers, for example) and from the results of studies that have concentrated on specific occupations (asbestos workers, for example). However, many occupational hazards may remain undetected because they are not the subject of systematic study. In fact, for the vast majority of workplace environments, there is no evidence concerning hazard one way or the other, and recognized risks may represent only the tip of the iceberg (Siemiatycki, 1991).

Occupational surveillance can be defined as the systematic collection, evaluation and dissemination of data relating workplace exposures to disease or mortality, with the ultimate aim of reducing or preventing excess risk (Langmuir, 1963; Baker et al., 1989). Relatively few surveillance systems have been set up to routinely monitor for associations between occupation and mortality. There are a number of examples of countries which produce publications which tabulate deaths by occupation, where occupation and cause of death is captured from the death registration. These include the statistical reports and decennial supplements for England and Wales, which have used mortality data to give reports on patterns of mortality by occupation groups from 1851 (Office of Population Censuses and Surveys, 1995); mortality by occupation, industry and cause of death for 24 States in the United States (Burnett et al, 1997); plus a number of separate U.S. States especially North Carolina (Surles et al, 1999), Washington (Milham, 1983), California (Petersen and Milham, 1980), Massachusetts (Dubrow and Wegman, 1984) and Rhode Island (Gute, 1981). In Canada death registration data with occupation has been published by British Columbia from 1950-84 (Gallagher et al, 1989).

Other studies in a number of countries link death certificate and census data, or cancer incidence and census data to follow up health outcomes. These include the United Kingdom for its 1% sample of the 1971 census population (Goldblatt, 1990), Norway (Borgan and Kristofersen, 1986), Sweden (Statistiska Centralbyran, 1982), Finland (Marin, 1986; Pukkala, 1995), Denmark (Andersen, 1985) and the combined Nordic countries (Nordic Statistical Secretariat, 1988; Andersen et al, 1999).

Studies of linked data such as this one, where occupation for a specific large cohort is collected at the time of employment and then followed up to see what happens to an individual with other sources such as mortality or cancer, are much rarer. The origin of this study was a research report by Dr. Howard Newcombe (Newcombe, 1974) prepared for the Environmental Secretariat of the National Research Council Associate Committee on Scientific Criteria for Environmental Quality. The present study takes advantage of a previously established set of Canadian data and the availability of the computerized record linkage system to link this to the Canadian Mortality Data Base to create a surveillance system that can provide valuable information at a relatively low cost. This study is unique in that it is able to ascertain subsequent mortality in a large cohort of working Canadians about whom occupational information was collected before death. As well, this study unlike most previous work, identifies occupation-related mortality risks among women. Increasingly, women are participating in the labour force and taking on less traditional, more hazardous employment (Passannanate and Nathanson, 1987). By 1994, women constituted 45% of Canada's labour force, up from 37% in 1970 and just 27% in 1960 (Statistics Canada, 1995). Occupational hazards for the vast majority of working women have not previously been studied (Klitzman et al., 1990). The utility of this cohort for examining associations between work and cancer among women was the subject of an earlier publication (Aronson and Howe, 1994).

2. OBJECTIVES

The aim of this study was to determine the mortality experience of the cohort of approximately 700,000 persons from 1965 to the end of 1991, thus providing up to 27 years of follow-up, and to determine the associations between job titles and specific causes of death for both women and men.

The purpose of this as a surveillance system is to consolidate the results in a systematic way and disseminate them to those who need to know, particularly those who are in a position to take further action. This will also help to identify previously unsuspected potential associations between occupations and cause-specific mortality risk.

3. THE FILES AND METHODS

3.1 The Files

3.1.1 Canadian Occupational Cohort

This cohort was created through the collaboration of Employment Canada, Statistics Canada, and university researchers with additional funding from the National Cancer Institute of Canada and Health Canada.

As part of their mandate to collect statistics on employment patterns in Canada, Employment Canada conducted a national survey between 1965 and 1971. Employers were contacted and asked to provide information for each individual they employed, who contributed to Canadian unemployment insurance and whose Social Insurance Number (S.I.N.) ended in the digit "4" for the years 1965-1968, and from 1969 through 1971 for those whose numbers which ended in the number 4 preceded by an odd number. The information collected was: S.I.N., given name, surname, year of birth, and occupation and industry in which that individual was currently employed. This constituted approximately a 10% sample of Canadian workers up to 1968 and approximately 5% from 1969-1971, who were covered under the Unemployment Insurance Act at the time.

Approximately 3 million records were collected during the survey. Since one individual could have up to six records on the file (i.e., for 1965 through 1969, and for 1971), it was first necessary to bring together records referring to the same individual. This was done by sorting the file on S.I.N. and then by cross-checking the names, sex and years of birth for individuals with the same S.I.N. (Howe and Lindsay, 1983). This formed composite occupational histories. Less than 0.1% of the records were sufficiently discrepant to indicate that they referred to different individuals. The discrepant records were dropped from the file.

To link the cohort records to the Canadian Mortality Data Base, it was necessary to abstract further identifying information from the master file of S.I.N.s maintained by the federal government. The S.I.N. is not generally available from death data, and the other identifying information available for the cohort was considered potentially inadequate for record linkage. However, comparison with the master S.I.N. index file provided detailed information on a number of identifiers, including surname, first and second given names, complete date of birth, sex, mother's maiden name, and province of most recent employment. The quality and

completeness of the master index file is extremely high, and therefore, the resulting record linkage to the Canadian Mortality Data Base was also of very high quality.

As the data were collected, occupation data were coded centrally at Statistics Canada using the 1961 census Standard Occupation Codes (SOC) (Statistics Canada, 1961) for data collected between 1965 and 1969, and the 1971 census codes (Statistics Canada, 1971) for data collected in 1971. Data for the year 1970 were lost before the start of this study. The 1961 Canadian Occupational Classification Manual (Statistics Canada, 1961) contains 274 3-digit job-title codes. The 1971 occupation codes are 4 digits, and are much more extensive, constituting several thousand in all. The data for analysis, therefore, consisted of a cohort of 699,420 individuals: 457,224 men, and 242,196 women for the years 1965-1971 (excluding 1970).

The two occupational coding groups were analysed separately as the 1961 and 1971 occupation codes were not compatible. Complete lists of the three-digit 1961 codes and the four-digit 1971 codes are given in Appendices 1 - 4. Appendices 1 and 2 provide the occupation codes sorted numerically by code number for the 1961 and 1971 codes respectively. Appendices 3 and 4 provide the occupation codes sorted alphabetically for 1961 and 1971 respectively. For this report, occupations were divided into two socio-economic groups: "white-collar" (professional and semi-professional workers) and "blue-collar" (non-professional workers).

3.1.2 Canadian Mortality Data Base (CMDB)

The Canadian Mortality Data Base is a file in machine readable form containing approximately 7.9 million death events from 1950 to 1997, reported by all Canadian provinces and territories. The file is updated annually. It contains, among other variables, identifying information including names, plus the date, place and coded cause of death, sex, residence, birth date and place..

The CMDB is maintained at Statistics Canada in Ottawa, on microfiche and computer tape, with source records also on microfilm and computer optical imaging. Since its creation in the late 1970's, this file has been used for many national historical mortality record linkage research studies, epidemiology studies and the generation of other statistical products (Smith and Newcombe, 1982). Strict confidentiality of all records is maintained in accordance with the Statistics Act and Privacy Act of Canada.

A subset of the CMDB was used for this project consisting of death events for the years 1965-1991, amounting to 4.6 million records.

For subjects identified in the Canadian Mortality Data Base as having died between 1965 and the end of 1991, the underlying cause of death was obtained from the CMDB as coded from the death registrations. The cause of death codes are based on the International Classification of Disease Codes in effect at the time of death included ICD-7 from 1965-1968 (WHO, 1957); ICDA-8 from 1969-1978 (NCHS 1968); and ICD-9 from 1979-1991 (WHO 1979). These historic individual cause of death codes were combined into 70 cause of death code groups for this study. Appendices 5 and 6 outline the cause of death groupings: Appendix 5 shows the causes of death sorted numerically by code group and Appendix 6 gives the same list sorted alphabetically by the short title.

3.2 Follow-up Procedures

Records from employment surveys of about 10% of the Canadian labour force between 1965 and 1971 were linked with records of deaths that occurred from 1965 through 1991 among the people identified in the surveys.

In 1993-1994, a record linkage with the Canadian Mortality Data Base was conducted to determine the mortality experience of the cohort. To ensure consistent quality of the linkage procedure over the entire study period, previous linkages were disregarded and this linkage, using improved computer matching techniques, covered the period 1965 through to the end of 1991. Seventy specific causes of death were investigated in relation to 670 occupational titles.

As a complement to the death search, Statistics Canada conducted an "alive" search to verify that those not found deceased were indeed alive. The advantage of the "alive" search is that instead of having to assume, say, an alive status to all that are not found dead, some proportion of the percent of lost to follow-up, i.e. those who did not die, will be known for this cohort. This methodology also helps verify the results of the death linkage. Elsewhere, evaluations of linking a specific occupational cohort to the CMDB and comparing computerised linkage with more traditional manual follow-up methods have reported about 4% of deaths not

found (Shannon et al, 1989; Goldberg et al, 1993). This is mainly due to deaths occurring outside Canada. The occupational cohort was matched to a summary historical income tax file for 1984-1991 through the availability of the S.I.N. to determine if the person was alive, dead or emigrated. Only summary tabular information (i.e. not specific to individuals) was made available to researchers outside Statistics Canada.

3.3 Statistical Analysis

There are many possible strategies for analysing this type of surveillance data. Separate but parallel analyses were performed for men and women, and separately for those working in 1965 through 1969 and in 1971, since the two coding schemes used in these two periods could not be combined. An individual was defined as being "exposed" to a particular occupation if he or she was employed during at least one year of the survey; that is, individuals working in more than one occupation were counted again as exposed for each occupation in which they worked: there was an average of 1.06 jobs per person. Observed deaths were classified by occupation, two age groups (15-64, and all ages 15 and older) and specific cause of death.

To obtain a measure of risk associated with each occupation, comparisons were made only within the labour force cohort. That is, internal standardization was used (Breslow and Day, 1987). This is the preferred approach for avoiding the healthy worker effect (McMichael, 1976; Howe et al., 1988; Thun, 1991), which occurs when workers are compared to the general population. In an effort to take socio-economic status into consideration, the cohort was divided into two broad groups representing professional and non-professional roles. Each occupation was classified into one of six levels of the Pineo scale, a scheme for classifying occupations according to income and status (Pineo, 1985). The first three levels constituted professional or "white-collar" jobs (professional and high-level managerial; semi-professional, technical and middle managerial; supervisors, foremen and forewomen). The other three classifications were grouped into non-professional or "blue-collar" jobs (skilled workers and employees; semi-skilled workers and employees; unskilled workers and employees). Occupation, other (i.e. not specified) was always blue. Appendices 1-4 listing occupations and occupation codes show the label of "blue" or "white" for each occupation.

The magnitude of associations is measured by the relative risk, with 95% confidence intervals based on a Poisson distribution. Relative risks were calculated separately for each

occupation, by sex, cause of death, and by two age at risk categories, namely ages 15 to 64 and all ages (15 and older). The former age group enables identification of potential occupational associations appearing at younger ages, e.g. accidents. The latter group, in addition, allows for any latency time that may be associated with occupational exposures. All analyses were stratified by five-year age and calendar periods.

The analysis compared the rate of death for each specific cause in one occupation with that observed in the comparison group, which consisted of the entire sub-group of the cohort in the same sex and Pineo socio-economic classification (white or blue collar) (Pineo, 1985). This means that the mortality rate for each specific cause in one occupation was compared to that in all occupations within the same sex and occupational classification, and the ratio of the rates is expressed as the relative risk. For example, the rate of lung cancer among male miners was compared with that among all male blue-collar workers. Age-adjustment was done in five year groups, and analyses were conducted separately for men and women. Within each sex, two age-at-death groups were considered (all ages 15 and older, and ages 15 to 64). Analysis using the AMFIT package within EPICURE (EPICURE, 1993) produced the maximum likelihood estimate of relative risk. Tests of significance and confidence intervals around the relative risk were estimated using the likelihood ratio method.

In summary, for each occupation, the absolute number of people who worked in that occupation and the person-years they contributed to follow-up from their entry into the cohort until the time of death, or to the end of 1991 if they were still alive, is presented. The absolute number of deaths is presented for each cause of death, as well as the relative risk associated with the particular occupation and its 95% confidence interval. The p-value refers to the log-likelihood ratio statistic for each fit of the regression model.

Thousands of comparisons were made in this analysis. Caution should be exercised in interpreting statistically significant relative risks. Just due to chance alone, several hundred relative risks would be expected to be statistically significant at least at the $p < 0.05$ level. While this approach was warranted in order to find potentially new associations that might otherwise not be the subject of study, testing these potential associations in subsequent studies is necessary.

3.4 Ethical Issues

Statistics Canada approved the record linkage, and the vital statistics Registrar General in each province/territory granted permission to release mortality data from the Canadian Mortality Data Base for analysis. Approval was also given by a Human Ethics Review Committee at the Office of Research Services, University of Toronto, and by the Ethics Committee, Faculty of Health Sciences, Queen's University.

The confidentiality of individuals has been protected throughout the creation and use of this database. Before researchers outside Statistics Canada can handle the data, all names are deleted. Individuals are identified only by a Statistics Canada identification number which cannot be linked to other databases. Personal identifiers were kept under security regulations by Statistics Canada and were not available to the university researchers. No subject was contacted, and it is not possible to identify any individual in any report.

3.5 Previous Analyses of this Cohort

Two previous computerized record linkages of this cohort to the Canadian Mortality Data Base have been conducted. The first covered deaths to the end of 1973, and the cancer mortality results for men were published (Howe and Lindsay, 1983). The second linkage, which updated mortality to the end of 1979, was the focus of a Ph.D. thesis by Dr. Joan Lindsay (Lindsay, 1989), and updated results for cancer mortality among men were published (Lindsay et al., 1993). The smaller size of the female group and their relatively young age has prohibited meaningful analysis until now (Aronson and Howe, 1994).

4. RESULTS

4.1 Descriptive Results

The maximum length of follow-up for this study was 27 years, with over 457,000 men contributing over 11 million person-years, and over 242,000 women, more than 6 million. There were almost 116,000 deaths among men and over 26,800 among women: see Table 4.1 for details. The statistical analyses yielded over 27,000 comparisons between occupations and specific causes of death. The study has examined the results within 8 categories; sex (female, male), socio-economic classification (blue collar, white collar), and for each of these four, two age-groups (15-64, all ages 15+).

Cohort Description Table
Table 4.1

	MALES			FEMALES			TOTAL		
	Blue Collar	White Collar	Total	Blue Collar	White Collar	Total	Blue Collar	White Collar	Total
Individuals			457,224			242,196			699,420
Persons counted in all occupations	405,841	88,687	494,528	223,229	24,096	247,325	629,070	112,783	741,853
Person-Years	9,443,114	1,966,873	11,409,987	5,473,232	536,042	6,009,274	14,916,346	2,502,915	17,419,261
No. of Associations Occup-Death	14,523	5,598	20,121	5,607	1,869	7,476	20,130	7,467	27,597
Deaths									
All ages 15+	97,773	18,184	115,957	24,088	2,752	26,840	121,861	20,936	142,797
Ages 15-64	45,137	8,382	53,519	1,229	1,124	12,353	56,366	9,506	65,872

Source: Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-1991

Overall, about 19% had died according to the CMDB. In addition to the ~19% deaths, it was possible through the "alive" follow-up to verify that an additional ~70% of the cohort was still alive in 1991. For the remainder of ~11% vital status could not be determined; they were not found to be dead, or among the tax filers for 1991. This remaining percentage would be a mixture of those dying outside Canada, non-residents/emigrants who are still alive, and/or living persons in Canada who did not file a tax return in 1991.

4.2 Results: FULL TABLES

With such a large pool of results, it is very difficult to make selections that would please everyone. We have, therefore, provided all the results in a set of prepared FULL TABLES for readers to browse through and make their own selections (see "DATA" button). These FULL TABLES are sorted into 70 causes of death and 670 occupations. Where no death occurred in a particular occupation/cause-of-death combination, statistical information is not presented. (See under the DATA button, prepared Table 1. FULL TABLES: All Results by Cause of Death; and prepared Table 2. FULL TABLES: All Results by Occupation).

4.3 Results: SELECTED TABLES (RR > 1, Observed Deaths [≥] 5, and p-value < 0.05)

Tables have also been prepared to highlight cases of suggested increased risk. This second set of tables is based on the relative risk being greater than 1, the number of observed deaths being greater than or equal to 5, and the p-value being less than 0.05. These SELECTED TABLES are presented using the same 70 causes of death and 670 occupations. (See under the DATA button, prepared Table 3, SELECTED TABLES: Selected Results by Cause of Death, and prepared Table 4, SELECTED TABLES: Selected Results by Occupation).

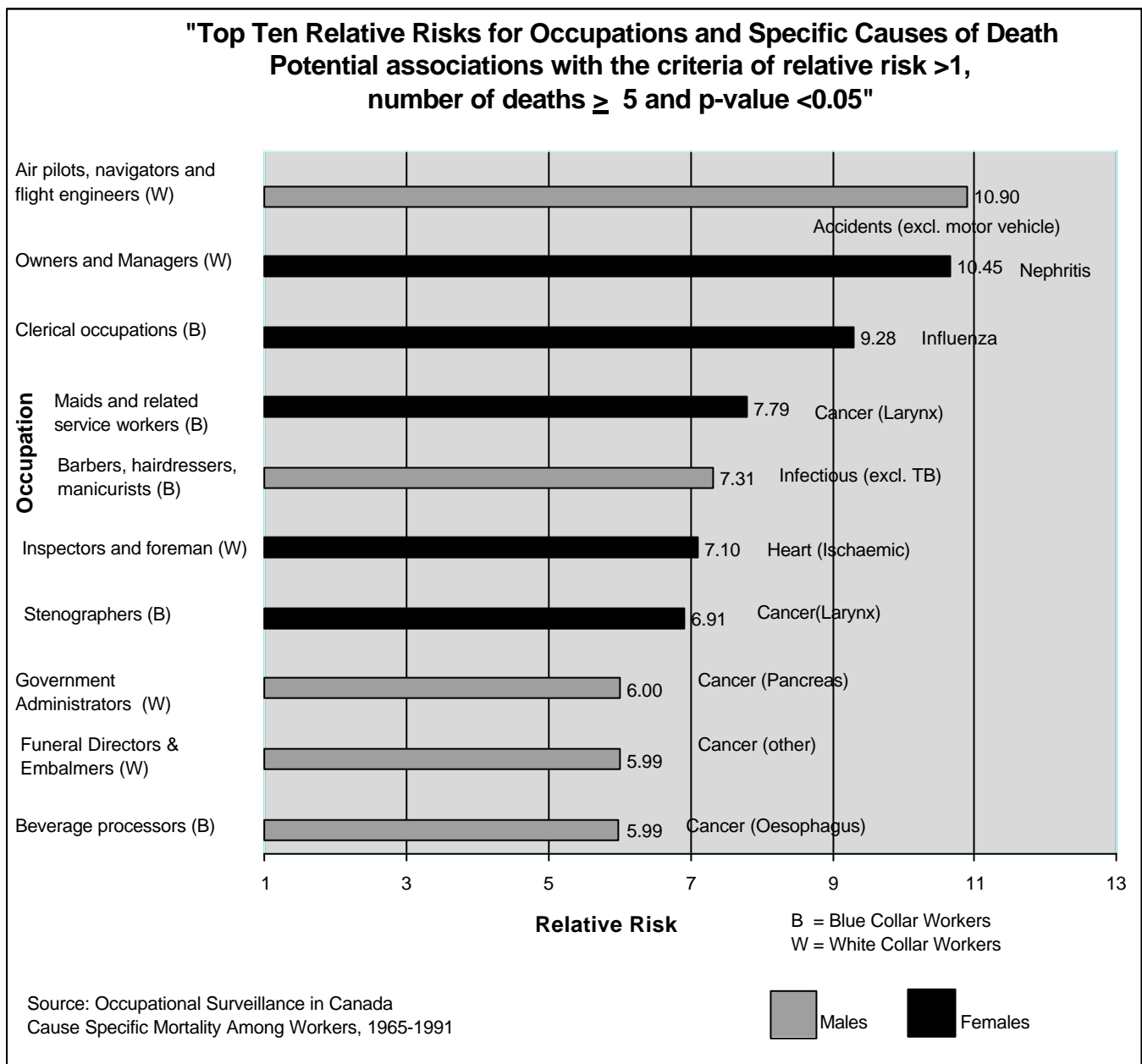
4.4 Results: Some Highlight Examples

In addition to the prepared tables giving the complete results and the selected results as detailed above, some highlights are given as examples of the way in which other information can be obtained from the data.

4.4.1 Top 10 Relative Risks by Specific Causes of Death

Figure 4.1 provides a graphic presentation of the study's relative risk estimates with 95% confidence intervals for each of the ten top relative risk findings by specific causes of death.

Figure 4.1



4.4.2 Highest Relative Risks by Sex and Occupational Classification

Tables 4.2 to 4.5 provide another way of looking at the results, listing occupations with the highest relative risk for a specific cause of death for each sex and each of the two socio-economic classifications. The four tables are prepared for ~~the four categories of~~ the selected top 12 relative risks for occupations analysed by sex and occupational classification (blue-collar and white-collar workers). Results are given where the number of deaths for that occupation and specific cause is greater than or equal to 5 and the p-value is less than 0.05.

Table 4.2
Female Blue-Collar Workers

Twelve potential associations between occupations and specific causes of death for female blue-collar workers.

Selection Criteria: Relative Risk > 1; Deaths ≥ 5; p-value < 0.05

By descending order of relative risk.

Death Code Group	Death Cause	Occupation	Age Group	Person Years	Deaths	Rel. Risk	95% Confidence Interval
55	Influenza	Clerical Occupations	15-64	830,546	5	9.28	2.22 - 38.87
16	Cancer (Larynx)	Maids and related service workers	All	164,070	9	7.79	3.56 - 17.05
16	Cancer (Larynx)	Stenographers	15-64	460,245	5	6.91	2.25 - 21.28
			All	497,943	7	3.40	1.47 - 7.89
67	Suicide	Stock clerks and storekeepers	15-64	14,313	5	4.59	1.90 - 11.09
			All	16,400	5	4.08	1.69 - 9.86
49	Alcohol related mental disorders	Maids and related service workers	15-64	131,374	10	4.55	2.31 - 8.98
34	Myeloma	General office clerks	All	12,994	5	4.44	1.84 - 10.71
28	Cancer (Brain)	Dressmakers and seamstresses – not in factory	All	24,023	6	4.41	1.95 - 9.97
44	Leukaemia (Other)	Telephone operators	All	115,179	5	4.02	1.75 - 9.24
54	Cerebrovascular	Metalworking machine operators	15-64	10,907	7	3.97	1.88 - 8.36
66	Accidents (excl. Code 65*)	Other textile occupations	15-64	19,063	5	3.93	1.63 - 9.52
60	Cirrhosis (Non-alcoholic)	Dressmakers and seamstresses – not in factory	All	24,023	6	3.52	1.56 - 7.95
69	External (excl. Codes 65-68*)	Janitors and cleaners (building)	15-64	69,418	7	3.50	1.62 - 7.59

Source: Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

* See Appendix 5 for Cause of Death Codes sorted by death code group number

Table 4.3
Female White-Collar Workers

Twelve potential associations between occupations and specific causes of death for female white-collar workers.

Selection Criteria: Relative Risk > 1; Deaths ³ 5; p-value < 0.05

By descending order of relative risk.

Death Code Group	Death Cause	Occupation	Age Group	Person Years	Deaths	Rel. Risk	95% Confidence Interval
61	Nephritis	Owners and managers	15-64	42,423	5	10.45	2.38 - 45.89
52	Heart (Ischaemic)	Inspectors and foremen	15-64	2,843	6	7.10	3.13 - 16.13
			All	3,330	15	3.94	2.36 - 6.59
66	Accidents (excl. Code 65*)	Attendants, doctors' and dentists' offices	15-64	20,932	6	5.61	2.31 - 13.64
			All	22,517	7	4.78	2.14 - 10.70
58	Emphysema	Owners and Managers	All	54,267	6	4.68	1.55 - 14.12
21	Cancer (Cervix)	Accountants and auditors	All	29,288	5	4.58	1.71 - 12.28
50	Heart (Chronic Rheumatic)	Foremen	All	24,102	9	4.11	1.97 - 8.56
30	Cancer Other (excl. Codes 6-29*)	Science and engineering technicians	All	15,735	6	3.22	1.41 - 7.35
53	Heart (excl. Codes 50, 52*)	Accountants and auditors	15-64	25,506	5	3.18	1.20 - 8.46
11	Cancer (Colon)	Supervisors: Sales occupations, commodities	All	5,817	5	3.15	1.28 - 7.75
17	Cancer (Lung)	Supervisors: Other clerical and related occupations	All	7,161	7	2.59	1.21 - 5.57
17	Cancer (Lung)	Office managers	All	11,409	8	2.44	1.19 - 4.99
9	Cancer (Stomach)	Owners and managers	All	54,267	9	2.34	1.05 - 5.18

Source: Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

* See Appendix 5 for Cause of Death Codes sorted by death code group number

Table 4.4
Male Blue-Collar Workers

Twelve potential associations between occupations and specific causes of death for male blue-collar workers

Selection Criteria: Relative Risk > 1; Deaths ³ 5; p-value < 0.05

By descending order of relative risk

Death Code Group	Death Cause	Occupation	Age Group	Person Years	Deaths	Rel. Risk	95% Confidence Interval
2	Infectious (excl. TB)	Barbers, hairdressers, manicurists	15-64	24,813	9	10.93	5.62-21.26
			All	26,953	9	7.31	3.78-14.15
8	Cancer (Esophagus)	Beverage processors	All	10,404	5	5.99	2.48-14.45
60	Cirrhosis (Non-alcohol)	Paper makers	All	7,724	5	5.98	2.48-14.40
50	Heart (Chronic Rheumatic)	Policemen and detectives	15-64	19,502	5	5.89	2.43-14.25
6	Cancer (Lip)	Labourers (excl. agricultural, fishing, logging or mining operations)	15-64	1,763,229	5	5.87	1.58 - 21.89
44	Leukaemia (Other) (excl. Codes 35-43*)	Construction workers, n.e.s.	All	29,883	5	5.66	2.34 - 13.71
14	Cancer (Gallbladder)	Operators of earth-moving and other construction machinery, n.e.s.	15-64	79,185	5	5.49	2.22 - 13.56
66	Accidents (excl. Code 65*)	Pipefitting, plumbing and related occupations	All	2,799	5	5.28	2.19 - 12.70
66	Accidents (excl. Code 65*)	Rolling-mill operators	15-64	4,511	7	5.14	2.44 - 10.79
			All	5,377	7	4.26	2.03 - 8.94
60	Cirrhosis (Non-alcoholic)	Other clerical and related occupations, n.e.s.	15-64	14,865	5	4.94	2.05 - 11.92
16	Cancer (Larynx)	Bartenders	All	27,156	9	4.94	2.55 - 9.55
16	Cancer (Larynx)	Fitters and assemblers – metal	15-64	81,419	11	4.85	2.65 - 8.89

Source: Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

* See Appendix 5 for Cause of Death Codes sorted by death code group number

Table 4.5
Male White-Collar Workers

Twelve potential associations between occupations and specific causes of death for male white-collar workers.

Selection Criteria: Relative Risk > 1; Deaths ³ 5; p-value < 0.05

By descending order of relative risk.

Death Code Group	Death Cause	Occupation	Age Group	Person Years	Deaths	Rel. Risk	95% Confidence Interval
66	Accidents (excl. Code 65*)	Air pilots, navigators, and flight engineers	15-64	4,468	9	11.76	6.05 - 22.86
			All	4,622	9	10.90	5.61 - 21.16
15	Cancer (Pancreas)	Government administrators	All	3,759	5	6.0	2.48 - 14.53
30	Cancer (Other) (excl. Codes 6-29*)	Funeral directors and embalmers	All	4,187	5	5.99	2.48 - 14.47
44	Leukaemia (Other) (excl. Codes 35-43*)	Purchasing agents and buyers	All	27,623	5	5.90	2.35 - 14.82
5	All cancer	Foremen: Textile processing occupations	15-64	833	6	5.79	2.60 - 12.91
39	Leukaemia (Chronic myeloid)	Foremen, n.e.s.	15-64	190,770	5	5.10	1.60 - 16.27
30	Cancer (Other) (excl. Codes 6-29*)	Draughtsmen	15-64	8,844	5	4.68	1.93 - 11.37
66	Accidents (excl. Code 65*)	Logging foremen	15-64	6,930	7	4.51	2.13 - 9.57
69	External (excl. Codes 65-68*)	General foremen – construction	15-64	48,212	6	3.96	1.67 - 9.38
			All	57,340	6	3.79	1.60 - 8.96
24	Cancer (Prostate)	Civil engineers	All	7,095	5	3.94	1.63 - 9.52
15	Cancer (Pancreas)	Logging foremen	All	9,189	9	3.82	1.97 - 7.44
9	Cancer (Stomach)	Logging foremen	All	9,189	9	3.76	1.93 - 7.31

Source: Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-91

* See Appendix 5 for Cause of Death Codes sorted by death code group number

4.4.3 Additional Ways of Examining the Results

There are many ways of looking at the results. Some examples include (i) reviewing cases where the number of observed deaths is greater than a certain number (n), where n could be 20, 25, 50, or 100, for a particular occupation, for specific causes of death. This review could be undertaken with the selection of the relative risk being greater than 1 and the p-value less than 0.05 (or lower); (ii) examining cases where the relative risk is greater than, say, 2 (or 3) and the p-value less than 0.05 (or lower); (iii) checking specific occupations for the relative risk by cause of death, taking into account the number of observed deaths to determine the potential risk for that occupation; or (iv) making a selection on specific causes of death.

Some tables of other specific results have been included in a published journal article (Aronson et al, 1999).

5. DISCUSSION

5.1 General

Possible associations between occupational factors and health outcomes can be identified in these occupational surveillance data. As measured by the relative risk, a number of occupations are characterized by elevated mortality ($RR > 1$) for specific causes of death. Complete results, without reporting criteria, are available in the FULL TABLES. The SELECTED TABLES, selected on the basis of $RR > 1$, number of deaths ≥ 5 , and $p\text{-value} < 0.05$, show the more significant findings. Associations flagged here may confirm earlier research, but more often, they raise new hypotheses about which there is no prior evidence. By design, causal inference is not possible with this type of study, and further investigations must test the hypotheses raised here.

5.2 Strengths and Limitations

Several strengths and limitations must be considered in the interpretation of these results. This database is unique in that it contains occupational information collected before death, whereas most other systems rely on occupational information entered on death registrations. Further, unlike individual studies, one key advantage is the assessment of risk potentially associated with many occupations at once. However, it is a challenge to analyse the vast quantity of data and

present the results in a meaningful way. The interpretation of these results may be tempered by the accuracy and completeness of reporting occupation in the employment surveys and deaths and causes of death in the mortality data base; the absence of information on potential confounders; and employment selection patterns.

5.3 Quality of Data Sources

Occupational information was reported to the employment surveys by employers, so is probably quite reliable. It is certainly of higher quality than occupational information on death registrations, which is usually reported by the funeral director from the next-of-kin (where level of agreement with various other sources is in the range of 50% to 80% (Swanson et al., 1984; Steenland and Beaumont, 1984; Schumacher, 1986; Wigle et al, 1982). Many studies using death registrations as the source of occupational information have excluded women, since most women were classified as "housewife" or "homemaker" (Gallagher et al., 1989), which may mask employment outside the home.

The major limitation of this occupational surveillance system is it provides no information on job titles after 1971, the last year of the employment surveys used for this cohort. That is, the maximum duration of recorded job titles for individuals in the cohort is six years and their work histories after 1971 are not known. The stability of occupations over time varies by occupation. Occupations with a professional or vocational training usually represent relatively well life-long occupational history, whereas in less specialised occupations there is more heterogeneity. Therefore, an occupation at one point in time may or may not reflect lifelong occupational history, depending on the occupation. The effect of this potential misclassification for "unstable" occupations is to dilute risk estimates.

This study evaluates risks potentially associated with employment in a particular occupation for at least one year of the survey. This is based partly on the fact that for many people, employment for a survey year is likely to represent prior and future employment for a number of years, and partly because occupational mortality associations are often observed in individuals with comparatively limited occupational experience. The relatively high statistical power of this investigation for many occupations may offset the consequences of potential misclassification (and therefore, attenuated relative risks), since outcome assessment occurs often long after exposure assessment. Actual exposures or measures of exposure, such as duration and intensity, are not considered. Therefore, before more definitive associations are

established between occupation and cause of death, in-depth epidemiologic studies must be performed.

All deaths occurring in Canada are recorded in the Canadian Mortality Data Base. There are also notifications of some deaths occurring in the United States for Canadian residents. The accuracy of the files used for the record linkage was enhanced by the availability of Social Insurance Number. An additional linkage to income tax files within Statistics Canada was made to determine who was still filing income tax returns to determine and help confirm their vital status. This procedure also provided evidence that the mortality linkage is of high quality. Coupled with the fact that this is an extremely large cohort, and that there are large numbers of subjects even for some very rare causes of death, the risk estimates are considered to be reliable. However, some of the categories of death used to allow examination of a wide spectrum of causes were broad and may mask important increases in risk that would be apparent in a more specific study of, for example, accidents. This was intended to be a "big picture" study of the potential impact of occupations on causes of death. Finally, for many non-cancer outcomes, mortality may be a poor indicator of non-fatal chronic conditions that are associated with specific occupations.

5.4 Confounders

The study has limitations, particularly the absence of individual data on potential confounders such as smoking. Associations between occupations and causes of death may reflect socio-economic status (for example, income and educational attainment), which in turn, entails lifestyle confounding factors such as smoking or alcohol consumption, and which may be more closely associated with mortality than the occupation per se. An attempt has been made to minimize this possible effect by comparing people within the same occupational class (white or blue collar), although such a broad classification into only two groups may not obviate the problem. These internal comparisons also avoid the healthy worker effect. Since the primary objective is to generate hypotheses, issues of confounding may properly be addressed in other data sources used to confirm or negate those hypotheses.

5.5 Generalizability

In terms of the cohort's representativeness of the entire Canadian working population, there appears to have been a reduced sampling of white-collar workers compared to blue-collar workers. Certain occupations, such as self-employed farmers, were excluded altogether. In addition, the S.I.N. was not introduced in Canada until 1964, so, when the survey started, not all individuals had been allocated a number. Workers with higher salaries and those who were self-employed, such as farmers who owned their farms, did not have to pay unemployment insurance and thus were less likely to obtain a S.I.N. The extent of the non-representativeness of the cohort cannot be quantified, but in view of the design of the study, this does not pose a problem in terms of selection bias, and the study may provide a reasonable approximation for inferences that involve generalization to the entire Canadian working population.

5.6 Multiple Tests

This study produced over 27,000 occupation, cause-specific, sex, and age group specific relative risks. Because so many comparisons have been made, the p-values of 0.05 or less should not be interpreted in the usual way as nominal values (i.e., a less than 1 in 20 chance). It is impossible to know which are true increased or decreased risks, and which occurred by chance alone. Nonetheless, this approach is justified by the objectives of this work, principally flagging all potential associations. The usual criterion of statistical significance should be viewed as only one tool in interpreting these data, with results from other studies, both past and future, taken into consideration as well as the biologic plausibility of potential associations. More research must be conducted before a potential association found here is labelled causal.

6. FUTURE WORK

6.1 Next Steps

Priorities for future research and preventive action related to occupation, cancer incidence and mortality in Canada will be established, at least in part, with the information provided through the continued use of this database. Investigations currently underway include translating job titles into exposure to specific substances, and including measures of exposure, such as

duration and intensity. Future work on this cohort may include a linkage to determine cancer incidence experience, using the Canadian Cancer Data Base. In addition, job titles will be classified according to physical activity level, and analyses will examine risk according to sedentary and active jobs, for example.

6.2 What Can be Done? Preventability

The results (see the FULL and SELECTED TABLES, which can be found under the *Data* button), together with some of the highlight results shown in the Section 4, above, quantify the relationships found so far.

These results provide clues to possible occupational health problem areas. They can be used to generate leads for further research. Users should take care to examine the relative risks in conjunction with the number of deaths involved to determine priorities and to incorporate the overall burden of illness in the population.

Assistance in targeting areas for further study can also be obtained from comparing and considering results of other major occupational studies, as well as consulting major publications reviewing occupational factors. These latter include the International Agency for Research on Cancer (IARC) Monographs 1982 - present. IARC publishes evaluations of the carcinogenic risks to humans of chemicals, complex mixtures, occupational exposures and cultural habits and divides the risks into five groups:

- Group 1: carcinogenic to humans;
- Group 2A: probably carcinogenic to humans;
- Group 2B: possibly carcinogenic to humans;
- Group 3: unclassifiable as to carcinogenicity to humans;
- Group 4: probably not carcinogenic to humans.

Other reviews can be found in Schottenfeld and Fraumeni, eds, 1996; Higginson, Muir and Munoz, 1992; Siemiatycki, 1991; Monson, 1990; National Centres for Health Statistics (NCHS) Workshop, 1988; Alderson, 1986, IARC, 1986.

In addition to using these results for further research, this surveillance information can be useful as a source of information for health departments, unions, workers and employers, to check hypothesised associations between a cause of death and an occupation. They can also be used for reviewing health promotion/disease prevention activities such as screening or other programs for tracking progress toward elimination of preventable disease, accidents and possible health risks for workers.

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Appendix 1: 1961 Occupations Codes – sorted by code number

MANAGERIAL OCCUPATIONS

Managers, specified

1	W	Advertising managers
2	W	Credit managers
4	W	Sales managers
5	W	Delivery managers
6	W	Office managers
7	W	Postmasters
8	W	Purchasing agents and buyers
10	W	Owners and managers, n.e.s.

PROFESSIONAL AND TECHNICAL OCCUPATIONS

Professional engineers

101	W	Civil engineers
102	W	Mechanical engineers
104	W	Industrial engineers
105	W	Electrical engineers
107	W	Mining engineers
108	W	Chemical engineers
109	W	Professional engineers, n.e.s.

Physical scientists

111	W	Chemists
112	W	Geologists
114	W	Physicists
119	W	Physical scientists, n.e.s.

Biologists and agricultural professionals

121	W	Biological scientists
124	W	Veterinarians
129	W	Agricultural professionals, n.e.s.

Teachers

131	W	Professors and college principals
135	W	School teachers
139	W	Teachers and instructors, n.e.s.

Health professionals

140	W	Physicians and surgeons
141		Dentists
142	W	Nurses, graduate
143		Nurses-in-training
144	W	Physical and occupational therapists
145	W	Optometrists
146		Osteopaths and chiropractors
147	W	Pharmacists
148	W	Medical and dental technicians
149	W	Other health professionals

Law professionals

151	W	Judges and magistrates
153	W	Lawyers and notaries

Religion professionals

161	W	Clergymen and priests, n.o.r.
163		Nuns and brothers, n.o.r.
169	W	Religious workers, n.o.r.

Artists, writers and musicians

171	W	Artists, commercial
172	W	Artists (except commercial), art teachers
174	W	Authors, editors and journalists
176	W	Musicians and music teachers

Other professionals

181	W	Architects
182	W	Draughtsmen
183	W	Surveyors
184	W	Actuaries and statisticians
186	W	Economists
187	W	Computer programmers
188	W	Accountants and auditors
191	W	Dietitians
192	W	Social welfare workers
194	W	Librarians
195	W	Interior decorators and window dressers
196	W	Photographers
198	W	Science and engineering technicians, n.e.s.

199 Professional occupations, n.e.s.

CLERICAL OCCUPATIONS

201	B	Bookkeepers and cashiers
203	B	Office appliance operators
212	B	Stock clerks and storekeepers
214	B	Shipping and receiving clerks
221		Baggagemen and expressmen, transport
223	B	Ticket, station and express agents, transport
232	B	Stenographers
234	B	Typists and clerk-typists
241	W	Attendants, doctors' and dentists' offices
249	B	Clerical occupations, n.e.s.

SALES OCCUPATIONS

301	W	Foremen, trade
303		Auctioneers
307	B	Canvassers and other door-to-door salesmen
312		Hawkers and pedlars
314	B	Commercial travellers
316		Newsvendors
323	B	Service station attendants
325	B	Sales clerks
327	B	Advertising salesmen and agents
331	B	Insurance salesmen and agents
334	B	Real estate salesmen and agents
336	B	Security salesmen and brokers
338	B	Brokers, agents and appraisers, n.e.s.
339	B	Other sales occupations

SERVICE AND RECREATION OCCUPATIONS

Protective service occupations

401	B	Firemen, fire protection
403	B	Policemen and detectives
405	B	Guards, watchmen, n.e.s.
407		Commissioned officers, armed forces
408		Other ranks, armed forces

Housekeepers, waiters, cooks and related workers

411	W	Lodging and boarding house keepers
412	B	Housekeepers (except private household), matron, stewards
413	B	Cooks
414	B	Bartenders
415	B	Waiters
416	B	Nursing assistants and aides
417	B	Porters, baggage and pullman
418	B	Baby sitters
419	B	Maids and related service workers, n.e.s.

Athletes, entertainers and related workers

431	W	Actors, entertainers and showmen
433	W	Athletes and sports officials

Other service occupations

451	B	Barbers, hairdressers, manicurists
452	B	Launderers and dry cleaners
453	B	Elevator tenders, buildings
454	B	Janitors and cleaners, building
455	W	Funeral directors and embalmers
456	B	Guides
457	B	Attendants, recreation and amusement
459	B	Service workers, n.e.s.

TRANSPORT AND COMMUNICATION OCCUPATIONS

Supervisors of transport operations

510	W	Inspectors and foremen
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Operators, aircraft

520	W	Air pilots, navigators and flight engineers
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Operators, railroad

531	B	Locomotive engineers
532	B	Locomotive fireman
534	B	Conductors railroad
535	B	Brakemen, railroad
537	B	Switchmen and signalmen

Operators, water transport

541	W	Deck officers, ship
543	W	Engineering officers, ship
545	B	Deck ratings (ship), barge crews and boatmen
547	B	Engine-room ratings, firemen and oilers (ship)

Operators, road transport

551	B	Bus drivers
552	B	Taxi drivers and chauffeurs
554	B	Driver-salesmen
556	B	Truck drivers

Other transport occupations

561	B	Operators, electric street railway
563	B	Teamsters
569	B	Transport occupations, n.e.s.

Supervisors of communication operations

570	W	Inspectors and foremen, communication
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Other communicative occupations

581	B	Radio and television announcers
582	W	Radio and television equipment operators
584	B	Telephone operators
585	B	Telegraph operators
587	B	Postmen and mail carriers
588	B	Messengers

FARMERS AND FARM WORKERS

601	B	Farmers and stockraisers
603	W	Farm managers and foremen
605	B	Farm labourers
607	B	Gardeners (except farm) and groundskeepers
609	B	Other agricultural occupations

LOGGERS AND RELATED WORKERS

611	W	Logging foremen
613	B	Forest rangers and cruisers
615	B	Lumbermen, including labourers in logging

FISHERMEN, TRAPPERS AND HUNTERS

631	B	Fishermen
633	B	Trappers and hunters

MINERS, QUARRYMEN AND RELATED WORKERS

651	W	Foremen-mine, quarry petrol, well
652	W	Prospectors
653	B	Timbermen
654	B	Miners, n.e.s.
655	B	Millmen
656	B	Well drillers and related workers
657	B	Labourers, mine
659	B	Quarriers and related workers, n.e.s.

CRAFTSMEN, PRODUCTION PROCESS AND RELATED WORKERS

Millers, bakers, brewers and related food workers

701	B	Millers of flour and grain
702	B	Bakers
703	B	Butchers and meat cutters
704	B	Meat canners, curers, packers
705	B	Fish canners, curers, packers
706	B	Fruit and vegetable canners and packers
707	B	Milk processors
708	B	Other food processing occupations
709	B	Beverage processors

Tire builders, vulcanizers and other rubber workers

711	B	Tire and tube builders
713	B	Vulcanizers
719	B	Other rubber workers

Leather Cutters, lasters, sewers and other leather workers (except glove and garment)

721	B	Leather cutters
722	B	Shoemakers and repairers-factory, n.e.s.
724	B	Shoemakers and repairers-not in factory
729	B	Other leather products makers

Spinners, weavers, knitters and related workers

731	B	Carders, combers, and other fibre preparers
732	B	Spinners and twisters
733	B	Winders, reelers
734	B	Weavers
735	B	Loom fixers and loom preparers
736	B	Knitters
737	B	Bleachers and dyers-textile
738	B	Finishers and calenderers
739	B	Other textile occupations

Tailors, furriers, upholsterers and related workers

741	B	Tailors and tailoresses
742	B	Dressmakers and seamstresses-not in factory
743	B	Furriers
744	B	Milliners; hat and cap makers
745	B	Cutters, markers-textiles; garment and glove leather
746	B	Sewers and sewing machine operators, n. e. s.
747	B	Upholsterers
749	B	Apparel and related product makers, n. e. s.

Carpenters, cabinetmakers, sawyers and related workers

751	B	Carpenters
752	B	Cabinet and furniture makers-wood
754	B	Sawyers
756	B	Woodworking machine operators, n.e.s.
758	B	Inspectors, graders, scalers, log and lumber
759	B	Woodworking occupations, n.e.s.

Paper makers, still operators, chemical and related workers

761	B	Batch and continuous still operators
762	B	Roasters, cookers and other heat treaters, chemical
763	B	Cellulose pulp preparers, n.e.s.
765	B	Paper makers
766	B	Paper making occupations, n.e.s.
768	B	Crushers, millers, calenderers, n.e.s.-chemical
769	B	Chemical and related process workers, n.e.s.

Printers, bookbinders and related workers

771	B	Compositors and typesetters
772	B	Pressmen, printing
773	B	Lithographic and photo-offset occupations
775	B	Photoengravers
776	B	Bookbinders
778	B	Other occupations in bookbinding

779	B	Printing workers, n.e.s.
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Furnacemen, moulders, blacksmiths and related metal workers

781	B	Furnacemen and heaters, metal
782	B	Heat treaters, annealers, temperers
783	B	Rolling mill operators
784	B	Blacksmiths, hammermen, forgemen
786	B	Moulders
787	B	Coremakers
788	B	Metal drawers and extruders
789	B	Metal treating occupations, n.e.s.

Jewellers, watchmakers and engravers

791	B	Jewellers and watchmakers
793	B	Engravers, except photoengravers

Machinists, plumbers, sheet metal workers and related workers

801	B	Toolmakers, diemakers
802	B	Machinists and machine tool setters
803	B	Filers, grinders, sharpeners
805	B	Millwrights
806	B	Fitters and assemblers, n.e.s. -metal
808	B	Metalworking machine operators, n.e.s.
810	B	Plumbers and pipefitters
811	B	Sheet metal workers
812	B	Riveters and rivet heaters
813	B	Boilermakers, platers and structural metal workers
815	B	Electroplaters, dip platers and related workers
817	B	Welders and flame cutters
818	B	Polishers and buffers - metal
819	B	Metalworking occupation, n.e.s.

Mechanics and repairmen, except electrical and electronic

821	B	Mechanics and repairmen, aircraft
822	B	Mechanics and repairmen, motor vehicle
824	B	Mechanics and repairmen, office machine
825	B	Mechanics and repairmen, railroad equipment
829	B	Mechanics and repairmen, n.e.s.

Electricians and related electric and electronics workers

831	B	Electricians, wiremen and electrical repairmen
832	B	Fitters and assemblers - electrical and electronics equipment
833	B	Power station operators
835	B	Mechanics and repairmen, radio and television receivers
836	B	Projectionists, motion picture
838	B	Linemen and servicemen - telephone, telegraph and power
839	B	Electrical and electronics workers, n.e.s.

Painters, paperhangers and glaziers

841	B	Painters (construction and maintenance), paperhangers and glaziers
843	B	Painters, except construction and maintenance

Bricklayers, plasterers and construction workers, n.e.s.

851	W	General foremen - construction
852	W	Inspectors - construction
854	B	Bricklayers, stonemasons, tilers
855	B	Cement and concrete finishers
856	B	Plasterers and lathers
857	B	Insulation applicators
859	B	Construction workers, n.e.s.

Clay, glass and stone workers

861	B	Lens grinders and polishers; opticians
862	B	Furnacemen and kilnmen, ceramics and glass
864	B	Stone cutters and dressers
869	B	Clay, glass and stone workers, n.e.s.

Stationary engine and excavating and lifting equipment operators and related workers

871	B	Boiler firemen (except ship)
872	B	Stationary enginemen

873	B	Motormen (vehicle), except railway
874	B	Hoistmen, cranemen, derrickmen
875	B	Riggers and cable splicers, except telephone, telegraph and power
876	B	Operators of earth-moving and other construction machinery, n.e. s.
877	B	Materials-handling equipment operators
878	B	Oilers and greasers - machinery and vehicles (except ships)

Longshoremen and other freight handlers

881	B	Longshoremen and stevedores
883	B	Warehousemen and freight handlers, n.e.s.

Sectionmen and trackmen

890	B	Sectionmen and trackmen
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Other production process and related occupations

900	W	Foremen, n.e.s.
911	B	Tobacco preparers and products makers
912	B	Patternmakers (except paper)
913	B	Bottlers, wrappers, labelers
914	B	Paper product makers
915	B	Photographic processing occupations
916	B	Tanners and tannery operatives
917	B	Inspectors, examiners, gaugers, n.e.s. - metal
918	B	Inspectors, graders and samplers, n.e.s.
919	B	Production process and related workers, n.e.s.

LABOURERS, N.E.S.

920	B	Labourers, excluding those engaged in agricultural, fishing, logging or mining operations
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Occupation not stated

980		Occupation not stated
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B = Blue-collar socio-economic classification
W = White-collar socio-economic classification
Blank = Not in this study cohort

n.e.s. means not elsewhere specified
n.e.c. means not elsewhere classified
n.o.r. means not otherwise reported

Appendix 2: 1971 Occupations Codes – sorted by code number

MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS

Officials and administrators unique to government

1111	W	Members of Legislative Bodies
1113	W	Government Administrators
1115	W	Postmasters
1116	W	Inspectors and Regulatory Officers, Government
1119	W	Officials and Administrators Unique to Government, n. e. c.

Other managers and administrators

1130	W	General Managers and Other Senior Officials
1131	W	Management Occupations, Natural Sciences and Engineering
1132	W	Management Occupations, Social Sciences and Related Fields
1133	W	Administrators in Teaching and Related Fields
1134	W	Administrators in Medicine and Health
1135	W	Financial Management Occupations
1136	W	Personnel and Industrial Relations Management Occupations
1137	W	Sales and Advertising Management Occupations
1141	W	Purchasing Management Occupations
1142	W	Services Management Occupations
1143	W	Production Management Occupations
1145	W	Management Occupations, Construction Operations
1147	W	Management Occupations, Transport and Communications Operations
1149	W	Other Managers and Administrators, n.e.c.

Occupations related to management and administration

1171	W	Accountants, Auditors and Other Financial Officers
1174	W	Personnel and Related Officers
1175	W	Purchasing Officers and Buyers, Except Wholesale and Retail Trade
1176	W	Inspectors and Regulatory Officers, Non-Government
1179	W	Occupations Related to Management and Administration, n.e.c.

OCCUPATIONS IN NATURAL SCIENCES, ENGINEERING AND MATHEMATICS

Occupations in physical sciences

2111	W	Chemists
2112	W	Geologists

2113		Physicists
2114	W	Meteorologists
2117	W	Physical Sciences Technologists and Technicians
2119	W	Occupations in Physical Sciences, n.e.c.

Occupations in life sciences

2131	W	Agriculturists and Related Scientists
2133	W	Biologists and Related Scientists
2135	W	Life Sciences Technologists and Technicians
2139	W	Occupations in Life Sciences, n.e.c.

Architects and engineers

2141	W	Architects
2142	W	Chemical Engineers
2143	W	Civil Engineers
2144	W	Electrical Engineers
2145	W	Industrial Engineers
2147	W	Mechanical Engineers
2151	W	Metallurgical Engineers
2153	W	Mining Engineers
2154	W	Petroleum Engineers
2155	W	Aeronautical Engineers
2157	W	Nuclear Engineers
2159	W	Architects and Engineers, n.e.c.

Other occupations architecture and engineering

2160	W	Supervisors: Other Occupations in Architecture and Engineering
2161	W	Surveyors
2163	W	Draughtsmen
2165	W	Architectural and Engineering Technologists and Technicians
2169	W	Other Occupations in Architecture and Engineering, n.e.c.

Occupations in mathematics, statistics, systems analysis and related fields

2181	W	Mathematicians, Statisticians and Actuaries
2183	W	Systems Analysts, Computer Programmers and Related Occupations
2189		Occupations in Mathematics, Statistics, Systems Analysis and Related Fields. n.e.c.

OCCUPATIONS IN SOCIAL SCIENCES AND RELATED FIELDS

Occupations in social sciences

2311	W	Economists
2313		Sociologists, Anthropologists and Related Social Scientists
2315	W	Psychologists
2319	W	Occupations in Social Sciences, n.e.c.

Occupations in social work and related fields

2331	W	Social Workers
2333	W	Occupations in Welfare and Community Services
2339		Occupations in Social Work and Related Fields, n.e.c.

Occupations in law and jurisprudence

2341	W	Judges and Magistrates
2343	W	Lawyers and Notaries
2349	W	Occupations in Law and Jurisprudence, n.e.c.

Occupations in library, museum and archival sciences

2350	W	Supervisors: Occupations in Library, Museum and Archival Sciences
2351	W	Librarians and Archivists
2353	W	Technicians in Library, Museum and Archival Sciences
2359	B	Occupations in Library, Museum and Archival Sciences, n.e.c.

Other occupations in social sciences and related fields

2391	W	Educational and Vocational Counsellors
2399	W	Other Occupations in Social Sciences and Related Fields, n.e.c.

OCCUPATIONS IN RELIGION

Occupations in religion

2511	W	Ministers of Religion
2513	W	Nuns and Brothers, n.o.r.
2519	W	Occupations in Religion, n.e.c.

TEACHING AND RELATED OCCUPATIONS

University teaching and related occupations

2711	W	University Teachers
2719	W	University Teaching and Related Occupations, n.e.c.

Elementary and secondary school teaching and related occupations

2731	W	Elementary and Kindergarten Teachers
2733	W	Secondary School Teachers
2739	W	Elementary and Secondary School Teaching and Related Occupations, n.e.c.

Other teaching and related occupations

2791	W	Community College and Vocational School Teachers
2792	W	Fine Arts School Teachers
2793	W	Post-Secondary School Teachers, n.e.c.
2795	W	Teachers of Exceptional Students, n.e.c.
2797	W	Instructors and Training Officers, n.e.c.
2799	W	Other Teaching and Related Occupations, n.e.c.

OCCUPATIONS IN MEDICINE AND HEALTH

Health diagnosing and treating occupations

3111	W	Physicians and Surgeons
3113	W	Dentists
3115	W	Veterinarians
3117		Osteopaths and Chiropractors
3119		Health Diagnosing and Treating Occupations, n.e.c.

Nursing, therapy and related assisting occupations

3130	W	Supervisors: Nursing Occupations
3131	W	Nurses, Graduate, Except Supervisors
3133		Nurses-in-Training
3134	B	Nursing Assistants
3135	B	Nursing Aides and Orderlies
3137		Physiotherapists, Occupational and Other Therapists
3139	B	Nursing, Therapy and Related Assisting Occupations, n.e.c.

Other occupations in medicine and health

3151	W	Pharmacists
3152	W	Dietitians and Nutritionists
3153	W	Optometrists
3154	W	Dispensing Opticians
3155	W	Radiological Technologists and Technicians
3156	W	Medical Laboratory Technologists and Technicians
3157	W	Dental Hygienists, Assistants and Technicians
3159	B	Other Occupations in Medicine and Health, n.e.c.

ARTISTIC, LITERARY, RECREATIONAL AND RELATED OCCUPATIONS

Occupations in fine and commercial art, photography and related fields

3311	W	Painters, Sculptors and Related Artists
3313	W	Product and Interior Designers
3314	W	Advertising and Illustrating Artists
3315	W	Photographers and Cameramen
3319		Occupations in Fine and Commercial Art, Photography and Related Fields, n.e.c.

Occupations in performing and audio-visual arts

3330	W	Producers and Directors, Performing and Audio-visual Arts
3332	W	Musicians
3333		Dancers and Choreographers
3335		Actors
3337	B	Radio and Television Announcers
3339	B	Occupations in Performing and Audio-visual Arts, n.e.c.

Occupations in writing

3352	W	Writers and Editors
3355	W	Translators and Interpreters
3359		Occupations in Writing, n.e.c.

Occupations in sport and recreation

3370	W	Coaches, Trainers, Instructors and Managers, Sport and Recreation
3371		Referees and Related Officials
3373		Athletes
3375	B	Attendants, Sport and Recreation
3379	B	Occupations in Sport and Recreation, n.e.c.

CLERICAL AND RELATED OCCUPATIONS

Stenographic and typing occupations

4110		Supervisors: Stenographic and Typing Occupations
4111	B	Secretaries and Stenographers
4113	B	Typists and Clerk-Typists

Bookkeeping, account-recording and related occupations

4130	W	Supervisors: Bookkeeping, Account-recording and Related Occupations
4131	B	Bookkeepers and Accounting Clerks
4133	B	Tellers and Cashiers
4135	B	Insurance, Bank and Other Finance Clerks
4137	B	Statistical Clerks
4139	B	Bookkeeping, Account-recording and Related Occupations, n.e.c.

Office machine and electronic data processing equipment operators

4140	W	Supervisors: Office Machine and Electronic Data-processing Equipment Operators
4141	B	Office Machine Operators
4143	B	Electronic Data-Processing Equipment Operators

Material recording, scheduling and distributing occupations

4150	W	Supervisors: Material Recording, Scheduling and Distributing Occupations
4151	B	Production Clerks
4153	B	Shipping and Receiving Clerks
4155	B	Stock Clerks and Related Occupations
4157	B	Weighers
4159	B	Material Recording, Scheduling and Distributing Occupations, n.e.c.

Library, file and correspondence clerks and related occupations

4160	W	Supervisors: Library, File and Correspondence Clerks and Related Occupations
4161	B	Library and File Clerks
4169	B	Library, File and Correspondence Clerks and Related Occupations, n.e.c.

Reception, information, mail and message distribution occupations

4170	W	Supervisors: Reception, Information, Mail and Message Distribution Occupations
4171	B	Receptionists and Information Clerks
4172	B	Mail Carriers
4173	B	Mail and Postal Clerks

4175	B	Telephone Operators
4177	B	Messengers
4179	B	Reception, Information, Mail and Message Distribution Occupations, n.e.c.

Other clerical and related occupations

4190	W	Supervisors: Other Clerical and Related Occupations, n.e.c.
4191	B	Collectors
4192	B	Adjusters, Claim
4193	B	Travel Clerks, Ticket, Station and Freight Agents
4194	B	Hotel Clerks
4195	B	Personnel Clerks
4197	B	General Office Clerks
4199	B	Other Clerical and Related Occupations, n.e.c.

SALES OCCUPATIONS

Sales occupations, commodities

5130	W	Supervisors: Sales Occupations, Commodities
5131	B	Technical Salesmen and Related Advisers
5133	B	Commercial Travellers
5135	B	Salesmen and Salespersons, Commodities, n.e.c.
5137	B	Sales Clerks, Commodities
5141	B	Street Vendors and Door-to Door Salesmen
5143		Newsboys
5145	B	Service Station Attendants
5149	B	Sales Occupations: Commodities, n.e.c.

Sales occupations, services

5170	W	Supervisors: Sales Occupations, Services
5171	W	Insurance Salesmen and Agents
5172	B	Real Estate Salesmen
5173	B	Salesmen and Traders, Securities
5174	B	Advertising Salesmen
5177	B	Business Services Salesmen
5179	B	Sales Occupations: Services, n.e.c.

Other sales occupations

5190	W	Supervisors: Other Sales Occupations
5191	W	Buyers, Wholesale and Retail Trade
5193	B	Driver-salesmen
5199	B	Other Sales Occupations, n.e.c.

SERVICE OCCUPATIONS

Protective service occupations

6111	B	Fire-fighting Occupations
6112	B	Policemen and Detectives, Government
6113	B	Policemen and Investigators, Private
6115	B	Guards and Watchmen
6116		Commissioned Officers, Armed Forces
6117		Other Ranks, Armed Forces
6119	B	Protective Service Occupations, n.e.c.

Food and beverage preparation and related service occupations

6120	W	Supervisors: Food and Beverage Preparation and Related Service Occupations
6121	B	Chefs and Cooks
6123	B	Bartenders
6125	B	Waiters, Hostesses and Stewards, Food and Beverage
6129	B	Food and Beverage Preparation and Related Service Occupations, n.e.c.

Occupations in lodging and other accommodation

6130	W	Supervisors: Occupations in Lodging and Other Accommodation
6131	W	Managers: Hotel, Motel and Other Accommodation
6133	B	Chambermaids and Housemen
6135	B	Sleeping-Car and Baggage Porters, and Bellmen
6139	B	Occupations in Lodging and Other Accommodation, n.e.c.

Personal service occupations

6141	W	Funeral Directors, Embalmers and Related Occupations
6143	B	Barbers, Hairdressers and Related Occupations
6144		Guides
6145	B	Hostesses and stewards, Except Food and Beverage
6147	B	Babysitters
6149	B	Personal Service Occupations, n.e.c.

Apparel and furnishings service occupations

6160	W	Supervisors: Apparel and Furnishings Service Occupations
6162	B	Laundry and Dry Cleaning Occupations
6165		Pressing Occupations
6169	B	Apparel and Furnishings Service Occupations, n.e.c.

Other service occupations

6190	W	Supervisors: Other Service Occupations
6191	B	Janitors, Charworkers and Cleaners
6193	B	Elevator Operating Occupations
6198	B	Occupations in Labouring and Other Elemental Work, Services
6199	B	Other Service Occupations, n.e.c.

FARMING, HORTICULTURAL AND ANIMAL HUSBANDRY OCCUPATIONS

Farmers

7112	B	Farmers
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Farm management occupations

7131	W	Farm Management Occupations
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Other farming, horticultural and animal husbandry occupations

7180	W	Foremen: Other Farming, Horticultural and Animal Husbandry Occupations
7182	B	Farm Workers
7195	B	Nursery and Related Workers
7197		Farm Machinery Operators and Custom Operators
7199	B	Other Farming, Horticultural and Animal Husbandry Occupations, n.e.c.

FISHING, HUNTING, TRAPPING AND RELATED OCCUPATIONS

7311	W	Captains and Other Officers, Fishing Vessels
7313	B	Fishermen: Net, Trap and Line
7315		Hunting, Trapping and Related Occupations
7319		Fishing, Hunting, Trapping and Related Occupations, n.e.c.

FORESTRY AND LOGGING OCCUPATIONS

7510	W	Foremen: Forestry and Logging Occupations
7511	B	Forestry Conservation Occupations
7513	B	Timber Cutting and Related Occupations
7516	B	Log Inspecting, Grading, Scaling and Related Occupations
7517	B	Log Hoisting, Sorting, Moving and Related Occupations
7518	B	Occupations in Labouring and Other Elemental Work, Forestry and Logging
7519	B	Forestry and Logging Occupations, n.e.c.

MINING AND QUARRYING INCLUDING OIL AND GAS FIELD OCCUPATIONS

7710	W	Foremen: Mining and Quarrying Including Oil and Gas Field Occupations
7711	B	Rotary Well-drilling and Related Occupations
7713	B	Other Rock and Soil Drilling Occupations
7715		Blasting Occupations
7717	B	Mining and Quarrying: Cutting, Handling and Loading Occupations
7718	B	Occupations in Labouring and Other Elemental Work, Mining and Quarrying Including Oil and Gas Fields
7719	B	Mining and Quarrying Including Oil and Gas Field Occupations, n.e.c.

PROCESSING OCCUPATIONS

Mineral ore treating occupations

8110	W	Foremen: Mineral Ore Treating Occupations
8111	B	Crushing and Grinding Occupations, Mineral Ores
8113	B	Mixing, Separating, Filtering and Related Occupations, Mineral Ores
8115		Melting and Roasting Occupations, Mineral Ores
8116		Inspecting, Testing, Grading and Sampling Occupations, Mineral Ore Treating
8118	B	Occupations in Labouring and Other Elemental Work, Mineral Ore Treating
8119		Mineral Ore Treating Occupations, n.e.c.

Metal processing and related occupations

8130	W	Foremen: Metal Processing and Related Occupations
8131	B	Metal Smelting, Converting and Refining Furnacemen
8133		Metal Heat Treating Occupations
8135	B	Metal Rolling Occupations
8137	B	Moulding, Coremaking and Metal Casting Occupations
8141		Metal Extruding and Drawing Occupations
8143	B	Plating, Metal Spraying and Related Occupations
8146	W	Inspecting, Testing, Grading and Sampling Occupations, Metal Processing
8148	B	Occupations in Labouring and Other Elemental Work, Metal Processing
8149	B	Metal Processing and Related Occupations, n.e.c.

Clay, glass and stone processing, forming and elated occupations

8150	W	Foremen: Clay, Glass and Stone Processing, Forming and Related Occupations
8151		Furnacemen and Kilnmen: Clay, Glass and Stone
8153	B	Separating, Grinding, Crushing and Mixing Occupations: Clay,

		Glass and Stone
8155	B	Forming Occupations: Clay, Glass and Stone
8156	B	Inspecting, Testing, Grading and Sampling Occupations: Clay, Glass and Stone Processing and Forming
8158	B	Occupations in Labouring and Other Elemental Work: Clay, Glass and Stone Processing and Forming
8159	B	Clay, Glass and Stone Processing, Forming and Related Occupations, n.e.c.

Chemicals, petroleum, rubber, plastic and related materials processing occupations

8160	W	Foremen: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations
8161	B	Mixing and Blending Occupations, Chemicals and Related Materials
8163		Filtering, Straining and Separating Occupations, Chemicals and Related Materials
8165	B	Distilling, Subliming and Carbonizing Occupations, Chemicals and Related Materials
8167	B	Roasting, Cooking and Drying Occupations, Chemicals and Related Materials
8171		Crushing and Grinding Occupations, Chemicals and Related Materials
8173		Coating and Calendering Occupations, Chemicals and Related Materials
8176	W	Inspecting, Testing, Grading and Sampling Occupations: Petroleum, Rubber, Plastic and Related Materials Processing
8178	B	Occupations in Labouring and Other Elemental Work: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
8179	B	Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations, n.e.c.

Food, beverage and related processing occupations

8210	W	Foremen: Food, Beverage and Related Processing Occupations
8211	B	Flour and Grain Milling Occupations
8213	B	Baking, Confectionery Making and Related Occupations
8215	B	Slaughtering and Meat Cutting, Canning, Curing and Packing Occupations
8217	B	Fish Canning, Curing and Packing Occupations
8221		Fruit and Vegetable Canning, Preserving and Packing Occupations
8223	B	Milk Processing Occupations
8225	B	Sugar Processing and Related Occupations
8226	B	Inspecting, Testing, Grading and Sampling Occupations: Food, Beverage and Related Processing
8227	B	Beverage Processing Occupations
8228	B	Occupations in Labouring and Other Elemental Work: Food, Beverage and Related Processing
8229	B	Food, Beverage and Related Processing Occupations, n.e.c.

Wood processing occupations, except pulp and papermaking

8230	W	Foremen: Wood Processing Occupations, Except Pulp and Papermaking
8231	B	Sawmill Sawyers and Related Occupations
8233		Plywood Making and Related Occupations
8235		Wood Treating Occupations
8236		Inspecting, Testing, Grading and Sampling Occupations: Wood Processing, Except Pulp and Papermaking
8238	B	Occupations in Labouring and Other Elemental Work: Wood Processing, Except Pulp and Papermaking
8239	B	Wood Processing Occupations, Except Pulp and Papermaking, n.e.c.

Pulp and papermaking and related occupations

8250	W	Foremen: Pulp and Papermaking and Related Occupations
8251		Cellulose Pulp Preparing Occupations
8253		Papermaking and Finishing Occupations
8256	B	Inspecting, Testing, Grading and Sampling Occupations, Pulp and Papermaking
8258	B	Occupations in Labouring and Other Elemental Work, Pulp and Papermaking
8259	B	Pulp and Papermaking and Related Occupations, n.e.c.

Textile processing occupations

8260	W	Foremen: Textile Processing Occupations
8261	B	Textile Fibre Preparing Occupations
8263		Textile Spinning and Twisting Occupations
8265		Textile Winding and Reeling Occupations
8267	B	Textile Weaving Occupations
8271	B	Knitting Occupations
8273	B	Textile Bleaching and Dyeing Occupations
8275	B	Textile Finishing and Calendering Occupations
8276	B	Inspecting, Testing, Grading and Sampling Occupations, Textile Processing
8278	B	Occupations in Labouring and Other Elemental Work, Textile Processing
8279	B	Textile Processing Occupations, n.e.c.

Other processing occupations

8290	W	Foremen: Other Processing Occupations
8293	B	Tobacco Processing Occupations
8295		Hide and Pelt Processing Occupations
8296		Inspecting, Testing, Grading and Sampling Occupations, Processing, n.e.c.
8298	B	Occupations in Labouring and Other Elemental Work, Other Processing
8299	B	Other Processing Occupations, n.e.c.

MACHINING AND RELATED OCCUPATIONS

Metal machining occupations

8310	W	Foremen: Metal Machining Occupations
8311	B	Tool and Die Making Occupations
8313	B	Machinist and Machine Tool Setting-Up Occupations
8315	B	Machine Tool Operating Occupations
8316		Inspecting, Testing, Grading and Sampling Occupations, Metal Machining
8319		Metal Machining Occupations, n.e.c.

Metal shaping and forming occupations, except machining

8330	W	Foremen: Metal Shaping and Forming Occupations, Except Machining
8331	B	Forging Occupations
8333	B	Sheet Metal Workers
8334	B	Metalworking-machine Operators, n.e.c.
8335	B	Welding and Flame Cutting Occupations
8336	W	Inspecting, Testing, Grading and Sampling Occupations: Metal Shaping and Forming, Except Machining
8337	B	Boilermakers, Platers and Structural Metal Workers
8339		Metal Shaping and Forming Occupations, Except Machining, n.e.c.

Wood machining occupations

8350	W	Foremen: Wood Machining Occupations
8351		Wood Patternmaking Occupations
8353	B	Wood Sawing and Related Occupations, Except Sawmill
8355		Planing, Turning, Shaping and Related Wood Machining Occupations
8356		Inspecting, Testing, Grading and Sampling Occupations, Wood Machining
8357		Wood Sanding Occupations
8359	B	Wood Machining Occupations, n.e.c.

Clay, glass and stone and related materials machining occupations

8370	W	Foremen: Clay, Glass and Stone and Related Materials Machining Occupations
8371		Cutting and Shaping Occupations: Clay, Glass and Stone
8373	B	Abrading and Polishing Occupations: Clay, Glass and Stone, n.e.c.
8376		Inspecting, Testing, Grading and Sampling Occupations: Clay, Glass and Stone Machining
8379		Clay, Glass and Stone and Related Materials Machining Occupations, n.e.c.

Other machining and related occupations

8390	W	Foremen: Other Machining and Related Occupations, n.e.c.
8391		Engravers, Etchers and Related Occupations

8393	B	Filing, Grinding, Buffing, Cleaning and Polishing Occupations, n.e.c.
8395	B	Patternmakers and Mouldmakers, n.e.c.
8396		Inspecting, Testing, Grading and Sampling Occupations, Machining, n.e.c.
8399		Other Machining and Related Occupations, n.e.c.

PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS

Fabricating and assembling occupations, metal products, n.e.c.

8510	W	Foremen: Fabricating and Assembling Occupations, Metal Products, n.e.c.
8511	B	Engine and Related Equipment Fabricating and Assembling Occupations, n.e.c.
8513	B	Motor Vehicle Fabricating and Assembling Occupations, n.e.c.
8515	B	Aircraft Fabricating and Assembling Occupations, n.e.c.
8523	B	Industrial, Farm, Construction and Other Mechanized Equipment and Machinery Fabricating and Assembling Occupations, n.e.c.
8525	B	Business and Commercial Machines Fabricating and Assembling Occupations, n.e.c.
8526	W	Inspecting, Testing, Grading and Sampling Occupations, Fabricating and Assembling Metal Products, n.e.c.
8527		Precision Instruments and Related Equipment Fabricating and Assembling Occupations, n.e.c.
8528	B	Occupations in Labouring and Other Elemental Work, Fabricating and Assembling Metal Products, n.e.c.
8529	B	Other Fabricating and Assembling Occupations, Metal Products. n.e.c.

Fabricating, assembling, installing and repairing occupations: electrical, electronic and related equipment

8530	W	Foremen: Fabricating, Assembling, Installing and Repairing Occupations, Electrical, Electronic and Related Equipment
8531	B	Electrical Equipment Fabricating and Assembling Occupations
8533	B	Electrical and Related Equipment Installing and Repairing Occupations, n.e.c.
8534	B	Electronic Equipment Fabricating and Assembling Occupations
8535	W	Electronic and Related Equipment Installing and Repairing Occupations, n.e.c.
8536	B	Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment
8537	B	Radio and Television Service Repairmen
8538	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment
8539	B	Fabricating, Assembling, Installing and Repairing Occupations: Electrical, Electronic and Related Equipment, n.e.c.

Fabricating, assembling and repairing occupations: wood products

8540	W	Foremen: Fabricating, Assembling and Repairing Occupations, Wood Products
8541	B	Cabinet and Wood Furniture Makers
8546		Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Wood Products
8548	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Wood Products
8549		Fabricating, Assembling and Repairing Occupations, Wood Products, n.e.c.

Fabricating, assembling and repairing occupations: textile, fur and leather products

8550	W	Foremen: Fabricating, Assembling and Repairing Occupations, Textile, Fur and Leather Products
8551	B	Patternmaking, Marking and Cutting Occupations: Textile, Fur and Leather Products
8553	B	Tailors and Dressmakers
8555		Furriers
8557		Milliners, Hat and Cap Makers
8561	B	Shoemaking and Repairing Occupations
8562	B	Upholsterers
8563	B	Sewing Machine Operators, Textile and Similar Materials
8566	B	Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
8568	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
8569	B	Fabricating, Assembling and Repairing Occupations: Textile, Fur and Leather Products, n.e.c.

Fabricating, assembling and repairing occupations: rubber, plastic and related products

8570	W	Foremen: Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products
8571	B	Bonding and Cementing Occupations, Rubber, Plastic and Related Products
8573	B	Moulding Occupations, Rubber, Plastic and Related Products
8575		Cutting and Finishing Occupations, Rubber, Plastic and Related Products
8576		Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
8578	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
8579		Fabricating, Assembling and Repairing Occupations: Rubber, Plastic and Related Products, n.e.c.

Mechanics and repairmen except electrical

8580	W	Foremen: Mechanics and Repairmen Except Electrical
8581	B	Motor Vehicle Mechanics and Repairmen
8582	B	Aircraft Mechanics and Repairmen
8583	B	Rail Transport Equipment Mechanics and Repairmen
8584	B	Industrial, Farm and Construction Machinery Mechanics and Repairmen
8585	B	Business and Commercial Machine Mechanics and Repairmen
8586	B	Inspecting, Testing, Grading and Sampling Occupations, Equipment Repair Except Electrical
8587		Watch and Clock Repairmen
8588	B	Precision Instrument Mechanics and Repairmen
8589	B	Mechanics and Repairmen Except Electrical, n.e.c.

Other product fabricating, assembling and repairing occupations

8590	W	Foremen: Product Fabricating, Assembling and Repairing Occupations, n.e.c.
8591	B	Jewellery and Silverware Fabricating, Assembling and Repairing Occupations
8592		Marine Craft Fabricating, Assembling and Repairing Occupations
8593	B	Paper Product Fabricating and Assembling Occupations
8595	B	Painting and Decorating Occupations, Except Construction
8596		Inspecting, Testing, Grading and Sampling Occupations: Product Fabricating, Assembling and Repairing, n.e.c.
8598	B	Occupations in Labouring and Other Elemental Work: Product Fabricating, Assembling and Repairing, n.e.c.
8599	B	Other Product Fabricating, Assembling and Repairing Occupations, n.e.c.

CONSTRUCTION TRADES OCCUPATIONS

Excavating, grading, paving and related occupations

8710	W	Foremen: Excavating, Grading, Paving and Related Occupations
8711	B	Excavating, Grading and Related Occupations
8713		Paving, Surfacing and Related Occupations
8715	B	Railway Sectionmen and Trackmen
8718	B	Occupations in Labouring and Other Elemental Work: Excavating, Grading, and Paving
8719	B	Excavating, Grading, Paving and Related Occupations, n.e.c.

Electrical power, lighting and wire communications equipment erecting, installing and repairing occupations

8730	W	Foremen: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing Occupations
8731	B	Electrical Power Linemen and Related Occupations

8733	B	Construction Electricians and Repairmen
8735	B	Wire Communications and Related Equipment Installing and Repairing Occupations
8736	W	Inspecting, Testing, Grading and Sampling Occupations: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing
8738	B	Occupations in Labouring and Other Elemental Work: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing
8739	B	Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing Occupations, n.e.c.

Other construction trades occupations

8780	W	Foremen: Other Construction Trades Occupations
8781	B	Carpenters and Related Occupations
8782	B	Brick and Stone Masons and Tile Setters
8783	B	Concrete Finishing and Related Occupations
8784	B	Plasterers and Related Occupations
8785	B	Painters, Paperhangers and Related Occupations
8786	B	Insulating Occupations, Construction
8787	B	Roofing, Waterproofing and Related Occupations
8791	B	Pipefitting, Plumbing and Related Occupations
8793	B	Structural Metal Erectors
8795	B	Glaziers
8796	W	Inspecting, Testing, Grading and Sampling Occupations, Construction, Except Electrical
8798	B	Occupations in Labouring and Other Elemental Work, Other Construction Trades
8799	B	Other Construction Trades Occupations, n.e.c.

TRANSPORT EQUIPMENT OPERATING OCCUPATIONS

Air transport operating occupations

9110	W	Foremen: Air Transport Operating Occupations
9111	W	Air Pilots, Navigators and Flight Engineers
9113	W	Air Transport Operating Support Occupations
9119		Air Transport Operating Occupations, n.e.c.

Railway transport operating occupations

9130	W	Foremen: Railway Transport Operating Occupations
9131	B	Locomotive Engineers and Firemen
9133	B	Conductors and Brakemen, Railway
9135	B	Railway Transport Operating Support Occupations
9139		Railway Transport Operating Occupations, n.e.c.

Water transport operating occupations

9151	W	Deck Officers
9153	W	Engineering Officers, Ship
9155	B	Deck Crew, Ship
9157	B	Engine and Boiler-Room Crew, Ship
9159	B	Water Transport Operating Occupations, n.e.c.

Motor transport operating occupations

9170	W	Foremen: Motor Transport Operating Occupations
9171	B	Bus Drivers
9173	B	Taxi Drivers and Chauffeurs
9175	B	Truck Drivers
9179	B	Motor Transport Operating Occupations, n.e.c.

Other transport and related equipment operating occupations

9190	W	Foremen: Other Transport and Related Equipment Operating Occupations
9191		Subway and Street Railway Operating Occupations
9193		Motormen and Dinkeymen, Except Rail Transport
9199	B	Other Transport and Related Equipment Operating Occupations, n.e.c.

MATERIALS HANDLING AND RELATED OCCUPATIONS, N.E.C.

9310	W	Foremen: Materials Handling and Related Occupations, n.e.c.
9311	B	Hoisting Occupations, n.e.c.
9313	B	Longshoremen, Stevedores and Freight Handlers
9315	B	Materials Handling Equipment Operators, n.e.c.
9317	B	Packaging Occupations, n.e.c.
9318	B	Occupations in Labouring and Other Elemental Work, Materials Handling
9319	B	Materials Handling and Related Occupations, n.e.c.

OTHER CRAFTS AND EQUIPMENT OPERATING OCCUPATIONS

Printing and related occupations

9510	W	Foremen: Printing and Related Occupations
9511	B	Typesetters and Compositors
9512	B	Printing Press Occupations
9513		Stereotypers and Electrotypers
9514	B	Printing Engravers, Except Photoengravers
9515		Photoengravers and Related Occupations

9517	B	Bookbinders and Related Occupations
9518	B	Occupations in Labouring and Other Elemental Work, Printing and Related, n.e.c.
9519	B	Printing and Related Occupations, n.e.c.

Stationary engine and utilities equipment operating and related occupations

9530	W	Foremen: Stationary Engine and Utilities Equipment Operating and Related Occupations
9531	B	Power Station Operators
9539	B	Stationary Engine and Utilities Equipment Operating and Related Occupations, n.e.c.

Electronic and related communications equipment operating occupations, n.e.c.

9550	W	Foremen: Electronic and Related Communications Equipment Operating Occupations, n.e.c.
9551	B	Radio and Television Broadcasting Equipment Operators
9553	B	Telegraph Operators
9555		Sound Recording and Reproduction Equipment Operators
9557	B	Motion Picture Projectionists
9559		Electronic and Related Communications Equipment Operating Occupations, n.e.c.

Other crafts and equipment operating occupations, n.e.c.

9590	W	Foremen: Other Crafts and Equipment Operating Occupations, n.e.c.
9591	B	Photographic Processing Occupations
9599		Other Crafts and Equipment Operating Occupations, n.e.c.

OCCUPATIONS NOT ELSEWHERE CLASSIFIED

9910	W	Supervisors and Foremen, n.e.c.
9916	B	Inspecting, Testing, Grading and Sampling Occupations, n.e.c.
9918	B	Occupations in Labouring and Other Elemental Work, n.e.c.
9919	B	Other Occupations, n.e.c.

B = Blue-collar socio-economic classification
W = White-collar socio-economic classification
Blank = Not in this study cohort

n.e.s. means not elsewhere specified
n.e.c. means not elsewhere classified
n.o.r. means not otherwise reported

Appendix 3: 1961 Occupations – sorted alphabetically

188	W	Accountants and auditors
431	W	Actors, entertainers and showmen
184	W	Actuaries and statisticians
1	W	Advertising managers
327	B	Advertising salesmen and agents
129	W	Agricultural professionals, n.e.s.
520	W	Air pilots, navigators and flight engineers
749	B	Apparel and related product makers, n.e.s.
181	W	Architects
172	W	Artists (except commercial), art teachers
171	W	Artists, commercial
433	W	Athletes and sports officials
241	W	Attendants, doctors' and dentists' offices
457	B	Attendants, recreation and amusement
303		Auctioneers
174	W	Authors, editors and journalists
418	B	Baby sitters
221		Baggagemen and expressmen, transport
702	B	Bakers
451	B	Barbers, hairdressers, manicurists
414	B	Bartenders
761	B	Batch and continuous still operators
709	B	Beverage processors
121	W	Biological scientists
784	B	Blacksmiths, hammermen, forgemen
737	B	Bleachers and dyers-textile
871	B	Boiler firemen (except ship)
813	B	Boilermakers, platers and structural metal workers
776	B	Bookbinders
201	B	Bookkeepers and cashiers
913	B	Bottlers, wrappers, labelers
535	B	Brakemen, railroad
854	B	Bricklayers, stonemasons, tilers
338	B	Brokers, agents and appraisers, n.e.s.
551	B	Bus drivers
703	B	Butchers and meat cutters

Appendix 3: 1961 Occupations Codes
Sorted alphabetically

752	B	Cabinet and furniture makers-wood
307	B	Canvassers and other door-to-door salesmen
731	B	Carders, combers, and other fibre preparers
751	B	Carpenters
763	B	Cellulose pulp preparers, n.e.s.
855	B	Cement and concrete finishers
769		Chemical and related process workers, n.e.s.
108	W	Chemical engineers
111	W	Chemists
101	W	Civil engineers
869	B	Clay, glass and stone workers, n.e.s.
161	W	Clergymen and priests, n.o.r.
249	B	Clerical occupations, n.e.s.
314	B	Commercial travellers
407		Commissioned officers, armed forces
771	B	Compositors and typesetters
187	W	Computer programmers
534	B	Conductors railroad
859	B	Construction workers, n.e.s.
413	B	Cooks
787	B	Coremakers
2	W	Credit managers
768	B	Crushers, millers, calenderers, n.e.s.-chemical
745	B	Cutters, markers-textiles; garment and glove leather
541	W	Deck officers, ship
545	B	Deck ratings (ship), barge crews and boatmen
5	W	Delivery managers
141		Dentists
191	W	Dietitians
182	W	Draughtsmen
742	B	Dressmakers and seamstresses-not in factory
554	B	Driver-salesmen
186	W	Economists
839	B	Electrical and electronics workers, n.e.s.
105	W	Electrical engineers
831	B	Electricians, wiremen and electrical repairmen
815	B	Electroplaters, dip platers and related workers
453	B	Elevator tenders, buildings
543	W	Engineering officers, ship

Appendix 3: 1961 Occupations Codes
Sorted alphabetically

547	B	Engine-room ratings, firemen and oilers (ship)
793	B	Engravers, except photoengravers
605	B	Farm labourers
603	W	Farm managers and foremen
601	B	Farmers and stockraisers
803	B	Filers, grinders, sharpeners
738	B	Finishers and calenderers
401	B	Firemen, fire protection
705	B	Fish canners, curers, packers
631	B	Fishermen
832	B	Fitters and assemblers - electrical and electronics equipment
806	B	Fitters and assemblers, n.e.s. -metal
900	W	Foremen, n.e.s.
301	W	Foremen, trade
651	W	Foremen-mine, quarry petrol, well
613	B	Forest rangers and cruisers
706	B	Fruit and vegetable canners and packers
455	W	Funeral directors and embalmers
781	B	Furnacemen and heaters, metal
862	B	Furnacemen and kilnmen, ceramics and glass
743	B	Furriers
607	B	Gardeners (except farm) and groundskeepers
851	W	General foremen - construction
112	W	Geologists
405	B	Guards, watchmen, n.e.s.
456	B	Guides
312		Hawkers and pedlars
782	B	Heat treaters, annealers, temperers
874	B	Hoistmen, cranemen, derrickmen
412	B	Housekeepers (except private household), matron, stewards
104	W	Industrial engineers
570	W	Inspectors and foremen, communication
852	W	Inspectors - construction
510	W	Inspectors and foremen
917	B	Inspectors, examiners, gaugers, n.e.s. - metal
918	B	Inspectors, graders and samplers, n.e.s.
758	B	Inspectors, graders, scalers, log and lumber
857	B	Insulation applicers
331	B	Insurance salesmen and agents
195	W	Interior decorators and window dressers

454	B	Janitors and cleaners, building
791	B	Jewellers and watchmakers
151	W	Judges and magistrates
736	B	Knitters
920	B	Labourers, excluding those engaged in agricultural, fishing, logging or mining operations
657	B	Labourers, mine
452	B	Launderers and dry cleaners
153	W	Lawyers and notaries
721	B	Leather cutters
861	B	Lens grinders and polishers; opticians
194	W	Librarians
838	B	Linemen and servicemen - telephone, telegraph and power
773	B	Lithographic and photo-offset occupations
531	B	Locomotive engineers
532	B	Locomotive fireman
411	W	Lodging and boarding house keepers
611	W	Logging foremen
881	B	Longshoremen and stevedores
735	B	Loom fixers and loom preparers
615	B	Lumbermen, including labourers in logging
802	B	Machinists and machine tool setters
419	B	Maids and related service workers, n.e.s.
877	B	Materials-handling equipment operators
704	B	Meat canners, curers, packers
102	W	Mechanical engineers
825	B	Mechanics and repairmen, railroad equipment
821	B	Mechanics and repairmen, aircraft
822	B	Mechanics and repairmen, motor vehicle
829	B	Mechanics and repairmen, n.e.s.
824	B	Mechanics and repairmen, office machine
835	B	Mechanics and repairmen, radio and television receivers
148	W	Medical and dental technicians
588	B	Messengers
788	B	Metal drawers and extruders
789	B	Metal treating occupations, n.e.s.
808	B	Metalworking machine operators, n.e.s.
819	B	Metalworking occupation, n.e.s.
707	B	Milk processors

Appendix 3: 1961 Occupations Codes
Sorted alphabetically

701	B	Millers of flour and grain
744	B	Milliners; hat and cap makers
655	B	Millmen
805	B	Millwrights
654	B	Miners, n.e.s.
107	W	Mining engineers
873	B	Motormen (vehicle), except railway
786	B	Moulders
176	W	Musicians and music teachers
316		Newsvendors
163		Nuns and brothers, n.o.r.
142	W	Nurses, graduate
143		Nurses-in-training
416	B	Nursing assistants and aides
980		Occupation not stated
203	B	Office appliance operators
6	W	Office managers
878	B	Oilers and greasers - machinery and vehicles (except ships)
876	B	Operators of earth-moving and other construction machinery, n.e.s.
561	B	Operators. electric street railway
145	W	Optometrists
146		Osteopaths and chiropractors
609	B	Other agricultural occupations
708	B	Other food processing occupations
149	W	Other health professionals
729	B	Other leather products makers
778	B	Other occupations in bookbinding
408		Other ranks, armed forces
719	B	Other rubber workers
339	B	Other sales occupations
739	B	Other textile occupations
10	W	Owners and managers, n.e.s.
841	B	Painters (construction and maintenance), paperhangers and glaziers
843	B	Painters, except construction and maintenance
765	B	Paper makers
766	B	Paper making occupations, n.e.s.
914	B	Paper product makers
912	B	Patternmakers (except paper)

Appendix 3: 1961 Occupations Codes
Sorted alphabetically

147	W	Pharmacists
775	B	Photoengravers
196	W	Photographers
915	B	Photographic processing occupations
144	W	Physical and occupational therapists
119	W	Physical scientists, n.e.s.
140	W	Physicians and surgeons
114	W	Physicists
856	B	Plasterers and lathers
810	B	Plumbers and pipefitters
403	B	Policemen and detectives
818	B	Polishers and buffers - metal
417	B	Porters, baggage and pullman
7	W	Postmasters
587	B	Postmen and mail carriers
833	B	Power station operators
772	B	Pressmen, printing
779	B	Printing workers, n.e.s.
919	B	Production process and related workers, n.e.s.
109	W	Professional engineers, n.e.s.
199		Professional occupations, n.e.s.
131	W	Professors and college principals
836	B	Projectionists, motion picture
652	W	Prospectors
8	W	Purchasing agents and buyers
659	B	Quarriers and related workers, n.e.s.
581	B	Radio and television announcers
582	W	Radio and television equipment operators
334	B	Real estate salesmen and agents
169	W	Religious workers, n.o.r.
875	B	Riggers and cable splicers, except telephone, telegraph and power
812	B	Riveters and rivet heaters
762	B	Roasters, cookers and other heat treaters, chemical
783	B	Rolling mill operators
325	B	Sales clerks
4	W	Sales managers
754	B	Sawyers
135	W	School teachers
198	W	Science and engineering technicians, n.e.s.

Appendix 3: 1961 Occupations Codes
Sorted alphabetically

890	B	Sectionmen and trackmen
336	B	Security salesmen and brokers
323	B	Service station attendants
459	B	Service workers, n.e.s.
746	B	Sewers and sewing machine operators, n.e.s.
811	B	Sheet metal workers
214	B	Shipping and receiving clerks
722	B	Shoemakers and repairers-factory, n.e.s.
724	B	Shoemakers and repairers-not in factory
192	W	Social welfare workers
732	B	Spinners and twisters
872	B	Stationary enginemen
232	B	Stenographers
212	B	Stock clerks and storekeepers
864	B	Stone cutters and dressers
183	W	Surveyors
537	B	Switchmen and signalmen
741	B	Tailors and tailoresses
916	B	Tanners and tannery operatives
552	B	Taxi drivers and chauffeurs
139	W	Teachers and instructors, n.e.s.
563	B	Teamsters
585	B	Telegraph operators
584	B	Telephone operators
223	B	Ticket, station and express agents, transport
653	B	Timbermen
711	B	Tire and tube builders
911	B	Tobacco preparers and products makers
801	B	Toolmakers, diemakers
569	B	Transport occupations, n.e.s.
633	B	Trappers and hunters
556	B	Truck drivers
234	B	Typists and clerk-typists
747	B	Upholsterers
124	W	Veterinarians
713	B	Vulcanizers
415	B	Waiters
883	B	Warehousemen and freight handlers, n.e.s.
734	B	Weavers
817	B	Welders and flame cutters

Appendix 3: 1961 Occupations Codes
Sorted alphabetically

656	B	Well drillers and related workers
733	B	Winders, reelers
756	B	Woodworking machine operators, n.e.s.
759	B	Woodworking occupations, n.e.s.

B = Blue-collar socio-economic classification
W = White-collar socio-economic classification
Blank = Not in this study cohort

n.e.s. means not elsewhere specified
n.e.c. means not elsewhere classified
n.o.r. means not otherwise reported

Appendix 4: 1971 Occupations – sorted alphabetically

8373	B	Abrading and Polishing Occupations: Clay, Glass and Stone, n.e.c.
1171	W	Accountants, Auditors and Other Financial Officers
3335		Actors
4192	B	Adjusters, Claim
1134	W	Administrators in Medicine and Health
1133	W	Administrators in Teaching and Related Fields
3314	W	Advertising and Illustrating Artists
5174	B	Advertising Salesmen
2155	W	Aeronautical Engineers
2131	W	Agriculturists and Related Scientists
9111	W	Air Pilots, Navigators and Flight Engineers
9119		Air Transport Operating Occupations, n.e.c.
9113	W	Air Transport Operating Support Occupations
8515	B	Aircraft Fabricating and Assembling Occupations, n.e.c.
8582	B	Aircraft Mechanics and Repairmen
6169	B	Apparel and Furnishings Service Occupations, n.e.c.
2141	W	Architects
2159	W	Architects and Engineers, n.e.c.
2165	W	Architectural and Engineering Technologists and Technicians
3373		Athletes
3375	B	Attendants, Sport and Recreation
6147	B	Babysitters
8213	B	Baking, Confectionery Making and Related Occupations
6143	B	Barbers, Hairdressers and Related Occupations
6123	B	Bartenders
8227	B	Beverage Processing Occupations
2133	W	Biologists and Related Scientists
7715		Blasting Occupations
8337	B	Boilermakers, Platers and Structural Metal Workers
8571	B	Bonding and Cementing Occupations, Rubber, Plastic and Related Products
9517	B	Bookbinders and Related Occupations
4131	B	Bookkeepers and Accounting Clerks
4139	B	Bookkeeping, Account-recording and Related Occupations, n.e.c.
8782	B	Brick and Stone Masons and Tile Setters
9171	B	Bus Drivers

Appendix 4: 1971 Occupations
Sorted alphabetically

8585	B	Business and Commercial Machine Mechanics and Repairmen
8525	B	Business and Commercial Machines Fabricating and Assembling Occupations, n.e.c.
5177	B	Business Services Salesmen
5191	W	Buyers, Wholesale and Retail Trade
8541	B	Cabinet and Wood Furniture Makers
7311	W	Captains and Other Officers, Fishing Vessels
8781	B	Carpenters and Related Occupations
8251		Cellulose Pulp Preparing Occupations
6133	B	Chambermaids and Housemen
6121	B	Chefs and Cooks
2142	W	Chemical Engineers
8179	B	Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations, n.e.c.
2111	W	Chemists
2143	W	Civil Engineers
8379		Clay, Glass and Stone and Related Materials Machining Occupations, n.e.c.
8159	B	Clay, Glass and Stone Processing, Forming and Related Occupations, n.e.c.
3370	W	Coaches, Trainers, Instructors and Managers, sport and Recreation
8173		Coating and Calendering Occupations, Chemicals and Related Materials
4191	B	Collectors
5133	B	Commercial Travellers
6116		Commissioned Officers, Armed Forces
2791	W	Community College and Vocational School Teachers
8783	B	Concrete Finishing and Related Occupations
9133	B	Conductors and Brakemen, Railway
8733	B	Construction Electricians and Repairmen
8171		Crushing and Grinding Occupations, Chemicals and Related Materials
8111	B	Crushing and Grinding Occupations, Mineral Ores
8575		Cutting and Finishing Occupations, Rubber, Plastic and Related Products
8371		Cutting and Shaping Occupations: Clay, Glass and Stone
3333		Dancers and Choreographers
9155	B	Deck Crew, Ship
9151	W	Deck Officers
3157	W	Dental Hygienists, Assistants and Technicians
3113	W	Dentists
3152	W	Dietitians and Nutritionists
3154	W	Dispensing Opticians
8165	B	Distilling, Subliming and Carbonizing Occupations, Chemicals and Related Materials

Appendix 4: 1971 Occupations
Sorted alphabetically

2163	W	Draughtsmen
5193	B	Driver-salesmen
2311	W	Economists
2391	W	Educational and Vocational Counsellors
8533	B	Electrical and Related Equipment Installing and Repairing Occupations, n.e.c.
2144	W	Electrical Engineers
8531	B	Electrical Equipment Fabricating and Assembling Occupations
8731	B	Electrical Power Linemen and Related Occupations
8739	B	Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing Occupations, n.e.c.
9559		Electronic and Related Communications Equipment Operating Occupations, n.e.c.
8535	W	Electronic and Related Equipment Installing and Repairing Occupations, n.e.c.
4143	B	Electronic Data-processing Equipment Operators
8534	B	Electronic Equipment Fabricating and Assembling Occupations
2731	W	Elementary and Kindergarten Teachers
2739	W	Elementary and Secondary School Teaching and Related Occupations, n.e.c.
6193	B	Elevator Operating Occupations
9157	B	Engine and Boiler-Room Crew, Ship
8511	B	Engine and Related Equipment Fabricating and Assembling Occupations, n.e.c.
9153	W	Engineering Officers, Ship
8391		Engravers, Etchers and Related Occupations
8711	B	Excavating, Grading and Related Occupations
8719	B	Excavating, Grading, Paving and Related Occupations, n.e.c.
8549		Fabricating, Assembling and Repairing Occupations, Wood Products, n.e.c.
8579		Fabricating, Assembling and Repairing Occupations: Rubber, Plastic and Related Products, n.e.c.
8569	B	Fabricating, Assembling and Repairing Occupations: Textile, Fur and Leather Products, n.e.c.
8539	B	Fabricating, Assembling, Installing and Repairing Occupations: Electrical, Electronic and Related Equipment, n.e.c.
7197		Farm Machinery Operators and Custom Operators
7131	W	Farm Management Occupations
7182	B	Farm Workers
7112	B	Farmers
8393	B	Filing, Grinding, Buffing, Cleaning and Polishing Occupations, n.e.c.
8163		Filtering, Straining and Separating Occupations, Chemicals and Related Materials

Appendix 4: 1971 Occupations
Sorted alphabetically

1135	W	Financial Management Occupations
2792	W	Fine Arts School Teachers
6111	B	Fire-fighting Occupations
8217	B	Fish Canning, Curing and Packing Occupations
7313	B	Fishermen: Net, Trap and Line
7319		Fishing, Hunting, Trapping and Related Occupations, n.e.c.
8211	B	Flour and Grain Milling Occupations
6129	B	Food and Beverage Preparation and Related Service Occupations, n.e.c.
8229	B	Food, Beverage and Related Processing Occupations, n.e.c.
9110	W	Foremen: Air Transport Operating Occupations
8160	W	Foremen: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations
8370	W	Foremen: Clay, Glass and Stone and Related Materials Machining Occupations
8150	W	Foremen: Clay, Glass and Stone Processing, Forming and Related Occupations
8730	W	Foremen: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing Occupations
9550	W	Foremen: Electronic and Related Communications Equipment Operating Occupations, n.e.c.
8710	W	Foremen: Excavating, Grading, Paving and Related Occupations
8510	W	Foremen: Fabricating and Assembling Occupations, Metal Products, n.e.c.
8550	W	Foremen: Fabricating, Assembling and Repairing Occupations, Textile, Fur and Leather Products
8570	W	Foremen: Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products
8540	W	Foremen: Fabricating, Assembling and Repairing Occupations, Wood Products
8530	W	Foremen: Fabricating, Assembling, Installing and Repairing Occupations, Electrical, Electronic and Related Equipment
8210	W	Foremen: Food, Beverage and Related Processing Occupations
7510	W	Foremen: Forestry and Logging Occupations
9310	W	Foremen: Materials Handling and Related Occupations, n.e.c.
8580	W	Foremen: Mechanics and Repairmen Except Electrical
8310	W	Foremen: Metal Machining Occupations
8130	W	Foremen: Metal Processing and Related Occupations
8330	W	Foremen: Metal Shaping and Forming Occupations, Except Machining
8110	W	Foremen: Mineral Ore Treating Occupations
7710	W	Foremen: Mining and Quarrying Including Oil and Gas Field Occupations
9170	W	Foremen: Motor Transport Operating Occupations
8780	W	Foremen: Other Construction Trades Occupations
9590	W	Foremen: Other Crafts and Equipment Operating Occupations, n.e.c.

Appendix 4: 1971 Occupations
Sorted alphabetically

7180	W	Foremen: Other Farming, Horticultural and Animal Husbandry Occupations
8390	W	Foremen: Other Machining and Related Occupations, n.e.c.
8290	W	Foremen: Other Processing Occupations
9190	W	Foremen: Other Transport and Related Equipment Operating Occupations
9510	W	Foremen: Printing and Related Occupations
8590	W	Foremen: Product Fabricating, Assembling and Repairing Occupations, n.e.c.
8250	W	Foremen: Pulp and Papermaking and Related Occupations
9130	W	Foremen: Railway Transport Operating Occupations
9530	W	Foremen: Stationary Engine and Utilities Equipment Operating and Related Occupations
8260	W	Foremen: Textile Processing Occupations
8350	W	Foremen: Wood Machining Occupations
8230	W	Foremen: Wood Processing Occupations, Except Pulp and Papermaking
7519	B	Forestry and Logging Occupations, n.e.c.
7511	B	Forestry Conservation Occupations
8331	B	Forging Occupations
8155	B	Forming Occupations: Clay, Glass and Stone
8221		Fruit and Vegetable Canning, Preserving and Packing Occupations
6141	W	Funeral Directors, Embalmers and Related Occupations
8151		Furnacemen and Kilnmen: Clay, Glass and Stone
8555		Furriers
1130	W	General Managers and Other Senior Officials
4197	B	General Office Clerks
2112	W	Geologists
8795	B	Glaziers
1113	W	Government Administrators
6115	B	Guards and Watchmen
6144		Guides
3119		Health Diagnosing and Treating Occupations, n.e.c.
8295		Hide and Pelt Processing Occupations
9311	B	Hoisting Occupations, n.e.c.
6145	B	Hostesses and stewards, Except Food and Beverage
4194	B	Hotel Clerks
7315		Hunting, Trapping and Related Occupations
2145	W	Industrial Engineers
8584	B	Industrial, Farm and Construction Machinery Mechanics and Repairmen
8523	B	Industrial, Farm, Construction and Other Mechanized Equipment and Machinery Fabricating and Assembling Occupations, n.e.c.
8796	W	Inspecting, Testing, Grading and Sampling Occupations, Construction, Except Electrical

Appendix 4: 1971 Occupations
Sorted alphabetically

8586	B	Inspecting, Testing, Grading and Sampling Occupations, Equipment Repair Except Electrical
8526	W	Inspecting, Testing, Grading and Sampling Occupations, Fabricating and Assembling Metal Products, n.e.c.
8396		Inspecting, Testing, Grading and Sampling Occupations, Machining, n.e.c.
8316		Inspecting, Testing, Grading and Sampling Occupations, Metal Machining
8146	W	Inspecting, Testing, Grading and Sampling Occupations, Metal Processing
8116		Inspecting, Testing, Grading and Sampling Occupations, Mineral Ore Treating
9916	B	Inspecting, Testing, Grading and Sampling Occupations, n.e.c.
8296		Inspecting, Testing, Grading and Sampling Occupations, Processing, n.e.c.
8256	B	Inspecting, Testing, Grading and Sampling Occupations, Pulp and Papermaking
8276	B	Inspecting, Testing, Grading and Sampling Occupations, Textile Processing
8356		Inspecting, Testing, Grading and Sampling Occupations, Wood Machining
8176	W	Inspecting, Testing, Grading and Sampling Occupations: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
8376		Inspecting, Testing, Grading and Sampling Occupations: Clay, Glass and Stone Machining
8377		
8156	B	Inspecting, Testing, Grading and Sampling Occupations: Clay, Glass and Stone Processing and Forming
8736	W	Inspecting, Testing, Grading and Sampling Occupations: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing
8576		Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
8577		
8566	B	Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
8546		Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Wood Products
8547		
8536	B	Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment
8226	B	Inspecting, Testing, Grading and Sampling Occupations: Food, Beverage and Related Processing
8336	W	Inspecting, Testing, Grading and Sampling Occupations: Metal Shaping and Forming, Except Machining
8596		Inspecting, Testing, Grading and Sampling Occupations: Product Fabricating, Assembling and Repairing, n.e.c.
8236		Inspecting, Testing, Grading and Sampling Occupations: Wood Processing, Except Pulp and Papermaking

Appendix 4: 1971 Occupations
Sorted alphabetically

1116	W	Inspectors and Regulatory Officers, Government
1176	W	Inspectors and Regulatory Officers, Non-Government
2797	W	Instructors and Training Officers, n.e.c.
8786	B	Insulating Occupations, Construction
5171	W	Insurance Salesmen and Agents
5171	B	Insurance Salesmen and Agents
4135	B	Insurance, Bank and Other Finance Clerks
6191	B	Janitors, Charworkers and Cleaners
8591	B	Jewellery and Silverware Fabricating, Assembling and Repairing Occupations
2341	W	Judges and Magistrates
8271	B	Knitting Occupations
6162	B	Laundering and Dry Cleaning Occupations
2343	W	Lawyers and Notaries
2351	W	Librarians and Archivists
4161	B	Library and File Clerks
4169	B	Library, File and Correspondence Clerks and Related Occupations, n.e.c.
2135	W	Life Sciences Technologists and Technicians
9131	B	Locomotive Engineers and Firemen
7517	B	Log Hoisting, Sorting, Moving and Related Occupations
7516	B	Log Inspecting, Grading, Scaling and Related Occupations
9313	B	Longshoremen, Stevedores and Freight Handlers
8315	B	Machine Tool Operating Occupations
8313	B	Machinist and Machine Tool Setting-Up Occupations
4173	B	Mail and Postal Clerks
4172	B	Mail Carriers
1145	W	Management Occupations, Construction Operations
1131	W	Management Occupations, Natural Sciences and Engineering
1132	W	Management Occupations, Social Sciences and Related Fields
1147	W	Management Occupations, Transport and Communications Operations
6131	W	Managers: Hotel, Motel and Other Accommodation
8592		Marine Craft Fabricating, Assembling and Repairing Occupations
4159	B	Material Recording, Scheduling and Distributing Occupations, n.e.c.
9319	B	Materials Handling and Related Occupations, n.e.c.
9315	B	Materials Handling Equipment Operators, n.e.c.
2181	W	Mathematicians, Statisticians and Actuaries
2147	W	Mechanical Engineers
8589	B	Mechanics and Repairmen Except Electrical, n.e.c.
3156	W	Medical Laboratory Technologists and Technicians
8115		Melting and Roasting Occupations, Mineral Ores
1111	W	Members of Legislative Bodies
4177	B	Messengers
8141		Metal Extruding and Drawing Occupations

Appendix 4: 1971 Occupations
Sorted alphabetically

8133		Metal Heat Treating Occupations
8319		Metal Machining Occupations, n.e.c.
8149	B	Metal Processing and Related Occupations, n.e.c.
8135	B	Metal Rolling Occupations
8339		Metal Shaping and Forming Occupations, Except Machining, n.e.c.
8131	B	Metal Smelting, Converting and Refining Furnacemen
2151	W	Metallurgical Engineers
8334	B	Metalworking-machine Operators, n.e.c.
2114	W	Meteorologists
8223	B	Milk Processing Occupations
8557		Milliners, Hat and Cap Makers
8119		Mineral Ore Treating Occupations, n.e.c.
7719	B	Mining and Quarrying Including Oil and Gas Field Occupations, n.e.c.
7717	B	Mining and Quarrying: Cutting, Handling and Loading Occupations
2153	W	Mining Engineers
2511	W	Ministers of Religion
8161	B	Mixing and Blending Occupations . Chemicals and Related Materials
8113	B	Mixing, Separating, Filtering and Related Occupations, Mineral Ores
9557	B	Motion Picture Projectionists
9179	B	Motor Transport Operating Occupations, n.e.c.
8513	B	Motor Vehicle Fabricating and Assembling Occupations, n.e.c.
8581	B	Motor Vehicle Mechanics and Repairmen
9193		Motormen and Dinkeymen, Except Rail Transport
8573	B	Moulding Occupations, Rubber, Plastic and Related Products
8137	B	Moulding, Coremaking and Metal Casting Occupations
3332	W	Musicians
5143		Newsboys
2157	W	Nuclear Engineers
2513	W	Nuns and Brothers, n.o.r.
7195	B	Nursery and Related Workers
3131	W	Nurses, Graduate, Except Supervisors
3133		Nurses-in-Training
3135	B	Nursing Aides and Orderlies
3134	B	Nursing Assistants
3139	B	Nursing, Therapy and Related Assisting Occupations, n.e.c.
3319		Occupations in Fine and Commercial Art, Photography and Related Fields, n.e.c.
8528	B	Occupations in Labouring and Other Elemental Work, Fabricating and Assembling Metal Products, n.e.c.
9318	B	Occupations in Labouring and Other Elemental Work, Materials Handling
8148	B	Occupations in Labouring and Other Elemental Work, Metal Processing
8118	B	Occupations in Labouring and Other Elemental Work, Mineral Ore Treating

Appendix 4: 1971 Occupations
Sorted alphabetically

7718	B	Occupations in Labouring and Other Elemental Work, Mining and Quarrying Including Oil and Gas Fields
9918	B	Occupations in Labouring and Other Elemental Work, n.e.c.
8798	B	Occupations in Labouring and Other Elemental Work, Other Construction Trades
8298	B	Occupations in Labouring and Other Elemental Work, Other Processing
9518	B	Occupations in Labouring and Other Elemental Work, Printing and Related, n.e.c.
8258	B	Occupations in Labouring and Other Elemental Work, Pulp and Papermaking
6198	B	Occupations in Labouring and Other Elemental Work, Services
8278	B	Occupations in Labouring and Other Elemental Work, Textile Processing
7518	B	Occupations in Labouring and Other Elemental Work, Forestry and Logging
8178	B	Occupations in Labouring and Other Elemental Work: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
8158	B	Occupations in Labouring and Other Elemental Work: Clay, Glass and Stone Processing and Forming
8738	B	Occupations in Labouring and Other Elemental Work: Electrical Power, Lighting and Wire Communications Equipment Erecting, Installing and Repairing
8718	B	Occupations in Labouring and Other Elemental Work: Excavating, Grading, and Paving
8578	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
8568	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
8548	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Wood Products
8538	B	Occupations in Labouring and Other Elemental Work: Fabricating, Assembling, Installing and Repairing Electrical, Electronic and Related Equipment
8228	B	Occupations in Labouring and Other Elemental Work: Food, Beverage and Related Processing
8598	B	Occupations in Labouring and Other Elemental Work: Product Fabricating, Assembling and Repairing, n.e.c.
8238	B	Occupations in Labouring and Other Elemental Work: Wood Processing, Except Pulp and Papermaking
2349	W	Occupations in Law and Jurisprudence, n.e.c.
2359	B	Occupations in Library, Museum and Archival Sciences, n.e.c.
2139	W	Occupations in Life Sciences, n.e.c.
6139	B	Occupations in Lodging and Other Accommodation, n.e.c.
2189		Occupations in Mathematics, Statistics, Systems Analysis and Related Fields. n.e.c.

Appendix 4: 1971 Occupations
Sorted alphabetically

3339	B	Occupations in Performing and Audio-visual Arts, n.e.c.
2119	W	Occupations in Physical Sciences, n.e.c.
2519	W	Occupations in Religion, n.e.c.
2319	W	Occupations in Social Sciences, n.e.c.
2339		Occupations in Social Work and Related Fields, n.e.c.
3379	B	Occupations in Sport and Recreation, n.e.c.
2333	W	Occupations in Welfare and Community Services
3359		Occupations in Writing, n.e.c.
1179	W	Occupations Related to Management and Administration, n.e.c.
4141	B	Office Machine Operators
1119	W	Officials and Administrators Unique to Government, n.e.c.
3153	W	Optometrists
3117		Osteopaths and Chiropractors
4199	B	Other Clerical and Related Occupations, n.e.c.
8799	B	Other Construction Trades Occupations, n.e.c.
9599		Other Crafts and Equipment Operating Occupations, n.e.c.
8529	B	Other Fabricating and Assembling Occupations, Metal Products, n.e.c.
7199	B	Other Farming, Horticultural and Animal Husbandry Occupations, n.e.c.
8399		Other Machining and Related Occupations, n.e.c.
1149	W	Other Managers and Administrators, n.e.c.
2169	W	Other Occupations in Architecture and Engineering, n.e.c.
3159	B	Other Occupations in Medicine and Health, n.e.c.
2399	W	Other Occupations in Social Sciences and Related Fields, n.e.c.
9919	B	Other Occupations, n.e.c.
8299	B	Other Processing Occupations, n.e.c.
8599	B	Other Product Fabricating, Assembling and Repairing Occupations, n.e.c.
6117		Other Ranks, Armed Forces
7713	B	Other Rock and Soil Drilling Occupations
5199	B	Other Sales Occupations, n.e.c.
6199	B	Other Service Occupations, n.e.c.
2799	W	Other Teaching and Related Occupations, n.e.c.
9199	B	Other Transport and Related Equipment Operating Occupations, n.e.c.
9317	B	Packaging Occupations, n.e.c.
8785	B	Painters, Paperhangers and Related Occupations
3311	W	Painters, Sculptors and Related Artists
8595	B	Painting and Decorating Occupations, Except Construction
8593	B	Paper Product Fabricating and Assembling Occupations
8253		Papermaking and Finishing Occupations
8395	B	Patternmakers and Mouldmakers, n.e.c.
8551	B	Patternmaking, Marking and Cutting Occupations: Textile, Fur and Leather Products

Appendix 4: 1971 Occupations
Sorted alphabetically

8713		Paving, Surfacing and Related Occupations
6149	B	Personal Service Occupations, n.e.c.
1136	W	Personnel and Industrial Relations Management Occupations
1174	W	Personnel and Related Officers
4195	B	Personnel Clerks
2154	W	Petroleum Engineers
3151	W	Pharmacists
9515		Photoengravers and Related Occupations
3315	W	Photographers and Cameramen
9591	B	Photographic Processing Occupations
2117	W	Physical Sciences Technologists and Technicians
3111	W	Physicians and Surgeons
2113		Physicists
3137		Physiotherapists, Occupational and Other Therapists
8791	B	Pipefitting, Plumbing and Related Occupations
8355		Planing, Turning, Shaping and Related Wood Machining Occupations
8784	B	Plasterers and Related Occupations
8143	B	Plating, Metal Spraying and Related Occupations
8233		Plywood Making and Related Occupations
6112	B	Policemen and Detectives, Government
6113	B	Policemen and Investigators, Private
1115	W	Postmasters
2793	W	Post-Secondary School Teachers, n.e.c.
9531	B	Power Station Operators
8588	B	Precision Instrument Mechanics and Repairmen
8527		Precision Instruments and Related Equipment Fabricating and Assembling Occupations, n.e.c.
6165		Pressing Occupations
9519	B	Printing and Related Occupations, n.e.c.
9514	B	Printing Engravers, Except Photoengravers
9512	B	Printing Press Occupations
3330	W	Producers and Directors, Performing and Audio-visual Arts
3313	W	Product and Interior Designers
4151	B	Production Clerks
1143	W	Production Management Occupations
6119	B	Protective Service Occupations, n.e.c.
2315	W	Psychologists
8259	B	Pulp and Papermaking and Related Occupations, n.e.c.
1141	W	Purchasing Management Occupations
1175	W	Purchasing Officers and Buyers, Except Wholesale and Retail Trade
3337	B	Radio and Television Announcers
9551	B	Radio and Television Broadcasting Equipment Operators

Appendix 4: 1971 Occupations
Sorted alphabetically

8537	B	Radio and Television Service Repairmen
3155	W	Radiological Technologists and Technicians
8583	B	Rail Transport Equipment Mechanics and Repairmen
8715	B	Railway Sectionmen and Trackmen
9139		Railway Transport Operating Occupations, n.e.c.
9135	B	Railway Transport Operating Support Occupations
5172	B	Real Estate Salesmen
4179	B	Reception, Information, Mail and Message Distribution Occupations, n.e.c.
4171	B	Receptionists and Information Clerks
3371		Referees and Related Officials
8167	B	Roasting, Cooking and Drying Occupations, Chemicals and Related Materials
8787	B	Roofing, Waterproofing and Related Occupations
7711	B	Rotary Well-drilling and Related Occupations
1137	W	Sales and Advertising Management Occupations
5137	B	Sales Clerks, Commodities
5149	B	Sales Occupations: Commodities, n.e.c.
5179	B	Sales Occupations: Services, n.e.c.
5135	B	Salesmen and Salespersons, Commodities, n.e.c.
5173	B	Salesmen and Traders, Securities
8231	B	Sawmill Sawyers and Related Occupations
2733	W	Secondary School Teachers
4111	B	Secretaries and Stenographers
8153	B	Separating, Grinding, Crushing and Mixing Occupations: Clay, Glass and Stone
5145	B	Service Station Attendants
1142	W	Services Management Occupations
8563	B	Sewing Machine Operators, Textile and Similar Materials
8333	B	Sheet Metal Workers
4153	B	Shipping and Receiving Clerks
8561	B	Shoemaking and Repairing Occupations
8215	B	Slaughtering and Meat Cutting, Canning, Curing and Packing Occupations
6135	B	Sleeping-Car and Baggage Porters, and Bellmen
2331	W	Social Workers
2313		Sociologists, Anthropologists and Related Social Scientists
9555		Sound Recording and Reproduction Equipment Operators
9539	B	Stationary Engine and Utilities Equipment Operating and Related Occupations, n.e.c.
4137	B	Statistical Clerks
9513		Stereotypers and Electrotypers

Appendix 4: 1971 Occupations
Sorted alphabetically

4155	B	Stock Clerks and Related Occupations
5141	B	Street Vendors and Door-to Door Salesmen
8793	B	Structural Metal Erectors
9191		Subway and Street Railway Operating Occupations
8225	B	Sugar Processing and Related Occupations
9910	W	Supervisors and Foremen, n.e.c.
6160	W	Supervisors: Apparel and Furnishings Service Occupations
4130	W	Supervisors: Bookkeeping, Account-recording and Related Occupations
6120	W	Supervisors: Food and Beverage Preparation and Related Service Occupations
4160	W	Supervisors: Library, File and Correspondence Clerks and Related Occupations
4150	W	Supervisors: Material Recording, Scheduling and Distributing Occupations
3130	W	Supervisors: Nursing Occupations
2350	W	Supervisors: Occupations in Library, Museum and Archival Sciences
6130	W	Supervisors: Occupations in Lodging and Other Accommodation
4140	W	Supervisors: Office Machine and Electronic Data-processing Equipment Operators
4190	W	Supervisors: Other Clerical and Related Occupations, n.e.c.
2160	W	Supervisors: Other Occupations in Architecture and Engineering
5190	W	Supervisors: Other Sales Occupations
6190	W	Supervisors: Other Service Occupations
4170	W	Supervisors: Reception, Information, Mail and Message Distribution Occupations
5130	W	Supervisors: Sales Occupations, Commodities
5170	W	Supervisors: Sales Occupations, Services
4110		Supervisors: Stenographic and Typing Occupations
2161	W	Surveyors
2183	W	Systems Analysts, Computer Programmers and Related Occupations
8553	B	Tailors and Dressmakers
9173	B	Taxi Drivers and Chauffeurs
2795	W	Teachers of Exceptional Students, n.e.c.
5131	B	Technical Salesmen and Related Advisers
2353	W	Technicians in Library, Museum and Archival Sciences
9553	B	Telegraph Operators
4175	B	Telephone Operators
4133	B	Tellers and Cashiers
8273	B	Textile Bleaching and Dyeing Occupations
8261	B	Textile Fibre Preparing Occupations
8275	B	Textile Finishing and Calendering Occupations
8279	B	Textile Processing Occupations, n.e.c.

Appendix 4: 1971 Occupations
Sorted alphabetically

8263		Textile Spinning and Twisting Occupations
8267	B	Textile Weaving Occupations
8265		Textile Winding and Reeling Occupations
7513	B	Timber Cutting and Related Occupations
8293	B	Tobacco Processing Occupations
8311	B	Tool and Die Making Occupations
3355	W	Translators and Interpreters
4193	B	Travel Clerks, Ticket, Station and Freight Agents
9175	B	Truck Drivers
9511	B	Typesetters and Compositors
4113	B	Typists and Clerk-Typists
2711	W	University Teachers
2719	W	University Teaching and Related Occupations, n.e.c.
8562	B	Upholsterers
3115	W	Veterinarians
6125	B	Waiters, Hostesses and Stewards, Food and Beverage
8587		Watch and Clock Repairmen
9159	B	Water Transport Operating Occupations, n.e.c.
4157	B	Weighers
8335	B	Welding and Flame Cutting Occupations
8735	B	Wire Communications and Related Equipment Installing and Repairing Occupations
8359	B	Wood Machining Occupations, n.e.c.
8351		Wood Patternmaking Occupations
8239	B	Wood Processing Occupations, Except Pulp and Papermaking, n.e.c.
8357		Wood Sanding Occupations
8353	B	Wood Sawing and Related Occupations, Except Sawmill
8235		Wood Treating Occupations
3352	W	Writers and Editors

B = Blue-collar socio-economic classification
W = White-collar socio-economic classification
Blank = Not in this study cohort

n.e.s. means not elsewhere specified
n.e.c. means not elsewhere classified
n.o.r. means not otherwise reported

Appendix 5: Cause of Death Codes – sorted by code group number

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
1	All causes (Code groups 2-70 excluding 5,31)	All causes	001-999	001-999	001-999
2	Infectious and parasitic diseases, excluding tuberculosis (Code Groups 3,4)	Infectious (excl. TB)	001-009, 020-136	001-009, 020-136	020-138
3	Tuberculosis, pulmonary and other respiratory	TB (respiratory)	011, 012	011, 012	001-008
4	Tuberculosis, excluding pulmonary and other respiratory (Code Group 3)	TB (excl. respiratory)	010, 013-018	010, 013-018	010-019
5	Neoplasms (Code Groups 6-46)	All cancers	140-239	140-239	140-239
6	Malignant neoplasm, lip	Cancer (lip)	149	140	140
7	Malignant neoplasm, other and unspecified parts of mouth	Cancer (buccal)	145	145	144
8	Malignant neoplasm, oesophagus	Cancer (oesophagus)	150	150	150
9	Malignant neoplasm, stomach	Cancer (stomach)	151	151	151
10	Malignant neoplasm, small intestine including duodenum	Cancer (small intestine)	152	152	152
11	Malignant neoplasm, colon	Cancer (colon)	153	153	153
12	Malignant neoplasm, rectum, rectosigmoid junction and anus	Cancer (rectum)	154	154	154
13	Malignant neoplasm, liver and intrahepatic bile ducts	Cancer (liver)	155	155	155.0
14	Malignant neoplasm, gallbladder and extrahepatic bile ducts	Cancer (gallbladder)	156	156	155.1

Appendix 5: Cause of Death Codes
Sorted by code group number

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
15	Malignant neoplasm, pancreas	Cancer (pancreas)	157	157	157
16	Malignant neoplasm, larynx	Cancer (larynx)	161	161	161
17	Malignant neoplasm, trachea, bronchus and lung	Cancer (lung)	162	162.1	162.1
18	Malignant neoplasm, bone and articular cartilage	Cancer (bone)	170	170	196
19	Malignant melanoma and other malignant neoplasm, skin	Cancer (skin)	172, 173	172, 173	190, 191
20	Malignant neoplasm, breast	Cancer (breast)	174, 175	174	170
21	Malignant neoplasm, cervix uteri	Cancer (cervix)	180	180	171
22	Malignant neoplasm, body of uterus	Cancer (uterus)	182	182	172
23	Malignant neoplasm, ovary and other uterine adnexa	Cancer (ovary)	183	183	175.0
24	Malignant neoplasm, prostate	Cancer (prostate)	185	185	177
25	Malignant neoplasm, bladder	Cancer (bladder)	188	188	181.0
26	Malignant neoplasm, kidney	Cancer (kidney)	189.0, .2	189.0	180
27	Malignant neoplasm, other and unspecified urinary organs, excluding kidney (Code Group 26)	Cancer (urinary excl. Code 26)	189.3-189.9	189.1, .2, .3	181.7, 181.8
28	Malignant neoplasm, brain	Cancer (brain)	191	191	193.0
29	Malignant neoplasm, other and unspecified parts of nervous system, excluding brain (Code Group 28)	Cancer (cns excl. Code 28)	192, 237	192	193.1, .2, .3, .4, .8, .9

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
30	Malignant neoplasm, other than Code Groups 6-29	Cancer (other, excl. Codes 6-29)	141-144, 146-149, 158-160, 163-165, 171, 179, 181, 184, 186, 187, 190, 193-199	141-144, 146-149, 158-160, 162.0, 163, 171, 181, 184, 186, 187, 190, 193-199	141-143, 145-148, 158-160, 162.0, .2, .8, 163-165, 173, 174, 175.1, .8, .9, 176-179, 192, 194, 195, 197-199
31	Malignant neoplasm of lymphatic and haematopoietic tissue (Code Groups 32-44)	Haematological cancers	200-208	200-209	200-207
32	Lymphosarcoma, reticulosarcoma and other malignant neoplasm of lymphoid and histiocytic tissue	Non-Hodgkin's lymphoma	200, 202	200, 202	200, 202, 205
33	Hodgkin's disease	Hodgkin's Disease	201	201	201
34	Multiple myeloma and immunoproliferative neoplasms	Myeloma	203	203	203
35	Leukaemia, lymphoid, acute	Leukaemia (lymphatic acute)	204.0	204.0	204.3
36	Leukaemia, lymphoid, chronic	Leukaemia (lymphatic chronic)	204.1	204.1	204.0
37	Leukaemia, lymphoid, subacute, other and unspecified	Leukaemia (lymphatic other)	204.2-204.9	204.9	
38	Leukaemia, myeloid, acute	Leukaemia (myeloid acute)	205.0	205.0	
39	Leukaemia, myeloid, chronic	Leukaemia (myeloid chronic)	205.1	205.1	204.1
40	Leukaemia, myeloid, subacute, other and unspecified	Leukaemia (myeloid other)	205.2-205.9	205.9	
41	Leukaemia, monocytic, acute	Leukaemia (monocytic acute)	206.0	206.0	
42	Leukaemia, monocytic chronic	Leukaemia (monocytic chronic)	206.1	206.1	204.2

Appendix 5: Cause of Death Codes
Sorted by code group number

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
43	Leukaemia, monocytic subacute, other and unspecified	Leukaemia (monocytic other)	206.2-206.9	206.9	
44	Leukaemia, other specified and unspecified cell type, other than Code Groups 35-43	Leukaemia (other excl. Codes 35-43)	207, 208	207	204.4
45	Neoplasms (benign)	Neoplasms (benign)	210-229	210-228	210-229
46	Carcinoma-in-situ, neoplasms of uncertain behavior, and neoplasms of unspecified nature	Neoplasms (in-situ, unspecified)	230-236, 238-239	230-239	230-239
47	Diabetes mellitus	Diabetes	250	250	260
48	Anaemia	Anaemia	280-285	280-285	290-299
49	Alcohol-related mental disorders	Alcohol-related mental disorders	291, 303, 305.0	291, 303	581.1, 307
50	Chronic rheumatic heart disease	Heart (chronic rheumatic)	393-398	393-398	410-416
51	Hypertensive disease	Hypertension	401-405	400-404	440-443
52	Ischaemic heart disease	Heart (ischaemic)	410-414, 429.2	410-414	
53	Heart disease other than chronic rheumatic and ischaemic (Code Groups 50, 52)	Heart (excl. Codes 50, 52)	420-429	420-429	420-434, 444-447
54	Cerebrovascular disease	Cerebrovascular	430-438	430-438	330-334
55	Influenza	Influenza	487	470-474	480-483
56	Pneumonia	Pneumonia	480-486	480-486	490-493, 763
57	Bronchitis	Bronchitis	490, 491, 466, 506.0	490, 491, 466	500, 501
58	Emphysema	Emphysema	492	492	502
59	Asthma	Asthma	493	493	241
60	Cirrhosis of liver without mention of alcohol	Cirrhosis (non-alcoholic)	571.5	571.8, .9	581.0

Appendix 5: Cause of Death Codes
Sorted by code group number

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
61	Nephritis	Nephritis	580-585,587	580-584	590-594
62	Hyperplasia of prostate	Prostatic hyperplasia	600	600	610-612
63	Complications mainly related to pregnancy	Pregnancy complications	640-648	630-634	640-649
64	Congenital anomalies	Congenital anomalies	740-759	740-759	750-759
65	Motor vehicle accidents	Accidents (motor vehicle)	810-825	810-823	810-835
66	Accidents, excluding motor vehicle accidents (Code Group 65)	Accidents (excl. Code 65)	800-807, 826-869, 880-929	800-807, 825-929, 940-949	800-802, 840-936
67	Suicide	Suicide	950-959	950-959	970-979
68	Homicide	Homicide	960-969	960-969	980-985
69	External causes, excluding motor vehicle accidents, other accidents, suicide and homicide (Code Groups 65-68)	External (excl. Codes 65-68)	970-999	970-999	990-999
70	Causes other than those specified in Code Groups 2-69	Causes (other, not in Codes 2-69)			

Appendix 6: Causes of Death – sorted alphabetically by short title

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
65	Motor vehicle accidents	Accidents (motor vehicle)	810-825	810-823	810-835
66	Accidents, excluding motor vehicle accidents (Code Group 65)	Accidents (excl. code 65)	800-807, 826-869, 880-929	800-807, 825-929, 940-949	800-802, 840-936
49	Alcohol-related mental disorders	Alcohol-related mental disorders	291, 303, 305.0	291, 303	581.1, 307
5	Neoplasms (Code Groups 6-46)	All cancers	140-239	140-239	140-239
1	All causes (Code Groups 2-70, excluding 5,31)	All causes	001-999	001-999	001-999
48	Anaemia	Anaemia	280-285	280-285	290-299
59	Asthma	Asthma	493	493	241
57	Bronchitis	Bronchitis	490, 491, 466, 506.0	490, 491, 466	500, 501
25	Malignant neoplasm, bladder	Cancer (bladder)	188	188	181.0
18	Malignant neoplasm, bone and articular cartilage	Cancer (bone)	170	170	196
28	Malignant neoplasm, brain	Cancer (brain)	191	191	193.0
20	Malignant neoplasm, breast	Cancer (breast)	174, 175	174	170
7	Malignant neoplasm, other and unspecified parts of mouth	Cancer (buccal)	145	145	144
21	Malignant neoplasm, cervix uteri	Cancer (cervix)	180	180	171
29	Malignant neoplasm, other and unspecified parts of nervous system, excluding brain (Code Group 28)	Cancer (cns excl. code 28)	192, 237	192	193.1, .2, .3, .4, .8, .9
11	Malignant neoplasm, colon	Cancer (colon)	153	153	153
8	Malignant neoplasm, oesophagus	Cancer (oesophagus)	150	150	150

Appendix 6: Cause of Death Codes
Sorted alphabetically by short title

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
14	Malignant neoplasm, gallbladder and extrahepatic bile ducts	Cancer (gallbladder)	156	156	155.1
26	Malignant neoplasm, kidney	Cancer (kidney)	189.0, .2	189.0	180
16	Malignant neoplasm, larynx	Cancer (larynx)	161	161	161
6	Malignant neoplasm, lip	Cancer (lip)	149	140	140
13	Malignant neoplasm, liver and intrahepatic bile ducts	Cancer (liver)	155	155	155.0
17	Malignant neoplasm, trachea, bronchus and lung	Cancer (lung)	162	162.1	162.1
30	Malignant neoplasm, other than Code Groups 6-29	Cancer (other, excl.codes 6-29)	141-144, 146-149, 158-160, 163-165, 171, 179, 181, 184, 186, 187, 190, 193-199	141-144, 146-149, 158-160, 162.0, 163, 171, 181, 184, 186, 187, 190, 193-199	141-143, 145-148, 158-160, 162.0, .2, .8, 163-165, 173, 174, 175.1, .8, .9, 176-179, 192, 194, 195, 197-199
27	Malignant neoplasm, other and unspecified urinary organs, excluding kidney (Code Group 26)	Cancer (urinary excl. code 26)	189.3-189.9	189.1, .2, .3	181.7, 181.8
23	Malignant neoplasm, ovary and other uterine adnexa	Cancer (ovary)	183	183	175.0
15	Malignant neoplasm, pancreas	Cancer (pancreas)	157	157	157
24	Malignant neoplasm, prostate	Cancer (prostate)	185	185	177
12	Malignant neoplasm, rectum, rectosigmoid junction and anus	Cancer (rectum)	154	154	154

Appendix 6: Cause of Death Codes
Sorted alphabetically by short title

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
19	Malignant melanoma and other malignant neoplasm, skin	Cancer (skin)	172, 173	172, 173	190, 191
10	Malignant neoplasm, small intestine including duodenum	Cancer (small intestine)	152	152	152
9	Malignant neoplasm, stomach	Cancer (stomach)	151	151	151
22	Malignant neoplasm, body of uterus	Cancer (uterus)	182	182	172
70	Causes other than those specified in Code Groups 2-69	Causes, other (not in codes 2-69)			
54	Cerebrovascular disease	Cerebrovascular	430-438	430-438	330-334
60	Cirrhosis of liver without mention of alcohol	Cirrhosis (non-alcoholic)	571.5	571.8, .9	581.0
64	Congenital anomalies	Congenital anomalies	740-759	740-759	750-759
47	Diabetes mellitus	Diabetes	250	250	260
58	Emphysema	Emphysema	492	492	502
69	External causes, excluding motor vehicle accidents, other accidents, suicide and homicide (Code Groups 65-68)	External (excl.codes 65-68)	970-999	970-999	990-999
31	Malignant neoplasm of lymphatic and haematopoietic tissue (Code Groups 32-44)	Haematological cancers	200-208	200-209	200-207
50	Chronic rheumatic heart disease	Heart (chronic rheumatic)	393-398	393-398	410-416
52	Ischaemic heart disease	Heart (ischaemic)	410-414, 429.2	410-414	
53	Heart disease other than chronic rheumatic and ischaemic (Code Groups 50, 52)	Heart (excl. codes 50, 52)	420-429	420-429	420-434, 444-447
33	Hodgkin's disease	Hodgkin's Disease	201	201	201
68	Homicide	Homicide	960-969	960-969	980-985
51	Hypertensive disease	Hypertension	401-405	400-404	440-443

Appendix 6: Cause of Death Codes
Sorted alphabetically by short title

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
2	Infectious and parasitic diseases, excluding tuberculosis (Code Groups 2, 3)	Infectious (excl. TB)	001-009, 020-136	001-009, 020-136	020-138
55	Influenza	Influenza	487	470-474	480-483
35	Leukaemia, lymphoid, acute	Leukaemia (lymphatic acute)	204.0	204.0	204.3
36	Leukaemia, lymphoid, chronic	Leukaemia (lymphatic chronic)	204.1	204.1	204.0
37	Leukaemia, lymphoid, subacute, other and unspecified	Leukaemia (lymphatic other)	204.2-204.9	204.9	
41	Leukaemia, monocytic, acute	Leukaemia (monocytic acute)	206.0	206.0	
42	Leukaemia, monocytic chronic	Leukaemia (monocytic chronic)	206.1	206.1	204.2
43	Leukaemia, monocytic subacute, other and unspecified	Leukaemia (monocytic other)	206.2-206.9	206.9	
38	Leukaemia, myeloid, acute	Leukaemia (myeloid acute)	205.0	205.0	
39	Leukaemia, myeloid, chronic	Leukaemia (myeloid chronic)	205.1	205.1	204.1
40	Leukaemia, myeloid, subacute, other and unspecified	Leukaemia (myeloid other)	205.2-205.9	205.9	
44	Leukaemia, other specified and unspecified cell type, other than Code Groups 35-43)	Leukaemia (other excl. codes 35-43)	207, 208	207	204.4
34	Multiple myeloma and immunoproliferative neoplasms	Myeloma	203	203	203
45	Neoplasms (benign)	Neoplasms (benign)	210-229	210-228	210-229
46	Carcinoma-in-situ, neoplasms of uncertain behavior, and neoplasms of unspecified nature	Neoplasms (in situ, unspecified)	230-236, 238-239	230-239	230-239
61	Nephritis	Nephritis	580-585,587	580-584	590-594

Appendix 6: Cause of Death Codes
Sorted alphabetically by short title

CODE GROUP	DEATH CAUSE FULL TITLE	DEATH CAUSE SHORT TITLE	ICD9 (1979+)	ICD8 (1969-1978)	ICD7 (1965-1968)
32	Lymphosarcoma, reticulosarcoma and other malignant neoplasm of lymphoid and histiocytic tissue	Non-Hodgkin's lymphoma	200, 202	200, 202	200, 202, 205
56	Pneumonia	Pneumonia	480-486	480-486	490-493, 763
63	Complications mainly related to pregnancy	Pregnancy complications	640-648	630-634	640-649
62	Hyperplasia of prostate	Prostatic hyperplasia	600	600	610-612
67	Suicide	Suicide	950-959	950-959	970-979
4	Tuberculosis, excluding pulmonary and other respiratory (Code Group 3)	TB (excl. respiratory)	010, 013-018	010, 013-018	010-019
3	Tuberculosis, pulmonary and other respiratory	TB (respiratory)	011, 012	011, 012	001-008

Appendix 7: Record Layout and Data Dictionary for ASCII File

OCCUPATIONAL SURVEILLANCE IN CANADA: Cause Specific Mortality Among Workers, 1965-91 RECORD LAYOUT OF ASCII DATA FILE					
FIELD #	POSITION*	LENGTH	DATA TYPE**	FIELD REFERENCE NAME	INFORMATION CONTAINED IN FIELD
1	1 – 2	2	N	DEATHCODE	Cause of Death Code group number (70)
2	4 – 6	3	CH	AGEGROUP	Age Group (All ages 15+ or 15 to 64) (2)
3	8 – 12	5	N	OBS.DEATHS BYCAUSE	Number of deaths for this specific cause (by occupation, PINEO, sex, age group)
4	14 – 20	7	F	REL-RISK	Relative Risk
5	22 – 28	7	F	LOWER-CI	Relative risk lower 95% Confidence Interval limit
6	30 – 38	9	F	UPPER-CI	Relative risk upper 95% Confidence Interval limit
7	40 – 45	6	F	P-VALUE	Log Likelihood ratio statistic p-value
8	47	1	N	SEX	Gender of individual (2)
9	49	1	CH	PINEO	Pineo Socio-economic Classification for occupation (2)
10	51 – 54	4	N	OCC-CODE	Job/Occupation code (670)
11	56 – 58	3	N	OCC-INDICATOR	Occupation Record Indicator (670)
12	60 – 64	5	N	NUM-WORKERS	Number of people in this occupation, Pineo code and sex
13	66 – 72	7	N	PERSON-YEARS	Person-years contributed by workers in this occupation, Pineo-code, sex and age group
14	74 – 78	5	N	DEATHSBYOCCUPAT	Total number of deaths (all causes) of people for a particular occupation, Pineo code, sex and age group

***Please Note:** One space has been placed between each field in order to enhance visual clarity when viewing the file.

****Data Types:**

N = Numeric

CH = Character

F = Floating Point (Decimal numbers)

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

DATA DICTIONARY ASCII DATA FILE		FIELD # 1
REFERENCE NAME:	DEATHCODE	
FIELD CONTENTS:	CAUSE OF DEATH CODE GROUP NUMBER	
FORMAT ON ASCII FILE		
POSITION: 1-2		
LENGTH: 2		
TYPE: NUMERIC		
FIELD DESCRIPTION		
<p>This is a code group, from 1-70 describing the cause of death for subjects in this study who have died. The cause is a combined description of the International Classification of Diseases (ICD), for ICD-7, ICDA-8 and ICD-9 Codes. The versions of ICD codes originally assigned were those in effect at the date of death.</p>		
CODE DEFINITION		
<p>Codes: 1-70</p>		
<p>See Death Cause List in Appendices 5 & 6</p>		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

DATA DICTIONARY ASCII DATA FILE		FIELD # 2
REFERENCE NAME:	AGEGROUP	
FIELD CONTENTS:	AGE GROUP	
FORMAT ON ASCII FILE		
POSITION: 4-6		
LENGTH: 3		
TYPE: CHARACTER		
FIELD DESCRIPTION		
Two age groups: - all ages 15+ - ages 15-64		
CODE DEFINITION		
ALL = All ages from 15+		
64 = Ages from 15 to 64 years old		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

DATA DICTIONARY ASCII DATA FILE		FIELD # 3
REFERENCE NAME:	OBS.DEATHSBYCAUSE	
FIELD CONTENTS:	NUMBER OF DEATHS BY SPECIFIC CAUSE	
FORMAT ON ASCII FILE		
POSITION:	8-12	
LENGTH:	5	
TYPE:	NUMERIC	
FIELD DESCRIPTION		
Total number of deaths of individuals in this study for this specific cause, in this occupation, Pineo code (socio-economic classification: white collar, blue collar), sex and age group.		
CODE DEFINITION		
Numbers > 0		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

DATA DICTIONARY ASCII DATA FILE		FIELD # 4
REFERENCE NAME:	REL-RISK	
FIELD CONTENTS:	RELATIVE RISK	
FORMAT ON ASCII FILE		
POSITION:	14-20	
LENGTH:	7	
TYPE:	FLOATING POINT (DECIMAL NUMBERS)	
FIELD DESCRIPTION		
<p>The risk of dying from this specific cause of death associated with those employed in this occupation, i.e. with this occupational code compared to that in all occupations in the same sex and occupational classification code (Pineo), i.e. white collar or blue collar workers.</p>		
CODE DEFINITION		
Range:	0.00 – 7766.00	

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

<div>DATA DICTIONARY ASCII DATA FILE</div>		FIELD # 5
REFERENCE NAME:	LOWER-CI	
FIELD CONTENTS:	REL. RISK LOWER 95% CONFIDENCE LEVEL INTERVAL LIMIT	
FORMAT ON ASCII FILE		
POSITION:	22-28	
LENGTH:	7	
TYPE:	FLOATING POINT (DECIMAL NUMBERS)	
FIELD DESCRIPTION		
The lower boundary of the 95% Confidence Interval for this Relative Risk.		
The lower level of a range of possible values for the Relative Risk associated with this cause of death and this occupational code.		
CODE DEFINITION		
Floating point decimal number		
Maximum Field Size: 9999.99		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

<div>DATA DICTIONARY ASCII DATA FILE</div>		FIELD # 6
REFERENCE NAME:	UPPER-CI	
FIELD CONTENTS:	REL. RISK UPPER 95% CONFIDENCE LEVEL LIMIT	
FORMAT ON ASCII FILE		
POSITION:	30-38	
LENGTH:	9	
TYPE:	FLOATING POINT (DECIMAL NUMBERS)	
FIELD DESCRIPTION		
The upper boundary of the 95% Confidence Interval for the Relative Risk.		
The upper level of a range of possible values for the Relative Risk associated with this cause of death and this occupational code.		
CODE DEFINITION		
Floating point decimal number		
Maximum Field Size: 999999.99		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
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DATA DICTIONARY ASCII DATA FILE		FIELD # 7
REFERENCE NAME:	P-VALUE	
FIELD CONTENTS:	LOG LIKELIHOOD RATIO STATISTIC P-VALUE	
FORMAT ON ASCII FILE		
POSITION:	40-45	
LENGTH:	6	
TYPE:	FLOATING POINT (DECIMAL NUMBERS)	
FIELD DESCRIPTION		
<p>The probability that the difference observed could have occurred by chance if the groups compared were really alike i.e. under the null hypothesis. In most epidemiologic work if this value is less than 0.05 (5%), the study result is considered sufficiently unlikely to have occurred by chance and will be designated as “statistically significant”.</p>		
CODE DEFINITION		
Floating point decimal number		
Range: 0.0000-0.9999		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
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<p>DATA DICTIONARY ASCII DATA FILE</p>		FIELD # 8
REFERENCE NAME:	SEX	
FIELD CONTENTS:	SEX	
<p>FORMAT ON ASCII FILE</p> <p>POSITION: 47</p> <p>LENGTH: 1</p> <p>TYPE: NUMERIC</p>		
<p>FIELD DESCRIPTION</p> <p>Gender of individual.</p>		
<p>CODE DEFINITION</p> <p>1 = Male</p> <p>2 = Female</p>		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
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DATA DICTIONARY ASCII DATA FILE		FIELD # 9
REFERENCE NAME:	PINEO	
FIELD CONTENTS:	SOCIO-ECONOMIC CLASSIFICATION FOR OCCUPATION	
FORMAT ON ASCII FILE		
POSITION:	49	
LENGTH:	1	
TYPE:	CHARACTER	
FIELD DESCRIPTION		
<p>Adapted from the code devised by P.C. Pineo to define different socio-economic levels by occupation. See References and Glossary.</p> <p>The Pineo socio-economic classification of occupations groups the Standard Occupational Classification Codes (SOC) for Canada into 16 levels of socio-economic status. These 16 levels have been collapsed into two levels to use for this study. The two levels are specified as “white collar” occupations and “blue collar” occupations.</p>		
CODE DEFINITION		
<p>B = Blue Collar Occupations W = White Collar Occupations</p> <p>See Occupation Code with occupational classification in Appendices 1-4.</p> <p>Identified as Occupational Classification in the FULL and SELECTED TABLES</p>		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
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DATA DICTIONARY ASCII DATA FILE		FIELD # 10
REFERENCE NAME:	OCC-CODE	
FIELD CONTENTS:	JOB/OCCUPATION CODE	
FORMAT ON ASCII FILE		
POSITION:	51-54	
LENGTH:	4	
TYPE:	NUMERIC	
FIELD DESCRIPTION		
Occupation of the individual.		
There are 670 distinct occupation codes for this cohort. The occupations are coded using the Statistics Canada Census of Canada Standard Occupational Classification (SOC) – see Appendices 1-4. The data for 1965-1969 are coded according to the 1961 3-digit codes; the 1971 codes are 4-digit codes (no 1970 data were available).		
CODE DEFINITION		
Code Values: 1-9919		
1961 Codes: For 1965-1969:	Codes 001-980 for Unit Groups, (261 codes) within 13 Major Divisions	
1971 Codes: For 1971:	Codes 1111-9919 for Unit Groups, (409 codes), grouped within 22 Major Groups	
See codes and occupation titles in Appendices 1-4		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
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DATA DICTIONARY ASCII DATA FILE		FIELD # 11
REFERENCE NAME:	OCC-INDICATOR	
FIELD CONTENTS:	OCCUPATION RECORD INDICATOR	
FORMAT ON ASCII FILE		
POSITION:	56-58	
LENGTH:	3	
TYPE:	NUMERIC	
FIELD DESCRIPTION		
<p>A number allocated in order, from 1, to each record by occupation code within the file.</p> <p>The same number identifies all the records within a specific occupation, changing with each occupation code.</p> <p>It is useful for locating a record or group of records.</p>		
CODE DEFINITION		
<p>Number >0</p> <p>Range of Numbers from 1-740 (There are 670 distinct occupation - some numbers are not used).</p>		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
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DATA DICTIONARY ASCII DATA FILE		FIELD # 12
REFERENCE NAME:	NUM-WORKERS	
FIELD CONTENTS:	NUMBER OF PEOPLE IN THIS OCCUPATION, PINEO CODE AND SEX	
FORMAT ON ASCII FILE		
POSITION:	60-64	
LENGTH:	5	
TYPE:	NUMERIC	
FIELD DESCRIPTION		
Total number of people in this study in this specific occupation, socio-economic classification (Pineo), and sex.		
CODE DEFINITION		
Number > 0		

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

FIELD # 13	
DATA DICTIONARY ASCII DATA FILE	
REFERENCE NAME:	PERSON-YEARS
FIELD CONTENTS:	PERSON YEARS CONTRIBUTED BY PEOPLE IN THIS OCCUPATION, PINEO CODE, SEX AND AGE GROUP.
FORMAT ON ASCII FILE	
POSITION:	66-72
LENGTH:	7
TYPE:	NUMERIC
FIELD DESCRIPTION	
Total years contributed from 1965, or date of hire, to 31st December 1991, or date of their death, by all individuals in this study in this particular occupation, socio-economic classification (PINEO), sex and age group.	
CODE DEFINITION	
Number > 0	

**OCCUPATIONAL SURVEILLANCE IN CANADA:
Cause Specific Mortality Among Workers 1965-1991**

DATA DICTIONARY ASCII DATA FILE		FIELD # 14
REFERENCE NAME:	DEATHSBYOCCUPAT	
FIELD CONTENTS:	TOTAL NUMBER OF DEATHS OF PEOPLE IN THIS OCCUPATION, PINEO CODE, SEX AND AGE GROUP.	
FORMAT ON ASCII FILE		
POSITION:	74-78	
LENGTH:	5	
TYPE:	NUMERIC	
FIELD DESCRIPTION		
Total number of deaths of individuals in this study who worked in this particular occupation, socio-economic classification (PINEO), sex and age group. (For number of deaths for the <u>specific cause</u> , see OBS.DEATHSBYCAUSE.)		
CODE DEFINITION		
Number > 0		

Appendix 8: Glossary of Terms

Age Group	In this study the analysis included 5-year age groups using the age of the person (in completed years) at the time of death. The results are presented for two age groups: these are ages 15-64 and ages 15+, referred to as “all” ages.
Cause of Death	This is based on the concept of the underlying cause, i.e. the disease or injury that initiated the sequence of events that led to death, or the circumstances of the accident or violence which produced the fatal injury. This is stated by the certifying physician on the death registration. Information is provided to Statistics Canada by vital statistics registrars in each province/territory. All deaths included in this report are based on the underlying cause of death, coded to the International Classification of Disease code in effect at the time of death (see International Classification of Diseases and Cause of Death Codes).
Cause of Death Codes	Cause of death codes for this study have been grouped into 70 categories, each relating to a specified group of causes of death coded under the International Classification of Diseases (see International Classification of Diseases (ICD)). For the period of this study the 7 th , 8 th , and 9 th Revisions of the ICD have been used. See Appendices 5 & 6 for the complete list of the 70 code groups with the equivalent ICD’s.
Cohort	Any designated group of persons which is followed or traced over a period of time.
Confidence Interval	<p>A computed interval with a given probability, e.g. 95%, that the true value of a variable such as a mean, in this case the relative risk, is contained within the interval (Last, 1995) (see Relative Risk).</p> <p>Lower Confidence Interval Limit: the lower boundary of the Confidence Interval for the relative risk.</p> <p>Upper Confidence Interval Limit: the upper boundary of the Confidence Interval for the relative risk.</p>
Control Group, Internal	The comparison group of persons who are not in the particular occupation being studied but are still within this same working cohort. In this study this includes all occupations within the same sex and occupational classification (white or blue collar), e.g. miners (male, blue-collar workers) have been compared with all male blue-collar workers.

Follow-up	Observation over a period of time of an individual, group or population whose characteristics have been assessed in order to observe changes in health status or health-related variables.
GRLS	The Generalized Record Linkage System is a probabilistic record linkage software system available at Statistics Canada. The main-frame version (GRLS.V1) was used in this study.
International Classification of Diseases (ICD)	The classification of specific conditions and groups of conditions determined by an internationally representative group of experts who advise the World Health Organization. Various revisions have occurred over the years. Those used in this study are ICD-7 (1958-68), ICDA-8 (1969-78) and ICD-9 (1979-1991) (see Cause of Death Codes).
Log Likelihood Ratio Statistic p-value	The p-value for the log likelihood ratio statistic indicates the probability that the test statistic, i.e. the relative risk in this case, would be equal to or more extreme than observed if the null hypothesis were true. The p-value, with a decimal notation between 0 and 1 (e.g. 0.55), is a statement of the probability that the difference observed could have occurred by chance if the groups compared were really alike i.e. under the null hypothesis. Conventionally, in most epidemiologic work, if this probability value is less than 0.05 (5%), or 0.01 (1%) the study result is considered sufficiently unlikely to have occurred by chance and will usually be designated as "statistically significant". (Last 1995) However, many comparisons are made in this study and the p-value here should be treated as only one piece of evidence
Mortality	Death from a particular cause (see Cause of Death).
Occupational Cohort	This cohort includes all persons 15 years of age and over, who were employed in the labour force during any of the years 1965-71 (excluding 1970), who had been allocated Social Insurance Numbers, who were covered by unemployment insurance and who were surveyed for this study.
Occupation Codes	These codes are taken from: i) <i>Occupational Classification Manual Census of Canada, 1961</i> , Dominion Bureau of Statistics, 1961. This provides occupational classification revised to take account of changes in the occupational composition of the labour force resulting from industrial and technological developments in the previous decade.

ii) *Occupational Classification Manual Census of Canada, 1971 based on the Canadian Classification and Dictionary of Occupations*, Dominion Bureau of Statistics, 1971. This was designed for use in the Census of Canada, 1971, as well as for multipurpose use or as a "standard" classification.

The occupation is described in terms of the "kind of work performed" as determined by analysis of the duties and tasks of the constituent occupations.

The 1961 standard occupation codes (SOC) have a 3-digit coding system. The 1971 standard occupation codes have a 4-digit coding system (see Appendices 1-4 for the complete numerical and alphabetical occupation code lists). The 1961 and 1971 occupation census codes are not readily reconcilable.

Occupational Surveillance Detailed examination and/or analysis of health outcomes of "exposure" to specific occupations to detect the health status of workers in order to initiate investigative or control measures to extend survival and improve quality of life.

Person-Years A unit of measurement combining persons and time. Each subject contributes years to the population at risk during the follow-up period (1965-91) or until the year of their death.

Pineo Code A classification code devised by P.C. Pineo to define different socio-economic classifications of occupations in Canada. (Reference: Pineo PC, *Revisions of the Pineo-Porter-McRoberts socio-economic classification of occupations for the 1981 census*, QSEP (Quantitative Studies in Economics and Population) Research Report No. 125, McMaster University, Hamilton, Ontario, 1985). The Pineo code classifies the Standard Occupational Classification Codes (SOC) into 16 levels of socio-economic status. These 16 codes have been collapsed into a two-level classification for this study, specified as "white-collar"(W) and "blue-collar"(B) occupations (see Appendices 1-4 for the Pineo socio-economic classification code related to each of the occupation codes used in this study).

P-Value The p (probability) value, ranging from zero to 1, is a statement of the probability that the difference observed could have occurred by chance if the groups compared were really alike i.e. under the null hypothesis. (Last, 1995) (see Log Likelihood Ratio Statistic p-value).

Record Linkage	A method for assembling the information contained in two or more records relating to the same individual, family, or entity.
Relative Risk	The ratio of the risk of death among those in the occupation being considered to that in all occupations in the same sex and occupational classification (white- or blue-collar).
SAS	Statistical Analysis System, computer software. SAS Institute Inc., SAS Campus Drive, Cary, NC 27513.
SOC	Standard Occupation Codes (see Occupation Codes).
Underlying Cause of Death	See Cause of Death.
Socio-economic Classification	Arrangement of persons into groups according to such characteristics as prior education, occupation and income. This usually reveals a strong correlation with health-related characteristics such as average length of life and risk of dying from certain specific causes. The classification system used here is based on a Canadian occupational classification system, see Pineo Code.