

# Working shift

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**T**hree out of ten Canadian workers do not work regular daytime hours. They are the nation's shift workers, providing essential services such as police and fire services, round-the-clock health care, and transportation. They also provide many of the services we enjoy - entertainment, dining and shopping, for example - and produce many of the manufactured goods we purchase.

This article takes a broad look at shift work, defining it as a non-standard work schedule that falls outside the normal "9-to-5" workday which begins in the morning and ends in the afternoon. It therefore encompasses regular rotating schedules, evening shifts and night shifts, as well as irregular days or hours and "on-call" work. These types of work schedules affected the professional and personal lives of about 2 million full-time and 1 million part-time employees in 1991.

For the workers who regularly put in non-standard hours, there may be both benefits and costs associated with their schedules. For some, shift work may be the only type of work available, either because jobs with standard hours are in short supply, or because their occupation requires that they work outside the regular 9-to-5 schedule. Working shift allows students to earn money without interfering with school. It may also be an advantage to some parents as a child care strategy, enabling a couple to save on day care costs while sharing the care of their children.

On the other hand, medical and sociological research documents some of the potential costs of shift work. Disrupted biological rhythms, insufficient sleep, and poor eating habits may be related to shift work and may contribute to emotional and physical health problems ([Finn](#), 1981). Shift hours can put workers out of sync with the people around them, and fatigue and tension may place further stress on family and social relationships. Finally, in the absence of round-the-clock child care services, shift work may present a child care dilemma, especially for lone parents or couples who work the same shift schedules.

Using results from the 1991 Survey of Work Arrangements, this article assesses the prevalence of non-standard work schedules, selected demographic and socio-economic characteristics of shift workers, and their main reasons for working shift. Since the labour force and demographic characteristics of full-time workers differ considerably from those of part-time workers, each group is examined separately.

# Full-time workers

## Almost one in four full-time employees works shift

Of the 8.5 million full-time paid workers in Canada in 1991, almost 2 million, or 23%, had schedules that differed from the regular daytime standard. These people were shift workers (see [Data and definitions](#)).

The schedules of full-time shift workers vary considerably. Almost two-thirds of them had "regular" schedules. By far the most common of these was the rotating shift, where the hours worked periodically change from days to evenings or nights (40%). The second most common was evenings (15%), followed by nights (6%), and split-shifts (3%). However, 3 out of 10 full-time shift workers did not work any of these schedules, having instead "irregular" shifts. An additional 3% worked on call ([Table 1](#)).



### Table 1 Proportion of paid workers\* by schedule of main job, type of work and sex, 1991

Source: *Survey of Work Arrangements*

\* Aged 15 to 64.

## Who works shift?

Shift work was slightly more common among male than female full-time employees (25% compared with 21%), but men were more likely to have pre-arranged schedules. Only 27% of male shift workers had irregular schedules, compared with 36% of women.

Teenagers, particularly young women, had the highest shift rates, at 31%. And while the incidence of shift work decreased sharply among full-time workers over age 24, a substantial proportion (22%) were employed outside regular daytime hours. Although a smaller proportion of adults than youths worked shift, those aged 25 and over accounted for the great majority of all full-time shift workers ([Chart A](#)).



### Chart A In 1991, the demographic profiles of full- and part-time shift workers differed dramatically.

Source: *Survey of Work Arrangements*

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Educational attainment did not seem to influence male shift rates. The exception was found among men with university degrees, whose rate was half the 27% average. Women's shift rates tended to decline at higher levels of education, apart from women with postsecondary certificates or diplomas. This anomaly is partly due to the high proportion of female shift workers with qualifications in health care.

## No choice in the matter

The vast majority of both male and female full-time shift workers felt they had no control over their work schedules. Among those who gave a reason for working shift, about 89% of men and 83% of women worked shift because it was required by the job. Only 6% of women (48,000), and almost no men chose to work shift because of child care or family responsibilities; a similarly small proportion of men and women (4%) worked shift to earn more money.

The rate of shift work by occupation [\(1\)](#) also suggests that necessity, rather than choice, dictates the work schedule of most full-time shift workers. The constant need for police, fire protection and health care is reflected in the high rates for protective and health occupations: almost 70% of police officers, firefighters and security guards, and 50% of health workers, worked shift. Rotating shifts dominated, but irregular shifts were also common.

Almost 3 out of 10 workers in the processing occupations had non-standard schedules to keep capital-intensive manufacturing plants and equipment in production, while 4 out of 10 employees in transportation and material handling worked shift to provide continual movement of goods and people. In contrast, occupations associated with the office - clerical workers, non-health professionals, and management - had shift rates below 15%. Construction workers were the least likely to work shift ([Chart B](#)).



### Chart B Occupation most often determined if an employee worked shift in 1991.

Source: *Survey of Work Arrangements*

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The distribution of full-time shift workers across the major occupations is influenced not only by shift rates, but also by the relative size of the occupational group.

Accordingly, workers in processing and those in food, beverage and other services each accounted for 17% of all shift workers. Despite high shift rates, only 11% worked in the health occupations and 6% in protective services. Conversely, although the incidence of shift work was very low in clerical occupations, the number of employees in this group was so large that they accounted for a further 10% of shift workers.

## Shift work and families

In 1991, just over a third of all full-time shift workers (700,000) were parents with children under the age of 16 at home; of these, half were parents of children under 6. There is little indication that workers with family responsibilities avoided shifts ([Table 2](#)).



Table 2

### Shift rates of full-time paid workers by type of family, presence of children and sex, 1991

Source:

*Survey of Work Arrangements*

Although men in dual-earner families and lone-parent fathers had lower shift rates than those in single-earner families or those who were unattached, the differences were small and there was little variation by presence and age of children.

Among women, the shift rate differed notably from the average (21%) in only two family situations. In the first, it was 27% for single-earner families with a husband and at least one child under 6, perhaps reflecting the presence of a non-working husband at home able to provide child care. In the second case, the shift rate climbed even higher, to 33%, for female lone parents with children under 6. For many of the women in this situation, it is likely that child care arrangements are complex and problematic, since institutional day care is almost exclusively a daytime operation.

## Part-time workers

### Most part-timers work shift

About 6 in 10 part-time employees are shift workers, and the majority of them do not have regular schedules. In 1991, just over 40% worked irregular schedules and an additional 18% worked on call; another 20% had regular evening hours, and 2% worked regular nights.

Over half of the part-time shift workforce is under the age of 25. Three-quarters of workers aged 15 to 24

had part-time shifts; not surprisingly, most (84%) were students.

Even though about 70% of men with part-time jobs worked shift, they represented fewer than 1 in 10 part-time shift workers, mainly because so few work less than 30 hours a week. On the other hand, part-time work is common among women, who accounted for over one-third of all part-time shift workers, even though their shift rate was lower than men's or youths'.

Shift work characterizes the majority of part-time schedules in almost all occupations. However, because of their large numbers, more than two-thirds of all part-time shift workers were concentrated in only three occupations: food, beverage and other services (29%); clerical work, including cashiers (22%); and sales (17%).

## Part-timers exercise more choice

Part-time workers were much more likely than full-time workers to be working shift to accommodate "other responsibilities." The element of choice was far more common among youths - almost two-thirds worked shift to allow time for school. Indeed, both short hours and non-standard schedules are well suited to the joint demands of school and work. Job requirements dictated the work schedules of the majority of adult men. For women, 16% had child care responsibilities that made shift hours more attractive than regular daytime schedules.

## Trends in shift work

Little information about the incidence of shift work is available for Canada, although some tentative conclusions may be drawn from work done in 1967. In June of that year, 19% of all paid workers (both full- and part-time) reported that they usually worked "nights" as distinct from standard daytime schedules. The shift rate for all paid workers in 1991 was 30%. While this may indicate a sharp upward trend over the last 25 years, the two estimates are not strictly comparable. [\(2\)](#)

Similarly, although the U.S. Bureau of Labor has measured the extent of shift work on three occasions over the last 15 years, each time the methods and concepts used were different enough to make comparisons problematic. The most recent estimate (May 1991) indicates that the schedules of 18% of all full-time wage and salary workers 16 years and over diverged from the regular daytime norm. This figure is considerably lower than the 1991 estimate for Canadian full-time workers (23%).

Despite the shortage of historical evidence, it seems that Canada has seen a long-term rise in the incidence of shift work. Over the last two decades, the workplace has changed in ways that encourage - and demand - the use of shift work. The service-producing sector's reliance on part-time workers is largely responsible for their growth from 11% of the total workforce in 1976 to 16% in 1991, and for the dramatic rise in the proportion of students working during the school year - up from 25% to almost 40% over the same period. And, as shown in this article, non-standard schedules are characteristic of both part-time work and

student labour.



## Chart C **At least one-quarter of full-time workers in five major industries had shift schedules in 1991.**

*Source: Survey of Work Arrangements*

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The future is likely to hold more of the same. For instance, the proportion of persons working in manufacturing is dropping, but the need for greater productivity may push the rate of shift work among these workers higher. Similar pressures are being exerted to distribute goods and services at the customer's convenience, a service generally provided by shift workers.

## Summary

Shift work is an important component of labour force activity in Canada. In 1991, it influenced the working lives of almost one-quarter of all full-time paid workers, and almost two-thirds of all part-timers. In most cases, their work schedules were dictated by the nature of their jobs.

Among full-time workers, men were somewhat more likely to work shift than women, and the incidence of shift work decreased with age for both sexes. Shift rates were highest among those who offer essential services - firefighting, law enforcement, and health care - but were also quite high among those employed in hospitality, transportation, material handling and processing jobs. The presence of young children made little difference to the likelihood that parents were working shift.

Over 60% of all part-time employees worked shift, and they tended to have irregular schedules that varied from day to day or week to week. Youths, primarily students, accounted for just over half of all part-time shift workers, while women made up most of the remainder.

Future trends in the prevalence of non-standard hours warrant close attention. Currently, 3 million shift workers are exposed to the physical and social problems often associated with non-standard hours, and many must continually adapt their personal and family schedules to the variable demands of irregular shifts. Nevertheless, the incidence of shift work is likely to increase in conjunction with demands for greater productivity and customer convenience, and the growth in part-time and student employment.

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# Data and definitions

The Survey of Work Arrangements was conducted as a supplement to the November 1991 Labour Force Survey (LFS) and collected data on the work schedules of paid workers employed during the LFS reference week. Information is available on a variety of issues, such as when people worked, the amount of control they had over their schedules, the extent and characteristics of home-based workers, and additional information on second jobs that was not previously collected.

## Work schedule definitions

There are several ways to measure the extent of shift work. One method is to determine the number of workers who worked a majority of their daily hours in any one week between 5 p.m. and 7 a.m. But this method does not fully capture the reality of workers whose schedules vary from week to week, or even day to day (rotating, split-shift, on-call and irregular schedules).

The data in this article are based on self-identification; that is, the respondent was asked which of several definitions best described their usual schedule in their **main job**. This method also has its shortcomings, as it excludes shift work associated with a second job. In 1991, an estimated 290,000 shift workers were moonlighting, holding down a second job in conjunction with a regular full-time day job. Information on these workers is not available from the survey.

**Regular daytime** - work either follows the standard 9-to-5 schedule or begins in the morning and ends in the afternoon (including weekends).

**Regular evening shift** - work starts at about 3 p.m. or 4 p.m. and ends around midnight.

**Regular night or graveyard shift** - work starts at or around midnight and ends around 8 a.m.

**Rotating shift** - a combination of the above shifts, provided the shifts rotate regularly and one shift does not predominate over the other(s).

**Split shift** - two or more distinct periods of work with an interval of free time - not solely a lunch break, for example - between work periods. A bus driver who works morning and afternoon rush hours with a five-hour break in between is on split shift.

**On-call** - hours vary considerably from one week to the next. Workers are asked to work as the need arises, rather than on a pre-arranged schedule.

**Irregular schedule** - workers do not have regular schedules but work for the same employers on a consistent basis. The schedule is usually arranged one week or more in advance.

**Other** - schedules that do not fit any of the above categories.

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## Notes

### *Note 1*

The occupational classification used in this article is based on the 1980 Standard Occupational Classification and is aggregated as follows:

- **Managerial, administrative, and professional**
  - Managerial
  - Non-health professional
  - Medicine and health
- **Clerical and related**
- **Sales**
- **Service**
  - Protective services
  - Food, beverage and other services
- **Primary**
- **Processing**
- **Construction**
- **Transportation**
- **Material handling and other crafts**

### *Note 2*

The 1967 and 1991 figures should be compared with caution for three reasons: (1) the 1967 survey included 14 year-olds, while the 1991 survey did not; (2) the estimates measure shift rates for different months of the year (if seasonal factors were taken into account, it is reasonable to assume that the difference between the rates would be even larger, because the incidence of shift work probably rises in the summer months); (3) the earlier survey did not allow for irregular and rotating shifts (if it had, the gap between the estimates would probably be smaller, more than offsetting the effects of seasonality).

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## Source

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This is the second of six articles in the issue.

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Table 1

**Proportion of paid workers\* by schedule of main job, type of work and sex, 1991**

	Total paid workers	Regular daytime schedule	Shift work schedule	Proportion of shift workers					
				Total	Evening	Night	Rotating	Irregular	Other**
				'000	%	%			
<b>All workers</b>	<b>10,332</b>	<b>70</b>	<b>30</b>	<b>100</b>	<b>16</b>	<b>5</b>	<b>30</b>	<b>35</b>	<b>14</b>
Men	5,350	70	30	100	17	5	36	29	13
Women	4,982	70	30	100	16	4	25	40	15
<b>Full-time</b>	<b>8,542</b>	<b>77</b>	<b>23</b>	<b>100</b>	<b>15</b>	<b>6</b>	<b>40</b>	<b>30</b>	<b>9</b>
Men	4,819	75	25	100	15	6	44	27	8
Women	3,723	79	21	100	14	6	35	36	9
<b>Part-time</b>	<b>1,790</b>	<b>39</b>	<b>61</b>	<b>100</b>	<b>20</b>	<b>2</b>	<b>12</b>	<b>42</b>	<b>23</b>
Men	531	29	71	100	23	--	10	37	27
Women	1,259	43	57	100	18	--	14	45	21

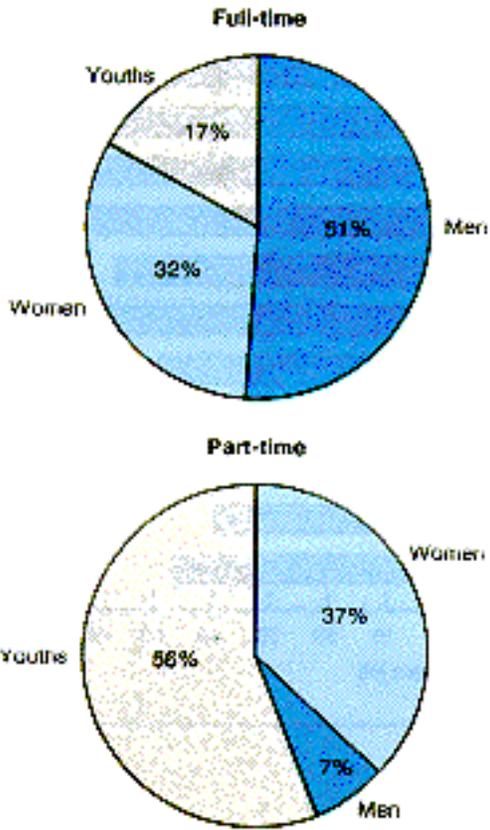
Source: Survey of Work Arrangements

\* Aged 15 to 64.

\*\* Includes split-shift and on-call schedules.

Chart A

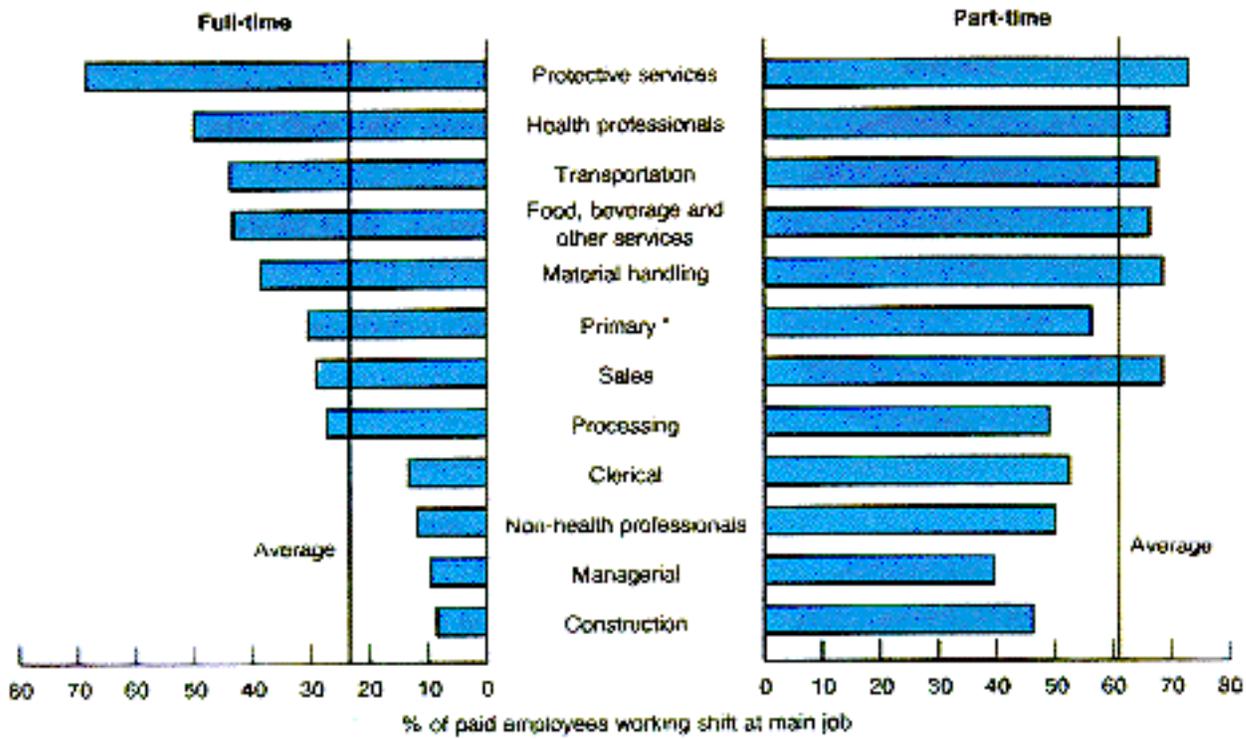
In 1991, the demographic profiles of full- and part-time shift workers differed dramatically.



Source: Survey of Work Arrangements

Chart B

Occupation most often determined if an employee worked shift in 1991.



Source: Survey of Work Arrangements

\* Includes farming, fishing, forestry and mining.

Table 2

**Shift rates of full-time paid workers by type of family, presence of children and sex, 1991**

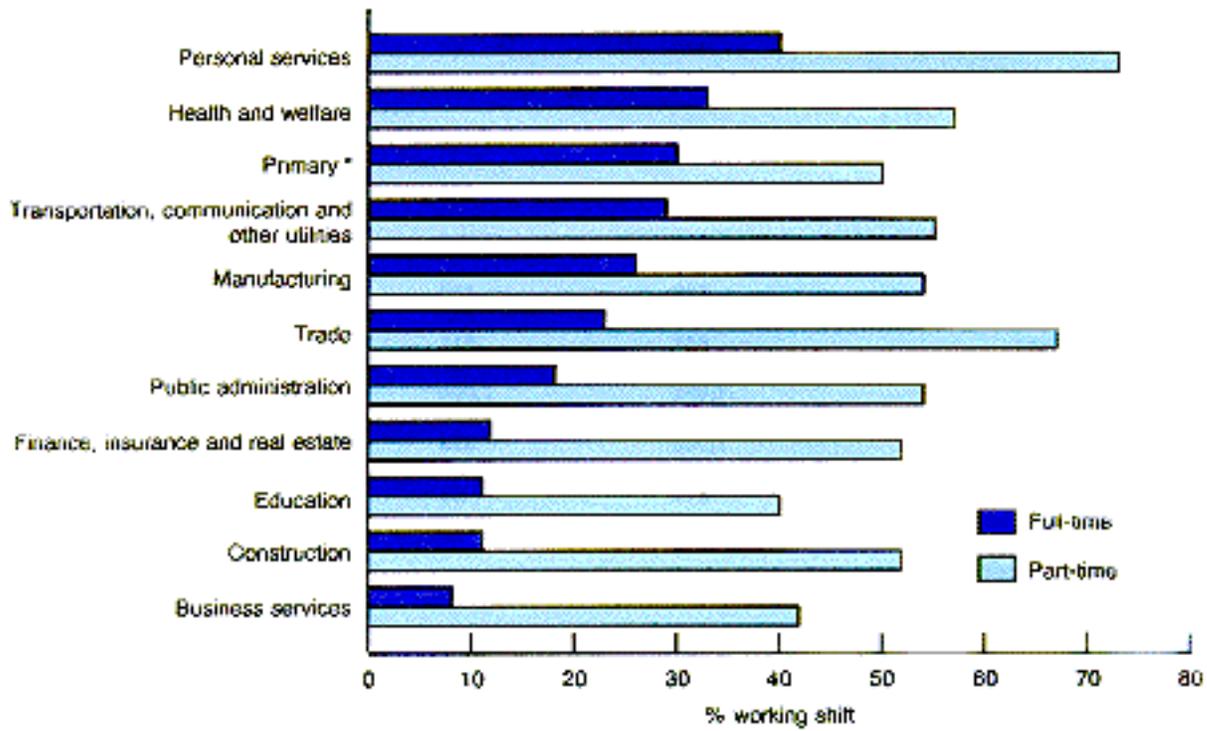
	Total employment		Shift rate	
	Men	Women	Men	Women
	'000		%	
<b>Total*</b>	<b>4,819</b>	<b>3,723</b>	<b>25</b>	<b>21</b>
Unattached individuals	714	643	27	23
Dual-earner families	2,251	1,965	23	20
With at least one child under 6 years	589	450	23	18
At least one child 6-15 years	641	511	21	22
No children under 16 years	1,022	1,004	24	20
Single-earner families	1,008	328	26	20
With at least one child under 6 years	371	58	26	27
At least one child 6-15 years	246	67	26	17
No children under 16 years	391	203	26	19
Lone parents	74	261	23	23
With at least one child under 6 years	6	50	--	33
At least one child 6-15 years	33	125	--	21
No children under 16 years	35	86	--	19

*Source: Survey of Work Arrangements*

*\* Includes other family members.*

Chart C

At least one-quarter of full-time workers in five major industries had shift schedules in 1991.



Source: Survey of Work Arrangements

\* includes agriculture, fishing, forestry and mining.