

OCCUPATIONAL SAFETY PROBLEMS IN QUEBEC'S TELECOMMUNICATION INDUSTRY

G. MATHIEU and P. ROHAN

University of Québec, INRS-Santé, Montréal, Canada

ABSTRACT

According to the overall work injury experience, the Québec telecommunication industry ranked among the medium-risk group of occupations between 1971 and 1977. During this period, the total number of employees increased by 33%. The rate of all work injuries (WI) rose from 6.9 to 8.5 per 100 workers. Disabling WI showed a significant increase from 1.0 per 100 workers, in 1971, to 2.8, in 1977. During the same period, off-work disabling injuries rose from 3.7 to 5.1 per 100 workers. Attitudes of physicians as well as cultural and socio-economic factors could be considered in the changing attitude of younger employees toward some injuries (having a strong subjective component), and toward absenteeism. Nevertheless, the continuing increase of disabling injury frequency is striking. These findings are consistent with trends in other types of industrial activities in Québec and, partially, all over Canada.

Medical services and departments of occupational safety became integral parts of the telecommunication industry all over North America. In recent years, we have been following problems related to occupational health and safety in Québec's telecommunication industry (QTI) covering practically the Eastern Region within a larger Canadian telecommunication system (CTS).

Immediately after hiring, special task and safety training as well as periodic educational health and safety programs have been periodically applied. Despite these and other preventive measures, the increase in disabling (i.e. at least one day beyond the day of accident) work accidents indicates that the present preventive measures are not efficient enough, mainly in newly hired young employees starting their apprentice year in an entirely new environment.

Our retrospective study in Québec covered about 1/3 of the workers employed within the mentioned CTS. During 1977, about 51% of employees were women, mostly employed in low-risk occupations. Between 1973 and 1977, the age-group distribution peaks were in the 20 to 29 years, amounting to 43 to 40% of workers. The highest frequency of disabling work accidents was registered in the same age group, with 52%.

Most of the work injuries, 4/5 to 9/10, were found in the "plant" and in "administrative services". The "plant" involves employees working in

installations, repair and maintenance of telecommunication equipment, on customers or business premises, in public buildings under construction, in manholes, on the poles, during the construction of new telephone lines, setting new poles and during the installation of underground cables.

The "administrative services" contain divisions of material and supplies, automobile equipment and maintenance, drivers, messengers, coin telephone collectors, dining room attendants and building maintenance services.

The remaining 1/10 to 1/5 of work injuries occur among telephone operators, office clerks and other employees with predominantly sedentary occupations. Table 1 summarizes the work injuries situation in the Quebec telephone industry.

TABLE 1
Outline of injuries suffered by employees in the Quebec telephone industries (1971-1977). All rates are per 100 employees.

| | Year | |
|---|-------|-------|
| | 1971 | 1977 |
| Total number of employees (thousands, rounded) | 12 | 16 |
| Percent of CTS* | 30 | 33 |
| Frequency rate of all work injuries | 6.9 | 8.5 |
| Percent of CTS | 29 | 38 |
| Frequency rate of disabling work injuries | 1.0 | 2.8 |
| Percent of CTS | 36 | 53 |
| Ratio of disabling work injuries vs all work injuries | 0.14 | 0.33 |
| Severity of disabling work injuries** | | |
| - work injuries per 100 employees | 29.6 | 43.9 |
| - number of lost days | 3 516 | 7 269 |
| - days of absence, per case | 25.5 | 15.4 |
| Frequency rate of off duty disabling injuries | 3.7 | 5.1 |
| Frequency rate of all injuries (on-and off duty) | 10.7 | 13.6 |

*Canadian telecommunication system, of which Quebec telephone industry is part.

**Without fatalities and permanent disabilities.

1975 and up: work days

1974 and down: calendar days

Experience seems to be a major contributing factor in the frequency of work injuries in the telephone industry. As seen in Table 2, comparisons of the experience distribution groups with appropriate work injury frequency revealed that about 1/4 of disabling work injuries occurred in newly hired workers during the first year of employment. About 11% of disabling work injuries were registered during the first six months after hiring. These facts alone justify special professional care and intensified safety measures in young, newly hired workers.

TABLE 2
Distribution of disabling work accidents by experience of workers.

| Year | Experience | |
|------|------------|--------------|
| | 0-5 years | Over 5 years |
| 1971 | 35% | 65% |
| 1974 | 55% | 45% |
| 1977 | 65% | 35% |

In order to explore whether the increased frequency of disabling work injuries in less experienced employees is a real phenomenon or might be due to a changing attitude of the young generation, we compared the trends of two categories of disabling injuries among employees, with up to 5 years of work experience. "Subjective" group "A": disabling injuries with an important subjective component involving effort and/or pain (strain, sprain, low back pain, tendinitis, some hernias, contusions). "Objective" group "B": disabling injuries with easily detectable lesions [fractures, lacerations, burns, skull traumas, electrical burns, foreign bodies, poison ivy (*Rhus radicans*)].

As the results of the longitudinal study indicated, both categories of disabling work injuries showed curves with increasing tendencies but the "subjective" group "A" had clearly a more accelerated trend, as far as frequency and severity are concerned. At least two different factors seem to be implicated in those results: some deterioration in the overall safety records (translated by the raising frequency of fractures per 100 employees) which might partially account for the "objective" figures and a gradually increasing problem of a changing attitude towards injuries and towards absenteeism, with a subjective component (in category "A"). An "individual preference" towards the length of a convalescence among younger employees seems to loom up, explaining partially the more rapid growth of the frequency and severity in the "subjective" group of disabling work injuries (Fig. 1). The attitude of the physician might play a role in the latter phenomenon; also the cultural background and socio-economic considerations, eventually related to psychological aspects, cannot be ruled out completely, without further prospective studies.

Summarizing the overall work injury experience in the Quebec telecommunication industry, between 1971 and 1977, we may maintain, that, on the whole, it falls under the medium-risk group of occupations. Striking is the continuing increase of the disabling injury frequency. These findings are consistent with trends in other branches of industrial activities in Quebec and, partially, all over Canada.

The size of human, medical, social and economic costs of work injuries to workers, their families, the employer and to the whole community, justifies a comprehensive and more sophisticated safety program including intensified educational and research facilities in the prevention of work injuries in Quebec's telecommunication industry.

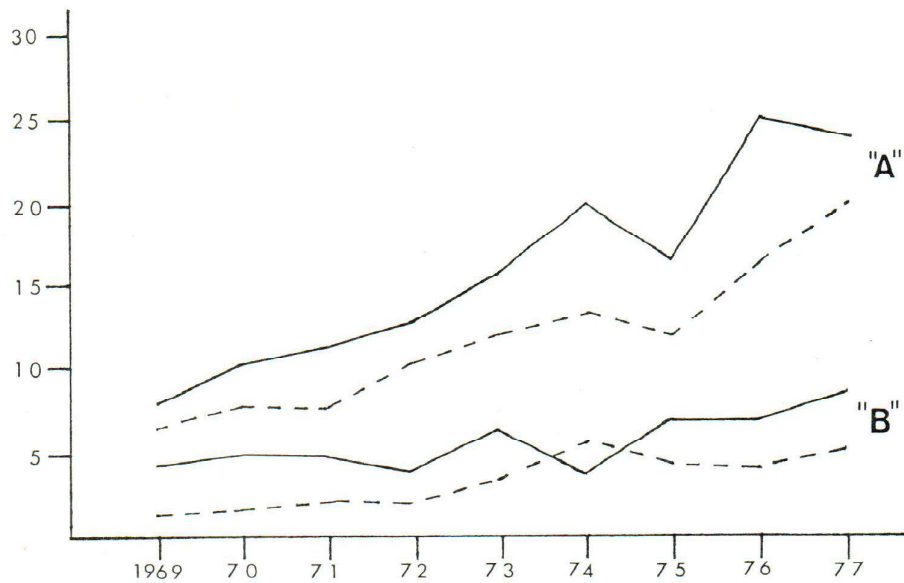


FIG. 1 - Frequency polygon of disabling work injuries for "objective injuries" (group B) and "subjective injuries" (group A) of Quebec telephone industry employees of up to five years experience. Full line is the number of cases per 1000 employees and dashed line the number of lost days per 100 employees.